Table of Contents

As filed with the U.S. Securities and Exchange Commission on April 6, 2020

Registration No. 333-

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM S-4
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

ACELRX PHARMACEUTICALS, INC.
(Exact name of registrant as specified in its charter)

Delaware	2834	41-2193603
(State or Other Jurisdiction of Incorporation or Organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification Number)

351 Galveston Drive
Redwood City, CA 94063
(650) 216-3500
(Address, Including Zip Code, and Telephone Number, Including Area Code, of Registrant's Principal Executive Offices)

Raffi Asadorian
Chief Financial Officer
AcelRx Pharmaceuticals, Inc.
351 Galveston Drive
Redwood City, CA 94063
(650) 216-3500
(Name, Address, Including Zip Code, and Telephone Number, Including Area Code, of Agent for Service)

Copies to:

Mark B. Weeks, Esq. **Rama Padmanabhan, Esq.** **Robert W. Phillips, Esq.** **Cooley LLP** **101 California St., 5th Fl** **San Francisco, CA 94611** **(415) 693-2000**	**Maria Stahl** **Chief Business Officer and General Counsel** **Tetraphase Pharmaceuticals, Inc.** **480 Arsenal Way** **Watertown, MA 02472** **(617) 715-3600**	**Stuart M. Falber, Esq.** **Hal J. Leibowitz, Esq.** **Christopher D. Barnstable-Brown, Esq.** **Wilmer Cutler Pickering Hale and Dorr LLP** **60 State Street** **Boston, MA 02109** **(617) 526-6000**

Approximate date of commencement of proposed sale of the securities to the public: As soon as practicable on or after the effective date of this registration statement and all other conditions to the merger described in the enclosed proxy statement/prospectus have been satisfied or waived.

If the securities being registered on this Form are to be offered in connection with the formation of a holding company and there is compliance with General Instruction G, check the following box. ☐

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☐	Accelerated Filer	☒
Non-accelerated filer	☐	Smaller reporting company	☒
		Emerging growth company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act. ☐

If applicable, place an X in the box to designate the appropriate rule provision relied upon in conducting this transaction:

Exchange Act Rule 13e-4(i) (Cross-Border Issuer Tender Offer) ☐

Exchange Act Rule 14d-1(d) (Cross-Border Third-Party Tender Offer) ☐

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities To Be Registered(1)	Amount to be registered(2)	Proposed maximum offering price per unit	Proposed maximum aggregate offering price	Amount of registration fee
Common Stock, par value $0.001 per share	16,082,290 shares	N/A	$8,950,709(3)	$1,161(4)

(1) This registration statement relates to common stock, par value $0.001 (the "AcelRx Common Stock"), of the Registrant issuable to holders of common stock, par value $0.001 (the "Tetraphase Common Stock"), of Tetraphase Pharmaceuticals, Inc., a Delaware corporation ("Tetraphase"), and holders of Tetraphase warrants (the "Tetraphase Warrants"), pursuant to the Agreement and Plan of Merger, dated as of March 15, 2020, by and among the Registrant, Tetraphase and Consolidation Merger Sub, Inc. (the "Merger Agreement") and the CVR Agreement (as defined herein).

(2) Represents a good faith estimate of the maximum number of shares of AcelRx Common Stock issuable to holders of Tetraphase Common Stock and Tetraphase Warrants in connection with the proposed merger described in the proxy statement/prospectus contained herein, which number represents 19.9% of the total number of shares of AcelRx Common Stock that were issued and outstanding immediately prior to the execution of the Merger Agreement. This number is calculated based on the sum of (A) the product of (a) the sum of 7,259,236 shares of Tetraphase Common Stock outstanding as of March 13, 2020, plus (i) 41,213 shares of Tetraphase Common stock subject to outstanding restricted stock units potentially issuable into the shares of Tetraphase Common Stock prior to the merger on a one-for-one basis, plus (ii) 12,850 shares of Tetraphase Common stock subject to outstanding performance stock units potentially issuable into the shares of Tetraphase Common Stock prior to the merger on a one-for-one basis, and plus (iii) 3,486,867 shares of Tetraphase Common Stock subject to certain outstanding unexercised warrants, and (b) the exchange ratio of 0.6303 shares of AcelRx Common Stock for each share of Tetraphase Common Stock; (B) 7,178,526 shares of AcelRx Common Stock issuable to holders of certain unexercised warrants; and (C) 2,096,276 shares of AcelRx Common Stock that can be issued to the holders of contingent value rights ("CVRs") upon the achievement of specified levels of annual net sales of XERAVA as described in the proxy statement/prospectus contained herein.

(3) Estimated solely for the purpose of calculating the registration fee required by Section 6(b) of the Securities Act and calculated in accordance with Rule 457(f)(1), Rule 457(f)(3) and Rule 457(c) of the Securities Act as follows: the product of (a) $1.18, the average of the high and low sales prices per share of Tetraphase Common Stock as quoted on The Nasdaq Global Market on April 1, 2020, and (b) the number of shares listed under "Amount To Be Registered," less $10,026,394, the maximum aggregate amount of cash payable by AcelRx in connection with the CVRs after giving effect to the share issuance in footnote 2(C) above.

(4) Determined in accordance with Section 6(b) of the Securities Act at a rate equal to $129.80 per $1,000,000 of the proposed maximum aggregate offering price.

The Registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to Section 8(a), may determine.

The information contained in this proxy statement/prospectus is not complete and may be changed. AcelRx Pharmaceuticals, Inc. may not distribute and issue the shares of AcelRx Pharmaceuticals, Inc. common stock being registered pursuant to the registration statement filed with the Securities and Exchange Commission, of which this document is a part, until the registration statement is declared effective. This proxy statement/prospectus does not constitute an offer to sell or a solicitation of an offer to buy any securities in any jurisdiction where an offer or solicitation is not permitted.

SUBJECT TO COMPLETION, DATED APRIL 6, 2020

PROXY STATEMENT OF TETRAPHASE PHARMACEUTICALS, INC. PROSPECTUS OF ACELRX PHARMACEUTICALS, INC.

PROPOSED MERGER—YOUR VOTE IS VERY IMPORTANT

Dear Tetraphase Stockholder:

We cordially invite you to attend a special meeting of the stockholders of Tetraphase Pharmaceuticals, Inc., a Delaware corporation, which we refer to as "we," "us," "our," "Tetraphase" or the "Company," to be held via the Internet at a virtual web conference at www.proxydocs.com/ttph on [DATE], at [TIME], Eastern Time. We are holding this special meeting virtually in order to support the health and well-being of our stockholders, employees and directors in light of the recent novel coronavirus ("COVID-19") outbreak.

On March 15, 2020, the Company entered into an agreement and plan of merger, which we refer to as the merger agreement, with AcelRx Pharmaceuticals, Inc., a Delaware corporation, which we refer to as AcelRx, and Consolidation Merger Sub, Inc., a Delaware corporation and an indirect wholly-owned subsidiary of AcelRx, which we refer to as Merger Sub, providing for the merger of Merger Sub with and into the Company, with the Company surviving the merger as an indirect wholly-owned subsidiary of AcelRx, which we refer to as the merger.

At the special meeting, you will be asked to consider and vote on the following matters:

- a proposal to adopt the merger agreement (the "merger agreement proposal");
- a proposal to approve, on a nonbinding advisory basis, the "golden parachute" compensation that will or may be payable to our named executive officers in connection with the merger as reported on the Change-in-Control Compensation table on page 83 of the accompanying proxy statement (the "compensation proposal"); and
- a proposal to approve one or more adjournments of the special meeting, if necessary or appropriate, to solicit additional proxies if there are insufficient votes at the time of the special meeting to approve the merger agreement proposal (the "adjournment proposal").

Approval of the merger agreement proposal is required for completion of the merger. Neither the compensation proposal nor the adjournment proposal is a condition to the obligations of the Company or AcelRx to complete the merger.

If the merger is consummated, each share of Tetraphase common stock issued and outstanding immediately prior to the effective time of the merger will, other than excluded shares (as defined in the accompanying proxy statement/prospectus), be converted into the right to receive, in accordance with the terms of the merger agreement, (1) a number of shares of AcelRx's common stock, par value $0.001 per share, equal to 0.6303 (the "Exchange Ratio"); *provided* that if the Company's closing net cash ("Closing Net Cash") is less than $5.0 million, the Exchange Ratio shall be adjusted to the ratio determined as follows: (a) (i) $20.0 million, minus (ii) the dollar amount by which the Closing Net Cash is less than $5.0 million, minus (iii) $10,265,292, divided by (b) (i) 10,800,166 shares of Tetraphase common stock divided by (ii) $1.43, and (2) one contingent value right per share (a "CVR") representing the right to receive up to $12.5 million (payable in cash or shares of AcelRx's common stock, at AcelRx's election), subject to the achievement of net sales milestones pursuant to the CVR Agreement (as defined below), which we refer to as the merger consideration.

The board of directors of the Company, which we refer to as the Tetraphase Board, has unanimously adopted and approved the merger agreement and recommended that the Company's stockholders vote in favor of the merger agreement proposal. The Tetraphase Board made its determination after consultation with its legal and financial

advisors and consideration of a number of factors. **The Tetraphase Board unanimously recommends that you vote "FOR" the merger agreement proposal, "FOR" the compensation proposal and "FOR" the adjournment proposal, if necessary or appropriate, to solicit additional proxies if there are insufficient votes at the time of the special meeting to adopt the merger agreement.**

Your vote is very important. The merger cannot be completed unless the holders of a majority of the outstanding shares of our common stock entitled to vote at the special meeting vote in favor of the merger agreement proposal.

The accompanying proxy statement/prospectus provides you with detailed information about the special meeting, the merger agreement and the merger. A copy of the merger agreement is attached as *Annex A* to the accompanying proxy statement/prospectus. We encourage you to carefully read the entire proxy statement/prospectus and its annexes, including the merger agreement. You also may obtain additional information about the Company from documents we have filed with the Securities and Exchange Commission by following the instructions listed in the section of the accompanying proxy statement/prospectus titled "*Where You Can Find More Information*."

In general, the exchange of Tetraphase common stock for the merger consideration in the merger is expected to be a taxable transaction for U.S. federal income tax purposes. We encourage Tetraphase stockholders to carefully review the information under the section titled "*Material U.S. Federal Income Tax Consequences of the Merger for Tetraphase Stockholders*" beginning on page 180 of the accompanying proxy statement/prospectus for a description of material U.S. federal income tax consequences of the merger.

If you have any questions or need assistance submitting a proxy to have your shares of Tetraphase common stock voted at the special meeting, please call Alliance Advisors LLC, the Company's proxy solicitor, at (855) 742-8268.

Thank you in advance for your cooperation and continued support.

Sincerely,
L. Patrick Gage, PhD.
Chairman of the Board

Larry Edwards
Chief Executive Officer

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of the merger or the other transactions described in this proxy statement/prospectus or the securities to be issued in connection with the merger or determined if this proxy statement/prospectus is accurate or complete. Any representation to the contrary is a criminal offense.

This proxy statement/prospectus is dated , 2020 and is expected to be first mailed to Tetraphase stockholders on or about , 2020.

Tetraphase Pharmaceuticals, Inc.
480 Arsenal Way
Watertown, MA 02472

Notice of Special Meeting of Stockholders to be Held on , 2020

To the Stockholders of Tetraphase Pharmaceuticals, Inc.:

Notice is hereby given that Tetraphase Pharmaceuticals, Inc., which is referred to as Tetraphase, will hold a special meeting of its stockholders, which is referred to as the Tetraphase special meeting, via the Internet at a virtual web conference at www.proxydocs.com/ttph on [DATE], at [TIME], Eastern Time, for the purpose of considering and voting on the following proposals:

1. to adopt the Agreement and Plan of Merger, dated as of March 15, 2020 (as it may be amended from time to time), which is referred to as the merger agreement, a copy of which is included as *Annex A* to the accompanying proxy statement/prospectus, by and among AcelRx Pharmaceuticals, Inc., which is referred to as AcelRx, Tetraphase and Consolidation Merger Sub, Inc., an indirect wholly-owned subsidiary of AcelRx, which is referred to as Merger Sub, pursuant to which Merger Sub will merge with and into Tetraphase, with Tetraphase as the surviving corporation and an indirect wholly-owned subsidiary of AcelRx, which proposal is referred to as the merger agreement proposal;

2. to approve, on a nonbinding advisory basis, the "golden parachute" compensation that may be payable to Tetraphase's named executive officers in connection with the merger as reported on the Change-in-Control Compensation table on page 83 of the accompanying proxy statement/prospectus, which proposal is referred to as the compensation proposal; and

3. to approve the adjournment of the Tetraphase special meeting to solicit additional proxies if there are not sufficient votes at the time of the Tetraphase special meeting to approve the merger agreement proposal or to ensure that any supplement or amendment to the accompanying proxy statement/prospectus is timely provided to Tetraphase stockholders, which proposal is referred to as the adjournment proposal.

Tetraphase will transact no other business at the Tetraphase special meeting or any adjournment or postponement thereof. The accompanying proxy statement/prospectus, including the merger agreement attached thereto as *Annex A*, contains further information with respect to these matters.

Only holders of record of Tetraphase common stock at the close of business on , 2020, the record date for notice of and voting at the Tetraphase special meeting, which is referred to as the record date, are entitled to notice of and to vote at the Tetraphase special meeting.

The board of directors of Tetraphase, which is referred to as the Tetraphase Board, has unanimously approved and declared advisable the merger agreement and the transactions contemplated by the merger agreement on the terms and subject to the conditions set forth in the merger agreement. The Tetraphase Board unanimously recommends that Tetraphase stockholders vote "**FOR**" the merger agreement proposal, "**FOR**" the compensation proposal and "**FOR**" the adjournment proposal.

Your vote is very important, regardless of the number of shares of Tetraphase common stock you own. Tetraphase cannot complete the transactions contemplated by the merger agreement, including the merger, without approval of the merger agreement proposal. Assuming a quorum is present, the approval of the merger agreement proposal requires the affirmative vote of the holders of a majority of the outstanding shares of Tetraphase common stock entitled to vote on the proposal.

To support the health and well-being of Tetraphase's stockholders, employees and directors in light of the recent novel coronavirus ("COVID-19") outbreak, the special meeting will be a "virtual meeting" of stockholders, which will be conducted exclusively via the Internet at a virtual web conference. There will not be a physical meeting location, and stockholders will not be able to attend the special meeting in person. This means that you can attend the special meeting online, vote your shares during the online meeting and submit questions during the online meeting by visiting the above-mentioned Internet site. In light of the public health and safety concerns related to COVID-19, we believe that hosting a "virtual meeting" will enable greater stockholder attendance and participation from any location around the world.

Whether or not you plan to attend the Tetraphase special meeting via virtual web conference, Tetraphase urges you to please promptly mark, sign and date the accompanying proxy card and return it in the enclosed postage-paid envelope, or call the telephone number or use the Internet as described in the instructions included with the proxy card, so that your shares may be represented and voted at the Tetraphase special meeting. If you hold your shares through a broker, bank or other nominee in "street name" (instead of as a registered holder) and you wish to vote during the Tetraphase special meeting, you will receive instructions from the holder of record that you must follow for your shares to be voted. Instructions on how to attend and participate online, including how to demonstrate proof of stock ownership, are posted at www.proxydocs.com/ttph. A list of registered stockholders as of the close of business on the record date will be available for examination by any stockholder for any purpose germane to the special meeting at www.proxydocs.com/ttph for a period of at least 10 days prior to the special meeting. This list will also be available for examination by the stockholders during the whole time of the special meeting at www.proxydocs.com/ttph.

If you have any questions about the merger or about how to vote or direct a vote in respect of your shares of Tetraphase common stock, you may contact Tetraphase's proxy solicitor, Alliance Advisors LLC, at (855) 742-8268.

By Order of the Board of Directors,
Larry Edwards
Chief Executive Officer

Watertown, Massachusetts
Dated: , 2020

Your vote is important. Tetraphase stockholders are requested to complete, date, sign and return the enclosed proxy card in the envelope provided, which requires no postage if mailed in the United States, or to submit a proxy to vote your shares electronically through the Internet or by telephone.

ABOUT THIS PROXY STATEMENT/PROSPECTUS

AcelRx Pharmaceuticals, Inc. ("AcelRx") has supplied all information contained in or incorporated by reference into this proxy statement/prospectus relating to AcelRx. Tetraphase Pharmaceuticals, Inc. ("Tetraphase") has supplied all information contained in this proxy statement/prospectus relating to Tetraphase. AcelRx and Tetraphase have both contributed to information relating to the proposed merger.

No one has been authorized to provide you with information that is different from that contained in or incorporated by reference into this proxy statement/prospectus. We take no responsibility for, and can provide no assurance as to the reliability of, any information others may give you. This proxy statement/prospectus is dated , 2020, and is based on information as of that date or such other date as may be noted. You should not assume that the information contained in this proxy statement/prospectus is accurate as of any other date. You should not assume that the information contained in any document incorporated or deemed to be incorporated by reference herein is accurate as of any date other than the date of such document. Any statement contained in a document incorporated or deemed to be incorporated by reference into this proxy statement/prospectus will be deemed to be modified or superseded to the extent that a statement contained herein or in any other subsequently filed document which also is or is deemed to be incorporated by reference into this proxy statement/prospectus modifies or supersedes that statement. Any statement so modified or superseded will not be deemed, except as so modified or superseded, to constitute a part of this proxy statement/prospectus. Neither the mailing of this proxy statement/prospectus to the stockholders of Tetraphase nor the taking of any actions contemplated hereby by AcelRx or Tetraphase at any time will create any implication to the contrary.

This proxy statement/prospectus does not constitute an offer to sell, or a solicitation of an offer to buy, any securities, or the solicitation of a proxy, in any jurisdiction in which or from any person to whom it is unlawful to make any such offer or solicitation in such jurisdiction.

Unless otherwise indicated or as the context otherwise requires, all references in this proxy statement/prospectus to:

- "**AcelRx**" refers to AcelRx Pharmaceuticals, Inc., a Delaware corporation;
- "**AcelRx Board**" refers to the board of directors of AcelRx;
- "**AcelRx Bylaws**" refers to the Amended and Restated Bylaws of AcelRx, as amended from time to time;
- "**AcelRx Charter**" refers to the Amended and Restated Certificate of Incorporation of AcelRx, as amended from time to time;
- "**AcelRx Common Stock**" refers to the common stock, par value $0.001 per share, of AcelRx;
- "**AcelRx SEC Documents**" refers to the registration statements, proxy statements and other statements, reports, schedules, forms and other documents filed by AcelRx with the SEC since December 31, 2018, including any amendments thereto since December 31, 2018, and any certifications and statements relating thereto required by: (A) Rule 13a-14 or Rule 15d-14 under the Exchange Act; (B) 18 U.S.C. §1350 (Section 906 of the Sarbanes-Oxley Act); or (C) any other rule or regulation promulgated by the SEC or applicable thereto;
- "**adjournment proposal**" refers to the proposal to approve adjournments of the Special Meeting, if necessary or appropriate, to solicit additional proxies if, immediately prior to such adjournment, sufficient votes to adopt the Merger Agreement have not been obtained by Tetraphase;
- "**Code**" refers to the Internal Revenue Code of 1986, as amended;
- "**compensation proposal**" refers to the proposal to approve, on a non-binding, advisory basis, the compensation payments that will or may be paid by Tetraphase to its named executive officers in connection with the Merger;
- "**Confidentiality Agreement**" refers to the Confidentiality Agreement dated July 29, 2019, and amended on January 23, 2020, by and between AcelRx and Tetraphase;

- "**Contemplated Transactions**" refers to the Merger and other transactions contemplated by the Merger Agreement, the CVR Agreement and the Voting Agreements;
- "**CVR Agreement**" refers to a contingent value rights agreement, a copy of which is attached as *Annex D* to this proxy statement/prospectus and incorporated by reference herein.
- "**CVRs**" refers to the contingent value rights issuable pursuant to the Merger Agreement, representing the right to receive contingent payments of cash and/or AcelRx Common Stock pursuant to the CVR Agreement;
- "**DGCL**" refers to the Delaware General Corporation Law;
- "**DOJ**" refers to the United States Department of Justice;
- "**Effective Time**" refers to the date and time of the filing of the certificate of merger with respect to the Merger with the Secretary of State of the State of Delaware or such later date and time as Tetraphase and AcelRx may agree upon and as is set forth in such certificate of merger;
- "**Exchange Act**" refers to the Securities Exchange Act of 1934, as amended;
- "**Exchange Agreement**" refers to the exchange agreement entered into by AcelRx with a holder of Tetraphase warrants;
- "**Exchange Ratio**" refers to 0.6303 shares of AcelRx Common Stock for each share of Tetraphase Common Stock issued and outstanding immediately prior to the Effective Time, provided that if Tetraphase Net Cash is less than Target Net Cash, Exchange Ratio shall mean: (a) (i) Residual Equity Value, divided by (ii) Reference Company Fully Diluted Shares, divided by (b) the Reference Company Per Share Price;
- "**FDA**" refers to U.S. Food and Drug Administration;
- "**FTC**" refers to the United States Federal Trade Commission;
- "**GAAP**" refers to Generally Accepted Accounting Principles in the United States of America;
- "**IRS**" refers to the United States Internal Revenue Service;
- "**Janney**" refers to Janney Montgomery Scott LLC, financial advisor to Tetraphase;
- "**Merger**" refers to the merger of Merger Sub with and into Tetraphase, with Tetraphase surviving the merger as an indirect wholly-owned subsidiary of AcelRx;
- "**Merger Agreement**" refers to the Agreement and Plan of Merger, dated as of March 15, 2020, by and among Tetraphase, AcelRx and Merger Sub, a copy of which is attached as *Annex A* to this proxy statement/prospectus and incorporated by reference herein;
- "**merger agreement proposal**" refers to the proposal to adopt the Merger Agreement;
- "**Merger Consideration**" refers to the consideration payable in the Merger by AcelRx to Tetraphase stockholders in respect of each share of Tetraphase Common Stock outstanding immediately prior to the Effective Time, which consideration consists of the Exchange Ratio and the CVRs;
- "**Merger Sub**" refers to Consolidation Merger Sub, Inc., a Delaware corporation and an indirect wholly-owned subsidiary of AcelRx;
- "**Nasdaq**" refers to the Nasdaq Global Select Market, the Nasdaq Global Market and The Nasdaq Stock Market LLC;
- "**Pro Forma Balance Sheet**" refers to AcelRx's unaudited pro forma balance sheet;
- "**Pro Forma Financial Statements**" refers to AcelRx's pro forma unaudited condensed combined financial statements;
- "**Pro Forma Statement of Operations**" refers to AcelRx's unaudited pro forma condensed combined statements of operations;
- "**Record Date**" refers to , 2020, the date on which holders of Tetraphase Common Stock must be holders of record in order to receive notice of, and to vote at, the Special Meeting;

- "**Reference Company Fully Diluted Shares**" refers to 10,800,166 shares of Tetraphase Common Stock;
- "**Reference Company Per Share Price**" refers to $1.43;
- "**Residual Equity Value**" refers to (a) $20.0 million, minus (b) the dollar amount by which the Tetraphase Net Cash is less than the Target Net Cash, minus (c) the Tetraphase Warrantholder Payout;
- "**Sarbanes-Oxley Act**" refers to the Sarbanes-Oxley Act of 2002, as it may be amended from time to time;
- "**SEC**" refers to the United States Securities and Exchange Commission;
- "**Securities Act**" refers to the Securities Act of 1933, as amended;
- "**Special Meeting**" refers to the meeting of Tetraphase stockholders to be held via the Internet at a virtual web conference at www.proxydocs.com/ttph on [DATE], at [TIME], Eastern Time;
- "**Surviving Corporation**" refers to Tetraphase as an indirect wholly-owned subsidiary of AcelRx following the Merger;
- "**Target Net Cash**" refers to $5.0 million;
- "**Tetraphase**" refers to Tetraphase Pharmaceuticals, Inc., a Delaware corporation;
- "**Tetraphase Board**" refers to the board of directors of Tetraphase;
- "**Tetraphase Bylaws**" refers to the Amended and Restated Bylaws of Tetraphase, as amended from time to time;
- "**Tetraphase Charter**" refers to the Restated Certificate of Incorporation of Tetraphase, as amended from time to time;
- "**Tetraphase Common Stock**" refer to the common stock, par value $0.001 per share, of Tetraphase;
- "**Tetraphase Net Cash**" refers to the definition of Tetraphase Net Cash as set forth in "*The Merger Agreement—Merger Consideration and the Exchange Ratio*" beginning on page 91 of this proxy statement/prospectus;
- "**Tetraphase Option Plans**" refers to: (a) the Tetraphase 2006 Stock Plan; and (b) the Tetraphase 2013 Stock Incentive Plan;
- "**Tetraphase Options**" refers to options to purchase shares of Tetraphase Common Stock from Tetraphase;
- "**Tetraphase PRSU**" refers to each restricted stock unit representing the right to vest in and be issued one share of Tetraphase Common Stock by Tetraphase, and which vests in whole or in part contingent upon the attainment of one or more performance goals, granted by Tetraphase pursuant to a Tetraphase Option Plan;
- "**Tetraphase RSU**" refers to each restricted stock unit representing the right to vest in and be issued one share of Tetraphase Common Stock by Tetraphase, granted by Tetraphase pursuant to a Tetraphase Option Plan, and which is not a Tetraphase PRSU;
- "**Tetraphase SEC Documents**" refers to the registration statements, proxy statements and other statements, reports, schedules, forms and other documents filed by Tetraphase with the SEC since December 31, 2018, including any amendments thereto since December 31, 2018, and any certifications and statements thereto required by: (A) Rule 13a-14 or Rule 15d-14 under the Exchange Act; (B) 18 U.S.C. §1350 (Section 906 of the Sarbanes-Oxley Act); or (C) any other rule or regulation promulgated by the SEC or applicable thereto;
- "**Tetraphase Warrantholder Payout**" refers to $10,265,292; and
- "**Voting Agreements**" refers to the voting agreements entered into by AcelRx with certain Tetraphase equityholders.

Table of Contents

REFERENCES TO ADDITIONAL INFORMATION

This proxy statement/prospectus incorporates by reference important business and financial information about AcelRx and Tetraphase from documents AcelRx and Tetraphase have filed or will file with the SEC that are not included in or delivered with this proxy statement/prospectus. This information is available to you without charge upon your written or oral request and must be made no later than five business days before the date of the Special Meeting. You can obtain documents incorporated by reference into this proxy statement/prospectus by requesting them in writing or by telephone using the following contact information:

For AcelRx stockholders:

AcelRx Pharmaceuticals, Inc.
351 Galveston Drive
Redwood City, CA 94063
Attn: Secretary
(650) 216-3500

For Tetraphase stockholders:

Tetraphase Pharmaceuticals, Inc.
480 Arsenal Way
Watertown, Massachusetts 02472
Attn: Secretary
Telephone: (617) 715-3600

If you would like to request any documents, please do so by , 2020, or the date that is five business days before the date of the Special Meeting, in order to receive them before the Special Meeting.

For additional information on the documents incorporated by reference into this proxy statement/prospectus, see "*Where You Can Find More Information*" beginning on page 196 of this proxy statement/prospectus and "*Incorporation of Certain Information by Referen*ce" beginning on page 197 of this proxy statement/prospectus.

TABLE OF CONTENTS

QUESTIONS AND ANSWERS

Q: Why did I receive these proxy materials?

A: You are receiving this proxy statement/prospectus because you were a stockholder of record of Tetraphase on the Record Date for the Special Meeting to be held via the Internet at a virtual web conference at www.proxydocs.com/ttph on [DATE], at [TIME], Eastern Time. You are invited to attend the Special Meeting online and are requested to vote on the items of business described in this proxy statement/prospectus.

Q: What is the purpose of the Special Meeting?

A: At the Special Meeting, Tetraphase stockholders will consider and vote on the following matters:

- **Proposal 1**: a proposal to adopt the Merger Agreement, a copy of which is included as *Annex A* to the accompanying proxy statement/prospectus, by and among AcelRx, Tetraphase and Merger Sub, pursuant to which Merger Sub will merge with and into Tetraphase, with Tetraphase as the surviving corporation and an indirect wholly-owned subsidiary of AcelRx, which proposal is referred to as the merger agreement proposal;
- **Proposal 2**: a proposal to approve, on a nonbinding advisory basis, the "golden parachute" compensation that may be payable to Tetraphase's named executive officers in connection with the Merger as reported on the Change-in-Control Compensation table on page 83 of this proxy statement/prospectus, which proposal is referred to as the compensation proposal; and
- **Proposal 3**: a proposal to approve the adjournment of the Tetraphase Special Meeting to solicit additional proxies if there are not sufficient votes at the time of the Tetraphase Special Meeting to approve the merger agreement proposal or to ensure that any supplement or amendment to this proxy statement/prospectus is timely provided to Tetraphase stockholders, which proposal is referred to as the adjournment proposal.

Q: What is the Merger?

A: AcelRx, Tetraphase, and Merger Sub entered into an Agreement and Plan of Merger, dated as of March 15, 2020, pursuant to which, among other things, Merger Sub will be merged with and into Tetraphase, with Tetraphase continuing as the surviving corporation and an indirect wholly-owned subsidiary of AcelRx. The Merger Agreement, as it may be amended from time to time, contains the terms and conditions of the proposed merger transaction between AcelRx, Tetraphase, and Merger Sub. This proposed merger transaction is referred to as the Merger.

At the Effective Time, each share of Tetraphase Common Stock outstanding immediately prior to the Effective Time (other than shares owned by AcelRx, Merger Sub or Tetraphase or any direct or indirect wholly-owned subsidiary of AcelRx or Tetraphase or by stockholders of Tetraphase who have exercised and perfected their statutory rights of appraisal as more fully described in the section titled "*The Merger—Appraisal Rights*" in this proxy statement/prospectus) will be converted into the right to receive the Merger Consideration.

Each outstanding share of Tetraphase Common Stock will be automatically converted into the right to receive (i) 0.6303 of a share of AcelRx Common Stock (subject to adjustment as described below), *plus* (ii) one CVR, *plus* (iii) any cash payable in lieu of fractional shares of AcelRx Common Stock.

The Exchange Ratio is subject to a potential downward adjustment if the Tetraphase Net Cash is less than $5.0 million at the closing of the Merger.

The Merger Agreement also provides that:

- each Tetraphase Option, whether vested or unvested, will terminate at the Effective Time and will be of no further force and effect;

- each unvested Tetraphase RSU and Tetraphase PRSU shall vest in full as of five business days prior to the Merger; and
- each Tetraphase Warrant shall be treated in accordance with its terms or as modified in any Voting Agreement or Exchange Agreement entered into with an applicable warrantholder, as further described in this proxy statement/prospectus.

At the Effective Time, AcelRx's stockholders will continue to own and hold their existing shares of AcelRx Common Stock.

Q: What will I receive for my shares of Tetraphase Common Stock in the Merger?

A: In the Merger, each issued and outstanding share of Tetraphase Common Stock immediately prior to the Effective Time will be automatically cancelled and converted into the right to receive (i) 0.6303 of a share of AcelRx Common Stock (subject to adjustment as described herein), *plus* (ii) one CVR, *plus* (iii) any cash payable in lieu of fractional shares of AcelRx Common.

After the consummation of the Merger, Tetraphase stockholders will own shares of AcelRx Common Stock and will no longer own shares of Tetraphase Common Stock. See "*The Merger Agreement*" beginning on page 90 of this proxy statement/prospectus.

Q: Where will the shares of AcelRx Common Stock that I receive in the Merger be traded?

A: Shares of AcelRx Common Stock are listed on Nasdaq under the symbol "ACRX." AcelRx will apply to have the new shares of AcelRx Common Stock issued in the Merger listed on Nasdaq upon consummation of the Merger.

Q: What percentage of AcelRx Common Stock will Tetraphase stockholders own following the Merger?

A: Based on the number of shares of Tetraphase Common Stock and AcelRx Common Stock estimated to be outstanding on the Record Date for the Special Meeting, Tetraphase and AcelRx estimate that, upon completion of the Merger, former Tetraphase stockholders and certain other Tetraphase equityholders will own approximately 14.6% of the combined company on a fully diluted basis.

Q: Are AcelRx stockholders voting on the Merger?

A: No. No vote of AcelRx's stockholders is required to complete the Merger.

Q: When is the Merger expected to be completed?

A: AcelRx and Tetraphase are working toward completing the Merger as expeditiously as possible and currently expect the Merger to be completed in the second quarter of 2020. However, AcelRx and Tetraphase cannot be certain when, or if, the conditions to the Merger will be satisfied or waived, or that the Merger will be completed.

Q: Who can vote at the Special Meeting?

A: To be entitled to vote, you must have been a stockholder of record at the close of business on the Record Date. There were shares of Tetraphase Common Stock outstanding and entitled to vote at the Special Meeting as of the Record Date.

Q: Why is the Special Meeting of stockholders a virtual, online meeting?

A: To support the health and well-being of Tetraphase stockholders, employees and directors in light of the recent novel coronavirus ("COVID-19") outbreak, the Tetraphase Special Meeting will be a virtual meeting of stockholders where stockholders will participate by accessing a website using the Internet. There will not be a physical meeting location. In light of the public health and safety concerns related to COVID-19, Tetraphase believes that hosting a virtual meeting will facilitate stockholder attendance and participation at the Tetraphase Special Meeting by enabling stockholders to participate remotely from any location around the world. Tetraphase has designed the virtual Special Meeting to provide the same rights and opportunities to participate as stockholders would have at an in-person meeting, including the right to vote and ask questions through the virtual meeting platform. If the Contemplated Transactions are not consummated, Tetraphase intends to return to holding in person meetings as soon as it is safe to do so.

Q: How do I virtually attend the Special Meeting?

A: Tetraphase will host the Special Meeting live online via webcast. You may attend the Special Meeting live online by visiting www.proxydocs.com/ttph. The webcast will start at [TIME], Eastern Time, on [DATE]. You will need the control number included on your proxy card or voting instruction form in order to be able to enter the Special Meeting online. Instructions on how to attend and participate online, including how to demonstrate proof of stock ownership, are posted at www.proxydocs.com/ttph. Online check-in will begin at [TIME], Eastern Time on [DATE], and you should allow ample time for the online check-in proceedings. Tetraphase will have technicians standing by and ready to assist you with any technical difficulties you may have accessing the Special Meeting starting at [TIME], Eastern Time, on [DATE]. If you encounter any difficulties accessing the virtual meeting during the check-in or meeting time, please call: [DOMESTIC PHONE NUMBER] (domestic) or [INTERNATIONAL PHONE NUMBER] (international).

Q: May I see a list of stockholders entitled to vote as of the Record Date?

A: A list of registered stockholders as of the close of business on the Record Date will be available for examination by any stockholder for any purpose germane to the Special Meeting at www.proxydocs.com/ttph for a period of at least 10 days prior to the Special Meeting. Such list will also be available for examination by the stockholders during the whole time of the Special Meeting at www.proxydocs.com/ttph.

Q: How do I submit a question at the Special Meeting?

A: If you wish to submit a question, on the day of the Special Meeting, beginning at [TIME], Eastern Time on [DATE], you may log into the virtual meeting platform at www.proxydocs.com/ttph, type your question into the "Ask a Question" field, and click "Submit." Tetraphase's virtual meeting will be governed by Tetraphase's [RULES OF CONDUCT AND PROCEDURES] which will be posted at www.proxydocs.com/ttph in advance of the meeting. The [RULES OF CONDUCT AND PROCEDURES] will address the ability of stockholders to ask questions during the meeting, including rules on permissible topics, and rules for how questions and comments will be recognized and disclosed to meeting participants. All questions received from stockholders during the virtual Special Meeting will be posted on Tetraphase's investor relations website at https://ir.tphase.com/investor-relations as soon as practicable following the Special Meeting.

Q: How many votes do I have?

A: Each share of Tetraphase Common Stock that you own as of the Record Date will entitle you to one vote on each matter considered at the Special Meeting.

Q: How do I vote?

A: If you are the "record holder" of your shares, meaning that your shares are registered in your name in the records of Tetraphase's transfer agent, American Stock Transfer & Trust Company, LLC, you may vote your shares during the meeting or by proxy as follows:

(1) **Over the Internet**: To vote over the Internet, please go to the following website: www.proxydocs.com/ttph, and follow the instructions at that site for submitting your proxy electronically. If you vote over the Internet, you do not need to complete and mail your proxy card or vote your proxy by telephone.

(2) **By Telephone**: To vote by telephone, please call (866) 416-3857, and follow the instructions provided on the proxy card. If you vote by telephone, you do not need to complete and mail your proxy card or vote your proxy over the Internet.

(3) **By Mail**: To vote by mail, you must mark, sign and date the proxy card and then mail the proxy card in accordance with the instructions on the proxy card. If you vote by mail, you do not need to vote over the Internet or by telephone. If you return your proxy card but do not specify how you want your shares voted on the proposal, they will be voted in accordance with the recommendations of the Tetraphase Board.

If your shares are held in "street name," meaning they are held for your account by an intermediary, such as a broker, then you are deemed to be the beneficial owner of your shares and the broker that actually holds the shares for you is the record holder and is required to vote the shares it holds on your behalf according to your instructions. The proxy materials, as well as voting and revocation instructions, should have been forwarded to you by the broker that holds your shares. In order to vote your shares, you will need to follow the instructions that your broker provides you. Many brokers solicit voting instructions over the Internet or by telephone.

A "broker non-vote" occurs when shares held by a broker are not voted with respect to a particular proposal because the broker does not have or did not exercise discretionary authority to vote on the matter and has not received voting instructions from its clients. Because none of the proposals currently scheduled to be voted on at the Special Meeting are routine matters for which brokers may have discretionary authority to vote, Tetraphase does not expect there to be any broker non-votes at the Special Meeting.

Regardless of whether your shares are held in street name, you are welcome to virtually attend the Special Meeting. You may not vote shares held in street name during the meeting, however, unless you obtain a proxy, executed in your favor, from the holder of record (i.e., your broker).

Q: Are there risks associated with the Merger that I should consider in deciding how to vote?

A: Yes. There are a number of risks related to the Merger and the other Contemplated Transactions that are discussed in this proxy statement/prospectus and in the documents incorporated by reference into this proxy statement/prospectus. Please read carefully the detailed description of the risks described in "*Risk Factors*" beginning on page 27 of this proxy statement/prospectus.

Q: Can I change my vote?

A: If your shares are registered directly in your name, you may revoke your proxy and change your vote at any time before the vote is taken at the Special Meeting. Execution of the proxy will not in any way affect your right to virtually attend the Special Meeting. To revoke a prior proxy, you must do one of the following:

(1) Vote over the Internet or by telephone as instructed above. Only your latest Internet or telephone vote is counted.

(2) Sign and return a new proxy card. Only your latest dated proxy card will be counted.

(3) Revocation of your proxy may also be made during the Special Meeting prior to the voting of the proxy by voting your shares online while virtually attending the Special Meeting. Virtual attendance at the Special Meeting does not in itself constitute the revocation of a proxy.

(4) Give Tetraphase's corporate secretary written notice before or during the meeting that you want to revoke your proxy.

If your shares are held in "street name," you may submit new voting instructions with a later date by contacting your broker.

Q: How many shares must be represented to have a quorum and hold the Special Meeting?

A: A majority of the shares of Tetraphase Common Stock outstanding at the Record Date must be virtually present or represented by proxy to hold the Special Meeting. This is called a quorum. For purposes of determining whether a quorum exists, Tetraphase counts as present any shares that are voted over the Internet, by telephone or by submitting a proxy card. Further, for purposes of establishing a quorum, Tetraphase will count as present shares that a stockholder holds even if the stockholder votes against the proposals or abstains. In addition, Tetraphase will count as present shares held in "street name" by brokers who indicate on their proxies that they do not have authority to vote those shares. If a quorum is not present, Tetraphase expects to adjourn the Special Meeting until Tetraphase obtains a quorum.

Q: What vote is required to approve the proposals and how are votes counted?

A: **Proposal 1**: **Merger Agreement Proposal**: Assuming a quorum is present at the Special Meeting, the merger agreement proposal requires the affirmative vote of the holders of a majority of the outstanding shares of Tetraphase Common Stock entitled to vote on such proposal. Accordingly, a Tetraphase stockholder's abstention from voting, a broker non-vote or the failure of a Tetraphase stockholder to vote (including the failure of a Tetraphase stockholder who holds shares in "street name" through a bank, broker or other nominee to give voting instructions to that bank, broker or other nominee) will have the same effect as votes cast "**AGAINST**" the merger agreement proposal.

Proposal 2: **Compensation Proposal**: Assuming a quorum is present at the Special Meeting, approval of the compensation proposal requires the affirmative vote of the holders of shares of Tetraphase Common Stock representing a majority of the votes cast on the proposal. Shares which abstain from voting and "broker non-votes" with respect to this proposal will not be counted as votes in favor of such matter, and will also not be counted as shares voting on such matter. Accordingly, abstentions and "broker non-votes" will have no effect on the voting on this proposal.

Proposal 3: **Adjournment Proposal**: Whether or not a quorum is present at the Special Meeting, approval of the adjournment proposal requires the affirmative vote of the holders of shares of Tetraphase Common Stock representing a majority of the votes cast on the proposal. Shares which abstain from voting and "broker non-votes" with respect to this proposal will not be counted as votes in favor of such matter, and will also not be counted as shares voting on such matter. Accordingly, abstentions and "broker non-votes" will have no effect on the voting on this proposal.

Q: Who will count the vote?

A: The votes will be counted, tabulated and certified by Mediant Communications.

Q: How does the board of directors recommend that I vote on the proposals?

A: The Tetraphase Board unanimously recommends that you vote FOR each of the proposals.

Q: Are there other matters to be voted on at the Special Meeting?

A: Tetraphase does not know of any matters that may come before the Special Meeting other than the three proposals previously mentioned. If any other matters are properly presented at the Special Meeting, the persons named in the accompanying proxy card intend to vote, or otherwise act, in accordance with their judgment on the matter.

Q: Where can I find the voting results?

A: Tetraphase plans to announce preliminary voting results at the Special Meeting and will report final voting results in a Current Report on Form 8-K filed with the SEC within four business days following the conclusion of the Tetraphase Special Meeting.

Q: What are the costs of soliciting these proxies?

A: Tetraphase will bear the cost of soliciting proxies. In addition to solicitation by mail, Tetraphase's directors, officers and employees may solicit proxies by telephone, e-mail, facsimile and in person without additional compensation. Tetraphase has engaged Alliance Advisors, LLC, a proxy solicitation firm, to solicit proxies from shareholders for a fee of $10,000 plus certain additional costs associated with solicitation campaigns. Tetraphase may reimburse brokers or persons holding stock in their names, or in the names of their nominees, for their expenses in sending proxies and proxy material to beneficial owners. Tetraphase has also hired a proxy solicitor who may also solicit proxies from shareholders by telephone, e-mail, facsimile and in person and whose fees Tetraphase will reimburse.

Q: What are the material U.S. federal income tax consequences of the Merger to U.S. Holders of Tetraphase Stockholders?

A: In general, the exchange of Tetraphase Common Stock for the Merger Consideration in the Merger is expected to be a taxable transaction for U.S. federal income tax purposes. Please carefully review the information set forth in "*Material U.S. Federal Income Tax Consequences of the Merger for Tetraphase Stockholders*" beginning on page 180 of this proxy statement/prospectus for a description of material U.S. federal income tax consequences of the Merger to Tetraphase Stockholders. The tax consequences to you of the Merger will depend on your particular facts and circumstances. You are urged to consult your tax advisors as to the specific tax consequences to you of the Merger and your receipt of the Merger Consideration, including the applicability and effect of U.S. federal, state, local and non-U.S. income and other tax laws in light of your particular circumstances.

Q. What happens if the Merger is not completed?

A. If the Merger is not completed, Tetraphase stockholders will not receive any consideration for their shares of Tetraphase Common Stock. Instead, Tetraphase and AcelRx will remain independent public companies, and shares of Tetraphase Common Stock and AcelRx Common Stock will continue to be independently listed and traded on Nasdaq. In the event the Merger Agreement is terminated pursuant to its terms, Tetraphase may, in certain circumstances, be required to pay AcelRx a termination fee equal to $810,000 and/or, in certain additional circumstances, to reimburse AcelRx for certain expenses up to $200,000 incurred in connection with the Merger Agreement and the Contemplated Transactions. These termination fees and reimbursement expenses are described in more detail in "*The Merger Agreement—Termination Fee and Expenses*" beginning on page 102 of this proxy statement/prospectus.

Stockholders Sharing the Same Address

Some brokers and other nominee record holders may be "householding" Tetraphase proxy materials. This means a single notice and, if applicable, the proxy materials, will be delivered to multiple stockholders sharing an address unless contrary instructions have been received. Tetraphase will promptly deliver a separate copy of the notice and, if applicable, the proxy materials, to you if you call or write to Tetraphase at its principal executive offices, 480 Arsenal Way, Watertown, Massachusetts 02472, Attn: Investor Relations, telephone: (617) 715-3600. In the future, if you want to receive separate copies of the proxy materials, or if you are receiving multiple copies and would like to receive only one copy per household, you should contact your broker, or you may contact Tetraphase at the above address and telephone number.

SUMMARY

This summary highlights selected information described in more detail elsewhere in this proxy statement/prospectus and the documents incorporated herein by reference and may not contain all of the information that is important to you. To understand the Merger and the other matters to be voted on by Tetraphase stockholders at the Special Meeting more fully, and to obtain a more complete description of the terms of the Merger Agreement, you should carefully read this entire proxy statement/prospectus, including the Annexes, and the documents to which AcelRx and Tetraphase refer you. You should also read and consider the information in the documents incorporated by reference into this proxy statement/prospectus described under "Incorporation of Certain Information by Reference" beginning on page 197 and the additional information described under "Where You Can Find More Information" beginning on page 196 of this proxy statement/prospectus. AcelRx and Tetraphase have included page references parenthetically to direct you to a more complete description of the topics presented in this summary.

The Companies (see page 36)

Tetraphase Pharmaceuticals, Inc.

Tetraphase Pharmaceuticals, Inc. ("Tetraphase") is a biopharmaceutical company using its proprietary chemistry technology to develop and commercialize novel tetracyclines for serious and life-threatening conditions, including bacterial infections caused by many multidrug-resistant ("MDR"), bacteria. There is a medical need for new antibiotics as resistance to existing antibiotics increases. The company's commercial product, XERAVA™ (eravacycline), a fully synthetic fluorocycline, is an intravenous ("IV") antibiotic that is approved for use as a first-line empiric monotherapy for the treatment of MDR infections, including those found in complicated intra-abdominal infections. The Tetraphase pipeline also includes TP-271 IV and Oral, and TP-6076 IV only, which are Phase 2 ready, and TP-2846, which is in preclinical testing for acute myeloid leukemia.

Shares of Tetraphase Common Stock are traded on the Nasdaq Global Select Market under the symbol "TTPH."

Tetraphase's current contact information is as follows:

Tetraphase Pharmaceuticals, Inc.
480 Arsenal Way
Watertown, MA 02472
(617) 715-3600

Additional information about Tetraphase is included in the documents incorporated by reference into this proxy statement/prospectus. See "*Information About Tetraphase*" beginning on page 117 of this proxy statement/prospectus and "*Where You Can Find More Information*" beginning on page 196 of this proxy statement/prospectus.

AcelRx Pharmaceuticals, Inc.

AcelRx Pharmaceuticals, Inc. ("AcelRx") is a specialty pharmaceutical company focused on the development and commercialization of innovative therapies for use in healthcare institutions. AcelRx's proprietary, non-invasive sublingual formulation technology delivers sufentanil with consistent pharmacokinetic profiles. The company has one approved product in the U.S., DSUVIA® (sufentanil sublingual tablet, 30 mcg), known as DZUVEO™ in Europe, indicated for the management of acute pain severe enough to require an opioid analgesic for adult patients in certified medically supervised healthcare settings, and one product candidate, Zalviso® (sufentanil sublingual tablet system, SST system, 15 mcg), an investigational product in the U.S., is being developed as an innovatively designed patient-controlled analgesia (PCA) system for reduction of moderate-to-severe acute pain in medically supervised settings. DZUVEO and Zalviso are both approved products in Europe.

Shares of AcelRx Common Stock are traded on The Nasdaq Stock Market LLC under the symbol "ACRX."
AcelRx's current contact information is as follows:

AcelRx Pharmaceuticals, Inc.
351 Galveston Drive
Redwood City, CA 94063
(650) 216-3500

Additional information about AcelRx and its subsidiaries is included in the documents incorporated by reference into this proxy statement/prospectus. See "*Where You Can Find More Information*" beginning on page 196 of this proxy statement/prospectus and "*Incorporation of Certain Information by Referenc*e" beginning on page 197 of this proxy statement/prospectus.

Consolidation Merger Sub, Inc.

Consolidation Merger Sub, Inc., a Delaware corporation and an indirect wholly-owned subsidiary of AcelRx ("Merger Sub"), was organized solely for the purpose of entering into the Merger Agreement and completing the Merger and other Contemplated Transactions. Merger Sub has not conducted any business operations other than in connection with the Contemplated Transactions. Upon consummation of the Merger, Merger Sub will cease to exist, with Tetraphase surviving the Merger as an indirect wholly-owned subsidiary of AcelRx under the name "Tetraphase Pharmaceuticals, Inc.".

Merger Sub's current contact information is as follows:

c/o AcelRx Pharmaceuticals, Inc.
351 Galveston Drive
Redwood City, CA 94063
(650) 216-3500

The Merger (see page 47)

The AcelRx Board and the Tetraphase Board have each unanimously approved the Merger Agreement, pursuant to which Merger Sub, an indirect wholly-owned subsidiary of AcelRx, will merge with and into Tetraphase, with Tetraphase surviving the Merger. As a result of the Merger, Tetraphase will become an indirect wholly-owned subsidiary of AcelRx. Upon completion of the Merger, Tetraphase stockholders and certain other Tetraphase equityholders will own approximately 14.6% of the outstanding shares of AcelRx Common Stock on a fully diluted basis.

At the Special Meeting to be held via the Internet at a virtual web conference at www.proxydocs.com/ttph on [DATE], at [TIME], Eastern Time, you will be asked to consider and vote upon a proposal to adopt the Merger Agreement.

Tetraphase stockholders are receiving this proxy statement/prospectus in connection with Tetraphase's solicitation of proxies for the Special Meeting.

The Merger Agreement (see page 90)

A copy of the Merger Agreement is attached as *Annex A* to this proxy statement/prospectus. AcelRx and Tetraphase encourage you to read the entire Merger Agreement carefully because it is the principal document governing the Merger.

Merger Consideration and the Exchange Ratio (see page 90)

At the Effective Time, each share of Tetraphase Common Stock issued and outstanding immediately prior to the Effective Time (other than shares owned by AcelRx, Merger Sub or Tetraphase or any direct or indirect wholly-

owned subsidiary of AcelRx or Tetraphase or by stockholders of Tetraphase who have exercised and perfected their statutory rights of appraisal under the DGCL) will be converted into the right to receive (i) 0.6303 of a share of AcelRx Common Stock (subject to a potential downward adjustment if the Tetraphase Net Cash is less than $5.0 million at the closing of the Merger) prior to the completion of the Merger), *plus* (ii) one CVR, *plus* (iii) any cash payable in lieu of fractional shares of AcelRx Common Stock. No fractional shares of AcelRx Common Stock will be issued in the Merger.

The Special Meeting (see page 97)

The Special Meeting will be held via the Internet at a virtual web conference at www.proxydocs.com/ttph on [DATE], at [TIME], Eastern Time. The purposes of the Special Meeting are as follows:

- **Proposal 1: Merger Agreement Proposal:** To adopt the Merger Agreement.
- **Proposal 2: Compensation Proposal:** To approve, on a nonbinding, advisory basis, the "golden parachute" compensation that will or may be payable to Tetraphase's named executive officers in connection with the Merger.
- **Proposal 3: Adjournment Proposal:** To approve adjournments of the Special Meeting, if necessary or appropriate, to solicit additional proxies if sufficient votes to approve the merger agreement proposal have not been obtained by Tetraphase.

Completion of the Merger is conditioned on the approval of the merger agreement proposal by Tetraphase stockholders. Approval of the compensation proposal concerning the merger-related compensation arrangements for Tetraphase's named executive officers is not a condition to the obligation of either Tetraphase or AcelRx to complete the Merger.

Only holders of record of issued and outstanding shares of Tetraphase Common Stock as of the close of business on the Record Date are entitled to notice of, and to vote at, the Special Meeting. Tetraphase stockholders may cast one vote for each share of Tetraphase Common Stock that Tetraphase stockholders held as of the Record Date.

Assuming a quorum is present at the Special Meeting, the merger agreement proposal requires the affirmative vote of the holders of a majority of the outstanding shares of Tetraphase Common Stock entitled to vote on such proposal. Accordingly, a Tetraphase stockholder's abstention from voting, a broker non-vote or the failure of a Tetraphase stockholder to vote (including the failure of a Tetraphase stockholder who holds shares in "street name" through a bank, broker or other nominee to give voting instructions to that bank, broker or other nominee) will have the same effect as votes cast "**AGAINST**" the merger agreement proposal.

Assuming a quorum is present at the Special Meeting, approval of the compensation proposal requires the affirmative vote of the holders of shares of Tetraphase Common Stock representing a majority of the votes cast on the proposal. Shares which abstain from voting and "broker non-votes" with respect to this proposal will not be counted as votes in favor of such matter, and will also not be counted as shares voting on such matter. Accordingly, abstentions and "broker non-votes" will have no effect on the voting on this proposal.

Whether or not a quorum is present at the Special Meeting, approval of the adjournment proposal requires the affirmative vote of the holders of shares of Tetraphase Common Stock representing a majority of the votes cast on the proposal. Shares which abstain from voting and "broker non-votes" with respect to this proposal will not be counted as votes in favor of such matter, and will also not be counted as shares voting on such matter. Accordingly, abstentions and "broker non-votes" will have no effect on the voting on this proposal.

The AcelRx Board's Reasons for the Merger (see page 62)

The AcelRx Board authorized and approved the Merger Agreement and approved the Contemplated Transactions, including the issuance of AcelRx Common Stock as Merger Consideration, and such other

agreements, instruments and documents as are contemplated by the Merger Agreement, including the Voting Agreements, Exchange Agreement and the form of CVR Agreement, as well as the Co-Promotion Agreement. The AcelRx Board also determined that the terms of the Merger are fair to and in the best interests of AcelRx, Merger Sub and their respective stockholders.

The AcelRx Board believes the combination of the two organizations creates efficiencies resulting from commercializing multiple products with a single salesforce. The combination also creates a growth platform to further consolidate hospital-focused pharmaceutical companies and products expected to generate near-and long-term growth, additional synergies and stockholder value.

Recommendation of the Tetraphase Board, the Tetraphase Board's Reasons for the Merger (see page 62)

The Tetraphase Board unanimously recommends that Tetraphase stockholders vote "**FOR**" the merger agreement proposal, "**FOR**" the compensation proposal, and "**FOR**" the adjournment proposal. In reaching its determinations and recommendations, the Tetraphase Board consulted with Tetraphase's senior management and its outside legal and financial advisors, and considered a number of factors, including the following reasons that weighed in favor of the Merger:

- the shares of AcelRx Common Stock payable at closing will provide Tetraphase equityholders with ownership of approximately 14.6% of the combined company and therefore allow Tetraphase's stockholders to participate in the anticipated growth of the combined company, as well as any synergies resulting from the Merger;
- the fact that the shares of AcelRx Common Stock that Tetraphase stockholders would receive pursuant to the Merger Agreement would be registered and freely tradable following the completion of the Merger;
- in addition to the upfront merger consideration, each share of Tetraphase Common Stock will entitle the holder thereof to one CVR, which may provide Tetraphase stockholders with an opportunity to receive additional payments in cash or shares of AcelRx Common Stock upon the achievement of certain milestones, and AcelRx has agreed in the agreement governing the CVRs to use commercially reasonable efforts to achieve such milestones;
- the expectation that the combined company would generate potentially significant cost synergies, including cost savings relating to the sales infrastructure of the companies;
- the risks associated with continuing to operate Tetraphase on a stand-alone basis, including the time and resources required to continue to commercialize and market XERAVA;
- the risks, costs and uncertainty associated with Tetraphase's existing cash position, including the need to obtain additional financing and the amount of cash resources that would be necessary to effect an orderly bankruptcy or liquidation process;
- the risks, costs and timing associated with a potential liquidation or bankruptcy event of Tetraphase;
- the expectation that the combined company could also realize revenue growth, including potentially immediately following execution of the Merger Agreement from activities under the Co-Promotion Agreement; and
- certain other factors, including the information and discussions with Tetraphase's senior management and outside advisors regarding AcelRx's business, assets, financial condition, results of operations, current business strategy and prospects, including the projected results of AcelRx as a stand-alone company, and the expected pro forma effect of the Merger on the combined company.

For a more complete description of the factors considered by the Tetraphase Board in reaching this decision, including potentially negative factors against which these advantages and opportunities were weighed, and additional information on the recommendation of the Tetraphase Board, see the section titled "*The Merger—Recommendation of the Tetraphase Board; Tetraphase's Reasons for the Merger*" beginning on page 62 of this proxy statement/prospectus.

Opinion of Janney Montgomery Scott LLC, Tetraphase's Financial Advisor (see page 66)

Tetraphase retained Janney as its financial advisor in connection with the potential sale of Tetraphase. Janney delivered an opinion to the Tetraphase Board to the effect that, as of March 15, 2020, based upon and subject to the assumptions made, matters considered and limitations and qualifications upon the review undertaken by Janney, the Merger Consideration to be received in the Merger was fair, from a financial point of view, to the common stockholders of Tetraphase. The full text of Janney's written opinion, dated as of March 15, 2020, which is attached as *Annex E* to this proxy statement/prospectus and which you should read carefully and in its entirety, is subject to the assumptions, limitations, qualifications and other conditions contained in such opinion and is necessarily based on economic, capital markets and other conditions, and the information made available to Janney, as of the date of such opinion. The description set forth below is qualified in its entirety by reference to the full text of the opinion.

Janney's opinion was directed to the Tetraphase Board and addressed only the fairness, from a financial point of view, as of the date of the Opinion, of the consideration to be paid to the common stockholders of Tetraphase. Janney's opinion did not address any other aspects of the proposed Merger or the Contemplated Transactions and did not address the prices at which shares of AcelRx Common Stock would trade following completion of the proposed Merger or at any time. Janney's opinion sets forth, among other things, the assumptions made, procedures followed, matters considered and qualifications and limitations on the scope of review undertaken by Janney in rendering its opinion. Janney's opinion did not and does not constitute a recommendation as to how any holder of Tetraphase Common Stock should vote in connection with the proposed Merger.

For a description of the opinion that the Tetraphase Board received from Janney, see *"The Merger—Opinion of Janney Montgomery Scott LLC, Tetraphase's Financial Advisor"* beginning on page 66 of this proxy statement/prospectus.

Interests of Tetraphase Directors and Executive Officers in the Merger (see page 78)

In considering the information described in this proxy statement/prospectus, you should be aware that Tetraphase's executive officers and directors may have interests in the Merger that are or were different from, or in conflict with or are in addition to, those of Tetraphase's stockholders generally. In addition to the rights described below in this section, the executive officers of Tetraphase may be eligible to receive some of the generally applicable benefits described under "*The Merger Agreement—Employee Benefit Matters*" beginning on page 110 of this proxy statement/prospectus, and certain directors are affiliated with certain of Tetraphase's equityholders that will be entitled to receive consideration as described under *"The Merger—Interests of Directors and Executive Officers in the Merger—Treatment of Outstanding Tetraphase Warrants."* The Tetraphase Board was aware of and considered these interests, among other matters, in evaluating and reaching its decision to approve the Merger Agreement, the Merger and the other Contemplated Transactions and in recommending that Tetraphase stockholders vote for the merger agreement proposal.

Overview of the Merger Agreement and Agreements Related to the Merger Agreement

Treatment of Tetraphase Common Stock (see page 90)

At the Effective Time, each share of Tetraphase Common Stock outstanding immediately prior to the Effective Time (other than any Dissenting Tetraphase Shares or shares held by AcelRx, Merger Sub, Tetraphase (or in Tetraphase's treasury) or any wholly-owned subsidiary of AcelRx or Tetraphase) will be converted into the right to receive the Merger Consideration, *i.e.*, (i) a number of shares of AcelRx Common Stock equal to the Exchange Ratio and (ii) one CVR representing the right to receive the consideration set forth in the CVR Agreement. No fractional shares of AcelRx Common Stock will be issued in the Merger and Tetraphase's stockholders will receive cash in lieu of any fractional share.

Treatment of Tetraphase Options (see page 90)

All Tetraphase Options, whether vested or unvested, will terminate at the Effective Time and will be of no further force and effect.

Treatment of Tetraphase RSUs and Tetraphase PRSUs (see page 90)

Effective as of five business days prior to the closing date of the Merger, each outstanding Tetraphase RSU and Tetraphase PRSU will vest in full, and Tetraphase will issue to the holder one share of Tetraphase Common Stock in respect of each Tetraphase RSU and each Tetraphase PRSU that vests. The holders of the Tetraphase RSUs and Tetraphase PRSUs are required, pursuant to the applicable award agreements, to sell, on the vesting date, a number of shares that are issued in respect of such awards having a value equal to Tetraphase's tax withholding obligations. All shares of Tetraphase Common Stock issued on vesting of the Tetraphase RSUs and Tetraphase PRSUs (including the shares that are sold to satisfy tax withholding obligations and any shares that continue to be held by the holder of the award) will be treated as outstanding shares of Tetraphase Common Stock at the Effective Time and will be converted into the right to receive the Merger Consideration.

Treatment of Tetraphase Warrants (see page 91)

Each outstanding and unexercised Tetraphase Warrant will be treated in accordance with its terms, except that, pursuant to the Voting Agreements and Exchange Agreement described below, (i) each outstanding common stock warrant issued by Tetraphase in November 2019 will be converted into the right to receive, at the closing of the Merger, 0.8813 of a share of AcelRx Common Stock for each share of Tetraphase Common Stock underlying such Tetraphase Warrant, (ii) each outstanding common stock warrant issued by Tetraphase in January 2020 will be converted into the right to receive, at the closing of the Merger, 0.9087 of a share of AcelRx Common Stock for each share of Tetraphase Common Stock underlying such Tetraphase Warrant, and (iii) each outstanding pre-funded warrant will be converted into the right to receive the product of (a) in the case of pre-funded warrants issued by Tetraphase in November 2019, 98.89052%, and in the case of pre-funded warrants issued by Tetraphase in January 2020, 99.88906%, and (b) each element of the Merger Consideration, for each share of Tetraphase Common Stock underlying such Tetraphase Warrant.

The Voting Agreements and Exchange Agreement (see page 113)

Concurrently with the execution of the Merger Agreement, AcelRx entered into Voting Agreements with the Tetraphase equityholders party thereto (including certain entities holding shares of Tetraphase Common Stock on their behalf), and collectively beneficially owning approximately 31% of the outstanding voting power of Tetraphase, pursuant to which such equityholders agreed, among other things, to vote their shares of Tetraphase Common Stock in favor of the adoption of the Merger Agreement, and agreed to certain restrictions on their ability to take actions with respect to the Tetraphase and their shares of Tetraphase Common Stock. In addition, such equityholders agreed to the treatment of the Tetraphase Warrants specified above. The Voting Agreements terminate by their terms in certain circumstances, including upon termination of the Merger Agreement in accordance with its terms and upon a Tetraphase Adverse Change in Recommendation. Tetraphase also entered into an exchange agreement with a holder of Tetraphase Warrants under which the holder agreed to the treatment of Tetraphase Warrants specified above.

The CVR Agreement (see page 114)

Prior to the Effective Time of the Merger, AcelRx will enter into the CVR Agreement with a rights agent selected by AcelRx and reasonably acceptable to Tetraphase governing the terms of certain consideration payable thereunder. The CVRs represent the right to receive contingent payments, payable to the rights agent for the benefit of the holders of CVRs, of up to $12.5 million in the aggregate, payable in cash or shares of AcelRx

Common Stock at AcelRx's election, without interest, and allocated among the outstanding CVRs, if the following milestones are achieved:

- $2.5 million upon the achievement of annual net sales of XERAVA in the United States of at least $20.0 million during the calendar year ending on December 31, 2021;
- $4.5 million upon the achievement of annual net sales of XERAVA in the United States of at least $35.0 million during any calendar year ending on or before December 31, 2024; and/or
- $5.5 million upon the achievement of annual net sales of XERAVA in the United States of at least $55.0 million during any calendar year ending on or before December 31, 2024.

The CVR Agreement provides that all milestones or a combination of any two milestones can be earned in the same year, in which case all such applicable milestone amounts will be payable. If AcelRx elects to pay milestone amounts in shares of AcelRx Common Stock, the number of shares of AcelRx Common Stock will be determined by reference to the number of shares of AcelRx Common Stock equal to the applicable milestone amount divided by the average closing price of a share of AcelRx Common Stock on the Nasdaq Global Market for the 10 most recent trading days that AcelRx Common Stock has traded ending on the trading day one day prior to the date of the applicable payment date. Notwithstanding anything to the contrary in the CVR Agreement, AcelRx will not be required to pay any milestone amounts in shares of AcelRx Common Stock in excess of a number of shares of AcelRx Common Stock equal to 19.9% of the total number of shares of AcelRx Common Stock issued and outstanding immediately prior to the execution and delivery of the Merger Agreement, when combined with all other shares of AcelRx Common Stock issued in connection with the closing of the Merger; *provided* that this limitation shall not limit any CVR holder's right to receive any milestone amount in full, and any portion of a milestone amount that would otherwise exceed such limitation will be paid in cash.

Additionally, commencing upon the closing of the Merger and continuing until the earlier of December 31, 2024 or the achievement of all milestones, AcelRx has agreed to, and has agreed to cause its affiliates and licensees to, use commercially reasonable efforts (as defined in the CVR Agreement) to achieve the milestones. Without limiting the foregoing, AcelRx has further agreed that neither it nor any of its affiliates will act in bad faith for the purpose of avoiding achievement of any milestone or the payment of any milestone amount.

The terms of the CVRs described above reflect the parties' agreement over the sharing of potential economic upside benefits from future net sales of XERAVA and do not reflect anticipated net sales of XERAVA. There can be no assurance that such levels of net sales will occur or that any or all of the payments in respect of the CVRs will be made.

The right to payments under the CVRs as evidenced by the CVR Agreement is a contractual right only and will not be transferable, except in the limited circumstances specified in the CVR Agreement, including: (i) upon death of a holder by will or intestacy; (ii) by instrument to an inter vivos or testamentary trust in which the CVRs are to be passed to beneficiaries upon the death of the trustee; (iii) pursuant to a court order; (iv) by operation of law (including by consolidation or merger) or without consideration in connection with the dissolution, liquidation or termination of any corporation, limited liability company, partnership or other entity; (v) in the case of CVRs held in book-entry or other similar nominee form, from a nominee to a beneficial owner and, if applicable, through an intermediary, as allowable by the Depository Trust Company; or (vi) to AcelRx in connection with an abandonment of the CVR or in connection with a negotiated transaction.

The foregoing description of the CVR Agreement does not purport to be complete and is qualified in its entirety by reference to the full text of the CVR Agreement, a form of which is attached as *Annex D* to this proxy statement/prospectus.

The Co-Promotion Agreement (see page 115)

Concurrently with the Merger Agreement, AcelRx and Tetraphase entered into the Co-Promotion Agreement, pursuant to which AcelRx agreed to detail and promote Tetraphase products, and Tetraphase agreed to detail and

promote AcelRx's products, in accordance with marketing plans to be agreed to by the parties and subject to specified minimum call requirements. The co-promotion activities are overseen by a joint marketing and sales committee, which is responsible for developing marketing plans for the products, provided, that each party is responsible for developing the marketing strategy for, creating the promotional materials for, and handling sales and distribution of, its own products. There are no payments being made between the parties under the agreement, and each party will continue to receive all the revenues from the sales of its own products.

The Co-Promotion Agreement has a five-year term, unless terminated earlier pursuant to its terms. Either party may terminate the Co-Promotion Agreement upon a 15-month notice period. Additionally, either party may terminate the Co-Promotion Agreement in the event of an uncured material breach or insolvency event of the other party and in the event of other specified circumstances relating to the other party's products, such as safety.

In the event of a change of control of either party, the other party may terminate the agreement upon one month's notice and, upon a material breach by the change of control party, may be entitled to receive a 10% royalty on net sales of the change of control party's products for a specified period of time (but not to exceed eighteen months).

Conditions to the Merger (see page 93)

The obligations to consummate the Merger and otherwise consummate the Contemplated Transactions are subject to receipt of the Tetraphase stockholder vote required to adopt the Merger Agreement and the satisfaction or waiver, on or prior to the Effective Time, of the other conditions set forth in the section titled "*The Merger Agreement—Conditions to the Merger*" beginning on page 93 of this proxy statement/prospectus.

No Solicitation of Acquisition Proposals (see page 96)

The Merger Agreement prohibits Tetraphase from soliciting an alternative transaction to the Merger. Under these "no solicitation" provisions, Tetraphase has agreed not to, directly or indirectly:

- solicit, initiate or knowingly facilitate or knowingly encourage any inquiries or the making of any proposal or offer that constitutes, or would reasonably be expected to lead to, an Acquisition Proposal;
- engage in, continue or otherwise participate in any discussions or negotiations regarding, or furnish to any other person any non-public information in connection with, an Acquisition Proposal or any proposal or offer that would reasonably be expected to lead to an Acquisition Proposal; or
- adopt any resolution for the purpose of exempting any person (other than AcelRx and its subsidiaries) from the restriction on "business combinations" or any similar provision contained in applicable takeover law or Tetraphase's organizational or other governing documents.

The Merger Agreement provides, however, that Tetraphase may furnish information to and/or engage in discussions or negotiations with a third party in response to a *bona fide*, written Acquisition Proposal if:

- the Acquisition Proposal is made or renewed after the date of the Merger Agreement (and is not withdrawn);
- the Acquisition Proposal did not result from any material breach of certain Tetraphase non-solicitation and board recommendation obligations; and
- the Tetraphase Board determines in good faith, after consultation with its independent financial advisors and outside legal counsel, the Acquisition Proposal constitutes or could reasonably be expected to lead to a Superior Offer and that failure to take such action could reasonably be expected to be inconsistent with the fiduciary duties of the Tetraphase Board to the Tetraphase stockholders under applicable legal requirements.

Tetraphase must keep AcelRx reasonably informed of any material developments regarding any such Acquisition Proposal, including by providing reasonably prompt (and in any event within one business day) notice of all

material amendments or modifications thereto and a copy of any final definitive agreement Tetraphase would be prepared to execute, subject to the terms and conditions of the Merger Agreement.

For more information, see "*The Merger Agreement—No Solicitation of Acquisition Proposals*" beginning on page 96 of this proxy statement/prospectus.

Tetraphase Board Recommendation (see page 98)

The Tetraphase Board may, prior to the adoption of the merger agreement proposal by the Tetraphase stockholders, effect a Tetraphase Adverse Change in Recommendation or terminate the Merger Agreement to substantially concurrently enter into a Specified Agreement (as defined in this section) and pay the termination fee pursuant to the Merger Agreement if (and only if):

- a *bona fide* written Acquisition Proposal is made to Tetraphase that has not been withdrawn;
- such Acquisition Proposal did not result from a material breach of certain Tetraphase non-solicitation obligations in the Merger Agreement;
- the Tetraphase Board determines in good faith, after consultation with outside legal counsel and independent financial advisors, that such Acquisition Proposal is a Superior Offer and that the failure to take such action could reasonably be expected to be inconsistent with the fiduciary duties of the Tetraphase Board to the Tetraphase stockholders under applicable legal requirements;
- Tetraphase provides a Determination Notice (as defined in this section) to AcelRx;
- Tetraphase has made available to AcelRx the identity of the offeror, a summary of the material terms and conditions of the Acquisition Proposal and copies of all written materials and certain other documents required under the non-solicitation provisions of the Merger Agreement;
- Tetraphase has given AcelRx the four business days after the Determination Notice to propose revisions to the terms of the Merger Agreement or make other proposals and shall have made available its representatives to negotiate with AcelRx with respect to such proposed revisions or other proposal, if any (*provided*, that AcelRx may revise such offer or proposal in response to any revisions to a Superior Offer);
- after considering any such revised proposal from AcelRx, including whether such proposal was a written, binding and irrevocable offer, and the results of any such negotiations and giving effect to the proposals made by AcelRx, if any, after consultation with outside legal counsel and its independent financial advisors, the Tetraphase Board shall have determined in good faith that such Acquisition Proposal is a Superior Offer and that the failure to make the Tetraphase Adverse Change in Recommendation and/or terminate the Merger Agreement pursuant to the Superior Offer Termination Right could reasonably be expected to be inconsistent with the fiduciary duties of the Tetraphase Board to the Tetraphase stockholders under applicable legal requirements; and
- if Tetraphase intends to terminate the Merger Agreement to enter into a Specified Agreement, Tetraphase has complied with the termination provisions of the Merger Agreement pursuant to the Superior Offer Termination Right, including the payment of the termination fee.

If there are any material amendments to such Acquisition Proposal, a new Determination Notice must be delivered to AcelRx except the references to four business days will be reduced to two business days.

Further, the Tetraphase Board may, prior to the adoption of the merger agreement proposal by the Tetraphase stockholders, make a Tetraphase Change of Recommendation in response to a Change in Circumstance (as defined in this section) if (and only if):

- the Tetraphase Board determines in good faith, after consultation with Tetraphase's outside legal counsel, that the failure to take such action could reasonably be expected to be inconsistent with the

fiduciary duties of the Tetraphase Board to the Tetraphase stockholders under applicable legal requirements;

- Tetraphase has given AcelRx a Determination Notice at least four business days prior to making any such Tetraphase Adverse Change in Recommendation;
- Tetraphase has specified the Change in Circumstance in reasonable detail including a summary of the material facts and circumstances involved in such Change in Circumstance;
- Tetraphase has given AcelRx the four business days after the Determination Notice to propose revisions to the terms of the Merger Agreement or make other proposals and shall have made available its representatives to negotiate with AcelRx with respect to such proposed revisions or other proposal, if any, such that the applicable Change in Circumstance would no longer necessitate a Tetraphase Adverse Change in Recommendation under the Merger Agreement; and
- after considering any such proposal, including whether such proposal was a written, binding and irrevocable offer, and the results of such negotiations and giving effect to the proposals made by AcelRx, if any, after consultation with outside legal counsel and its independent financial advisors, the Tetraphase Board shall have determined in good faith that the failure to make the Tetraphase Adverse Change in Recommendation could reasonably be expected to be inconsistent with the fiduciary duties of the Tetraphase Board to the Tetraphase stockholders under applicable legal requirements.

If there is a material change to the status of such Change in Circumstance, a new Determination Notice must be delivered to AcelRx except the references to four business days will be reduced to two business days.

For more information, see "*The Merger Agreement—Tetraphase Board Recommendation*" beginning on page 98 of this proxy statement/prospectus.

Termination of the Merger Agreement and Termination Fee and Expenses (see pages 102 and 103)

The Merger Agreement may be terminated by the parties under certain circumstances, and upon termination of the Merger Agreement, Tetraphase may be required, in certain circumstances, to pay to AcelRx a termination fee of $810,000, and/or in other specified circumstances Tetraphase may be required to reimburse AcelRx's expenses incurred, up to a maximum of $200,000, as set forth in the section titled *"The Merger Agreement—Termination Fees and Expenses"* beginning on page 102 of this proxy statement/prospectus.

Accounting Treatment of the Merger (see page 89)

AcelRx expects the Merger will be accounted for by AcelRx as a business combination under the acquisition method of accounting, in conformity with GAAP. Under the acquisition method of accounting, the assets and liabilities of Tetraphase as of the Effective Time will be recorded by AcelRx at their respective fair values and consolidated with those of AcelRx. Any excess of purchase price over the fair value of the net assets will be recorded as goodwill. Tetraphase's assets and liabilities and results of operations will be consolidated with those of AcelRx from and after the date of the Merger.

Material U.S. Federal Income Tax Consequences (see page 180)

In general, the exchange of Tetraphase Common Stock for the Merger Consideration in the Merger is expected to be a taxable transaction for U.S. federal income tax purposes Please carefully review the information under "*Material U.S. Federal Income Tax Consequences of the Merger for Tetraphase Stockholders*" beginning on page 180 of this proxy statement/prospectus for a description of material U.S. federal income tax consequences of the Merger to Tetraphase stockholders. The tax consequences to you will depend on your particular facts and circumstances.

You are urged to consult your tax advisors as to the specific tax consequences to you of the Merger and your receipt of the Merger Consideration, including the applicability and effect of U.S. federal, state, local and non-U.S. income and other tax laws in light of your particular circumstances.

Risk Factors (see page 27)

Both AcelRx and Tetraphase are subject to various risks associated with their businesses and their industries. In addition, the Merger, including the possibility that the Merger may not be completed, poses a number of risks to each company and its respective stockholders, including the following risks:

- if the Merger is not consummated, AcelRx's and Tetraphase's business could suffer materially and the respective stock prices of AcelRx and/or Tetraphase could decline;
- the Merger may be completed even though material adverse changes may result from the announcement of the Merger, industry-wide changes and other causes;
- the market price of the combined company's common stock may decline as a result of the Merger;
- AcelRx and Tetraphase's stockholders may not realize a benefit from the Merger commensurate with the ownership dilution they will experience in connection with the Merger;
- during the pendency of the Merger, Tetraphase will be subject to contractual limitations set forth in the Merger Agreement that restrict its ability to enter into business combination transactions with another party;
- the opinion received by the Tetraphase Board from Janney has not been, and is not expected to be, updated to reflect changes in circumstances that may have occurred since the date of the opinion; and
- AcelRx and Tetraphase may become involved in securities litigation or stockholder derivative litigation in connection with the Merger, and this could divert the attention of AcelRx and Tetraphase management and harm the combined company's business, and insurance coverage may not be sufficient to cover all related costs and damages.

These risks and other risks are discussed in greater detail under the section titled "*Risk Factors*" in this proxy statement/prospectus. You are encouraged to read and consider all of these risks carefully.

Appraisal Rights in Connection with the Merger (see page 86)

Holders of AcelRx Common Stock are not entitled to appraisal rights in connection with the Merger. Holders of Tetraphase Common Stock are entitled to appraisal rights in connection with the Merger under Section 262 of the DGCL. For more information about such rights, please see the provisions of Section 262 of the DGCL attached as *Annex F* to this proxy statement/prospectus, and the section titled "*The Merger—Appraisal Rights*" beginning on page 86 of this proxy statement/prospectus.

SELECTED HISTORICAL FINANCIAL DATA OF ACELRX

The following table sets forth selected historical consolidated financial data for AcelRx. The historical consolidated financial information for each of the years in the five-year period ended December 31, 2019 is derived from the audited consolidated financial statements of AcelRx as of and for each of the years in the five-year period ended December 31, 2019. You should not assume the results of operations for any past periods indicate results for any future period, including with respect to the future performance of AcelRx following the date of this proxy statement/prospectus or following the completion of the Merger.

The information set forth below should be read in conjunction with AcelRx's consolidated financial statements and the related notes thereto and the information under the heading "*Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations*" included in AcelRx's Annual Report on Form 10-K for the year ended December 31, 2019, which is incorporated by reference into this proxy statement/prospectus. For additional information, see "*Where You Can Find More Information*" beginning on page 196 of this proxy statement/prospectus and "*Incorporation of Certain Information by Referen*ce" beginning on page 197 of this proxy statement/prospectus.

Statements of Operations Data

	Year Ended December 31,				
	2019	2018	2017	2016	2015
	(in thousands, except share and per share data)				
Consolidated Statements of Operations Data:					
Total revenue	$ 2,289	$ 2,151	$ 7,995	$ 17,357	$ 19,263
Costs and Operating Expenses:					
Cost of goods sold	$ 6,806	$ 3,976	$ 10,659	$ 12,315	$ 1,770
Research and development	4,661	13,137	19,409	21,402	22,488
General and administrative	45,027	20,765	16,609	15,597	14,203
Restructuring costs	—	—	—	—	756
Total costs and operating expenses	56,494	37,878	46,677	49,314	39,217
Loss from operations	(54,205)	(35,727)	(38,682)	(31,957)	(19,954)
Interest expense	(2,535)	(2,217)	(3,316)	(2,770)	(2,977)
Interest income and other income, net	2,166	1,138	510	918	1,720
Non-cash interest income (expense) on liability related to sale of future royalties	1,337	(10,341)	(10,721)	(9,382)	(2,428)
Net loss before income taxes	$ (53,237)	$ (47,147)	$ (52,209)	$ (43,191)	$ (23,639)
Provision (benefit) for income taxes	3	2	(701)	(34)	760
Net loss	$ (53,240)	$ (47,149)	$ (51,508)	$ (43,157)	$ (24,399)
Net loss per share of common stock, basic	$ (0.67)	$ (0.81)	$ (1.10)	$ (0.95)	$ (0.55)
Shares used in computing net loss per share of common stock, basic	79,184,266	58,408,548	46,883,535	45,313,118	44,300,099
Net loss per share of common stock, diluted	$ (0.67)	$ (0.81)	$ (1.10)	$ (0.95)	$ (0.60)
Shares used in computing net loss per share of common stock, diluted	79,184,266	58,408,548	46,883,535	45,313,118	44,468,440

Balance Sheet Data

	As of December 31,				
	2019	2018	2017	2016	2015
	(in thousands)				
Balance Sheet Data:					
Cash, cash equivalents and short-term investments	$ 66,137	$ 105,715	$ 60,469	$ 80,310	$ 113,464
Working capital	58,077	92,066	49,753	78,862	106,167
Total assets	91,356	120,533	75,552	99,993	127,785
Long-term debt	25,147	11,991	19,096	21,549	20,922
Liability related to sale of future royalties	92,035	93,679	83,588	72,987	63,612
Accumulated deficit	(398,106)	(345,019)	(297,870)	(246,362)	(203,205)
Total stockholders' (deficit) equity	(41,418)	4,253	(36,509)	(5,337)	33,113

SELECTED HISTORICAL FINANCIAL DATA OF TETRAPHASE

Tetraphase is a smaller reporting company, as defined by Rule 12b-2 of the Securities Exchange Act of 1934, as amended, and is not required to provide the information required under this item.

SELECTED UNAUDITED PRO FORMA CONDENSED COMBINED FINANCIAL INFORMATION

The following table presents selected unaudited pro forma combined financial information about AcelRx's consolidated balance sheet and statements of operations, after giving effect to the Merger with Tetraphase. The information under "Selected Unaudited Pro Forma Condensed Combined Statements of Operations" in the table below assumes the Merger had been consummated on January 1, 2019, the beginning of the earliest period presented. The information under "Selected Unaudited Pro Forma Condensed Combined Balance Sheet Data" in the table below assumes the Merger had been consummated on December 31, 2019.

The unaudited pro forma condensed combined financial information includes adjustments which are preliminary and may be revised. These revisions may be material. In addition, the unaudited pro forma condensed combined financial information does not reflect any cost savings or associated costs to achieve such savings from operating efficiencies, synergies, debt refinancing or other restructuring that may result from the Merger. The unaudited pro forma condensed combined financial information is not necessarily indicative of results that actually would have occurred or that may occur in the future had the Merger been completed on the dates indicated.

The accompanying unaudited pro forma condensed combined financial information should be read in conjunction with (a) the audited consolidated financial statements of AcelRx contained in its Annual Report on Form 10-K for the year ended December 31, 2019, which is incorporated herein by reference, and (b) the audited consolidated financial statements of Tetraphase for the year ended December 31, 2019, which are incorporated herein by reference. See "*Where You Can Find More Information*" beginning on page 196 of this proxy statement/prospectus and "*Incorporation of Certain Information by Referen*ce" beginning on page 197 of this proxy statement/prospectus.

(in thousands, except share and per share data)	Year Ended December 31, 2019 (Unaudited)
Selected Unaudited Pro Forma Condensed Combined Statements of Operations	
Total revenue	$ 9,665
Operating costs and expenses:	
Cost of goods sold	12,207
Research and development	27,553
Selling, general and administrative	94,070
Total operating costs and expenses	133,830
Loss from operations	(124,165)
Interest expense	(5,115)
Interest income and other income (expense), net	3,761
Non-cash interest income (expense) on liability related to sale of future royalties	1,337
Loss on extinguishment of debt	(1,568)
Net loss before income taxes	$ (125,750)
Provision (benefit) for income taxes	3
Net loss	$ (125,753)
Net loss per share of common stock, basic	$ (1.35)
Shares used in computing net loss per share of common stock, basic	93,170,280
Net loss per share of common stock, diluted	$ (1.35)
Shares used in computing net loss per share of common stock, diluted	93,170,280

(in thousands)	As of December 31, 2019 (Unaudited)
Selected Unaudited Pro Forma Condensed Combined Balance Sheet Data	
Cash, cash equivalents and short-term investments	$ 70,861
Working capital	69,890
Total assets	124,887
Long-term debt	25,147
Liability related to sale of future royalties	92,035
Accumulated deficit	(402,493)
Total stockholders' (deficit) equity	(28,005)

UNAUDITED COMPARATIVE PER SHARE INFORMATION

The following table sets forth, for the periods indicated, selected per share information for AcelRx Common Stock on a historical and pro forma combined basis and selected per share information for Tetraphase Common Stock on a historical and pro forma equivalent basis. Except for the historical information as of and for the year ended December 31, 2019, which is derived from the audited financial statements, the information in the table is unaudited. The information in the table is based on, and should be read together with, the historical consolidated financial statements and related notes of (i) AcelRx contained in its Annual Report on Form 10-K for the year ended December 31, 2019, which is incorporated by reference into this proxy statement/prospectus, and (ii) Tetraphase as disclosed under *"Consolidated Financial Statements of Tetraphase"* included in Tetraphase's Annual Report on Form 10-K for the year ended December 31, 2019, which is incorporated by reference into this proxy statement/prospectus. See "*Where You Can Find More Information*" beginning on page 196 of this proxy statement/prospectus and "*Incorporation of Certain Information by Referenc*e" beginning on page 197 of this proxy statement/prospectus.

The pro forma combined per share information for the year ended December 31, 2019 reflects the Merger as if it had occurred on January 1, 2019. The pro forma combined book value per share amounts in the table below reflect the Merger as if it had occurred on December 31, 2019. The pro forma information below is presented for illustrative purposes only and is not necessarily indicative of the operating results or financial position that would have occurred if the Merger and the other Contemplated Transactions had been completed as of the beginning of the periods presented, nor is it necessarily indicative of the future operating results or financial position of AcelRx or Tetraphase following the date of this proxy statement/prospectus or following the completion of the Merger.

The pro forma combined net loss per share of common stock set forth below was calculated using the methodology as described in "*Unaudited Pro Forma Condensed Combined Financial Information*" beginning on page 185 of this proxy statement/prospectus. The pro forma combined book value per share was calculated by dividing total combined AcelRx and Tetraphase pro forma common stockholders' equity by pro forma equivalent shares of common stock. The Tetraphase equivalent pro forma per common share amounts were calculated by multiplying the AcelRx pro forma combined per share amounts by the Exchange Ratio of 0.6303, rounded to the nearest whole cent.

Neither AcelRx nor Tetraphase declared a cash dividend on account of their respective common stock during the periods presented in the following table. Neither AcelRx nor Tetraphase have any intention to pay cash dividends in the foreseeable future.

	Year ended December 31, 2019
AcelRx historical information	
Net loss per share, basic and diluted	$ 0.67
Book value per share[1]	$ (0.52)
Tetraphase historical information	
Net loss per share, basic and diluted	$ 22.85
Book value per share[1]	$ 6.68
AcelRx unaudited pro forma combined information	
Net loss per share, basic and diluted	$ 1.35
Book value per share	$ (0.30)
Tetraphase equivalent unaudited pro forma combined information[2]	
Net loss per share, basic and diluted	$ 0.85
Book value per share	$ 0.19

(1) Book value per share represents the total stockholders' equity as of December 31, 2019 divided by the number of shares outstanding, as of December 31, 2019.

(2) The Tetraphase equivalent unaudited pro forma combined share amounts were calculated by multiplying the AcelRx unaudited pro forma combined share amounts by the Exchange Ratio of 0.6303.

COMPARATIVE MARKET PRICE INFORMATION

AcelRx Common Stock is listed on Nasdaq under the symbol "ACRX." Tetraphase Common Stock is listed on Nasdaq under the symbol "TTPH." The following table presents the closing prices of AcelRx Common Stock and Tetraphase Common Stock on March 13, 2020, the last trading day before the public announcement of the Merger Agreement, and , 2020, the last practicable trading day prior to the mailing of this proxy statement/prospectus. The table also shows the equivalent per share value of the Merger Consideration for a share of Tetraphase Common Stock on the relevant date. Equivalent per share amounts for Tetraphase Common Stock are calculated by multiplying per share information for AcelRx Common Stock by the Exchange Ratio of 0.6303, rounded to the nearest whole cent.

Date	AcelRx Closing Price	Tetraphase Closing Price	Equivalent Value Per Share of Tetraphase Common Stock
March 13, 2020	$ 1.03	$ 1.45	$ 0.65
, 2020	$	$	$

The above table shows only historical comparisons. These comparisons may not provide meaningful information to Tetraphase stockholders in determining whether to approve the adoption of the Merger Agreement. Because the Exchange Ratio will not be adjusted for changes in the market price of AcelRx Common Stock, the market value of the shares of AcelRx Common Stock that holders of Tetraphase Common Stock will be entitled to receive at the Effective Time of the Merger may vary significantly from the market value of the shares of AcelRx Common Stock that holders of Tetraphase Common Stock would have received if the Merger were completed on the dates shown in the table above.

The above table does not take into account any adjustment of the Exchange Ratio to the extent the Tetraphase Net Cash is less than $5.0 million at the closing of the Merger. If the Tetraphase Net Cash is less than $5.0 million, the Exchange Ratio will be adjusted to the ratio determined as follows: (a) (i) $20.0 million, *minus* (ii) the dollar amount by which the Tetraphase Net Cash is less than $5.0 million, *minus* (iii) $10,265,292, *divided by* (b) (i) 10,800,166 shares of Tetraphase Common Stock, *divided by* (ii) $1.43.

RISK FACTORS

Risks Relating to the Merger

The failure to complete the Merger in a timely manner, or at all, may adversely affect the business and financial results of AcelRx and Tetraphase and their respective stock prices.

Each of AcelRx's and Tetraphase's obligations to consummate the Merger are subject to the satisfaction or waiver of certain customary conditions, including, among others, (i) the Merger Agreement must be adopted by the requisite vote of Tetraphase stockholders; (ii) the absence of (A) any governmental restraining order or injunction having been issued with respect to the Contemplated Transactions and continuing in effect or (B) any legal proceeding of a governmental body challenging or seeking to prohibit the consummation of the Merger or related matters; (iii) subject to certain qualifications, the accuracy of the respective representations and warranties of Tetraphase and AcelRx and compliance by the parties with their respective obligations under the Merger Agreement; (iv) the registration statement of which this proxy statement/prospectus forms a part being declared effective by the SEC, and remaining in effect; (v) the approval of the shares of AcelRx Common Stock issuable as Merger Consideration for listing on Nasdaq; and (vi) the absence of any Tetraphase Material Adverse Effect or AcelRx Material Adverse Effect since the date of the Merger Agreement. AcelRx and Tetraphase cannot provide assurance that these or the other conditions to the completion of the Merger will be satisfied in a timely manner or at all. In addition, other factors may affect when and whether the Merger will occur. If the Merger is not completed, AcelRx's and Tetraphase's stock prices could fall to the extent that such current stock prices reflect an assumption that the Merger will be completed. Furthermore, if the Merger is not completed and the Merger Agreement is terminated, AcelRx and Tetraphase may suffer other consequences that could adversely affect such entity's business, results of operations and stock price, including the following:

- each of AcelRx and Tetraphase have incurred and will continue to incur costs relating to the Merger (including significant legal and financial advisory fees) and many of these costs are payable by AcelRx and Tetraphase whether or not the Merger is completed;
- Tetraphase could be required, in certain circumstances, to pay an $810,000 termination fee and/or reimburse AcelRx up to $200,000 for certain of its costs incurred in connection with the Merger and the Merger Agreement;
- Tetraphase may be unable to pursue business opportunities that would otherwise be in its best interest as a standalone company due to covenants restricting Tetraphase's solicitation of alternative transaction proposals and the conduct of Tetraphase's business between the date of signing the Merger Agreement and the closing of the Merger;
- matters relating to the Merger (including sales integration planning and implementation) may require substantial commitments of time and resources by AcelRx's and Tetraphase's management teams, which could otherwise have been devoted to other opportunities that may have been beneficial to AcelRx and Tetraphase;
- current and prospective employees could experience uncertainty about their future roles within the combined company, which may adversely affect AcelRx's and Tetraphase's ability to retain their respective key employees, who may seek other employment opportunities;
- AcelRx and Tetraphase may be subject to legal proceedings related to the Merger or the failure to complete the Merger;
- AcelRx's and Tetraphase's respective customers, prospective customers and other business partners and investors in general may view the failure to consummate the Merger as a poor reflection on its business or prospects; and
- because of social distancing guidelines and other legal orders and restrictions caused by COVID-19, including that many hospitals will not allow Tetraphase sales representatives inside them during the pandemic, the economies realized by the Merger may be lower than they would have been otherwise.

The Exchange Ratio is not adjustable based on the market price of AcelRx Common Stock so the merger consideration at the closing of the Merger may have a greater or lesser value than at the time the Merger Agreement was signed.

At the Effective Time, outstanding shares of Tetraphase Common Stock will be converted into the Merger Consideration, which includes shares of AcelRx Common Stock. Applying the Merger Consideration, each share of Tetraphase Common Stock issued and outstanding immediately prior to the Effective Time (other than shares owned by AcelRx, Merger Sub or Tetraphase or any direct or indirect wholly-owned subsidiary of AcelRx or Tetraphase or by stockholders of Tetraphase who have exercised and perfected their statutory rights of appraisal under the DGCL) will be automatically converted into the right to receive (i) 0.6303 of a share of AcelRx Common Stock (subject to a potential downward adjustment if the Tetraphase Net Cash is less than $5.0 million at the closing of the Merger) prior to the completion of the Merger), *plus* (ii) one CVR, *plus* (iii) any cash payable in lieu of fractional shares of AcelRx Common Stock.

Any changes in the market price of AcelRx Common Stock before the completion of the Merger will not affect the number of shares Tetraphase stockholders will be entitled to receive pursuant to the Merger Agreement. Therefore, if before the completion of the Merger the market price of AcelRx Common Stock declines from the market price on the date of the Merger Agreement, then holders of Tetraphase Common Stock could receive merger consideration with substantially lower value. Similarly, if before the completion of the Merger the market price of AcelRx Common Stock increases from the market price on the date of the Merger Agreement, then holders of Tetraphase Common Stock could receive consideration with substantially more value for their shares of Tetraphase Common Stock than the parties had negotiated for in the establishment of the Exchange Ratio. The Merger Agreement does not include a price-based termination right.

Stock price changes may result from a variety of factors, including, among others, general market and economic conditions, changes in AcelRx's or Tetraphase's respective businesses, operations and prospects, reductions or changes in U.S. government spending or budgetary policies, market assessments of the likelihood that the merger will be completed, interest rates, general market, industry and economic conditions, pandemics and viruses, and other factors generally affecting the respective prices of AcelRx's or Tetraphase's common stock, federal, state and local legislation, governmental regulation and legal developments in the industry segments in which AcelRx or Tetraphase operate, and the timing of the merger.

Many of these factors are beyond AcelRx's and Tetraphase's control, and neither AcelRx nor Tetraphase is permitted to terminate the Merger Agreement solely due to a decline in the market price of the common stock of the other party. You are urged to obtain current market quotations for AcelRx Common Stock and Tetraphase Common Stock in determining whether to vote for the adoption of the merger agreement proposal.

Uncertainty about the Merger may adversely affect the respective business and stock price of AcelRx and Tetraphase, whether or not the Merger is completed.

Each of AcelRx and Tetraphase are subject to risks in connection with the announcement and pendency of the Merger, including the risks from possibly foregoing opportunities AcelRx and Tetraphase might otherwise pursue absent the proposed Merger. Furthermore, uncertainties about the Merger may cause current and prospective employees of AcelRx and Tetraphase to experience uncertainty about their future with their respective companies. These uncertainties may impair AcelRx's and Tetraphase's ability to retain, recruit or motivate key management and other personnel.

In addition, in response to the announcement of the proposed Merger, AcelRx's and Tetraphase's existing or prospective customers, suppliers or collaboration partners may:

- delay, defer or cease purchasing products from, or providing goods or services to, AcelRx and Tetraphase;

- delay or defer other decisions concerning AcelRx and Tetraphase, or refuse to extend credit terms to AcelRx and Tetraphase; or
- otherwise seek to change the terms on which they do business with AcelRx and Tetraphase.

While AcelRx and Tetraphase are attempting to address these risks, their respective existing and prospective customers, suppliers or collaboration partners may be reluctant to purchase AcelRx's and Tetraphase's products, supply AcelRx and Tetraphase with goods and services or continue collaborations due to the potential uncertainty about the direction of AcelRx's and Tetraphase's product offerings and the support and service of AcelRx's and Tetraphase's products after the completion of the Merger.

While the Merger is pending, Tetraphase is subject to contractual restrictions that could harm its business, operating results and stock price.

The Merger Agreement includes restrictions on the conduct of Tetraphase's business prior to the completion of the Merger, generally (i) requiring Tetraphase to use commercially reasonable efforts to cause each of Tetraphase and its subsidiaries to conduct its business and operations in the ordinary course and in accordance in all material respects with past practice, to pay its debt, payables and taxes when due, and to attempt to ensure that each of Tetraphase and its subsidiaries preserves intact the material components of its current business organization and maintains its relations and goodwill with all material suppliers, material customers, material licensors and governmental bodies, and (ii) restricting Tetraphase from taking certain specified actions absent AcelRx's prior written consent. See "*The Merger Agreement—Conduct of Business Pending the Merger*" beginning on page 103 of this proxy statement/prospectus. Tetraphase may find that these and other obligations in the Merger Agreement may delay or prevent Tetraphase from or limit its ability to respond effectively to competitive pressures, industry developments and future business opportunities that may arise during such period, even if Tetraphase's management and the Tetraphase Board think they may be advisable. These restrictions could adversely impact Tetraphase's business, operating results and stock price and its perceived acquisition value, regardless of whether the Merger is completed.

The Merger Agreement limits Tetraphase's ability to pursue alternative transactions which could deter a third party from proposing an alternative transaction.

The Merger Agreement contains provisions that, subject to certain exceptions, limit Tetraphase's ability to solicit, initiate or knowingly facilitate or knowingly encourage any inquiries or the making of any proposal or offer that constitutes, or would reasonably be expected to lead to, or engage in, continue or otherwise participate in any discussions or negotiations regarding, or furnish any non-public information in connection with, an alternative transaction. See "*The Merger Agreement—No Solicitation of Acquisition Proposals*" beginning on page 96 of this proxy statement/prospectus. It is possible that these or other provisions in the Merger Agreement might discourage a potential competing acquirer that might have an interest in acquiring all or a significant part of the outstanding shares of Tetraphase Common Stock from considering or proposing an acquisition or might result in a potential competing acquirer proposing to pay a lower per share price to acquire Tetraphase Common Stock than it might otherwise have proposed to pay.

The Merger will involve substantial and potentially unexpected costs.

AcelRx and Tetraphase have incurred and expect to continue to incur substantial costs and expenses relating directly to the Merger and the issuance of AcelRx Common Stock in connection with the Merger, including, as applicable, fees and expenses payable to financial advisors, other professional fees and expenses, insurance premium costs, fees and costs relating to regulatory filings and notices, SEC filing fees, printing and mailing costs and other transaction-related costs, fees and expenses. Actual transaction costs may substantially exceed estimates and may have an adverse effect on the combined company's financial condition and operating results.

If the Merger is not completed, AcelRx and Tetraphase will have incurred substantial expenses for which no ultimate benefit will have been received by either company.

The fairness opinion obtained by the Tetraphase Board from its financial advisor will not be updated to reflect changes in circumstances between signing the Merger Agreement and the completion of the Merger.

The Tetraphase Board has not obtained an updated fairness opinion as of the date of this proxy statement/prospectus from Janney, its financial advisor. Changes in the operations and prospects of AcelRx or Tetraphase, general market and economic conditions, and other factors that may be beyond the control of AcelRx and Tetraphase and on which the fairness opinion was based, may alter the value of AcelRx or Tetraphase or the price of AcelRx Common Stock or Tetraphase Common Stock by the time the Merger is completed.

The fairness opinion does not speak as of the time the Merger will be completed or as of any date other than the date of such opinion. Tetraphase does not anticipate asking Janney to update its fairness opinion. The fairness opinion of Janney is included as *Annex E* to this proxy statement/prospectus. For a description of the fairness opinion that the Tetraphase Board received from Janney and a summary of the material financial analyses it provided to the Tetraphase Board in connection with rendering such opinion, see "*The Merger—Opinion of Janney Montgomery Scott LLC, Tetraphase's Financial Advisor*" beginning on page 66 of this proxy statement/prospectus.

For a description of the factors considered by the Tetraphase Board in determining to approve the Merger, see "*The Merger—Recommendation of the Tetraphase Board; the Tetraphase Board's Reasons for the Merger*" beginning on page 62 of this proxy statement/prospectus.

Certain directors and executive officers of Tetraphase may have interests in the Merger that are or were different from, or in conflict with or in addition to, those of Tetraphase's stockholders generally.

In considering whether to approve the proposals at the Special Meeting, Tetraphase stockholders should recognize that directors and officers of Tetraphase have interests in the Merger that may differ from, or that are in addition, to their interests as stockholders of Tetraphase. The Tetraphase Board was aware of these interests at the time it approved the Merger Agreement. These interests may cause Tetraphase's directors and officers to view the Merger differently from how you may view it as a stockholder. For a description of the factors considered by the Tetraphase Board in determining to approve the Merger, see "*The Merger—Interests of Tetraphase Directors and Executive Officers in the Merger*" beginning on page 78 of this proxy statement/prospectus.

The Merger is expected to be a taxable transaction for U.S. federal income tax purposes.

The exchange of Tetraphase Common Stock for the Merger Consideration in the Merger is expected to be a taxable transaction for U.S. federal income tax purposes. However, no opinion of counsel or ruling from the IRS with respect to the tax treatment of the Merger has or will be sought, and there can be no assurance that the IRS will not assert a contrary position. Assuming the Merger will be a taxable transaction for U.S. federal income tax purposes, the amount of gain or loss a holder of Tetraphase Common Stock recognizes, and the timing and potentially the character of a portion of such gain or loss, depends in part on the U.S. federal income tax treatment of the CVRs, with respect to which there is uncertainty. For further discussion, see "*Material U.S. Federal Income Tax Consequences of the Merger for Tetraphase Stockholders*" elsewhere in this proxy statement/prospectus. **Tetraphase stockholders should be aware that the Merger Consideration they will be entitled to receive upon the completion of the Merger does not include a cash component payable at closing to pay any taxes that may be due as a result of the Merger.**

Tetraphase and AcelRx may be targets of securities class action and derivative lawsuits which could result in substantial costs and may delay or prevent the Merger from being completed.

Securities class action lawsuits and derivative lawsuits are often brought against public companies that have entered into merger agreements. Even if the lawsuits are without merit, defending against these claims could result in substantial costs and divert management time and resources. An adverse judgment could result in

monetary damages, which could have a negative impact on Tetraphase's and AcelRx's respective liquidity and financial condition. Additionally, if a plaintiff is successful in obtaining an injunction prohibiting completion of the Merger, then that injunction may delay or prevent the Merger from being completed, or from being completed within the expected timeframe, which may adversely affect Tetraphase's and AcelRx's respective business, financial position and results of operations.

The shares of AcelRx Common Stock to be received by Tetraphase stockholders as a result of the Merger will have rights different from the current shares of Tetraphase Common Stock.

Upon consummation of the Merger, the rights of Tetraphase stockholders, who will become stockholders of AcelRx, will be governed by the amended and restated certificate of incorporation and bylaws of the AcelRx. The rights associated with Tetraphase Common Stock are different from the rights which will be associated with AcelRx Common Stock. See the section entitled "*Comparison of Rights of Holders of AcelRx Common Stock and Tetraphase Common Stock*" beginning on page 173 of this proxy statement/prospectus for a discussion of these rights.

Risks Related to the CVRs

You may not receive any future issuance of AcelRx Common Stock or cash payment on the CVRs.

Your right to receive any future issuance of AcelRx Common Stock or cash payment on the CVRs will be contingent upon the achievement by AcelRx and its subsidiaries of certain milestones within agreed time periods, as specified in the CVR Agreement. If some or all of the milestones specified in the CVR Agreement are not achieved for any reason within the time periods specified in such agreement, only some or none of the issuances of AcelRx Common Stock or cash payments will be made under the CVRs and the CVRs will expire valueless. Accordingly, the value, if any, of the CVRs is speculative, and the CVRs may ultimately result in no additional value to holders of CVRs. See "*The CVR Agreement*" on page 114 of this proxy statement/prospectus.

You will not be able to determine the amount of stock or cash to be received under the CVRs until the achievement of certain agreed upon milestones, which makes it difficult to value the CVRs.

Upon the achievement of certain agreed upon milestones, the CVRs are payable in cash or shares of AcelRx Common Stock at AcelRx's election. If any issuance of AcelRx Common Stock or cash payment is made on the CVRs, it will not be made until the achievement of such milestones. As such, you will not know the value, if any, of your CVRs until certain sales milestones occur, or until the CVRs expire.

The CVRs are nontransferable.

The CVRs are not transferable, except in the limited circumstances specified in the CVR Agreement. The CVRs will not be registered as securities and they will not be listed or traded on any stock exchange in the United States or elsewhere. Therefore, the CVRs are not liquid and you will not be permitted to sell or transfer them, except for in certain limited circumstances. See "*The CVR Agreement*" on page 114 of this proxy statement/prospectus.

While AcelRx and its subsidiaries and licensees are required to use commercially reasonable efforts to achieve the CVR milestones, some or all of the milestones may ultimately not be achieved.

AcelRx has agreed to, and has agreed to cause its affiliates and licensees to, use commercially reasonable efforts to achieve the CVR milestones. AcelRx has further agreed that neither it nor any of its affiliates shall act in bad faith for the purpose of avoiding achievement of any milestone or the payment of any milestone amount. The CVR Agreement does not, however, require AcelRx to take all possible actions to achieve each milestone, and the milestones may not be achieved due to factors outside of AcelRx's control. As a result, some or all of the milestones may ultimately not be achieved.

The U.S. federal income tax treatment of the CVRs is unclear.

There is no legal authority directly addressing the U.S. federal income tax treatment of the CVRs or the treatment of payments that may be received pursuant to the CVR Agreement. Accordingly, the amount, timing and character of any gain, income or loss with respect to the CVRs are uncertain. For further discussion, see "*Material U.S. Federal Income Tax Consequences of the Merger for Tetraphase Stockholders*" elsewhere in this proxy statement/prospectus.

Risks Related to AcelRx Following the Merger

AcelRx may fail to realize the benefits expected from the Merger, which could adversely affect its stock price.

The anticipated benefits AcelRx expects from the Merger are, necessarily, based on projections and assumptions about the combined businesses of AcelRx and Tetraphase, which may not materialize as expected or which may prove to be inaccurate. The value of AcelRx Common Stock following the completion of the Merger could be adversely affected if AcelRx is unable to realize the anticipated benefits from the Merger on a timely basis or at all. Achieving the benefits of the Merger will depend, in part, on AcelRx's ability to integrate the sales team, business, operations and products of Tetraphase successfully and efficiently with its sales team and business. The challenges involved in this integration, which will be complex and time-consuming, include the following:

- difficulties entering new markets and integrating new technologies and products in which AcelRx has no or limited direct prior experience;
- successfully managing relationships with the combined supplier and customer base of AcelRx and Tetraphase;
- coordinating and integrating the joint promotion and marketing of each company's products under the Co-Promotion Agreement while reducing costs;
- consolidating and integrating manufacturing processes, research, development and engineering activities, customer and technical support and management and administrative functions;
- the increased scale and complexity of AcelRx's operations resulting from the Merger;
- retaining key employees of AcelRx and Tetraphase; and
- minimizing the diversion of AcelRx's management attention from other important business objectives.

If AcelRx does not successfully manage these issues and the other challenges inherent in integrating an acquired business of the size and complexity of Tetraphase, then AcelRx may not fully achieve, or may take longer to achieve, the anticipated benefits of the Merger and its revenue, expenses, operating results and financial condition could be materially adversely affected.

The acquisition of Tetraphase may result in significant charges or other liabilities that could adversely affect the financial results of the combined company.

The financial results of the combined company may be adversely affected by cash expenses and non-cash accounting charges incurred in connection with AcelRx's integration of the business and operations of Tetraphase. The amount and timing of these possible charges are not yet known. Further, AcelRx's failure to identify or accurately assess the magnitude of certain liabilities it is assuming in the Merger could result in unexpected litigation or regulatory exposure, unfavorable accounting charges, unexpected increases in taxes due, a loss of anticipated tax benefits or other adverse effects on AcelRx's business, operating results or financial condition. The price of AcelRx Common Stock following the Merger could decline to the extent the combined company's financial results are materially affected by any of these events.

AcelRx's future results will suffer if it does not effectively manage its expanded operations following the Merger.

Following the Merger, the size and scope of operations of the business of the combined companies will increase beyond the current size and scope of operations of either AcelRx's or Tetraphase's current businesses. In addition, AcelRx may continue to expand its size and operations through additional acquisitions or other strategic transactions. AcelRx's future success depends, in part, upon its ability to manage its expanded business, which may pose substantial challenges for its management, including challenges related to the management and monitoring of new operations and associated increased costs and complexity. There can be no assurances that AcelRx will be successful in managing such expanded business or that it will realize the expected economies of scale, synergies and other benefits currently anticipated from the Merger or anticipated from any additional acquisitions or strategic transactions.

Future results of AcelRx following the Merger may differ materially from the unaudited pro forma financial information included in this proxy statement/prospectus.

The future results of AcelRx following the Merger may be materially different from those shown in the unaudited pro forma financial information presented in this proxy statement/prospectus that show only a combination of AcelRx's and Tetraphase's historical results. AcelRx expects to incur significant costs associated with completing the Merger and integrating the operations of Tetraphase, and the exact magnitude of these costs is not yet known. Furthermore, these costs may decrease the amount of capital that could be used by AcelRx for other purposes.

The market price of AcelRx Common Stock after completion of the Merger will continue to fluctuate, and may be affected by factors different from those affecting shares of Tetraphase Common Stock currently.

Upon completion of the Merger, holders of Tetraphase Common Stock will become holders of AcelRx Common Stock. The business of AcelRx differs from that of Tetraphase in important respects, and, accordingly, the results of operations of AcelRx after the Merger, as well as the market price of AcelRx Common Stock, may be affected by factors different from those currently affecting the results of operations of Tetraphase. As a result of the Merger, Tetraphase will be part of a larger company with other lines of business, such that decisions affecting Tetraphase may be made in respect of the larger combined business as a whole rather than the Tetraphase business individually. Moreover, general fluctuations in stock markets could have a material adverse effect on the market for, or liquidity of, AcelRx Common Stock, regardless of AcelRx's actual operating performance. For further information on the businesses of AcelRx and Tetraphase and certain factors to consider in connection with those businesses, see the documents incorporated by reference or included in this proxy statement/prospectus and referred to under "*Where You Can Find More Information*" beginning on page 196 of this proxy statement/prospectus, "*Incorporation of Certain Information by Reference*" beginning on page 197 of this proxy statement/prospectus and "*Information about Tetraphase*" beginning on page 117 of this proxy statement/prospectus.

Additional Risks Related to AcelRx and Tetraphase

AcelRx's and Tetraphase's businesses are and will be subject to the risks described above. In addition, AcelRx is also currently subject to the additional risks described in AcelRx's Annual Report on Form 10-K for the year ended December 31, 2019, as updated by any subsequent Current Reports on Form 8-K and Quarterly Reports on Form 10-Q, all of which are filed with the SEC and are incorporated by reference into this proxy statement/prospectus. See "*Where You Can Find More Information*" beginning on page 196 of this proxy statement/prospectus and "*Incorporation of Certain Information by Reference"* beginning on page 197 of this proxy statement/prospectus. In addition, Tetraphase is currently subject to the additional risks described in Tetraphase's Annual Report on Form 10-K for the year ended December 31, 2019, as updated by any subsequent Current Reports on Form 8-K and Quarterly Reports on Form 10-Q, all of which are filed with the SEC and are incorporated by reference into proxy statement/prospectus.

The Tetraphase Bylaws provides that the Court of Chancery of the State of Delaware will be the sole and exclusive forum for substantially all disputes between Tetraphase and its stockholders, which could limit its stockholders' ability to obtain a judicial forum that they find favorable for disputes with Tetraphase or its directors, officers or other employees.

The Tetraphase Bylaws provides that the Court of Chancery of the State of Delaware is the sole and exclusive forum for any derivative action or proceeding brought on Tetraphase's behalf, any action asserting a breach of fiduciary duty owed by any of its current or former directors, officers or other employees to Tetraphase, agents, or its stockholders, including, without limitation, a claim alleging the aiding and abetting of such a breach of fiduciary duty, any action asserting a claim against it arising pursuant to any provisions of the DGCL, the Tetraphase Charter or Tetraphase Bylaws, or any action asserting a claim against it that is governed by the internal affairs doctrine or other "internal corporate claim" as that term is defined in Section 115 of the DGCL; *provided*, that these provisions will not apply to actions or proceedings brought to enforce a duty or liability created by the Securities Act of 1933, as amended, the Securities Exchange Act of 1934, as amended, or any other claim for which the federal courts have exclusive jurisdiction. The choice of forum provision may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with Tetraphase or its directors, officers or other employees, which may discourage such lawsuits against Tetraphase or the combined company and its directors, officers and other employees. If a court were to find the choice of forum provision contained in the Tetraphase Bylaws to be inapplicable or unenforceable in an action, the combined company may incur additional costs associated with resolving such action in other jurisdictions.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This proxy statement/prospectus contains "forward-looking statements" within the meaning of federal securities laws. Forward-looking statements may contain words such as "believes", "anticipates", "estimates", "expects", "intends", "aims", "potential", "will", "would", "could", "considered", "likely" and words and terms of similar substance used in connection with any discussion of future plans, actions or events identify forward-looking statements. All statements, other than historical facts, including statements regarding the expected timing of the closing of the Merger and AcelRx's or Tetraphase's expected financial condition, results of operations and business performance, including any forecasts, financial projections and descriptions of anticipated cost savings or other synergies or expected benefits of the Merger, are forward-looking statements. These statements are based on management's current expectations, assumptions, estimates and beliefs. While AcelRx and Tetraphase believe these expectations, assumptions, estimates and beliefs are reasonable, such forward-looking statements are only predictions, and are subject to a number of risks and uncertainties that could cause actual results to differ materially from those described in the forward-looking statements.

The following factors, among others, could cause actual results to differ materially from those described in the forward-looking statements:

- failure to satisfy the conditions to the closing of the Merger, including the failure of Tetraphase to obtain stockholder approval as required for the Merger, which may give rise to the termination of the Merger Agreement;
- substantial and/or unexpected costs in connection with or with respect to the Merger;
- the effect of the announcement of the Merger on the ability of Tetraphase or AcelRx to retain and hire key personnel and maintain business relationships with customers, suppliers and others with whom Tetraphase or AcelRx does business, or on Tetraphase's or AcelRx's operating results, market price of common stock, and business generally;
- potential legal proceedings relating to the Merger and the outcome of any such legal proceeding;
- the inherent risks, costs and uncertainties associated with integrating the businesses successfully and risks of not achieving all or any of the anticipated benefits of the Merger, or the risk that the anticipated benefits of the Merger may not be fully realized or take longer to realize than expected;
- fluctuations in the market prices of AcelRx's and Tetraphase's stock, as well as the risk that some or all of the milestones under the CVR Agreement are not achieved;
- the contractual restrictions under the Merger Agreement may limit Tetraphase's ability to respond effectively to competitive pressures in the markets in which Tetraphase and AcelRx operate; and
- other risks to the consummation of the Merger, including the risk that the Merger will not be consummated within the expected time period or at all.

These and additional factors that may affect the future results of Tetraphase and AcelRx are set forth under "*Risk Factors*" beginning on page 27 of this proxy statement/prospectus, as well as in AcelRx's Annual Report on Form 10-K for the year ended December 31, 2019, as updated by any subsequent Quarterly Reports on Form 10-Q and Current Reports on Form 8-K. See "*Incorporation of Certain Information by Reference"* beginning on page 197 of this proxy statement/prospectus. The risks and uncertainties described and referred to above are not exclusive and further information concerning AcelRx and Tetraphase and their respective businesses, including factors that potentially could materially affect their respective businesses, financial condition or operating results, may emerge from time to time. You are urged to consider these factors carefully in evaluating these forward-looking statements, and not to place undue reliance on any forward-looking statements. The forward-looking statements in this proxy statement/prospectus speak only as of the date of this proxy statement/prospectus. Except as required by law, AcelRx and Tetraphase assume no obligation to update or revise these forward-looking statements for any reason, even if new information becomes available in the future.

THE COMPANIES

Information about Tetraphase

Tetraphase Pharmaceuticals, Inc. ("Tetraphase") is a biopharmaceutical company using its proprietary chemistry technology to develop and commercialize novel tetracyclines for serious and life-threatening conditions, including bacterial infections caused by many multidrug-resistant ("MDR"), bacteria. There is a medical need for new antibiotics as resistance to existing antibiotics increases. The company's commercial product, XERAVA™ (eravacycline), a fully synthetic fluorocycline, is an intravenous ("IV") antibiotic that is approved for use as a first-line empiric monotherapy for the treatment of MDR infections, including those found in complicated intra-abdominal infections. The Tetraphase pipeline also includes TP-271 IV and Oral, and TP-6076 IV only, which are Phase 2 ready, and TP-2846, which is in preclinical testing for acute myeloid leukemia.

Shares of Tetraphase Common Stock are traded on The Nasdaq Global Select Market under the symbol "TTPH."

Additional information about Tetraphase is included in the documents incorporated by reference into this proxy statement/prospectus. See "*Where You Can Find More Information*" beginning on page 196 of this proxy statement/prospectus and "*Incorporation of Certain Information by Reference*" beginning on page 197 of this proxy statement/prospectus for information on how you can view reports and other documents filed with the SEC by Tetraphase.

Information about AcelRx

AcelRx Pharmaceuticals, Inc. ("AcelRx") is a specialty pharmaceutical company focused on the development and commercialization of innovative therapies for use in healthcare institutions. AcelRx's proprietary, non-invasive sublingual formulation technology delivers sufentanil with consistent pharmacokinetic profiles. The company has one approved product in the U.S., DSUVIA® (sufentanil sublingual tablet, 30 mcg), known as DZUVEO™ in Europe, indicated for the management of acute pain severe enough to require an opioid analgesic for adult patients in certified medically supervised healthcare settings, and one product candidate, Zalviso® (sufentanil sublingual tablet system, SST system, 15 mcg), an investigational product in the U.S., is being developed as an innovatively designed patient-controlled analgesia (PCA) system for reduction of moderate-to-severe acute pain in medically supervised settings. DZUVEO and Zalviso are both approved products in Europe.

Shares of AcelRx Common Stock are traded on The Nasdaq Stock Market LLC under the symbol "ACRX."

Additional information about AcelRx is included in the documents incorporated by reference into this proxy statement/prospectus. See "*Where You Can Find More Information*" beginning on page 196 of this proxy statement/prospectus and "*Incorporation of Certain Information by Referenc*e" beginning on page 197 of this proxy statement/prospectus.

THE SPECIAL MEETING

This proxy statement/prospectus is being provided to Tetraphase stockholders as part of a solicitation of proxies by the Tetraphase Board for use at the Special Meeting. This proxy statement/prospectus contains important information regarding the Special Meeting, the proposals on which you are being asked to vote, information you may find useful in determining how to vote and voting procedures.

This proxy statement/prospectus is being first mailed on or about , 2020 to all stockholders of record of Tetraphase as of the Record Date. Stockholders of record who owned Tetraphase Common Stock at the close of business on the Record Date are entitled to receive notice of, attend and vote at the Special Meeting. On the Record Date, there were shares of Tetraphase Common Stock outstanding.

Date, Time and Place of the Special Meeting

The Special Meeting will be held via the Internet at a virtual web conference at www.proxydocs.com/ttph on [DATE], at [TIME], Eastern Time.

Proposals at the Special Meeting

At the Special Meeting, Tetraphase stockholders will be asked to vote on the following proposals:

Proposal 1: Merger Agreement Proposal: To adopt the Merger Agreement.

Proposal 2: Compensation Proposal: To approve, on a nonbinding, advisory basis, the "golden parachute" compensation that will or may be payable to Tetraphase named executive officers in connection with the Merger.

Proposal 3: Adjournment Proposal: To approve adjournments of the Special Meeting, if necessary or appropriate, to solicit additional proxies if sufficient votes to approve the merger agreement proposal have not been obtained by Tetraphase.

Recommendation of the Tetraphase Board

At a meeting of the Tetraphase Board held on March 15, 2020 the Tetraphase Board unanimously (i) determined that the Contemplated Transactions are advisable and fair to and in the best interests of Tetraphase and the Tetraphase stockholders; (ii) adopted, approved and declared advisable the Merger Agreement and the Contemplated Transactions; and (iii) resolved to recommend the adoption of the Merger Agreement by the Tetraphase stockholders.

The Tetraphase Board unanimously recommends that you vote "FOR" each of the merger agreement proposal, the compensation proposal and the adjournment proposal.

Shares Entitled to Vote

Stockholders who owned Tetraphase Common Stock at the close of business on the Record Date are entitled to receive notice of, attend and vote at the Special Meeting. On the Record Date, there were shares of Tetraphase Common Stock outstanding and entitled to vote at the Special Meeting.

As a Tetraphase stockholder on the Record Date, you have a right to vote on certain matters affecting Tetraphase. The proposals that will be presented at the Special Meeting and upon which you are being

asked to vote are summarized above and fully set forth in this proxy statement/prospectus. Each share of Tetraphase Common Stock that you owned at the close of business on the Record Date, including (i) shares held directly in your name as the stockholder of record and (ii) shares held for you as the beneficial owner in street name through a broker, bank or other nominee, entitles you to one vote on each proposal to be presented at the Special Meeting.

Quorum Requirement

A quorum of outstanding shares of Tetraphase Common Stock is necessary to take action at the Special Meeting. Holders of a majority of the outstanding shares of Tetraphase Common Stock entitled to vote as of the Record Date must be virtually present by remote communication or by proxy at the Special Meeting to constitute a quorum and to conduct business at the Special Meeting. Your shares are counted as present if you virtually attend the Special Meeting by remote communication or properly submit a proxy by telephone, over the Internet or mail. The inspector of election will treat abstentions as present for purposes of determining the presence of a quorum. If you hold your shares of Tetraphase Common Stock in street name and you fail to give voting instructions to your broker, bank or other nominee, your shares will not be considered present for purposes of determining the presence of a quorum to transact business at the Special Meeting.

Votes Required for the Proposals

Proposal 1: **Merger Agreement Proposal**: Assuming a quorum is present at the Special Meeting, the merger agreement proposal requires the affirmative vote of the holders of a majority of the outstanding shares of Tetraphase Common Stock entitled to vote on such proposal. Accordingly, a Tetraphase stockholder's abstention from voting, a broker non-vote or the failure of a Tetraphase stockholder to vote (including the failure of a Tetraphase stockholder who holds shares in "street name" through a bank, broker or other nominee to give voting instructions to that bank, broker or other nominee) will have the same effect as votes cast "**AGAINST**" the merger agreement proposal.

Proposal 2: **Compensation Proposal**: Assuming a quorum is present at the Special Meeting, approval of the compensation proposal requires the affirmative vote of the holders of shares of Tetraphase Common Stock representing a majority of the votes cast on the proposal. Shares which abstain from voting and "broker non-votes" with respect to this proposal will not be counted as votes in favor of such matter, and will also not be counted as shares voting on such matter. Accordingly, abstentions and "broker non-votes" will have no effect on the voting on the compensation proposal.

Proposal 3: **Adjournment Proposal**: Whether or not a quorum is present at the Special Meeting, approval of the adjournment proposal requires the affirmative vote of the holders of shares of Tetraphase Common Stock representing a majority of the votes cast on the proposal. Shares which abstain from voting and "broker non-votes" with respect to this proposal will not be counted as votes in favor of such matter, and will also not be counted as shares voting on such

matter. Accordingly, abstentions and "broker non-votes" will have no effect on the voting on the adjournment proposal.

Methods of Voting—Stockholders of Record

If you are a Tetraphase stockholder of record on the Record Date, you may submit a proxy by mail, by telephone or over the Internet to instruct the voting of your shares of Tetraphase Common Stock at the Special Meeting or you may vote your shares of Tetraphase Common Stock at the Special Meeting. Proxies submitted by mail, by telephone or over the Internet must be received by 11:59 p.m., Eastern Time, on , 2020.

Voting by Telephone or over the Internet. To submit a proxy by telephone or over the Internet, please follow the instructions included on your proxy card. If you submit a proxy by telephone or over the Internet, you are authorizing the individuals named on the proxy card to vote your shares of Tetraphase Common Stock at the Special Meeting in the manner you indicate, and you do not need to complete and mail a proxy card.

Voting by Mail. By completing and signing the proxy card and returning it in the enclosed prepaid and addressed envelope, you are authorizing the individuals named on the proxy card to vote your shares of Tetraphase Common Stock at the Special Meeting in the manner you indicate. If you receive more than one proxy card, it is an indication that your shares are held in multiple accounts. Please sign and return all proxy cards to ensure that all of your shares are voted.

If you are a Tetraphase stockholder of record and you sign and return your proxy card(s) without indicating how to vote on any particular proposal, the shares of Tetraphase Common Stock represented by your proxy card(s) will be counted as present for purposes of determining the presence of a quorum at the Special Meeting and will be voted "FOR" that proposal.

Tetraphase encourages you to submit a proxy by telephone, over the Internet or by signing and returning the proxy card even if you plan to attend the Special Meeting so that your shares will be voted if you are unable to attend the Special Meeting.

Methods of Voting—Beneficial Owners

If your shares of Tetraphase Common Stock are held in an account at a broker, bank or other nominee, then you are the beneficial owner of shares held in "street name" and this proxy statement/prospectus is being sent to you by that organization. The organization holding your account is considered to be the stockholder of record for purposes of voting at the Special Meeting. As a beneficial owner, you have the right to direct your broker or other agent regarding how to vote the shares in your account by following the instructions that the broker, bank or other nominee provides you along with this proxy statement/prospectus. If you are not a stockholder of record, you must obtain a proxy executed in your favor from the record holder of your shares to be able to vote at the Special Meeting.

Attending the Special Meeting	To support the health and well-being of Tetraphase's stockholders, employees and directors in light of the recent novel coronavirus ("COVID-19") outbreak, the Special Meeting will be a "virtual meeting" of stockholders, which will be conducted exclusively via the Internet at a virtual web conference. There will not be a physical meeting location, and stockholders will not be able to attend the Special Meeting in person. This means that you can attend the Special Meeting online, vote your shares during the online meeting and submit questions during the online meeting by visiting the above-mentioned Internet site. In light of the public health and safety concerns related to COVID-19, Tetraphase believes that hosting a "virtual meeting" will enable greater stockholder attendance and participation from any location around the world. If the Contemplated Transactions are not consummated, Tetraphase intends to resume its historical practice of holding an in-person meeting next year.
Voting Instructions	If you are a stockholder of record of Tetraphase Common Stock and return a signed proxy card but do not provide specific voting instructions, your shares will be voted on the proposals as follows: "**FOR**" the merger agreement proposal; "**FOR**" the compensation proposal; and "**FOR**" the adjournment proposal.
Shares Held in Street Name	In general, if your shares of Tetraphase Common Stock are held in street name and you do not instruct your broker how to vote your shares, your brokerage firm, in its discretion, may either leave your shares unvoted or vote your shares on routine matters, but not on any non-routine matters. **None of the proposals at the Special Meeting are routine matters.** **If you fail to give voting instructions to your broker, bank or other nominee, your broker, bank or other nominee may not submit or vote your shares of Tetraphase Common Stock for any purpose at the Special Meeting, which will have the same effect as a vote "AGAINST" of the merger agreement proposal but will have no effect on the compensation proposal and the adjournment proposal.**
Revoking Your Proxy	If you are a Tetraphase stockholder of record, you may revoke your proxy at any time before it is voted at the Special Meeting. To revoke your proxy, you must: • submit a new proxy by telephone or over the Internet by 11:59 p.m., Eastern Time, on , 2020; • sign and return another proxy card, which must be received by 11:59 p.m., Eastern Time, on , 2020; or • provide written notice of the revocation to Tetraphase's Secretary at: Tetraphase Pharmaceuticals, Inc., Attention: Secretary, 480 Arsenal Way, Watertown, MA 02472, which

must be received by 11:59 p.m., Eastern Time, on , 2020.

If you are the beneficial owner of shares held in "street name" by a broker, bank or other nominee, you should follow the instructions of your broker, bank or other nominee regarding the revocation of proxies.

Solicitation of Proxies

Tetraphase will bear the cost of soliciting proxies. In addition to solicitation by mail, the Tetraphase Board, officers and employees may solicit proxies by telephone, e-mail, and facsimile without additional compensation. Tetraphase may reimburse brokers or persons holding stock in their names, or in the names of their nominees, for their expenses in sending proxies and proxy material to beneficial owners. Tetraphase has also hired a proxy solicitor who may also solicit proxies from shareholders by telephone, e-mail, and facsimile and in person and whose fees Tetraphase will reimburse.

DO NOT SEND IN ANY TETRAPHASE STOCK CERTIFICATES WITH YOUR PROXY CARD.

As described in the Merger Agreement, Tetraphase stockholders will be sent materials for exchanging Tetraphase Common Stock shortly after consummation of the Merger.

BENEFICIAL STOCK OWNERSHIP OF TETRAPHASE DIRECTORS, EXECUTIVE OFFICERS AND CERTAIN HOLDERS OF TETRAPHASE COMMON STOCK

Unless otherwise provided below, the following table sets forth information regarding beneficial ownership of Tetraphase Common Stock as of March 31, 2020 by:

- each person, or group of affiliated persons, known to Tetraphase to be the beneficial owner of 5% or more of the outstanding shares of Tetraphase Common Stock;
- each of Tetraphase's current directors;
- each of Tetraphase's named executive officers; and
- all of Tetraphase's directors and executive officers as a group.

Beneficial ownership is determined in accordance with SEC rules. These rules generally attribute beneficial ownership of securities to persons who possess sole or shared voting power or investment power with respect to those securities and include shares of Tetraphase Common Stock issuable upon the exercise of stock options, warrants or other rights that are immediately exercisable or exercisable or that will vest, as applicable, within 60 days after March 1, 2020. Except as otherwise indicated, all of the shares reflected in the table are shares of Tetraphase Common Stock and all persons listed below have sole voting and investment power with respect to the shares of Tetraphase Common Stock beneficially owned by them, subject to applicable community property laws. The information is not necessarily indicative of beneficial ownership for any other purpose.

The column titled "Percentage of Shares Beneficially Owned" is based on a total of 7,259,236 shares of Tetraphase Common Stock outstanding as of March 1, 2020. Except as otherwise indicated in the footnotes below, the address of the beneficial owner is c/o Tetraphase Pharmaceuticals, Inc., 480 Arsenal Way, Watertown, MA 02472.

Name of Beneficial Owner	Number of Shares Beneficially Owned	Percentage of Shares Beneficially Owned
5% Stockholders		
Armistice Capital, LLC(1)	1,419,507	19.6%
CVI Investments, Inc.(2)	666,666	9.2%
Intracoastal Capital LLC(3)	725,197	9.9%
Sabby Volatility Warrant Master Fund Limited(4)	666,667	9.2%
Named Executive Officers and Directors		
Larry Edwards(5)	21,490	*
Leonard Patrick Gage, Ph.D.(6)	7,481	*
Garen Bohlin(7)	5,997	*
Steven Boyd(1)(8)	1,419,507	19.6%
Jeffrey Chodakewitz (9)	3,869	*
John Freund, M.D. (10)	4,369	*
Gerri Henwood(11)	3,369	*
Guy Macdonald	21,000	*
Keith Maher, M.D. (1)(12)	1 419,507	19.6%
Nancy Wysenski(9)	3,869	*
Maria Stahl(13)	22,526	*
Christopher Watt(14)	11,110	*
All current executive officers and directors as a group (12 persons)(15)	1,524,587	21.0%

* Represents beneficial ownership of less than 1% of outstanding Tetraphase Common Stock.

(1) Consists of 1,419,507 shares of Tetraphase Common Stock held by Armistice Capital Master Fund Ltd. (“Armistice”). As a result of the application of a beneficial ownership cap in the warrants issued to Armistice in the Tetraphase January 2020 private placement (the “January 2020 Warrants)”, the table above under the heading “Shares of Common Stock Beneficially Owned” does not include 5,396,668 shares of Tetraphase Common Stock issuable upon exercise of warrants to purchase Tetraphase Common Stock held by Armistice. While such shares are being registered under the registration statement of which this prospectus forms a part, Armistice is not permitted to exercise the January 2020 Warrants to the extent that such exercise would result in Armistice and its affiliates beneficially owning more than 19.99% of the number of shares of Tetraphase Common Stock outstanding immediately after giving effect to the issuance of shares of Tetraphase Common Stock issuable upon exercise of the January 2020 Warrants. As a result of the application of a beneficial ownership cap in the warrants issued to Armistice in Tetraphase’s November 2019 registered direct offering (the “November 2019 Warrants”), the table above under the heading “Shares of Common Stock Beneficially Owned” does not include 3,560,986 shares of Tetraphase Common Stock issuable upon exercise of warrants to purchase Tetraphase Common Stock held by Armistice. Armistice is not permitted to exercise the November 2019 Warrants to the extent that such exercise would result in Armistice and its affiliates beneficially owning more than 4.99% of the number of shares of Tetraphase Common Stock outstanding immediately after giving effect to the issuance of shares of Tetraphase Common Stock issuable upon exercise of the November 2019 Warrants. Armistice has the right to increase this beneficial ownership limitation in its discretion on 61 days’ prior written notice to us, provided that in no event is Armistice permitted to exercise the November 2019 Warrants to the extent that such exercise would result in Armistice and its affiliates beneficially owning in the aggregate more than 9.99% of the number of shares of Tetraphase Common Stock outstanding or the combined voting power of Tetraphase securities outstanding immediately after giving effect to the issuance of shares of Tetraphase Common Stock issuable upon exercise of the November 2019 Warrants. Armistice Capital LLC (“Armistice Capital”) has shared voting power of 1,419,507 shares of Tetraphase Common Stock with Armistice, a Cayman Islands corporation, and Steven Boyd. Mr. Boyd is the managing member of Armistice Capital, a director of Armistice and a member of the Tetraphase Board. Keith Maher, a member of the Tetraphase Board, is a managing director of Armistice Capital. Armistice’s address is 510 Madison Avenue, 7th Floor, New York, NY 10022.This information is based, in part, on a Schedule 13D filed by Armistice with the SEC on January 23, 2020.

(2) Consists of 666,666 shares of Tetraphase Common Stock held by CVI Investments, Inc. (“CVI”). As a result of the application of a beneficial ownership cap in the warrants issued to CVI, the table above under the heading “Shares of Common Stock Beneficially Owned” does not include 666,666 shares of Tetraphase Common Stock issuable upon exercise of warrants to purchase Tetraphase Common Stock held by CVI. CVI is not permitted to exercise such warrants to purchase Tetraphase Common Stock to the extent that such exercise would result in CVI and its affiliates beneficially owning more than 4.99% of the number of shares of Tetraphase Common Stock outstanding immediately after giving effect to the issuance of shares of Tetraphase Common Stock issuable upon exercise of such warrants to purchase Tetraphase Common Stock. CVI has shared voting and dispositive power with Heights Capital Management, Inc., the investment manager of CVI. CVI’s address is Ugland House, South Church Street, George Town, Grand Cayman Islands. This information is based, in part, on a Schedule 13G filed by CVI with the SEC on January 31, 2020.

(3) Consists of 725,197 shares of Tetraphase Common Stock held by Intracoastal Capital LLC (“Intracoastal”). As a result of the application of a beneficial ownership cap in the warrants issued to Intercoastal, the table above under the heading “Shares of Common Stock Beneficially Owned” does not include 460 shares of Tetraphase Common Stock issuable upon exercise of warrants to purchase Tetraphase Common Stock held by Intracoastal. Intracoastal is not permitted to exercise such warrants to purchase Tetraphase Common Stock to the extent that such exercise would result in Intracoastal and its affiliates beneficially owning more than 4.99% of the number of shares of Tetraphase Common Stock outstanding immediately after giving effect to the issuance of shares of Tetraphase Common Stock issuable upon exercise of such warrants to purchase Tetraphase Common Stock. Intracoastal has shared voting power with Mitchell Kopin and Daniel

Asher. Intracoastal's address is 245 Palm Trail, Delray Beach, FL 33483. This information is based, in part, on a Schedule 13G filed by Intracoastal with the SEC on January 31, 2020.

(4) Consists of 666,667 shares of Tetraphase Common Stock held by Sabby Volatility Warrant Master Fund, Ltd. ("Sabby"). As a result of the application of a beneficial ownership cap in the warrants issued to Sabby, the table above under the heading "Shares of Common Stock Beneficially Owned" does not include 666,667 shares of Tetraphase Common Stock issuable upon exercise of warrants to purchase Tetraphase Common Stock held by Sabby. Sabby is not permitted to exercise such warrants to purchase Tetraphase Common Stock to the extent that such exercise would result in Sabby and its affiliates beneficially owning more than 4.99% of the number of shares of Tetraphase Common Stock outstanding immediately after giving effect to the issuance of shares of Tetraphase Common Stock issuable upon exercise of such warrants to purchase Tetraphase Common Stock. Sabby has shared voting and dispositive power with Sabby Management, LLC and Hal Mintz. Sabby's address is 10 Mountainview Road, Suite 205, Upper Saddle River, NJ 07458. This information is based, in part, on a Schedule 13G filed by Sabby with the SEC on January 28, 2020.

(5) Includes 15,438 shares of Tetraphase Common Stock issuable upon the exercise of options exercisable and 1,000 restricted stock units that will vest within 60 days after March 1, 2020.

(6) Consists of 1,944 shares of Tetraphase Common Stock held directly by Dr. Gage, 191 shares of Tetraphase Common Stock held by Dr. Gage's spouse and 5,346 shares of Tetraphase Common Stock issuable upon the exercise of options exercisable within 60 days after March 1, 2020.

(7) Consists of 5,997 shares of Tetraphase Common Stock issuable upon the exercise of options exercisable within 60 days after March 1, 2020.

(8) Mr. Boyd is the managing member of Armistice Capital and a director of Armistice.

(9) Consists of 3,869 shares of Tetraphase Common Stock issuable upon the exercise of options exercisable within 60 days after March 1, 2020.

(10) Consists of 4,369 shares of Tetraphase Common Stock issuable upon the exercise of options exercisable within 60 days after March 1, 2020.

(11) Consists of 3,369 shares of Tetraphase Common Stock issuable upon the exercise of options exercisable within 60 days after March 1, 2020.

(12) Dr. Maher is a managing director of Armistice Capital.

(13) Includes 18,156 shares of Tetraphase Common Stock issuable upon the exercise of options exercisable and 1,000 restricted stock units that will vest within 60 days after March 1, 2020.

(14) Includes 7,594 shares of Tetraphase Common Stock issuable upon the exercise of options exercisable that will vest within 60 days after March 1, 2020.

(15) Includes 68,007 shares of Tetraphase Common Stock issuable upon the exercise of options exercisable within 60 days after March 1, 2020 and restricted stock units that will vest within 60 days of March 1, 2020.

PROPOSAL 1: ADOPTION OF THE MERGER AGREEMENT

This proxy statement/prospectus is being furnished to you as a stockholder of Tetraphase as part of the solicitation of proxies by the Tetraphase Board for use at the Special Meeting to consider and vote upon a proposal to adopt the Merger Agreement, which is attached as *Annex A* to this proxy statement/prospectus.

The Tetraphase Board, after due and careful discussion and consideration, unanimously approved and declared advisable the Merger Agreement, the Merger and the other Contemplated Transactions and determined that the Merger Agreement, the Merger and the other Contemplated Transactions are fair to and in the best interests of Tetraphase and its stockholders.

The Tetraphase Board accordingly unanimously recommends that Tetraphase stockholders adopt the Merger Agreement, which is described in this proxy statement/prospectus and particularly in the sections titled "*The Merger*" beginning on page 47 of this proxy statement/prospectus and "*The Merger Agreement*" beginning on page 90 of this proxy statement/prospectus and which is attached as *Annex A* to this proxy statement/prospectus.

The Merger between AcelRx and Tetraphase cannot be completed without the affirmative vote of the holders of a majority of the outstanding shares of Tetraphase Common Stock entitled to vote thereon. A failure to vote or an abstention will have the same effect as a vote "**AGAINST**" the proposal to adopt the Merger Agreement.

THE TETRAPHASE BOARD UNANIMOUSLY RECOMMENDS THAT YOU VOTE "FOR" THE MERGER AGREEMENT PROPOSAL (PROPOSAL 1).

PROPOSAL 2: ADVISORY (NON-BINDING) VOTE ON MERGER-RELATED COMPENSATION FOR TETRAPHASE NAMED EXECUTIVE OFFICERS

Pursuant to Section 14A of the Exchange Act and Rule 14a-21(c) thereunder, Tetraphase is seeking a non-binding, advisory stockholder approval of the compensation of Tetraphase's named executive officers that is based on or otherwise relates to the Merger as disclosed in the section titled "*Interests of Tetraphase's Directors and Executive Officers in the Merger—Employee Incentives and Benefits—Possible Change-in-Control Compensation*" beginning on page 83 of this proxy statement/prospectus. The compensation proposal gives stockholders the opportunity to express their views on the merger-related compensation of Tetraphase's named executive officers.

Accordingly, Tetraphase is asking its stockholders to vote "**FOR**" the adoption of the following resolution, on a non-binding, advisory basis:

"RESOLVED, that the compensation that will or may be paid or become payable to Tetraphase's named executive officers, in connection with the Merger, and the agreements or understandings pursuant to which such compensation will or may be paid or become payable, in each case as disclosed pursuant to Item 402(t) of Regulation S-K in the section titled "*Interests of Tetraphase's Directors and Executive Officers in the Merger—Employee Incentives and Benefits—Possible Change-in-Control Compensation*" of the proxy statement/prospectus for this meeting is hereby APPROVED."

The vote on the compensation proposal is a vote separate and apart from the vote to adopt the Merger Agreement. Accordingly, if you are a stockholder, you may vote to adopt the Merger Agreement proposal, and vote not to approve the compensation proposal, and vice versa. Because the vote on the merger-related compensation proposal is advisory only, it will not be binding on Tetraphase. If the Merger is completed, the merger-related compensation may be paid to Tetraphase's named executive officers to the extent payable in accordance with the terms of the compensation agreements and arrangements even if stockholders fail to approve the advisory vote regarding merger-related compensation.

Assuming a quorum is present at the Special Meeting, approval of the compensation proposal requires the affirmative vote of the holders of shares of Tetraphase Common Stock representing a majority of the votes cast on the proposal. Shares which abstain from voting and "broker non-votes" with respect to this proposal will not be counted as votes in favor of such matter, and will also not be counted as shares voting on such matter. Accordingly, abstentions and "broker non-votes" will have no effect on the voting on this proposal.

THE TETRAPHASE BOARD UNANIMOUSLY RECOMMENDS THAT YOU VOTE "FOR" THE COMPENSATION PROPOSAL (PROPOSAL 2).

PROPOSAL 3: ADJOURNMENT OF THE TETRAPHASE SPECIAL MEETING

The Special Meeting may be adjourned to another time and place if necessary to permit solicitation of additional proxies if there are not sufficient votes to approve the Merger Agreement proposal or to ensure that any supplement or amendment to this proxy statement/prospectus is timely provided to stockholders.

Tetraphase is asking its stockholders to authorize the holder of any proxy solicited by the Tetraphase Board to vote in favor of any adjournment of the Special Meeting to solicit additional proxies if there are not sufficient votes to approve the merger agreement proposal or to ensure that any supplement or amendment to this proxy statement/prospectus is timely provided to stockholders.

Whether or not a quorum is present at the Special Meeting, approval of the adjournment proposal requires the affirmative vote of the holders of shares of Tetraphase Common Stock representing a majority of the votes cast on the proposal. Shares which abstain from voting and "broker non-votes" with respect to this proposal will not be counted as votes in favor of such matter, and will also not be counted as shares voting on such matter. Accordingly, abstentions and "broker non-votes" will have no effect on the voting on this proposal.

Under the Tetraphase Bylaws, the chairman of the Special Meeting may adjourn the Special Meeting regardless of the outcome of the adjournment proposal if a quorum is not present.

THE TETRAPHASE BOARD UNANIMOUSLY RECOMMENDS THAT YOU VOTE "FOR" THE ADJOURNMENT PROPOSAL (PROPOSAL 3).

THE MERGER

This section of the proxy statement/prospectus describes certain material aspects of the proposed Merger. This section may not contain all of the information that is important to you. You should carefully read this entire proxy statement/prospectus and the documents incorporated herein by reference, including the full text of the Merger Agreement, which is attached as *Annex A*, for a more complete understanding of the Merger. In addition, (i) important business and financial information about AcelRx is incorporated into this proxy statement/prospectus by reference and (ii) important business and financial information about Tetraphase is incorporated into this proxy statement/prospectus by reference. See also "*Where You Can Find More Information*" beginning on page 196 of this proxy statement/prospectus and "*Incorporation of Certain Information by Referen*ce" beginning on page 197 of this proxy statement/prospectus.

Background of the Merger

The Tetraphase Board, together with members of the Tetraphase management team, regularly reviews and assesses the performance, future growth prospects, business plans and overall strategic direction of Tetraphase and considers a variety of strategic alternatives that may be available to Tetraphase including continuing to pursue the company's strategy as a standalone company or pursuing potential strategic or financing transactions with third parties, in each case, with the goal of maximizing shareholder value.

In connection with such a review, representatives of Tetraphase met with representatives of several companies and potential investors at the 2019 J.P. Morgan Conference in San Francisco, California during the period between January 7, 2019 and January 9, 2019. These potential strategic partners included representatives of ten companies, including: AcelRx and companies that we refer to as Company B, Company C, Company D, Company E, Company F and Company G.

On March 1, 2019, Company F sent an unsolicited offer to acquire all the common stock of Tetraphase in a stock-for-stock transaction to Mr. Guy Macdonald, Tetraphase's then President and Chief Executive Officer, and to other members of Tetraphase's management team. The offer contemplated a fixed exchange ratio that would result in stockholders of Tetraphase holding approximately 37% of the equity of the combined company.

On March 3, 2019, the Tetraphase Board was notified of the Company F proposal.

On March 4, 2019, the Tetraphase Board held a telephonic meeting to discuss the Company F proposal. At this meeting, representatives of management, Tetraphase's then financial advisor, which we refer to as Financial Advisor A, and Tetraphase's special legal counsel for a possible transaction with Company F, which we refer to as Law Firm A, also participated. During this meeting the Tetraphase Board directed representatives of management and Financial Advisor A to conduct a "market check" to determine if there were other parties interested in a potential strategic transaction with the company.

On March 5, 2019, Financial Advisor A contacted representatives of companies that we refer to as Company H and Company I regarding a potential strategic transaction with Tetraphase, which were selected based on a judgment about their potential interest in Tetraphase's business and assets as a result of their existing commercial products and pipeline. Both companies subsequently declined, indicating that they were not interested in acquiring assets in the antibiotic space. Officers of Tetraphase also contacted representatives of Company E and of a company that we refer to as Company J for the same purpose of determining whether they would be interested in a possible strategic transaction with the company. Company J subsequently declined. Later in the day, representatives of Financial Advisor A contacted representatives of Company F to discuss the timeline for a possible acquisition of Tetraphase.

On March 6, 2019, Maria Stahl, Tetraphase's Chief Business Officer and General Counsel, e-mailed an officer of Company E with an update on the potential timing of a transaction.

On or about March 8, 2019, such officer of Company E informed Ms. Stahl telephonically that Company E was not interested in pursuing a strategic transaction with Tetraphase at that time, citing structural and valuation concerns with a potential transaction, including a lack of willingness on the part of Company E to seek and obtain approval from its own stockholders for a transaction.

On March 12, 2019, representatives of Tetraphase and Company F met in Boston, Massachusetts to discuss Tetraphase's business and operations. Representatives of each company's financial advisors were also present at the meeting.

On March 14, 2019, Company F provided representatives of Tetraphase with access to a data room, and Tetraphase began conducting due diligence on Company F's business and operations.

On or about March 15, 2019, Tetraphase provided Company F with access to a data room and Company F began conducting due diligence on Tetraphase's business and operations.

On March 21, 2019, the Tetraphase Board held a telephonic meeting to review the terms and conditions of a draft merger agreement, initially prepared by Tetraphase, and other matters related to a potential strategic transaction with Company F. Representatives of Tetraphase management, Financial Advisor A and Law Firm A also participated in the meeting.

On March 28, 2019, the Tetraphase Board held a telephonic meeting to review matters related to the potential strategic transaction with Company F. Representatives of Tetraphase management, Financial Advisor A and Law Firm A also participated in the meeting.

On or about April 5, 2019, representatives of Company F informed representatives of Tetraphase that Company F was no longer interested in pursuing a strategic transaction with Tetraphase, citing financial and liquidity concerns with Tetraphase's business.

In late June 2019, Company F's Chief Executive Officer contacted Mr. Macdonald to discuss the possibility of resuming discussions regarding a possible strategic transaction between Tetraphase and Company F.

On July 2, 2019, representatives of Company F's management team and Tetraphase's management team met in Philadelphia, Pennsylvania to discuss the business and operations of both companies and the potential synergies arising out of a combination of the two companies.

From July 3, 2019 to July 31, 2019, discussions between Company F and Tetraphase continued. Also during this period, members of Tetraphase's management team held discussions with other potential strategic partners and investors, including, but not limited to, Company C, which had earlier not been interested in a potential strategic transaction but, due to developments with its own business, expressed a desire to discuss a potential transaction with Tetraphase.

On July 25, 2019, representatives of Tetraphase management received an offer to acquire the company in a stock-for-stock transaction from Company C. The offer contemplated a fixed exchange ratio that would result in stockholders of Tetraphase holding approximately 20% of the equity of the combined company. On or about the same day, Tetraphase management informed representatives of Financial Advisor A, Law Firm A and all the members of the Tetraphase Board of Company C's offer.

On July 26, 2019, at a previously scheduled telephonic meeting of a committee of the Tetraphase Board composed of L. Patrick Gage, Garen Bohlin and John Freund which had been formed to evaluate potential equity financing transactions, which we refer to as the Pricing Committee, and at which other members of the Tetraphase Board were present, the Tetraphase directors discussed Company C's offer and Tetraphase management and Financial Advisor A were instructed to contact other parties to determine whether there was any interest in pursuing a possible strategic transaction with Tetraphase. Financial Advisor A contacted approximately seven parties between July 26, 2019 and August 1, 2019.

On July 29, 2019, Tetraphase and AcelRx entered into a confidentiality agreement in anticipation of the sharing of confidential information by the parties, which did not include a standstill.

On or about August 2, 2019, based on responses to these contacts and following the execution of a confidentiality agreement with the applicable party, Tetraphase provided access to a data room to representatives of Company B, Company C, Company F, Company G and Company I as well as companies that we refer to as Company K and Company L.

On August 4, 2019, the Tetraphase Board held a telephonic meeting to discuss Company C's proposal as well as ongoing discussions with the other potential interested parties. Representatives of Tetraphase management, Financial Advisor A and Law Firm A also participated in this meeting.

On or about August 12, 2019, Company G provided Tetraphase with a non-binding proposal to acquire the company in an all cash transaction for aggregate consideration of $20 million.

Between late July and late August, representatives of Tetraphase management, Financial Advisor A and Law Firm A continued to work on diligence matters with the interested parties referred to above.

On August 18, 2019, the Tetraphase Board held a telephonic meeting to discuss the terms and conditions of a proposed merger agreement to be delivered to Company G. Representatives of Tetraphase management, Financial Advisor A and Law Firm A also participated in the meeting.

On or prior to August 25, 2019, Company C advised Tetraphase that it was no longer interested in pursuing a potential strategic transaction with the company, citing market conditions.

On or about September 4, 2019, Company G notified Financial Advisor A that following its due diligence review and due to other business development activities it would not be pursuing a potential strategic transaction with Tetraphase. Prior to that date each of Companies B, F, I, K and L had also indicated to Tetraphase or Financial Advisor A that it was not interested in pursuing a strategic transaction with the company, citing, to the extent the parties provided a specific reason, market conditions and judgments regarding valuation and liquidity.

On September 25, 2019 the Tetraphase Board held a regularly scheduled meeting in Boston, Massachusetts, at the offices of Wilmer Cutler Pickering Hale and Dorr LLP, Tetraphase's outside corporate counsel, which we refer to as WilmerHale. At this meeting, the Tetraphase Board instructed management to engage an investment bank to underwrite a public offering of Tetraphase's common stock.

On or about September 27, 2019, Ms. Stahl began discussions with representatives of H.C. Wainwright & Co., or HCW, concerning a potential equity financing for Tetraphase.

On September 29, 2019, after approval from the Pricing Committee, Tetraphase management engaged HCW as its exclusive agent, advisor or underwriter for an equity offering for capital raising purposes.

On September 30, 2019 representatives of HCW and its legal counsel, members of Tetraphase management, WilmerHale and representatives of Ernst & Young LLP, Tetraphase's independent public company registered accountants ("EY"), participated in an organizational call to discuss the structure and timing of a potential public offering.

From September 30, 2019 through the morning of October 7, 2019, representatives of HCW and its legal counsel, members of Tetraphase management, WilmerHale, and EY worked to prepare Tetraphase for a public offering of Tetraphase Common Stock. This work included, but was not limited to, conducting due diligence and drafting and negotiating documentation.

On October 2, 2019, Tetraphase commenced discussions under terms of confidentiality with potential investors for a public offering of Tetraphase Common Stock.

From October 2, 2019 through October 4, 2019, members of Tetraphase management participated in telephone calls with potential investors in the public equity offering.

On October 2, 2019, Ms. Stahl and an officer of Company E met in person. During this meeting, the Company E officer noted that Company E's board of directors was interested in pursuing a possible strategic transaction with Tetraphase. Following the meeting, Ms. Stahl reported this discussion to Larry Edwards, who had succeeded Mr. Macdonald as Tetraphase's President and Chief Executive Officer effective as of August 1, 2019.

On the morning of October 4, 2019, Ms. Stahl and the Company E officer spoke by telephone and the officer reiterated Company E's interest in commencing discussions with Tetraphase regarding a possible strategic transaction.

On the afternoon of October 4, 2019, the Pricing Committee met telephonically with members of Tetraphase management and WilmerHale. During this meeting, management updated the Tetraphase Board on the potential public equity offering, noting the expected terms of the offering, including the fact that investors would likely require warrants to be issued in the offering, including warrants containing "Black-Scholes" provisions potentially requiring any acquirer of Tetraphase to redeem the warrants at their Black-Scholes value, which we refer to as the Black-Scholes Put Provisions. Members of Tetraphase management also discussed with the Pricing Committee the in-bound inquiry by Company E, noting that if Tetraphase were to pursue the in-bound inquiry, then Tetraphase's efforts regarding a public equity offering would have to cease. The Pricing Committee directed management to call a meeting of the full Board for a discussion of Tetraphase's alternatives.

Late in the day on October 4, 2019, the President and Chief Executive Officer of Company E called Mr. Edwards to reiterate Company E's interest in a potential strategic transaction.

In October 2019, Tetraphase engaged an agent to assist the company in exploring the availability of debt financing for Tetraphase. As a result of these efforts, the company entered into confidentiality agreements and engaged in discussions with several third party lenders, following which the company determined that debt financing would not be available due, in part, to the company's limited cash resources.

On October 7, 2019, Company E delivered a non-binding indication of interest to Tetraphase providing for an acquisition of the company for approximately $14.56 million payable in shares of Company E common stock, representing an approximate 14% ownership in the combined company, with such valuation based on market prices for Tetraphase's and Company E's common stock existing at such time, with an exchange ratio to be determined prior to execution of definitive documents based on each company's current market valuation. Later on October 7, 2019, the Tetraphase Board held a telephonic meeting and determined that management should cease pursuing the public equity offering and instead should focus its efforts on moving forward with a potential strategic transaction with Company E.

From October 7, 2019 to October 10, 2019, representatives of Tetraphase management held discussions with four potential financial advisors.

On or about October 8, 2019, Company E began to conduct due diligence on Tetraphase and Tetraphase informed HCW that it would cease all activities regarding a financing transaction.

On October 9, 2019, representatives of Company E met in person with representatives of Tetraphase, including Mr. Edwards and Ms. Stahl, at the company's corporate offices to discuss Tetraphase's business and operations and begin conducting in-person due diligence.

On October 10, 2019, Ms. Stahl and a Company E officer spoke telephonically to discuss process and timing for a potential transaction as well as the likelihood of obtaining necessary consent from the Tetraphase stockholders.

On October 11, 2019, Messrs. Edwards and Christopher Watt, Tetraphase's Senior Vice President, Finance, held an in-person meeting with representatives of an investor which we refer to as Company M to ascertain whether or not Company M would be interested in making a strategic investment in Tetraphase.

From October 9, 2019 through October 18, 2019, Company E continued to conduct legal and operational due diligence on Tetraphase, including telephonic calls with Tetraphase's legal advisors and in person meetings with representatives of Tetraphase's operations team.

On or about October 18, 2019, Company E delivered a draft merger agreement to representatives of Tetraphase.

On October 20, 2019, the Tetraphase Board held a telephonic meeting with WilmerHale to discuss certain provisions of the draft merger agreement provided by Company E, including certain termination provisions in the draft merger agreement.

On October 21, 2019, Mr. Edwards and Ms. Stahl and representatives of Company E spoke telephonically regarding the termination provisions of the draft merger agreement and their implications to Tetraphase in light of its projected cash runway and liquidity position, and the Tetraphase Board's concerns with these provisions, including the fact that if the merger agreement was executed but ultimately terminated prior to consummation Tetraphase would have insufficient capital to effect an orderly bankruptcy or liquidation process.

On the afternoon of October 23, 2019, Ms. Stahl and a Company E officer discussed certain terms and conditions related to the draft merger agreement, including the proposed termination provisions.

One the evening of October 23, 2019, the Tetraphase Board held a telephonic meeting to discuss certain termination provisions in the draft merger agreement. At the direction of the Tetraphase Board, following this meeting, Tetraphase engaged Janney Montgomery Scott LLC ("Janney") as the company's financial advisor, including to provide a fairness opinion with respect to a potential transaction and to conduct a "market check" with certain parties previously contacted and other parties that could be interested in a potential transaction.

On October 23, 2019, Ms. Stahl reviewed with the Tetraphase Board considerations related to certainty of consummating the proposed strategic transaction with Company E, including issues raised by the termination provisions in Company E's draft merger agreement. Later in the day Ms. Stahl and the Company E officer discussed with WilmerHale and Company E's outside counsel the potential timing of a transaction. In the early evening on this date, the Company E officer telephoned Ms. Stahl to discuss, once again, certain termination provisions in the draft merger agreement.

On October 24, 2019, representatives of Janney and WilmerHale, Ms. Stahl and Mr. Watt discussed the potential transaction with Company E and Janney's work process. Also on October 24, 2019, Ms. Stahl and an officer of Company E spoke again regarding the termination provisions of the draft merger agreement.

On October 25, 2019, Mr. Edwards, Ms. Stahl and representatives of Janney discussed the status of prior discussions between Tetraphase and potential strategic partners as well as new potential strategic partners to contact as part of Janney's "market check." They also discussed certain considerations related to a potential transaction with Company E, including the termination provisions and the potential timing of a transaction.

On October 26, 2019, the Tetraphase Board held a telephonic meeting to discuss the potential strategic transaction with Company E. Representatives of management, Janney and WilmerHale also participated in this meeting at the Tetraphase Board's request. During this meeting, the Tetraphase Board determined to cease pursuing a potential strategic transaction with Company E due to Company E's stated requirements regarding the

termination provisions, particularly in light of the company's cash runway and financial position. Company E required Tetraphase to meet a specified cash threshold as of the closing of the proposed transaction that Tetraphase determined it could not meet, and Company E had indicated that it would not negotiate on this threshold. Later on October 26, 2019, Ms. Stahl notified Company E of the Tetraphase Board decision. Also on October 26, 2019, at the request of the Tetraphase Board, Ms. Stahl contacted HCW to resume discussions regarding a potential financing transaction and requested that Janney cease outreach to potential counterparties regarding a potential strategic transaction.

From October 26, 2019 to October 29, 2019, representatives of Tetraphase, WilmerHale, and representatives of HCW and its legal counsel worked to prepare and consummate an offering of Tetraphase equity securities. During this period the Pricing Committee met telephonically on multiple occasions to discuss the terms of an offering, including the requirement for the issuance of warrants that included Black-Scholes Put Provisions.

On the morning of October 30, 2019, Tetraphase announced that it had entered into a registered direct offering at the market for $8.0 million of its equity securities, consisting of shares of common stock, common stock warrants (which included the Black-Scholes Put Provisions) and pre-funded warrants, with a single investor, Armistice Capital. The financing was consummated on November 1, 2019. Steve Boyd and Keith Maher, who became members of the Tetraphase Board on January 21, 2020 in connection with the January Offerings described below, are principals of Armistice Capital, a global, long/short, value-oriented and event-driven hedge fund. Upon the consummation of the financing, Armistice Capital became Tetraphase's largest stockholder, both on an actual basis and a fully-diluted basis.

Also on the morning of October 30, 2019, after Tetraphase issued the financing press release, an officer of Company G contacted Mr. Edwards to congratulate him on the financing and to inquire about the company's future prospects.

Following the closing of the offering on November 1, 2019 until December 3, 2019, representatives of Tetraphase's management contacted several parties, including Company E, Company G and Company M, to see if there was any interest in a potential strategic transaction.

From November 1, 2019 to early December 2019, Tetraphase reengaged with an agent to assist the company in exploring the availability of debt financing for Tetraphase. As a result of these efforts, the company entered into confidentiality agreements and engaged in discussions with several third-party lenders, following which the company determined that debt financing continued to be unavailable.

On December 4, 2019, the Tetraphase Board held a regularly scheduled meeting. At this meeting, the Tetraphase Board determined that the company should engage financial and legal advisors to begin preparations for a potential sale of the company through a bankruptcy process.

Between December 5, 2019 to December 12, 2019, Tetraphase entered into engagement letters with a financial advisor that we refer to as Financial Advisor B, another financial advisor that we refer to as Financial Advisor C, and Delaware special bankruptcy counsel.

On December 16, 2019, representatives of Tetraphase and representatives of Financial Advisor B and Financial Advisor C met to discuss the company's business and operations as well as potential parties for a strategic transaction with the company.

On or about December 19, 2019, a representative of Financial Advisor B contacted representatives of a company referred to as Company N to see if Company N had any interest in making a strategic investment in the company, based on certain public reports indicating Company N's potential increased involvement in the antibiotic section.

From December 20, 2019 to December 23, 2019, Mr. Boyd of Armistice Capital had several discussions with members of Tetraphase management regarding the company's business and financial needs and possible bankruptcy plans.

On December 20, 2019, Mr. Edwards met with representatives of the sole stockholder of Company K, which we refer to as Company O, regarding Tetraphase's financial and near-term strategic needs.

On December 24, 2019, a company that we refer to as Company P delivered an unsolicited proposal to acquire Tetraphase for an aggregate cash amount of $9.0 million. Company P is affiliated with Armistice Capital, and Mr. Boyd is a member of Company P's board of directors.

On December 26, 2019, the Tetraphase Board held a telephonic meeting to discuss the Company P proposal. During this meeting the Tetraphase Board instructed representatives of Financial Advisor B to conduct a "market check." Later on December 26, 2019, a representative of Financial Advisor B contacted several potential parties to gauge their interest in a strategic transaction with Tetraphase, including AcelRx, Company E, Company G, Company L, Company M, Company N and Company O.

Between December 26, 2019 and December 30, 2019, representatives of Financial Advisor B and Tetraphase management held calls with potential parties to a strategic transaction.

On December 28, 2019, Company E delivered a proposal to acquire Tetraphase in an all stock transaction valued at approximately $14.2 million.

On December 30, 2019, Company P executed a confidentiality agreement with Tetraphase and representatives of Company P and Armistice Capital, as an investor in and potential financing source for Company P, began conducting due diligence on Tetraphase.

On December 31, 2019, legal and financial advisors of Company E and Tetraphase held a telephonic meeting to discuss Company E's proposal, the potential structure of a transaction and other matters related to the timing of a potential transaction.

Also on December 31, 2019, representatives of Financial Advisor B discussed with representatives of Company L a potential strategic transaction with Tetraphase. Based on this discussion, Tetraphase allowed Company L to begin conducting due diligence on the company's business and operations.

On January 1, 2020, Ms. Stahl provided representatives of Company P and its outside legal counsel a draft merger agreement for review.

On January 2, 2020, an officer of Company P discussed with Ms. Stahl the expected legal requirements for a potential transaction. Also on January 2, 2020, representatives of Armistice Capital held a diligence discussion with representatives of Tetraphase and its financial advisors to discuss Tetraphase's pipeline, compliance program and other areas of the company's business and operations.

On January 3, 2020, Mr. Edwards communicated additional financial information to Mr. Boyd as previously requested by Mr. Boyd.

On the morning of January 3, 2020, the Tetraphase Board held a telephonic meeting to discuss the Company P and Company E proposals. Representatives of management, WilmerHale, Financial Advisor B and Financial Advisor C participated in the meeting. At this meeting representatives of Financial Advisor B reviewed with the Tetraphase Board the potential proceeds to Tetraphase stockholders in a transaction with Company P and a transaction with Company E, including the implications of the Black-Scholes Put Provisions. The representative of WilmerHale also reviewed with the Tetraphase Board various timing scenarios with respect to the two proposals and their potential interplay with a bankruptcy filing.

In the evening of January 3, 2020, Tetraphase received a draft non-binding proposal from Company E detailing the terms and conditions by which Company E would be willing to serve as a stalking horse bidder to acquire certain of Tetraphase's assets in a chapter 11 bankruptcy process.

On January 4, 2020, Mr. Edwards and Ms. Stahl had a brief discussion with representatives of Financial Advisor B and WilmerHale to review the Company E proposal. Following this discussion, Financial Advisor B sent an e-mail to Company E seeking clarification on Company E's proposal.

On January 6, 2020, WilmerHale held a discussion with counsel for Company P regarding certain terms and conditions of the draft merger agreement previously sent to Company P. Following this call, Mr. Edwards had a discussion with Mr. Boyd regarding the same terms and conditions.

On January 7, 2020, Mr. Edwards and Ms. Stahl engaged in a telephonic discussion with Financial Advisor B and WilmerHale regarding the Company E proposal. Following this discussion, Financial Advisor B provided representatives of Company E with feedback on the draft proposal previously sent to Tetraphase.

On January 8, 2020, Mr. Edwards met in New York City with representatives of Armistice Capital to discuss Tetraphase's business and operations.

Also on January 8, 2020, representatives of Company E and its counsel engaged in a telephonic discussion with representatives of Tetraphase, WilmerHale and Financial Advisor B to discuss Tetraphase's comments on Company E's proposal.

Also on January 8, 2020, counsel for Company P provided WilmerHale with a markup of the draft merger agreement previously provided by WilmerHale. Financial Advisor B also had a conversation with Armistice Capital regarding the structure of a potential transaction involving the company and Company P.

On January 8, 2020, Financial Advisor B discussed with representatives of Company N a potential transaction involving Tetraphase.

On January 8, 2020, Tetraphase provided access to its data room to representatives of Company E and to representatives of Company P's outside legal counsel.

On January 9, 2020, representatives of Financial Advisor B, Financial Advisor C and WilmerHale met with representatives of Tetraphase to discuss in detail the company's expected cash position over the next few months and the implications and risks associated with entering into a strategic transaction.

On January 9, 2020, WilmerHale discussed Company P's markup of the merger agreement with counsel for Company P.

On January 9, 2020, Mr. Watt had a discussion with an officer of Company E regarding Tetraphase's business and cash needs in the event of a potential chapter 11 proceeding.

On January 9, 2020, Ms. Stahl shared a draft bridge financing term sheet, created by Tetraphase for potential distribution to Company P and Mr. Boyd, with the Tetraphase Board. The proposed bridge financing was intended to provide the company with sufficient funds to operate through the closing of a transaction with Company P or, if that transaction failed to close, through a bankruptcy proceeding.

On January 9, 2020, Company E provided Tetraphase a revised non-binding proposal for the purchase of Tetraphase's assets through a chapter 11 proceeding.

On January 10, 2020, the Tetraphase Board held a telephonic meeting to discuss the terms of a bridge financing proposal to send to Company P and Armistice Capital and the revised Company E asset purchase proposal. Members of management and representatives of WilmerHale, Financial Advisor B and Financial Advisor C also participated in the meeting.

Following this meeting, representatives of Tetraphase delivered on the same day the proposed bridge financing terms to Armistice Capital, Company P and their respective representatives. Representatives of Armistice Capital and Company P also sent representatives of Tetraphase their own set of proposed bridge financing terms.

Later in the day on January 10, 2020, representatives of Financial Advisor B and WilmerHale discussed both sets of the bridge financing proposals with representatives of Armistice Capital and Company P, including Mr. Boyd.

Also on January 10, 2020, representatives of Company E's financial advisor called Financial Advisor B to discuss the timeline associated with Company E's revised proposal.

Later in the day on January 10, 2020, Financial Advisor C sent counsel for Company P certain Tetraphase financial information.

On January 12, 2020, representatives of Tetraphase, WilmerHale and Financial Advisor B held a telephonic discussion with representatives of Company E and its counsel and financial advisor regarding Company E's revised asset purchase proposal. The parties also discussed a request from Company E for up to $250,000 in prepayments of its expenses in connection with potentially serving as a stalking horse bidder in the event of a chapter 11 bankruptcy filing by the company.

Also on January 12, 2020, Mr. Boyd discussed a potential equity investment in the Company, as an alternative to either Company E's proposal or Company P's proposal, with HCW and with Mr. Edwards. Later that day representatives of HCW sent a revised engagement letter to Mr. Edwards and Ms. Stahl. HCW also sent Tetraphase a term sheet for a proposed $15 million financing, consisting of the purchase of common stock and warrants by Armistice Capital on substantially the same terms as the October 2019 financing.

On January 13, 2020, Mr. Edwards conveyed HCW's financing proposal to the Tetraphase Board.

Also on January 13, 2020, in furtherance of the Company E proposal, WilmerHale discussed with counsel for Company E the potential timeline and documentation in the event that Tetraphase were to file for chapter 11 protection.

On or about January 14, 2020, Mr. Boyd informed Mr. Edwards that Armistice Capital would no longer fund the Company P proposal to acquire Tetraphase.

On January 14, 2020, the Tetraphase Board held a telephonic meeting. At the meeting, the Tetraphase Board instructed management to continue working with HCW and Armistice Capital toward a potential capital investment in the company. In response to a request from Company E, the Tetraphase Board also instructed management to pay Company E $75,000 as a prepayment of its expenses in connection with potentially serving as a stalking horse bidder in the event of a chapter 11 bankruptcy filing by the company.

Later on January 14, 2020, Tetraphase entered into an amended engagement letter for a financing transaction with HCW.

On January 15, 2020 Mr. Edwards attended the 2020 JP Morgan Healthcare Conference and met with representatives of several biotechnology companies, including Vince Angotti, President and Chief Executive Officer of AcelRx.

On January 20, 2020, Dr. Freund and Mr. Angotti, who knew each other from prior business dealings, met in Palo Alto. At this meeting, Mr. Angotti indicated that AcelRx was interested in a potential merger with Tetraphase.

On or about January 21, 2020, AcelRx requested certain financial information from Tetraphase, which the company provided.

Also on January 21, 2020, Company E informed Ms. Stahl that Company E was no longer interested in pursuing a transaction to acquire Tetraphase's assets due in part to the company's unwillingness to provide Company E with additional reimbursement of its expenses in connection with a potential stalking horse bid in a Tetraphase bankruptcy.

Also, on January 21, 2020, HCW advised Tetraphase that Armistice Capital had indicated that it would not fund the full $15 million in the proposed financing and proposed that HCW contact other potential investors to explore their interest in participating in a concurrent registered direct offering along-side the Armistice Capital investment.

Also on January 21, 2020, the Tetraphase Board held a telephonic meeting to approve moving forward with the proposed financing involving Armistice Capital and certain additional investors. During the meeting the Tetraphase Board reviewed the potential investors in the financing and the terms of the proposed offering, including the issuance of common stock warrants that included the Black-Scholes Put Provisions.

On January 22, 2020, the Pricing Committee met telephonically on two occasions to discuss and approve, and Tetraphase announced, offerings of common stock, common stock warrants and pre-funded warrants with aggregate gross proceeds of approximately $17.5 million, consisting of a $10 million private placement with Armistice Capital and a $7.5 million concurrent registered direct offering with certain additional investors, which we refer to collectively as the January Offerings. Steve Boyd and Keith Maher, who are each affiliated with Armistice Capital, became members of the Tetraphase Board on January 21, 2020 in connection with the January Offerings.

On January 23, 2020, Tetraphase and AcelRx entered into an amendment to the July 29, 2019 confidentiality agreement between the parties to extend the agreed upon confidentiality obligations to cover additional discussions and information sharing between the parties.

On January 24, 2020, Tetraphase completed the January Offerings.

On January 30, 2020 and January 31, 2020, Mr. Edwards, Ms. Stahl, Mr. Watt and Kevin Lloyd, Tetraphase's Vice President of Program Management, held in person meetings at Tetraphase's headquarters with Vincent Angotti, AcelRx's President and Chief Executive Officer, and Raffi Asadorian, AcelRx's Chief Financial Officer.

On February 2, 2020, the Tetraphase Board held a telephonic meeting and considered, among other things, the status of discussions with and outreach to various parties regarding a potential strategic transaction for the company.

On February 5, 2020, representatives of Tetraphase, including Mr. Edwards, and representatives of AcelRx, including Mr. Angotti, discussed potential synergies in territories and the field teams of the two companies and the possibility of entering into a co-promotion agreement between the parties.

On February 7, 2020, Tetraphase management contacted Janney to re-engage regarding a potential fairness opinion and to conduct a "market check" with various potential counterparties. Also on February 7, 2020, representatives of Tetraphase and representatives of AcelRx held a telephonic discussion regarding potential timing of a possible transaction, and Mr. Boyd spoke with Mr. Angotti, who knew each other as a result of prior business dealings.

On February 9, 2020, representatives of Tetraphase and AcelRx and their legal representatives and AcelRx's financial advisor met telephonically to discuss a proposed timeline for a potential transaction.

On February 10, 2020, AcelRx delivered to Mr. Edwards a non-binding proposal for an acquisition of Tetraphase in an all-stock transaction for a fully diluted equity value, using a fixed exchange ratio based on market prices as

of the date of the proposal, ranging between $20 million to $25 million, inclusive of amounts payable under the Black-Scholes Put Provisions, subject to a closing adjustment provision based on an assumed $15 million of net cash at Tetraphase at closing. The proposal also contemplated that the parties would enter into the co-promotion agreement. That same day Mr. Edwards shared the term sheet with the Tetraphase Board.

On February 11, 2020, the Tetraphase Board held a telephonic meeting, with representatives of Janney and WilmerHale participating at the invitation of the Board. The Tetraphase Board considered the AcelRx proposal as well as the status of other discussions and outreach regarding a potential strategic transaction for the company. The Board also discussed AcelRx's request for exclusivity and certain cash balance adjustments at the closing of a transaction.

On February 12 and 13, 2020, representatives of AcelRx met with representatives of Tetraphase at Tetraphase's offices for purposes of conducting additional reciprocal due diligence.

On February 12, 2020, AcelRx provided Tetraphase with a draft of the co-promotion agreement.

On February 13, 2020, AcelRx sent a revised offer to acquire all the equity of Tetraphase in an all-stock transaction for a fully diluted equity value, using a fixed exchange ratio based on market prices as of the date of the proposal, ranging between $13 million to $18 million, including amounts payable under the Black-Scholes Put Provisions, subject to a closing adjustment provision based on an assumed $8 million of net cash at Tetraphase at closing, and requested exclusivity beginning on February 18, 2020.

Also on February 13, 2020, management instructed Janney on behalf of the Tetraphase Board to contact third parties, including Companies E, H, I and K, to see if there was any interest in a strategic transaction with Tetraphase.

On February 14, 2020, Janney contacted 12 third parties to inquire about their potential interest in a strategic transaction with Tetraphase, including parties that had previously expressed an interest in acquiring Tetraphase. Of the 12 parties contacted by Janney over the course of February 14, 2020 through February 21, 2020, only Company K expressed interest in submitting an offer to acquire Tetraphase. Also on February 14, 2020, representatives of Company K and Janney discussed a potential strategic transaction, in which representatives of Company K expressed interest in moving forward with the process. Also on February 14, 2020, Dr. Freund and Mr. Angotti had a telephone call to discuss a potential merger with Tetraphase.

On February 15, 2020, the Tetraphase Board held a telephonic meeting to discuss AcelRx's revised proposal and request for exclusivity. Representatives of Tetraphase management, Janney and WilmerHale participated in the meeting.

On February 16, 2020, Mr. Richard Page and Mr. James McNaughton of Janney spoke with a representative of AcelRx's financial advisor regarding AcelRx's proposal and the Tetraphase Board's response to that proposal. Mr. Page and Mr. McNaughton noted that the Tetraphase Board would not agree to exclusivity, and that AcelRx should revisit the valuation included in AcelRx's proposal.

On February 18, 2020, representatives of Janney followed up with representatives of Company K. Representatives of Company K requested access to the Tetraphase data room and indicated that Company K would be in a position to provide an update the following week.

On February 19, 2020, AcelRx delivered a draft merger agreement to Tetraphase, and then Cooley LLP ("Cooley"), counsel for AcelRx, circulated a revised version on February 20, 2020. On the same day, Tetraphase delivered a revised draft of the co-promotion agreement to AcelRx.

On February 20, 2020, representatives of Tetraphase and WilmerHale spoke to representatives of AcelRx and Cooley regarding the draft co-promotion agreement. Also on February 20, 2020, Dr. Freund and Mr. Angotti met and discussed the timing of the deal and consideration.

On or about February 21, 2020, Tetraphase granted access to its data room to representatives of Company K and representatives of Company O, Company's K's sole stockholder.

On February 23, 2020, Cooley delivered a draft voting agreement for the transaction to WilmerHale.

On February 25, 2020, WilmerHale provided Cooley with comments on the draft merger agreement and the draft voting agreement, including, among others, comments related to the termination fee, the obligation to pay AcelRx's expenses in certain circumstances, certain proposed downward adjustments to the exchange ratio, the covenants applicable to both parties between signing and closing of the merger, and the conditions to the closing of the merger.

On February 26, 2020, representatives of Janney held a call with representatives of Company K to discuss a potential strategic transaction with Tetraphase.

On February 27, 2020, Mr. Edwards and representatives of Company O had an in-person meeting. During this meeting, they discussed a potential strategic transaction involving Tetraphase. Also on February 27, 2020, representatives of Janney held a call with representatives of Company O and Company K to discuss a potential transaction with Tetraphase, including the potential impact of the Black-Scholes Put Provisions.

On February 28, 2020, Company O sent representatives of Janney a non-binding proposal for the acquisition of Tetraphase in a transaction valuing the Company at $10 million in cash, plus contingent value rights, or CVRs, representing the right to receive up to an additional $5 million in cash based on attainment of certain sales milestones. Mr. Edwards shared this non-binding proposal with the Tetraphase Board later that day.

Also on February 28, 2020, representatives of AcelRx provided a capabilities presentation to representatives of Tetraphase and Janney. Representatives of Tetraphase and Janney asked questions of the representatives of AcelRx for the purpose of conducting diligence on the business prospects of AcelRx.

Also on February 28, 2020, AcelRx sent Tetraphase a further revised non-binding proposal to acquire Tetraphase in an all-stock transaction, reflecting a fixed exchange ratio in which each share of Tetraphase Common Stock would be exchanged for the right to receive 0.748 of a share of AcelRx common stock, which, based on then prevailing market prices, reflected a fully-diluted equity value of approximately $17 million, inclusive of amounts payable to the Company's warrant holders under the Black-Scholes Put Provisions. Also on February 28, 2020, Cooley sent WilmerHale a revised draft of the merger agreement for the proposed transaction.

On February 29, 2010, Cooley sent WilmerHale a revised draft of the voting agreement.

On March 1, 2020, representatives of Tetraphase, Janney and WilmerHale held a discussion regarding the Company O proposal and the revised AcelRx proposal as well as the comments received on the merger agreement, the co-promotion agreement and a proposed voting agreement pursuant to which certain stockholders of Tetraphase would agree, subject to certain terms and conditions, to vote in favor of the merger.

Also on March 1, 2020, Mr. Edwards and Ms. Stahl held a discussion with Messrs. Angotti and Asadorian and AcelRx's general counsel, regarding certain open business issues.

Also on March 1, 2020, the Tetraphase Board held a telephonic meeting to discuss the Company O proposal and the revised AcelRx proposal, including AcelRx's continued request for exclusivity. At this meeting the Tetraphase Board formed a mergers and acquisitions committee, which we refer to as the M&A Committee, consisting of Messrs. Gage, Bohlin, Boyd, Freund and Maher, to provide guidance regarding a proposed strategic transaction to Tetraphase's management and advisors between meetings of the full board.

On March 2, 2020, representatives of Janney contacted representatives of Company O to discuss their initial proposal. Representatives of Janney also contacted representatives of AcelRx's financial advisor to inform them

that another offer had been presented to Tetraphase, and encouraged AcelRx to revisit the value in their offer letter. Representatives of Janney also indicated that Tetraphase would consider granting a limited period of exclusivity if AcelRx sufficiently increased its offer.

On March 3, 2020, WilmerHale provided Cooley with a revised draft of the merger agreement and the co-promotion agreement, as well as a markup of the draft voting agreement assuming that certain shareholders would be willing to enter into such an agreement.

On March 4, 2020, Cooley and WilmerHale discussed the revised merger agreement and Mr. Edwards and Mr. Angotti also discussed certain open issues in the merger agreement.

Also on March 4, 2020, representatives of Company K and Company O contacted Janney and verbally informed them of a revised offer consisting of $15 million in cash to be paid at closing, without any CVR component. On the same day Mr. Edwards discussed the verbal revised offer with a principal of Company O. Representatives of Janney and Mr. Edwards each expressed to representatives of Company K and Company O that their revised offer was still not as attractive as an alternative offer being considered by Tetraphase and suggested that Company K and Company O should further consider their offer before submitting a revised written proposal.

On March 5, 2020, representatives of Janney held discussions with a representative of Company O regarding the potential for Company K and Company O to revise the verbal offer of March 4, 2020. Later in the day, a representative of Company O spoke to Janney and provided an update indicating that a revised written proposal would be forthcoming and that the revised proposal would be an improvement over the latest verbal offer. Also on the same day, Mr. Edwards shared this new offer with members of the M&A Committee.

Also on March 5, 2020, representatives of Janney engaged in discussions with representatives of AcelRx's financial advisor regarding various items relating to the business terms of the transaction documents, including AcelRx's desire for a closing condition and an adjustment to the purchase price tied to Tetraphase's net cash at the closing, AcelRx's desire for exclusivity and the need for AcelRx to increase its previous offer before exclusivity would be considered by the Tetraphase Board.

On March 6, 2020, representatives of Janney spoke to representatives of AcelRx's financial advisor to inform them that Tetraphase was expecting to receive a revised written proposal from a competing bidder. The Janney representatives indicated that the alternative proposal was for upfront cash consideration, rather than shares of stock as in AcelRx's proposal, and that Tetraphase was asking both parties to submit their best and final proposals by 5:00 p.m. on March 6, 2020, in advance of a Tetraphase M&A Committee meeting on March 7, 2020. In particular, representatives of Janney indicated to representatives of AcelRx's financial advisor the attractiveness to Tetraphase of the shorter timeline to closing and potential for greater closing certainty provided by the competing bid, as well as the certainty of value presented by the upfront cash consideration in the other proposal.

On March 6, 2020, representatives of Company O sent representatives of Janney an updated non-binding proposal to acquire Tetraphase for $15 million of cash at closing, plus a CVR for an additional $2.5 million based upon the attainment of $20 million of net sales in any four consecutive quarters by 2021. Also on March 6, 2020, representatives of Janney and of Company O exchanged emails and discussed by phone that Tetraphase intended to make a decision to proceed with one party or the other after the Tetraphase M&A Committee meeting on March 7, 2020. During this discussion, representatives of Company O indicated that its offer of $15 million in cash plus a CVR of up to $2.5 million in potential future value represented its "best and final" offer. Company O informed Tetraphase that it had several more weeks of diligence to complete before it would potentially be willing to convert its non-binding proposal to a binding agreement, and the Tetraphase Board determined that not only was the final AcelRx offer more attractive financially, but that AcelRx had also completed its diligence and was willing to sign a binding agreement.

On March 7, 2020, representatives of Janney and representatives of AcelRx's financial advisor conducted a phone discussion during which representatives of AcelRx's financial advisor orally provided an updated proposal from AcelRx to acquire Tetraphase in a transaction in which each share of Tetraphase Common Stock would be exchanged for the right to receive (x) 0.791 of a share of AcelRx common stock, representing on the date of the offer a fully diluted upfront equity value of approximately $20 million (inclusive of any consideration payable to warrant holders under the Black-Scholes Put Provisions), subject to a closing adjustment provision based on an assumed $5 million of net cash at Tetraphase at closing, and (y) a CVR for the pro rata portion of up to $12.5 million (payable at AcelRx's election in cash or shares of its common stock) upon the achievement of certain net sales milestones. AcelRx's financial advisor sent Janney a written copy of the non-binding proposal from AcelRx following the discussion. Over the course of March 8, 2020 through March 13, 2020, AcelRx with the assistance of its legal and financial advisors revised the exchange ratio within the offer to 0.6303 to reflect the latest fully diluted share count and the inclusion of the CVR value attributable to warrant holders under the Black-Scholes Put Provisions, both of which were not considered in the non-binding proposal from March 7, 2020. Additionally, as a result of the financial and stock markets experiencing unusual volatility from March 9, 2020 through March 13, 2020, the offer, on the date of signing, March 16, 2020, was negatively impacted by the drop in AcelRx's stock price to $1.03 per share (from $1.43 at the time of the proposal) and as a result represented as of the execution of the merger agreement a lower fully diluted upfront equity value of approximately $14.4 million (inclusive of any consideration payable to warrant holders under the Black-Scholes Put Provisions).

Also on March 7, 2020, Cooley sent to WilmerHale a revised draft of the merger agreement, voting agreement and co-promotion agreement for the proposed transaction.

Later on March 7, 2020, the M&A Committee held a telephonic meeting with representatives of Janney and WilmerHale to discuss the two revised proposals. Members of the Committee and their advisors compared and contrasted the proposals from AcelRx and Company O. Mr. Edwards and representatives of Janney both shared with the M&A Committee Company O's unwillingness to further increase its offer, and members of the M&A Committee expressed concern that, without granting exclusivity, there was a risk that AcelRx might withdraw its offer. The M&A Committee instructed management to move forward with the AcelRx proposal and authorized management to enter into an agreement with AcelRx granting exclusivity until the end of the day on Wednesday, March 11, 2020. Later that day, Janney communicated the M&A Committee's decisions to AcelRx's financial advisor. Also on this day AcelRx and Tetraphase entered into an exclusivity agreement, which provided for exclusivity through March 11, 2020.

On March 8, 2020, Janney communicated Tetraphase's decisions to Company K and Company O.

Also on March 8, 2020, representatives of Tetraphase and its outside intellectual property counsel held a diligence call with representatives of AcelRx and Cooley. A lengthy discussion also occurred between representatives of Tetraphase and WilmerHale and representatives of AcelRx and Cooley regarding the terms and conditions of the merger agreement.

On March 9, 2020, Ms. Stahl spoke to Dr. Maher of Armistice Capital regarding the Black-Scholes Put Provisions and their implications for a transaction with AcelRx.

Also on March 9, 2020, representatives of Tetraphase and representatives of AcelRx continued to negotiate the terms and conditions of the merger agreement. Revised drafts of the co-promotion agreement and merger agreement were distributed by WilmerHale to Cooley. Later that day, Cooley provided WilmerHale with a first draft of the contingent value rights agreement.

On March 10, 2020, the parties continued to negotiate the terms and conditions of the merger agreement and the other transaction documents, and WilmerHale and Cooley exchanged drafts of the merger agreement.

On March 11, 2020, Ms. Stahl and Mr. Boyd discussed the potential valuation of the warrants held by Armistice Capital and the other warrant holders for purposes of the Black-Scholes Put Provisions. Mr. Boyd informed Ms. Stahl that Armistice Capital would be willing to agree to a fixed exchange ratio for its warrants in connection with the signing of the merger agreement. Also on this day, WilmerHale and Cooley exchanged drafts of the contingent value rights agreement.

On March 12, 2020, the M&A Committee met telephonically on two occasions with representatives of Janney and WilmerHale. During these meetings the M&A Committee discussed the status of ongoing discussions and negotiations with AcelRx, including AcelRx's request for an extension of the exclusivity period, as well as the status of discussions with the holders of warrants with the Black-Scholes Put Provisions. Ms. Stahl noted that, given the current market turmoil, none of the warrant holders was willing to enter into confidentiality agreements to facilitate a discussion of these issues prior to close of market on Friday, March 13, 2020 and that the warrant holders would not be willing to be out of the market on Monday, March 16, 2020. The M&A Committee directed management to proceed with discussions with the warrant holders after market close on Friday, March 13, 2020, and to agree to an extension of exclusivity with AcelRx through 8:00 am Eastern Time on Monday, March 16, 2020. Also on this day, Cooley sent a revised draft of the merger agreement to WilmerHale and WilmerHale and Cooley exchanged drafts of the contingent value rights agreement.

On March 13, 2020, Ms. Stahl requested that warrant holders other than Armistice Capital enter into confidentiality agreements with Tetraphase, which they did following the close of market. Ms. Stahl then contacted representatives of each warrant holder requesting that they enter into voting agreements and agree to a fixed exchange ratio for the shares of common stock issuable under their warrants pursuant to the Black-Scholes Put Provisions. Also on this day, Cooley and WilmerHale exchanged drafts of the merger agreement, contingent value rights agreement and voting agreement.

On March 14, 2020, Ms. Stahl had discussions with several warrant holders regarding the specifics of the proposed transaction and the value attributable to their warrants. Following these discussions, four of the five warrant holders agreed to enter into voting agreements with AcelRx in connection with the contemplated transactions and to fix the exchange ratio for the shares of common stock issuable under their warrants pursuant to the Black-Scholes Put Provisions and the fifth warrant holder, which did not own shares of Tetraphase Common Stock, agreed to enter into an exchange agreement for the same purpose.

Also on March 14, 2020, materials were provided to the Tetraphase Board for review and consideration in anticipation of the following day's scheduled board meeting to consider approval of the proposed transactions and Cooley and WilmerHale finalized the transaction documents.

On March 15, 2020, the AcelRx Board met to discuss the contemplated transactions. The AcelRx Board unanimously approved the transactions. Also on March 15, 2020, the Tetraphase Board met to discuss the contemplated transactions. Members of the Tetraphase management team, representatives of WilmerHale and Janney also participated in this meeting. Janney delivered to the Tetraphase Board an oral opinion, which was later confirmed in writing, stating that the Merger Consideration to be received in the merger was fair, from a financial point of view, to the common stockholders of Tetraphase. The Tetraphase Board unanimously approved the merger agreement. Following these two board meetings, the parties entered into the merger agreement and the ancillary agreements. Tetraphase's warrant holders also entered into either a voting agreement or an exchange agreement with AcelRx relating to the voting of their common stock and exchange ratios of their respective warrants.

On March 16, 2020, each company separately issued a press release before the market open detailing the proposed merger of the two companies. AcelRx also held an investor call prior to market open to discuss its earnings for the year ended December 31, 2019 and to discuss the proposed merger between the two companies.

Effects of the Merger

Upon completion of the Merger, Merger Sub, an indirect wholly-owned subsidiary of AcelRx, will merge with and into Tetraphase. Tetraphase will be the Surviving Corporation and will become an indirect wholly-owned subsidiary of AcelRx.

Merger Consideration

For a discussion of Merger Consideration (including treatment of the Tetraphase Common Stock, Tetraphase equity awards and Tetraphase Warrants) and the Exchange Ratio, please see the section titled "*The Merger Agreement—Merger Consideration and Exchange Ratio*" beginning on page 90 of this proxy statement/prospectus.

Other Effects

The rights pertaining to AcelRx Common Stock will be different from the rights pertaining to Tetraphase Common Stock, because the AcelRx Charter and the AcelRx Bylaws in effect immediately after the completion of the Merger will be different from the Tetraphase Charter and the Tetraphase Bylaws, respectively. A further description of the rights pertaining to AcelRx Common Stock and the AcelRx Charter and AcelRx Bylaws is set forth under "*Comparison of Rights of Holders of AcelRx Common Stock and Tetraphase Common Stock*" beginning on page 173 of this proxy statement/prospectus.

AcelRx Board's Reasons for the Merger

The AcelRx Board authorized and approved the Merger Agreement and approved the Contemplated Transactions, including the issuance of AcelRx Common Stock as Merger Consideration, and such other agreements, instruments and documents as are contemplated by the Merger Agreement, including the Voting Agreements, Exchange Agreement and the form of CVR Agreement, as well as the Co-Promotion Agreement. The AcelRx Board also determined that the terms of the Merger Agreement, the Merger and the other Contemplated Transactions are fair to and in the best interests of AcelRx, Merger Sub and their respective stockholders.

The AcelRx Board believes the combination of the two organizations creates efficiencies resulting from commercializing multiple products with a single salesforce. The combination also creates a growth platform to further consolidate hospital-focused pharmaceutical companies and products expected to generate near-and long-term growth, additional synergies and stockholder value.

Recommendation of the Tetraphase Board; the Tetraphase Board's Reasons for the Merger

At a meeting held on March 15, 2020, the Tetraphase Board unanimously:

- determined that the Merger Agreement, the Merger and the other Contemplated Transactions are fair to, and in the best interests of, Tetraphase and its stockholders;
- approved and declared advisable the Merger Agreement, the Merger and the other Contemplated Transactions contemplated by the Merger Agreement;
- directed that the Merger Agreement be submitted for adoption at a meeting of Tetraphase stockholders; and
- recommended that Tetraphase stockholders vote in favor of the adoption of the Merger Agreement.

Accordingly, the Tetraphase Board has approved the Merger Agreement and unanimously recommends that Tetraphase stockholders vote "FOR" the merger agreement proposal, "FOR" the compensation proposal, and "FOR" the adjournment proposal.

In reaching its decision to approve and declare advisable the Merger Agreement, the Merger and the other Contemplated Transactions, the Tetraphase Board, as described in the section titled "*—Background of the Merger*" beginning on page 47 of this proxy statement/prospectus, held a number of meetings, consulted with Tetraphase's senior management and its outside legal and financial advisors, WilmerHale and Janney, respectively, and considered the business, assets and liabilities, results of operations, financial performance, strategic direction and prospects of Tetraphase and AcelRx. At its meeting held on March 15, 2020, after due consideration and consultation with Tetraphase's senior management and outside legal and financial advisors and after receipt of its financial advisor's opinion (as described in the section titled "*—Opinion of Janney Montgomery Scott LLC, Tetraphase's Financial Advisor*" beginning on page 66 of this proxy statement/prospectus), the Tetraphase Board unanimously approved and declared advisable the Merger Agreement, the Merger and the other Contemplated Transactions and recommended that Tetraphase stockholders vote in favor of the adoption of the Merger Agreement.

In making its determination, the Tetraphase Board focused on a number of reasons, including the following potential advantages and opportunities:

- the shares of AcelRx Common Stock payable at closing will provide Tetraphase equityholders with ownership of approximately 14.6% of the combined company on a fully diluted basis and therefore allow Tetraphase's stockholders to participate in the anticipated growth of the combined company, as well as any synergies resulting from the Merger;
- the fact that the shares of AcelRx Common Stock that Tetraphase stockholders would receive pursuant to the Merger Agreement would be registered and freely tradable following the completion of the Merger;
- in addition to the upfront merger consideration, each share of Tetraphase Common Stock will entitle the holder thereof to one CVR, which may provide Tetraphase stockholders with an opportunity to receive additional payments in cash or shares of AcelRx Common Stock upon the achievement of certain milestones, and AcelRx has agreed in the agreement governing the CVRs to use commercially reasonable efforts to achieve such milestones;
- the expectation that the combined company would generate potentially significant cost synergies, including cost savings relating to the sales infrastructure of the companies;
- the expectation that the combined company could also realize revenue growth, including potentially immediately following execution of the Merger Agreement from activities under the Co-Promotion Agreement;
- the information and discussions with Tetraphase's senior management and outside advisors regarding AcelRx's business, assets, financial condition, results of operations, current business strategy and prospects, including the projected results of AcelRx as a stand-alone company, and the expected pro forma effect of the Merger on the combined company;
- the recommendation of Tetraphase's senior management in favor of the Merger;
- the risk that AcelRx would withdraw its proposal to acquire Tetraphase or reduce its proposed consideration if Tetraphase elected to continue to solicit additional offers from or engage with other parties and a higher offer did not emerge;
- the risks associated with continuing to operate Tetraphase on a stand-alone basis, including the time and resources required to continue to commercialize and market XERAVA;
- the risks, costs and uncertainty associated with Tetraphase's existing cash position, including the need to obtain additional financing and the amount of cash resources that would be necessary to effect an orderly bankruptcy process;

- the view that the combined company will be led by a senior management team from AcelRx with a strong track record;
- the lack of superior alternative transactions and offers despite substantial efforts made over a significant period of time by Tetraphase's management and financial advisors to solicit strategic alternatives for Tetraphase to the transaction, including the discussions that Tetraphase's management, Tetraphase's representatives and the Tetraphase Board had with other potential strategic transaction candidates as described in the section titled "*—Background of the Merger*";
- the current financial market conditions and historical market prices, volatility and trading information with respect to Tetraphase;
- the risks, costs and timing associated with a potential liquidation or bankruptcy event of Tetraphase;
- the oral opinion of Janney, subsequently confirmed in writing, to the Tetraphase Board that, as of March 15, 2020, and based upon and subject to the various assumptions made and matters considered as set forth in its written opinion, the merger consideration pursuant to the Merger Agreement was fair from a financial point of view to the holders of shares of Tetraphase Common Stock, as more fully described under the section titled "*—Opinion of Janney Montgomery Scott LLC, Tetraphase's Financial Advisor*" beginning on page 64 of this proxy statement/prospectus and the full text of the written opinion of Janney, which is attached as *Annex E* to this proxy statement/prospectus; and
- the review by the Tetraphase Board with its advisors of the structure of the Merger and the financial and other terms of the Merger Agreement, including the parties' representations, warranties and covenants, the conditions to their respective obligations and the termination provisions as well as the likelihood of consummation of the proposed transactions and the evaluation of the Tetraphase Board of the likely time period necessary to complete the Merger, as well as the following specific aspects of the Merger Agreement:
  - the Merger is subject to the approval of the Tetraphase stockholders, who are free to approve or reject the Merger;
  - the Merger Agreement permits Tetraphase, subject to certain conditions, to respond to and negotiate unsolicited acquisition proposals prior to the time that Tetraphase's stockholders approve the Merger and to terminate the Merger Agreement to accept an unsolicited acquisition proposal that the Tetraphase Board determines is superior to the Merger;
  - the Merger Agreement permits the Tetraphase Board, subject to certain conditions, to make an adverse recommendation change to Tetraphase stockholders, in response to a superior proposal or a change in circumstances if the failure to take such action could reasonably be expected to be inconsistent with the fiduciary duties of the Tetraphase Board to Tetraphase's stockholders under applicable law;
  - stockholders are entitled to exercise their appraisal rights under the DGCL in connection with the Merger; and
  - AcelRx's obligations to consummate the Merger are not subject to any financing contingency.

The Tetraphase Board weighed these advantages and opportunities against a number of potentially negative reasons in its deliberations concerning the Merger Agreement and the Merger including:

- the number of shares of AcelRx Common Stock to be received for each outstanding share of Tetraphase Common Stock is fixed (subject to a potential downward adjustment if the Tetraphase Net Cash as calculated in connection with the closing is less than $5.0 million) and will not be increased to compensate Tetraphase stockholders in the event of a decline in the share price of AcelRx Common Stock or an increase in the share price of Tetraphase Common Stock prior to the Effective Time;
- the risk that some or all of the net sales milestones necessary to trigger the contingent payments under the CVRs may not be achieved;

- the risks and costs to Tetraphase during the pendency of the Merger, including as a result of the reduction in Tetraphase's sales force and limitation of activities in certain territories pursuant to the Co-Promotion Agreement executed simultaneously with the Merger Agreement;
- the risks and costs to Tetraphase if the Merger is not completed, including that Tetraphase's cash runway would be limited, its prospects as a stand-alone company would be materially and adversely impacted and it would likely be required to file for protection under applicable bankruptcy laws;
- the risk that AcelRx's financial performance may not meet Tetraphase's expectations and the anticipated cost synergies may not be achieved;
- the Merger Agreement contains provisions that restrict the conduct of Tetraphase's business prior to the completion of the Merger, generally requiring Tetraphase not to take certain actions with respect to the conduct of its business without the prior consent of AcelRx;
- the Merger Agreement contains provisions that could have the effect of discouraging third party offers for Tetraphase, including the restriction on Tetraphase's ability to solicit third-party proposals for alternative transactions;
- under certain circumstances under the Merger Agreement, Tetraphase may be required to pay to AcelRx (i) the Tetraphase termination fee or (ii) the AcelRx fee reimbursement, as more fully described in the section titled "*The Merger Agreement—Termination Fee and Expenses*";
- Tetraphase could incur substantial expenses related to the Merger, including in connection with any litigation that may result from the announcement or pendency of the Merger;
- the risk that Tetraphase stockholders may not approve the proposals at the Special Meeting;
- the expectation that the receipt of the Merger Consideration in exchange for shares of Tetraphase Common Stock pursuant to the Merger will generally be a taxable transaction for U.S. federal income tax purposes; and
- the other various risks associated with the Merger and the business of Tetraphase, AcelRx and the combined company, as described in the section titled "*Risk Factors*."

The Tetraphase Board considered all of these reasons as a whole and, on balance, concluded that it supported a favorable determination to approve the Merger Agreement and to make its recommendations to Tetraphase stockholders.

In addition, the Tetraphase Board was aware of and considered the interests of its directors and executive officers that are different from, or in addition to, the interests of Tetraphase stockholders generally, including the treatment of equity awards and warrants held by such directors and executive officers in the Merger described in the section titled "*Interests of Tetraphase's Directors and Executive Officers in the Merger*" beginning on page 78 of this proxy statement/prospectus and the obligation of the combined company to indemnify Tetraphase directors and officers against certain claims and liabilities.

The foregoing discussion of the information and reasons that the Tetraphase Board considered is not intended to be exhaustive, but rather is meant to include the material reasons that the Tetraphase Board considered. The Tetraphase Board collectively reached the conclusion to approve the Merger Agreement, the Merger and the other Contemplated Transactions in light of the various reasons described above and other reasons that the members of the Tetraphase Board believed were appropriate. In view of the complexity and wide variety of reasons, both positive and negative, that the Tetraphase Board considered in connection with its evaluation of the Merger, the Tetraphase Board did not find it practical, and did not attempt, to quantify, rank or otherwise assign relative or specific weights or values to any of the reasons it considered in reaching its decision and did not undertake to make any specific determination as to whether any particular reason, or any aspect of any particular reason, was favorable or unfavorable to the ultimate determination of the Tetraphase Board. In considering the reasons discussed above, individual directors may have given different weights to different reasons.

The foregoing description of Tetraphase's consideration of the reasons supporting the Merger is forward-looking in nature. This information should be read in light of the reasons discussed in the section titled "*Special Note Regarding Forward-Looking Statements*" beginning on page 35.

Opinion of Janney Montgomery Scott LLC, Tetraphase's Financial Advisor

The Tetraphase Board retained Janney Montgomery Scott LLC ("Janney") on October 23, 2019 to act as its financial advisor in connection with the Merger and requested Janney to render an opinion, as investment bankers, as of the date of the opinion, whether the Merger Consideration to be received in the Merger is fair, from a financial point of view, to the common stockholders of Tetraphase. In selecting Janney, the Tetraphase Board considered, among other things, the fact that Janney is a reputable investment banking firm with substantial experience advising companies in the healthcare sector and in providing strategic advisory services in general. Janney, as part of its investment banking business, is continuously engaged in the valuation of businesses and their securities in connection with mergers and acquisitions, negotiated underwritings, secondary distributions of listed and unlisted securities, private placements and valuations for corporate and other purposes.

On March 15, 2020, at the request of the Tetraphase Board, Janney rendered an oral opinion to the Tetraphase Board, which was subsequently confirmed in a written opinion as of the same date (the "Opinion"), that as of such date, and based upon and subject to the assumptions made, matters considered and limitations and qualifications upon the review undertaken by Janney, the Merger Consideration to be received in the Merger was fair, from a financial point of view, to the common stockholders of Tetraphase.

The full text of Janney's written Opinion to the Tetraphase Board dated March 15, 2020, is attached to this document as *Annex E* and is incorporated by reference in this document in its entirety. Holders of shares of Tetraphase's common stock should read the Opinion carefully and in its entirety. The Opinion sets forth, among other things, the assumptions made, procedures followed, matters considered and qualifications and limitations on the scope of review undertaken by Janney in rendering its Opinion. Janney's Opinion was directed to the Tetraphase Board and addressed only the fairness, from a financial point of view, as of the date of the Opinion, of the consideration to be paid to the common stockholders of Tetraphase. Janney's Opinion did not address any other aspects of the proposed Merger or the Contemplated Transactions and did not address the prices at which shares of AcelRx's common stock would trade following completion of the proposed Merger or at any time. Janney's Opinion did not and does not constitute a recommendation as to how any holder of Tetraphase's common stock should vote in connection with the proposed Merger. The summary of Janney's Opinion set forth in this document is qualified in its entirety by reference to the full text of such Opinion. The Opinion was approved by Janney's fairness opinion committee in accordance with the requirements of the Financial Industry Regulatory Authority Rule 5150.

In rendering the Opinion, Janney made such reviews, analyses and inquiries as deemed necessary and appropriate under the circumstances. Among other things, Janney:

- reviewed certain publicly available information such as annual reports, quarterly reports and SEC filings of Tetraphase and AcelRx, respectively;
- reviewed the historical financial performance, current financial position and general prospects of Tetraphase and AcelRx, respectively;
- reviewed certain internal financial and operating information with respect to the business, operations and general prospects of Tetraphase and AcelRx, including certain historical financial non-GAAP adjustments and financial forecasts prepared by the management of Tetraphase and the management of AcelRx;
- discussed Tetraphase's historical financial performance, current financial position and general prospects with members of Tetraphase's senior management team;

- discussed AcelRx's historical financial performance, current financial position and general prospects with members of AcelRx's senior management team and with Tetraphase's senior management team;
- reviewed the pro forma impact of the Merger on Tetraphase's cash flow, consolidated capitalization and certain financial measures;
- reviewed the proposed financial terms of the Merger, as set forth in the draft Agreement, dated March 13, 2020, the draft CVR Agreement, dated March 13, 2020, the draft Voting Agreement, dated March 13, 2020, and the draft Exchange Agreement, dated March 13, 2020;
- reviewed the current and historical price ranges and trading activity of Tetraphase's common stock and AcelRx's common stock;
- considered the results of Janney's efforts on behalf of Tetraphase to solicit, at the direction of Tetraphase, indications of interest from third parties with respect to a possible acquisition of Tetraphase;
- to the extent deemed relevant, analyzed the premiums paid for certain selected recent control merger and acquisition transactions of publicly traded companies and compared the implied premium of the Merger Consideration to these transactions;
- to the extent deemed relevant, analyzed information of certain selected publicly traded companies;
- to the extent deemed relevant, analyzed information of certain other selected merger and acquisition transactions and compared the Merger from a financial point of view to these other transactions to the extent information concerning such transactions was publicly available;
- discussed with the Tetraphase Board and certain members of senior management of Tetraphase the strategic aspects of the Merger, including, past and current business operations, financial condition and prospects (including their views on the risks and uncertainties of achieving Tetraphase's forecasts);
- discussed with AcelRx's senior management the strategic aspects of the Merger, including, but not limited to, past and current business operations, financial condition and prospects (including their views on the risks and uncertainties of achieving the forecasts); and
- performed such other analyses and examinations as Janney deemed appropriate.

In performing its review, Janney relied upon the accuracy and completeness of all of the financial and other information that was available from public sources, that was provided by Tetraphase and its representatives and by AcelRx and its representatives or that was otherwise reviewed, and assumed such accuracy and completeness for purposes of rendering its Opinion. Janney further relied on the assurances of management of Tetraphase and management of AcelRx that they were not aware of any facts or circumstances that would make any of such information inaccurate or misleading. Janney has not been asked to and has not undertaken any independent verification of any of such information and does not assume any responsibility or liability for the accuracy or completeness thereof. Janney has not been requested to and did not make an independent evaluation or appraisal of any of the assets or liabilities (contingent or otherwise) of Tetraphase or any of its affiliates and has not been furnished with any such evaluation or appraisal. Janney has not made any physical inspection of the properties or assets of Tetraphase.

With respect to the financial forecasts prepared by Tetraphase's management or those prepared by AcelRx's management, both management teams have confirmed that they were prepared in good faith and reflected then-currently available estimates and judgments of such management of the future financial performance of each respective company. Janney expresses no opinion or view as to such financial projections or the assumptions on which they are based or whether if the Merger were not consummated that Tetraphase's performance would be consistent with such forecasts. Janney relied only on Tetraphase's and AcelRx's historical financial information, except for the financial forecasts prepared by Tetraphase's management and the management team of AcelRx (which was assumed will be achieved) in connection with the analysis. Janney relied on the assessment by

management of Tetraphase of the strategic, financial and other benefits (including their ability to integrate the businesses) expected to result from the Merger, that such benefits will be realized in the amounts and the time periods indicated thereby, and Janney expressed no opinion with respect to such benefits or the assumptions on which they were based. Janney relied upon and assumed, without independent verification, that the actual amounts that may become payable under the CVR Agreement and the actual Merger Consideration calculated as of the closing of the Merger will not differ from the amounts thereof that Janney was directed to assume in any respect that would be material to its analyses or its Opinion. The financial and stock markets have been experiencing unusual volatility as a result of the coronavirus pandemic and Janney expressed no opinion or view as to any potential effects of such volatility on the Merger, the Company or AcelRx and the Opinion does not purport to address potential developments in any such markets.

Janney's conclusion was rendered on the basis of market, economic and other conditions prevailing as of March 15, 2020 and on the conditions and prospects, financial and otherwise, of Tetraphase, as they existed and were known on March 15, 2020. Janney's Opinion is directed only to the fairness, from a financial point of view, as of March 15, 2020, of the Merger Consideration to be received by holders of shares of Tetraphase's common stock and not any other constituency of Tetraphase and does not address the fairness of the Merger to, or any consideration received in connection therewith by, or the amount or nature of any compensation to be paid or payable to any of the officers, directors or employees of Tetraphase, whether relative to the Merger Consideration or otherwise.

Janney is not expressing any opinion as to the solvency or viability of Tetraphase, any of the other parties to the Merger Agreement, the CVR Agreement, the Voting Agreements, the Exchange Agreement or AcelRx or their respective ability to pay their debts when they become due, including any impact of the Merger thereon.

Janney's Opinion does not address the fairness of the Merger to, or any consideration received in connection therewith by, any warrant holders of Tetraphase. Furthermore, no opinion, counsel or interpretation is intended in matters that require legal, regulatory, accounting, insurance, tax or other similar professional advice. It is assumed that such opinions, counsel or interpretations have been or will be obtained from the appropriate professional sources. Furthermore, Janney relied, with the Tetraphase Board's consent, on the assessments by Tetraphase and its advisers, as to all legal, regulatory, accounting, insurance and tax matters with respect to Tetraphase and the Merger. Events occurring after March 15, 2020 may affect Janney's Opinion and the assumptions used in preparing it, and Janney did not assume any obligation to revise or reaffirm its Opinion.

Summary of Financial Analyses

The summary set forth below does not purport to be a complete description of the analyses performed by Janney, but describes, in summary form, the material elements of the presentation that Janney made to the Tetraphase Board on March 15, 2020, in connection with Janney's Opinion. In accordance with customary investment banking practice, Janney employed generally accepted valuation methods and financial analyses in reaching its Opinion as well as other financial analysis Janney deemed relevant. The following is a summary of the material financial analyses performed by Janney in arriving at its Opinion.

None of the analyses performed were assigned a greater significance by Janney than any other, nor does the order of analyses described represent relative importance or weight given to those analyses by Janney. The summary text describing each financial analysis does not constitute a complete description of Janney's financial analyses, including the methodologies and assumptions underlying the analyses, and if viewed in isolation could create a misleading or incomplete view of the financial analyses performed. The summary text set forth below does not represent and should not be viewed by anyone as constituting conclusions reached by Janney with respect to any of the analyses performed in connection with its Opinion. Rather, Janney made its determination as to the fairness of the Merger Consideration to the common stockholders of Tetraphase pursuant to the Merger Agreement, from a financial point of view, on the basis of its experience and professional judgment after considering the results of all of the analyses performed.

In performing its analyses, Janney made numerous assumptions with respect to industry performance, general business, regulatory, economic, market and financial conditions and other matters. These include, among other things, the impact of competition on the businesses of Tetraphase and the industry generally, industry growth and the absence of any adverse material change in the financial condition and prospects of Tetraphase, AcelRx, the industry or in the financial markets in general. Many of these assumptions are beyond the control of Tetraphase or AcelRx. Any estimates contained in Janney's analyses are not necessarily indicative of future results or actual values, which may be significantly more or less favorable than those suggested by such estimates. Except as otherwise noted, the information utilized by Janney in its analyses, to the extent that it is based on market data, is based on market data as it existed on or before March 13, 2020, the last market trading day prior to signing of the Merger Agreement, and is not necessarily indicative of current market conditions.

In performing its financial analyses summarized below and in arriving at its Opinion, Janney used and relied upon the financial projections of Tetraphase, those of AcelRx and the combined pro forma projections more fully described in the section titled "*Unaudited Pro Forma Condensed Combined Financial Information Financial Data*." Some of the financial analyses summarized below include information presented in tabular format. In order to fully understand the financial analyses used by Janney, the tables must be read together with the text of each summary. The tables alone do not constitute a complete description of the financial analyses and must be considered as a whole

Implied Equity Value of the Merger Consideration

The Merger Consideration consists of (1) 0.6303 shares of AcelRx common stock, or the Exchange Ratio, for each share of Tetraphase Common Stock outstanding immediately prior to the effective time of the Merger (*provided* that if the Tetraphase Net Cash is less than $5.0 million, the Exchange Ratio shall be adjusted to the ratio determined as follows: (a) (i) $20.0 million, minus (ii) the dollar amount by which the Tetraphase Net Cash is less than $5.0 million, minus (iii) $10,265,292, divided by (b) (i) 10,800,166, divided by (ii) $1.43, and) plus (2) one contingent value right per share for each share of Tetraphase Common Stock prior to the effective time of the Merger. Janney calculated the upfront value of the AcelRx stock consideration to Tetraphase by multiplying (1) the Exchange Ratio of 0.6303 by both (a) the total number of Tetraphase fully diluted shares estimated to be outstanding immediately prior to closing of 10,800,166 and by (b) AcelRx's share price of $1.03 as of March 13, 2020 to arrive at an upfront value of AcelRx stock to Tetraphase common stockholders of $7.0 million. Janney then calculated an implied present value of the aggregate amount of $12.5 million of potential CVR payments to common stockholders assuming that Tetraphase would attain the required sales milestones in the latest possible year under the CVR Agreement to adjust for the possibility that Tetraphase may not achieve the exact projected sales figures provided in the Certain Projected Information in the year forecasted. Janney then applied discount rates, based on an estimate of Tetraphase's weighted average cost of capital (as further described under the Standalone Discounted Cash Flow Analysis below), ranging from 17.6% to 21.6%, to the following list of potential CVR payments reflecting Tetraphase's achievement of sales milestones in the latest possible period under the CVR Agreement, as described above: (1) an aggregate amount of $2.5 million on December 31, 2021, (2) an aggregate amount of $4.5 million on December 31, 2024 and (3) an aggregate amount of $5.5 million on December 31, 2024. The analysis yielded a present value range of the total CVR payments of $6.0 million to $6.8 million. Janney then added this CVR value range to the upfront value of the AcelRx stock consideration, to derive a range of total implied equity value of the Merger Consideration to Tetraphase stockholders of $13.0 million to $13.8 million as shown in the following table. Janney then assumed the midpoint of the range, or $13.4 million as the implied total equity value of the Merger Consideration to Tetraphase stockholders for comparison purposes to the rest of its analyses.

($ in millions)		**Merger Consideration**
Upfront Value of AcelRx Common Stock Consideration	$	7.0
Implied Present Value of CVR Payments	$	6.0 - $6.8
Implied Equity Value of the Merger Consideration (Range)	**$**	**13.0 - $13.8**
Implied Equity Value of the Merger Consideration (Midpoint)	**$**	**13.4**

Standalone Discounted Cash Flow Analysis

Janney performed a discounted cash flow analysis on Tetraphase, which is designed to provide an implied value of a company on a standalone basis by calculating the present value of the estimated future cash flows of such company.

Tetraphase Discounted Cash Flow Analysis. Janney calculated a range of implied equity values to existing Tetraphase stockholders based on estimates of future cash flows from June 30, 2020 through December 31, 2024. Janney performed its analysis on the estimated future cash flows contained in the Tetraphase projections (see the section titled "*Certain Projected Information*." Janney first calculated the estimated unlevered free cash flows of Tetraphase (calculated as tax-effected earnings before interest and taxes less capital expenditures, plus depreciation and amortization, less the increase in net working capital or plus the decrease in net working capital, as appropriate, and plus any non-cash related adjustments). Janney utilized an illustrative terminal value in the year 2024 based on an Enterprise Value/Revenue exit multiple range of 2.25x to 2.75x that was determined based on Janney's experience and professional judgment, which included, but was not limited to, reviews of relevant multiples from the Selected Precedent Transaction Analysis below. Janney then discounted the unlevered free cash flows and terminal value to a present value as of the anticipated transaction close date of June 30, 2020, using the mid-year discount convention and a range of discount rates of 17.6% to 21.6%. The range of discount rates was derived based on Tetraphase's assumed weighted average cost of capital under the capital asset pricing model based on Janney's experience and professional judgment and included assumptions regarding post-tax cost of debt, market risk premium, equity size premium, risk free rate, beta (which was based on a re-levered adjusted beta of selected public companies in the healthcare space with similar characteristics to Tetraphase, including but not limited to anti-bacterial drug focus and similar operating metrics) and debt to total capitalization.

Janney then deducted the net debt or added the net cash, as applicable, of Tetraphase from the resulting value to derive gross equity value. Net debt (cash) was based on Tetraphase's debt and cash and cash equivalents from management projections as of June 30, 2020. Janney then deducted the present value of projected proceeds from a future $41.4 million equity financing transaction needed to fund projected cash shortfalls below the estimated cash balance on June 30, 2020 until Tetraphase achieved projected positive free cash flow, with such future equity financing proceeds discounted using 19.6%, the mid-point of the assumed discount rate range of 17.6% to 21.6% (which Janney derived based on Tetraphase's assumed cost of capital calculated under the capital asset pricing model using its experience and professional judgment) to derive adjusted gross equity value.

Based on the above-described analysis, Janney derived the following ranges of the equity value to existing holders of Tetraphase's common stock as of an assumed transaction close date of June 30, 2020:

($ in millions)	**Tetraphase Standalone DCF**
Tetraphase Implied Equity Value	**$ 6.4 - $33.6**
Implied Total Equity Value of the Merger Consideration	**$ 13.4**

Analysis of Implied Pro Forma Equity Value Impact to Tetraphase

Janney performed an illustrative analysis of the pro forma impact of the Merger on Tetraphase's equity value, which compared (1) Tetraphase's potential standalone equity value to existing common stockholders based on the Tetraphase Management Projections to (2) the combined company's potential equity value on a pro forma basis and the resultant value to existing Tetraphase common stockholders based on a discounted cash flow analysis (derived from each of the Tetraphase management projections and AcelRx management projections, including illustrative synergies, as applicable, as further described in the section titled "*Certain Projected Information*" assuming a pro forma equity split of 14.6% Tetraphase and 85.4% AcelRx and reflecting the impact of a future dilutive equity financing to address projected cash shortfalls of the combined pro forma company.

Description of Certain Pro Forma Discounted Cash Flow Assumptions. Janney calculated a range of implied pro forma equity values of the combined entity to existing Tetraphase common stockholders based on estimates of

future pro forma cash flows of both Tetraphase and AcelRx from June 30, 2020 through December 31, 2024. Janney performed its analysis on the estimated future cash flows contained in the management projections (see the section titled "*Certain Projected Information*"). The pro forma discounted cash flow analysis also included the impact of certain operational synergies expected to be achieved as a result of the Merger provided by AcelRx management, informed by discussions with Tetraphase management. Janney first calculated the estimated unlevered free cash flows of the pro forma combined entity (calculated as tax-effected earnings before interest and taxes less capital expenditures, plus depreciation and amortization, less the increase in net working capital or plus the decrease in net working capital, as appropriate, and plus any non-cash related adjustments). Janney utilized an illustrative terminal value in the year 2024 based on an Enterprise Value/Revenue exit multiple range of 2.25x to 2.75x that was determined based on Janney's experience and professional judgment, which included, but was not limited to, reviews of relevant multiples from the Selected Precedent Transaction Analysis below. Janney then discounted the unlevered free cash flows and terminal value to present value as of the anticipated transaction close date of June 30, 2020, using the mid-year discount convention and a range of discount rates of 14.7% to 18.7%. The range of discount rates was derived based on AcelRx's assumed weighted average cost of capital under the capital asset pricing model based on Janney's experience and professional judgment and included assumptions regarding post- tax cost of debt, market risk premium, equity size premium, risk free rate, beta (which was based on re-levered adjusted beta of selected public companies in the healthcare space with similar characteristics to AcelRx) and debt to total capitalization.

Janney then deducted the net debt or added the net cash, as applicable, of the combined Pro Forma entity from the resulting value to derive gross equity value. Net debt (cash) was based on Tetraphase and AcelRx's forecasted debt and cash and cash equivalents as of June 30, 2020 from management projections, and was further adjusted to deduct Tetraphase management's assumption of $10 million in transaction and severance costs for Tetraphase associated with the Merger. Janney then deducted the present value of projected proceeds from a $4.2 million future equity financing transaction needed to fund projected cash shortfalls of the combined pro forma company below the estimated cash balance on June 30, 2020 until the combined pro forma company achieved projected positive free cash flow, with such future equity financing proceeds discounted using 16.7%, which was the mid-point of the assumed of discount rate range of 14.7% to 18.7%which Janney derived based on AcelRx's assumed cost of capital calculated under the capital asset pricing model using its experience and professional judgment) to derive adjusted gross equity value.

Based on the above-described analysis, Janney derived the following ranges of equity value to the combined Pro Forma entity as of June 30, 2020: $528.7 million to $708.3 million. Tetraphase common stockholders and warrant holders, collectively, as part of the Merger Consideration, will receive 14.6% of the total Pro Forma entity, with 48.7% of the AcelRx shares issued to Tetraphase going to Tetraphase common stockholders. The analysis indicated the following implied equity value to existing Tetraphase common stockholders, who own 7.1% of the Pro Forma combined entity (48.7% of the Tetraphase portion of 14.6%).

($ in millions)	
Tetraphase Implied Common Stockholder Equity Value	**$37.5 - $50.2**
Tetraphase Common Stockholder Ownership of Pro Forma Entity	7.1%
Tetraphase Standalone Implied Equity Value	**$ 6.4 - $ 33.6**

Selected Precedent Transactions Analysis

Janney reviewed and analyzed the following 15 precedent merger and acquisition transactions, which were selected based on Janney's professional judgment and expertise and include comparable transactions with companies in the healthcare space with similar characteristics to Tetraphase, including but not limited to anti-bacterial drug focus and similar operating metrics. Using publicly available information, Janney calculated, when available, for each selected transaction, the multiple of the target company's enterprise value (calculated as equity value, plus the book value of debt, preferred stock and minority interests, minus cash and equivalents and the book value of investments in unconsolidated affiliates) implied in the relevant transaction to the target

company's estimated revenue for the trailing twelve months at the announcement date of each applicable transaction ("LTM Revenue"). Financial data for the selected companies was based on the selected companies' filings with the SEC, equity research reports, earnings transcripts, company investor presentations and press releases, FactSet Research Systems, BioCentury, Capital IQ and SNL Financial. Enterprise value and revenue calculations for certain of the selected transactions were adjusted, using publicly available information, for certain mergers and acquisitions activity.

Acquiror	Target	Announcement Date
Cumberland Pharmaceuticals, Inc.	Theravance Biopharma, Inc. (Vibativ)	11/6/2018
Ligand Pharmaceuticals	Vernalis Research	8/9/2018
Savara, Inc.	Cardeas Pharma Corp.	7/25/2018
Nabriva Therapeutics Plc	Zavante Therapeutics, Inc.	7/24/2018
Summit Therapeutics Plc	Discuva Ltd.	12/23/2017
Melinta Therapeutics, Inc.	The Medicines Company - Infectious Disease Business	11/28/2017
Cempra, Inc.	Melinta Therapeutics, Inc.	8/9/2017
NantCell, Inc.	Altor BioScience Corp.	6/27/2017
Taro Pharmaceutical Industries Ltd	Thallion Pharmaceuticals, Inc.	3/16/2017
Kasten, Inc.	Thru Pharma LLC	3/7/2017
Mast Therapeutics, Inc.	Aravas, Inc.	1/7/2017
Phagelux (Canada), Inc.	Biophage Pharma, Inc.	3/20/2015
Merck & Co., Inc.	Cubist Pharmaceuticals, Inc.	12/8/2014
Actavis Plc	Durata Therapeutics, Inc.	10/6/2014
Transcept Pharmaceuticals, Inc.	Paratek Pharmaceuticals, Inc.	7/1/2014

The following table sets forth a summary of the enterprise values as a multiple of LTM Revenue for the selected acquisitions identified above:

	EV / Revenue
High	8.4x
Low	0.9x
Mean	4.4x
Median	2.2x

In calculating the implied equity values for Tetraphase, Janney utilized LTM Revenue of $3.6 million, which corresponds to the Xerava product revenue for the year end 2019, and added the cash balances to the resulting enterprise values to arrive at the implied equity value under two scenarios: (1) the cash balance as of December 31, 2019 of $21 million and (2) the expected balance sheet cash at the assumed Merger completion date of June 30, 2020 of $5 million. The following table sets forth, for the period indicated, the reference range of revenue multiples utilized by Janney in performing its analysis and the range of the equity values for Tetraphase implied by the analysis, which were selected based upon its professional judgment and experience and after taking into consideration, among other things, the observed data for the selected transactions:

	Equity Value to:		
($ in millions)	Relevant Range of Revenue Multiples	Implied Range of Tetraphase Equity Value	Implied Total Equity Value of Merger Consideration
2019 Xerava Revenue Assuming $21 Million in Cash	2.0x - 4.5x	$ 28.4 - $37.4	$ 13.4

	Equity Value to:		
	Relevant Range of Revenue Multiples	Implied Range of Tetraphase Equity Value	Implied Total Equity Value of Merger Consideration
2019 Xerava Revenue Assuming $5 Million in Cash	2.0x - 4.5x	$ 12.2 - $21.2	$ 13.4

Premiums Paid Analysis

Janney reviewed the consideration paid in 30 selected healthcare transactions involving an enterprise value less than $500 million announced subsequent to January 1, 2017**,** selected based on Janney's professional judgment and experience in the industry. Janney calculated the premiums paid in these transactions over the applicable, unaffected stock price of the target company on the trading day one trading day prior to the announcement of the acquisition, the trading day five trading days prior to the announcement of the acquisition and the trading day 30 trading days prior to the announcement of the acquisition.

The following table sets forth the ranges of premiums paid utilized by Janney in performing its analysis, which were derived from the selected healthcare transactions identified above using the first and third quartiles to provide a representative sample range, and the ranges of the equity values of Tetraphase Common Stock implied by the analysis.

	Premiums		
	1-Day	1-Week	1-Month
First Quartile	32.2%	29.5%	31.9%
Third Quartile	56.1%	55.5%	61.6%

	Premiums		
($ in millions)	1-Day	1-Week	1-Month
Implied Equity Value	$13.9 - $ 16.4	$13.6 - $16.4	$13.9 - $17.0
Implied Total Equity Value of Merger Consideration	$ 13.4	$ 13.4	$ 13.4

Other Information

Selected Public Companies Analysis. Janney reviewed, analyzed and compared certain financial information relating to Tetraphase to corresponding publicly available financial information and market multiples for the following thirteen publicly traded antibiotic-focused companies, of which some had commercially available products and others did not:

- Commercially Available Comparable Companies
  - Basilea Pharmaceutica AG
  - Insmed Incorporated
  - Nabriva Therapeutics plc
  - Paratek Pharmaceuticals, Inc.
- Pre-Commercial Comparable Companies
  - Aridis Pharmaceuticals, Inc.
  - Cidara Therapeutics Holdings, Inc.
  - ContraFect Corporation
  - Entasis Therapeutics Holdings, Inc.
  - Iterum Therapeutics plc
  - Scynexis, Inc.
  - Spero Therapeutics, Inc.
  - Summit Therapeutics plc

Janney selected the companies used in the analysis on the basis of its experience and knowledge of companies in the industry and various factors, including the size of the company and the similarity of the lines of business to Tetraphase's lines of business, as well as the business models, service offerings and end-market exposure of such companies. As noted above, no company used as a comparison is identical to Tetraphase.

Janney reviewed, among other things, the range of enterprise values of the selected publicly traded companies (calculated as equity value, using the closing stock prices on March 13, 2020, plus the book value of debt, preferred stock and minority interests, minus cash and equivalents and the book value of investments in unconsolidated affiliates), as a multiple of estimates of revenue of the applicable selected company for calendar year 2019, 2020 and 2021. Financial data for the selected companies was based on the selected companies' filings with the SEC and publicly available equity research analyst consensus estimates from FactSet Research Systems.

The selected public companies analysis was presented for reference purposes only, and was not relied upon for valuation purposes. In its professional judgement, Janney did not compare Tetraphase, whose auditor expressed significant doubt in the company continuing as a going concern in its most recently filed 10-K, to other publicly traded companies with commercially available products that did not have a going concern opinion from their auditors. Furthermore, given the uncertainty and challenges surrounding the pre-commercial publicly traded companies in gaining regulatory approval and market acceptance of their products, Janney also did not did not compare Tetraphase to the group of pre-commercial companies, since Tetraphase already has an approved product on the market.

Miscellaneous

This summary is not a complete description of Janney's Opinion or the underlying analyses and factors considered in connection with Janney's Opinion. The preparation of a fairness opinion is a complex process involving the application of subjective business and financial judgment in determining the most appropriate and relevant methods of financial analysis and the application of those methods to the particular circumstances and, therefore, is not readily susceptible to partial analysis or summary description. Janney believes that its analyses described above must be considered as a whole and that considering any portion of such analyses and of the factors considered without considering all analyses and factors could create a misleading view of the process underlying its Opinion. No company or transaction in the analyses described above is identical to Tetraphase or the Merger.

In conducting its analyses and arriving at its Opinion, Janney utilized a variety of valuation methods. The analyses were prepared solely for the purpose of enabling Janney to provide its Opinion to the Tetraphase Board as to the fairness, from a financial point of view, to the holders of Tetraphase Common Stock of the consideration to be received by the holders of Tetraphase Common Stock in the Merger, as of the date of the Opinion, and do not purport to be an appraisal or necessarily reflect the prices at which businesses or securities actually may be sold, which are inherently subject to uncertainty.

The terms of the Merger were determined through negotiations between Tetraphase and AcelRx, and were approved by the Tetraphase Board. Although Janney provided advice to Tetraphase's management team and the Tetraphase Board during the course of these negotiations, the decision to enter into the Merger Agreement was solely that of the Tetraphase Board. Janney did not recommend any specific consideration to Tetraphase or the Tetraphase Board, or that any specific amount or type of consideration constituted the only appropriate consideration for the Merger. As described above, the Opinion of Janney and its presentation to the Tetraphase Board were among a number of factors taken into consideration by the Tetraphase Board in making its determination to approve the Merger Agreement and the Merger.

Pursuant to the terms of the engagement letters between Janney and the Tetraphase Board and between Janney and the management of Tetraphase, Tetraphase agreed to pay to Janney a retainer fee upon signing of the fairness

opinion engagement letter, a fee upon Janney's delivery of its Opinion, and a fee upon the consummation of the Merger in consideration of financial advisory services rendered in connection with the Merger, for an aggregate amount of fees of approximately $600,000. Approximately half of the amount of the total fees are contingent upon the successful completion of the Merger. The fee for rendering the Opinion is not contingent on the successful completion of the Merger or the conclusions expressed therein. In addition, Tetraphase agreed to reimburse Janney for its reasonable out-of-pocket expenses, including attorneys' fees and disbursements, and to indemnify Janney and related persons against various liabilities, including certain liabilities under the federal securities laws.

Janney, as part of its investment banking business, is continually engaged in the valuation of businesses and their securities in connection with mergers and acquisitions, negotiated underwritings, competitive biddings, secondary distributions of listed and unlisted securities, private placements and valuations for estate, corporate and other purposes. As of the date of the Opinion, Janney, on behalf of its own account and for the accounts of its customers, held 23,100 shares of common stock of Tetraphase and held 23,635 shares of common stock of AcelRx, which represents an immaterial percentage of the overall total amount of shares of all companies held by Janney for its own account and for the account of others. In the two years prior to the date hereof, Janney has not been engaged by Tetraphase or AcelRx on financial advisory or financing assignments in which it received customary investment banking fees. Janney or its affiliates may provide investment and corporate banking services to AcelRx and its respective affiliates in the future, for which Janney or its affiliates would seek customary compensation. Janney provides a full range of financial advisory and securities services and, in the course of its normal trading activities, may from time to time affect transactions and hold securities, including, without limitation, derivative securities, of Tetraphase or its affiliates for its own account and for the accounts of customers.

Certain Information Provided by the Parties

Certain Projected Information

As a matter of course, Tetraphase does not publicly disclose long-term projections of future financial results due to the inherent unpredictability and subjectivity of underlying assumptions and estimates. In connection with its evaluation of the Merger, the Tetraphase Board considered unaudited, non-public financial projections prepared by (i) Tetraphase management with respect to Tetraphase as a standalone company and (ii) AcelRx management with respect to (a) AcelRx as a standalone company and (b) the combined company, which was also used for the purposes of Janney's financial analyses and opinion (which opinion is attached to this proxy statement/prospectus as *Annex E*). We refer to these financial projections as the management projections. A summary of the management projections is set forth below. The Tetraphase management projections were provided to AcelRx.

The inclusion of the management projections below should not be deemed an admission or representation by Tetraphase, Janney, AcelRx or any of their respective officers, directors, employees, affiliates, advisors, or other representatives with respect to such projections. The management projections are not included to influence your views on the Merger described in this proxy statement/prospectus but solely to provide stockholders access to certain non-public information that was provided to the Tetraphase Board in connection with its evaluation of the Merger and to Janney to assist with its financial analyses as described in the section titled "*Opinion of Janney Montgomery Scott LLC, Tetraphase's Financial Advisor*" beginning on page 66 of this proxy statement/prospectus. The information from the management projections included below should be evaluated, if at all, in conjunction with the historical financial statements and other information regarding Tetraphase and AcelRx in their respective public filings with the SEC. Because the management projections (other than the combined company projections summarized below) were prepared on a standalone basis, they do not give effect to the proposed Merger expected to result from the acquisition.

The management projections included in this section regarding AcelRx and its business and projected synergies from the combination of both companies were prepared and provided by AcelRx management. The inclusion of

such management projections should not be deemed an admission or representation by, or in any way adopted by, AcelRx or any of its officers, directors, employees, affiliates, advisors, or other representatives with respect to such projections.

The management projections were not prepared with a view toward public disclosure, nor were they prepared with a view toward compliance with published guidelines of the SEC, the guidelines established by the American Institute of Certified Public Accountants for preparation and presentation of prospective financial information, or GAAP. Such financial measures used in the management projections were relied upon by Janney for purposes of its opinion and by the Tetraphase Board in connection with its consideration of the Merger. Such financial measures were provided to a financial advisor for the purpose of rendering an opinion that is materially related to the business combination transaction, and therefore are excluded from the definition of non-GAAP financial measures, and as a result, a reconciliation of a non-GAAP financial measure to a GAAP financial measure is not required. Accordingly, Tetraphase has not provided a reconciliation of the financial measures included in the management projections to the relevant GAAP financial measures. Neither the independent registered public accounting firm of Tetraphase, AcelRx, nor any other independent accountant has audited, reviewed, compiled, examined or performed any procedures with respect to the accompanying unaudited prospective financial information for the purpose of its inclusion herein, and accordingly, neither the independent registered public accounting firm of Tetraphase, AcelRx, nor any other independent accountant expresses an opinion or provides any form of assurance with respect thereto for the purpose of this proxy statement/prospectus. This report does not extend to the management projections and should not be read to do so.

The management projections were prepared for internal use and are subjective in many respects. As a result, these management projections are susceptible to multiple interpretations and periodic revisions based on actual experience and business developments. Although Tetraphase and AcelRx believe their respective assumptions to be reasonable, all financial projections are inherently uncertain, and Tetraphase and AcelRx expect that differences will exist between actual and projected results. Although presented with numerical specificity, the management projections reflect numerous variables, estimates, and assumptions made by Tetraphase's and AcelRx management at the time they were prepared, and also reflect general business, economic, regulatory, market, and financial conditions and other matters, all of which are difficult to predict and many of which are beyond Tetraphase's and AcelRx's control. In addition, the management projections cover multiple years, and this information by its nature becomes subject to greater uncertainty with each successive year. Furthermore, the projections prepared by AcelRx management reflect numerous variables, estimates, and assumptions made by AcelRx's management, rather than Tetraphase's management. Accordingly, there can be no assurance that the estimates and assumptions made in preparing the management projections will prove accurate or that any of the management projections will be realized.

The Tetraphase management projections include certain assumptions relating to, among other things, Tetraphase's expectations relating to revenue growth rates, including underlying assumptions relating to product pricing, market penetration, the availability and amount of reimbursement, peak U.S. sales, patent life of products, gross margins and operating costs. The projections prepared by AcelRx management include certain assumptions relating to, among other things, the pricing and volume of products sold, the share of the moderate-to-severe acute pain market and the timing to penetrate the market, production costs, the amount of selling, general and administrative expenses and the amount of capital expenditures and debt service.

The management projections are subject to many risks and uncertainties and you are urged to review (i) "*Risk Factors*" beginning on page 27 of this proxy statement/prospectus for a description of risk factors relating to the Merger. You should also read "*Special Note Regarding Forward-Looking Statements*" beginning on page 35 of this proxy statement/prospectus for additional information regarding the risks inherent in forward-looking information such as the management projections.

The inclusion of the management projections herein should not be regarded as an indication that Tetraphase, Janney, AcelRx or any of their respective affiliates or representatives considered or consider the management projections to be necessarily indicative of actual future events, and the management projections should not be

relied upon as such. The management projections do not take into account any circumstances or events occurring after the date they were prepared. Tetraphase and AcelRx do not intend to, and disclaim any obligation to, update, correct, or otherwise revise the management projections to reflect circumstances existing or arising after the date the management projections were generated or to reflect the occurrence of future events, even in the event that any or all of the assumptions or other information underlying the management projections are shown to be in error. Furthermore, the management projections do not take into account the effect of any failure of the Merger to be consummated and should not be viewed as accurate or continuing in that context.

The management projections set forth below include earnings before interest and tax ("EBIT") and unlevered free cash flow, which are (subject to the disclosure above) non-GAAP financial measures.

In light of the foregoing factors and the uncertainties inherent in financial projections, Tetraphase stockholders are cautioned not to place undue reliance, if any, on the management projections.

Tetraphase Projections

Tetraphase Base Case (in millions)

The following table presents a selected summary of the base Tetraphase management projections with respect to net sales of Xerava (the "Tetraphase Base Projections"). The Tetraphase Base Projections were prepared by Tetraphase management, made available to the Tetraphase Board and used by Janney in its financial analyses.

	2020E	2021E	2022E	2023E	2024E
Total Revenue	14.5	28.7	36.0	55.9	73.6
EBIT	(34.1)	(20.0)	(21.5)	(5.4)	9.0
Unlevered Free Cash Flow(1)	(32.5)	(26.6)	(17.1)	(2.5)	12.9

(1) Unlevered Free Cash Flow is calculated as EBIT *plus* depreciation *plus* other non-cash adjustments *minus* capital expenditures *minus* change in working capital. Excludes potential impact of net operating losses. Stock-based compensation expense is not treated as a cash expense.

Tetraphase Upside Case (in millions)

The following table presents a selected summary of the upside case Tetraphase management projections with respect to net sales of Xerava (the "Tetraphase Upside Projections"). The Tetraphase Upside Projections were prepared by Tetraphase management and made available to the Tetraphase Board.

	2020E	2021E	2022E	2023E	2024E
Total Revenue	18.4	39.2	56.8	84.4	105.5
EBIT	(31.4)	(12.9)	(7.0)	15.6	32.9
Unlevered Free Cash Flow(1)	(29.1)	(17.4)	1.4	18.4	36.8

(1) Unlevered Free Cash Flow is calculated as EBIT *plus* depreciation *plus* other non-cash adjustments *minus* capital expenditures *minus* change in working capital. Excludes potential impact of net operating losses. Stock-based compensation expense is not treated as a cash expense.

AcelRx Projections

AcelRx base case (in millions)

The following table presents a selected summary of the base AcelRx management projections with respect to sales of DSUVIA and of Zalviso in the European Union (the "AcelRx Base Projections"). The AcelRx Base Projections were prepared by AcelRx management, provided to Tetraphase, provided by Tetraphase management to the Tetraphase Board and used by Janney in its financial analyses.

	2020E	2021E	2022E	2023E	2024E
Total Revenue	14.4	46.5	132.6	217.4	283.8
EBIT	(52.0)	(30.3)	45.9	122.7	184.6
Unlevered Free Cash Flow(1)	(51.0)	(29.1)	40.3	124.8	185.1

(1) Unlevered Free Cash Flow is calculated as EBIT *plus* depreciation *plus* other non-cash adjustments *minus* capital expenditures *minus* change in working capital. Excludes potential impact of net operating losses. Stock-based compensation expense is not treated as a cash expense.

Combined pro forma company projections

Combined pro forma projections (in millions)

The following table presents a selected summary of combined revenues and certain other measures, using the Tetraphase Base Projections and AcelRx Base Projections, which give effect to certain revenue and cost synergies projections (the "Combined Pro Forma Projections"). The Combined Pro Forma Projections were prepared by AcelRx management, provided to Tetraphase, provided by Tetraphase Management to the Tetraphase Board and used by Janney in its financial analyses.

	2H 2020E	2021E	2022E	2023E	2024E
Total Revenue	22.9	75.2	168.5	273.3	357.3
EBIT	(21.0)	(22.0)	54.1	146.8	223.2
Unlevered Free Cash Flow(1)	(19.3)	(27.5)	52.9	151.9	227.6

(1) Unlevered Free Cash Flow is calculated as EBIT *plus* depreciation *plus* other non-cash adjustments *minus* capital expenditures *minus* change in working capital. Excludes potential impact of net operating losses. Stock-based compensation expense is not treated as a cash expense.

Interests of Tetraphase Directors and Executive Officers in the Merger

In considering the information described in this proxy statement/prospectus, you should be aware that Tetraphase's executive officers and directors may have economic interests in the Merger that are or were different from, or in addition to, those of Tetraphase's stockholders generally and that may create potential conflicts of interest. In addition to the rights described below in this section, the executive officers of Tetraphase may be eligible to receive some of the generally applicable benefits described under the heading "*The Merger Agreement—Employee Benefit Matters*" on page 110, and certain directors will be entitled to receive consideration as described under *"The Merger—Interests of Directors and Executive Officers in the Merger—Treatment of Outstanding Tetraphase Warrants."* The Tetraphase Board was aware of and considered those interests, among other matters, in reaching its decision to approve the Merger Agreement, the Merger and the Contemplated Transactions.

Set forth below are the descriptions of the directors' and executive officers' interests including, but not limited to, the treatment in the Merger of Tetraphase's equity compensation awards (including Tetraphase Stock Options, Tetraphase RSUs and Tetraphase PRSUs) and Tetraphase's outstanding warrants, severance and other rights that may be held by Tetraphase's executive officers under their offer letters with the Company, and the

indemnification of current and former Tetraphase directors and officers by Tetraphase after completion of the Merger. The dates used in the discussions below to quantify certain of these interests have been selected for illustrative purposes only, and they do not necessarily reflect the dates on which certain events will occur.

Equity Awards Held by Tetraphase Directors and Executive Officers

Treatment of Outstanding Equity Awards in the Merger

The general treatment of Tetraphase Stock Options, Tetraphase RSUs and Tetraphase PRSUs in the Merger, including such awards held by Tetraphase's directors and executive officers, is described under the section entitled "*The Merger Agreement—Merger Consideration and the Exchange Ratio*" beginning on page 90 of this proxy statement/prospectus. Tetraphase Stock Options, whether vested or unvested, will terminate at the Effective Time, and thus no Merger Consideration will be payable in respect of any outstanding Tetraphase Stock Options.

Effective as of five business days prior to the closing date of the Merger, each outstanding Tetraphase RSU and Tetraphase PRSU will vest in full and Tetraphase will issue to the holder one share of Tetraphase Common Stock in respect of each Tetraphase RSU and each Tetraphase PRSU that vests. The holders of the Tetraphase RSUs and Tetraphase PRSUs are required, pursuant to the applicable award agreements, to sell, on the vesting date, a number of shares that are issued in respect of such awards having a value equal to Tetraphase's tax withholding obligations. All shares of Tetraphase Common Stock issued on vesting of the Tetraphase RSUs and Tetraphase PRSUs (including the shares that are sold to satisfy tax withholding obligations and any shares that continue to be held by the holder of the award) will be treated as outstanding shares of Tetraphase Common Stock at the Effective Time and will be converted into the right to receive the Merger Consideration.

The following table sets forth, as of five business days prior to the Effective Time, assuming the Effective Time occurs on June 30, 2020 and assuming the applicable Tetraphase executive officer remains employed by Tetraphase as of five business days prior to the Effective Time, the number of Tetraphase RSUs and Tetraphase PRSUs that will vest in full, the value of the shares of Tetraphase Common Stock issued upon the vesting in full of unvested Tetraphase RSUs and Tetraphase PRSUs, and the number of shares of Tetraphase Common Stock to be sold to satisfy tax withholding obligations upon the accelerated vesting of such awards for each of Tetraphase's executive officers (such sale being required by the applicable award agreement). The Tetraphase non-employee directors do not hold any Tetraphase RSUs or Tetraphase PRSUs. The amounts shown in the following table assume that the relevant price per share of Tetraphase Common Stock as of five business days prior to the Effective Time is $1.28, which is the closing price per share of Tetraphase Common Stock on March 31, 2020, and assumes that Tetraphase must withhold income and employment taxes in respect of the compensation income realized by the executive officer at an aggregate 40% tax rate.

Name	Number of RSUs to Vest(1)	Value of Accelerated RSUs	Shares Sold to Satisfy Withholding Obligations	Number of PRSUs to Vest(2)	Value of Accelerated PRSUs	Shares Sold to Satisfy Withholding Obligations
Executive Officers						
Larry Edwards	12,500	$ 16,000	5,000	6,125	$ 7,840	2,450
Maria Stahl	7,516	$ 9,620	3,006	4,300	$ 5,504	1,720
Christopher Watt	2,666	$ 3,412	1,066	—	—	—

(1) Tetraphase RSUs granted to Larry Edwards, Maria Stahl, and Christopher Watt on January 17, 2019 and to Larry Edwards and Maria Stahl on August 1, 2019, would ordinarily vest in three equal installments on each of the first, second and third anniversaries of the applicable grant date. As described under the section entitled "*The Merger Agreement—Merger Consideration and the Exchange Ratio*" beginning on page 90 of this proxy statement/prospectus, as of five business days prior to the Effective Time, each outstanding Tetraphase RSU will vest in full.

(2) Tetraphase PRSUs granted to Larry Edwards and Maria Stahl on January 17, 2018 (the "2018 Tetraphase PRSUs"), January 17, 2019 (the "2019 Tetraphase PRSUs"), and August 1, 2019 (the "August 2019 Tetraphase PRSUs"), would ordinarily vest only if specific regulatory and commercial milestones are achieved, subject to the named executive officer's continued employment. Subject to the achievement of such regulatory and commercial milestones, the 2018 Tetraphase PRSUs would ordinarily vest in January 2021, the 2019 Tetraphase PRSUs would ordinarily vest between March 2020 and March 2022 and the August 2019 Tetraphase PRSUs would ordinarily vest between August 2020 and August 2021. As described under the section entitled "*The Merger Agreement—Merger Consideration and the Exchange Ratio*" beginning on page 90 of this proxy statement/prospectus, as of five business days prior to the Effective Time, each unvested Tetraphase PRSU will vest in full.

The following table summarizes, as of the Effective Time, the net number of shares of Tetraphase Common Stock that each of the Tetraphase executive officers will continue to hold following the vesting in full of their outstanding Tetraphase RSUs and Tetraphase PRSUs, after giving effect to the assumed number of shares sold to satisfy Tetraphase's tax withholding obligations (reflected in the table above), and assuming that such executive officer does not sell any additional shares between the vesting date and the Effective Date. The table also summarizes the Merger Consideration payable to the Tetraphase executive officers in respect of such shares. The table assumes the Effective Time occurs on June 30, 2020. The amounts shown in the following table assume that (i) the Exchange Ratio is 0.6303, (ii) the relevant price per share of AcelRx Common Stock is $1.03, the closing price on March 13, 2020 (the last trading day prior to the execution of the Merger Agreement) and (iii) the value of the CVR is $1.1574. The Tetraphase non-employee directors do not hold any Tetraphase RSUs or Tetraphase PRSUs.

Outstanding Awards

Name	Net Number of Shares Issued in Respect of RSUs as of the Effective Time	Net Number of Shares Issued in Respect of PRSUs as of the Effective Time	Value of Exchange Ratio Consideration Payable in Respect of shares issued from RSUs and PRSUs	Contingent Consideration Payable in Respect of shares issued from RSUs and PRSUs
Executive Officers				
Larry Edwards	7,500	3,675	$ 7,255	$ 12,934
Maria Stahl	4,510	2,580	$ 4,603	$ 8,206
Christopher Watt	1,600	—	$ 1,039	$ 1,852

Executive Severance Arrangements

Tetraphase has previously entered into employment agreements in the form of offer letters with each of its executive officers, which provide for severance payments and certain benefits to be made in connection with a termination of employment in certain circumstances, including for certain terminations that occur in connection with a change in control. The Merger will constitute a change in control for purposes of each executive officer's offer letter. Under these employment agreements, the change-in-control benefits are structured as "double trigger" benefits. In other words, the change in control does not itself trigger benefits; rather, benefits will be paid only if the Surviving Corporation or AcelRX, as applicable, terminates the employment of the executive without "cause" or the executive terminates his or her employment for "good reason" during the 12 months after the change in control, with "cause" and "good reason" as defined in the offer letters.

In order to receive these severance benefits, the executive officers must comply with the non-competition, non-solicitation and non-disclosure agreements previously entered into with Tetraphase. Under the non-competition, non-solicitation and non-disclosure agreements, each executive officer has agreed (i) not to compete with Tetraphase during his or her employment and for a period of one year after the termination of his or her employment, (ii) not to solicit Tetraphase's employees during his or her employment and for a period of

one year after the termination of his or her employment, (iii) to protect Tetraphase's confidential and proprietary information, and (iv) to assign to Tetraphase related intellectual property developed during the course of his or her employment. If an executive officer fails to comply with these covenants, the terminated executive officer will not be entitled to receive the severance benefits described in this section.

The offer letters generally provide, if, within 12 months following a change in control, an Tetraphase's executive officer's employment is terminated by the Surviving Corporation or AcelRX, as applicable, without cause or he or she terminates his or her employment for good reason (as defined in the applicable offer letter), subject to the executive's signing a separation agreement that will include a general release of potential claims against Tetraphase:

- in the case of Mr. Edwards, (1) he will be entitled to continue to receive his monthly base salary for a period of 18 months, (2) he will be entitled to receive a lump-sum payment equal to 100% of his target bonus at the time he ceases to be employed by the Surviving Corporation or AcelRX, as applicable, and (3) if he is eligible for and elects continuation medical coverage under COBRA, the Surviving Corporation or AcelRX, as applicable, will continue to pay the share of the insurance premiums it pays for active employees who receive the same type of medical coverage (or, if less, the monthly amount it was paying when coverage ended) for 18 months or such earlier date as he becomes eligible for coverage from another employer;
- in the case of each of Ms. Stahl and Mr. Watt, (1) she or he will be entitled to continue to receive her or his monthly base salary for a period of 12 months, (2) she or he will be entitled to receive a lump-sum payment equal to 100% of her or his target bonus at the time she or he ceases to be employed by the Surviving Corporation or AcelRX, as applicable, and (3) if she or he is eligible for and elects continuation medical coverage under COBRA, the Surviving Corporation or AcelRX, as applicable, will continue to pay the share of the insurance premiums it pays for active employees who receive the same type of medical coverage (or, if less, the monthly amount it was paying when coverage ended) for 12 months or such earlier date as she or he becomes eligible for coverage from another employer; and
- in the case of all executive officers, immediate vesting and exercisability of all stock option awards (but no acceleration of vesting of any RSU awards, unless approved by the Tetraphase Board).

Treatment of Outstanding Tetraphase Warrants

Mr. Boyd and Dr. Maher, directors of Tetraphase, are each affiliated with Armistice Capital LLC ("Armistice Capital"), which will receive consideration in exchange for the treatment of Tetraphase Warrants as described below, if the Merger is consummated. The Tetraphase Warrants will each be treated in accordance with their terms, except that, pursuant to the Voting Agreements and Exchange Agreement described below, (i) each outstanding common stock warrant issued by Tetraphase in November 2019 will be converted into the right to receive, at the closing of the Merger, 0.8813 of a share of AcelRx Common Stock for each share of Tetraphase Common Stock underlying such warrant, (ii) each outstanding common stock warrant issued by Tetraphase in January 2020 will be converted into the right to receive, at the closing of the Merger, 0.9087 of a share of AcelRx Common Stock for each share of Tetraphase Common Stock underlying such warrant, and (iii) each outstanding pre-funded warrant will be converted into the right to receive the product of (a) in the case of pre-funded warrants issued by Tetraphase in November 2019, 98.89052%, and in the case of pre-funded warrants issued by Tetraphase in January 2020, 99.88906%, and (b) each element of the Merger Consideration, for each share of Tetraphase Common Stock underlying such warrant.

On March 15, 2020, concurrently with the execution of the Merger Agreement, AcelRx entered into Voting Agreements (the "Voting Agreements") with the equityholders party thereto, including Armistice Capital, pursuant to which such equityholders agreed, among other things, to vote their shares of Tetraphase Common Stock in favor of the adoption of the Merger Agreement and any matter that would reasonably be expected to

facilitate the Merger, and agreed to certain restrictions on their ability to take actions with respect to Tetraphase and their shares of Tetraphase Common Stock. Armistice Capital holds (a) common stock warrants representing the right to purchase 5,463,827 shares of Tetraphase Common Stock and (b) pre-funded warrants representing the right to purchase 3,493,827 shares of Tetraphase Common Stock, and Armistice Capital would receive 8,382,271 shares of AcelRx Common Stock upon the closing of the Merger and CVRs.

For additional information on the outstanding Tetraphase awards held by directors Mr. Boyd and Dr. Maher, see "*The Merger Agreement—Merger Consideration and the Exchange Ratio*" beginning on page 90 of this proxy statement/prospectus and "*The Merger Agreement—Certain Relationships and Related Party Transactions*" beginning on page 194 of this proxy statement/prospectus.

Treatment of Shares of Common Stock in the Merger

Pursuant to the Merger Agreement, at the Effective Time of the Merger, each share of Tetraphase Common Stock issued and outstanding immediately prior to the Effective Time of the Merger (other than Tetraphase Common Stock to be canceled in the Merger or held by stockholders who properly exercise dissenters' rights) shall be automatically converted into the right to receive, in accordance with the terms of the Merger Agreement, (1) a number of shares of AcelRx Common Stock equal to the Exchange Ratio; *provided* that if the Tetraphase Net Cash is less than $5,000,000, the Exchange Ratio shall be adjusted to the ratio determined as follows: (a) (i) $20,000,000, *minus* (ii) the dollar amount by which the Tetraphase Net Cash is less than $5,000,000, *minus* (iii) $10,265,292, *divided* by (b) (i) 10,800,166, *divided* by (ii) $1.43, and (2) one CVR representing the right to receive certain consideration based on the achievement of net sales milestones pursuant to the CVR Agreement (together with the Exchange Ratio, the "Merger Consideration").

The following table sets forth, as of April 3, 2020, the consideration that each executive officer and director and his or her affiliates would be entitled to receive in respect of outstanding shares beneficially owned by him, her or it (excluding shares underlying Tetraphase Stock Options, Tetraphase RSUs, Tetraphase PRSUs and outstanding warrants of Tetraphase) assuming (1) a price per share of AcelRx common stock of $1.03, the closing price on March 13, 2020 (the last trading day prior to the execution of the Merger Agreement), (2) that all of the milestones under the CVR Agreement are achieved, (3) the Tetraphase Net Cash is greater than or equal to $5,000,000 and (4) the number of outstanding CVRs as of each applicable payment date is 10,800,166.

Name	Number of Shares	Value of Exchange Ratio Consideration Payable in Respect of Shares	Contingent Consideration Payable in Respect of Shares(1)
Executive Officers			
Larry Edwards	5,767	$ 3,744	$ 6,675
Maria Stahl	4,975	$ 3,230	$ 5,758
Christopher Watt	4,006	$ 2,601	$ 4,637
Non-Employee Directors			
L. Patrick Gage	7,481	$ 4,857	$ 8,658
Garen Bohlin	—	—	—
Steven Boyd(2)	1,419,507	$ 921,557	$ 1,642,923
Jeffrey Chodakewitz	—	—	—
John Freund	—	—	—
Gerri Henwood	—	—	—
Guy Macdonald	21,000	$ 13,633	$ 24,305
Keith Maher(3)	1,419,507	$ 921,557	$ 1,642,923
Nancy Wysenski	—	—	—

(1) Amount payable in respect of CVRs, assuming that the total payments under the CVR for each share will be $1.16 per share, which is calculated by dividing $12,500,000, which represents the aggregate amount of

contingent payments payable, by 10,800,166, the number of shares of Tetraphase Common Stock outstanding as of March 13, 2020, in accordance with the CVR Agreement. As described above, each CVR payment is conditioned on achieving certain milestones which may not be achieved.

(2) Consists of 1,419,507 shares of Tetraphase Common Stock held by Armistice Capital Master Fund Ltd. ("Armistice"). Mr. Boyd is the managing member of Armistice Capital and a director of Armistice.

(3) Consists of 1,419,507 shares of Tetraphase Common Stock held by Armistice. Dr. Maher is a managing director of Armistice Capital.

For information on the CVRs, see "*The CVR Agreement*" beginning on page 114 of this proxy statement/prospectus.

Employment Arrangements Between AcelRx and Tetraphase's Executive Officers

AcelRx and Tetraphase have commenced an integration planning process to determine the employment status of Tetraphase's executive officers following the Effective Time. Additional decisions regarding these individuals are expected to be made closer to, or after, the closing of the Merger.

Possible Change-in-Control Compensation

The following tables set forth the information required by Item 402(t) of Regulation S-K regarding certain compensation which each of Tetraphase's named executive officers may receive or has already received that is based on or that otherwise relates to the Merger. This compensation is sometimes referred to as "golden parachute" compensation. The "golden parachute" compensation payable to these individuals is subject to a non-binding advisory vote of Tetraphase stockholders, as described under "*Proposal 2—Advisory (Non-Binding) Vote on Merger-Related Compensation for Tetraphase Named Executive Officers*" beginning on page 45 of this proxy statement/prospectus. Assuming that the Merger is consummated and Tetraphase's named executive officers are terminated in a qualifying termination of employment and are entitled to full benefits available under their offer letters, these individuals would receive approximately the amounts set forth in the tables below.

No named executive officer will receive any pension or nonqualified deferred compensation that is based on or otherwise triggered by the consummation of the Merger. The amounts indicated below are estimates based on multiple assumptions that may or may not actually occur, including assumptions described in this proxy statement/prospectus. As a result, the actual amounts, if any, to be received by a named executive officer may differ from the amounts set forth below. Specifically, the tables below assume that (i) each named executive officer remains employed by Tetraphase through the Effective Date and that the employment of each such Tetraphase named executive officer will be terminated immediately following the Effective Time in a manner entitling the named executive officer to receive the severance benefits described under "*The Merger—Equity Awards Held by Tetraphase Directors and Executive Officers—Executive Severance Arrangements*" beginning on page 80 of this proxy statement/prospectus; (ii) no named executive officer receives any additional equity grants on or prior to the Effective Time; (iii) no named executive officer enters into new agreements with Tetraphase or AcelRx, or is otherwise legally entitled to, prior to the Effective Time, additional compensation or benefits; and (iv) no payments are delayed due to Section 409A of the Code. The amounts shown in the tables do not include the value of payments or benefits that would have been earned, or any amounts associated with equity awards that would vest pursuant to their terms, on or prior to the Effective Time, or the value of payments or benefits that are not based on or otherwise related to the Merger.

Change-in-Control Compensation

Name	Cash ($)(1)	Equity ($)(2)	Perquisites/ Bonus ($)(3)	Other ($)(4)	Total ($)
Larry Edwards	750,000	13,835	45,975	275,000	1,084,810
Maria Stahl	415,000	8,777	29,714	166,000	619,491
Christopher Watt	312,296	1,980	30,650	93,689	438,615

(1) Amount shown represents lump-sum cash severance amounts that would be payable on a "double trigger" basis if the executive officer's employment is terminated without cause or the executive officer resigns for good reason during the executive officer's applicable change in control period, as described in "*The Merger—Equity Awards Held by Tetraphase Directors and Executive Officers—Executive Severance Arrangements*" beginning on page 80 of this proxy statement/prospectus.

(2) Amount shown represents the "single trigger" accelerated vesting of the named executive officer's Tetraphase RSUs and Tetraphase PRSUs as of five business days prior to the Effective Time as described in "*The Merger—Equity Awards Held by Tetraphase Directors and Executive Officers—Executive Severance Arrangements*" beginning on page 80 of this proxy statement/prospectus. Tetraphase Options held by the named executive officers will be terminated in connection with the Merger in exchange for no consideration. For additional information on the outstanding equity awards held by the named executive officers, see the Outstanding Awards table under *"The Merger—Equity Awards Held by Tetraphase Directors and Executive Officers—Treatment of Outstanding Equity Awards in the Merger"* beginning on page 79 of this proxy statement/prospectus. The amount is based on a per-share value for Tetraphase Common Stock of $0.7428, which represents the average closing market price of Tetraphase Common Stock over the first five business days following the first public announcement of the Merger.

The following table summarizes, as of April 3, 2020, the aggregate value of the Tetraphase RSUs and Tetraphase PRSUs that are currently subject to vesting for each of Tetraphase's named executive officers, and that, as described under the section entitled "*The Merger Agreement—Merger Consideration*" beginning on page 90 of this proxy statement/prospectus, will vest in full five business days prior to the Effective Time, assuming continued employment through the Effective Time, and assuming the Effective Time occurs on June 30, 2020. All Tetraphase Stock Options, including those held by the named executive officers will terminate upon the Effective Time in exchange for no consideration.

Name	Aggregate Value of Options ($)	Aggregate Value of RSUs ($)	Aggregate Value of PRSUs ($)	Total ($)
Larry Edwards	—	9,285	4,550	13,835
Maria Stahl	—	5,583	3,194	8,777
Christopher Watt	—	1,980	—	1,980

(3) Amount shown represents the estimated value of continued employee benefit plan coverage and participation (or for certain executive officers, cash payments in respect of such coverage and participation) that would be payable on a "double trigger" basis if the executive officer's employment is terminated without cause or the executive officer resigns for good reason during the executive officer's applicable change in control period, as described in "*The Merger—Equity Awards Held by Tetraphase Directors and Executive Officers—Executive Severance Arrangements*" beginning on page 80 of this proxy statement/prospectus. The estimated amounts shown in this column are based on the benefit levels in effect on March 18, 2020, the latest practicable date to determine such amounts before the filing of this proxy statement/prospectus. Therefore, if benefit levels are changed after such date, actual payments to a named executive officer may be different than those listed in this column.

(4) Amount shown represents lump sum cash bonus severance amounts that would be payable on a "double trigger" basis if the executive officer's employment is terminated without cause or the executive officer resigns for good reason during the executive officer's applicable change in control period, as described in "*The Merger—Equity Awards Held by Tetraphase Directors and Executive Officers—Executive Severance Arrangements*" beginning on page 80 of this proxy statement/prospectus.

Indemnification; Directors' and Officers' Insurance

AcelRx has agreed to cause the Surviving Corporation, to the fullest extent permitted by the DGCL, to honor all rights to indemnification, advancement of expenses and exculpation from liabilities existing in favor of the

current or former directors or officers of Tetraphase or its subsidiaries at or prior to the Effective Time for acts or omissions occurring at or prior to the Effective Time, as such indemnification provisions are provided for in the Tetraphase Charter, the Tetraphase Bylaws or indemnification agreements between Tetraphase and such individuals. Such obligations will survive the Merger and will be honored for a period of six years from the closing date of the Merger. AcelRx has further agreed that the certificate of incorporation and bylaws (or comparable organizational documents) of the Surviving Corporation and its subsidiaries will contain provisions no less favorable with respect to indemnification, advancement of expenses and exculpation of such persons as presently set forth in the Tetraphase Charter, the Tetraphase Bylaws or the certificate of incorporation and bylaws of its subsidiaries.

For six years from the Effective Time, the Surviving Corporation must also maintain or obtain directors' and officers' liability insurance policies covering acts or omissions occurring on or prior to the Effective Time with respect to the current or former directors or officers of Tetraphase or its subsidiaries at or prior to the Effective Time to the extent that, with respect to such individuals, such policies are fully prepaid; *provided, however,* that: (i) the Surviving Corporation may instead obtain a fully prepaid policy or policies of comparable coverage or purchase, at Tetraphase's expense, a six year "tail policy"; and (ii) the annual premiums of the existing insurance policy or tail policy may not exceed 300% of the annual premiums currently paid by Tetraphase with respect to such existing insurance policy. In the event any future annual premiums for the existing insurance policy or tail policy exceed 300% of the annual premiums paid by Tetraphase as of the date of the Merger Agreement, the Surviving Corporation will be entitled to reduce the amount of coverage to the amount of coverage that can be obtained for a premium equal to 300% of such annual premiums.

Prior to the Closing, Tetraphase may, at its sole option, purchase a six year "tail policy" for the existing policy of directors' and officers' liability insurance maintained by Tetraphase as of the date of the Merger Agreement.

In the event AcelRx or the Surviving Corporation or any of their respective successors or assigns (i) consolidates with or merges into any other person and shall not be the continuing or surviving corporation or entity of such consolidation or merger or (ii) transfers all or substantially all of its properties and assets to any person, then, and in each such case, AcelRx shall ensure that the successors and assigns of AcelRx or the Surviving Corporation, as the case may be, will assume the obligations described above.

Regulatory Approvals

AcelRx and Tetraphase are not currently aware of any other material governmental consents, approvals or filings that are required prior to the parties' completion of the Merger. If the parties become aware of any notices, reports and other documents required to filed with respect to the Merger, AcelRx and Tetraphase have agreed to use reasonable best efforts to file, as soon as practicable, such notices, reports and other documents, and to submit promptly any information reasonably requested by any governmental entity in connection therewith.

Nasdaq Listing of AcelRx Common Stock; De-Listing and Deregistration of Tetraphase Common Stock After the Merger

Pursuant to the Merger Agreement, AcelRx must file a Listing of Additional Shares Notification Form with respect to the shares of AcelRx Common Stock to be issued in the Merger. The approval by Nasdaq of the listing of AcelRx Common Stock is a condition to the closing of the Merger.

Prior to the Effective Time, Tetraphase has agreed to cooperate with AcelRx and use its reasonable best efforts to enable the delisting by the Surviving Corporation of the shares of Tetraphase Common Stock from Nasdaq and the deregistration of the shares of Tetraphase Common Stock under the Exchange Act as promptly as practicable after the Effective Time.

Appraisal Rights

If the Merger is consummated, stockholders of Tetraphase who (i) did not vote in favor of the Merger or consent thereto in writing; (ii) follow the procedures set forth in Section 262 of the DGCL; and (iii) do not thereafter withdraw their demand for appraisal of such shares of Tetraphase Common Stock or otherwise lose their appraisal rights, in each case in accordance with the DGCL, will be entitled to receive appraisal for the "fair value" of their shares of Tetraphase Common Stock in accordance with Section 262 of the DGCL. Any stockholder contemplating the exercise of such appraisal rights should review carefully the provisions of Section 262 of the DGCL, particularly the procedural steps required to perfect such rights.

The following is a summary of the procedures to be followed by stockholders that wish to exercise their appraisal rights under Section 262 of the DGCL, the full text of which is attached to this proxy statement/prospectus as *Annex F*. This summary does not purport to be a complete statement of, and is qualified in its entirety by reference to, Section 262 of the DGCL and to any amendments to such section adopted or otherwise made effective after the date of this proxy statement/prospectus. Failure to follow any of the procedures of Section 262 of the DGCL may result in termination or waiver of appraisal rights under Section 262 of the DGCL. Stockholders should assume that Tetraphase will take no action to perfect any appraisal rights of any stockholder.

Any stockholder who desires to exercise his, her or its appraisal rights should review carefully Section 262 of the DGCL and is urged to consult his, her or its legal advisor before electing or attempting to exercise such rights.

Under Section 262 of the DGCL, a constituent corporation not less than 20 days prior to the stockholder meeting to vote on the merger shall notify each of the holders of any class or series of stock of such constituent corporation who are entitled to appraisal rights of the approval of the merger or consolidation and that appraisal rights are available for any or all shares of such class or series of stock of such constituent corporation, and shall include in such notice a copy of Section 262. This proxy statement/prospectus constitutes the formal notice of appraisal rights under Section 262 of the DGCL. Any holder of shares of Tetraphase Common Stock who wishes to exercise such appraisal rights or who wishes to preserve his, her or its right to do so should review the following discussion and *Annex F* carefully because failure to timely and properly comply with the procedures specified will result in the loss of appraisal rights under the DGCL.

If a stockholder elects to exercise appraisal rights under Section 262 of the DGCL, such stockholder must do all of the following:

- prior to the Special Meeting, deliver to Tetraphase at the address indicated below a written demand for appraisal of shares of Tetraphase Common Stock held, which demand must reasonably inform Tetraphase of the identity of the stockholder and that the stockholder is demanding appraisal;
- not vote in favor of the Merger or consent thereto in writing;
- continuously hold of record the shares of Tetraphase Common Stock from the date on which the written demand for appraisal is made through the Effective Time; and
- comply with the procedures of Section 262 of the DGCL for perfecting appraisal rights thereafter.

Written Demand by the Record Holder

All written demands for appraisal should be addressed to:

Tetraphase Pharmaceuticals, Inc.
480 Arsenal Way
Watertown, Massachusetts 02472
Attn: Secretary

The demand for appraisal must be executed by or for the stockholder of record, fully and correctly, as such stockholder's name appears on the stockholder's certificates (whether in book entry or on physical certificates) evidencing such stockholder's shares of Tetraphase Common Stock. If the shares of Tetraphase Common Stock are owned of record in a fiduciary capacity, such as by a trustee, guardian or custodian, the demand should be made in that capacity, and if the shares of Tetraphase Common Stock are owned of record by more than one person, as in a joint tenancy or tenancy in common, the demand must be made by or for all owners of record. An authorized agent, including one or more joint owners, may execute the demand for appraisal for a stockholder of record; however, such agent must identify the record owner or owners and expressly disclose in such demand that the agent is acting as agent for the record owner or owners of such shares of Tetraphase Common Stock.

A record stockholder, such as a broker who holds shares of Tetraphase Common Stock as a nominee for beneficial owners, some or all of whom desire to demand appraisal, must exercise rights on behalf of such beneficial owners with respect to the shares of Tetraphase Common Stock held for such beneficial owners. In such case, the written demand for appraisal must set forth the number of shares covered by such demand. Unless a demand for appraisal specifies a number of shares of Tetraphase Common Stock, such demand will be presumed to cover all shares of Tetraphase Common Stock held in the name of such record owner.

Filing a Petition for Appraisal

Within 120 days after the Effective Time, but not thereafter, the Surviving Corporation, or any holder of shares of Tetraphase Common Stock who has complied with Section 262 of the DGCL and is entitled to appraisal rights under Section 262 may commence an appraisal proceeding by filing a petition (a "Petition") in the Delaware Court of Chancery (the "Delaware Court") demanding a determination of the fair value of the shares of Tetraphase Common Stock held by all holders who did not vote in favor of the Merger or consent thereto in writing and demanded appraisal. If no such petition is filed within that 120-day period, appraisal rights will be lost for all holders of shares of Tetraphase Common Stock who had previously demanded appraisal of their shares of Tetraphase Common Stock. Tetraphase is under no obligation to and has no present intention to file a petition and holders should not assume that Tetraphase will file a petition or that it will initiate any negotiations with respect to the fair value of the shares of Tetraphase Common Stock. Accordingly, it is the obligation of the holders of shares of Tetraphase Common Stock to initiate all necessary action to perfect their appraisal rights in respect of the shares of Tetraphase Common Stock within the period prescribed in Section 262 of the DGCL.

Within 120 days after the Effective Time, any holder of shares of Tetraphase Common Stock who has complied with the requirements for exercise of appraisal rights will be entitled, upon written request, to receive from the Surviving Corporation a statement setting forth the aggregate number of shares of Tetraphase Common Stock not voted in favor of the Merger or consented thereto in writing and with respect to which demands for appraisal have been received and the aggregate number of holders of such shares of Tetraphase Common Stock. Such statement must be mailed within 10 days after a written request therefor has been received by the Surviving Corporation or within 10 days after the expiration of the period for delivery of demands for appraisal, whichever is later. Notwithstanding the foregoing requirement that a demand for appraisal must be made by or on behalf of the record owner of the shares of Tetraphase Common Stock, a person who is the beneficial owner of shares of Tetraphase Common Stock held either in a voting trust or by a nominee on behalf of such person, and as to which demand has been properly made and not effectively withdrawn, may, in such person's own name, file a petition for appraisal or request from the Surviving Corporation the statement described in this paragraph.

Upon the filing of such petition by any such holder of shares of Tetraphase Common Stock (a "Dissenting Stockholder," and such shares of Tetraphase Common Stock, "Dissenting Tetraphase Shares"), service of a copy thereof must be made upon the Surviving Corporation, which will then be obligated within 20 days to file with the Delaware Register in Chancery a duly verified list containing the names and addresses of all stockholders who have demanded payment for their shares of Tetraphase Common Stock and with whom agreements as to the value of their shares of Tetraphase Common Stock has not been reached. Upon the filing of a Petition by a Dissenting Stockholder, the Delaware Court may order a hearing and that notice of the time and place fixed for

the hearing on the Petition be mailed to the Surviving Corporation and all the Dissenting Stockholders. Notice will also be published at least one week before the day of the hearing in a newspaper of general circulation published in the City of Wilmington, Delaware, or in another publication deemed advisable by the Delaware Court. The costs relating to these notices will be borne by the Surviving Corporation.

If a hearing on the Petition is held, the Delaware Court is empowered to determine which Dissenting Stockholders have complied with the provisions of Section 262 of the DGCL and are entitled to an appraisal of their shares of Tetraphase Common Stock. The Delaware Court may require that Dissenting Stockholders submit their Share certificates for notation thereon of the pendency of the appraisal proceedings. The Delaware Court is empowered to dismiss the proceedings as to any Dissenting Stockholder who does not comply with such requirement. Accordingly, Dissenting Stockholders are cautioned to retain their Share certificates pending resolution of the appraisal proceedings. In addition, because immediately before the Effective Time, the shares of Tetraphase Common Stock were listed on a national securities exchange, the Delaware Court shall dismiss the proceedings as to all holders of such shares who are otherwise entitled to appraisal rights unless (1) the total number of shares entitled to appraisal exceeds 1% of the outstanding shares of the class or series eligible for appraisal, (2) the value of the consideration provided in the merger or consolidation for such total number of shares exceeds $1 million, or (3) the merger was approved pursuant to Section 253 or Section 267 of the DGCL.

The shares of Tetraphase Common Stock will be appraised by the Delaware Court at the fair value thereof exclusive of any element of value arising from the accomplishment or expectation of the Merger, together with interest, if any, to be paid upon the amount determined to be the fair value. Unless the Delaware Court in its discretion determines otherwise for good cause shown, interest from the Effective Time through the date of payment of the judgment will be compounded quarterly and will accrue at 5% over the Federal Reserve discount rate (including any surcharge) as established from time to time during the period between the Effective Time and the date of payment of the judgment. In determining the value, the court is to take into account all relevant factors. At any time before the entry of judgment in the proceedings, the Surviving Corporation may pay to each stockholder entitled to appraisal an amount in cash, in which case interest shall accrue thereafter as provided herein only upon the sum of (1) the difference, if any, between the amount so paid and the fair value of the shares as determined by the Delaware Court, and (2) interest theretofore accrued, unless paid at that time.

The Delaware Court may also (i) assess costs of the proceeding among the parties as the Delaware Court deems equitable and (ii) order all or a portion of the expenses incurred by any Dissenting Stockholder in connection with the appraisal proceeding, including, without limitation, reasonable attorneys' fees and fees and expenses of experts, to be charged pro rata against the value of all shares entitled to appraisal. Determinations by the Delaware Court are subject to appellate review by the Delaware Supreme Court.

Dissenting Stockholders are generally permitted to participate in the appraisal proceedings. No appraisal proceedings in the Delaware Court shall be dismissed as to any Dissenting Stockholder without the approval of the Delaware Court, and this approval may be conditioned upon terms which the Delaware Court deems just.

Stockholders considering whether to seek appraisal should bear in mind that the fair value of their shares of Tetraphase Common Stock determined under Section 262 of the DGCL could be more than, the same as, or less than the value of consideration to be issued and paid in the Merger as set forth in the Merger Agreement. Also, the Surviving Corporation may assert in any appraisal proceeding that, for purposes thereof, the "fair value" of the shares of Tetraphase Common Stock is less than the value of the consideration to be issued and paid in the Merger as set forth in the Merger Agreement.

The process of dissenting and exercising appraisal rights requires strict compliance with technical prerequisites. Stockholders wishing to dissent should consult with their own legal counsel in connection with compliance with Section 262 of the DGCL.

Any stockholder who has duly demanded and perfected appraisal rights in compliance with Section 262 of the DGCL will not, after the Effective Time, be entitled to vote his or her shares of Tetraphase Common Stock for any purpose or be entitled to the payment of dividends or other distributions thereon, except dividends or other distributions payable to holders of record of shares of Tetraphase Common Stock as of a date prior to the Effective Time.

If any stockholder who demands appraisal of shares of Tetraphase Common Stock under Section 262 of the DGCL fails to perfect, successfully withdraws or loses such holder's right to appraisal, such stockholder's shares of Tetraphase Common Stock will be deemed to have been converted at the Effective Time into the right to receive the Merger Consideration. A stockholder will fail to perfect, or effectively lose, the stockholder's right to appraisal if no petition for appraisal is filed within 120 days after the Effective Time. In addition, as indicated above, a stockholder may withdraw his, her or its demand for appraisal in accordance with Section 262 of the DGCL and accept the Merger Consideration.

This summary of appraisal rights under the DGCL is not complete and is qualified in its entirety by reference to Section 262 of the DGCL.

Under the DGCL, the holders of AcelRx Common Stock are not entitled to appraisal rights in connection with the Merger.

Accounting Treatment of the Merger

The Merger will be accounted for by AcelRx as a business combination under the acquisition method of accounting, in conformity with GAAP. Under the acquisition method of accounting, the assets and liabilities of Tetraphase as of the Effective Time will be recorded by AcelRx at their respective fair values and added to those of AcelRx. Any excess of purchase price over the fair value of the net assets will be recorded as goodwill. Tetraphase's assets and liabilities and results of operations will be consolidated from the date of the Merger.

THE MERGER AGREEMENT

The following summary describes certain material provisions of the Merger Agreement, which is attached as Annex A to this proxy statement/prospectus and which is incorporated by reference herein. The description in this section and elsewhere in this proxy statement/prospectus is qualified in its entirety by reference to the Merger Agreement. This summary does not purport to be complete and may not contain all of the information about the Merger Agreement that is important to you. AcelRx and Tetraphase encourage you to read carefully the Merger Agreement in its entirety before making any decisions regarding the Merger because it is the principal document governing the Merger.

The Merger

Subject to the terms and conditions of the Merger Agreement and in accordance with the DGCL, at the Effective Time, Merger Sub, an indirect wholly-owned subsidiary of AcelRx and a party to the Merger Agreement, will merge with and into Tetraphase. Tetraphase will continue as the Surviving Corporation.

Effective Time; Closing

The Merger will become effective upon the filing of a certificate of merger with the Secretary of State of the State of Delaware or such later time as is agreed upon by AcelRx and Tetraphase and specified in such certificate of merger. The closing of the Merger will occur no later than two business days following the day on which the conditions to the Merger set forth in the Merger Agreement and described in this proxy statement/prospectus (other than conditions which by their terms are required to be satisfied or waived at the closing, but subject to the satisfaction or waiver of such conditions at the closing) has been satisfied or waived in accordance with the Merger Agreement.

Although AcelRx and Tetraphase currently expect the Merger to be completed in the second quarter of 2020 (in the event Tetraphase's stockholders adopt the Merger Agreement), neither AcelRx nor Tetraphase can specify when or make any assurances that AcelRx and Tetraphase will satisfy or waive all of the conditions to the Merger. See "*The Merger Agreement—Conditions to the Merger*" beginning on page 93 of this proxy statement/prospectus.

Merger Consideration and the Exchange Ratio

Tetraphase Common Stock

At the Effective Time, each share of Tetraphase Common Stock outstanding immediately prior to the Effective Time (other than any Dissenting Tetraphase Shares or shares held by AcelRx, Merger Sub, Tetraphase (or in Tetraphase's treasury) or any wholly-owned subsidiary of AcelRx or Tetraphase) will be converted into the right to receive the Merger Consideration, *i.e.*, (i) a number of shares of AcelRx Common Stock equal to the Exchange Ratio and (ii) one CVR representing the right to receive the consideration set forth in the CVR Agreement. No fractional shares of AcelRx Common Stock will be issued in the Merger and Tetraphase's stockholders will receive cash in lieu of any fractional share.

Treatment of Tetraphase Options, RSUs, PRSUs and Warrants

Tetraphase Options

All Tetraphase Options, whether vested or unvested, will terminate at the Effective Time and will be of no further force and effect.

Tetraphase RSUs and Tetraphase PRSUs

Effective as of five business days prior to the closing date of the Merger, each outstanding Tetraphase RSU and Tetraphase PRSU will vest in full and Tetraphase will issue to the holder one share of Tetraphase Common Stock

in respect of each Tetraphase RSU and each Tetraphase PRSU that vests. The holders of the Tetraphase RSUs and Tetraphase PRSUs are required, pursuant to the applicable award agreements, to sell, on the vesting date, a number of shares that are issued in respect of such awards having a value equal to Tetraphase's tax withholding obligations. All shares of Tetraphase Common Stock issued on vesting of the Tetraphase RSUs and Tetraphase PRSUs (including the shares that are sold to satisfy tax withholding obligations and any shares that continue to be held by the holder of the award) will be treated as outstanding shares of Tetraphase Common Stock at the Effective Time and will be converted into the right to receive the Merger Consideration.

Tetraphase Warrants

Each outstanding and unexercised Tetraphase Warrant will be treated in accordance with its terms, except that, pursuant to the Voting Agreements and the Exchange Agreement, (i) each outstanding common stock warrant issued by Tetraphase in November 2019 will be converted into the right to receive, at the closing of the Merger, 0.8813 of a share of AcelRx Common Stock for each share of Tetraphase Common Stock underlying such Tetraphase Warrant, (ii) each outstanding common stock warrant issued by Tetraphase in January 2020 will be converted into the right to receive, at the closing of the Merger, 0.9087 of a share of AcelRx Common Stock for each share of Tetraphase Common Stock underlying such Tetraphase Warrant, and (iii) each outstanding pre-funded warrant will be converted into the right to receive the product of (a) in the case of pre-funded warrants issued by Tetraphase in November 2019, 98.89052%, and in the case of pre-funded warrants issued by Tetraphase in January 2020, 99.88906%, and (b) each element of the Merger Consideration, for each share of Tetraphase Common Stock underlying such Tetraphase Warrant.

Fractional Shares

AcelRx will not issues any fractional shares of AcelRx Common Stock in connection with the Merger. Any holder of Tetraphase Common Stock (other than any Dissenting Tetraphase Shares) who would otherwise be entitled to receive a fraction of a share of AcelRx Common Stock (after aggregating all fractional shares of AcelRx Common Stock issuable to such holder) will, in lieu of such fraction of a share, be paid in cash the dollar amount (rounded to the nearest whole cent, with numbers ending with .5 or more being rounded up to the nearest whole cent), without interest, determined by multiplying such fraction by the average closing price of a share of AcelRx Common Stock on the Nasdaq Global Select Market for the 10 most recent trading days that AcelRx Common Stock has traded ending on the trading day one day prior to the date on which the Merger becomes effective.

Exchange Ratio

The Exchange Ratio is 0.6303, but may be adjusted in the event that the Tetraphase Net Cash is less than the $5.0 million. If the Tetraphase Net Cash is less than $5.0 million, the Exchange Ratio will mean: (a) (i) (A) $9,734,708, *minus* (B) the dollar amount by which the Tetraphase Net Cash is less than $5.0 million, *divided* by (ii) 10,800,166 shares of Tetraphase Common Stock, *divided* by (b) $1.43.

"Cash and Cash Equivalents" means all cash and cash equivalents determined in a manner consistent with the manner in which such items were historically determined and in accordance with Tetraphase's financial statements (including any related notes) contained or incorporated by reference in the Tetraphase SEC Documents, and/or Tetraphase's audited balance sheet, including, for the avoidance of doubt, any cash deposits or similar amounts with respect to Tetraphase's financial credit card program.

"Tetraphase Net Cash" means, without duplication and determined in a manner consistent with the manner in which such items were historically determined and in accordance with Tetraphase's financial statements (including any related notes) contained or incorporated by reference in the Tetraphase SEC Documents, Tetraphase's audited balance sheet, and Schedule I of the disclosure schedules delivered by Tetraphase to AcelRx is connection with the Merger Agreement (a) the sum of Tetraphase and its subsidiaries' Cash and Cash

Equivalents, in each case as of the anticipated closing date for the Merger as agreed upon by Tetraphase and AcelRx, minus (b) the amount of all fees and expenses incurred by Tetraphase and its subsidiaries in connection with the Contemplated Transactions, including for the avoidance of doubt Transaction Expenses of Tetraphase and its subsidiaries, to the extent unpaid as of the closing of the Merger, minus (c) the cash cost of any unpaid "single trigger" (or "double trigger," to the extent the second trigger occurs in connection with or within 90 days following the closing of the Merger) change of control payments or severance, termination or similar payments pursuant to any agreement, contract, subcontract, grant, funding agreement, lease, instrument, note, option, warranty, purchase order, license, sublicense, insurance policy, benefit plan or other legally binding understanding, arrangement, commitment or undertaking or applicable legal requirements that are or become due to any current or former employee, director or independent contractor of Tetraphase or its subsidiaries, minus (d) the cash cost of any accrued and unpaid retention payments or other bonuses due to any current or former employee, director or independent contractor of Tetraphase or its subsidiaries as of the closing of the Merger, minus (e) all payroll or employment taxes incurred by Tetraphase or its subsidiaries in connection with any payment amounts set forth in clauses (c) or (d), the exercise of any Tetraphase Option at or prior to the Effective Time, or the vesting and settlement of Tetraphase RSUs or Tetraphase PRSUs at or prior to the Effective Time, minus (f) all withholding taxes deducted or withheld on or prior to the date of the closing of the Merger and not paid to the appropriate governmental body prior to the determination of Tetraphase Net Cash, minus (g) the expected costs and/or any premium related to the directors' and officers' insurance tail policy, minus (h) the amount of any accounts payable of Tetraphase or its subsidiaries to the extent such party is delinquent in payment by more than 60 days, minus (i) payments of the unpaid deductible amount under Tetraphase's directors' and officers' insurance reasonably expected to be payable in connection with legal proceedings initiated following the date of the Merger Agreement and before the closing of the Merger assumed by the insurer or expected to be assumed by the insurer (and if such legal proceeding relates to the Contemplated Transactions, provided that, for purposes of the reduction of Tetraphase Net Cash under clause (i), such amount will not exceed $400,000).

"Transaction Expenses" means, without duplication and subject to certain exceptions (including such exceptions with respect to any sharing of fees and/or expenses contemplated by the Merger Agreement), with respect to each party, all fees and expenses incurred by such party at or prior to the Effective Time in connection with the Contemplated Transactions and the Merger Agreement, including (a) any fees and expenses of legal counsel and accountants, the amount of fees and expenses payable to financial advisors, investment bankers, brokers, consultants, and other advisors of such party; (b) fees paid to the SEC in connection with filing this proxy statement/prospectus and the registration statement of which this proxy statement/prospectus is a part, and any amendments or supplements thereto, with the SEC; (c) any fees and expenses in connection with the printing, mailing and distribution of this proxy statement/prospectus and the registration statement of which this proxy statement/prospectus is a part and any amendments or supplements thereto; (d) only with respect to AcelRx, any fees associated with listing the shares of AcelRx Common Stock in connection with the Contemplated Transactions on Nasdaq, including the portion of AcelRx's periodic Nasdaq fees that is attributable to the shares of AcelRx Common Stock to be issued in connection with the Contemplated Transactions; and (e) only with respect to Tetraphase, any "single-trigger" (or "double trigger," to the extent the second trigger occurs in connection with or within 90 days following the closing of the Merger), bonus, severance, change-in-control payments or similar payment obligations that become due or payable to any director, officer, employee or consultant of Tetraphase upon, and solely as a result of, the consummation of the Contemplated Transactions (provided, that Transaction Expenses shall not include any amounts (i) payable as a result of any arrangements implemented or actions taken by AcelRx, or by Tetraphase or its subsidiaries after the Effective Time, or (ii) discharged prior to the closing of the Merger).

Dividends and Distributions

No dividends and distributions declared or made with respect to shares of AcelRx Common Stock with a record date after the Effective Time will be paid to the holder of any un-surrendered shares of Tetraphase Common Stock until such shares of Tetraphase Common Stock are surrendered. Following such surrender and subject to

applicable law, the holder of the shares of AcelRx Common Stock issued in exchange for such shares of Tetraphase Common Stock will be entitled, subject to the effect of applicable abandoned property, escheat or similar laws, to receive all such dividends and distributions, without interest.

Conditions to the Merger

The obligations of AcelRx, Merger Sub and Tetraphase to effect the Merger are subject to the satisfaction or waiver of the following conditions:

- no temporary restraining order, preliminary or permanent injunction or other order issued by any court of competent jurisdiction preventing, prohibiting, restraining, enjoining or rendering illegal the consummation of the Merger having been issued and continuing in effect; and
- no pending legal proceeding by a governmental body: (a) challenging or seeking to restrain, prohibit, rescind or unwind the consummation of the Merger; (b) seeking to prohibit or limit in any material respect AcelRx's ability to exercise ownership rights with respect to the stock of the Surviving Corporation; (c) relating to the Merger and that would reasonably be expected to materially and adversely affect the right or ability of AcelRx to own any of the material assets or materially limit the operation of Tetraphase's business, taken as a whole; (d) seeking to compel any of Tetraphase, AcelRx or their subsidiaries to dispose of or hold separate any material assets or material business as a result of the Merger; or (e) relating to the Merger and seeking to impose (or that would reasonably be expected to result in the imposition of) any criminal sanctions or criminal liability on AcelRx or any of the Tetraphase or its subsidiaries.

In addition, AcelRx's and Merger Sub's obligations to effect the Merger are subject to the satisfaction or waiver of the following additional conditions:

- the representations and warranties of Tetraphase set forth in the Merger Agreement relating to subsidiaries; due organization; authority; vote required; and financial advisors shall be true and correct (without giving effect to any limitation as to materiality set forth in such representation or warranty or any update of or modification to the disclosure schedules delivered by Tetraphase to AcelRx is connection with the Merger Agreement) in all material respects, as of the closing date of the Merger as if made on and as of such time (except to the extent expressly made as of a specific date, in which case as of such date);
- the representations and warranties of Tetraphase set forth in the Merger Agreement relating to capital stock shall be true and correct (without giving effect to any limitation as to materiality or Tetraphase Material Adverse Effect set forth in such representation or warranty), except for inaccuracies that do not increase aggregate value of the consideration payable of AcelRx Common Stock to be issued in the Merger by more than $325,000, as of the closing date of the Merger as if made on and as of such time (except to the extent expressly made as of a specific date, in which case as of such date);
- all other representations and warranties of Tetraphase set forth in the Merger Agreement shall be true and correct (without giving effect to any limitation as to materiality set forth in such representation or warranty or any update of or modification to the disclosure schedules delivered by Tetraphase to AcelRx is connection with the Merger Agreement), except where the failure of such representations and warranties to be so true and correct do not constitute, collectively, a Tetraphase Material Adverse Effect, as of the closing date of the Merger as if made on and as of such time (except to the extent expressly made as of a specific date, in which case as of such date);
- Tetraphase shall have performed in all material respects all obligations required to be performed by it under the Merger Agreement at or prior to the closing of the Merger;
- the affirmative vote of the holders of a majority of the shares of Tetraphase Common Stock outstanding as of the Record Date to adopt the Merger Agreement;

- since the date of the Merger Agreement, there shall not have occurred any Tetraphase Material Adverse Effect;
- the Tetraphase Net Cash shall be equal to or greater than $5.0 million at the closing of the Merger;
- AcelRx shall have received a certificate signed by the chief executive officer of Tetraphase to the effect that the aforementioned seven conditions have been satisfied;
- the registration statement of which this proxy statement/prospectus forms a part shall be declared effective by the SEC under the Securities Act with no stop order suspending such effectiveness issued by the SEC remaining in effect and no proceedings for that purpose initiated or threatened in writing by the SEC; and
- Tetraphase shall have delivered a certificate to AcelRx confirming that Tetraphase is not a "United States real property holding corporation" as defined in Section 897 of the Code.

In addition, Tetraphase's obligations to effect the Merger are subject to the satisfaction or waiver of the following additional conditions:

- the representations and warranties of AcelRx set forth in the Merger Agreement relating to due organization; authorized and outstanding AcelRx capital stock; authority; and ownership of Tetraphase capital stock shall be true and correct (without giving effect to any limitation as to materiality set forth in such representation or warranty or any update of or modification to the disclosure schedules delivered by AcelRx to Tetraphase is connection with the Merger Agreement) in all material respects, as of the closing date of the Merger as if made on and as of such time (except to the extent expressly made as of a specific date, in which case as of such date);
- all other representations and warranties of AcelRx set forth in the Merger Agreement shall be true and correct (without giving effect to any limitation as to materiality set forth in such representation or warranty or any update of or modification to the disclosure schedules delivered by AcelRx to Tetraphase is connection with the Merger Agreement), except where the failure of such representations and warranties to be so true and correct do not constitute, collectively, an AcelRx Material Adverse Effect, as of the closing date of the Merger as if made on and as of such time (except to the extent expressly made as of a specific date, in which case as of such date);
- each of AcelRx and Merger Sub shall have performed in all material respects all obligations required to be performed by it under the Merger Agreement at or prior to the closing of the Merger;
- the registration statement of which this proxy statement/prospectus forms a part shall be declared effective by the SEC under the Securities Act with no stop order suspending such effectiveness issued by the SEC remaining in effect and no proceedings for that purpose initiated or threatened in writing by the SEC;
- since the date of the Merger Agreement, there shall not have occurred any AcelRx Material Adverse Effect;
- the shares of AcelRx Common Stock issuable as Merger Consideration shall have been approved for listing on Nasdaq;
- Tetraphase shall have received a certificate signed by the chief executive officer of AcelRx to the effect that the aforementioned six conditions have been satisfied;
- the affirmative vote of the holders of a majority of the shares of Tetraphase Common Stock outstanding as of the Record Date to adopt the Merger Agreement; and
- the CVR Agreement shall have been executed by the parties thereto and shall be in full force and effect.

"AcelRx Material Adverse Effect" means any effect, change, claim, event or circumstance, that, considered together, is or would reasonably be expected to be or to become materially adverse to, or has or would reasonably be expected to have or result in a material adverse effect on the business, financial condition or results of operations of AcelRx and its subsidiaries taken as a whole, but in no event shall any of the foregoing resulting from any of the following, alone or in combination, be deemed to constitute, or be taken into account in determining whether there has occurred or could or would occur, an AcelRx Material Adverse Effect: (i) conditions generally affecting the industries in which any of AcelRx or its subsidiaries participates or the U.S. or global economy as a whole, to the extent that such conditions do not have a materially disproportionate impact on AcelRx or its subsidiaries, taken as a whole as compared to other industry participants; (ii) general conditions in the financial markets, and any changes therein, and any changes arising out of acts of terrorism, war, weather conditions, viruses, pandemics or other force majeure events, to the extent that such conditions do not have a materially disproportionate impact on AcelRx or its subsidiaries, taken as a whole, as compared to other industry participants; (iii) changes in the trading price or trading volume of AcelRx Common Stock, or the suspension of trading in or delisting of AcelRx's securities on Nasdaq; (iv) changes in GAAP (or any interpretations of GAAP) or legal requirements applicable to AcelRx or any of its subsidiaries; (v) the failure to meet public estimates or forecasts of revenues, earnings of other financial metrics, in and of itself, or the failure to meet internal projections, forecasts or budgets of revenues, earnings or other financial metrics, in and of itself; (vi) any stockholder litigation arising from or relating to the Merger Agreement or the Contemplated Transactions and/or relating to a breach of the fiduciary duties of the AcelRx's Board to the AcelRx's stockholders under applicable legal requirements; (vii) resulting or arising out of the execution, announcement or performance of the Merger Agreement or the Contemplated Transactions, including loss of employees, suppliers or customers (including customer orders or contracts) resulting directly from the announcement or pendency of the Merger Agreement or the Contemplated Transactions; or (viii) the taking of any action expressly required to be taken pursuant to the Merger Agreement or the taking of any action requested by Tetraphase to be taken pursuant to the terms of the Merger Agreement to the extent taken in accordance with such request.

"Tetraphase Material Adverse Effect" means any effect, change, claim, event or circumstance, that, considered together, is or would reasonably be expected to be or to become materially adverse to, or has or would reasonably be expected to have or result in a material adverse effect on the business, financial condition or results of operations of Tetraphase and its subsidiaries taken as a whole, but in no event shall any of the foregoing resulting from any of the following, alone or in combination, be deemed to constitute, or be taken into account in determining whether there has occurred or could or would occur, a Tetraphase Material Adverse Effect: (i) conditions generally affecting the industry in which Tetraphase or its subsidiaries participate or the U.S. or global economy as a whole, to the extent that such conditions do not have a materially disproportionate impact on Tetraphase or its subsidiaries taken as a whole as compared to other industry participants; (ii) general conditions in the financial markets, and any changes therein, and any changes arising out of acts of terrorism, war, weather conditions, viruses or pandemics or other force majeure events, to the extent that such conditions do not have a materially disproportionate impact on Tetraphase or any of its subsidiaries, taken as a whole, as compared to other industry participants; (iii) changes in the trading price or trading volume of Tetraphase Common Stock, or the suspension of trading in or delisting of Tetraphase's securities on Nasdaq; (iv) changes in GAAP (or any interpretations of GAAP) or legal requirements applicable to Tetraphase or any of its subsidiaries; (v) the failure to meet public estimates or forecasts of revenues, earnings of other financial metrics, in and of itself, or the failure to meet internal projections, forecasts or budgets of revenues, earnings or other financial metrics, in and of itself; (vi) any stockholder litigation arising from or relating to the Merger Agreement or the Contemplated Transactions and/or relating to a breach of the fiduciary duties of Tetraphase Board to Tetraphase's stockholders under applicable legal requirements; (vii) resulting or arising out of the execution, announcement or performance of the Merger Agreement or the Contemplated Transactions, including the loss of employees, suppliers or customers (including customer orders or contracts); or (viii) the taking of any action expressly required to be taken pursuant to the Merger Agreement or the taking of any action requested by AcelRx to be taken pursuant to the terms of the Merger Agreement to the extent taken in accordance with such request.

No Solicitation of Acquisition Proposals

The Merger Agreement prohibits, subject to certain exceptions, Tetraphase from soliciting an alternative transaction to the Merger. Under these "no solicitation" provisions, Tetraphase agreed to (and to cause its subsidiaries to) and to direct its and their representatives to immediately cease any solicitation, discussions or negotiations with any persons that may have been ongoing as of the date of the Merger Agreement with respect to an Acquisition Proposal. In addition, from the date of the Merger Agreement until the earlier of the date of the adoption of the merger agreement proposal by the Tetraphase stockholders or the termination of the Merger Agreement in accordance with its terms, Tetraphase will not, and will cause each of its subsidiaries and cause its and their representatives not to, directly or indirectly:

- solicit, initiate or knowingly facilitate or knowingly encourage any inquiries or the making of any proposal or offer that constitutes, or would reasonably be expected to lead to, an Acquisition Proposal;
- engage in, continue or otherwise participate in any discussions or negotiations regarding, or furnish to any other person any non-public information in connection with an Acquisition Proposal or any proposal or offer that would reasonably be expected to lead to an Acquisition Proposal; or
- adopt any resolution for the purpose of exempting any person (other than AcelRx and its subsidiaries) from the restriction on "business combinations" or any similar provision contained in applicable takeover law or Tetraphase's organizational or other governing documents.

The Merger Agreement also required Tetraphase to, and to cause its subsidiaries and direct its and their representatives, to promptly (but in no event later than within five business days of the date of the Merger Agreement), request the return from, or destruction by, all third parties of all non-public information previously furnished or made available to such parties by or on behalf of the Tetraphase and its subsidiaries relating to any possible Acquisition Proposal within six months prior to the date of the Merger Agreement (and Tetraphase must use commercially reasonable efforts to have such information returned or destroyed) and on the date of the Merger Agreement terminate all physical and electronic data room access previously granted to any such party or its representatives.

Notwithstanding these restrictions, the Merger Agreement also provides that if, at any time from the date of the Merger Agreement until the earlier of the date of the adoption of the merger agreement proposal by the Tetraphase stockholders or the termination of the Merger Agreement in accordance with its terms, Tetraphase or any of its subsidiaries receives a *bona fide*, written Acquisition Proposal made or renewed after the date of the Merger Agreement (and is not withdrawn), and did not result from any material breach of certain Tetraphase non-solicitation and board recommendation obligations, that the Tetraphase Board determines in good faith, after consultation with its independent financial advisors and outside legal counsel, constitutes or could reasonably be expected to lead to a Superior Offer and that failure to take such action could reasonably be expected to be inconsistent with the fiduciary duties of the Tetraphase Board to the Tetraphase stockholders under applicable legal requirements, Tetraphase may take the following actions:

- Furnish, pursuant to (but only pursuant to) an Acceptable Confidentiality Agreement, information (including non-public information) to the person or group of persons who has made such Acquisition Proposal; *provided*, that Tetraphase shall provide to AcelRx (substantially concurrently with providing access to any such other person) any such non-public information that is provided to any person given such access which was not previously made available to AcelRx or its representatives; and
- engage in, continue or otherwise participate in discussions or negotiations (including the solicitation of revised Acquisition Proposals) (and waive such person's noncompliance with any provision of any "standstill" agreement to the extent (but only to the extent) necessary to permit such discussions) with the person or group of persons making such Acquisition Proposal and its or their representatives.

The Merger Agreement requires that Tetraphase promptly (and in no event later than one business day after receipt) notify AcelRx orally and in writing of any Acquisition Proposal received by Tetraphase, its subsidiaries, or any of its representatives. Tetraphase must also provide to AcelRx the identity of the person making or submitting such Acquisition Proposal, a copy of any written Acquisition Proposal (and any other written material provided by such person with respect to such Acquisition Proposal to the extent setting forth a material clarification to the material terms and conditions thereof) and a summary of the material terms and conditions of any such Acquisition Proposal that is presented orally. Tetraphase must keep AcelRx reasonably informed of any material developments regarding any such Acquisition Proposal on a reasonably prompt basis, including by providing reasonably prompt (and in any event within one business day) notice of all material amendments or modifications thereto and a copy of any final definitive agreement Tetraphase would be prepared to execute, subject to the terms and conditions of the Merger Agreement. Tetraphase has agreed that it and its subsidiaries will not enter into any confidentiality agreement with any person subsequent to the date of the Merger Agreement that prohibits Tetraphase from providing any information to AcelRx in accordance with the non-solicitation provisions of the Merger Agreement.

Tetraphase (other than as permitted under the “no solicitation” provisions described above) has also agreed that it (i) will not, and it will ensure that none of its subsidiaries will, release or permit the release of any person from, or amend, waive or permit the amendment or waiver of any provision of, any “standstill” or similar agreement or provision to which any of Tetraphase or its subsidiaries is or becomes a party or under which any of Tetraphase or its subsidiaries has or acquires any rights and (ii) will use its reasonable best efforts to enforce or cause to be enforced each such agreement or provision.

In the event any of Tetraphase’s subsidiaries or representatives takes any action which, if taken by Tetraphase, would constitute a breach of its non-solicitation obligations in the Merger Agreement, Tetraphase will be deemed to be in breach of such non-solicitation obligations in the Merger Agreement.

An “Acceptable Confidentiality Agreement” means any customary confidentiality agreement containing provisions as to confidentiality that are materially no less favorable to Tetraphase than those contained in the Confidentiality Agreement and does not prohibit Tetraphase from providing any information to AcelRx in accordance with certain of the non-solicitation provisions in the Merger Agreement and certain obligations with respect to the Tetraphase Adverse Change in Recommendation. Tetraphase shall provide to AcelRx (substantially concurrently with providing access to any such other person) any such non-public information that is provided to any person given such access that was not previously made available to AcelRx or its representatives.

The Special Meeting

Tetraphase has agreed, as promptly as reasonably practicable following the date of the Merger Agreement, in accordance with applicable law and its governing documents, take all action necessary to establish a record date for, duly call, give notice of, convene and, as soon as reasonably practicable after the effectiveness of the registration statement of which this proxy statement/prospectus is a part (and on a date selected in consultation with AcelRx), hold the Special Meeting to vote on a proposal to adopt the Merger Agreement. Tetraphase will submit such proposal to such holders at the Special Meeting and will not submit any other proposal to such holders in connection with the Special Meeting without the prior written consent of AcelRx.

Tetraphase will (i) take all action necessary under all applicable laws to establish a Record Date for, duly call, give notice of and convene a Special Meeting to vote on the merger agreement proposal; (ii) submit such proposal to such holders at the Special Meeting; and (iii) not submit any other proposal to such holders in connection with the Special Meeting without the prior written consent of AcelRx. Tetraphase, in consultation with AcelRx, will set a Record Date for persons entitled to notice of, and to vote at, the Special Meeting. Subject to the rights to postpone or adjourn the Special Meeting set forth below, the Special Meeting will be held (on a date selected by Tetraphase in consultation with AcelRx) as promptly as reasonably practicable after the Form S-4 Registration Statement is declared effective under the Securities Act, and in any event will be initially scheduled to be held no later than 45 days thereafter.

Tetraphase will use commercially reasonable efforts to ensure that all proxies solicited by it and its representatives in connection with the Special Meeting are solicited in compliance with all laws. Notwithstanding anything to the contrary contained in the Merger Agreement, if either AcelRx or Tetraphase reasonably believes it is necessary to ensure that (A) Tetraphase will receive proxies sufficient to obtain the required approval of the holders of Tetraphase Common Stock at the Special Meeting for the adoption of the Merger Agreement, whether or not a quorum would be present at the Special Meeting, or (B) Tetraphase will have sufficient shares of Tetraphase Common Stock represented (whether in person or by proxy) to constitute a quorum necessary to conduct the business of the Special Meeting, Tetraphase may, or, at the request of AcelRx, will, postpone or adjourn the Special Meeting, on one or multiple occasions, as long as the date of the Special Meeting is not postponed or adjourned more than an aggregate of 45 calendar days in connection with such postponement or adjournment. Tetraphase agrees that, unless the Merger Agreement will have been terminated, its obligation to hold the Special Meeting will not be affected by the commencement, public proposal, public disclosure or communication to Tetraphase or any of its subsidiaries of any Acquisition Proposal or by any Tetraphase Adverse Change in Recommendation.

Subject to each party's termination rights described in "*The Merger Agreement —Termination Fee and Expenses*" beginning on page 103 of this proxy statement/prospectus, Tetraphase agrees that its obligations to duly call, give notice of and convene the Special Meeting, as applicable, will not be affected, including if a competing proposal or superior proposal shall have been made or received or if the board of directors shall have effected a recommendation change or announced or proposed any intention to do so.

Tetraphase Board Recommendation

Until the earlier of the date of the adoption of the merger agreement proposal by the Tetraphase stockholders or the termination of the Merger Agreement in accordance with its terms, none of the Tetraphase Board or any committee of the Tetraphase Board shall: (1) (A) withhold, withdraw, qualify or modify in a manner adverse to AcelRx, or resolve to or publicly propose to withhold, withdraw, qualify, or modify in a manner adverse to AcelRx, the recommendation that the Tetraphase stockholders vote to adopt the Merger Agreement at the Special Meeting (the "Tetraphase Board Recommendation," (B) remove the Tetraphase Board Recommendation from this proxy statement/prospectus or (C) approve, recommend or declare advisable, or publicly propose to approve, recommend or declare advisable, any Acquisition Proposal (any action described in this clause (1) being referred to as a "Tetraphase Adverse Change in Recommendation") or (2) adopt, approve, recommend, submit to stockholders or declare advisable, or propose to adopt, approve, recommend, submit to stockholders or declare advisable, or allow Tetraphase or any of its subsidiaries to execute or enter into any letter of intent (whether or not binding), term sheet, merger agreement, acquisition agreement, option agreement, agreement in principle or similar agreement providing for any Acquisition Proposal, or requiring Tetraphase to abandon, terminate, delay or fail to consummate the Contemplated Transactions (other than an Acceptable Confidentiality Agreement).

The Tetraphase Board may, however, prior to the adoption of the merger agreement proposal by the Tetraphase stockholders, effect a Tetraphase Adverse Change in Recommendation or terminate the Merger Agreement to substantially concurrently enter into a binding written definitive acquisition agreement providing for the consummation of a transaction constituting a Superior Offer (a "Specified Agreement") and pay the termination fee pursuant to the Merger Agreement if (and only if):

- a *bona fide* written Acquisition Proposal is made to Tetraphase (that has not been withdrawn);
- such Acquisition Proposal did not result from a material breach of certain Tetraphase non-solicitation obligations in the Merger Agreement;
- the Tetraphase Board determines in good faith, after consultation with outside legal counsel and independent financial advisors, that such Acquisition Proposal is a Superior Offer and that the failure to take such action could reasonably be expected to be inconsistent with the fiduciary duties of the Tetraphase Board to the Tetraphase stockholders under applicable legal requirements;

- Tetraphase provides AcelRx prior written notice of its intention to consider making a Tetraphase Adverse Change in Recommendation or terminate the Merger Agreement pursuant to the Superior Offer Termination Right at least four business days prior to making any such Tetraphase Adverse Change in Recommendation or termination (a "Determination Notice");
- Tetraphase has made available to AcelRx the identity of the offeror, a summary of the material terms and conditions of the Acquisition Proposal and copies of all written materials and other documents required under the non-solicitation provisions of the Merger Agreement;
- Tetraphase has given AcelRx the four business days after the Determination Notice to propose revisions to the terms of the Merger Agreement or make other proposals and shall have made available its representatives to negotiate with AcelRx with respect to such proposed revisions or other proposal, if any (*provided*, that AcelRx may revise such offer or proposal in response to any revisions to a Superior Offer);
- after considering any such revised proposal from AcelRx, including whether such proposal was a written, binding and irrevocable offer, and the results of any such negotiations and giving effect to the proposals made by AcelRx, if any, after consultation with outside legal counsel and its independent financial advisors, the Tetraphase Board shall have determined in good faith that such Acquisition Proposal is a Superior Offer and that the failure to make the Tetraphase Adverse Change in Recommendation and/or terminate the Merger Agreement pursuant to the Superior Offer Termination Right could reasonably be expected to be inconsistent with the fiduciary duties of the Tetraphase Board to the Tetraphase stockholders under applicable legal requirements; and
- if Tetraphase intends terminate the Merger Agreement to enter into a Specified Agreement, Tetraphase has complied with the termination provisions of the Merger Agreement pursuant to the Superior Offer Termination Right, including the payment of the termination fee.

If there are any material amendments to such Acquisition Proposal, a new Determination Notice must be delivered to AcelRx except the references to four business days will be reduced to two business days.

Further, the Tetraphase Board may, prior to the adoption of the merger agreement proposal by the Tetraphase stockholders, make a Tetraphase Change of Recommendation in response to a Change in Circumstance if (and only if):

- the Tetraphase Board determines in good faith, after consultation with Tetraphase's outside legal counsel, that the failure to take such action could reasonably be expected to be inconsistent with the fiduciary duties of the Tetraphase Board to the Tetraphase stockholders under applicable legal requirements;
- Tetraphase has given AcelRx a Determination Notice at least four business days prior to making any such Tetraphase Adverse Change in Recommendation;
- Tetraphase has specified the Change in Circumstance in reasonable detail including a summary of the material facts and circumstances involved in such Change in Circumstance;
- Tetraphase has given AcelRx the four business days after the Determination Notice to propose revisions to the terms of the Merger Agreement or make other proposals and shall have made available its representatives to negotiate with AcelRx with respect to such proposed revisions or other proposal, if any, such that the applicable Change in Circumstance would no longer necessitate a Tetraphase Adverse Change in Recommendation under the Merger Agreement; and
- after considering any such proposal, including whether such proposal was a written, binding and irrevocable offer, and the results of such negotiations and giving effect to the proposals made by AcelRx, if any, after consultation with outside legal counsel and its independent financial advisors, the Tetraphase Board shall have determined in good faith that the failure to make the Tetraphase Adverse Change in Recommendation could reasonably be expected to be inconsistent with the fiduciary duties of the Tetraphase Board to the Tetraphase stockholders under applicable legal requirements.

If there is a material change to the status of such Change in Circumstance, a new Determination Notice must be delivered to AcelRx except the references to four business days will be reduced to two business days.

“Acquisition Proposal” means any offer or proposal (other than an offer or proposal by AcelRx) for an Acquisition Transaction.

“Acquisition Transaction” means any transaction or series of related transactions (other than the Contemplated Transactions) for: (i) any acquisition or purchase from Tetraphase or any of its subsidiaries by any person or “group” (as defined in or under Section 13(d) of the Exchange Act), directly or indirectly, of more than a 15% beneficial or record interest in the total outstanding voting securities of any class (or instruments convertible into or exercisable or exchangeable for more than 15% of any such class) of Tetraphase, including pursuant to a stock purchase, merger, consolidation, tender offer, share exchange or other transaction involving Tetraphase or any of its subsidiaries; (ii) any tender offer (including self-tender) or exchange offer that if consummated would result in any person or “group” (as defined in or under Section 13(d) of the Exchange Act) owning (beneficially or on record) more than 15% of the total outstanding voting securities of any class (or instruments convertible into or exercisable or exchangeable for more than 15% of any such class) of Tetraphase; (iii) any merger, consolidation, business combination, share exchange, issuance of securities, acquisition of securities, reorganization, recapitalization or other similar transaction for more than 15% of the voting securities of Tetraphase or the consolidated assets of Tetraphase or its subsidiaries, taken as a whole; (iv) any sale, lease, exchange, transfer, exclusive license or disposition, in each case, other than in the ordinary course of business, of more than 15% of the consolidated assets of Tetraphase or its subsidiaries, taken as a whole (measured by the lesser of book or fair market value thereof); or (v) any combination of the foregoing.

“Change in Circumstance” means any material event, development or change in circumstances with respect to Tetraphase and its subsidiaries that (a) was neither known to, nor was reasonably foreseeable by, the Tetraphase Board on or prior to the date of the Merger Agreement and (b) does not relate to an Acquisition Proposal.

“Superior Offer” means any *bona fide* written Acquisition Proposal involving an Acquisition Transaction that is not subject to any financing contingency, which the Tetraphase Board shall have determined (after consultation with its independent financial advisor and its outside legal counsel) (a) is reasonably likely to be consummated in accordance with its terms, taking into account all legal, regulatory and financing aspects (including certainty of financing and certainty of closing) of the proposal, the person making the proposal and other aspects of the Acquisition Proposal that the Tetraphase Board deems relevant and (b) if consummated, would be more favorable to the Tetraphase stockholders (in their capacity as such) and creditors than the transaction contemplated under the Merger Agreement; *provided*, that for purposes of the definition of “Superior Offer”, the references to “15%” in the definition of Acquisition Proposal shall be deemed to be references to “80%.”

Efforts to Consummate the Merger; Regulatory Matters

Each of AcelRx, Merger Sub and Tetraphase have agreed to use its reasonable best efforts to cause the closing of the Merger to occur and effect the Contemplated Transactions, including to:

- make all filings (if any) and give all notices (if any) required to be made and given in connection with the Merger and the other Contemplated Transactions;
- use reasonable best efforts to obtain each consent (if any), including pursuant to any applicable legal requirement and under any contracts, necessary to permit the consummation of the Merger (*provided*, neither AcelRx nor Tetraphase will be required to pay any monies or agree to any material undertaking in connection with any such consent that may be required); and
- use reasonable best efforts to lift any restraint, injunction or other legal bar to the Merger.

Each of AcelRx and Tetraphase agreed to, as soon as practicable after the date of the Merger Agreement, cooperate with each other and use reasonable best efforts to file all governmental notices, reports and other

documents required to be filed with respect to the Merger and the other Contemplated Transactions, and to submit promptly any information reasonably requested by any governmental body. Tetraphase and AcelRx must also (i) give the other party prompt notice upon becoming aware of the commencement or known threat of commencement of any legal proceeding by or before any governmental body with respect to the Merger or any of the other Contemplated Transactions, (ii) keep the other party reasonably informed as to the status of any such legal proceeding or threat, and (iii) in connection with any such legal proceeding, permit authorized representatives of the other party to be present at each meeting or conference relating to any such legal proceeding and to have access to and be consulted in connection with any document, opinion or proposal made or submitted to any governmental body in connection with any such legal proceeding.

Termination

The Merger Agreement may be terminated, and the Merger abandoned, at any time prior to the Effective Time under the following circumstances:

- by mutual written consent of AcelRx and Tetraphase;
- by either AcelRx or Tetraphase if a court of competent jurisdiction or other governmental body has issued a final and nonappealable order, or has taken any other final and nonappealable action, having the effect of permanently restraining, enjoining or otherwise prohibiting the Merger; *provided*, that this termination right is not available to AcelRx or Tetraphase if the issuance of such final and nonappealable order results primarily from the failure on the part of AcelRx or Tetraphase, respectively, to perform any covenant or obligation in the Merger Agreement required to be performed by it at or prior to the Effective Time;
- by either AcelRx or Tetraphase if the Tetraphase stockholders have taken a final vote on the proposal to adopt the Merger Agreement at the Special Meeting, as adjourned or postponed from time to time, and the Merger Agreement has not been adopted (the "Approval Failure Termination Right");
- by AcelRx at any time prior to the adoption of the Merger Agreement by the Tetraphase stockholders, if, whether or not permitted to do so: (i) the Tetraphase Board or any committee thereof has made a Tetraphase Adverse Change in Recommendation; (ii) Tetraphase, the Tetraphase Board or any committee thereof has adopted, approved, recommended, submitted to stockholders, declared advisable, executed or entered into, or resolved to do the same, any letter of intent, term sheet, merger agreement, acquisition agreement, option agreement, agreement in principle or similar agreement providing for any Acquisition Proposal, or requiring Tetraphase to abandon, terminate, delay or fail to consummate the Contemplated Transactions (other than an Acceptable Confidentiality Agreement); (iii) following the public disclosure of an Acquisition Proposal (other than a tender or exchange offer which is the subject of clause (iv) below), the Tetraphase Board fails to publicly reaffirm its recommendation that the Tetraphase stockholders adopt the Merger Agreement within five business days after AcelRx requests in writing (*provided* that, AcelRx may only make such request on two occasions); (iv) a tender offer or exchange offer for outstanding shares of Tetraphase Common Stock has been commenced (other than by the AcelRx or an affiliate of AcelRx) and the Tetraphase Board has recommended that the Tetraphase stockholders tender their shares in such tender or exchange offer or, within 10 business days after the commencement of such tender or exchange offer, the Tetraphase Board has failed to recommend against acceptance of such offer; (v) Tetraphase has materially breached its non-solicitation and board recommendation obligations set forth in the Merger Agreement; or (vi) other than in connection with an Acquisition Proposal, Tetraphase has failed to issue a press release that reaffirms the Tetraphase Board's recommendation that the Tetraphase stockholders adopt the Merger Agreement within five business days after AcelRx requests in writing (*provided* that, AcelRx may only make such request on two occasions) (each of the foregoing "Triggering Event"), *provided*, that any such termination pursuant to a Triggering Event must occur within 10 business days of the applicable Triggering Event;

- by either AcelRx or Tetraphase if the Merger has not been consummated by July 15, 2020; *provided*, *however*, that this termination right is not available to either party if the failure to consummate the Merger by July 15, 2020 resulted primarily from such party's failure to perform any of its obligations under the Merger Agreement at or prior to the Effective Time (the "Termination Date Termination Right");
- by Tetraphase at any time prior to the adoption of the Merger Agreement by the Tetraphase stockholders, in order to, substantially concurrent with such termination, enter into a Specified Agreement if (i) Tetraphase has not materially breached certain of its non-solicitation and board recommendation obligations set forth in the Merger Agreement with respect to such Superior Offer, (ii) the Tetraphase Board has authorized Tetraphase to enter into such Specified Agreement and (iii) substantially concurrently with such termination, Tetraphase pays the termination fee described below (the "Superior Offer Termination Right");
- by AcelRx if Tetraphase breaches any of it representations and warranties or covenants or obligations contained in the Merger Agreement such that the applicable closing condition would not be satisfied (or, if capable of being cured by July 15, 2020, shall remain uncured for 30 days following written notice from AcelRx to Tetraphase of such breach); *provided*, *that* this termination right is not available if AcelRx or Merger Sub is then in material breach of any of its representations, warranties, covenants or obligations under the Merger Agreement (the "Tetraphase Breach Termination Right"); or
- by Tetraphase if AcelRx breaches any of it representations and warranties or covenants or obligations contained in the Merger Agreement such that the applicable closing condition would not be satisfied (or, if capable of being cured by July 15, 2020, shall remain uncured for 30 days following written notice from Tetraphase to AcelRx of such breach); *provided*, *that* this termination right is not available if Tetraphase is then in material breach of any of its representations, warranties, covenants or obligations under the Merger Agreement.

If the Merger Agreement is terminated in accordance with the termination provisions described above, it will have no effect or liability thereunder on the part of any party thereto, subject to certain exceptions including any obligation to pay the termination fees and expenses described below. No such termination, however, will relieve AcelRx, Merger Sub or Tetraphase, as applicable, from liability for intentional common fraud or Tetraphase's willful breach of its pre-closing operating covenants under the Merger Agreement by entering into or otherwise initiating bankruptcy proceedings.

Termination Fee and Expenses

AcelRx, Merger Sub and Tetraphase will generally each pay its own fees and expenses in connection with the Merger, whether or not the Merger is consummated. However, AcelRx and Tetraphase will share equally all fees and expenses, other than attorneys' fees, incurred in connection with the filing, printing and mailing of this proxy statement/prospectus and the registration statement of which this proxy statement/prospectus is a part and any amendments or supplements thereto.

In addition, Tetraphase must pay a termination fee of $810,000 to AcelRx, if:

- Tetraphase terminates the Merger Agreement pursuant to the Superior Offer Termination Right, which termination fee must be paid prior to or concurrently with the termination of the Merger Agreement and execution of the Specified Agreement;
- AcelRx terminates the Merger Agreement due to a Triggering Event, which termination fee must be paid two business days after such termination;
- Tetraphase or AcelRx terminates the Merger Agreement pursuant to the Approval Failure Termination Right;

- Tetraphase or AcelRx terminates the Merger Agreement pursuant to the Termination Date Termination Right; or
- AcelRx terminates the Merger Agreement pursuant to the Tetraphase Breach Termination Right.

With respect to the last three bullets above, the Termination Fee is payable by Tetraphase only if (i) prior to such termination, an Acquisition Proposal is publicly announced and not withdrawn; and (ii) within 12 months of such termination Tetraphase has consummated an Acquisition Proposal or entered into a definitive agreement with respect to any Acquisition Proposal that is thereafter consummated; *provided*, that for purposes of this clause (ii) the references to "15%" in the definition of "Acquisition Transaction" shall be deemed to be references to "50%". If such conditions are met, Tetraphase must pay to AcelRx the termination fee within two business days of consummation of such Acquisition Proposal.

Further, if the Merger Agreement is terminated pursuant to the Approval Failure Termination Right, Tetraphase must reimburse AcelRx for any transaction expenses, including disbursements and fees of outside legal counsel and outside strategic advisors, incurred by AcelRx in connection with the Merger Agreement or the Contemplated Transactions, up to $200,000. Such reimbursement must be paid by Tetraphase within two business days after AcelRx's demand for reimbursement. Such reimbursement may only be paid on one occasion. If Tetraphase fails to promptly pay the termination fee or such reimbursement when such payment becomes payable, Tetraphase must also pay AcelRx its reasonable and documented costs and expenses (including reasonable and documented fees of outside legal counsel) in connection with enforcing its right to such payment, together with interest on such payment at the prime rate published in The Wall Street Journal in effect on the date such payment was required to be made, plus 2% per annum, through the date such payment was actually received.

If AcelRx receives full payment of the termination fee, then the receipt of the termination fee by AcelRx will be the sole and exclusive remedy of AcelRx and Merger Sub for any liability or damage relating to or arising out of the Merger Agreement or the Merger (other than any reimbursement of AcelRx's expenses, if applicable); however, no such payment will relieve AcelRx, Merger Sub or Tetraphase, as applicable, from liability or damages for any intentional common law fraud.

Conduct of Business Pending the Merger

Tetraphase has agreed to, until the earlier of the Effective Time and the termination of the Merger Agreement in accordance with its terms and subject to certain exceptions (including such exceptions as disclosed in the disclosure schedules delivered by Tetraphase to AcelRx in connection with the Merger Agreement, as otherwise contemplated by the Merger Agreement, as required by legal requirements or existing Tetraphase contracts that have been made available to AcelRx or that are otherwise not required to be made available pursuant to the terms of the Merger Agreement, or with AcelRx's written consent (not to be unreasonably withheld, conditioned or delayed)), use commercially reasonable best efforts to (i) cause each of Tetraphase and its subsidiaries to conduct its business and operations in the ordinary course and in accordance in all material respects with past practice and to pay its debt, payables and taxes when due (including taxes due in connection with the vesting or settlement of Tetraphase RSUs or Tetraphase PRSUs pursuant to the Merger Agreement), and (ii) attempt to ensure that each of each of Tetraphase and its subsidiaries preserves intact the material components of its current business organization and maintains its relations and goodwill with all material suppliers, material customers, material licensors and governmental bodies.

In addition, Tetraphase has agreed not to, except as disclosed in the disclosure schedules delivered by Tetraphase to AcelRx in connection with the Merger Agreement, as otherwise contemplated by the Merger Agreement, as required by legal requirements, or with AcelRx's written consent (not to be unreasonably withheld, conditioned or delayed):

- declare, accrue, set aside or pay any dividend or make any other distribution in respect of any shares of capital stock, or repurchase, redeem or otherwise reacquire any shares of capital stock or other

securities, other than: (A) dividends or distributions between or among any of Tetraphase or its subsidiaries to the extent consistent with past practice; (B) pursuant to Tetraphase's right to repurchase restricted stock held by an employee of Tetraphase upon termination of such employee's employment; or (C) in connection with the withholding of shares of Tetraphase Common Stock to satisfy tax obligations with respect to the exercise of Tetraphase Options, vesting of Tetraphase RSUs or settlement of Tetraphase PRSUs;

- sell, issue, grant or authorize the sale, issuance or grant of: (A) any capital stock or other security; (B) any option, call, warrant or right to acquire any capital stock or other security; or (C) any instrument convertible into or exchangeable for any capital stock or other security (except that Tetraphase may issue shares of Tetraphase Common Stock upon the valid exercise of Tetraphase Options or Tetraphase Warrants outstanding as of the date of the Merger Agreement);
- amend or waive any of its rights under, or accelerate the vesting under, any provision of any of the Tetraphase Option Plans, any provision of any agreement evidencing any outstanding stock option, any restricted stock unit grant, or performance-based vesting restricted stock unit grant, or otherwise modify any of the terms of any outstanding option, restricted stock unit, warrant or other security or any related contract;
- subject to certain exceptions under the Merger Agreement, amend, terminate or grant any waiver under any standstill agreements;
- amend or permit the adoption of any amendment to the Tetraphase Charter or Tetraphase Bylaws or other charter or organizational documents;
- (A) acquire any equity interest or other interest in any other entity; (B) form any subsidiary; (C) effect or become a party to, or adopt a plan of complete or partial liquidation, dissolution, business combination, amalgamation, merger, consolidation, employee restructuring, recapitalization, other reorganization of Tetraphase or its subsidiaries, or any share exchange, reclassification of shares, stock split, reverse stock split, division or subdivision of shares, consolidation of shares or similar transaction;
- make any capital expenditure (except any capital expenditure that: (A) is provided for in Tetraphase's budget made available to AcelRx prior to the date of the Merger Agreement; or (B) when added to all other capital expenditures made on behalf of all of Tetraphase and its subsidiaries since the date of the Merger Agreement but not provided for in Tetraphase's budget made available to AcelRx prior to the date of the Merger Agreement, does not exceed $50,000 in the aggregate);
- (A) enter into or become bound by, or permit any of the assets owned or used by it to become bound by, any material contract or any other contract that would be a material contract had it been in effect at the signing of the Merger Agreement; or (B) amend, terminate, or waive any material right or remedy under, any material contract, other than termination thereof upon the expiration of any such contract in accordance with its terms or if permitted by the terms of such material contract, upon a material breach thereof by the counterparty thereto;
- acquire, lease or license any right or other asset from any other person or sell or otherwise dispose of, or lease or license, any right or other asset to any other person (except in each case for assets: (A) acquired, leased, licensed or disposed of by Tetraphase in the ordinary course of business consistent in all material respects with past practice; or (B) that are immaterial to the business of Tetraphase and its subsidiaries, taken as a whole);
- make any pledge of any of its material assets or permit any of its material assets to become subject to any encumbrances, except for encumbrances permitted under the Merger Agreement and encumbrances that do not materially detract from the value of such assets or that do not materially impair the operations of any of Tetraphase or its subsidiaries (taken as a whole);
- lend money to any person (other than intercompany indebtedness and routine travel and business expense advances made to directors or employees, in each case in the ordinary course of business), or,

except in the ordinary course of business consistent in all material respects with past practice, incur or guarantee any indebtedness;

- establish, adopt, enter into any new, amend, terminate or take any action to accelerate rights or payments under, or exercise discretion with respect to performance under, any employee plan or employment agreement (except entering into customary releases with departing employees), pay any bonus or make any profit-sharing or similar payment to, or increase the amount of the wages, salary, commissions, fringe benefits or other compensation (including equity-based compensation, whether payable in stock, cash or other property), any other similar payment (including severance, change of control or termination payments) or remuneration payable to, any of its directors or any of its officers or other employees, except that Tetraphase: (A) may amend existing employee plans to the extent required by applicable legal requirements or the applicable provisions of the Merger Agreement; and (B) may make payments and provide such benefits in accordance with employee plans or employment agreements existing on the date of the Merger Agreement);
- hire any employee;
- other than as required by concurrent changes in GAAP or SEC rules and regulations, change any of its methods of accounting or accounting practices in any respect;
- make, change or revoke any material election in respect of taxes, amend any material tax return, adopt or change any material accounting method in respect of taxes, settle or compromise any material governmental proceeding with respect to taxes, surrender any right or claim of a material refund of tax, request any tax ruling, enter into any closing agreement within the meaning of Section 7121 of the Code (or any similar provision of other applicable legal requirement), enter into any tax sharing or similar contract or arrangement, consent to any extension or waiver of the limitation period applicable to any tax claim or assessment (other than in the ordinary course of an audit);
- commence any legal proceeding, except with respect to: (A) routine matters in the ordinary course of business consistent in all material respects with past practice involving only claims for monetary damages of not more than $200,000 in the aggregate; (B) in such cases where Tetraphase reasonably determines in good faith that the failure to commence suit could result in a material impairment of a valuable aspect of its business (*provided* that Tetraphase consults with AcelRx in advance and considers the views and comments of AcelRx); or (C) in connection with the Contemplated Transactions or a breach of the Merger Agreement or the other agreements listed in the definition of “Contemplated Transactions;”
- settle any material legal proceeding, other than pursuant to a settlement: (A) that results solely in monetary obligation involving payment by Tetraphase or its subsidiaries of the amount specifically reserved in accordance with GAAP with respect to such legal proceedings on Tetraphase’s most recent audited balance sheet; (B) that results solely in monetary obligation involving only the payment of monies by Tetraphase or its subsidiaries of not more than $50,000 in the aggregate; or (C) pursuant to or otherwise in accordance with the Merger Agreement;
- enter into any contract covering any Tetraphase employee, or make any payment to any Tetraphase employee, that, considered individually or considered collectively with any other such contracts or payments, will, or would reasonably be expected to, be characterized as a “parachute payment” within the meaning of Section 280G(b)(2) of the Code in connection with the Contemplated Transactions;
- recognize, or enter into, any collective bargaining agreement or any other contract or other agreement with any labor organization, except as otherwise required by applicable legal requirements and after advance notice to AcelRx; or
- agree or commit to take any of the actions described above.

In turn, AcelRx has agreed, until the earlier of the Effective Time and the termination of the Merger Agreement in accordance with its terms and subject to certain exceptions (including in connection with a Permitted Acquisition or Permitted Financing, as contemplated by the Merger Agreement, as required by legal requirements or existing AcelRx contracts made available to Tetraphase, or with Tetraphase's written consent (not to be unreasonably withheld, conditioned or delayed)), to (i) use commercially reasonable efforts to cause each of AcelRx and its subsidiaries to conduct its business and operations in the ordinary course and consistent in all material respects with past practice, (ii) use commercially reasonable efforts to attempt to ensure that each of AcelRx and its subsidiaries preserves intact the material components of its current business organization and maintains its relations and goodwill with all material suppliers, material customers, material licensors, and governmental bodies, and (iii) to promptly notify Tetraphase following its becoming aware of any claim asserted or legal proceeding commenced, or, to AcelRx's knowledge, threatened against, relating to, involving or otherwise affecting any of AcelRx or its subsidiaries and that relates to any of the Contemplated Transactions.

In addition, AcelRx has agreed not to, subject to certain exceptions (including such exceptions otherwise contemplated by the Merger Agreement, as required by legal requirements or existing AcelRx contracts made available to Tetraphase, or with Tetraphase's prior written consent (not to be unreasonably withheld, conditioned or delayed)):

- declare, accrue, set aside or pay any dividend or make any other distribution in respect of any shares of capital stock, or repurchase, redeem or otherwise reacquire any shares of capital stock or other securities, other than: (A) dividends or distributions between or among any of AcelRx and its subsidiaries to the extent consistent with past practice; (B) pursuant to AcelRx's right to repurchase shares of AcelRx restricted stock held by an employee of AcelRx upon termination of such employee's employment; or (C) in connection with the withholding of shares of AcelRx Common Stock to satisfy tax obligations with respect to the exercise of AcelRx Options or the vesting of AcelRx RSUs;
- other than to the extent required to consummate a Permitted Acquisition or a Permitted Financing, amend or permit the adoption of any amendment to its certificate of incorporation or bylaws or other charter or organizational documents;
- other than a Permitted Acquisition or a Permitted Financing: (A) except in the ordinary course of business consistent in all material respects with past practice acquire any equity interest or other interest in any other entity; (B) effect or become a party to any merger, consolidation, share exchange, business combination, amalgamation, recapitalization, reclassification of shares, stock split, reverse stock split, division or subdivision of shares, consolidation of shares or similar transaction;
- other than in the ordinary course of business consistent in all material respects with past practice or as required by concurrent changes in GAAP or SEC rules and regulations, change any of its methods of accounting or accounting practices in any respect; or
- agree or commit to take any of the actions described above.

"Permitted Acquisition" means a merger, acquisition, share exchange, business combination, in-licensing, out-licensing or similar transaction (other than a Prohibited Acquisition) with respect to AcelRx or one of its subsidiaries, in each case as would not reasonably be expected to, individually or in the aggregate with any other Permitted Acquisition(s), impair or delay, in any material respect, AcelRx's ability to consummate the Contemplated Transactions on or before July 15, 2020.

"Permitted Financing" means any *bona fide* financing (including any equity financing involving AcelRx Common Stock (including warrants) or any debt financing, but excluding an equity financing involving AcelRx Preferred Stock).

"Prohibited Acquisition" means any acquisition by AcelRx of an antibiotic product through a merger, acquisition, share exchange, business combination, in-licensing or similar transaction.

Disclosure

Tetraphase and AcelRx must consult with each other before issuing any press release(s) or otherwise making any public statement or making any announcement to any current or former officer, employee, independent contractor, consultant or director, of or to any of Tetraphase or its subsidiaries (to the extent not previously issued or made in accordance with the Merger Agreement) with respect to the Merger or the Contemplated Transactions and shall not issue any such press release, public statement or announcement to current or former officers, employees, independent contractors, consultants or directors, of or to any of Tetraphase or its subsidiaries without the other party's written consent (not to be unreasonably withheld, delayed or conditioned). However, either party may (a) make any public statement in response to questions from the press, analysts, investors or those attending industry conferences, make internal announcements to employees and make disclosures in the AcelRx SEC Documents or Tetraphase SEC Documents, as applicable, so long as such statements are consistent with previous press releases, public disclosures or public statements made jointly by the parties (or individually, if approved by the other party), (b) subject, to the extent practical, to giving advance notice to the other party and giving due consideration to comments from the other party, issue any such press release or make any such public announcement or statement as may be required by legal requirement and (c) issue any press release or make public statement or filing pursuant to or in connection with any Acquisition Proposal, Superior Offer or Tetraphase Adverse Change in Recommendation. Additionally, Tetraphase is not prohibited from (i) taking and disclosing to the Tetraphase stockholders a position contemplated by Rule 14e-2(a), Rule 14d-9 or Item 1012(a) of Regulation M-A promulgated under the Exchange Act, (ii) making any disclosure to the Tetraphase stockholders if, in the good faith judgment of the Tetraphase Board, after consultation with outside counsel, failure to so disclose would be reasonably likely to be inconsistent with its fiduciary duties under applicable legal requirements or (iii) making any "stop, look and listen" communication pursuant to Rule 14d-9(f) promulgated under the Exchange Act; *provided*, that none of the foregoing will permit the Tetraphase Board to make a Tetraphase Adverse Change in Recommendation except to the extent expressly permitted by, and in accordance with, the Merger Agreement.

Access to Information; Confidentiality

From the date of the Merger Agreement to the earlier of the Effective Time and the termination of the Merger Agreement in accordance with its terms, each of AcelRx and Tetraphase must upon reasonable notice, and must cause its subsidiaries and each of its and their respective representatives to:

- provide the representatives of the other party with reasonable access during normal business hours to its representatives and assets and to all existing books, records, tax returns, work papers and other documents and information relating to such entity or any of its subsidiaries, in each case as reasonably requested by AcelRx or Tetraphase, as the case may be; and
- provide the representatives of the other party with such copies of the existing books, records, tax returns, work papers and other documents and information relating to such entity and its subsidiaries as reasonably requested by AcelRx or Tetraphase, as the case may be.

Without limiting the generality of any of the foregoing, during such period (but subject to applicable legal requirements, and except in the case of any document relating to any Acquisition Proposal, Superior Offer or Triggering Event), Tetraphase and AcelRx must each promptly provide the other with copies of any notice, report or other document filed with or sent to any governmental body on behalf of any of Tetraphase or its subsidiaries or AcelRx or Merger Sub in connection with the Merger or any of the other Contemplated Transactions a reasonable time in advance of the filing or sending of such document in order to permit a review thereof.

Notwithstanding the foregoing obligations, neither AcelRx nor Tetraphase is required to disclose such information if such disclosure would:

- jeopardize any attorney-client privilege; or

- contravene any applicable legal requirement or binding agreement entered into prior to the date of the Merger Agreement.

Securityholder Litigation

Pursuant to the terms of the Merger Agreement, in the event that any litigation related to the Merger Agreement or the Contemplated Transactions is brought by any stockholder of Tetraphase or any holder of Tetraphase's other securities against Tetraphase and/or its directors or officers, Tetraphase will promptly notify AcelRx of such litigation and will keep AcelRx reasonably informed with respect to the status thereof. Notwithstanding anything to the contrary herein (but subject to the following sentence), Tetraphase will have the right to control the defense of any litigation related to the Merger Agreement or the Contemplated Transactions brought by any stockholder of Tetraphase or any holder of Tetraphase's other securities against Tetraphase and/or its directors or officers; *provided* that Tetraphase will give AcelRx the opportunity to participate, at AcelRx's expense, in the defense of any such litigation and Tetraphase will give due consideration to AcelRx's advice with respect to such litigation. Notwithstanding anything to the contrary contained in the Merger Agreement, Tetraphase will not settle or enter into any negotiations or agreement with respect to the settlement of any such litigation without the prior written consent of AcelRx, which consent will not be unreasonably conditioned, withheld or delayed (*provided* that AcelRx will not withhold its consent if the settlement involves (a) solely the payment of an aggregate amount not to exceed $400,000 and supplemental disclosure (*provided*, *further* that AcelRx will be given reasonable opportunity to review and comment on any supplemental disclosure and Tetraphase will consider in good faith any reasonable changes thereto proposed by AcelRx), (b) no admission of wrongdoing or liability, (c) no injunctive or similar relief, (d) a complete and unconditional release from the named plaintiff(s) of all defendants in respect of all disclosure claims then pending relating to the Merger Agreement and the Contemplated Transactions and (e) the withdrawal or dismissal of all claims and actions then pending relating to the Merger Agreement and the Contemplated Transactions). Each of AcelRx and Tetraphase has agreed to notify the other promptly of the commencement of any such stockholder litigation of which it has received notice.

Additional Agreements

Preparation of this Proxy Statement/Prospectus

Each party will use commercially reasonable efforts to cause to be delivered to AcelRx a customary consent letter of such party's independent accounting firm, before the date on which the registration statement of which this proxy statement/prospectus is a part becomes effective. Tetraphase and AcelRx are also required to cooperate with each other and provide each other a reasonable opportunity to review and comment in advance on this proxy statement/prospectus or the registration statement of which this proxy statement/prospectus is a part prior to its filing (or any related amendment or supplement), and any comments of the SEC or any response thereto.

If either of Tetraphase or AcelRx becomes aware of any information that should be set forth in an amendment of, or supplement to, this proxy statement/prospectus or the registration statement of which it is a part, the discovering party must notify the other party, provide the other party (and its counsel) a reasonable opportunity to review and comment in advance on any amendment or supplement to this proxy statement/prospectus or the registration statement of which this proxy statement/prospectus is a part prior to its filing, provide a copy of such amendment or supplement after it is filed with the SEC and cooperate, if appropriate, in the prompt mailing of such amendment or supplement to the Tetraphase stockholders.

Each of AcelRx and Tetraphase shall use commercially reasonable efforts: (i) to cause the registration statement and the proxy statement/prospectus to comply with the applicable rules and regulations promulgated by the SEC; (ii) to promptly notify the other of, cooperate with each other with respect to, provide the other party (and its counsel) with a reasonable opportunity to review and comment on, and respond promptly to, in each case, any comments of the SEC or its staff with respect to the registration statement and the proxy statement/prospectus;

(iii) to provide the other party (and its counsel) with a reasonable opportunity to review and comment on the registration statement and the proxy statement/prospectus, and any amendment or supplement thereto, prior to filing of any such document with the SEC; (iv) to have the registration statement become effective under the Securities Act as promptly as practicable after it is filed with the SEC; and (v) to keep the registration statement effective through the closing of the Contemplated Transactions in order to permit the consummation of the Merger.

As promptly as practicable after the registration statement of which this proxy statement/prospectus is a part is declared effective under the Securities Act, Tetraphase shall use commercially reasonable efforts to cause this proxy statement/prospectus to be mailed to its stockholders entitled to vote at the Special Meeting.

AcelRx has agreed to use commercially reasonable efforts to obtain all regulatory approvals needed to ensure that the AcelRx Common Stock to be issued in the Merger will (to the extent required) be registered or qualified or exempt from registration or qualification under the securities law of every state of the United States in which any registered holder of Tetraphase Common Stock has an address of record on the Record Date for determining the stockholders entitled to notice of and to vote at the Special Meeting; *provided*, that AcelRx is not required to (i) qualify to do business as a foreign corporation in any jurisdiction in which it is not now qualified or (ii) file a general consent to service of process in any jurisdiction.

Stock Exchange Listing; Delisting and Deregistration

AcelRx will file a Listing of Additional Shares Notification Form with respect to the shares of AcelRx Common Stock to be issued in the Merger. AcelRx has also agreed to use reasonable best efforts to receive an email from Nasdaq stating that their review is complete at or prior to the Effective Time.

Prior to the Effective Time, Tetraphase will cooperate with AcelRx and use its reasonable best efforts to take, or cause to be taken, all actions, and do or cause to be done all things, reasonably necessary, proper or advisable (to the extent that such actions can reasonably be taken prior to the Effective Time) on its part under applicable laws and rules and policies of Nasdaq to enable the delisting by the Surviving Corporation of the shares of Tetraphase Common Stock from Nasdaq and the deregistration of the shares of Tetraphase Common Stock under the Exchange Act as promptly as practicable after the Effective Time.

Resignations

Tetraphase will use commercially reasonable efforts to obtain and deliver, as or prior to the Effective Time, to AcelRx resignations from each officer and director of Tetraphase and its subsidiaries.

Section 16 Matters

Prior to the Effective Time, each of AcelRx and the Tetraphase will take all such steps as may be required by applicable law to cause any dispositions of Tetraphase Common Stock (including derivative securities with respect to Tetraphase Common Stock) and acquisitions of AcelRx equity securities pursuant to the Contemplated Transactions by each individual who is a director or officer of Tetraphase subject to the reporting requirements of Section 16(a) of the Exchange Act to be exempt under Rule 16b-3 promulgated under the Exchange Act.

State Takeover Laws

If any “moratorium,” “fair price,” “business combination,” “control share acquisition” or similar provision of any state anti-takeover legal requirement is or may become applicable to any of the Contemplated Transactions or the transactions contemplated by the CVR Agreement, Tetraphase, the Tetraphase Board, AcelRx and Merger Sub, as applicable, each shall use its respective reasonable best efforts to (a) take such actions as are reasonably necessary so that the Contemplated Transactions may be consummated as promptly as practicable on the terms contemplated thereby and (b) otherwise take all such actions as are necessary to eliminate the effects of any such statute or regulation on such transactions.

Pediatric Trial Waiver

Tetraphase will, prior to the closing of the Merger, in good faith request from the FDA a full waiver under 21 USC 355c(a)(5)(A) of pediatric studies 3472-1 and 3472 from the FDA approval letter dated August 27, 2019 of NDA 21109.

Governance of the Surviving Corporation

The Merger Agreement provides that Merger Sub's directors and officers immediately prior to the Effective Time will be the directors and officers, respectively, of the Surviving Corporation immediately after the Effective Time. At the Effective Time, the certificate of incorporation and bylaws of the Surviving Corporation will be amended and restated to read as the certificate of incorporation and bylaws set forth as exhibits to the Merger Agreement.

Employee Benefit Matters

Subject to a commercially reasonable transition period and subject to any applicable plan provisions, contractual requirements or legal requirements, AcelRx has agreed to permit all employees of Tetraphase who remain employed by Tetraphase until the closing date of the Merger and remain employed by Tetraphase or become employed by AcelRx or any of its subsidiaries at such date to participate in the employee benefit programs of AcelRx or the applicable subsidiary to the same extent as similarly situated employees of AcelRx. Until the date that is six months following the closing date of the Merger, AcelRx has agreed to provide, or cause to be provided, each continuing employee with, as applicable, (i) a rate of salary, bonus opportunity and commission opportunity payable or otherwise provided to such employee that is substantially comparable in the aggregate to that provided to such employee immediately prior to the Effective Time, and (ii) severance and similar benefits that are no less favorable than the severance and similar benefits provided to the applicable employees of Tetraphase as of the date hereof.

AcelRx has agreed to cause continuing employees to receive customary service credit for prior employment with Tetraphase and, subject to any insurer consents, to use commercially reasonable efforts to (i) waive certain preexisting conditions, exclusions and waiting periods with respect to participation and coverage requirements under AcelRx welfare benefit plans; and (ii) provide each continuing employee with credit for any co-payments and deductibles paid prior to the Effective Time in satisfying any applicable deductible or out-of-pocket requirements under any AcelRx benefit plan that is a welfare plan in which such continuing employees may be eligible to participate after the Effective Time.

The Merger Agreement provides that Tetraphase will, upon AcelRx's advance request, formally terminate its 401(k) plan prior to the closing of the Merger.

Nothing in the Merger Agreement may be construed to create any right to continued employment with AcelRx, the Surviving Corporation or any of AcelRx's subsidiaries for any current or former officer, employee, independent contractor, consultant or director, of or to Tetraphase or any of its subsidiaries, and no such person will be deemed to be a third party beneficiary of the Merger Agreement, except to the extent any such person is entitled to certain rights of indemnification under the Merger Agreement as a current or former director or officer of Tetraphase or its subsidiaries.

Representations and Warranties

The Merger Agreement contains representations and warranties by Tetraphase, AcelRx and Merger Sub that are subject, in some cases, to specified exceptions and qualifications contained in the Merger Agreement or in the disclosure letters delivered by AcelRx and Tetraphase in connection with the Merger Agreement.

These representations and warranties relate to, among other things:

- subsidiaries, corporate organization and qualification, valid existence, good standing and qualification and similar corporate matters;
- certificates of incorporation and bylaws or comparable organizational documents;
- capital structure;
- corporate power and authority to enter into and perform such party's obligations under the Merger Agreement and the CVR Agreement and to consummate the Contemplated Transactions;
- filing of required AcelRx SEC Documents and Tetraphase SEC Documents;
- compliance of the financial statements included in the AcelRx SEC Documents and the Tetraphase SEC Documents, respectively, with the published rules and regulations of the SEC, the preparation of such statements in accordance with GAAP applied on a consistent basis during the periods involved;
- maintenance of a system of internal control over financial reporting and disclosure controls and procedures;
- absence of certain changes or events;
- absence of pending or threatened legal proceedings or investigations;
- absence of undisclosed liabilities;
- compliance with the laws and orders of any regulatory authority or governmental authority;
- matters related to the FDA and comparable regulatory or governmental authorities;
- compliance with healthcare regulations;
- compliance with anti-corruption laws;
- non-contravention and required third party consents;
- brokers' fees;
- intellectual property matters;
- tax matters;
- transactions with affiliates; and
- acknowledgements that no other representations or warranties are made other than as set forth in the Merger Agreement.

Additional representations made only by Tetraphase relate to, among other things:

- good and marketable title to property and assets;
- outstanding loans and advances;
- customers, suppliers and manufacturers;
- equipment and real property;
- material contracts;
- holding of and compliance with material governmental authorizations and necessary permits;
- employee benefit plan and ERISA matters;
- labor matters;
- environmental matters;

- insurance matters;
- government contracts;
- inapplicability of Section 203 of the DGCL; and
- the stockholder vote required to adopt the Merger Agreement.

Additional representations made only by AcelRx and Merger Sub relate to, among other things:

- purposes and business activities of Merger Sub;
- ownership of Tetraphase Common Stock or any other shares of Tetraphase's capital stock; and
- issuance of the AcelRx Common Stock in the Merger.

None of the representations or warranties of Tetraphase, AcelRx and Merger Sub will survive the Effective Time.

Amendment of the Merger Agreement; Waiver

AcelRx, Tetraphase and Merger Sub may amend the Merger Agreement at any time prior to the Effective Time with the approval of the respective boards of directors of AcelRx and Tetraphase.

At any time prior to the Effective Time, any party may (i) extend the time for the performance of any obligation or other act of the other parties under the Merger Agreement, (ii) waive any breach or inaccuracies in the representations and warranties of the other party contained in the Merger Agreement or in any document delivered pursuant to the Merger Agreement or (iii) waive compliance with any covenant, obligation or condition for the benefit of such party contained in the Merger Agreement.

The failure of any party to the Merger Agreement to exercise or assert any of its rights under the Merger Agreement will not constitute a waiver of such rights.

Applicable Law; Jurisdiction; Specific Performance

The Merger Agreement will be governed by, and construed in accordance with, the laws of the State of Delaware, without giving effect to any laws, rules or provisions that would cause the application of the laws of any jurisdiction other than the State of Delaware.

Each of the parties to the Merger Agreement has irrevocably and unconditionally submitted to the exclusive jurisdiction of the Court of Chancery of the State of Delaware and has irrevocably waived any right such party may have to a trial by jury.

Each of the parties to the Merger Agreement has also agreed that irreparable damage may occur and there may not be an adequate remedy at law in the event that any provision of the Merger Agreement were not performed in accordance with their specific terms or were otherwise breached. The parties have further agreed that in the event of any breach or threatened breach by any other party to the Merger Agreement of any covenant or obligation contained in the Merger Agreement, the non-breaching party will be entitled to an injunction or injunctions to prevent breaches of the Merger Agreement and to enforce specifically the terms and provisions of the Merger Agreement. This right to seek specific performance will be in addition to any other remedy available to such non-breaching party at law or in equity.

THE CONFIDENTIALITY AGREEMENT

On July 29, 2019, AcelRx and Tetraphase entered into the Confidentiality Agreement, which contained customary mutual confidentiality and non-solicitation obligations but did not contain a "standstill" obligation. The parties amended the Confidentiality Agreement on January 23, 2020 to extend the confidentiality obligations until December 31, 2020.

THE VOTING AGREEMENTS AND EXCHANGE AGREEMENT

In connection with the execution of the Merger Agreement, AcelRx entered into Voting Agreements with certain Tetraphase equityholders (including certain entities holding shares of Tetraphase Common Stock on their behalf), and collectively beneficially owning approximately 31% of the outstanding voting power of Tetraphase (the "Voting Agreement Equityholder"). The following summary of the Voting Agreements does not purport to be complete and is subject to, and qualified in its entirety by reference to, the Form of Voting Agreement attached to this proxy statement/prospectus as *Annex B*.

Pursuant to the Voting Agreements, each Voting Agreement Equityholder agreed, among other things, to vote its shares of Tetraphase Common Stock (i) in favor of adopting the Merger Agreement; and (ii) against (A) any Acquisition Proposal and against any other action, agreement or transaction involving Tetraphase that would reasonably be expected to cause Tetraphase to abandon, terminate or fail to consummate the Merger or (B) any liquidation, dissolution, extraordinary dividend or other significant corporate reorganization of Tetraphase. Each Voting Agreement Equityholder that holds Tetraphase Warrants also agreed to (i) exchange its outstanding Tetraphase Common Stock warrants, if applicable, for a fixed number of shares of AcelRx Common Stock and (ii) exchange its outstanding Tetraphase pre-funded common stock warrants, if applicable, for a specified percentage of the per share Merger Consideration.

Each Voting Agreement Equityholder is also restricted from transferring his, her or its shares of Tetraphase Common Stock, subject to certain limited permitted transfers. In addition, each Voting Agreement Equityholder agreed that it will not take any action that Tetraphase is prohibited from taking in respect of Tetraphase's non-solicitation obligations in the Merger Agreement. Further, each Voting Agreement Equityholder agreed not to commence or participate in any class action with respect to, any litigation related to the Merger Agreement, the Merger or any of the other Contemplated Transactions.

The Voting Agreements will terminate automatically with respect to a Voting Agreement Equityholder, without any notice or other action by any person, upon the first to occur of (a) the termination of the Merger Agreement in accordance with its terms, (b) the Effective Time, (c) any amendment to the Merger Agreement that reduces the amount, or changes the form, of consideration payable to such Voting Agreement Equityholder in the Contemplated Transactions, imposes additional restrictions on such Voting Agreement Equityholder or otherwise materially and adversely impacts such Voting Agreement Equityholder, (d) a Tetraphase Adverse Change in Recommendation or (e) the mutual written consent of AcelRx and such Voting Agreement Equityholder. Upon termination of any Voting Agreement, no party shall have any further obligations or liabilities under such Voting Agreement; *provided*, *however*, that a party shall not be relieved from liability for any willful breach of such Voting Agreement prior to termination thereof.

In addition, Tetraphase entered into an Exchange Agreement with one warrantholder under which such warrantholder agreed to exchange its outstanding Tetraphase Common Stock warrants for a fixed number of shares of AcelRx Common Stock. In addition, such warrantholder agreed that it will not take any action that Tetraphase is prohibited from taking in respect of Tetraphase's non-solicitation obligations in the Merger Agreement. Further, such warrantholder agreed not to commence or participate in any class action with respect to, any litigation related to the Merger Agreement, the Merger or any of the other Contemplated Transactions.

The above summary of the Exchange Agreement does not purport to be complete and is subject to, and qualified in its entirety by reference to, the Form of Exchange Agreement attached to this proxy statement/prospectus as *Annex C*.

THE CVR AGREEMENT

Prior to the Effective Time of the Merger, AcelRx will enter into the CVR Agreement with a rights agent selected by AcelRx and reasonably acceptable to Tetraphase (the "Rights Agent") governing the terms of certain consideration payable thereunder. The CVRs represent the right to receive contingent payments, payable to the Rights Agent for the benefit of the holders of CVRs, of up to $12.5 million in the aggregate, payable in cash or shares of AcelRx Common Stock at AcelRx's election, without interest and less any applicable withholding taxes, and allocated among the CVRs, if the following milestones are achieved:

- $2.5 million upon the achievement of annual net sales of XERAVA in the United States of at least $20.0 million during the calendar year ending on December 31, 2021;
- $4.5 million upon the achievement of annual net sales of XERAVA in the United States of at least $35.0 million during any calendar year ending on or before December 31, 2024; and/or
- $5.5 million upon the achievement of annual net sales of XERAVA in the United States of at least $55.0 million during any calendar year ending on or before December 31, 2024.

The CVR Agreement provides that all milestones or a combination of any two milestones can be earned in the same year, in which case all such applicable milestone amounts shall be payable. If AcelRx elects to pay milestone amounts in shares of AcelRx Common Stock, the number of shares of AcelRx Common Stock shall be determined by reference to the number of shares of AcelRx Common Stock equal to the applicable milestone amount divided by the average closing price of a share of AcelRx Common Stock on the Nasdaq Global Select Market for the 10 most recent trading days that AcelRx Common Stock has traded ending on the trading day one day prior to the date of the applicable payment date. Notwithstanding anything to the contrary in the CVR Agreement, AcelRx shall not be required to pay any milestone amounts in shares of AcelRx Common Stock in excess of a number of shares of AcelRx Common Stock equal to 19.9% of the total number of shares of AcelRx Common Stock issued and outstanding immediately prior to the execution and delivery of the Merger Agreement; *provided* that this limitation shall not limit any CVR holder's right to receive any milestone amount in full, and any portion of a milestone amount that would otherwise exceed such limitation shall be paid in cash.

Additionally, commencing upon the closing of the Merger and continuing until the earlier of December 31, 2024 or the achievement of all milestones, AcelRx has agreed to, and has agreed to cause its affiliates and licensees to, use Commercially Reasonable Efforts (as defined in the CVR Agreement) to achieve the milestones. Without limiting the foregoing, AcelRx has further agreed that neither it nor any of its Affiliates shall act in bad faith for the purpose of avoiding achievement of any milestone or the payment of any milestone amount.

The terms of the CVRs described above reflect the parties' agreement over the sharing of potential economic upside benefits from future net sales of XERAVA and do not reflect anticipated net sales of XERAVA. There can be no assurance that such levels of net sales will occur or that any or all of the payments in respect of the CVRs will be made.

If a milestone is not achieved during any of 2021, 2022, 2023 or 2024, then within 60 days after the end of such applicable year, AcelRx shall deliver to the Rights Agent a milestone non-achievement certificate, which certifies that such milestone has not occurred, accompanied by a statement setting forth, in reasonable detail, a calculation of net sales of XERAVA for the applicable period. The Rights Agent will have 10 business days after receipt of a milestone non-achievement certificate to send each CVR holder a copy of the applicable milestone non-achievement certificate. Unless holders representing at least 40% of the outstanding CVRs send the Rights Agent a written objection to a milestone non-achievement certificate within 180 days of delivery by the Rights

Agent of such milestone non-achievement certificate (i) with respect to the first milestone, or (ii) with respect to 2024 and any of the second, third or fourth milestones, then, in each case, the holders of CVRs will be deemed to have accepted such milestone non-achievement certificate and AcelRx and its affiliates will have no further obligation with respect to the applicable milestone payment. Until December 31, 2025, holders representing at least 40% of the outstanding CVRs will have limited rights to request an audit by an independent accounting firm of AcelRx's records in order to evaluate and verify AcelRx's calculation of net sales of XERAVA under the CVR Agreement. If such independent accountant concludes that payment with respect to the achievement of a milestone should have been paid but was not paid when due, then AcelRx will be required to pay any such unpaid amount, plus interest.

The CVR Agreement provides that the holders of CVRs are intended third-party beneficiaries of the CVR Agreement.

The right to payments under the CVRs as evidenced by the CVR Agreement is a contractual right only and will not be transferable, except in the limited circumstances specified in the CVR Agreement, including: (i) upon death of a CVR holder by will or intestacy; (ii) by instrument to an inter vivos or testamentary trust in which the CVRs are to be passed to beneficiaries upon the death of the trustee; (iii) pursuant to a court order; (iv) by operation of law (including by consolidation or merger) or without consideration in connection with the dissolution, liquidation or termination of any corporation, limited liability company, partnership or other entity; (v) in the case of CVRs held in book-entry or other similar nominee form, from a nominee to a beneficial owner and, if applicable, through an intermediary, as allowable by the Depository Trust Company; or (vi) to AcelRx in connection with an abandonment of the CVR or in connection with a negotiated transaction.

The foregoing description of the CVR Agreement does not purport to be complete and is qualified in its entirety by reference to the full text of the CVR Agreement, the form of which is filed as *Annex D* to this proxy statement/prospectus.

THE CO-PROMOTION AGREEMENT

Concurrently with the Merger Agreement, AcelRx and Tetraphase entered into the Co-Promotion Agreement, pursuant to which AcelRx agreed that its sales force would detail and promote Tetraphase products, and Tetraphase agreed that its sales force would detail and promote AcelRx's products, in the United States in accordance with marketing plans to be agreed to by the parties.

The co-promotion activities are overseen by a joint marketing and sales committee, which is responsible for developing marketing plans for the products, provided, that each party is responsible for developing the marketing strategy for, creating the promotional materials for, and handling sales and distribution of, its own products.

Each of AcelRx and Tetraphase has agreed that each member of its sales force will use reasonable efforts to conduct at least 40 details of the other party's product per month with at least 20 as the primary presentation, and to conduct details at least ten separate institutions, subject to certain adjustments.

There are no payments being made between the parties under the agreement, and each party will continue to receive all the revenues from the sales of its own products. In addition, each party will bear its own costs and expenses incurred by it in the conduct of activities under the Co-Promotion Agreement.

The Co-Promotion Agreement has a five-year term, unless terminated earlier pursuant to its terms. Either party may terminate the Co-Promotion Agreement upon a 15-month notice period. Additionally, either party may terminate the Co-Promotion Agreement in the event of an uncured material breach or insolvency event of the other party and in the event of other specified circumstances relating to the other party's products, such as safety.

In the event of a change of control of either party, the other party may terminate the agreement upon one month's notice and, upon a material breach by the change of control party, may be entitled to receive a 10% royalty for a specified period of time (but not to exceed eighteen months).

THE EXCLUSIVITY AGREEMENT

AcelRx and Tetraphase also entered into an exclusivity agreement dated March 7, 2020, which was extended by the parties on March 12, 2020. Pursuant to the exclusivity agreement and subject to the terms set forth therein, Tetraphase agreed not to solicit or knowingly encourage or facilitate certain proposals regarding a possible acquisition transactions, engage in discussions or negotiations or furnish non-public information in connection with a possible acquisition transaction, or enter into an agreement with a party other than AcelRx with respect to an acquisition transaction. The exclusivity agreement terminated upon the execution of the Merger Agreement.

INFORMATION ABOUT TETRAPHASE

The information provided under "*Information About Tetraphase*" reflects certain information set forth in Tetraphase's Annual Report on Form 10-K for the year ended December 31, 2019, and, except as indicated by the context, has not been updated to reflect subsequent developments.

Tetraphase's Business

Tetraphase is a biopharmaceutical company using its proprietary chemistry technology to create, develop and commercialize novel tetracyclines for serious and life-threatening conditions, including bacterial infections caused by multidrug-resistant ("MDR"), bacteria. There is a medical need for new antibiotics as resistance to existing antibiotics increases. In recognition of this need, Tetraphase developed its product, Xerava (eravacycline), a fully synthetic fluorocycline, as an intravenous ("IV"), antibiotic for use as a first-line empiric monotherapy for the treatment of MDR infections, including MDR Gram-negative infections, such as those found in complicated intra-abdominal infections ("cIAI").

On August 27, 2018, the FDA approved Xerava for the treatment of cIAI in adults. Approval of Xerava was based on Tetraphase's IGNITE (**I**nvestigating **G**ram-**N**egative **I**nfections **T**reated with **E**ravacycline) phase 3 program. In the first pivotal phase 3 trial in the IGNITE program in patients with cIAI, twice-daily IV Xerava met the primary endpoint by demonstrating statistical non-inferiority of clinical response compared to ertapenem, a carbapenem and a standard of care treatment for cIAI, and was well-tolerated. Tetraphase refers to this trial as IGNITE1. In Tetraphase's other pivotal phase 3 clinical trial of Xerava in patients with cIAI, twice-daily IV Xerava met the primary endpoint by demonstrating statistical non-inferiority of clinical response compared to meropenem, another standard of care treatment, and was well-tolerated. Tetraphase refers to this trial as IGNITE4. In both IGNITE1 and IGNITE4, Xerava achieved high cure rates in patients with poly-microbial infections (Gram-negative, Gram-positive, and anaerobic infections), including resistant isolates.

In October 2018, Tetraphase commenced sales of Xerava in the United States. Tetraphase is commercializing Xerava in the United States using a small, targeted commercial and medical affairs groups to build and promote access to Xerava. As a result, as of March 3, 2020, Tetraphase has approximately 27 sales representatives, 3 regional business directors, 3 strategic market access executives and approximately 7 medical affairs personnel supporting Xerava in the United States.

On September 20, 2018, based on the results of IGNITE, the European Commission granted marketing authorization for Xerava for the treatment of cIAI in adults in all 28 countries of the European Union ("EU"), plus Norway, Iceland and Liechtenstein. In February 2018 Tetraphase entered into a license agreement with Everest Medicines Limited ("Everest Medicines"), granting Everest Medicines commercialization rights to eravacycline in China and other Asian territories. In June 2018, Everest Medicines submitted an Investigational New Drug ("IND") application to the China National Medical Products Administration (formerly China FDA) for a phase 3 clinical trial of eravacycline in cIAI. The application was approved, and Everest Medicines began enrolling patients in this phase 3 trial in the second quarter of 2019.

Tetraphase believes that the ability of Xerava to cover MDR Gram-negative bacteria, as well as MDR Gram-positive, anaerobic and atypical bacteria, may enable Xerava to become the drug of choice for first-line empiric treatment of patients with cIAI. In *in vitro* studies, Xerava has demonstrated the ability to cover a wide variety of MDR Gram-negative, Gram-positive, anaerobic and atypical bacteria, including MDR *Klebsiella pneumoniae* and MDR *Acinetobacter.* Multidrug-resistant *Klebsiella pneumoniae* (carbapenem-resistant Enterobacteriaceae (CRE)) and MDR Acinetobacter are listed as urgent threats and Extended-spectrum beta-lactamase (ESBL)-producing Enterobacteriaceae is listed as serious threats by the Centers for Disease Control and Prevention in a 2019 report. They are also listed as "Priority 1; Critical Pathogens" in the World Health Organization's priority pathogens list for R&D, published in February 2017. CREs were a confirmed area of great concern by the World Health Organization in an April 2014 global surveillance report. Gram-negative bacteria that are resistant to multiple available existing antibiotics are increasingly common and a growing threat to public health.

In addition to Xerava, Tetraphase has also developed other fluorocycline antibiotic compounds, TP-6076 and TP-271, and TP-2846, a tetracycline for the treatment of acute myeloid leukemia. Tetraphase developed TP-6076, a fully-synthetic fluorocycline derivative, as a lead candidate under its second-generation program to target unmet medical needs, including MDR Gram-negative bacteria such as carbapenem-resistant Enterobacteriaceae and carbapenem-resistant or pan-resistant *Acinetobacter baumanii*. To date, Tetraphase has conducted phase 1 single-ascending and multiple-ascending dose studies evaluating the safety, tolerability and pharmacokinetics of IV TP-6076 in healthy volunteers. Tetraphase also conducted a Phase 1 study to assess the bronchopulmonary disposition, pharmacokinetics, and safety of TP-6076 in healthy volunteers. TP-271 is a fully-synthetic fluorocycline that Tetraphase developed for respiratory disease caused by bacterial biothreat and antibiotic-resistant public health pathogens, as well as bacterial pathogens associated with community-acquired bacterial pneumonia. To date, Tetraphase has completed single-ascending and multiple-ascending dose trials for IV and oral formulations of TP-271. Tetraphase has completed pre-clinical toxicology studies for TP-2846 and intends to file an IND with the FDA for TP-2846 upon identifying a partner.

Going Concern

Tetraphase has identified conditions and events that raise substantial doubt about its ability to continue as a going concern. As of December 31, 2019, Tetraphase had cash, cash equivalents and short-term investments of $21.2 million. Based on its recurring losses and cash outflows from operations since inception, expectation of continuing operating losses and cash outflows from operations for the foreseeable future and the need to raise additional capital to finance its future operations, Tetraphase has concluded that there is substantial doubt about its ability to continue as a going concern. For a further discussion of Tetraphase's liquidity, please refer to page 154 of this proxy statement/prospectus under the heading *"Management's Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources—Funding Requirements"* and Note 1 to Tetraphase's consolidated financial statements, which are incorporated by reference into this proxy statement/prospectus from Tetraphase's Annual Report on Form 10-K for the year ended December 31, 2019.

Drug-Resistant Antibiotic Market

Physicians commonly prescribe antibiotics to treat patients with acute and chronic infectious diseases that are either presumed or known to be caused by bacteria. Inappropriate use of antibiotics and lack of new therapies has resulted in a rapid increase in bacterial infections that are resistant to multiple antibacterial agents. Global microbial resistance, including bacteria, viruses and fungi, now results in the death of at least 700,000 people each year, according to *The Review on Antimicrobial Resistance*, an analysis commissioned by the U.K. government in 2016. The report predicts that failing to develop effective treatments for drug-resistant bacteria by 2050 would lead to 10 million extra deaths a year. Further, in a 2019 report, the CDC estimated that every year in the United States, more than 2.8 million people acquire serious infections that are resistant to one or more of the antibiotics designed to treat those infections, with at least 35,000 dying as a result, and many more dying from other conditions that are complicated by the occurrence of an antibiotic-resistant infection. These antibiotic-resistant infections add considerable and avoidable costs to the United States healthcare system. In a September 2013 report, the CDC noted that the total economic cost of antibiotic-resistant infections to the United States economy has been estimated to be as high as $20 billion in excess direct healthcare costs. Over the last decade there has been an increase in antibiotics that target resistant Gram-positive bacteria, but there still remain limited therapeutic options for resistant Gram-negative infections. According to the CDC, among all of the bacterial resistance problems, Gram-negative pathogens are particularly worrisome because they are becoming resistant to nearly all drugs that would be considered for treatment, with the most serious Gram-negative infections being healthcare associated and the most common pathogens being *Enterobacteriaceae*, *Pseudomonas aeruginosa* and *Acinetobacter*.

Antibiotics that treat bacterial infections can be classified as broad-spectrum or narrow-spectrum. Antibiotics that are active against a mixture of Gram-positive, Gram-negative and anaerobic bacteria are referred to as broad-spectrum. Antibiotics that are active only against a select subset of bacteria are referred to as narrow-spectrum.

Because it usually takes from 24 to 72 hours from the time a specimen is received in the laboratory to definitively diagnose a particular bacterial infection, physicians may be required to prescribe antibiotics for serious infections without having identified the bacteria. As such, effective first-line treatment of serious infections, commonly referred to as empiric treatment, requires the use of broad-spectrum antibiotics with activity against a broad range of bacteria at least until the bacterial infection can be diagnosed.

Broad-spectrum antibiotics are used to treat major hospital infections such as cIAI. Based on an analysis from a variety of industry sources, Tetraphase estimates that the number of patients treated with antibiotics in the United States and European Union annually includes approximately 4.6 million cIAI patients with each patient being treated for an average of 7.6 days for a combined estimated 40 million annual average days of treatment. Of these patients, Tetraphase believes that approximately 40% of cIAI patients require a change in therapy and 50% of patients with cIAI are receiving combination therapy.

As such, at present, there is an acute need for new drugs to treat MDR Gram-negative bacteria. Currently approved products, such as meropenem, are becoming increasingly ineffective against Gram-negative bacteria due to increasing resistance, limiting patients' treatment options, particularly for patients with MDR infections. Few new therapeutic agents have been approved or are in clinical development.

Intra-abdominal infection is classified as uncomplicated or complicated based on the extent of the infection. cIAIs extend beyond the source organ into the peritoneal space (the space between the two membranes that separate the organs in the abdominal cavity from the abdominal wall) as a result of perforation or other damage to the gastrointestinal tract. cIAI diagnoses include intra-abdominal abscess, stomach or intestinal perforation, peritonitis, appendicitis, cholecystitis, or diverticulitis. Different bacterial pathogens are responsible for cIAI, including Gram-negative aerobic bacteria, Gram-positive bacteria, and anaerobic bacteria. Early detection, containment and appropriate antimicrobial treatment are essential to the successful treatment of IAI. This is even more critical with increasing rates of infections caused by drug-resistant bacteria, which limit the effectiveness of currently available antibiotics.

A nationwide electronic database looked at the prevalence of Gram-negative resistance from 2008-2015 in U.S. hospitals and it showed MDR rates continuing to increase. Out of the 3,158,349 isolates tested, 5.3% were considered MDR pathogens. Five bacteria accounted for 92.7% of all MDR isolates: *E coli* (39.4%), *P aeruginosa* (29.4%), *K pneumoniae* (13.2%), *A baumannii* (5.4%) and *Enterobacter* spp (5.2%). The highest rate of MDR was associated with the onset in hospital setting (11.4%), followed by the admission period (6.6%), and the ambulatory setting (3.5%). In the database, 42.9% of *A baumannii* were MDR isolates. The rate of MDR *A baumannii was* highest in the inpatient setting (58.6% of isolates from all body sources), followed by admission setting (43.2%), and ambulatory setting (24.8%).

Legislative initiatives have been approved as part of the 21st Century Cures Act, including the Antibiotic Development to Advance Patient Treatment Act which would provide a pathway for approval of antibiotics in limited populations of patients with few or no suitable treatment options. Other legislation still pending include the Developing an Innovative Strategy for Antimicrobial Resistant Microorganisms, or DISARM, Act which would remove certain novel antibiotics used to treat serious bacterial infections from the diagnosis-related group and receive a drug specific reimbursement.

Limitations of Available Treatment Options

When confronted with a new patient suffering from a serious infection, such as cIAI, caused by an unknown pathogen, a physician may be required to quickly initiate first-line empiric antibiotic treatment to stabilize the patient prior to definitively diagnosing the particular bacterial infection. However, current antibiotics for first-line empiric treatment of serious bacterial infections suffer from significant limitations, including one or more of the following:

Insufficient Coverage Against MDR Bacteria. A physician cannot risk prescribing an inappropriate antibiotic when initially treating a patient for a serious infection due to well-documented increased rates of

morbidity and mortality associated with ineffective empiric therapy or where the pathogen has not yet been definitively identified. Frequently used products, such as linezolid and daptomycin, are limited to Gram-positive bacteria and thus are rarely used as a first-line empiric monotherapy if broad bacterial coverage is required. Recently approved products are limited to specific Gram-negative bacteria and thus are rarely used as a first-line empiric monotherapy if broad bacterial coverage is required. In addition, other popular antibiotics that have been used as first-line empiric monotherapies, such as levofloxacin and piperacillin/tazobactam have seen their utility as first-line empiric monotherapies diminished as the number of bacterial strains resistant to these therapies has increased. In response, utilization of broader-spectrum, higher potency antibiotics, such as carbapenems, has increased. This has been accompanied by an increase in resistance to these agents such that the utility of the entire carbapenem class is now threatened.

Carbapenem Overuse and Increased Resistance. Carbapenems, such as meropenem and ertapenem, are considered the empiric drugs of choice for the treatment of a suspected or document cIAI caused by extended-spectrum beta-lactamase, or ESBL, producing *Enterobacteriaceae*. Finding alternatives to carbapenems for treatment of infections caused by ESBL-producing *Enterobacteriaceae* is an urgent medical need. Because ESBL producers are frequently also resistant to fluoroquinolones and piperacillin/tazobactam the options are scarce. The use of carbapenems is growing, which has led to increased resistance. In 2010, carbapenems were used for more than 8 million patient days of therapy, or DOTs, a number which doubled to 16 million DOTs by 2015. In parallel with this increased utilization, carbapenem-resistant enterobacteriaceae, or CRE, has been observed. Increased use of carbapenems is also associated with a higher rate of carbapenem-resistant Pseudomonas aeruginosa and *Acinetobacter baumannii.*

Penicillin Allergies.It is estimated that 10% of individuals in the United States report having a penicillin allergy which may limit empiric treatment options for serious infections including cIAI. Commonly prescribed alternatives to penicillin include fluoroquinolones, aztreonam or an aminoglycoside. However, these agents do not routinely provide adequate *in vitro* activity against the common Gram-negative pathogens which cause cIAI. Fluoroquinolones, which are the most commonly prescribed class in patients with penicillin allergies, have a black boxed warning due to serious side effects and are also associated with developing *Clostridioides difficile* (formerly known as *Clostridium difficile), or C. difficile*, infection.

Poor Dose Optimization for Renally Impaired. With all beta-lactams, including carbapenems and piperacillin/tazobactam, it is necessary to adjust the dose for patients with renal impairment. This may cause problems with ensuring a patient is receiving an optimal dose when there are rapid changes in renal function associated with serious infections like cIAI. Xerava does not require dose adjustment for renal impairment, simplifying dosing in this setting.

Increased Risk of C. Difficile. Antibiotics are capable of disrupting the normal gut microflora, which can allow for *C difficile* to flourish and produce toxins. *C. difficile* is responsible for 20-30% of antibiotic-associated diarrhea cases and is the most common cause of infectious diarrhea in the healthcare setting. In general, a longer antibiotic duration and multiple antibiotics are two factors that increase the risk of antibiotic-associated *C difficile* diarrhea. Clindamycin carries the highest risk of *C difficile* infection, while fluoroquinolones, cephalosporins and carbapenems carry a fairly high risk,

Complicated and Expensive Multi-Drug Cocktails and Multi-Dose Regimens. Due to gaps in the spectrum of coverage of antibiotics, physicians are often confronted with the need to design complicated multi-drug cocktails for the first-line empiric treatment of patients with serious infections. The clinical situation is further complicated when each drug in the multi-drug cocktail has a different dosing regimen, such as three or four times a day, resulting in an added burden on the pharmacy and nursing staff, higher costs due to multiple drug administrations and an increased potential for medical errors or drug-drug interactions. Tetraphase believes that, with the exception of Xerava, most of the antibiotics that are in development or have recently been approved by the FDA that are intended to cover a broad range of bacteria, including Gram-negative bacteria, or solely to address Gram-negative bacteria, are being developed or are approved for use in combination with one or more

other antibiotics, and require the addition of a third drug such as metronidazole to address the presence of anaerobic bacteria. Multi-drug regimens may also be associated with toxicities not seen with the individual drugs, such as kidney injury, which has been reported when vancomycin and piperacillin/tazobactam are given together.

Safety and Tolerability Concerns. Concerns about antibiotic safety and tolerability are among the leading reasons why patients stop treatment and fail therapy. Antibiotics on the market have been associated with adverse effects such as myelosuppression, seizures, *C. difficile* colitis, nephrotoxicity and gastrointestinal disorders. Furthermore, allergies to beta-lactam antibiotics limit the utility of this class of antibiotics for up to 10% of patients.

Given these limitations, there is an unmet medical need for empiric antibiotic treatment that has the following characteristics:

- Potency and effectiveness against a broad range of bacteria, including MDR Gram-negative, Gram-positive, atypical and anaerobic bacteria;
- Offers an alternative to carbapenems;
- Capability of being used as a monotherapy in the majority of patients in the hospital with cIAI and other MDR infections;
- A convenient dosing regimen, such as once or twice-daily;
- A favorable safety and tolerability profile;
- No required dose adjustments for patients with impaired renal functions;
- No need for therapeutic drug monitoring for any patient group;
- Potent *in vitro* activity against *C. difficile;* and
- Ability to use in patients with penicillin and beta-lactam allergies

Based on Tetraphase's belief that Xerava has each of these characteristics, its goal is to develop Xerava to be the drug of choice for use as a first-line empiric monotherapy for the treatment of multidrug-resistant infections, including MDR Gram-negative infections such as those found in cIAI.

Xerava (Eravacycline)

Overview

Tetraphase developed Xerava using its proprietary chemistry technology as an IV antibiotic for use as a first-line empiric monotherapy for the treatment of multidrug-resistant infections, including MDR Gram-negative infections such as those found in cIAI. On August 27, 2018, the FDA approved Xerava for the treatment of cIAI in adults. On September 20, 2018, the EC granted marketing authorization for Xerava for the treatment of cIAI in adults in all 28 countries of the EU, Norway, Iceland and Liechtenstein. Approval of Xerava in both the United States and in the EU was based on Tetraphase's IGNITE (**I**nvestigating **G**ram-**N**egative **I**nfections **T**reated with **E**ravacycline) phase 3 program in cIAI. Tetraphase initiated sales of Xerava in the United States on October 15, 2018. For the year ended December 31, 2019, net sales of Xerava were $3.6 million.

Tetraphase received approval for Xerava in the US and EU based on the results of its IGNITE1 and IGNITE4 phase 3 clinical trials evaluating the safety and efficacy of Xerava with IV administration for the treatment of cIAI. In each of IGNITE1 and IGNITE4, Xerava met the primary endpoint of statistical non-inferiority compared to the control therapy for the trial and those trials formed the basis of the approval of Xerava by the FDA for the treatment of cIAI.

Tetracycline antibiotics have been in clinical use for over 50 years and have a demonstrated record of safety and effectiveness. However, as with most classes of antibiotics, a high incidence of resistance among many bacteria has limited their effectiveness and resulted in tetracyclines being relegated to second- or third-line therapy several decades after their introduction. Chemists have generally been unable to synthesize new tetracyclines that could overcome bacterial resistance mechanisms. Tetraphase has used its proprietary chemistry technology to create more than 3,000 new tetracycline derivatives that Tetraphase believes could not be practically created with conventional methods. Many of these new derivatives, including Xerava, have been able to overcome bacterial resistance in *in vitro* studies.

Xerava is a novel, fully synthetic fluorocycline antibiotic. Tetraphase selected Xerava for development from tetracycline derivatives that Tetraphase generated using its proprietary chemistry technology. In designing Xerava, Tetraphase inserted a fluorine atom into the tetracycline scaffold, which Tetraphase calls a fluorocycline, and modified the scaffold at another position. Tetraphase believes that these modifications enable Xerava to not be subject to tetracycline-specific mechanisms of drug resistance. As a result, Tetraphase believes that Xerava is active against MDR bacteria in ways that tetracyclines currently on the market or in development are not.

In *in vitro* studies, including a surveillance study published in December 2014 using over 4,000 patient bacterial isolates collected in New York City, Xerava has been highly active against emerging MDR pathogens like *Acinetobacter baumannii* as well as clinically important species of *Enterobacteriaceae*, including those isolates that produce ESBLs, or are resistant to the carbapenem class of antibiotics, and anaerobes, in comparison to commonly used antibiotics.

Data published in August 2016 demonstrated that in *in vitro* studies, Xerava retained potency against *E. coli* clinical isolates containing a plasmid expressing *mcr-1*, the gene associated with colistin resistance (ERV MIC90=0.5 µg/mL; colistin MIC90=16 µg/mL). The *in vitro* potency of Xerava was unaffected by inducible overexpression of the *mcr-1* gene in an engineered laboratory *E. coli* strain.

Xerava has also demonstrated strong activity *in vitro* against Gram-positive pathogens, including both nosocomial and community-acquired methicillin susceptible or resistant *Staphylococcus aureus* strains, vancomycin susceptible or resistant *Enterococcus faecium* and *Enterococcus faecalis*, and penicillin-susceptible or resistant strains of *Streptococcus pneumoniae*. In *in vitro* studies of pathogens most prevalent in cIAI infections, Xerava consistently exhibited strong activity against *enterococci* and *streptococci.*

Key Differentiating Attributes of Xerava

Tetraphase believes that the following key attributes of Xerava, observed in clinical trials and preclinical studies, differentiate Xerava from other antibiotics targeting multidrug-resistant infections, including MDR Gram-negative infections. Tetraphase believes these attributes support Xerava as safe and effective treatment for cIAI and potentially for other serious and life-threatening infections for which Tetraphase may develop Xerava.

- **Offers a broad range of activity against a wide variety of MDR Gram-negative, Gram-positive and anaerobic bacteria.** In Tetraphase's phase 2 and phase 3 clinical trials of the IV formulation of Xerava, Xerava demonstrated a high cure rate against a wide variety of MDR Gram-negative, Gram-positive and anaerobic bacteria. In addition, in *in vitro* studies, Xerava demonstrated potent antibacterial activity against Gram-negative bacteria, including ESBL-producing *enterobacteriaceae;* carbapenem-resistant *Enterobacteriaceae (CRE); MCR-1 gene expressing bacteria; Acinetobacter baumannii*, including *carbapenem resistant Acinetobacter (CRAB);* Gram-positive bacteria, including MRSA and vancomycin-resistant *enterococcus*, or VRE; and anaerobic pathogens. As a result, Tetraphase believes that Xerava has the potential to be used as a first-line empiric monotherapy for the treatment of cIAI and potentially other serious and life-threatening infections.
- **Lower probability of drug resistance.** In the clinical trials and preclinical studies of Xerava that Tetraphase has conducted for the treatment of cIAI, Tetraphase has seen little decrease in susceptibility

that would suggest increased resistance to Xerava. Tetraphase believes that, as a fluorocycline, Xerava is not subject to tetracycline-specific mechanisms of drug resistance in certain MDR pathogens.

- **Favorable safety and tolerability profile.** Xerava has been evaluated in over 2,700 subjects in the phase 1, phase 2 and phase 3 clinical trials that Tetraphase has conducted. In these trials, Xerava has demonstrated a favorable safety and tolerability profile. In Tetraphase's phase 2 and phase 3 clinical trials of Xerava in patients with cIAI, no patients suffered any drug-related serious adverse events, and safety and tolerability were comparable to the respective control therapies for the trials. In the phase 3 clinical trials of Xerava in patients with cUTI, safety and tolerability were comparable to the respective control therapies for these trials. In addition, in these phase 2 and phase 3 clinical trials, the rate at which gastrointestinal adverse events such as nausea and emesis occurred in the Xerava arms was low. Since Xerava is not a beta-lactam, it also offers an alternative treatment for patients with allergies to this commonly used antibiotic class.
- **Lower risk of *C. difficile* colitis.** Xerava, like other tetracycline class antibiotics, has shown activity against *C. difficile* in *in vitro* studies and, therefore, may be associated with a lower risk of *C. difficile* colitis compared with other broad-spectrum antibiotics.
- **Convenient dosing regimen.** In its clinical trials, Tetraphase has dosed Xerava once or twice a day as a monotherapy. Tetraphase believes that Xerava will be able to be administered as a first-line empiric monotherapy with twice-daily dosing, avoiding the need for complicated dosing regimens typical of multi-drug cocktails and the increased risk of negative drug-drug interactions inherent to multi-drug cocktails.
- **No dosage adjustment required for impaired renal function.** Unlike other classes of antibiotics, such as beta-lactams, Xerava does not require dosage adjustment in patients with impaired renal function. In addition to convenience, this ensures that patients with rapidly fluctuating renal function do not have high drug levels, which could lead to toxicity, or low drug levels which could result in loss of efficacy.

Clinical Experience

Tetraphase has studied IV and oral formulations of Xerava in over 2,700 subjects in 21 clinical trials completed from October 2009 to February 2018.

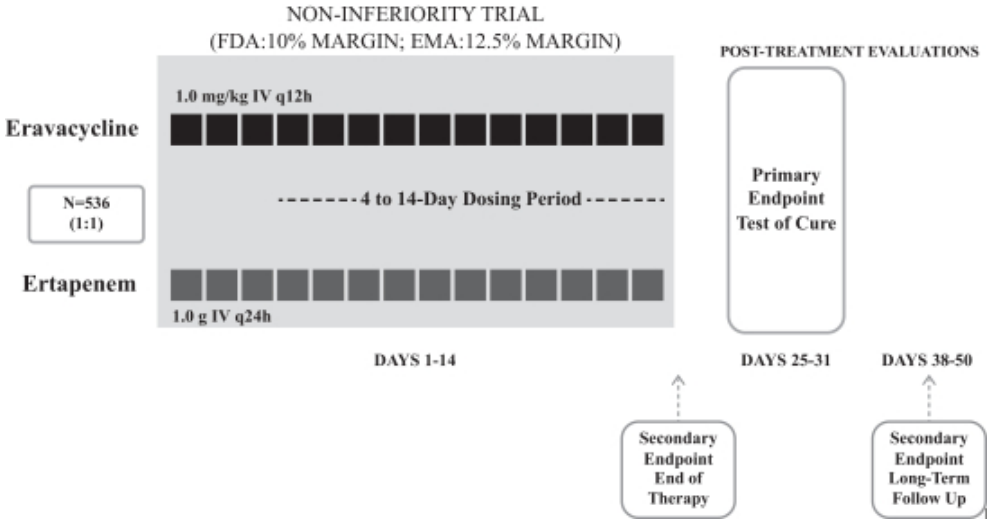
Phase 3 Clinical Program in cIAI

Tetraphase designed its IGNITE phase 3 program for Xerava in cIAI to enable it to position Xerava as a first-line empiric monotherapy for the treatment of cIAI due to Xerava's broad-range of coverage against resistant and MDR infections, including MDR Gram-negative infections.

Tetraphase's initial phase 3 clinical trial of Xerava for the treatment of patients with cIAI was its IGNITE1 trial. In December 2014, Tetraphase announced that Xerava met the primary endpoint of statistical non-inferiority compared to ertapenem in IGNITE1 for the treatment of cIAI. In July 2017, Tetraphase announced that Xerava met the primary endpoint of statistical non-inferiority compared to meropenem in IGNITE4 for the treatment of cIAI.

IGNITE1

Eravacycline Phase 3 IGNITE1 Study Design

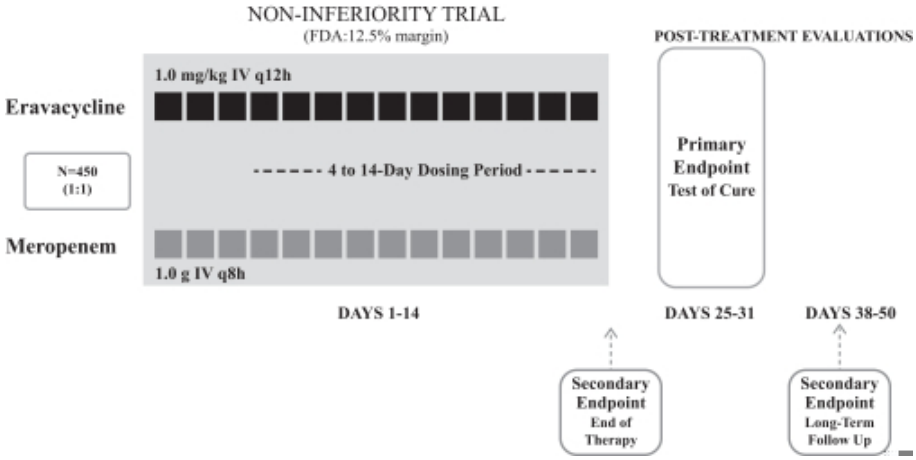


Tetraphase designed IGNITE1 as a non-inferiority study. Under FDA guidance, the primary endpoint of the trial was clinical response at the test-of-cure, or TOC, visit in the microbiological intent-to-treat, or micro-ITT, population which consisted of all randomized patients in the trial who had baseline bacterial pathogens that cause cIAI and against which Xerava has antibacterial activity. Under EMA guidance, the primary endpoint of the trial was clinical response at the TOC visit in the modified intent-to-treat, or MITT, population which consisted of all patients who received at least one dose of study drug, and in the clinically evaluable, or CE, patient population, which consisted of all randomized patients in the trial who meet key inclusion/exclusion criteria and follow other important components of the trial. Tetraphase designed the trial to be consistent with the FDA's cIAI guidance, in which the FDA suggested that the primary efficacy endpoint for a trial of cIAI should be complete resolution of baseline signs and symptoms attributable to cIAI in the micro-ITT patient population 28 days after randomization and the absence of clinical failure including death and unplanned surgical procedures through the period ending 28 days following randomization.

In December 2014, Tetraphase announced top-line data from IGNITE1. In the trial, Xerava met the primary endpoint of statistical non-inferiority of clinical response at the TOC visit, under the guidance set by the FDA and the EMA. The primary analysis under the FDA guidance was conducted using a 10% non-inferiority margin in the micro-ITT population. In the micro-ITT population, the lower and upper bounds of the 95% confidence interval were -7.1% and 5.5%, respectively. Under the EMA guidance, the primary analysis was conducted using a 12.5% non-inferiority margin in the CE and MITT patient populations. In the CE population, the lower and upper bounds of the 95% confidence interval were -6.3% and 2.8%, respectively, and the lower and upper bounds of the 99% confidence interval were -7.9% and 4.4%, respectively. In the MITT population, the lower and upper bounds of the 95% confidence interval were -7.4% and 3.8%, respectively, and the lower and upper bounds of the 99% confidence interval were -9.2% and 5.6%, respectively. The most commonly reported drug-related adverse events for Xerava were gastrointestinal, including nausea (3.3%) and emesis (2.2%). This adverse event profile for Xerava was consistent with that seen in the phase 2 clinical trial of Xerava in cIAI. The spectrum of pathogens in this trial was similar to that seen in other pivotal trials of antibiotics in this patient population. The most common Gram-negative pathogens in the trial included *Escherichia coli*, *Klebsiella pneumonia*, *Pseudomonas* and *Bacteroides.*

IGNITE4

Eravacycline Phase 3 IGNITE4 Study Design



Tetraphase designed IGNITE4 as a non-inferiority study. Under FDA guidance, the primary endpoint of the trial was clinical response at the TOC visit in the micro-ITT population, which consisted of randomized patients in the trial who had baseline bacterial pathogens that cause cIAI and against which Xerava has antibacterial activity. Under EMA guidance, the primary endpoint of the trial was clinical response at the TOC visit in the MITT population, which consisted of patients in the trial who received at least one dose of study drug, and in the CE patient population, which consisted of patients in the trial who met key inclusion/exclusion criteria and followed other important components of the trial. Secondary endpoints included clinical response at the end-of-treatment, TOC and follow-up visits in the intent-to-treat population, the CE population, the micro-ITT population and the microbiologically evaluable, or ME, population. The ME population consisted of all micro-ITT patients who met key inclusion/exclusion criteria and followed other important components of the trial. In the trial, Tetraphase also studied microbiologic response at the end-of-treatment and TOC visits in the micro-ITT and ME populations, the safety and tolerability of Xerava in the safety population and pharmacokinetic parameters after Xerava administration.

On July 25, 2017, Tetraphase announced top-line data from IGNITE4. In the trial, Xerava met the primary endpoint of statistical non-inferiority of clinical response at the TOC visit, under the guidance set by the FDA and the EMA. The primary efficacy analysis under the FDA guidance was conducted using a 12.5% non-inferiority margin in the micro-ITT population. Clinical cure rates in the micro-ITT population were 90.8% and 91.2% for Xerava (n=195) and meropenem (n=205), respectively (95% CI: -6.3%,5.3%). Under the EMA guidance, the primary analysis was conducted using a 12.5% non-inferiority margin of the MITT and CE patient populations. Clinical cure rates in the MITT population were 92.4% and 91.6% for Xerava (n=250) and meropenem (n=249), respectively (95% CI: -4.1%,5.8%). Clinical cure rates in the CE population were 96.9% and 96.1% for Xerava (n=225) and meropenem (n=231), respectively (95% CI: -2.9%,4.5%). The secondary analyses were consistent with, and supportive of, the primary outcome. The most commonly reported drug-related adverse events for Xerava were gastrointestinal, including nausea (2.4%) and emesis (1.6%). This adverse event profile for Xerava was consistent with that seen in the phase 2 clinical trial of Xerava in cIAI. The spectrum of pathogens in this trial was similar to that seen in other pivotal trials of antibiotics in this patient population. The most common Gram-negative pathogens in the trial included *Escherichia coli, Klebsiella pneumonia, Pseudomonas* and *Bacteroides.*

Product Pipeline

Tetraphase has developed three additional product candidates - TP-6076, a fully-synthetic fluorocycline derivative designed to target unmet medical needs, including MDR Gram-negative bacteria such as *Acinetobacter baumannii*; TP-271 is a fully-synthetic, broad-spectrum fluorocycline, for the treatment of respiratory diseases caused by bacterial biothreat pathogens; and TP-2846 a fully-synthetic tetracycline that Tetraphase is developing for the treatment of AML. In June 2019, Tetraphase determined to cease all work relating to these product candidates, including conducting any additional pre-clinical or clinical trials for any of these product candidates due to a lack of human and financial resources. Tetraphase is seeking to outlicense each of these product candidates.

Sales and Marketing

Tetraphase has established a targeted commercial organization in the United States to support the launch of Xerava in the United States. As of March 3, 2020, Tetraphase had approximately 27 sales representatives, 3 regional business directors, 3 strategic market access executives and 7 medical affairs personnel supporting Xerava. Tetraphase's sales force has on average 25 years of hospital sales experience and launching antibiotics. Tetraphase also has tenured and focused marketing and sales operations teams located at its headquarters in Watertown, Massachusetts.

Tetraphase's commercialization strategy is to develop Xerava into a first-line empiric monotherapy for the treatment of multidrug-resistant infections, including MDR Gram-negative infections such as those found in cIAI. Tetraphase has retained worldwide commercial rights to all of its product candidates other than Xerava in China and other Asian territories. Tetraphase exclusively licensed its commercial rights to Xerava in China and other Asian territories to Everest Medicines Limited in February 2018. In the future Tetraphase may enter into additional regional licensing transactions similar to the Everest license agreement. Tetraphase intends to retain control over the commercial execution of Xerava and any product candidate in the United States.

Manufacturing and Supply

Tetraphase does not own or operate manufacturing facilities for the production of Xerava or any of its product candidates, nor does Tetraphase have plans to develop its own manufacturing operations in the foreseeable future. Xerava and Tetraphase's product candidates are organic compounds of low molecular weight, commonly referred to as small molecules. They are manufactured in a fully synthetic process from readily available starting materials.

Tetraphase currently relies on a limited number of third-party contract manufacturers for all of its required raw materials, drug substance and finished product for its preclinical research and clinical trials. Tetraphase does not have long-term agreements with any of these third parties other than with respect to its agreements with third-party contract manufacturers for the commercial production of Xerava. Tetraphase currently employs internal resources to manage its third-party manufacturing relationships.

Patheon UK Limited Master Manufacturing Services Agreement

In June 2017, Tetraphase and Patheon UK Limited and certain of its affiliates, or Patheon, entered into a master manufacturing services agreement, or the Patheon agreement. Under the Patheon agreement, Tetraphase is responsible for supplying the active pharmaceutical ingredient for Xerava to Patheon, and Patheon is responsible for manufacturing Xerava, conducting quality control, quality assurance, analytical testing and stability testing and packaging. Tetraphase entered into two related product agreements pursuant to the Patheon agreement that govern the terms and conditions of Patheon's manufacture of commercial supplies of Xerava at Patheon's Greenville, North Carolina and Ferentino, Italy manufacturing sites. Each product agreement is governed by the terms of the Patheon agreement, unless expressly modified in such product agreement. Pursuant to the Patheon

agreement, Tetraphase has agreed to order from Patheon at least a certain percentage of its annual commercial requirements for Xerava in the United States and European Union each year for the term of the Patheon agreement.

Under the Patheon agreement, Tetraphase is required to submit to Patheon by a date in June of a calendar year the forecast for the following two years that sets forth the total quantity of Xerava commercial supply that Tetraphase expects to order from Patheon during that period. Patheon has no obligation to manufacture the Xerava commercial supply in accordance with any forecast which is increased by a certain percentage above the previously forecast amount.

The Patheon agreement has an initial term ending December 31, 2022, and will automatically renew after the initial term for successive terms of two years each, unless either party gives notice of its intention to terminate at least 18 months prior to the end of the then current term. Tetraphase may terminate a product agreement upon 30 days' prior written notice if any governmental agency takes any action that prevents Tetraphase from importing, exporting, purchasing or selling Xerava. Either party may terminate the Patheon agreement or a product agreement (a) upon written notice if the other party has failed to remedy a material breach under the Patheon agreement or a product agreement within a specified time following receipt of written notice of such breach, and (b) immediately upon written notice to the other party in the event that the other party is declared insolvent or bankrupt, a voluntary petition of bankruptcy is filed in any court by such other party or the Pantheon agreement or a product agreement is assigned by such other party for the benefit of creditors. Patheon may terminate the Patheon agreement or a product agreement upon six months written notice if Tetraphase assigns the Patheon agreement to an assignee that, in the opinion of Patheon acting reasonably, is (i) not a creditworthy substitute for Tetraphase or (ii) a competitor of Patheon.

The Patheon agreement contains, among other provisions, customary representations and warranties by the parties, a grant to Patheon of certain limited license rights to Tetraphase's intellectual property in connection with Patheon's performance of the services under the Patheon agreement, certain indemnification rights in favor of both parties, limitations of liability and customary confidentiality provisions.

Finorga SAS Commercial Supply Agreement

In October 2017, Tetraphase and Finorga SAS, or Novasep, entered into a Commercial Supply Agreement, or the Novasep agreement. Under the Novasep agreement, Novasep will, pursuant to accepted purchase orders entered into under the Novasep agreement, manufacture for commercial supply the active pharmaceutical ingredient, or API, for Xerava for Tetraphase.

Under the Novasep agreement, Tetraphase will submit to Novasep on a periodic basis on or before the first business day of each calendar quarter a rolling forecast for a certain time period that sets forth the total quantity of the API for Xerava for commercial supply that Tetraphase either has ordered, desires to order or expects to order from Novasep. A certain time period of each such forecast is binding on Tetraphase and constitutes a "firm order". The remainder of each forecast will be for planning purposes only and will not be binding. Novasep has no obligation to manufacture the API for Xerava in accordance with any forecast that is not the subject of a firm order and which is increased by a certain percentage above the previously forecast amount.

The Novasep agreement has an initial term ending October 16, 2022, and will automatically renew after the initial term, unless either party gives notice of its intention to terminate at least 18 months prior to the end of the then current term. Tetraphase may terminate the Novasep agreement upon 30 days' prior written notice (a) if any regulatory authority takes any action, or raises any objection, that prevents Tetraphase from importing, exporting, purchasing or selling the API for Xerava, or (b) in the event that Novasep experiences a force majeure event. Either party may terminate the Novasep agreement (a) upon written notice if the other party has failed to remedy a material breach under the Novasep agreement within a specified time following receipt of written notice of such breach, and (b) immediately upon written notice to the other party in the event the other party makes a

general assignment for the benefit of its creditors, or proceedings of a case are commenced in any court of competent jurisdiction by or against the other party seeking (i) such party's reorganization, liquidation, dissolution, arrangement or winding up, or the composition or readjustment of its debts, (ii) the appointment of a receiver or trustee for or over such party's property, or (iii) similar relief in respect of such party under any law relating to bankruptcy, insolvency, reorganization, winding up or composition or adjustment of debt, and such proceedings shall continue undismissed, or an order with respect to the foregoing shall be entered and continue unstayed, for a period of more than 60 days.

The Novasep agreement contains, among other provisions, customary representations and warranties by the parties, a grant to Novasep of certain limited license rights to Tetraphase's intellectual property in connection with Novasep's performance of the services under the Novasep agreement, certain indemnification rights in favor of both parties, limitations of liability and customary confidentiality provisions.

Intellectual Property

Tetraphase strives to protect the proprietary technology that Tetraphase believes is important to its business, including seeking and maintaining patents intended to cover its product candidates and compositions, their methods of use and processes for their manufacture and any other inventions that are commercially important to the development of its business. Tetraphase also relies on trade secrets to protect aspects of its business that are not amenable to, or that Tetraphase does not consider appropriate for, patent protection.

Tetraphase's success will significantly depend on its ability to obtain and maintain patent and other proprietary protection for commercially important technology and inventions and know-how related to its business, defend and enforce its patents, preserve the confidentiality of its trade secrets and operate without infringing the valid and enforceable patents and proprietary rights of third parties. Tetraphase also relies on know-how and continuing technological innovation to develop and maintain its proprietary position.

As of February 25, 2020, Tetraphase owned 12 U.S. patents, 81 foreign patents, eight pending U.S. patent applications, one pending application filed under the Patent Cooperation Treaty, or PCT, and 65 pending foreign patent applications in Europe and 20 other jurisdictions. The PCT is an international patent law treaty that provides a unified procedure for filing a single initial patent application for an invention simultaneously in each of the member states. Although a PCT application is not itself examined and cannot issue as a patent, it allows the applicant to seek protection in any of the member states through national-phase applications. In addition, Tetraphase has exclusively licensed from Harvard University rights under 12 U.S. patents, 34 foreign patents, two pending U.S. patent application and six pending foreign patent applications in Europe and ten other jurisdictions. Certain of Tetraphase's patents and patent applications are directed to the composition of matter and/or use of Xerava and patents have granted, or applications are pending in the United States, Europe, Japan and other countries.

Tetraphase-Owned Intellectual Property Relating to Xerava and Other Compounds Under Development

Tetraphase has patent applications directed to the composition of matter and/or use of Xerava and other fluorocyclines pending in the United States and other countries. In addition, patents specific to the composition of matter, pharmaceutical compositions and/or use of Xerava have been granted in the United States, Europe, Argentina, Australia, China, Colombia, India, Japan, Korea, Mexico, New Zealand, Hong Kong, Taiwan, Israel and Singapore. The granted patents have an expiration date of August 7, 2029, and any patents that may issue from the pending applications will also have an expiration date of August 7, 2029, absent any term extensions or adjustments that may be available. The term of one of the United States patents has received 508 days of patent term adjustment under the America Invents Act.

Tetraphase has filed applications for Supplementary Protection Certificates (SPCs) based on European Patent No. 2323972 directed to the composition of matter and use of Xerava. Some applications have granted and others are pending.

Tetraphase has a pending U.S patent application and pending foreign patent applications directed to crystalline forms of Xerava. Any patents that may issue based on the pending applications will have an expiration date no earlier than 2037.

Tetraphase has also filed patent applications directed to the composition of matter and use of various derivatives of tetracycline and pentacycline (a tetracycline scaffold extended to five rings) in the United States, Europe and other foreign countries. Any patents that might issue from these pending applications will have an expiration date no earlier than 2030, with some expiration dates as late as 2037.

Exclusively Licensed Intellectual Property Relating to Tetraphase's Proprietary Chemistry Technology

The patents and patent applications that Tetraphase exclusively licenses from Harvard provide patent protection for the proprietary chemistry technology used in its fully synthetic process to make Xerava and other tetracycline derivatives. The key intermediates that enable Tetraphase's fully synthetic process are commonly referred to as enone intermediates. The licensed patents and patent applications are directed towards the composition of matter of enone intermediates and compounds used to make the enone intermediates, referred to as key precursors, as well as synthetic routes to those enone intermediates, precursors and Tetraphase's tetracycline derivatives under development.

Composition of matter for the enone intermediates and precursors used in preparing the enone intermediates, and methods of making the precursors and enone intermediates are covered by the U.S. patents Tetraphase licenses from Harvard, which will expire no earlier than 2025, not taking into consideration patent term adjustment. Corresponding patent applications have been filed in foreign jurisdictions and any patents that have issued and might issue from these applications also expire or will expire no earlier than 2025.

Exclusively Licensed Intellectual Property Relating to Pentacycline and Tetracycline Derivatives

Tetraphase's license from Harvard also includes patents and patent applications directed to the composition of matter and use of other novel tetracycline or pentacycline derivatives. Patents have been granted or applications are pending in the United States, Europe and other countries. Any patents that might issue from these pending applications will have an expiration date no earlier than 2027.

Patent Term and Patent Term Extensions

The term of individual patents depends upon the legal term for patents in the countries in which they are obtained. In most countries, including the United States, the patent term is 20 years from the earliest filing date of a non-provisional patent application. In the United States, a patent's term may be lengthened by patent term adjustment, which compensates a patentee for administrative delays by the U.S. Patent and Trademark Office in examining and granting a patent or may be shortened if a patent is terminally disclaimed over an earlier filed patent. The term of a patent that covers a drug, biological product or medical device approved pursuant to a pre-market approval may also be eligible for patent term extension when FDA approval is granted, provided statutory and regulatory requirements are met. The length of the patent term extension is related to the length of time the drug is under regulatory review while the patent is in force. The Drug Price Competition and Patent Term Restoration Act of 1984, or the Hatch-Waxman Act, permits a patent term extension of up to five years beyond the expiration date set for the patent. Patent extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval, only one patent applicable to each regulatory review period may be granted an extension and only those claims reading on the approved drug are extended. Similar provisions are available in Europe and other foreign jurisdictions to extend the term of a patent that covers an approved drug.

Trademark Applications Relating to Tetraphase Name, Logo and Xerava Product

As of February 19, 2020, TETRAPHASE PHARMACEUTICALS, Tetraphase's logo, and combinations of those are registered in the United States. TETRAPHASE PHARMACEUTICALS is either registered or pending in

twelve other jurisdictions, the logo is pending or registered in the same twelve jurisdictions, the combination of the name and logo is pending in three of those jurisdictions, and two TETRAPHASE PHARMACEUTICALS Chinese character marks are registered in China. Tetraphase owns a trademark registration in the United States for Xerava, the proprietary name for the Xerava product.

Trade Secrets

Tetraphase relies, in some circumstances, on trade secrets to protect its unpatented technology. However, trade secrets can be difficult to protect. Tetraphase seeks to protect its trade secrets and proprietary technology and processes, in part, by confidentiality agreements with its employees, consultants, scientific advisors and contractors. Tetraphase also seeks to preserve the integrity and confidentiality of its data and trade secrets by maintaining physical security of its premises and physical and electronic security of its information technology systems. While Tetraphase has confidence in these individuals, organizations and systems, agreements or security measures may be breached. Tetraphase may not have adequate remedies for any breach and could lose its trade secrets through such a breach. In addition, Tetraphase's trade secrets may otherwise become known or be independently discovered by competitors. To the extent that its consultants, contractors or collaborators use intellectual property owned by others in their work for Tetraphase, disputes may arise as to the rights in related or resulting trade secrets, know-how and inventions.

Third-Party License Agreements

On August 3, 2006, Tetraphase entered into a license agreement with The President and Fellows of Harvard College, under which Harvard granted Tetraphase an exclusive worldwide license under specified Harvard patent rights to develop and commercialize tetracycline-based products such as Xerava. Under the license agreement, Tetraphase also has the right to expand the patent rights subject to the license to include improvement patents that may be owned by Harvard in the future and that meet specified criteria by paying to Harvard an additional license issuance fee in an amount to be agreed between Harvard and Tetraphase. Tetraphase also has a right of negotiation to expand the license to include additional patents relating to tetracycline chemistry within a specified category that may be owned by Harvard in the future, including patents covering inventions made by Andrew Myers, Ph.D., Tetraphase's scientific founder, under his consulting agreement with Tetraphase. Since entering into the license agreement, Tetraphase has entered into amendments to the license agreement pursuant to which Tetraphase expanded the patent rights subject to the license in accordance with these rights. Under the license agreement, Tetraphase is obligated to satisfy diligence requirements, including using commercially reasonable efforts to develop and commercialize licensed compounds and to implement a specified development plan, meeting specified development milestones and providing an update on progress on an annual basis. Tetraphase's license grant from Harvard is subject to academic rights retained by Harvard and United States government rights and obligations that are customary in patent license agreements with universities in the United States.

In consideration for the rights granted to Tetraphase by Harvard under the license agreement, as of December 31, 2019, Tetraphase has paid Harvard an aggregate of $16.8 million in upfront license fees, sublicense fees and development milestone payments and issued 1,568 shares of its common stock to Harvard. Tetraphase has also agreed to make payments to Harvard upon the achievement of specified future development and regulatory milestones totaling up to $15.1 million for each licensed product candidate ($12.6 million of which has already been paid with respect to Xerava), and to pay tiered royalties in the single digits based on annual worldwide net sales, if any, of licensed products by us, its affiliates and sublicensees in certain circumstances. Tetraphase is also obligated to pay Harvard a specified share of non-royalty sublicensing and other revenues that Tetraphase receives from sublicensees for the grant of sublicenses under the license in certain circumstances, and to reimburse Harvard for specified patent prosecution and maintenance costs.

The Harvard license agreement expires on a licensed product-by-licensed product and country-by-country basis upon the expiration of the last-to-expire patent covering the applicable product in the applicable country that is

included in the license. Harvard may terminate the license agreement based on Tetraphase's uncured material breach or insolvency or bankruptcy. Tetraphase has the right to terminate the license agreement for any or no reason at any time on sixty (60) days prior written notice to Harvard.

Government Contracts

Xerava

Tetraphase received funding for Xerava under an award from Biomedical Advanced Research and Development Authority, or BARDA, an agency of the U.S. Department of Health and Human Services. In January 2012, BARDA awarded to CUBRC, Inc., or CUBRC, an independent, not-for-profit, research corporation that specializes in United States government-based contracts, with which Tetraphase collaborated, a five-year contract that provided a total of up to $67.3 million in funding. The BARDA Contract contemplated that CUBRC would collaborate with Tetraphase on the development, manufacturing and clinical evaluation of a novel tetracycline antibiotic with potential as an empiric countermeasure for respiratory diseases caused by biothreat and antibiotic-resistant public health pathogens, including *Francisella tularensis*, which causes tularemia, *Yersinia pestis*, which causes plague, and *Bacillus anthracis*, which causes anthrax disease, as well as bacterial pathogens associated with moderate-to-severe CABP and other serious hospital infections. The BARDA Contract also provided funding for certain activities in the development of Xerava to treat certain infections caused by life-threatening multidrug-resistant bacteria. In connection with the BARDA Contract, in February 2012, Tetraphase entered into a cost-plus-fixed-fee subcontract with CUBRC under which Tetraphase received $41.3 million to fund specific work performed by it related to Xerava.

Tetraphase collaborated with CUBRC in seeking government funding of this development program because Tetraphase did not have any expertise in bidding for, or the administration and management of, government-funded contracts. Because CUBRC had the expertise to manage and administer awards issued by government funding agencies, Tetraphase agreed with CUBRC that CUBRC would serve as the prime contractor under the BARDA Contract, primarily carrying out a program management and administrative role with additional responsibility for the management of certain preclinical studies. Tetraphase served as lead technical experts on all aspects of the BARDA Contract and served as a subcontractor of CUBRC responsible for management of chemistry, manufacturing and control activities and clinical studies. The terms of the subcontract between Tetraphase and CUBRC expired on December 31, 2019.

TP-6076

Tetraphase's program to develop TP-6076 was partially covered by an award from Combating Antibiotic Resistant Bacteria Biopharmaceutical Accelerator, or CARB-X, an international public-private partnership focused on advancing new antimicrobial products to address the threat of antibiotic resistance. In March 2017, CARB-X selected Tetraphase to receive up to $4.0 million in research funding over eighteen months for TP-6076. In connection with this funding, Tetraphase entered into a cost reimbursement Sub-Award Agreement with the Trustees of Boston University, the administrator of the program. The Sub-Award Agreement expired on June 30, 2019. The Company received payments totaling $3.2M during the life of this award. Tetraphase's obligations under this Sub-Award Agreement have been met in full as of December 31, 2019.

TP-271

Tetraphase's program to develop TP-271 was funded by the National Institute of Allergy and Infectious Diseases, or NIAID, a division of the National Institutes of Health, through the NIAID Contract, an agreement that provided $35.8 million in funding that NIAID awarded to CUBRC in October 2011. The NIAID Contract contemplated that CUBRC would collaborate with Tetraphase on the development, manufacturing and clinical evaluation of a novel broad-spectrum tetracycline antibiotic for respiratory diseases caused by biothreat and antibiotic-resistant public health pathogens, including *Francisella tularensis*, *Yersinia pestis* and *Bacillus anthracis*, as well as bacterial pathogens associated with CABP.

In connection with the NIAID Contract, in October 2011, Tetraphase entered into a subcontract with CUBRC under which Tetraphase received funding of $16.3 million, reflecting the portion of the NIAID Contract funding that was paid to Tetraphase for its activities. The term of the NIAID subcontract expired on March 31, 2019. Tetraphase's obligations under the NIAID Contract had been met in full as of December 31, 2019.

Collaborations

In February 2018, Tetraphase entered into a license agreement, which Tetraphase calls the Everest license agreement, with Everest Medicines Limited, or Everest Medicines, whereby Tetraphase granted Everest Medicines an exclusive license to develop and commercialize eravacycline, for the treatment of cIAI and other indications, in mainland China, Taiwan, Hong Kong, Macau, South Korea and Singapore, or the territory.

Under the terms of the Everest license agreement, Tetraphase received from Everest Medicines an upfront cash payment of $7.0 million and are entitled to receive up to an aggregate of $16.5 million in clinical development and regulatory milestone payments and up to $20.0 million provided that certain sales thresholds are met. Through December 31, 2019, Tetraphase has received $5.5 million from Everest Medicines in clinical development and regulatory milestones. There can be no guarantee that any such milestones or sales thresholds will in fact be met. Tetraphase is obligated to make certain payments to Harvard based on amounts received from Everest Medicines under the Everest license agreement pursuant to the existing license agreement by and between Harvard and us.

In addition, on July 29, 2019, Tetraphase amended its original agreement with Everest Medicines to extend Everest Medicines' exclusive license to develop and commercialize Xerava to the jurisdictions of the Malaysian Federation, the Kingdom of Thailand, the Republic of Indonesia, the Socialist Republic of Vietnam and the Republic of the Philippines. Under the terms of this amendment, Tetraphase received from Everest Medicines an upfront, nonrefundable cash payment of $2.0 million in September 2019. As with the milestones discussed above, Tetraphase was obligated to make certain payments to Harvard based on amounts received from Everest under this amendment pursuant to the existing license agreement by and between Harvard and Tetraphase. During the fourth quarter of 2019, Tetraphase paid Harvard $0.4 million related to this milestone.

Tetraphase will also be entitled to receive double-digit tiered royalties on sales in the territory, if any, of products containing eravacycline. Royalties are payable with respect to each jurisdiction in the territory until the latest to occur of: (i) the last-to-expire of specified patent rights in such jurisdiction in the territory; (ii) expiration of marketing or regulatory exclusivity in such jurisdiction in the territory; or (iii) ten (10) years after the first commercial sale of a product in such jurisdiction in the territory. In addition, royalties payable under the Everest license agreement will be subject to reduction on account of generic competition and after patent expiry in a jurisdiction if required by applicable law, with any such reductions capped at certain percentages of the amounts otherwise payable during the applicable royalty payment period.

Under the terms and conditions of the Everest license agreement, Everest Medicines will be solely responsible for the development and commercialization of licensed products in the territory.

If either Tetraphase or Everest Medicines materially breaches the Everest license agreement and does not cure such breach within 90 days (or fewer days in certain cases), the non-breaching party may terminate the Everest license agreement in its entirety. However, if the breach relates only to any jurisdiction other than mainland China, the non-breaching party may only terminate the Everest license agreement with respect to such jurisdiction. Either party may also terminate the Everest license agreement, effective immediately upon written notice, if the other party files for bankruptcy, is dissolved or has a receiver appointed for substantially all of its property. Tetraphase may terminate the Everest license agreement if Everest Medicines, its affiliates or its sublicensees challenges the validity or enforceability of any of its patents covering any of the licensed compounds or products. In certain circumstances, if Tetraphase materially breaches the Everest license agreement Everest Medicines may reduce royalties owed to Tetraphase in lieu of a termination. Moreover, if

Tetraphase materially breaches the Everest license agreement and Everest Medicines terminates the Everest license agreement with respect to any jurisdiction and Tetraphase then commercializes a licensed product in that jurisdiction, Tetraphase will pay to Everest Medicines a low, single digit royalty on such sales of the licensed product in such jurisdiction for a minimum of five years after such termination.

Competition

The biopharmaceutical industry is characterized by intense competition and rapid innovation. Tetraphase's potential competitors include large pharmaceutical and biotechnology companies, specialty pharmaceutical companies and generic drug companies. Many of Tetraphase's potential competitors have greater financial, technical and human resources than Tetraphase has, as well as greater experience in the discovery and development of product candidates, obtaining FDA and other regulatory approvals of products and the commercialization of those products. Accordingly, Tetraphase's potential competitors may be more successful than it in achieving widespread market acceptance. Tetraphase anticipates that it will face intense and increasing competition as new drugs enter the market and advanced technologies become available. Finally, the development of new treatment methods for the diseases Tetraphase is targeting could render its product candidates less competitive or obsolete.

Tetraphase believes the key competitive factors that may affect the commercial success of Xerava for the treatment of cIAI are; efficacy, coverage of drug-resistant strains of bacteria, safety and tolerability profile, convenience of dosing, price, and the availability of reimbursement from governmental and other third-party payers. Outside factors that may affect the commercial success of Xerava are increased resistance trends, changes in the reimbursement landscape, and the approval/availability of rapid diagnostics.

Tetraphase is selling Xerava as an IV antibiotic for use as a first-line empiric monotherapy for the treatment of cIAI. Xerava competes with a number of antibiotics that are currently marketed for the treatment of cIAI and other multidrug resistant infections, including meropenem, which is marketed by AstraZeneca as Merrem, imipenem/cilastatin, which is sold by Merck & Co., or Merck, as Primaxin, tigecycline, which was marketed by Pfizer as Tygacil, piperacillin/tazobactam, which is marketed by Pfizer as Zosyn, ceftolozane/tazobactam and imipenem/relebactam, which are marketed by Merck as Zerbaxa and Recarbrio, and ceftazidime/avibactam, which is marketed by Allergan, Inc. as Avycaz, meropenem and vaborbactam, which is marketed by Melinta Therapeutics as Vabomere, Tetraphase also expects that Xerava will compete with future and current generic versions of marketed antibiotics.

Tetraphase believes that Xerava may compete effectively against these compounds on the basis of:

- broad range of activity against a wide variety of resistant and MDR Gram-negative, Gram-positive and anaerobic bacteria;
- lower probability of drug resistance;
- a favorable safety and tolerability profile;
- effectiveness in patients with allergies to beta-lactam;
- a convenient dosing regimen with no need for adjustment for renal impairment;
- lower risk of *C. Difficile*;
- approval as a monotherapy; and
- no drug to drug interactions.

Government Regulation and Product Approval

Government authorities in the United States, at the federal, state and local level, and in other countries, extensively regulate, among other things, the research, development, clinical trials, testing, manufacture, including any manufacturing changes, authorization, pharmacovigilance, adverse event reporting, recalls, packaging, storage, record keeping, labeling, advertising, promotion, distribution, marketing, import and export of pharmaceutical products and product candidates such as those Tetraphase is developing. The processes for obtaining regulatory approvals in the United States and in foreign countries, along with subsequent compliance with applicable statutes and regulations, require the expenditure of substantial time and financial resources.

U.S. Government Regulation

In the United States, the FDA regulates drugs and drug products under the Federal Food, Drug, and Cosmetic Act, or FDCA, and implementing regulations. The process of obtaining regulatory approvals and the subsequent compliance with appropriate federal, state, local and foreign statutes and regulations requires the expenditure of substantial time and financial resources. Failure to comply with the applicable United States requirements at any time during the product development process, approval process or after approval, may subject an applicant to a variety of administrative or judicial sanctions, such as the FDA's refusal to approve pending new drug applications, or NDAs, withdrawal of an approval, imposition of a clinical hold, issuance of warning letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, refusals of government contracts, restitution, disgorgement or civil and/or criminal penalties.

The process required by the FDA before a drug may be marketed in the United States generally involves the following:

- completion of preclinical laboratory tests, animal studies and formulation studies in compliance with the FDA's good laboratory practice, or GLP, regulations;
- submission to the FDA of an investigational new drug application, or IND, which must become effective before human clinical trials may begin;
- approval by an independent institutional review board, or IRB, representing each clinical site before each clinical trial may be initiated;
- performance of adequate and well-controlled human clinical trials in accordance with good clinical practice, or GCP, to establish the safety and efficacy of the proposed drug product for each indication;
- submission to the FDA of an NDA for a drug product which includes not only the results of the clinical trials but also detailed information on the chemistry, manufacture and quality controls for the product candidate and proposed labelling for one or more proposed indication(s);
- satisfactory completion of an FDA pre-approval inspection of the manufacturing facility or facilities at which the product is produced to assess compliance with current good manufacturing practices, or cGMP, and to assure that the facilities, methods and controls are adequate to preserve the drug's identity, strength, quality and purity;
- payment of user fees and FDA review and approval of the NDA, including consideration of the views of any FDA advisory committee; and
- compliance with any post-approval requirements, including the potential requirement to implement a Risk Evaluation and Mitigation Strategy, or REMS, and the potential requirement to conduct post-approval studies required by the FDA.

Preclinical Studies

Before an applicant begins testing a product candidate with potential therapeutic value in humans, the product candidate enters the preclinical testing stage. Preclinical tests include laboratory evaluations of product chemistry, formulation and stability, as well as other studies to evaluate, among other things, the toxicity of the product candidate. The conduct of the preclinical tests and formulation of the compounds for testing must comply with federal regulations and requirements, including GLP regulations and standards. The results of the preclinical tests, together with manufacturing information and analytical data, are submitted to the FDA as part of an IND. Some long-term preclinical testing, such as animal tests of reproductive adverse events and carcinogenicity, and long-term toxicity studies, may continue after the IND is submitted.

The IND and IRB Processes

An IND is an exemption from the FDCA that allows an unapproved product candidate to be shipped in interstate commerce for use in an investigational clinical trial and a request for FDA authorization to administer such investigational product to humans. Such authorization must be secured prior to interstate shipment and administration of any product candidate that is not the subject of an approved NDA. In support of a request for an IND, applicants must submit a protocol for each clinical trial and any subsequent protocol amendments must be submitted to the FDA as part of the IND. In addition, the results of the preclinical tests, together with manufacturing information, analytical data, any available clinical data or literature and plans for clinical trials, among other things, must be submitted to the FDA as part of an IND. The FDA requires a 30-day waiting period after the filing of each IND before clinical trials may begin. This waiting period is designed to allow the FDA to review the IND to determine whether human research subjects will be exposed to unreasonable health risks. At any time during this 30-day period, or thereafter, the FDA may raise concerns or questions about the conduct of the trials as outlined in the IND and impose a clinical hold or partial clinical hold. In this case, the IND sponsor and the FDA must resolve any outstanding concerns before clinical trials can begin.

Following commencement of a clinical trial under an IND, the FDA may also place a clinical hold or partial clinical hold on that trial. A clinical hold is an order issued by the FDA to the sponsor to delay a proposed clinical investigation or to suspend an ongoing investigation. A partial clinical hold is a delay or suspension of only part of the clinical work requested under the IND. For example, a specific protocol or part of a protocol is not allowed to proceed, while other protocols may do so. No more than 30 days after imposition of a clinical hold or partial clinical hold, the FDA will provide the sponsor a written explanation of the basis for the hold. Following issuance of a clinical hold or partial clinical hold, an investigation may only resume after the FDA has notified the sponsor that the investigation may proceed. The FDA will base that determination on information provided by the sponsor correcting the deficiencies previously cited or otherwise satisfying the FDA that the investigation can proceed.

A sponsor may choose, but is not required, to conduct a foreign clinical study under an IND. When a foreign clinical study is conducted under an IND, all FDA IND requirements must be met unless waived. When a foreign clinical study is not conducted under an IND, the sponsor must ensure that the study complies with certain regulatory requirements of the FDA in order to use the study as support for an IND or application for marketing approval. Specifically, on April 28, 2008, the FDA amended its regulations governing the acceptance of foreign clinical studies not conducted under an investigational new drug application as support for an NDA. The final rule provides that such studies must be conducted in accordance with good clinical practice, or GCP, including review and approval by an independent ethics committee, or IEC, and informed consent from subjects. The GCP requirements in the final rule encompass both ethical and data integrity standards for clinical studies. The FDA's regulations are intended to help ensure the protection of human subjects enrolled in non-IND foreign clinical studies, as well as the quality and integrity of the resulting data. They further help ensure that non-IND foreign studies are conducted in a manner comparable to that required for IND studies.

In addition to the foregoing IND requirements, an IRB representing each institution participating in the clinical trial must review and approve the plan for any clinical trial before it commences at that institution, and the IRB must conduct continuing review and reapprove the study at least annually. The IRB must review and approve, among other things, the study protocol and informed consent information to be provided to study subjects. An IRB must operate in compliance with FDA regulations. An IRB can suspend or terminate approval of a clinical trial at its institution, or an institution it represents, if the clinical trial is not being conducted in accordance with the IRB's requirements or if the product candidate has been associated with unexpected serious harm to patients.

Additionally, some trials are overseen by an independent group of qualified experts organized by the trial sponsor, known as a data safety monitoring board or committee, or DSMB. This group provides recommendations as to whether or not a trial may move forward at designated check points based on access that only the group maintains to available data from the study. Suspension or termination of development during any phase of clinical trials can occur if it is determined that the participants or patients are being exposed to an unacceptable health risk. Other reasons for suspension or termination may be made by Tetraphase based on evolving business objectives and/or competitive climate.

Information about clinical trials must be submitted within specific timeframes to the National Institutes of Health, or NIH, for public dissemination on its ClinicalTrials.gov website.

Human Clinical Trials

Clinical trials involve the administration of the investigational new drug to human subjects under the supervision of qualified investigators in accordance with GCP requirements, which include the requirement that all research subjects provide their informed consent in writing for their participation in any clinical trial along with the requirement to ensure that the data and results reported from the clinical trials are credible and accurate. Clinical trials are conducted under protocols detailing, among other things, the objectives of the trial, the criteria for determining subject eligibility, the dosing plan, the parameters to be used in monitoring safety, the procedure for timely reporting of adverse events, and the effectiveness criteria to be evaluated. A protocol for each clinical trial and any subsequent protocol amendments must be submitted to the FDA as part of the IND. In addition, an IRB representing each clinical site participating in the clinical trial must review and approve the plan for any clinical trial before it commences at that site. The FDA may impose clinical holds on a drug candidate at any time before or during clinical trials due to safety concerns or non-compliance. Information about certain clinical trials must be submitted within specific timeframes to the National Institutes of Health, or NIH, for public dissemination on their www.clinicaltrials.gov website.

Human clinical trials are typically conducted in three sequential phases, which may overlap or be combined:

- Phase 1: The drug is initially introduced into a limited number of healthy human subjects or patients with the target disease or condition and tested for safety, dosage tolerance, absorption, metabolism, distribution, excretion and, if possible, to gain an early indication of its effectiveness. During phase 1 clinical trials, sufficient information about the investigational drug's or biological product's pharmacokinetics and pharmacological effects may be obtained to permit the design of well-controlled and scientifically valid phase 2 clinical trials.
- Phase 2: The drug is administered to a larger, but still limited patient population to identify possible adverse effects and safety risks, to preliminarily evaluate the efficacy of the product for specific targeted indications and to determine dosage tolerance and optimal dosage. Phase 2 clinical trials are typically well-controlled and closely monitored.
- Phase 3: The drug is administered to an expanded patient population, generally at geographically dispersed clinical trial sites, in well-controlled clinical trials to generate enough data to statistically evaluate the efficacy and safety of the product for approval, to establish the overall risk-benefit profile of the product, and to provide adequate information for the labeling of the product. Phase 3 clinical trials usually involve a larger number of participants than a phase 2 clinical trial.

In some cases, the FDA may approve an NDA for a product candidate but require the sponsor to conduct additional clinical trials to further assess the product candidate's safety and effectiveness after approval. Such post-approval trials are typically referred to as phase 4 clinical trials. These studies are used to gain additional experience from the treatment of a larger number of patients in the intended treatment group and to further document a clinical benefit in the case of drugs approved under accelerated approval regulations. Failure to exhibit due diligence with regard to conducting phase 4 clinical trials could result in withdrawal of approval for products.

Progress reports detailing the status and a brief description of available results of the clinical trials must be submitted at least annually to the FDA and more frequently if serious adverse events occur. In addition, IND safety reports must be submitted to the FDA for any of the following: serious and unexpected suspected adverse reactions; findings from other studies or animal or *in vitro* testing that suggest a significant risk in humans exposed to the product; and any clinically important increase in the case of a serious suspected adverse reaction over that listed in the protocol or investigator brochure. Phase 1, phase 2 and phase 3 clinical trials may not be completed successfully within any specified period or completed at all. Furthermore, the FDA or the sponsor may suspend or terminate a clinical trial at any time on various grounds, including a finding that the research subjects are being exposed to an unacceptable health risk. Similarly, an IRB can suspend or terminate approval of a clinical trial at its institution, or an institution it represents, if the clinical trial is not being conducted in accordance with the IRB's requirements or if the product has been associated with unexpected serious harm to patients. The FDA will typically inspect one or more clinical sites to assure compliance with GCP and the integrity of the clinical data submitted.

Concurrent with clinical trials, companies often complete additional animal studies and must also develop additional information about the chemistry and physical characteristics of the drug as well as finalize a process for manufacturing the product in commercial quantities in accordance with cGMP requirements. The manufacturing process must be capable of consistently producing quality batches of the product candidate and, among other things, must develop methods for testing the identity, strength, quality, purity, and potency of the final drug. Additionally, appropriate packaging must be selected and tested, and stability studies must be conducted to demonstrate that the product candidate does not undergo unacceptable deterioration over its shelf life.

Marketing Approval

Assuming successful completion of the required clinical testing and other requirements, the results of the preclinical and clinical studies, together with detailed information relating to the product's chemistry, manufacture, controls and proposed labeling, among other things, are submitted to the FDA as part of an NDA requesting approval to market the product for one or more indications. In most cases, the submission of an NDA is subject to a substantial application user fee. Under the Prescription Drug User Fee Act, or PDUFA, guidelines that are currently in effect, the FDA has a goal of ten months from the date of "filing" of a standard NDA for a new molecular entity to review and act on the submission. This review typically takes twelve months from the date the NDA is submitted to FDA because the FDA has approximately two months to make a "filing" decision. The FDA conducts a preliminary review of all NDAs within the first 60 days after submission, before accepting them for filing, to determine whether they are sufficiently complete to permit substantive review. The FDA may request additional information rather than accept an NDA for filing. In this event, the application must be resubmitted with the additional information. The resubmitted application is also subject to review before the FDA accepts it for filing. Once the submission is accepted for filing, the FDA begins an in-depth substantive review. The FDA reviews an NDA to determine, among other things, whether the drug is safe and effective and whether the facility in which it is manufactured, processed, packaged or held meets standards designed to assure the product's continued safety, quality and purity.

Furthermore, the FDA is not required to complete its review within the established ten-month timeframe and may extend the review process by issuing requests for additional information or clarification.

In addition, under the Pediatric Research Equity Act of 2003, as amended and reauthorized, certain NDAs or supplements to an NDA must contain data that are adequate to assess the safety and effectiveness of the drug for the claimed indications in all relevant pediatric subpopulations, and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. The FDA may, on its own initiative or at the request of the applicant, grant deferrals for submission of some or all pediatric data until after approval of the product for use in adults, or full or partial waivers from the pediatric data requirements.

Unless otherwise required by regulation, the pediatric data requirements do not apply to products with orphan designation. Tetraphase's product candidates are not designated as orphan drugs.

The FDA also may require submission of a risk evaluation and mitigation strategy, or REMS, to mitigate any identified or suspected serious risks. The REMS plan could include medication guides, physician communication plans, assessment plans, and elements to assure safe use, such as restricted distribution methods, patient registries, or other risk minimization tools.

The FDA is required to refer an application for a novel drug to an advisory committee or explain why such referral was not made. An advisory committee is typically a panel of independent experts, including clinicians and other scientific experts, that reviews, evaluates and provides a recommendation as to whether the application should be approved and under what conditions. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions.

Before approving an NDA, the FDA typically will inspect the facility or facilities where the product is or will be manufactured. The FDA will not approve an application unless it determines that the manufacturing processes and facilities are in compliance with cGMP requirements and adequate to assure consistent production of the product within required specifications. Additionally, before approving an NDA, the FDA will typically inspect one or more clinical trial sites to assure compliance with GCP.

The FDA generally accepts data from foreign clinical trials in support of an NDA if the trials were conducted under an IND. If a foreign clinical trial is not conducted under an IND, the FDA nevertheless may accept the data in support of an NDA if the study was conducted in accordance with GCP and the FDA is able to validate the data through an on-site inspection, if deemed necessary. The FDA also expects an explanation of how the foreign data are applicable to the United States population and United States medical practice.

The testing and approval process for an NDA requires substantial time, effort and financial resources, and each may take several years to complete. Data obtained from preclinical and clinical testing are not always conclusive and may be susceptible to varying interpretations, which could delay, limit or prevent regulatory approval. The FDA may not grant approval on a timely basis, or at all.

After evaluating the NDA and all related information, including the advisory committee recommendation, if any, and inspection reports regarding the manufacturing facilities and clinical trial sites, the FDA may issue an approval letter or a complete response letter. An approval letter authorizes commercial marketing of the product with specific prescribing information for specific indications, and potentially subject to additional restrictions such as a REMS. A complete response letter generally contains a statement of specific deficiencies in the NDA and conditions that must be met in order to secure final approval of the NDA, which may require additional clinical or preclinical testing in order for FDA to reconsider the application. Even with submission of this additional information, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval.

Even if the FDA approves a product, it may limit the approved indications for use of the product, require that contraindications, warnings or precautions be included in the product labeling, require that post-approval studies, including phase 4 clinical trials, be conducted to further assess a drug's safety after approval, require testing and surveillance programs to monitor the product after commercialization, or impose other conditions, including

distribution and use restrictions or other risk management mechanisms under a REMS which can materially affect the potential market and profitability of the product. The FDA may prevent or limit further marketing of a product based on the results of post-marketing studies or surveillance programs. After approval, some types of changes to the approved product, such as adding new indications, certain manufacturing changes, and additional labeling claims, are subject to further testing requirements and FDA review and approval.

Special FDA Expedited Review and Approval Programs

The FDA has various programs, including fast track designation, accelerated approval and priority review, that are intended to expedite or simplify the process for the development and FDA review of drugs that are intended for the treatment of serious or life-threatening diseases or conditions and demonstrate the potential to address unmet medical needs. The purpose of these programs is to provide important new drugs to patients earlier than under standard FDA review procedures.

To be eligible for a fast track designation, the FDA must determine, based on the request of a sponsor, that a product is intended to treat a serious or life-threatening disease or condition and demonstrates the potential to address an unmet medical need, or if the drug qualifies as a QIDP under the recently enacted Generating Antibiotic Incentives Now, or GAIN, Act. The FDA will determine that a product will fill an unmet medical need if it will provide a therapy where none exists or provide a therapy that may be potentially superior to existing therapy in a number of different ways. Fast track designation provides additional opportunities for interaction with the FDA's review team and may allow for rolling review of NDA components before the completed application is submitted.

The FDA may give a priority review designation to drugs that offer major advances in treatment for a serious condition or provide a treatment where no adequate therapy exists. Most products that are eligible for fast track designation are also likely to be considered appropriate to receive a priority review. A priority review means that the goal for the FDA to review an application is six months, rather than the standard review of ten months under current PDUFA guidelines. Under the new PDUFA agreement, these six and ten-month review periods are measured from the "filing" date rather than the receipt date for NDAs for new molecular entities, which typically adds approximately two months to the timeline for review and decision from the date of submission.

In addition, products studied for their safety and effectiveness in treating serious or life-threatening illnesses and that provide meaningful therapeutic benefit over existing treatments may receive accelerated approval, meaning that it may be approved on (1) the basis of adequate and well-controlled clinical trials establishing that the drug product has an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit, or (2) on an intermediate clinical endpoint that can be measured earlier than irreversible morbidity or mortality and that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity or prevalence of the condition and the availability or lack of alternative treatments. As a condition of approval, the FDA may require a sponsor of a drug receiving accelerated approval to perform post-marketing studies to verify and describe the predicted effect on irreversible morbidity or mortality or other clinical endpoint, and the drug may be subject to expedited withdrawal procedures.

Moreover, under the provisions of the Food and Drug Administration Safety and Innovation Act, or FDASIA, enacted in 2012, a sponsor can request designation of a product candidate as a "breakthrough therapy." A breakthrough therapy is defined as a drug that is intended, alone or in combination with one or more other drugs, to treat a serious or life-threatening disease or condition, and preliminary clinical evidence indicates that the drug may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. The benefits of breakthrough therapy designation include much of the same benefits as fast track designation, plus intensive guidance from FDA to ensure an efficient drug development program and organizational commitment involving senior FDA managers.

Even if a product qualifies for one or more of these programs, the FDA may later decide that the product no longer meets the conditions for qualification or decide that the time period for FDA review or approval will not be shortened.

Limited Population Antibacterial Drug Pathway

With passage of the Cures Act, Congress authorized the FDA to approve an antibacterial or antifungal drug, alone or in combination with one or more other drugs, as a "limited population drug." To qualify for this approval pathway, the drug must be intended to treat a serious or life-threatening infection in a limited population of patients with unmet needs; the standards for approval of drugs and biologics under the FDCA and the Public Health Service Act, or PHSA, must be satisfied; and the FDA must receive a written request from the sponsor to approve the drug as a limited population drug pursuant to this provision. The FDA's determination of safety and effectiveness for such a product must reflect the benefit-risk profile of such drug in the intended limited population, taking into account the severity, rarity, or prevalence of the infection the drug is intended to treat and the availability or lack of alternative treatment in such a limited population.

Any drug or biologic approved under this pathway must be labeled with the statement "Limited Population" in a prominent manner and adjacent to the proprietary name of the drug or biological product. The prescribing information must also state that the drug is indicated for use in a limited and specific population of patients and copies of all promotional materials relating to the drug must be submitted to the FDA at least 30 days prior to dissemination of the materials. If the FDA subsequently approves the drug for a broader indication, the agency may remove any post-marketing conditions, including requirements with respect to labeling and review of promotional materials applicable to the product. Nothing in this pathway to approval of a limited population drug prevents sponsors of such products from seeking designation or approval under other provisions of the FDCA, such as accelerated approval.

Post-Approval Regulation

Drugs manufactured or distributed pursuant to FDA approvals are subject to pervasive and continuing regulation by the FDA, including, among other things, requirements relating to record keeping, periodic reporting, product sampling and distribution, advertising and promotion and reporting of adverse experiences with the product. After approval, many changes to the approved product, such as adding new indications or other labeling claims, are subject to prior FDA review and approval. There also are continuing, annual user fee requirements for any marketed products and the establishments at which such products are manufactured, as well as new application fees for supplemental applications with clinical data.

The FDA may impose a number of post-approval requirements as a condition of approval of an NDA. For example, the FDA may require post-marketing testing, including phase 4 clinical trials, and surveillance to further assess and monitor the product's safety and effectiveness after commercialization.

In addition, drug manufacturers and other entities involved in the manufacture and distribution of approved drugs are required to register their establishments with the FDA and state agencies, and are subject to periodic unannounced inspections by the FDA and these state agencies for compliance with cGMP requirements. Changes to the manufacturing process are strictly regulated and often require prior FDA approval before being implemented. FDA regulations also require investigation and correction of any deviations from cGMP and impose reporting and documentation requirements upon the sponsor and any third-party manufacturers that the sponsor may decide to use. Accordingly, manufacturers must continue to expend time, money, and effort in the area of production and quality control to maintain cGMP compliance.

The FDA strictly regulates the marketing, labeling, advertising and promotion of drug products that are placed on the market. A product cannot be commercially promoted before it is approved, and approved drugs may generally be promoted only for their approved indications. Promotional claims must also be consistent with the

product's FDA-approved label, including claims related to safety and effectiveness. The FDA restricts drug manufacturers' communications regarding uses not described in the FDA-approved labeling, known as off-label uses. The FDA and other federal agencies also closely regulate the promotion of drugs in specific contexts such as direct-to-consumer advertising, industry-sponsored scientific and education activities, and promotional activities involving the Internet and social media.

Once an approval is granted, the FDA may withdraw the approval if compliance with regulatory requirements and standards is not maintained or if problems occur after the product reaches the market.

Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with manufacturing processes, or failure to comply with regulatory requirements, may result in mandatory revisions to the approved labeling to add new safety information; imposition of post-market studies or clinical trials to assess new safety risks; or imposition of distribution or other restrictions under a REMS program. Other potential consequences of regulatory non-compliance include, among other things:

- restrictions on, or suspensions of, the marketing or manufacturing of the product, complete withdrawal of the product from the market or product recalls;
- interruption of production processes, including the shutdown of manufacturing facilities or production lines or the imposition of new manufacturing requirements;
- warning letters or other enforcement letters or holds on post-approval clinical trials;
- refusal of the FDA to approve pending NDAs or supplements to approved NDAs, or suspension or revocation of product license approvals;
- product seizure or detention, or refusal to permit the import or export of products; or
- injunctions or the imposition of civil penalties or criminal prosecution.

In addition, the distribution of prescription pharmaceutical products is subject to the Prescription Drug Marketing Act, or PDMA, which regulates the distribution of drugs and drug samples at the federal level, and sets minimum standards for the registration and regulation of drug distributors by the states. Both the PDMA and state laws limit the distribution of prescription pharmaceutical product samples and impose requirements to ensure accountability in distribution.

Exclusivity and Approval of Competing Products

Abbreviated New Drug Applications for Generic Drugs

In 1984, with passage of the Hatch-Waxman Amendments to the FDCA, Congress established an abbreviated regulatory scheme authorizing the FDA to approve generic drugs that are shown to contain the same active ingredients as, and to be bioequivalent to, drugs previously approved by the FDA pursuant to NDAs. To obtain approval of a generic drug, an applicant must submit an abbreviated new drug application, or ANDA, to the agency. An ANDA is a comprehensive submission that contains, among other things, data and information pertaining to the active pharmaceutical ingredient, bioequivalence, drug product formulation, specifications and stability of the generic drug, as well as analytical methods, manufacturing process validation data and quality control procedures. ANDAs are "abbreviated" because they generally do not include preclinical and clinical data to demonstrate safety and effectiveness. Instead, in support of such applications, a generic manufacturer may rely on the preclinical and clinical testing previously conducted for a drug product previously approved under an NDA, known as the reference-listed drug, or RLD.

Specifically, in order for an ANDA to be approved, the FDA must find that the generic version is identical to the RLD with respect to the active ingredients, the route of administration, the dosage form, the strength of the drug and the conditions of use of the drug. At the same time, the FDA must also determine that the generic drug is "bioequivalent" to the innovator drug. Under the statute, a generic drug is bioequivalent to an RLD if "the rate

and extent of absorption of the drug do not show a significant difference from the rate and extent of absorption of the listed drug." Upon approval of an ANDA, the FDA indicates whether the generic product is "therapeutically equivalent" to the RLD in its publication "Approved Drug Products with Therapeutic Equivalence Evaluations," also referred to as the "Orange Book." Physicians and pharmacists consider a therapeutic equivalent generic drug to be fully substitutable for the RLD. In addition, by operation of certain state laws and numerous health insurance programs, the FDA's designation of therapeutic equivalence often results in substitution of the generic drug without the knowledge or consent of either the prescribing physician or patient.

Under the Hatch-Waxman Amendments, the FDA may not approve an ANDA until any applicable period of non-patent exclusivity for the RLD has expired. The FDCA provides a period of five years of non-patent data exclusivity for a new drug containing a new chemical entity. For the purposes of this provision, a new chemical entity, or NCE, is a drug that contains no active moiety that has previously been approved by the FDA in any other NDA. An active moiety is the molecule or ion responsible for the physiological or pharmacological action of the drug substance. In cases where such NCE exclusivity has been granted, an ANDA may not be filed with the FDA until the expiration of five years unless the submission is accompanied by a Paragraph IV certification, in which case the applicant may submit its application four years following the original product approval.

The FDCA also provides for a period of three years of exclusivity if the NDA includes reports of one or more new clinical investigations, other than bioavailability or bioequivalence studies, that were conducted by or for the applicant and are essential to the approval of the application. This three-year exclusivity period often protects changes to a previously approved drug product, such as a new dosage form, route of administration, combination or indication. Three-year exclusivity would be available for a drug product that contains a previously approved active moiety, provided the statutory requirement for a new clinical investigation is satisfied. Unlike five-year NCE exclusivity, an award of three-year exclusivity does not block the FDA from accepting ANDAs seeking approval for generic versions of the drug as of the date of approval of the original drug product. The FDA typically makes decisions about awards of data exclusivity shortly before a product is approved.

The FDA must establish a priority review track for certain generic drugs, requiring the FDA to review a drug application within eight months for a drug that has three or fewer approved drugs listed in the Orange Book and is no longer protected by any patent or regulatory exclusivities, or is on the FDA's drug shortage list. The new legislation also authorizes FDA to expedite review of ‘‘competitor generic therapies’’ or drugs with inadequate generic competition, including holding meetings with or providing advice to the drug sponsor prior to submission of the application.

Hatch-Waxman Patent Certification and the 30-Month Stay

Upon approval of an NDA or a supplement thereto, NDA sponsors are required to list with the FDA each patent with claims that cover the applicant's product or an approved method of using the product. Each of the patents listed by the NDA sponsor is published in the Orange Book. When an ANDA applicant files its application with the FDA, the applicant is required to certify to the FDA concerning any patents listed for the reference product in the Orange Book, except for patents covering methods of use for which the ANDA applicant is not seeking approval. To the extent that the Section 505(b)(2) applicant is relying on studies conducted for an already approved product, the applicant is required to certify to the FDA concerning any patents listed for the approved product in the Orange Book to the same extent that an ANDA applicant would.

Specifically, the applicant must certify with respect to each patent that:

- the required patent information has not been filed;
- the listed patent has expired;
- the listed patent has not expired, but will expire on a particular date and approval is sought after patent expiration; or
- the listed patent is invalid, unenforceable or will not be infringed by the new product.

A certification that the new product will not infringe the already approved product's listed patents or that such patents are invalid or unenforceable is called a Paragraph IV certification. If the applicant does not challenge the listed patents or indicates that it is not seeking approval of a patented method of use, the application will not be approved until all the listed patents claiming the referenced product have expired (other than method of use patents involving indications for which the applicant is not seeking approval).

If the ANDA applicant has provided a Paragraph IV certification to the FDA, the applicant must also send notice of the Paragraph IV certification to the NDA and patent holders once the ANDA has been accepted for filing by the FDA. The NDA and patent holders may then initiate a patent infringement lawsuit in response to the notice of the Paragraph IV certification. The filing of a patent infringement lawsuit within 45 days after the receipt of a Paragraph IV certification automatically prevents the FDA from approving the ANDA until the earlier of 30 months after the receipt of the Paragraph IV notice, expiration of the patent, or a decision in the infringement case that is favorable to the ANDA applicant.

To the extent that the Section 505(b)(2) applicant is relying on studies conducted for an already approved product, the applicant is required to certify to the FDA concerning any patents listed for the approved product in the Orange Book to the same extent that an ANDA applicant would. As a result, approval of a Section 505(b)(2) NDA can be stalled until all the listed patents claiming the referenced product have expired, until any non-patent exclusivity, such as exclusivity for obtaining approval of a new chemical entity, listed in the Orange Book for the referenced product has expired, and, in the case of a Paragraph IV certification and subsequent patent infringement suit, until the earlier of 30 months, settlement of the lawsuit or a decision in the infringement case that is favorable to the Section 505(b)(2) applicant.

Qualified Infectious Disease Product Exclusivity

Under the GAIN provisions of FDASIA, which was signed into law in July 2012, the FDA may designate a product as a "qualified infectious disease product," or QIDP. In order to receive this designation, a drug must qualify as an antibacterial or antifungal drug for human use intended to treat serious or life-threatening infections, including those caused by either (1) an antibacterial or antifungal resistant pathogen, including novel or emerging infectious pathogens, or (2) a so-called "qualifying pathogen" found on a list of potentially dangerous, drug-resistant organisms to be established and maintained by the FDA. A sponsor must request such designation before submitting a marketing application. Tetraphase obtained a QIDP designation for the IV formulation of Xerava for cIAI in July 2013, the oral formulation in March 2014, the IV formulation of TP-271 in September 2015, the oral formulation of TP-271 in February 2017, and expect to request QIDP designations for its other product candidates prior to submitting a marketing application for such product candidates, as appropriate.

Upon approving an application for a qualified infectious disease product, the FDA will extend by an additional five years any non-patent marketing exclusivity period awarded, such as a five-year exclusivity period awarded for a new molecular entity. This extension is in addition to any pediatric exclusivity extension awarded, and the extension will be awarded only to a drug first approved on or after the date of enactment.

The GAIN provisions prohibit the grant of an exclusivity extension where the application is a supplement to an application for which an extension is in effect or has expired, is a subsequent application for a specified change to an approved product, or is an application for a product that does not meet the definition of qualified infectious disease product based on the uses for which it is ultimately approved.

Pediatric Studies and Exclusivity

Under the Pediatric Research Equity Act of 2003, an NDA or supplement thereto must contain data that are adequate to assess the safety and effectiveness of the product for the claimed indications in all relevant pediatric subpopulations, and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. Sponsors must also submit pediatric study plans prior to the assessment data. Those plans

must contain an outline of the proposed pediatric study or studies the applicant plans to conduct, including study objectives and design, any deferral or waiver requests and other information required by regulation. The applicant, the FDA, and the FDA's internal review committee must then review the information submitted, consult with each other and agree upon a final plan. The FDA or the applicant may request an amendment to the plan at any time.

For drugs intended to treat a serious or life-threatening disease or condition, the FDA must, upon the request of an applicant, meet to discuss preparation of the initial pediatric study plan or to discuss deferral or waiver of pediatric assessments. In addition, FDA will meet early in the development process to discuss pediatric study plans with sponsors and FDA must meet with sponsors by no later than the end-of-phase 1 meeting for serious or life-threatening diseases and by no later than 90 days after FDA's receipt of the study plan.

The FDA may, on its own initiative or at the request of the applicant, grant deferrals for submission of some or all pediatric data until after approval of the product for use in adults, or full or partial waivers from the pediatric data requirements. Additional requirements and procedures relating to deferral requests and requests for extension of deferrals are contained in FDASIA. Unless otherwise required by regulation, the pediatric data requirements do not apply to products with orphan designation.

The FDA Reauthorization Act of 2017 established new requirements to govern certain molecularly targeted cancer indications. Any company that submits an NDA three years after the date of enactment of that statute must submit pediatric assessments with the NDA if the drug is intended for the treatment of an adult cancer and is directed at a molecular target that FDA determines to be substantially relevant to the growth or progression of a pediatric cancer. The investigation must be designed to yield clinically meaningful pediatric study data regarding the dosing, safety and preliminary efficacy to inform pediatric labeling for the product.

Pediatric exclusivity is another type of non-patent marketing exclusivity in the United States and, if granted, provides for the attachment of an additional six months of marketing protection to the term of any existing regulatory exclusivity, including the non-patent and orphan exclusivity. This six-month exclusivity may be granted if an NDA sponsor submits pediatric data that fairly respond to a written request from the FDA for such data. The data do not need to show the product to be effective in the pediatric population studied; rather, if the clinical trial is deemed to fairly respond to the FDA's request, the additional protection is granted. If reports of requested pediatric studies are submitted to and accepted by the FDA within the statutory time limits, whatever statutory or regulatory periods of exclusivity or patent protection cover the product are extended by six months. This is not a patent term extension, but it effectively extends the regulatory period during which the FDA cannot approve another application.

Patent Term Restoration and Extension

A patent claiming a new drug product may be eligible for a limited patent term extension under the Hatch-Waxman Act, which permits a patent restoration of up to five years for patent term lost during product development and the FDA regulatory review. The restoration period granted on a patent covering a product is typically one-half the time between the effective date of a clinical investigation involving human beings is begun and the submission date of an application, plus the time between the submission date of an application and the ultimate approval date. Patent term restoration cannot be used to extend the remaining term of a patent past a total of 14 years from the product's approval date. Only one patent applicable to an approved product is eligible for the extension, and the application for the extension must be submitted prior to the expiration of the patent in question. A patent that covers multiple products for which approval is sought can only be extended in connection with one of the approvals. The United States Patent and Trademark Office reviews and approves the application for any patent term extension or restoration in consultation with the FDA.

Foreign Regulation

In addition to regulations in the United States, Tetraphase will be subject to a variety of foreign regulations governing clinical trials, marketing authorization, safety reporting and commercial sales and distribution of its products. Whether or not Tetraphase obtains FDA approval for a product, Tetraphase must obtain approval by the comparable regulatory authorities of foreign countries or economic areas, such as the EU, before Tetraphase may commence clinical trials or market products in those countries or areas. The approval process and requirements governing the conduct of clinical trials, product authorization, pricing and reimbursement vary greatly from place to place, and the time may be longer or shorter than that required for FDA approval.

Under EU regulatory systems, a company may submit an application for marketing authorization through several different procedures. These are the centralized, mutual recognition procedure, decentralized procedure, or national procedure (single EU Member State). The centralized procedure is compulsory for medicinal products produced by biotechnology or those medicinal products containing new active substances for specific indications such as the treatment of AIDS, cancer, neurodegenerative disorders, diabetes, viral diseases and designated orphan medicinal products. The centralized marketing authorization procedure is optional for medicinal products containing a new active substance that is not yet authorized in the EEA or for products that constitute a significant therapeutic, scientific or technical innovation or for which grant of centralized marketing authorization is in the interest of patients in the EU. Under the centralized procedure, an application for marketing authorization is submitted to the European Medicines Agency, or EMA, where it will be evaluated by the Committee for Medicinal Products for Human Use and a favorable opinion typically results in the grant by the European Commission of a single marketing authorization that is valid for all European Union Member States and three of the four European Free Trade Association, or EFTA, countries (Iceland, Liechtenstein and Norway). The initial marketing authorization is valid for five years. The authorization may be renewed and remain valid for an unlimited period unless the national competent authority or the European Commission decides on justified grounds to proceed with one additional five-year renewal period. The renewal of a marketing authorization is subject to a re-evaluation of the risk-benefit balance of the product by the national competent authorities or the EMA. The decentralized authorization procedure permits companies to file identical applications for authorization simultaneously in several EU Member States for a medicinal product that has not yet been authorized in any EU Member State. The competent authorities of a single EU Member State, the reference member state, is appointed to review the application and provide an assessment report. The competent authorities of the other EU Member States, the concerned member states, are subsequently required to grant marketing authorization for their territories on the basis of this assessment. The only exception to this is where an EU Member State considers that there are concerns of potential serious risk to public health related to authorization of the product. In these circumstances, the matter is submitted to the Heads of Medicines Agencies, or CMDh for review. The mutual recognition procedure allows companies that have a medicinal product already authorized in one EU Member State to apply for this authorization to be recognized by the competent authorities in other EU Member States.

In the EU, innovative medicinal products that are subject to marketing authorization on the basis of a full dossier qualify for eight years of data exclusivity from the data of marketing authorization and 10 years of market exclusivity. This data exclusivity, if granted, prevents regulatory authorities in the EU from referencing the innovator’s data to assess a generic application or biosimilar application for eight years from the data of authorization of the innovative product. After this period an application for marketing authorization for a generic or biosimilar product may be submitted, and the innovator’s data may be referenced. However, even if authorization is granted in relation to the generic product or biosimilar product this product cannot be marketed in the EU until 10 years after grant of authorization for the innovative product. The ten year market exclusivity period may be extended for a further year to a maximum of 11 years if, during the first eight years following authorization of the innovative product, authorization is granted for one or more new therapeutic indications which, during the scientific evaluation prior to their authorization, are held to bring a significant clinical benefit in comparison with existing therapies.

The holder of an EU marketing authorization for a medicinal product must comply with EU pharmacovigilance legislation. This includes requirements to conduct pharmacovigilance, and to assess and monitor the safety of medicinal products.

Various requirements apply to the manufacturing and placing of medicinal products on the EU market. Manufacture of medicinal products in the EU requires a manufacturing authorization. The manufacturing authorization holder must comply with requirements set out in the applicable EU laws, regulations and guidance. These requirements include compliance with EU cGMP standards when manufacturing medicinal products and APIs. These obligations extend to the manufacture of APIs outside of the EU for import into the EU. Similarly, the distribution of medicinal products into and within the EU is subject to compliance with the applicable EU laws, regulations and guidelines, including the requirement to hold appropriate authorizations for distribution granted by the competent authorities of the EU Member States. Marketing authorization holders may be subject to civil, criminal or administrative sanctions, including suspension of manufacturing authorization, in case of non-compliance with the EU or EU Member States' requirements applicable to the manufacturing of medicinal products.

In the EU, the advertising and promotion of medicinal products are subject to EU Member States' laws governing promotion of medicinal products, interactions with physicians, misleading and comparative advertising and unfair commercial practices. Breaches of the rules governing the promotion of medicinal products in the EU could be penalized by administrative measures, fines and imprisonment. These laws may further limit or restrict the advertising and promotion of medicinal products to the general public and may also impose limitations on promotional activities with healthcare professionals.

Similar to the United States, the various phases of non-clinical and clinical research in the EU are subject to significant regulatory controls. Although the EU Clinical Trials Directive 2001/20/EC has sought to harmonize the EU clinical trials regulatory framework, setting out common rules for the control and authorization of clinical trials in the EU, the EU Member States have transposed and applied the provisions of the Directive in a manner that is often not uniform. This has led to variations in the rules governing the conduct of clinical trials in the individual EU Member States. The EU legislator adopted Regulation (EU) No 536/2014, or the Clinical Trials Regulation in 2014. The new EU Clinical Trials Regulation, which will replace the EU Clinical Trials Directive, introduces a complete overhaul of the existing regulation of clinical trials for medicinal products in the EU, including a new coordinated procedure for authorization of clinical trials that is reminiscent of the mutual recognition procedure for marketing authorization of medicinal products, and increased obligations on sponsors to publish clinical trial results. The Clinical Trials Regulation is expected to start to apply in late 2019 or in 2020.

Clinical trials must currently be conducted in accordance with the requirements of the EU Clinical Trials Directive and applicable good clinical practice standards, as implemented into national legislation by EU Member States. Under the current regime, before a clinical trial can be initiated it must be approved in each of EU Member State where there is a site at which the trial is to be conducted by two distinct bodies: the National Competent Authority, or NCA, and one or more Ethics Committees, or ECs. Under the current regime all suspected unexpected serious adverse reactions to the investigated drug that occur during the clinical trial must be reported to the NCA and ECs of the Member State where they occurred.

General Data Protection Regulation

The collection, use, disclosure, transfer, or other processing of personal data regarding individuals in the EU, including personal health data, is subject to the EU General Data Protection Regulation (GDPR), which became effective on May 25, 2018. The GDPR is wide-ranging in scope and imposes numerous requirements on companies that process personal data, including requirements relating to processing health and other sensitive data, obtaining consent of the individuals to whom the personal data relates, providing information to individuals regarding data processing activities, implementing safeguards to protect the security and confidentiality of personal data, providing notification of data breaches, and taking certain measures when engaging third-party processors. The GDPR also imposes strict rules on the transfer of personal data to countries outside the EU,

including the United States, and permits data protection authorities to impose large penalties for violations of the GDPR, including potential fines of up to €20 million or 4% of annual global revenues, whichever is greater. The GDPR also confers a private right of action on data subjects and consumer associations to lodge complaints with supervisory authorities, seek judicial remedies, and obtain compensation for damages resulting from violations of the GDPR. Compliance with the GDPR will be a rigorous and time-intensive process that may increase the cost of doing business or require companies to change their business practices to ensure full compliance.

Pharmaceutical Insurance Coverage and Reimbursement

Sales of Tetraphase's products will depend, in part, on the availability and extent of coverage and reimbursement by third-party payors, such as government health programs, including Medicare and Medicaid, commercial insurance and managed healthcare organizations. These third-party payors are increasingly challenging the price and limiting the coverage and reimbursement amounts for medical products and services.

The containment of healthcare costs has become a priority of federal and state governments, and the prices of drugs have been a focus in this effort. The United States government, state legislatures and foreign governments have shown significant interest in implementing cost-containment programs, including price controls, restrictions on coverage and reimbursement, and requirements for substitution of generic products. Adoption of price controls and cost-containment measures, and adoption of more restrictive policies in jurisdictions with existing controls and measures, could further limit Tetraphase's net revenue and results. Decreases in third-party reimbursement for Tetraphase's product candidates or a decision by a third-party payor to not cover Tetraphase's product candidates could reduce physician usage of the product candidate and have a material adverse effect on Tetraphase's sales, results of operations and financial condition.

In the United States, the federal government provides health insurance for people who are 65 or older, and certain people with disabilities or certain conditions irrespective of their age, through the Medicare program, which is administered by the Centers for Medicare & Medicaid Services, or CMS. Coverage and reimbursement for products and services under Medicare are determined in accordance with the Social Security Act and pursuant to regulations promulgated by CMS, as well as the agency's subregulatory coverage and reimbursement guidance and determinations.

Medicaid is a health insurance program for low-income children, families, pregnant women, and people with disabilities that is jointly funded by the federal and state governments, but administered by the states. In general, state Medicaid programs are required to cover drugs and biologicals of manufacturers that have entered into a Medicaid Drug Rebate Agreement, although such drugs and biologicals may be subject to prior authorization or other utilization controls.

In the United States, there have been and continue to be a number of federal and state legislative and regulatory initiatives to expand health care coverage, improve health care quality, and contain health care costs, which could impact Tetraphase's ability to sell its products profitably. For example, the federal Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010, known collectively as ACA, substantially changes the way health care is financed by United States governmental and commercial payors, and significantly affects the United States pharmaceutical industry. Among other things, the ACA establishes annual fees and taxes to be paid by manufacturers of certain branded prescription drugs; creates a new Medicare Part D coverage gap discount program, under which, as a condition of coverage of their products under Medicare Part D, manufacturers currently must agree to offer 70% point-of-sale discounts off of negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period; increases manufacturer rebate liabilities under the Medicaid Drug Rebate Program for outpatient drugs dispensed to Medicaid recipients; addresses a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are injected, inhaled, infused, instilled, or implanted, and for line extensions of current drugs; and expands oversight and support for the federal government's comparative effectiveness research of services and products.

Some of the provisions of the ACA have yet to be fully implemented, and certain provisions have been subject to judicial or Congressional challenges. In addition, there have been efforts by the Trump Administration to repeal or replace certain aspects of the ACA, and to alter the implementation of the ACA and related laws. And legislation affecting implementation of certain taxes under the ACA have been signed into law. The Tax Cuts and Jobs Act of 2017 includes a provision repealing, effective January 1, 2019, the tax-based shared responsibility payment imposed by the ACA on certain individuals who fail to maintain qualifying health coverage for all or part of a year, commonly referred to as the "individual mandate." Additionally, on January 22, 2018, President Trump signed into law a continuing resolution on appropriations for fiscal year 2018 that, among other things, delayed the implementation of certain ACA-mandated fees, including the annual fee imposed on certain high-cost employer-sponsored health plans, commonly referred to as the "Cadillac" health plan tax; the annual fee imposed on certain health insurance providers based on market share; and the medical device excise tax on non-exempt medical devices. Further, the Bipartisan Budget Act of 2018, among other things, amended the ACA, effective January 1, 2019, to reduce the coverage gap in most Medicare prescription drug plans, commonly referred to as the "donut hole." Additional legislative changes, regulatory changes, and judicial challenges related to the ACA remain possible. It is unclear how the ACA and its implementation, as well as efforts to repeal or replace, or invalidate, the ACA, or portions thereof, will affect Tetraphase's business. Tetraphase participates in and have certain price reporting obligations to the Medicaid Drug Rebate Program and other governmental pricing programs, and Tetraphase has obligations to report the average sales price for certain of its drugs to the Medicare program. The Medicaid Drug Rebate Program and other governmental programs impose obligations to report pricing figures to the federal government and Tetraphase is subject to these price reporting and other compliance obligations. Other programs impose limits on the price Tetraphase is permitted to charge certain entities for its products. Statutory and regulatory changes or other agency action regarding these programs and their requirements could negatively affect the coverage and reimbursement by these programs of Tetraphase's products and could negatively impact its results of operations.

Under the Medicaid Drug Rebate Program, Tetraphase is required to pay a rebate to each state Medicaid program for its covered outpatient drugs that are dispensed to Medicaid beneficiaries and paid for by a state Medicaid program as a condition of having federal funds being made available to the state for Tetraphase's drugs under Medicaid and Medicare Part B. Those rebates are based on pricing data reported by Tetraphase on a monthly and quarterly basis to CMS, the federal agency that administers the Medicare and Medicaid programs. These data include the average manufacturer price and, in the case of innovator products, the best price for each drug, which, in general, represents the lowest price available from the manufacturer to any entity in the United States in any pricing structure, calculated to include all sales and associated rebates, discounts, and other price concessions. The ACA made significant changes to the Medicaid Drug Rebate program, and CMS issued a final regulation, which became effective on April 1, 2016, to implement the changes to the Medicaid Drug Rebate Program under the ACA. Tetraphase's failure to comply with these price reporting and rebate payment options could negatively impact its financial results.

Federal law requires that any company that participates in the Medicaid Drug Rebate Program also participate in the Public Health Service's 340B drug pricing discount program in order for federal funds to be available for the manufacturer's drugs under Medicaid and Medicare Part B. The 340B drug pricing program, which is administered by the Health Resources and Services Administration, or HRSA, requires participating manufacturers to agree to charge statutorily defined covered entities no more than the 340B "ceiling price" for the manufacturer's covered outpatient drugs. These 340B covered entities include a variety of community health clinics and other entities that receive health services grants from the Public Health Service, as well as hospitals that serve a disproportionate share of low-income patients. The 340B ceiling price is calculated using a statutory formula, which is based on the average manufacturer price and rebate amount for the covered outpatient drug as calculated under the Medicaid Drug Rebate Program, and in general, products subject to Medicaid price reporting and rebate liability are also subject to the 340B ceiling price calculation and discount requirement. Changes to the definition of average manufacturer price and the Medicaid Drug Rebate amount under the ACA or otherwise also could affect Tetraphase's 340B ceiling price calculations and negatively impact its results of operations.

HRSA issued a final regulation regarding the calculation of the 340B ceiling price and the imposition of civil monetary penalties on manufacturers that knowingly and intentionally overcharge covered entities, which became effective on January 1, 2019. HRSA also has announced that it will begin to implement a ceiling price reporting requirement related to the 340B program during the first quarter of 2019. It is currently unclear how HRSA will apply its enforcement authority under the new regulation. In addition, legislation may be introduced that, if passed, would further expand the 340B program to additional covered entities or would require participating manufacturers to agree to provide 340B discounted pricing on drugs used in the inpatient setting.

Federal law also requires that a company that participates in the Medicaid Drug Rebate Program report average sales price information each quarter to CMS for certain categories of drugs that are paid under the Medicare Part B program. Manufacturers calculate the average sales price based on a statutorily defined formula as well as regulations and interpretations of the statute by CMS. CMS uses these submissions to determine payment rates for drugs under Medicare Part B. Statutory or regulatory changes or CMS guidance could affect the average sales price calculations for Tetraphase's products and the resulting Medicare payment rate, and could negatively impact its results of operations. Also, the Medicare Part B drug payment methodology is subject to change based on potential demonstration projects undertaken by CMS or potential legislation enacted by Congress.

Pricing and rebate calculations vary across products and programs, are complex and are often subject to interpretation by us, governmental or regulatory agencies and the courts. The Medicaid rebate amount is computed each quarter based on Tetraphase's submission to CMS of its average manufacturer prices and best prices for the quarter. If Tetraphase becomes aware that its reporting for a prior quarter was incorrect, or has changed as a result of recalculation of the pricing data, Tetraphase is obligated to resubmit the corrected data for up to three years after those data originally were due. Such restatements and recalculations would increase Tetraphase's costs for complying with the laws and regulations governing the Medicaid Drug Rebate Program and could result in an overage or underage in Tetraphase's rebate liability for past quarters. Price recalculations also may affect the ceiling price under the 340B program.

Tetraphase could be held liable for errors associated with its submission of pricing data. Civil monetary penalties can be applied if Tetraphase is found to have knowingly submitted any false price information to the government, if Tetraphase is found to have made a misrepresentation in the reporting of its average sales price, if Tetraphase fails to submit the required price data on a timely basis, or if Tetraphase is found to have charged 340B covered entities more than the statutorily mandated ceiling price. Such conduct also could be grounds for CMS to terminate Tetraphase's Medicaid drug rebate agreement, in which case federal payments may not be available under Medicaid or Medicare Part B for its covered outpatient drugs. Tetraphase cannot assure you that its submissions will not be found by CMS to be incomplete or incorrect.

In order to be eligible to have its products paid for with federal funds under the Medicaid and Medicare Part B programs and purchased by certain federal agencies and grantees, Tetraphase participates in the U.S. Department of Veterans Affairs, or VA, Federal Supply Schedule, or FSS, pricing program. Under this program, Tetraphase is obligated to make its innovative products available for procurement on an FSS contract under which Tetraphase must comply with standard government terms and conditions and charge a price to certain federal agencies that is no higher than the statutory Federal Ceiling Price, or FCP. The FCP is based on the non-federal average manufacturer price, or Non-FAMP, which Tetraphase calculates and reports to the VA on a quarterly and annual basis.

Pricing and rebate calculations vary across products and programs, are complex, and are often subject to interpretation by us, governmental or regulatory agencies and the courts. Risks relating to price reporting and payment obligations under the foregoing programs are further discussed in the risk factor under the heading, "If we fail to comply with our reporting and payment obligations under the Medicaid Drug Rebate program or other governmental pricing programs, we could be subject to additional reimbursement requirements, penalties, sanctions and fines, which could have a material adverse effect on our business, financial condition, results of operations and growth prospects."

In addition, in some foreign countries, the proposed pricing for a drug must be approved before it may be lawfully marketed. The requirements governing drug pricing vary widely from country to country. For example, in the EU, the sole legal instrument at the EU level governing the pricing and reimbursement of medicinal products is Council Directive 89/105/EEC, or the Price Transparency Directive. The aim of this Directive is to ensure that pricing and reimbursement mechanisms established in the EU Member States are transparent and objective, do not hinder the free movement of and trade in medicinal products in the EU, and do not hinder, prevent or distort competition on the market. The Price Transparency Directive does not provide any guidance concerning the specific criteria on the basis of which pricing and reimbursement decisions are to be made in individual EU Member States, nor does it have any direct consequence for pricing or reimbursement levels in individual EU Member States. The EU Member States are free to restrict the range of medicinal products for which their national health insurance systems provide reimbursement, and to control the prices and/or reimbursement levels of medicinal products for human use. An EU Member State may approve a specific price or level of reimbursement for the medicinal product, or alternatively adopt a system of direct or indirect controls on the profitability of the company responsible for placing the medicinal product on the market, including volume-based arrangements, caps and reference pricing mechanisms.

Health Technology Assessment, or HTA, of medicinal products is becoming an increasingly common part of the pricing and reimbursement procedures in some EU Member States, including the United Kingdom, France, Germany, Ireland, Italy and Sweden. The HTA process in the EU Member States is governed by the national laws of these countries. HTA is the procedure according to which the assessment of the public health impact, therapeutic impact, and the economic and societal impact of use of a given medicinal product in the national healthcare systems of the individual country is conducted. HTA generally focuses on the clinical efficacy and effectiveness, safety, cost, and cost-effectiveness of individual medicinal products as well as their potential implications for the healthcare system. Those elements of medicinal products are compared with other treatment options available on the market. The outcome of HTA regarding specific medicinal products will often influence the pricing and reimbursement status granted to these medicinal products by the competent authorities of individual EU Member States. The extent to which pricing and reimbursement decisions are influenced by the HTA of the specific medicinal product vary between EU Member States. A negative HTA of one of Tetraphase's products by a leading and recognized HTA body could not only undermine its ability to obtain reimbursement for such product in the EU Member State in which such negative assessment was issued, but also in other EU Member States. For example, EU Member States that have not yet developed HTA mechanisms could rely to some extent on the HTA performed in countries with a developed HTA framework, such as France, Germany or Sweden, when adopting decisions concerning the pricing and reimbursement of a specific medicinal product.

On January 31, 2018, the European Commission adopted a proposal for a regulation on HTA. This legislative proposal is intended to boost cooperation among EU Member States in assessing health technologies, including new medicinal products, and providing the basis for cooperation at the EU level for joint clinical assessments in these areas. The proposal provides that EU Member States will be able to use common HTA tools, methodologies, and procedures across the EU, working together in four main areas, including joint clinical assessment of the innovative health technologies with the most potential impact for patients, joint scientific consultations whereby developers can seek advice from HTA authorities, identification of emerging health technologies to identify promising technologies early, and continuing voluntary cooperation in other areas. Individual EU Member States will continue to be responsible for assessing non-clinical (e.g., economic, social, ethical) aspects of health technology, and making decisions on pricing and reimbursement. The European Commission has stated that the role of the draft HTA regulation is not to influence pricing and reimbursement decisions in the individual EU Member States. However, this consequence cannot be excluded.

Healthcare Fraud and Abuse Laws

Healthcare providers, physicians, distributors and third-party payors play a primary role in the distribution, recommendation and prescription of Tetraphase's products. Tetraphase's arrangements with third-party payors and customers expose Tetraphase to broadly applicable fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements through which Tetraphase markets, sells and distributes its products. Restrictions under applicable federal and state healthcare laws and regulations include the following:

- The United States federal healthcare Anti-Kickback Statute prohibits any person from, among other things, knowingly and willfully offering, paying, soliciting, or receiving remuneration, directly or indirectly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchasing, leasing, ordering or arranging for or recommending of any good or service for which payment may be made, in whole or in part, under federal and state healthcare programs such as Medicare and Medicaid. The term "remuneration" has been broadly interpreted to include anything of value. The Anti-Kickback Statute is subject to evolving interpretation and has been applied by government enforcement officials to a number of common business arrangements in the pharmaceutical industry. The government can establish a violation of the Anti-Kickback Statute without proving that a person or entity had actual knowledge of the statute or specific intent to violate it. There are a number of statutory exemptions and regulatory safe harbors protecting some common activities from prosecution; however, those exceptions and safe harbors are drawn narrowly. Failure to meet all of the requirements of a particular statutory exception or regulatory safe harbor does not make the conduct per se illegal under the Anti-Kickback Statute, but the legality of the arrangement will be evaluated on a case-by-case basis based on the totality of the facts and circumstances. Tetraphase seeks to comply with the available statutory exemptions and safe harbors whenever possible, but its practices may not in all cases meet all of the criteria for safe harbor protection from anti-kickback liability. Moreover, there are no safe harbors for many common practices, such as educational and research grants or patient or product assistance programs.
- The federal civil False Claims Act prohibits, among other things, knowingly presenting, or causing to be presented, claims for payment of government funds that are false or fraudulent, or knowingly making, or using or causing to be made or used, a false record or statement material to a false or fraudulent claim to avoid, decrease, or conceal an obligation to pay money to the federal government. Private individuals, commonly known as "whistleblowers," can bring civil False Claims Act *qui tam* actions, on behalf of the government and such individuals and may share in amounts paid by the entity to the government in recovery or settlement. In recent years, several pharmaceutical and other healthcare companies have faced enforcement actions under the federal False Claims Act for, among other things, allegedly submitting false or misleading pricing information to government health care programs and providing free product to customers with the expectation that the customers would bill federal programs for the product. Federal enforcement agencies also have showed increased interest in pharmaceutical companies' product and patient assistance programs, including reimbursement and co-pay support services, and a number of investigations into these programs have resulted in significant civil and criminal settlements. Other companies have faced enforcement actions for causing false claims to be submitted because of the company's marketing the product for unapproved, and thus non-reimbursable, uses. In addition, a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the federal civil False Claims Act. False Claims Act liability is potentially significant in the healthcare industry because the statute provides for treble damages and significant mandatory penalties per false claim or statement for violations. Because of the potential for large monetary exposure, healthcare and pharmaceutical companies often resolve allegations without admissions of liability for significant and material amounts to avoid the uncertainty of treble damages and per claim penalties that may be awarded in litigation proceedings. Companies may be required, however, to enter into corporate integrity agreements with the government, which may impose substantial costs on companies to ensure

compliance. Criminal penalties, including imprisonment and criminal fines, are also possible for making or presenting a false, fictitious or fraudulent claim to the federal government.

- The federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, fraud provisions, among other things, impose criminal and civil liability for knowingly and willfully executing a scheme to defraud any healthcare benefit program, including private third-party payors. HIPAA also prohibits knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement or representation, or making or using any false writing or document knowing the same to contain any materially false fictitious or fraudulent statement or entry in connection with the delivery of or payment for healthcare benefits, items or services. Similar to the federal healthcare Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it to have committed a violation.
- The federal Physician Payment Sunshine Act, being implemented as the Open Payments Program, requires certain manufacturers of drugs, devices, biologics, and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program (with certain exceptions) to report annually to the United States Department of Health and Human Services, Centers for Medicare and Medicaid Services, information related to payments and other transfers of value, directly or indirectly, to physicians (defined to include doctors, dentists, optometrists, podiatrists, and chiropractors) and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members. Beginning in 2022, applicable manufacturers also will be required to report information regarding payments and transfers of value provided to physician assistants, nurse practitioners, clinical nurse specialists, certified nurse anesthetists, and certified nurse-midwives. A manufacturer's failure to submit timely, accurately and completely the required information for all payments, transfers of value or ownership or investment interests may result in civil monetary penalties of up to an aggregate of $150,000 per year, and up to an aggregate of $1 million per year for "knowing failures." Manufacturers must submit reports by the 90th day of each calendar year.

Analogous state laws and regulations, such as state anti-kickback and false claims laws, may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by any third-party payors, including private insurers or patients. Several states also require pharmaceutical companies to report expenses relating to the marketing and promotion of pharmaceutical products in those states and to report gifts and payments to individual health care providers in those states. Some of these states also prohibit certain marketing-related activities, including the provision of gifts, meals, or other items to certain health care providers, and restrict the ability of manufacturers to offer co-pay support to patients for certain prescription drugs. Some states require the posting of information relating to clinical studies and their outcomes. Some states and cities require identification or licensing of sales representatives. In addition, several states require pharmaceutical companies to implement compliance programs or marketing codes.

Employees

As of March 3, 2020, Tetraphase had 67 employees, of which 67 are full-time employees, 38 of whom were primarily engaged in the commercialization and support of the commercialization of Xerava and none of whom were primarily engaged in research and development activities. A total of 9 employees have an M.D., PharmD or Ph.D. degree. None of its employees is represented by a labor union and Tetraphase considers its employee relations to be good.

Available Information

Tetraphase files reports and other information with the Securities and Exchange Commission as required by the Securities Exchange Act of 1934, as amended, which Tetraphase refers to as the Exchange Act. You can review its electronically filed reports and other information that Tetraphase files with the SEC on the SEC's web site at http://www.sec.gov.

Tetraphase was incorporated under the laws of the State of Delaware on July 7, 2006 as Tetraphase Pharmaceuticals, Inc. Tetraphase's principal executive offices are located at 480 Arsenal Way, Watertown, Massachusetts, 02472, and its telephone number is (617) 715-3600. Tetraphase's Internet website is http://www.tphase.com. Tetraphase makes available free of charge through its website its Annual Report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Sections 13(a) and 15(d) of the Exchange Act. Tetraphase makes these reports available through its website as soon as reasonably practicable after Tetraphase electronically files such reports with, or furnish such reports to, the SEC. In addition, Tetraphase regularly uses its website to post information regarding its business, product development programs and governance, and Tetraphase encourages investors to use its website, particularly the information in the section entitled "Investor Relations," as a source of information about Tetraphase.

The foregoing references to its website are not intended to, nor shall they be deemed to, incorporate information on Tetraphase's website into this proxy statement/prospectus by reference.

Properties

Tetraphase leases its principal facilities, which consist of approximately 21,539 square feet of office, research and laboratory space located at 480 Arsenal Way, Watertown, Massachusetts. The leases covering this space expire on November 30, 2022. Tetraphase believes that its existing facilities are sufficient for its current needs. In the third quarter of 2016, Tetraphase entered into a sublease with respect to a portion of its principal facilities with an unrelated third party. This sublease was terminated in August 2019. In January 2020, Tetraphase amended its lease to reduce the square feet of office, research and laboratory space from approximately 37,438 square feet to 21,539 square feet.

Legal Proceedings

On February 7, 2020, DHL Supply Chain (Netherlands) B.V ("DHL") made an arbitration demand against Tetraphase with Foundation UNUM. The arbitration demand alleges breach of contract by Tetraphase under a letter of intent entered into between the parties in August 2018 between the parties, and DHL seeks full indemnification for all damages and costs resulting from the alleged breach by Tetraphase, including but not limited to loss of profit, which DHL calculates at 2,335,000 Euros. Tetraphase does not believe it has breached any contract with DHL and plans to engage in a vigorous defense against such claims.

Market Information

The Tetraphase Common Stock began trading on the Nasdaq Global Select Market on March 20, 2013 under the symbol "TTPH". Prior to that date, there was no established public trading market for the Tetraphase Common Stock.

Dividends

Tetraphase has never declared or paid any cash dividends on its common stock. Tetraphase is currently prohibited from paying cash dividends under the terms of its debt facility with Solar Capital. Tetraphase currently intends to retain earnings, if any, for use in its business and does not anticipate paying cash dividends on its common stock in the foreseeable future. Payment of future dividends, if any, on its Tetraphase Common Stock will be at the discretion of the Tetraphase Board after taking into account various factors, including its financial condition, operating results, anticipated cash needs, and plans for expansion.

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

You should read the following discussion and analysis of Tetraphase's financial condition and results of operations together with its consolidated financial statements and related notes, each appearing in Tetraphase's Annual Report on Form 10-K as of and for the year ended December 31, 2019 and incorporated by reference into this proxy statement/prospectus. Some of the information contained in this discussion and analysis or set forth elsewhere in this proxy statement/prospectus, including information with respect to Tetraphase's plans and strategy for its business and related financing, includes forward-looking statements that involve risks and uncertainties. As a result of many factors, including those factors set forth in the "Risk Factors" section of this proxy statement/prospectus, Tetraphase's actual results could differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis.

Overview

Tetraphase is a biopharmaceutical company using its proprietary chemistry technology to create, develop and commercialize novel tetracyclines for serious and life-threatening conditions, including bacterial infections caused by multidrug-resistant, or MDR, bacteria. There is a medical need for new antibiotics as resistance to existing antibiotics increases. In recognition of this need, Tetraphase developed its product, Xerava (eravacycline), a fully synthetic fluorocycline, as an intravenous, or IV antibiotic for use as a first-line empiric monotherapy for the treatment of MDR infections, including MDR Gram-negative infections, such as those found in complicated intra-abdominal infections, or cIAI.

On August 27, 2018, the United States Food and Drug Administration, or FDA, approved Xerava for the treatment of cIAI in adults.Approval of Xerava was based on Tetraphase's IGNITE (**I**nvestigating **G**ram-**N**egative **I**nfections **T**reated with **E**ravacycline) phase 3 program. In the first pivotal phase 3 trial in the IGNITE program in patients with cIAI, twice-daily IV Xerava met the primary endpoint by demonstrating statistical non-inferiority of clinical response compared to ertapenem, a carbapenem and a standard of care treatment for cIAI, and was well-tolerated. Tetraphase refers to this trial as IGNITE1. In Tetraphase's other pivotal phase 3 clinical trial of Xerava in patients with cIAI, twice-daily IV Xerava met the primary endpoint by demonstrating statistical non-inferiority of clinical response compared to meropenem, another standard of care treatment, and was well-tolerated. Tetraphase refers to this trial as IGNITE4. In both IGNITE1 and IGNITE4, Xerava achieved high cure rates in patients with poly-microbial infections (Gram-negative, Gram-positive, and anaerobic infections), including resistant isolates.

In October 2018, Tetraphase commenced sales of Xerava in the United States. Tetraphase is commercializing Xerava in the United States using a small, targeted commercial and medical affairs groups to build and promote access to Xerava. As of March 3, 2020, Tetraphase has approximately 27 sales representatives, 3 regional business directors, 3 strategic market access executives and approximately 7 medical affairs personnel supporting Xerava in the United States.

On September 20, 2018, based on the results of IGNITE1, the European Commission, or EC, granted marketing authorization for Xerava for the treatment of cIAI in adults in all 28 countries of the European Union, or EU, plus Norway, Iceland and Liechtenstein. In February 2018 Tetraphase entered into a license agreement with Everest Medicines Limited, or Everest Medicines, granting Everest Medicines commercialization rights to eravacycline in China and other Asian territories. In June 2018, Everest Medicines submitted an Investigational New Drug, or IND, application to the China National Medical Products Administration (formerly China FDA) for a phase 3 clinical trial of eravacycline in cIAI. The application was approved, and Everest Medicines began enrolling patients in this phase 3 trial in the second quarter of 2019.

Tetraphase believes that the ability of Xerava to cover MDR Gram-negative bacteria, as well as MDR Gram-positive, anaerobic and atypical bacteria, may enable Xerava to become the drug of choice for first-line empiric

treatment of patients with cIAI. In *in vitro* studies, Xerava has demonstrated the ability to cover a wide variety of MDR Gram-negative, Gram-positive, anaerobic and atypical bacteria, including MDR *Klebsiella pneumoniae* and MDR *Acinetobacter.* Multidrug-resistant *Klebsiella pneumoniae* (carbapenem-resistant Enterobacteriaceae (CRE)) and MDR Acinetobacter are listed as urgent threats and Extended-spectrum beta-lactamase (ESBL)-producing Enterobacteriaceae is listed as serious threats by the Centers for Disease Control and Prevention, or CDC, in a 2019 report. They are also listed as "Priority 1; Critical Pathogens" in the World Health Organization's priority pathogens list for R&D, published in February 2017. CREs were a confirmed area of great concern by the World Health Organization in an April 2014 global surveillance report. Gram-negative bacteria that are resistant to multiple available existing antibiotics are increasingly common and a growing threat to public health.

In addition to Xerava, Tetraphase has also developed other fluorocycline antibiotic compounds, TP-6076 and TP-271, and TP-2846, a tetracycline for the treatment of acute myeloid leukemia. Tetraphase developed TP-6076, a fully-synthetic fluorocycline derivative, as a lead candidate under its second-generation program to target unmet medical needs, including MDR Gram-negative bacteria such as carbapenem-resistant Enterobacteriaceae and carbapenem-resistant or pan-resistant *Acinetobacter baumanii*. To date, Tetraphase has conducted phase 1 single-ascending and multiple-ascending dose studies evaluating the safety, tolerability and pharmacokinetics of IV TP-6076 in healthy volunteers. Tetraphase also conducted a Phase 1 study to assess the bronchopulmonary disposition, pharmacokinetics, and safety of TP-6076 in healthy volunteers. TP-271 is a fully-synthetic fluorocycline that Tetraphase developed for respiratory disease caused by bacterial biothreat and antibiotic-resistant public health pathogens, as well as bacterial pathogens associated with community-acquired bacterial pneumonia. To date, Tetraphase has completed single-ascending and multiple-ascending dose trials for IV and oral formulations of TP-271. Tetraphase has completed pre-clinical toxicology studies for TP-2846 and intend to file an IND with the FDA for TP-2846 upon identifying a partner.

Tetraphase commenced business operations in July 2006. Tetraphase's operations to date have been limited to organizing and staffing its company, business planning, raising capital, acquiring and developing its proprietary chemistry technology, identifying potential product candidates, undertaking preclinical studies and clinical trials of its product candidates and initiating commercial sales of Xerava. Prior to October 2018, when Tetraphase commenced sales of Xerava in the United States, Tetraphase had not generated any product revenues. Tetraphase has financed its operations primarily through the public offerings and private placements of its equity securities, debt financings, revenue from United States government grants and contract awards and milestone payments from its licensing agreement. As of December 31, 2019, Tetraphase had received an aggregate of $596.1 million in net proceeds from the issuance of equity securities and borrowings under debt facilities, an aggregate of $61.0 million from government grants and contracts and an aggregate of $14.5 million from licensing agreement milestone payments. As of December 31, 2019, Tetraphase's principal source of liquidity was cash and cash equivalents, which totaled $21.2 million.

As of December 31, 2019, Tetraphase had an accumulated deficit of $604.1 million and cash and cash equivalents of $21.2 million. Tetraphase's net losses were $70.1 million and $72.2 million for the years ended December 31, 2019 and 2018, respectively. Tetraphase expects that its expenses will decrease in 2020 compared with 2019, driven by lower costs associated with development of Xerava, its 2019 reorganization and a gradual decrease in Xerava sales and marketing expenses.

In January 2020, Tetraphase issued and sold (a) in a private placement, (i) 1,270,000 shares of common stock and accompanying warrants to purchase an aggregate of 1,270,000 shares of common stock, for a combined price of $3.00, and (ii) pre-funded warrants to purchase 2,063,334 shares of common stock and accompanying warrants to purchase 2,063,334 shares of common stock, for a combined price of $2.999, and (b) in a concurrent registered direct offering, (i) 2,380,105 shares of its common stock and accompanying warrants to purchase an aggregate of 2,380,105 shares of common stock, for a combined price of $3.00 and (ii) pre-funded warrants to purchase 120,000 shares of its common stock and accompanying warrants to purchase 120,000 shares of common stock, for a combined price of $2.999. The net proceeds from the concurrent January 2020 private placement and

registered direct offering, after deducting the placement agent's fees and other estimated offering expenses payable by Tetraphase, were approximately $15.9 million.

Tetraphase believes, based on its current operating plan, that its existing cash and cash equivalents as of December 31, 2019 and its projected revenues from sales of Xerava, together with the net proceeds of approximately $15.9 million from its registered direct offering and concurrent private placement of equity securities in January 2020, will be sufficient to fund its operations into the first quarter of 2021, however, Tetraphase has based this estimate on assumptions that may prove to be wrong, and its capital resources may be utilized faster than Tetraphase currently expects.

As of December 31, 2019, management has further assessed this risk and, in accordance with the requirements of Accounting Standards Update No. 2014-15, *Disclosure of Uncertainties about an Entity's Ability to Continue as a Going Concern (Subtopic 205-40)*, or ASC 205-40, has determined that there is substantial doubt about Tetraphase's ability to continue as a going concern. There is no assurance that Tetraphase will be successful in obtaining additional financing on terms acceptable to us, if at all, nor is it considered probable under the accounting standards. As such, under the requirements of ASC 205-40, management may not consider the potential for future capital raises or management plans to reduce costs that are not considered probable in their assessment of Tetraphase's ability to meet its obligations.

If Tetraphase is unable to obtain funding, it may be required to delay, reduce or eliminate its commercialization efforts, which could adversely affect its business prospects, and it may be unable to continue operations. Tetraphase will be required to obtain further funding through public or private equity offerings, debt financings, collaborations and licensing arrangements or other sources to fund its expenses after that time.

Adequate additional financing may not be available to Tetraphase on acceptable terms, or at all. In addition, although Tetraphase is exploring out-licensing opportunities for its pipeline of early-stage antibiotics and oncology product candidates, there can be no assurance that Tetraphase will be able to out-license these on a timely basis or on terms that are favorable to us, or at all. Tetraphase's failure to raise capital through financing or a license of its pipeline as and when needed would have a negative impact on its financial condition and its ability to pursue its business strategy. Tetraphase could be forced to significantly scale back or discontinue the commercialization of Xerava and reduce other expenditures, seek collaborators at an earlier stage than otherwise would be desirable or on terms that are less favorable than might otherwise be available, and relinquish or license, potentially on unfavorable terms, its rights to Xerava and its product candidates. In addition, in such circumstance, Tetraphase would consider seeking protection under the bankruptcy laws in order to continue to pursue potential transactions and conduct a wind-down of its company. If Tetraphase decides to seek protection under the bankruptcy laws, Tetraphase would expect that it would file for bankruptcy at a time that is significantly earlier than when it would otherwise exhaust its cash resources. If Tetraphase decides to dissolve and liquidate its assets or to seek protection under the bankruptcy laws, it is unclear to what extent Tetraphase will be able to pay its obligations, and, accordingly, it is further unclear whether and to what extent any resources will be available for distributions to stockholders.

Financial overview

Product Revenue

Xerava received approval on August 27, 2018 for the treatment of cIAI in adults. Following FDA approval of Xerava in the United States, Tetraphase began selling Xerava in October 2018. Tetraphase sells Xerava to a limited number of specialty distributors in the United States, who collectively represent its customers. These customers subsequently resell Xerava to hospitals or other treatment centers. In addition to the agreements with these distributors and the related discounts and fees, Tetraphase is subject to government mandated rebates, chargebacks, and discounts with respect to the purchase of Xerava. Product revenue is recognized net of reserves for all variable consideration, including discounts, chargebacks, government rebates and product returns. For

further discussion of Tetraphase's product revenue, see Note 2, *Summary of Significant Accounting Policies* to the consolidated financial statements, appearing in Tetraphase's Annual Report on Form 10-K as of and for the year ended December 31, 2019 and incorporated by reference in this proxy statement/prospectus.

Collaboration Revenue

In February 2018, Tetraphase entered into a license agreement with Everest Medicines, whereby Tetraphase granted Everest Medicines an exclusive license to develop and commercialize eravacycline, for the treatment of cIAI and other indications, in mainland China, Taiwan, Hong Kong, Macau, South Korea and Singapore. Tetraphase amended this agreement in July 2019 to extend Everest Medicines' exclusive license to develop and commercialize Xerava to the jurisdictions of the Malaysian Federation, the Kingdom of Thailand, the Republic of Indonesia, the Socialist Republic of Vietnam and the Republic of the Philippines. Terms of this arrangement include various payment types, including upfront license fees, development, regulatory and commercial milestone payments, payments for clinical supply services and royalties on sales revenue. For further discussion of the Everest Medicines collaboration and the related revenue recognition, please see Note 2, *Summary of Significant Accounting Policies* and Note 3, *Significant Agreements and Contracts* to the consolidated financial statements, each appearing in Tetraphase's Annual Report on Form 10-K as of and for the year ended December 31, 2019 and incorporated by reference in this proxy statement/prospectus.

Government Contract and Grant Revenue

Tetraphase's government contract and grant revenue has been derived from funding provided under four awards. These awards included a contract from BARDA for the development of Xerava for the treatment of disease caused by bacterial biothreat pathogens, two separate awards from NIAID for the development of TP-271. These three awards were made to CUBRC. CUBRC served as the prime contractor under these awards, primarily carrying out a program management and administrative role with additional responsibility for the management of preclinical studies. The fourth award was from CARB-X. For further discussion of Tetraphase's government contract and grant revenue agreements and the related revenue recognition, please see Note 2, *Summary of Significant Accounting Policies* and Note 3, *Significant Agreements and Contracts* to the consolidated financial statements, each appearing in Tetraphase's Annual Report on Form 10-K as of and for the year ended December 31, 2019 and incorporated by reference in this proxy statement/prospectus..

Cost of Revenue

Cost of revenue consists primarily of the manufacturing and distribution costs for Xerava, Xerava net sales-based royalties and the amortization of the intangible asset associated with certain milestones paid to Harvard University, or Harvard, related to Xerava. All manufacturing costs incurred prior to Xerava's approval in the United States on August 27, 2018 have been expensed in research and development and are not included in cost of revenue.

Research and Development Expenses

Research and development expenses consist primarily of costs incurred for the research and development of Tetraphase's preclinical and clinical candidates, and include:

- personnel-related expenses, including salaries, benefits and stock-based compensation expense;
- expenses incurred under agreements with contract research organizations, contract manufacturing organizations, and consultants that provide preclinical, clinical, regulatory and manufacturing services;
- certain payments made under Tetraphase's license agreement with Harvard;
- the cost of acquiring, developing and manufacturing clinical trial materials and lab supplies;

- facility, depreciation and other expenses, which include direct and allocated expenses for rent, maintenance of Tetraphase's facilities, insurance and other supplies; and
- costs associated with preclinical and regulatory activities.

Tetraphase expenses research and development costs to operations as incurred. Tetraphase recognizes costs for certain development activities, such as clinical trials, based on an evaluation of the progress to completion of specific tasks using data such as patient enrollment, clinical site activations or information provided to Tetraphase by its vendors.

Tetraphase tracks external development expenses and personnel expense on a program-by-program basis and allocate common expenses, such as scientific consultants and laboratory supplies, to each program based on the personnel resources allocated to such program. Expenses related to facilities, consulting, travel, conferences, stock-based compensation and depreciation are not allocated to a program and are separately classified as other research and development expenses. The following table identifies research and development expenses on a program-specific basis for Tetraphase's product candidates for the years ended December 31, 2019 and 2018:

	Year Ended December 31,	
	2019	2018
	(in thousands)	
Xerava	$ 10,876	$ 31,542
TP-6076	1,293	2,092
BARDA Contract	1,023	1,399
CARB-X	460	2,048
NIAID Contract	88	2,525
Other development programs	3,040	3,276
Other research and development	6,005	11,997
Total research and development	$ 22,785	$ 54,879

Prior to its June 2019 reorganization, research and development activities were central to Tetraphase's business model. As part of its reorganization, Tetraphase decided not to engage in further research and development, including conducting clinical trials of its product candidates.

As of December 31, 2019, Tetraphase had incurred an aggregate of $298.7 million in research and development expenses related to the development of Xerava, and $38.7 million in research and development expenses related to the development of Xerava that were funded under the BARDA Contract.

Tetraphase has licensed its proprietary chemistry technology from Harvard University, or Harvard, on an exclusive worldwide basis under a license agreement that Tetraphase entered into in August 2006. Under its license agreement, as of December 31, 2019, Tetraphase has paid Harvard an aggregate of $16.8 million in upfront license fees, sublicense fees and development milestone payments for the licensed Harvard technology. Tetraphase has also issued 1,568 shares of its common stock to Harvard under the license agreement. Tetraphase has also agreed to make payments to Harvard upon the achievement of specified future development and regulatory milestones totaling up to $15.1 million for each licensed product candidate ($12.6 million of which has already been paid with respect to Xerava), and to pay tiered royalties in the single digits based on annual worldwide net sales, if any, of licensed products, by Tetraphase, its affiliates and its sublicensees. Tetraphase is also obligated to pay Harvard a specified share of non-royalty sublicensing revenues that Tetraphase receives from sublicensees for the grant of sublicenses under the license and to reimburse Harvard for specified patent prosecution and maintenance costs. The Company is obligated to make certain payments to Harvard based on amounts received under its license agreement with Everest Medicines Limited. During years ended December 31, 2019 and 2018, Tetraphase paid $1.1 million and $9.7 million, respectively, related to the Everest Medicines license agreement and all other obligations under the Harvard agreement.

Selling, General and Administrative Expenses

Selling, general and administrative expenses consist principally of personnel-related costs, including salaries and related costs such as benefits and stock-based compensation for personnel in executive, finance, operational, corporate communications, sales, marketing, medical affairs and human resource functions. Other significant selling, general and administrative expenses include marketing and promotion expenses supporting the launch of Xerava, professional fees for legal, patent, auditing and tax services, consulting, and facility costs not otherwise included in research and development expenses.

Tetraphase anticipates that its selling, general and administrative expenses will plateau or decrease for a number of reasons, including a decrease of infrastructure, including decreases in personnel-related costs, consulting, legal, and accounting costs.

Other Income (Expense)

Other income (expense) consists primarily of interest income, interest expenses and expenses related to the early payment of indebtedness under its term loan facility, which Tetraphase paid off in August 2019. Interest income consists of interest earned on Tetraphase's cash and cash equivalents. The primary objective of its investment policy is capital preservation. Interest expense consists primarily of interest accrued on Tetraphase's outstanding indebtedness and non-cash interest related to the amortization of debt discount costs associated with its term loan facility with Solar Capital. Tetraphase expects that its interest expense will decrease in future periods due to the early payment of the term loan facility in August 2019. During the year ended December 31, 2019 Tetraphase recorded a one-time loss from debt extinguishment of $1.6 million as the difference between the net carrying amount of the indebtedness under the term loan facility and the amount paid.

Critical Accounting Policies and Significant Judgments and Estimates

Tetraphase's management's discussion and analysis of its financial condition and results of operations are based on its consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires Tetraphase to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses and the disclosure of contingent assets and liabilities in its financial statements. On an ongoing basis, Tetraphase evaluates its estimates and judgments, including product revenue, inventory, estimates related to clinical trial accruals, stock-based compensation expense, government contract and grant revenues, and going concern considerations. Tetraphase bases its estimates on historical experience, known trends and events and various other factors that Tetraphase's management believes to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

While Tetraphase's significant accounting policies are described in more detail in the notes to its consolidated financial statements appearing elsewhere in this proxy statement/prospectus, Tetraphase believes the following accounting policies to be most critical to the judgments and estimates used in the preparation of its financial statements.

Revenue Recognition

Product Revenue

Tetraphase sells Xerava to a limited number of specialty distributors in the U.S. These customers subsequently resell Xerava to hospitals or other treatment centers. In addition to the agreements with these distributors and the related discounts and fees, Tetraphase is subject to government mandated rebates, chargebacks, and discounts with respect to the purchase of Xerava.

Tetraphase recognizes Xerava revenue at the time the performance obligation is satisfied, which is the point in time at which the goods are delivered to its customers' facilities, using a transaction price that represents the amount of consideration Tetraphase expects to receive in exchange for the goods sold. Product revenue is recognized net of reserves for all variable consideration, including discounts, chargebacks, government rebates and product returns.

Tetraphase evaluates its contracts with customers for all forms of variable consideration which may require an adjustment to the transaction price based on their estimated impact. Tetraphase estimates variable consideration using the expected value method, which is the sum of probability-weighted amounts in a range of possible outcomes. These outcomes include market events and trends, forecasted product demand patterns, customer buying patterns and statutory requirements. The resulting reserves represent Tetraphase's best estimates of variable consideration it expects to occur.

Revenues from product sales are recorded at the gross sales price, net of reserves for variable consideration, as follows:

- *Trade Discounts and Allowances:* Tetraphase offers its customers prompt pay discounts and service fees as stated in its customer contracts. The related reserves are set in the same period the corresponding revenue is recognized, resulting in a reduction of product revenue and receivables or recording of accrued liabilities. Tetraphase employs the expected value method to estimate the impact of discounts and allowances, subject to any constraints.
- *Government Chargebacks and Rebates:* Under the terms of Tetraphase's master agreements, Customers may charge Tetraphase back for reimbursement when they are contractually obligated to sell products to government entities or other end-users at a lower price than the wholesale acquisition cost, or WAC, at which those products were acquired from us. These rebates consist of Medicare, TriCare and Medicaid rebates as well as those related to other government drug pricing and reimbursement programs. Tetraphase uses the expected value method to estimate the variable consideration, subject to any constraints. Chargeback reserves are established in the same period that the related revenue is recognized, resulting in a reduction of product revenue and receivables.
- *Product Returns:* Tetraphase estimates the amount of product that may be returned and records this as a reduction in revenue in the relevant period. Tetraphase currently estimates product return liabilities using available industry data, sales information and visibility into the inventory remaining in the distribution channel. Tetraphase has not received any returns to date since launch. Tetraphase uses the expected value method to estimate the impact of product returns, subject to any constraints.

Collaboration Revenue Recognition

Tetraphase entered into an out-licensing agreement that is evaluated under ASC 606, through which Tetraphase licenses certain of its product candidates' rights to a third party. Any future out-license agreement entered into by Tetraphase and additional third parties shall also be evaluated under ASC 606. Terms of these arrangements include various payment types, typically including one or more of the following: upfront license fees; development, regulatory and commercial milestone payments; payments for manufacturing supply services; and/or royalties on net sales of licensed products.

To determine the amount and timing of revenue to be recognized under each agreement, Tetraphase evaluates the following criteria: (i) confirming the goods or services in the contract; (ii) defining the performance obligations under the agreement; (iii) determining the transaction price, including any constraint on variable consideration; (iv) allocating the transaction price to the performance obligations; and (v) defining how the revenue will be recognized for each performance obligation. In determining the accounting treatment for these arrangements, Tetraphase develops assumptions to determine the stand-alone selling price for each performance obligation in the contract. These assumptions may include forecasted revenues, development timelines, discount rates and probabilities of technical and regulatory success.

Licenses of Intellectual Property: If the license to its intellectual property is determined to be distinct from the other performance obligations identified in the arrangement, Tetraphase recognizes revenue from upfront fees allocated to the license when the license is transferred to the licensee, including any associated know-how and the licensee can use and benefit from the license. For licenses that are bundled with other obligations, Tetraphase uses judgment to evaluate the combined performance obligation to determine whether it is satisfied over time or at a point in time and the appropriate method of measuring completion for purposes of recognizing revenue.

Milestone Payments: For arrangements that include development milestone payments, Tetraphase evaluates whether the milestones are considered probable and estimate the amount to be included in the transaction price using the most likely amount method. If it is probable that a significant revenue reversal would not occur, the associated milestone value is included in the transaction price. Milestone payments that are not within Tetraphase's control or the licensee's control, such as regulatory approvals, are not considered probable of being achieved until those approvals are received.

Manufacturing Supply: Arrangements that include a promise for future supply of drug substance or drug product for either clinical development or commercial supply at the licensee's discretion are generally considered as options. Tetraphase assesses if these options provide a material right to the licensee and if so, they are accounted for as separate performance obligations. If Tetraphase is entitled to additional payments when the licensee exercises these options, Tetraphase recognizes revenue when the licensee obtains control of the goods, which is upon delivery.

Royalties: For arrangements that include sales-based royalties, including milestone payments based on the level of sales, and the license is deemed to be the predominant item to which the royalties relate, Tetraphase recognizes revenue at the later of (i) when the related sales occur, or (ii) when the performance obligation to which some or all of the royalty has been allocated has been satisfied (or partially satisfied).

Going Concern Assessment

Accounting Standards Update ("ASU") No. 2014-15, *Presentation of Financial Statements—Going Concern*, requires Tetraphase to evaluate the company's ability to continue as a going concern one year beyond the filing date of the given financial statements. This evaluation requires Tetraphase to perform two steps. First, Tetraphase evaluates whether there are conditions and events that raise substantial doubt about its ability to continue as a going concern. Second, if Tetraphase concludes that substantial doubt is raised, Tetraphase is required to consider whether Tetraphase has plans in place to alleviate that doubt. Disclosures in the notes to the financial statements are required if Tetraphase concludes that substantial doubt exists or that its plans alleviate the substantial doubt that was raised.

Based on its current operating plan, Tetraphase expects that its cash and cash equivalents as of December 31, 2019, its projected revenues from sales of Xerava and the net proceeds from its concurrent private placement and registered direct offerings of equity securities completed in January 2020 will be sufficient to fund its operations into the first quarter of 2021. This estimate is based on certain significant assumptions, which are uncertain and may turn out to be incorrect. In particular, the forecast assumes continued significant growth of Xerava revenue, for which Tetraphase has limited historical experience to base its estimate. In addition, Tetraphase has forecasted a continued reduction in expenses in 2020. If these estimates are incorrect, Tetraphase may use its cash resources sooner than expected.

Results of Operations

Comparison of Years Ended December 31, 2019 and 2018

The following tables summarize the results of Tetraphase's operations for each of the years ended December 31, 2019 and 2018, together with the changes in those items in dollars and as a percentage:

	Year Ended December 31,		Increase/ (decrease)
	2019	2018	
	(in thousands)		
Revenue:			
Product revenue, net	$ 3,575	$ 178	$ 3,397
License and collaboration revenue	2,000	12,677	(10,677)
Government revenue	1,801	6,049	(4,248)
Total revenue	7,376	18,904	(11,528)
Expenses:			
Cost of revenue—product sales	2,687	130	2,557
Cost of revenue—intangible asset amortization	393	98	295
Research and development	22,785	54,879	(32,094)
Selling, general and administrative	49,043	37,078	11,965
Total expenses	74,908	92,185	(17,277)
Loss from operations	(67,532)	(73,281)	5,749
Other income (expense)	(2,553)	1,123	(3,676)
Net loss	$(70,085)	$(72,158)	$ 2,073

Product Revenue

Tetraphase initiated sales of Xerava in the United States on October 15, 2018. For the year ended December 31, 2019, net sales of Xerava were $3.6 million.

License and Collaboration Revenue

In February 2018, Tetraphase entered into a license agreement with Everest Medicines, whereby Tetraphase granted Everest Medicines an exclusive license to develop and commercialize eravacycline, for the treatment of cIAI and other indications, in mainland China, and certain surrounding territories. During 2019, Tetraphase recognized $2.0 million in license and collaboration revenue from the territory expansion payment received from Everest Medicines resulting from the July 2019 amendment of the license agreement. During 2018, Tetraphase recognized $12.7 million related to the initial upfront payment, Chinese IND milestone and Phase 3 clinical trial milestone and from the sale of clinical trial material to Everest Medicines for the planned Chinese clinical trial. These payments were recognized as revenue as Tetraphase had completed all of its performance obligations.

Revenue from U.S. Government Contracts and Grants

The following table sets forth Tetraphase's government contract and grant revenue for the years ended December 31, 2019 and 2018:

Revenue	Year Ended December 31, 2019	2018	Increase/ (decrease)
		(in thousands)	
BARDA Contract	$1,254	$1,457	$ (203)
CARB-X Award	452	2,046	(1,594)
NIAID Contract	95	2,546	(2,451)
	$1,801	$6,049	$ (4,248)

Government contract and grant revenue was $1.8 million for the year ended December 31, 2019 compared to $6.0 million for the year ended December 31, 2018, a decrease of $4.2 million. This decrease was due to the scope and timing of activities conducted under Tetraphase's subcontract with respect to the BARDA and NIAID Contracts and the CARB-X Award. Tetraphase does not expect to receive any government contract and grant revenue in 2020 from these contracts and awards, as all of these awards and related sub-awards have expired and all obligations have been satisfied as of December 31, 2019.

Cost of Revenue

Cost of product revenue was $3.1 million for the year ended December 31, 2019, compared to $0.2 million for the year ended December 31, 2018, consisting primarily of manufacturing and distribution costs for Xerava, Xerava net sales-based royalties and the amortization of the intangible asset associated with certain milestones paid to Harvard related to Xerava. All of Tetraphase's manufacturing costs incurred prior to Xerava's approval have been expensed in research and development expenses and are not included in cost of revenue. Tetraphase expects cost of revenue to be variable during 2020 as these inventories are released over time and depleted.

Research and Development Expenses

Research and development expenses were $22.8 million for the year ended December 31, 2019 compared to $54.9 million for the year ended December 31, 2018, a decrease of $32.1 million. This decrease was primarily due to lower clinical trial costs associated with the IGNITE Phase 3 clinicals trials, which concluded in the first quarter of 2018 and license and milestone payments to Harvard that occurred in the first and second quarter of 2018. As a result of its determination in connection with the restructuring Tetraphase announced in June 2019 to discontinue further product development, Tetraphase expects future research and development costs to decrease significantly.

Selling, General and Administrative Expenses

Selling, general and administrative expenses for the year ended December 31, 2019 were $49.0 million compared to $37.1 million for the year ended December 31, 2018, an increase of $11.9 million. This increase was primarily due to an increase in commercial related expenses for Xerava.

Other Income (Expense)

Interest expense increased by $2.0 million for the year ended December 31, 2019 as compared to December 31, 2018 reflecting interest expense under Tetraphase's term loan facility. On August 30, 2019, Tetraphase entered into a payoff letter with Solar Capital Ltd. as collateral agent and lender and the other lenders named under the Loan and Security Agreement, or the Loan Agreement (referred to collectively as the Lenders), pursuant to

which Tetraphase agreed to pay off and thereby terminate the Loan Agreement. Pursuant to the payoff letter, Tetraphase paid a total of $30.7 million to the Lenders, representing the principal balance, accrued interest outstanding and a portion of the final fee under the Loan Agreement in repayment of its outstanding obligations under the Loan Agreement. Tetraphase recorded a loss from debt extinguishment of $1.6 million as the difference between the net carrying amount of the indebtedness under the Loan Agreement and the amount paid. Interest income decreased by $0.5 million related to the year-over-year decrease in cash and cash equivalents. Other income increased by $0.3 million for the year ended December 31, 2019, related to an insurance reimbursement.

Liquidity and Capital Resources

Tetraphase has incurred losses since its inception and anticipate that Tetraphase will continue to incur losses for at least the next several years. Tetraphase expects its total expenses to decrease but remain significant in 2020 and, as a result, Tetraphase will need additional capital to fund its operations, which Tetraphase may obtain from additional financings, research funding, collaborations, government contract and grant revenue or other sources.

Since its inception, Tetraphase has funded its operations principally through the receipt of funds from public offerings and private placements of equity securities, debt financings and contract research funding and research grants from the United States government.

As of December 31, 2019, Tetraphase had cash and cash equivalents of approximately $21.2 million. Tetraphase invests cash in excess of immediate requirements in accordance with its investment policy, primarily with a view to liquidity and capital preservation. As of December 31, 2019, Tetraphase's funds were held in cash and money market funds.

On January 17, 2017, Tetraphase entered into a Controlled Equity Offering Sales Agreement, or sales agreement, with Cantor Fitzgerald & Co., as sales agent, or Cantor. On July 7, 2017, Tetraphase entered into an amendment to the sales agreement, or the amended sales agreement. In accordance with the terms of the sales agreement, Tetraphase may offer and sell through Cantor, from time to time, shares of its common stock up to an aggregate offering price of $80.0 million through an "at-the-market" offering program. As of December 31, 2019, Tetraphase had sold 305,522 shares under the amended sales agreement at an average price of $129.80 per share and Tetraphase had received aggregate cash proceeds of $38.2 million, after deducting the sales commissions and offering expenses. Tetraphase made no sales under the amended sales agreement during 2019. Under the amended sales agreement, Cantor may sell shares of Tetraphase's common stock by methods deemed to be an "at-the-market" offering as defined in Rule 415 promulgated under the Securities Act of 1933, as amended, including sales made directly on The Nasdaq Global Select Market or on any other existing trading market for Tetraphase's common stock. Tetraphase is not obligated to make any sales of shares of its common stock under the amended sales agreement. Tetraphase or Cantor may suspend or terminate the offering of shares of its common stock upon notice to the other party and subject to other conditions and pay Cantor a commission rate equal to 3.0% of the gross proceeds per share sold.

On November 2, 2018, Tetraphase entered into the Loan Agreement with the Lenders. The Lenders agreed to make available to Tetraphase term loans in an aggregate principal amount of up to $75.0 million under the Loan Agreement. The Loan Agreement provided a term loan commitment of $50.0 million in two potential tranches: (i) a $30.0 million Term A loan facility funded on November 2, 2018 and (ii) a $20.0 million Term B loan facility to be funded at the request of Tetraphase no later than October 31, 2020, subject to (a) Tetraphase having unrestricted net cash proceeds of not less than $50 million from the issuance and sale of common stock and/or from other business activities and (b) Tetraphase having product revenue greater than or equal to $14.0 million on a six month trailing basis prior to September 30, 2020. Both of these term loans had a maturity date of May 2, 2023. The Loan Agreement also provided access to an additional Term C loan facility in the amount of $25.0 million, to be funded at the Lenders' sole discretion.

In connection with the Loan Agreement and the funding of the Term A facility, Tetraphase issued to the Lenders warrants to purchase an aggregate of 20,718 shares of its common stock, equal to 3.00% of the term loan funded divided by the exercise price of $43.44. Each warrant will terminate 10 years from the date of its original issuance.

On August 30, 2019, Tetraphase paid the Lenders a total of $30.7 million representing the principal balance, accrued interest outstanding and a portion of the final fee under the Loan Agreement in repayment of its outstanding obligations under the Loan Agreement. Upon the payment of the $30.7 million, all its outstanding indebtedness and obligations owing to the Lenders under the Loan Agreement were deemed paid in full. The Loan Agreement and the notes thereunder, as well as the security interests in the assets of Tetraphase securing the Loan Agreement and note obligations, were terminated. The Lenders retained the warrants issued to them in connection with the origination of the Loan Agreement obligations.

On June 24, 2019, Tetraphase received a deficiency letter from the Listing Qualifications Department of the Nasdaq Stock Market notifying it that, for the last 30 consecutive business days, the bid price for its common stock had closed below the minimum $1.00 per share requirement for continued inclusions on the Nasdaq Global Select Market, referred to as the minimum bid price rule. On September 26, 2019 Tetraphase affected a 1-for-20 reverse stock split for the purpose of regaining compliance with the minimum bid price rule.

On October 11, 2019, Tetraphase received notification from the Listing Qualifications Department of the Nasdaq Stock Market that for 10 consecutive business days, the closing bid price of its common stock had been at $1.00 per share or greater, confirming that Tetraphase had regained compliance with the minimum bid price rule.

On November 1, 2019, Tetraphase completed a registered direct offering to Armistice Capital, LLC, a healthcare-focused institutional investor, or Armistice, priced at-the-market, of (i) 300,000 shares of common stock and accompanying warrants to purchase an aggregate of 300,000 shares of common stock, and (ii) pre-funded warrants to purchase up to an aggregate of 1,830,493 shares of common stock and accompanying warrants to purchase an aggregate of 1,830,493 shares of common stock. Each share of common stock and accompanying common stock warrant were sold together at a combined price of $3.755, and each pre-funded warrant and accompanying common stock warrant were sold together at a combined price of $3.745. Each pre-funded warrant has an exercise price of $0.01 per share, is exercisable immediately and is exercisable until exercised in full. Each common stock warrant has an exercise price of $3.62 per share, is exercisable immediately and expires five years from the date of issuance. The net proceeds from the offering, after deducting the placement agent’s fees and other offering expenses payable by Tetraphase, are approximately $7.1 million.

On January 24, 2020, Tetraphase completed a private placement with Armistice priced at-the-market of (i) 1,270,000 shares of common stock and accompanying warrants to purchase an aggregate of 1,270,000 shares of common stock, and (ii) pre-funded warrants to purchase up to an aggregate of 2,063,334 shares of common stock and accompanying warrants to purchase up to an aggregate of 2,063,334 shares of common stock. Each share of common stock and accompanying common stock warrant were sold together at a combined price of $3.00, and each pre-funded warrant and accompanying common stock warrant were sold together at a combined price of $2.999, for gross proceeds of approximately $10 million. Each pre-funded warrant had an exercise price of $0.001 per share, was exercisable immediately and was exercisable until all of the pre-funded warrants are exercised in full. Each common stock warrant had an exercise price of $2.87 per share, was exercisable immediately and will expire five years from the date of issuance.

Also on January 24, 2020, Tetraphase completed a registered direct offering to certain institutional investors priced at-the-market, of (i) 2,380,105 shares of common stock and accompanying warrants to purchase up to an aggregate of 2,380,105 shares of common stock, and (ii) pre-funded warrants to purchase up to an aggregate of 120,000 shares of common stock and accompanying warrants to purchase up to an aggregate of 120,000 shares of common stock. Each share of common stock and accompanying common stock warrant were sold together at a combined price of $3.00, and each pre-funded warrant and accompanying common stock warrant were sold

together at a combined price of $2.999, for gross proceeds of approximately $7.5 million. Each pre-funded warrant had an exercise price of $0.001 per share, was exercisable immediately and was exercisable until all of the pre-funded warrants are exercised in full. Each common stock warrant had an exercise price of $2.87 per share, was exercisable immediately and will expire five years from the date of issuance.

The net proceeds from the concurrent January 2020 private placement and registered direct offering, after deducting the placement agent's fees and other estimated offering expenses payable by Tetraphase, were approximately $15.9 million.

The following table summarizes Tetraphase's sources and uses of cash for each of the periods set forth below:

	Year Ended December 31,	
	2019	2018
	(in thousands)	
Net cash used in operating activities	$ (63,670)	$ (59,628)
Net cash provided by (used in) investing activities	478	(4,954)
Net cash provided by (used in) financing activities	(23,345)	36,447
Net decrease in cash and cash equivalents	$ (86,537)	$ (28,135)

Cash Flows from Operating Activities. The $4.0 million increase in cash used in operating activities for the year ended December 31, 2019, compared to the year ended December 31, 2018, was primarily due to Tetraphase's increase in commercial spend for Xerava compared to the same period in 2018.

Cash Flows from Investing Activities. The $5.4 million decrease in cash used in investing activities for the year ended December 31, 2019, compared to the year ended December 31, 2018 was due to a $4.8 million payment to Harvard upon FDA approval of Xerava during the second half of 2018 together with cash proceeds from sales of lab equipment in 2019.

Cash Flows from Financing Activities. For the year ended December 31, 2019, the $23.3 million cash used in financing activities was due principally to the repayment of the Solar debt facility and related fees in August 2019 offset in part by net proceeds provided by the registered direct offering completed in November 2019. For the year ended December 31, 2019 the $36.4 million in cash provided by financing activities was primarily from the Solar debt facility plus sales of common stock under Tetraphase's amended sales agreement with Cantor.

Operating Capital Requirements

Tetraphase expects to incur significant operating losses for at least the next several years as Tetraphase commercializes Xerava and satisfy its obligations under its license agreement with Harvard.

Tetraphase believes, based on its current operating plan, that its existing cash and cash equivalents as of December 31, 2019 and its projected revenues from sales of Xerava, together with the net proceeds of approximately $15.9 million from its registered direct offering and concurrent private placement of equity securities in January 2020, will be sufficient to fund its operations into the first quarter of 2021, however, Tetraphase has based this estimate on assumptions that may prove to be wrong, and its capital resources may be utilized faster than Tetraphase currently expects. In accordance with the requirements of ASC 205-40, based on its recurring losses and cash outflows from operations since inception, expectation of continuing operating losses and cash outflows from operations for the foreseeable future and the need to raise additional capital to finance its future operations, Tetraphase has concluded that there is substantial doubt about its ability to continue as a going concern. The financial statements do not include any adjustments that might result from the outcome of this uncertainty. There is no assurance that Tetraphase will be successful in obtaining additional financing on terms acceptable to us, if at all, nor is it considered probable under the accounting standards. As such, under the requirements of ASC 205-40, management may not consider the potential for future capital raises or management plans to reduce costs that are not considered probable in their assessment of its ability to meet its obligations.

Tetraphase will be required to obtain further funding through public or private equity offerings, debt financings, collaborations and licensing arrangements or other sources to fund its operations beyond such time. If Tetraphase is unable to obtain funding, Tetraphase may be required to delay, reduce or eliminate its commercialization efforts, which could adversely affect its business prospects, and Tetraphase may be unable to continue operations.

Tetraphase has based its projections of operating capital requirements and revenues on assumptions that may prove to be incorrect, and Tetraphase may use all of its available capital resources sooner than it expects. However, because of the numerous risks and uncertainties associated with the commercialization of pharmaceutical products such as Xerava, Tetraphase's estimates of its operating capital requirements may be incorrect. Adequate additional financing may not be available to it on acceptable terms, or at all. In addition, although Tetraphase is exploring out-licensing opportunities for its pipeline of early-stage antibiotics and oncology product candidates, there can be no assurance that Tetraphase will be able to out-license these on a timely basis or on terms that are favorable to us, or at all. Tetraphase's failure to raise capital through financing or a license of its pipeline as and when needed would have a negative impact on its financial condition and its ability to pursue its business strategy. Tetraphase could be forced to significantly scale back or discontinue the commercialization of Xerava and reduce other expenditures, seek collaborators at an earlier stage than otherwise would be desirable or on terms that are less favorable than might otherwise be available, and relinquish or license, potentially on unfavorable terms, its rights to Xerava and its product candidates. In addition, in such circumstance, Tetraphase would consider seeking protection under the bankruptcy laws in order to continue to pursue potential transactions and conduct a wind-down of its company. If Tetraphase decides to seek protection under the bankruptcy laws, Tetraphase would expect that it would file for bankruptcy at a time that is significantly earlier than when itwould otherwise exhaust its cash resources. If Tetraphase decides to dissolve and liquidate its assets or to seek protection under the bankruptcy laws, it is unclear to what extent Tetraphase will be able to pay its obligations, and, accordingly, it is further unclear whether and to what extent any resources will be available for distributions to stockholders. Tetraphase's future funding requirements, both short-term and long-term, will depend on many factors, including, but not limited to:

- revenues received from commercial sales of Xerava;
- Tetraphase's ability to enter into collaborations, licensing, marketing, distribution or other arrangements with respect to Xerava and its product candidates, and the terms and timing of any such arrangements into which Tetraphase enters;
- the timing and costs of manufacturing and other activities in connection with the commercialization of Xerava;
- the amount and timing of any payments Tetraphase may be required to make, or that Tetraphase may receive, in connection with the licensing, filing, prosecution, defense and enforcement of any patents or other intellectual property rights, including milestone and royalty payments and patent prosecution fees that Tetraphase is obligated to pay to Harvard University, or Harvard, and other licenses under license agreements to which Tetraphase may be a party;
- the costs of maintaining and protecting Tetraphase's intellectual property rights and defending against intellectual property related claims;
- the extent to which Tetraphase in-licenses or acquires other products and technologies; and
- Tetraphase's ability to continue as a going concern.

Tetraphase will need to obtain substantial additional funding in order to successfully commercialize Xerava. To the extent that Tetraphase raises additional capital through the sale of common stock, convertible securities or other equity securities, the ownership interests of its existing stockholders may be materially diluted and the terms of these securities could include liquidation or other preferences that could adversely affect the rights of its existing stockholders. In addition, additional debt financing, if available, would result in increased fixed payment

obligations and may involve agreements that include restrictive covenants that limit its ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends, that could adversely impact its ability to conduct its business. If Tetraphase is unable to raise capital when needed or on attractive terms or if its product revenue does not meet its current projections, or if, from its exploration of strategic alternatives, Tetraphase is unable to consummate such a transaction or transactions on a timely basis or at all, Tetraphase could be forced to significantly delay, scale back or discontinue the commercialization of Xerava or reduce other expenditures, seek collaborators at an earlier stage than otherwise would be desirable or on terms that are less favorable than might otherwise be available, and relinquish or license, potentially on unfavorable terms, its rights to Xerava and its product candidates.

Contractual Obligations and Commitments

The following table summarizes Tetraphase's outstanding contractual obligations as of payment due date by period at December 31, 2019:

	Payment due by period				
Contractual Obligations	**Total**	**Less than 1 Year**	**1-3 Years**	**3-5 Years**	**More than 5 Years**
			(in thousands)		
Operating leases(1)	$5,573	$ 1,875	$ 3,698	$ —	$ —
Total contractual cash obligations	$5,573	$ 1,875	$ 3,698	$ —	$ —

(1) On November 29, 2018, Tetraphase amended its existing operating lease to extend its lease term through November 30, 2022. In January 2020, Tetraphase amended its lease to reduce the square feet of office, research and laboratory space from approximately 37,438 square feet to approximately 21,539 square feet. In third quarter of 2016, Tetraphase entered into a sublease with respect to a portion of its principal facilities, which consist of office, research and laboratory space located at 480 Arsenal Way, Watertown, Massachusetts, with an unrelated third party. This sublease was terminated in August 2019. This amendment is expected to reduce Tetraphase's lease expense related to its office lease by approximately $0.8 million annually.

Tetraphase has employment agreements with certain employees which require the funding of a specific level of payments, if certain events, such as a change in control or termination without cause, occur.

In the course of normal business operations, Tetraphase also has agreements with contract service providers to assist in the performance of its research and development and manufacturing activities. Tetraphase can elect to discontinue the work under these agreements at any time. Tetraphase could also enter into additional collaborative research, contract research, manufacturing, and supplier agreements in the future, which may require up-front payments and even long-term commitments of cash.

Off-Balance Sheet Arrangements

Tetraphase did not have, during the periods presented, and Tetraphase does not currently have, any off-balance sheet arrangements, as defined under applicable SEC rules.

Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISKS

Tetraphase is a smaller reporting company, as defined by Rule 12b-2 of the Securities Exchange Act of 1934, as amended, and is not required to provide the information required under this item.

DESCRIPTION OF ACELRX CAPITAL STOCK

AcelRx's authorized capital stock consists of 200,000,000 shares of AcelRx Common Stock, $0.001 par value, and 10,000,000 shares of preferred stock ("AcelRx Preferred Stock"), $0.001 par value. A description of material terms and provisions of the AcelRx Charter and AcelRx Bylaws affecting the rights of holders of AcelRx's capital stock is set forth below. The description is intended as a summary, and is qualified in its entirety by reference to the AcelRx Charter and AcelRx Bylaws.

Common Stock

Voting Rights. Each holder of AcelRx Common Stock is entitled to one vote for each share on all matters submitted to a vote of the stockholders, including the election of directors. In all matters other than the election of directors, the affirmative vote of the majority of shares virtually present by remote communication or represented by proxy at a meeting of the stockholders and entitled to vote generally on the subject matter shall be the act of the stockholders. Directors shall be elected by a plurality of the votes of the shares virtually present by remote communication or represented by proxy at a meeting of the stockholders and entitled to vote generally on the election of directors. AcelRx stockholders do not have cumulative voting rights in the election of directors. Accordingly, holders of a majority of the voting shares of AcelRx are able to elect all of the directors to be elected at any particular time.

Dividends. Subject to preferences that may be applicable to any then outstanding AcelRx Preferred Stock, holders of AcelRx Common Stock are entitled to receive dividends, if any, as may be declared from time to time by the AcelRx Board out of funds legally available if the AcelRx Board, in its discretion, determines to issue dividends and then only at the times and in the amounts that the AcelRx Board may determine.

Liquidation. In the event of AcelRx's liquidation, dissolution or winding up, holders of AcelRx Common Stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of AcelRx's debts and other liabilities and the satisfaction of any liquidation preference granted to the holders of any then outstanding shares of AcelRx Common Stock.

Rights and Preferences. Holders of AcelRx Common Stock have no preemptive, conversion, subscription or other rights, and there are no redemption or sinking fund provisions applicable to AcelRx Common Stock. The rights, preferences and privileges of the holders of AcelRx Common Stock are subject to and may be adversely affected by the rights of the holders of shares of any series of AcelRx Preferred Stock that AcelRx may designate in the future.

Fully Paid and Nonassessable. All of the outstanding shares of AcelRx Common Stock are, and the shares of AcelRx Common Stock to be issued pursuant to any offering AcelRx may make pursuant to this proxy statement/prospectus will be, fully paid and nonassessable.

Preferred Stock

The AcelRx Board is authorized, subject to limitations prescribed by the DGCL, to issue AcelRx Preferred Stock in one or more series, to establish from time to time the number of shares to be included in each series and to fix the designation, powers, preferences and rights of the shares of each series and any of its qualifications, limitations or restrictions. The AcelRx Board can also increase or decrease the number of shares of any series, but not below the number of shares of that series then outstanding, without any further vote or action by AcelRx stockholders. The AcelRx Board may authorize the issuance of AcelRx Preferred Stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of AcelRx Common Stock. The issuance of AcelRx Preferred Stock, while providing flexibility in connection with financings, possible acquisitions and other corporate purposes, could, among other things, have the effect of delaying, deferring, discouraging or preventing a change in control of AcelRx, may adversely affect the market price of

AcelRx Common Stock and the voting and other rights of the holders of AcelRx Common Stock, and may reduce the likelihood that holders of AcelRx Common Stock will receive dividend payments and payments upon liquidation.

Anti-Takeover Effects of Provisions of AcelRx's Charter and Bylaws and Delaware Law

Certificate of incorporation and bylaws. The AcelRx Charter and AcelRx Bylaws include a number of provisions that may deter or impede hostile takeovers or changes of control or management. These provisions include:

- *Issuance of undesignated preferred stock*. Under the AcelRx Charter, the AcelRx Board has the authority, without further action by the stockholders, to issue up to 10,000,000 shares of undesignated preferred stock with rights and preferences, including voting rights, designated from time to time by the AcelRx Board. The existence of authorized but unissued shares of preferred stock enables the AcelRx Board to make it more difficult or to discourage an attempt to obtain control of AcelRx by means of a merger, tender offer, proxy contest or otherwise.
- *Classified board.* The AcelRx Charter provides for a classified board of directors consisting of three classes of directors, with staggered three-year terms. Only one class of directors will be elected at each annual meeting of AcelRx stockholders, with the other classes continuing for the remainder of their respective three-year terms. This provision may have the effect of delaying a change in control of the AcelRx Board.
- *Board of directors vacancies.* The AcelRx Charter and AcelRx Bylaws authorize only the AcelRx Board to fill vacant directorships. In addition, the number of directors constituting the AcelRx Board may be set only by resolution adopted by a majority vote of the entire AcelRx Board. These provisions prevent a stockholder from increasing the size of the AcelRx Board and gaining control of the AcelRx Board by filling the resulting vacancies with its own nominees.
- *Stockholder action; special meetings of stockholders.* The AcelRx Charter provides that AcelRx stockholders may not take action by written consent, but may only take action at annual or special meetings of AcelRx stockholders. Stockholders will not be permitted to cumulate their votes for the election of directors. The AcelRx Bylaws further provide that special meetings of AcelRx stockholders may be called only by a majority of the AcelRx Board, the chairman of the AcelRx Board, or AcelRx's chief executive officer. These provisions may prevent stockholders from corporate actions as stockholders at times when they otherwise would like to do so.
- *Advance notice requirements for stockholder proposals and director nominations.* The AcelRx Bylaws provide advance notice procedures for stockholders seeking to bring business before AcelRx's annual meeting of stockholders, or to nominate candidates for election as directors at AcelRx's annual meeting of stockholders. The AcelRx Bylaws also specify certain requirements as to the form and content of a stockholder's notice. These provisions may make it more difficult for AcelRx stockholders to bring matters before AcelRx's annual meeting of stockholders or to nominate directors at AcelRx's annual meeting of stockholders.

These provisions are intended to enhance the likelihood of continued stability in the composition of the AcelRx Board and its policies and to discourage certain types of transactions that may involve an actual or threatened acquisition of AcelRx. These provisions are designed to reduce AcelRx's vulnerability to an unsolicited acquisition proposal. The provisions also are intended to discourage certain tactics that may be used in proxy fights. However, these provisions could have the effect of discouraging others from making tender offers for shares of AcelRx Common Stock and, as a consequence, they may also reduce fluctuations in the market price of shares of AcelRx Common Stock that could result from actual or rumored takeover attempts.

Section 203 of the Delaware General Corporation Law

AcelRx is subject to the provisions of Section 203 of the DGCL ("Section 203") regulating corporate takeovers. This section prevents some Delaware corporations from engaging, under some circumstances, in a business combination, which includes a merger or sale of at least 10% of the corporation's assets with any interested stockholder, meaning a stockholder who, together with affiliates and associates, owns or, within three years prior to the determination of interested stockholder status, did own 15% or more of the corporation's outstanding voting stock, unless:

- the transaction is approved by the board of directors prior to the time that the interested stockholder became an interested stockholder;
- upon consummation of the transaction which resulted in the stockholder's becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced; or
- at or subsequent to such time that the stockholder became an interested stockholder the business combination is approved by the board of directors and authorized at an annual or special meeting of stockholders by at least two-thirds of the outstanding voting stock which is not owned by the interested stockholder.

In general, Section 203 defines "business combination" to include the following:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested stockholder;
- subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- any transaction involving the corporation that has the effect of increasing the proportionate share of the stock or any class or series of the corporation beneficially owned by the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loss, advances, guarantees, pledges or other financial benefits by or through the corporation.

In general, Section 203 defines an "interested stockholder" as an entity or person who, together with the person's affiliates and associates, beneficially owns, or within three years prior to the time of determination of interested stockholder status did own, 15% or more of the outstanding voting stock of the corporation.

A Delaware corporation may "opt out" of these provisions with an express provision in its original certificate of incorporation or an express provision in its certificate of incorporation or bylaws resulting from a stockholders' amendment approved by at least a majority of the outstanding voting shares. AcelRx has not "opted out" of these provisions and does not plan to do so. The statute could prohibit or delay mergers or other takeover or change in control attempts and, accordingly, may discourage attempts to acquire AcelRx.

Transfer Agent and Registrar

The transfer agent and registrar for AcelRx Common Stock is Computershare, Inc.: 1-800-736-3001. The transfer agent's address is 250 Royall Street, Canton, Massachusetts 02021.

COMPARISON OF RIGHTS OF HOLDERS OF ACELRX COMMON STOCK AND TETRAPHASE COMMON STOCK

The following is a summary of the material differences between the rights of holders of AcelRx Common Stock and the rights of holders of Tetraphase Common Stock, but it is not a complete description of those differences. These differences arise from the governing documents of the two companies, including the AcelRx Charter, the AcelRx Bylaws, the Tetraphase Charter and the Tetraphase Bylaws. AcelRx and Tetraphase are both Delaware corporations and are governed by the DGCL. After completion of the Merger, the rights of Tetraphase stockholders who become AcelRx stockholders will be governed by the DGCL, the AcelRx Charter and the AcelRx Bylaws. AcelRx and Tetraphase urge you to read each of the AcelRx Charter, the AcelRx Bylaws, the Tetraphase Charter, and the Tetraphase Bylaws in their entirety. For additional information, see "*Where You Can Find More Information*" beginning on page 196 of this proxy statement/prospectus and "*Incorporation of Certain Information by Referenc*e" beginning on page 197 of this proxy statement/prospectus.

AcelRx	Tetraphase
Authorized Capital Stock	
AcelRx is authorized to issue 210,000,000 shares of capital stock divided into two classes consisting of: (a) 200,000,000 shares of common stock, par value $0.001 per share; and (b) 10,000,000 shares of preferred stock, par value $0.001 per share ("AcelRx Preferred Stock").	Tetraphase is authorized to issue 130,000,000 shares of capital stock divided into two classes consisting of: (a) 125,000,000 shares of common stock, par value $0.001 per share; and (b) 5,000,000 shares of preferred stock, par value $0.001 per share.
Rights of Preferred Stock	
The AcelRx Charter authorizes the AcelRx Board, without further action by the stockholders, to provide for the issue of preferred stock with rights and preferences, including voting rights, designated from time to time by the directors. No shares of AcelRx Preferred Stock are issued or outstanding as of the date of this proxy statement/prospectus or as of the Record Date.	The Tetraphase Charter authorizes the Board of Directors, without further action by the stockholders, to issue preferred stock with powers, privileges, rights, including voting rights, designated from time to time by the directors. Tetraphase has no currently outstanding or issued shares of preferred stock.
Number of Directors	
The AcelRx Charter and AcelRx Bylaws provide that the number of directors of AcelRx shall be fixed by resolution of the AcelRx Board.	The Tetraphase Charter provides that the number of directors which shall constitute the Tetraphase Board shall be established by the Tetraphase Directors.
Classification of Board of Directors	
The AcelRx Charter and AcelRx Bylaws provide that, subject to the rights of the holders of any series of AcelRx Preferred Stock to elect additional directors under specified circumstances, the directors shall be divided into three classes designated as Class I, Class II and Class III, respectively, with the term of each such class expiring sequentially each year.	The Tetraphase Charter provides that directors shall be divided into three classes, designated Class I, Class II and Class III, with the term of each such class expiring sequentially each year.

AcelRx	Tetraphase
Election of Directors	
The AcelRx Charter and AcelRx Bylaws provide that at each succeeding annual meeting of stockholders directors shall be elected for a full term of three years to succeed the directors of the class whose terms expire at such annual meeting.	The Tetraphase Charter provides that at each succeeding annual meeting of stockholders, directors shall be elected for a full term of three years to succeed the directors of the class whose terms expires at such annual meeting.
Cumulative Voting	
The AcelRx Charter and AcelRx Bylaws do not provide for cumulative voting rights in the election of directors.	The Tetraphase Charter does not provide for cumulative voting rights in the election of directors.
Nomination of Directors	
The AcelRx Bylaws provide that nominations of persons for election to the AcelRx Board may be made at an annual meeting of the stockholders if: (i) pursuant to the notice of meeting of stockholders (with respect to business other than nominations); (ii) brought specifically by or at the direction of the AcelRx Board; or (iii) brought by any stockholder of AcelRx who was a stockholder of record at the time of giving the stockholder's notice provided for in Section 5(b) of the AcelRx Bylaws, who is entitled to vote at such meeting and who has complied with the notice procedures set forth in Section 5 of the AcelRx Bylaws. The AcelRx Bylaws provide that nominations of persons for election to the AcelRx Board may be made at a special meeting of the stockholders at which directors are to be elected (i) by or at the direction of the AcelRx Board or (ii) by any stockholder of AcelRx who is a stockholder of record at the time of giving notice, who is entitled to vote at such meeting and who delivers written notice to the Secretary of AcelRx setting for the information required in Section 5(b)(i) of the AcelRx Bylaws. The AcelRx Bylaws further provide that in the event the corporation calls a special meeting of stockholders for the purpose of electing one or more directors to the AcelRx Board, any such stockholder of record may nominate a person or persons (as the case may be), for election to such position(s) as specified in the corporation's notice of meeting, if written notice setting forth the information required by Section 5(b)(i) of the AcelRx Bylaws is received in accordance with Section 6(c) of the AcelRx Bylaws.	The Tetraphase Charter and Tetraphase Bylaws provide that nominations of persons for election to the Tetraphase Board may be made at a meeting of stockholders (i) by or at the direction of the Tetraphase Board or (ii) by any stockholder of the corporation who (x) timely complies with the notice procedures in Section 1.10(b) of the Tetraphase Bylaws, (y) is a stockholder of record on the date of the giving of such notice and on the record date for the determination of stockholders entitled to vote at such meeting and (z) is entitled to vote at such meeting.

AcelRx	Tetraphase
Removal of Directors	
The AcelRx Charter and AcelRx Bylaws provide that, subject to the rights of the holders of any series of AcelRx Preferred Stock to elect additional directors under specified circumstances, neither the AcelRx Board nor any individual director may be removed without cause.	The Tetraphase Charter and Tetraphase Bylaws provide that directors of Tetraphase may be removed only for cause and only by the affirmative vote of holders of at least seventy-five percent (75%) of the votes which all the stockholders would be entitled to cast in any annual election of directors or class of directors.
The AcelRx Charter and AcelRx Bylaws provide that any individual director or directors may be removed with cause by the affirmative vote of the holders of at least 66 2/3% of the voting power of all then-outstanding shares of capital stock of AcelRx entitled to vote generally at an election of directors, voting together as a single class.	
Stockholder Nominations and Proposals; Requirements for Delivery and Notice	
The AcelRx Bylaws provide that a stockholder must give advance written notice to AcelRx if such stockholder intends to nominate an individual for election to the AcelRx Board or wishes to present a proposal at an annual meeting of AcelRx stockholders.	The Tetraphase Charter provides that advance notice of stockholder nominations for election of directors and other business to be brought by stockholders before a meeting of stockholders shall be given in the manner provided by the Tetraphase Bylaws.
In order to make such a nomination or proposal, a stockholder must satisfy certain procedural and information requirements outlined in Section 5(b)(i) of the AcelRx Bylaws including, among others, providing timely notice of the proposal as well as the disclosure of certain information about the nominating stockholder and the director candidate or proposal, as applicable.	The Tetraphase Bylaws provide that for nominations for election to the Tetraphase Board by any stockholder of Tetraphase, a stockholder's notice must be received in writing by the Secretary at the principal executive offices of the Tetraphase on a timely basis, set forth necessary information, and be updated and supplemented on a timely basis, each as provided in Section 1.10(b) of the Tetraphase Bylaws.
Under the AcelRx Bylaws, to be timely, written notice to include stockholder proposals must be received by the Secretary of AcelRx at AcelRx's principal executive offices not later than the close of business on the ninetieth (90th) day nor earlier than the close of business on the one hundred twentieth (120th) day prior to the first anniversary of the preceding year's annual meeting; provided, however, that, subject to the last sentence of this paragraph, in the event that the date of the annual meeting is advanced more than thirty (30) days prior to or delayed by more than thirty (30) days after the anniversary of the preceding year's annual meeting, notice by the stockholder to be timely must be received not earlier than the close of business on the one hundred and twentieth (120th) day prior to such annual meeting and not later than the close of business on the later of the ninetieth (90th) day prior to such annual meeting or the tenth (10th) day following the day on which public	The Tetraphase Bylaws provide that for a proposal of business by any stockholder of Tetraphase, a stockholder's notice must be received in writing by the Secretary at the principal executive offices of the Tetraphase on a timely basis, set forth necessary information, and be updated and supplemented on a timely basis, each as provided in Section 1.11(b) of the Tetraphase Bylaws.

AcelRx	Tetraphase
announcement of the date of such meeting is first made. In no event shall an adjournment or postponement of an annual meeting for which notice has been given, or the public announcement thereof has been made, commence a new time period for the giving of a stockholder's notice as described above.	
Amendments to Certificate of Incorporation	
The AcelRx Charter reserves to AcelRx the right to amend or repeal any provision of the AcelRx Charter in the manner now or hereafter prescribed by the DGCL and all rights conferred upon stockholders are granted subject to this reservation. Notwithstanding any other provision in the AcelRx Charter or any provision of law which might otherwise permit a lesser vote or no vote, but in addition to any affirmative vote of the holders of any particular class or series of AcelRx required by law or the AcelRx Charter or any certificate of designation filed with respect to a series of AcelRx Preferred Stock, the affirmative vote of the holders of at least 66 2/3 of the voting power of all of the then-outstanding shares of capital stock of AcelRx entitled to vote generally in the election of directors, voting together as a single class is required to alter, amend or repeal Articles V, VI, and VII of the AcelRx Charter.	The Tetraphase Charter provides that Tetraphase may amend, repeal or change any provisions in the Tetraphase Charter or Tetraphase Bylaws inconsistent with Article 9 of the Tetraphase Charter by the affirmative vote of the holders of at least seventy-five percent (75%) of the votes which all the stockholders would be entitled to cast in any annual election of directors or class of directors.
Amendments to Bylaws	
The AcelRx Charter provides that, subject to the rights of the holders of any series of AcelRx Preferred Stock that may be designated from time to time, the AcelRx Board is expressly empowered to adopt, amend or repeal the AcelRx Bylaws. The AcelRx Bylaws provide that, subject to the limitations in Section 45(h) of the AcelRx Bylaws or the provisions of the AcelRx Charter, the AcelRx Board is expressly empowered to adopt, amend or repeal the AcelRx Bylaws. Any adoption, amendment or repeal of the AcelRx Bylaws by the AcelRx Board requires the approval of a majority of the authorized number of directors. The stockholders also have the power to adopt, amend or repeal the AcelRx Bylaws; provided, however, that, in addition to any vote of the holders of any class or series of stock of AcelRx required by law or the AcelRx Charter, such action by stockholders requires the affirmative vote of the holders of at least 66 2/3 of the voting power of all of the then-outstanding shares of the capital stock of the corporation entitled to vote generally in the election of directors, voting together as a single class.	The Tetraphase Charter provides that, subject to the terms of any series of Preferred Stock, the Tetraphase Board shall have the power to adopt, amend, alter or repeal the Tetraphase Bylaws by the affirmative vote of a majority of the directors present at any regular or special meeting of the Tetraphase Board at which a quorum is present. The stockholders may not adopt, amend, alter or repeal the Tetraphase Bylaws, or adopt any provision inconsistent therewith, unless such action is approved, in addition to any other vote required by the Tetraphase Charter, by the affirmative vote of the holders of at least seventy-five percent (75%) of the votes that all the stockholders would be entitled to cast in any annual election of directors or class of directors.

AcelRx	Tetraphase
Special Meetings of Stockholders	
The AcelRx Bylaws provide that special meetings of the stockholders may be called for any purpose that is a proper matter for stockholder action under the DGCL. Special meetings may only be called by (i) the Chairman of the AcelRx Board, (ii) the Chief Executive Officer of AcelRx or (iii) the AcelRx Board pursuant to a resolution adopted by a majority of the total number of authorized directors (whether or not there exist any vacancies in previously authorized directorships at the time any such resolution is presented to the AcelRx Board for adoption).	The Tetraphase Bylaws provide that special meetings of stockholders for any purpose or purposes may be called at any time by only the Tetraphase Board, the Chairman of the Tetraphase Board or the Chief Executive Officer, and may not be called by any other person or persons.
Notice of Special Meetings of Stockholders	
The AcelRx Bylaws provide that for special meetings each stockholder entitled to vote at such meeting will receive written notice not less than ten (10) nor more than sixty (60) days before the date of the meeting, which will provide the place, if any, date, hour, the purpose or purposes of the special meeting and the means of remote communications, if any, by which stockholders and proxy holders may be deemed to be present in person and vote at any such meeting.	The Tetraphase Bylaws provide that notice of any special meeting of stockholders shall be given not less than 10 nor more than 60 days before the date of the meeting to each stockholder entitled to vote at such meeting, subject to the provisions of Section 1.4 of the Tetraphase Bylaws.
Stockholder Action by Written Consent	
The AcelRx Charter and AcelRx Bylaws provide that no action shall be taken by stockholders by written consent or by electronic transmission.	The Tetraphase Bylaws provide that no action shall be taken by the stockholder by written consent in lieu of a meeting.
Proxy	
The AcelRx Bylaws provide that every person entitled to vote shall have the right to do so either in person, by remote communication, if applicable, or by an agent or agents authorized by a proxy granted in accordance with the DGCL.	The Tetraphase Bylaws provide that every person entitled to vote shall have the right to do so either in person, by remote communication, if applicable, or by an agent or agents authorized by a proxy granted in accordance with the DGCL. An agent so appointed need not be a stockholder. No proxy shall be voted after 3 years from its date of creation unless the proxy provides for a longer period.
Limitation of Personal Liability of Directors	
The AcelRx Charter provides that the liability of the directors for monetary damages shall be eliminated to the fullest extent under applicable law. If the DGCL is amended to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of a director of AcelRx shall be	The Tetraphase Charter provides that liability of a director for monetary damages shall be eliminated or limited to the fullest extent permitted by applicable law. If the DGCL is amended to permit further elimination or limitation of the personal liability of directors, then the liability of a director of Tetraphase

AcelRx	Tetraphase
eliminated to the fullest extent permitted by the DGCL, as so amended.	shall be eliminated or limited to the fullest extent permitted by the DGCL. No amendment to or repeal of this provision shall apply to or have any effect on the liability or alleged liability of any director of Tetraphase for or with respect to any acts or omissions of such director occurring prior to such amendment or repeal.
Indemnification of Directors and Officers	
The AcelRx Bylaws provide that AcelRx shall indemnify its directors and officers to the extent not prohibited by the DGCL or any other applicable law; provided, however, the corporation may modify the extent of indemnification by individual contracts with its directors and officers; and, provided, further, that AcelRx is not required to indemnify any director or officer in connection with any proceeding (or part thereof) initiated by such person unless (i) such indemnification is expressly required to be made by law, (ii) the proceeding was authorized by the AcelRx Board, (iii) such indemnification is provided by AcelRx, in its sole discretion, pursuant to the powers vested in AcelRx under the DGCL or any other applicable law or (iv) such indemnification is required to be made under Section 45(d) of the AcelRx Bylaws.	The Tetraphase Charter provides that Tetraphase shall indemnify its directors and officers against all expenses to the extent not prohibited by the DGCL or any other applicable law, subject to the limitations set forth therein.
DGCL Section 203 Election	
The AcelRx Charter and AcelRx Bylaws have not opted-out of the statutory protections of Section 203 of the DGCL. See "*Description of AcelRx Capital Stock—Section 203 of the Delaware General Corporation Law*" beginning on page 172 of this proxy statement/prospectus for additional information on Section 203 of the DGCL	Tetraphase has not opted-out of the statutory protections of Section 203 of the DGCL in the Tetraphase Charter and Tetraphase Bylaws.
Vote on Mergers	
The AcelRx Charter and AcelRx Bylaws have not affected the ability of common stockholders to vote on corporate matters involving proposed mergers, acquisitions, consolidations and other such transactions.	The Tetraphase Charter and Tetraphase Bylaws do not affect the ability of common stockholders to vote on corporate matters involving proposed mergers, acquisitions, consolidations and other such transactions.
Exclusive Forum	
The AcelRx Charter and AcelRx Bylaws have not designated an exclusive forum for litigation involving AcelRx.	The Tetraphase Charter and Tetraphase Bylaws has designated the Court of Chancery of the State of Delaware as the sole and exclusive forum for (a) any derivative action or proceeding brought on behalf of

AcelRx	Tetraphase
	Tetraphase, (b) any action asserting a claim of breach of a fiduciary duty owed by any current or former director, officer, other employee, agent or stockholder to Tetraphase or its stockholders, including, without limitation, a claim alleging the aiding and abetting of such a breach of fiduciary duty, (c) any action asserting a claim arising pursuant to any provision of the DGCL, the Tetraphase Charter or the Tetraphase Bylaws or as to which the DGCL confers jurisdiction on the Court of Chancery of the State of Delaware, or (d) any action asserting a claim governed by the internal affairs doctrine or other "internal corporate claim" as that term is defined in Section 115 of the DGCL.

MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES OF THE MERGER FOR TETRAPHASE STOCKHOLDERS

The following is a general summary of material U.S. federal income tax consequences of the Merger to U.S. Holders and Non-U.S. Holders (each as defined below) of shares of Tetraphase Common Stock whose shares are exchanged for AcelRx Common Stock, cash in lieu of fractional shares, and CVRs pursuant to the Merger.

This discussion is for general information only and is not tax advice. This discussion is based upon the Internal Revenue Code of 1986, as amended (the "Code"), Treasury Regulations promulgated under the Code, judicial authorities, published positions of the Internal Revenue Service (the "IRS"), and other applicable authorities, all as in effect on the date of this proxy statement/prospectus and all of which are subject to change or differing interpretations, possibly with retroactive effect. Any such change or interpretation could affect the continuing validity of this discussion. This discussion applies only to holders of Tetraphase Common Stock who hold their Tetraphase Common Stock as capital assets within the meaning of Section 1221 of the Code. The following discussion does not address any aspects of U.S. taxation other than U.S. federal income taxation, nor does it address any aspects of the Medicare contribution tax on net investment income or the alternative minimum tax. This discussion does not address any non-income or other taxes or any non-U.S., state or local tax consequences.

This discussion does not address all aspects of U.S. federal income taxation that may be relevant to particular holders of Tetraphase Common Stock in light of their particular facts and circumstances and does not apply to holders of Tetraphase Common Stock that are subject to special rules under the U.S. federal income tax laws, such as:

- banks, insurance companies or other financial institutions;
- brokers, dealers or traders in securities that use a mark-to-market method of tax accounting;
- tax-exempt entities, retirement plans, individual retirement accounts or other tax-deferred accounts;
- real estate investment trusts, regulated investment companies or mutual funds;
- "controlled foreign corporations" or "passive foreign investment companies";
- "qualified foreign pension funds" as defined in Section 897(l)2) of the Code and entities all of the interests of which are held by qualified foreign pension funds;
- certain former citizens or former long-term residents of the United States;
- U.S. Holders having a "functional currency" for U.S. federal income tax purposes that is not the U.S. dollar;
- holders who hold shares of Tetraphase Common Stock as part of a hedge, straddle, constructive sale, conversion transaction or other integrated transaction;
- holders who own (or are deemed to own) 5% or more of the outstanding Tetraphase Common Stock;
- persons holding Tetraphase Common Stock as qualified small business stock within the meaning of Sections 1202 and/or 1045 of the Code;
- persons subject to special tax accounting rules under Section 451(b) of the Code as a result of any item of gross income with respect to Tetraphase Common Stock being taken into account in an applicable financial statement; and
- holders who acquired (or will acquire) their shares of Tetraphase Common Stock through the exercise of employee stock options or otherwise as compensation or through a tax-qualified retirement plan; and
- holders of Tetraphase Warrants or pre-funded warrants of Tetraphase.

If a partnership (or other entity or arrangement that is classified as a partnership or other pass-through entity for U.S. federal income tax purposes) holds shares of Tetraphase Common Stock, the U.S. federal income tax

treatment of a person treated as a partner or owner in such partnership or other entity generally will depend on the status of the partner or owner and the activities of the partnership or other entity. Partnerships or other pass-through entities that hold shares of Tetraphase Common Stock and partners or owners in such partnerships or entities should consult their tax advisers as to the particular U.S. federal income tax consequences of the Merger to them.

The following discussion is for general information purposes only and does not purport to be a complete analysis or discussion of all of the potential tax consequences of the Merger. It is not a substitute for careful tax planning and advice. AcelRx and Tetraphase urge you to consult your own tax advisor as to the specific tax consequences to you of the Merger and of receiving, owning and disposing of AcelRx Common Stock, including the applicability and effect of U.S. federal, state, local and non-U.S. income and other non-income tax laws in light of your particular circumstances.

U.S. Holders

For purposes of this discussion, a "U.S. Holder" is a beneficial holder of Tetraphase Common Stock that is for U.S. federal income tax purposes:

- an individual citizen or resident of the United States;
- a corporation (or any other entity treated as a corporation for U.S. federal income tax purposes) created or organized in or under the laws of the United States, any state thereof or the District of Columbia;
- an estate the income of which is subject to U.S. federal income taxation regardless of its source; or
- a trust that (a) is subject to the primary supervision of a court within the United States and one or more U.S. persons have the authority to control all substantial decisions of the trust or (b) has a valid election in effect under applicable Treasury Regulations to be treated as a U.S. person.

Receipt of Merger Consideration

The exchange of Tetraphase Common Stock for the Merger Consideration in the Merger is expected to be, and this discussion assumes such exchange will be, a taxable transaction for U.S. federal income tax purposes. Assuming the Merger will be a taxable transaction for U.S. federal income tax purposes, the amount of gain or loss a holder of Tetraphase Common Stock recognizes, and the timing and potentially the character of a portion of such gain or loss, depends in part on the U.S. federal income tax treatment of the CVRs, with respect to which there is uncertainty.

There is no legal authority directly addressing the U.S. federal income tax treatment of the receipt of the CVRs in connection with the Merger. The receipt of the Merger Consideration might be treated as either a "closed transaction" or an "open transaction" for U.S. federal income tax purposes. The installment method of reporting will not be available with respect to any gain attributable to the receipt of a CVR because Tetraphase Common Stock is traded on an established securities market.

Pursuant to U.S. Treasury Regulations dealing with contingent payment obligations analogous to the CVRs, if the fair market value of the CVRs is "reasonably ascertainable," a U.S. Holder should treat the transaction as a "closed transaction" and treat the fair market value of the CVRs as part of the consideration received in the Merger for purposes of determining gain or loss. On the other hand, if the fair market value of the CVRs cannot be reasonably ascertained, a U.S. Holder should treat the transaction as an "open transaction" for purposes of determining gain or loss. These Treasury Regulations state that only in "rare and extraordinary" cases would the value of contingent payment obligations not be reasonably ascertainable.

The following sections discuss the tax consequences of the Merger if the receipt of the Merger Consideration is treated as a closed transaction or, alternatively, as an open transaction. You are urged to consult your tax adviser with respect to the tax considerations relating to the CVRs. There is no authority directly addressing whether

contingent payment rights with characteristics similar to the rights under a CVR should be treated as closed transactions or open transactions, and such question is inherently factual in nature. Accordingly, U.S. Holders are urged to consult their own tax advisors regarding the availability of "open transaction" treatment and other possible characterizations of the receipt of a CVR.

Under either "open" or "closed" transaction treatment, gain or loss recognized in the transaction must be determined separately for each identifiable block of Tetraphase Common Stock surrendered in the Merger (i.e., shares of Tetraphase Common Stock acquired at the same cost in a single transaction). Any such gain or loss will be long-term capital gain if Tetraphase Common Stock is held for more than one year before such disposition. For U.S. Holders that are individuals, estates or trusts, long-term capital gain generally is taxed at preferential rates. The deductibility of both long-term and short-term capital loss is subject to certain limitations.

Treatment as Closed Transaction

If the receipt of the CVRs is treated as, or determined to be, part of a closed transaction for U.S. federal income tax purposes, a U.S. Holder should generally recognize capital gain or loss for U.S. federal income tax purposes upon closing of the Merger equal to the difference between (x) the sum of (i) the fair market value (determined as of the closing of the Merger) of AcelRx Common Stock received upon the closing of the Merger, (ii) any cash in lieu of fractional shares received upon the closing of the Merger, and (iii) the fair market value (determined as of the closing of the Merger) of the CVRs received, and (y) such U.S. Holder's adjusted tax basis in the Tetraphase Common Stock surrendered pursuant to the Merger. The proper method to determine the fair market value of a CVR is not clear, but it is possible that the trading value of the Tetraphase Common Stock would be considered along with other factors in making that determination. AcelRx and its affiliates and Tetraphase do not intend to obtain or report any valuation of the CVRs that may be used by Tetraphase stockholders for this purpose.

Under such treatment, a U.S. Holder's initial tax basis in AcelRx Common Stock received upon the closing of the Merger will equal the fair market value of such stock on the date of the closing of the Merger, and the holding period of such AcelRx Common Stock will begin on the day following the date of the closing of the Merger. A U.S. Holder's initial tax basis in the CVRs will equal the fair market value of the CVRs on the date of the closing of the Merger, and the holding period of the CVRs will begin on the day following the date of the closing of the Merger.

There is no authority directly addressing the U.S. federal income tax treatment of receiving payments on the CVRs and, therefore, the amount, timing and character of any gain, income or loss with respect to the CVRs would be uncertain. For example, payments with respect to the CVRs could be treated as payments with respect to a sale or exchange of a capital asset or as giving rise to ordinary income. In addition, it is unclear how a U.S. Holder of the CVRs would recover its adjusted tax basis with respect to payments thereon. It is possible that a holder may not be able to recover its adjusted tax basis in a CVR until the last payment on the CVR is made. It is also possible that, were a payment to be treated as being with respect to the sale of a capital asset, a portion of such payment would constitute imputed interest (as described below under "Treatment as Open Transaction"). Additionally, a U.S. Holder may recognize loss to the extent of any remaining basis in the CVRs after the expiration of any right to payments under such U.S. Holder's CVRs.

Treatment as Open Transaction

If the receipt of the Merger Consideration is treated as an "open transaction" for U.S. federal income tax purposes, a U.S. Holder should generally recognize capital gain for U.S. federal income tax purposes in the year of the Merger if and to the extent the fair market value of AcelRx Common Stock plus cash in lieu of fractional shares received upon the closing of the Merger exceeds such U.S. Holder's adjusted tax basis in the Tetraphase Common Stock surrendered pursuant to the Merger (but would not recognize loss for U.S. federal income tax purposes in the year of the Merger if such adjusted tax basis exceeds the fair market value of AcelRx Common Stock plus cash in lieu of fractional shares received upon the closing of the Merger). Under such treatment, a

U.S. Holder's initial tax basis in AcelRx Common Stock received upon the closing of the Merger will equal the fair market value of such stock on the date of the closing of the Merger, and the holding period of such AcelRx Common Stock should begin on the day following the date of the closing of the Merger.

The fair market value of the CVRs would not be treated as additional consideration for the Tetraphase Common Stock at the time the CVRs are received in the Merger. Instead, a U.S. Holder would take no tax basis in the CVRs but would, subject to the imputed interest rules discussed below, recognize capital gain as payments with respect to the CVRs are made or deemed made in accordance with the U.S. Holder's regular method of accounting, but only to the extent the sum of such payments (and all previous payments under the CVRs), together with the fair market value of AcelRx Common Stock plus cash in lieu of fractional shares received upon closing of the Merger, exceeds such U.S. Holder's adjusted tax basis in the Tetraphase Common Stock surrendered pursuant to the Merger. Subject to the imputed interest rules discussed below, a U.S. Holder who does not receive AcelRx Common Stock and cash pursuant to the Merger (including for this purpose any AcelRx Common Stock and cash received as payments on the CVRs) with a fair market value at least equal to such U.S. Holder's adjusted tax basis in the Tetraphase Common Stock surrendered pursuant to the Merger should recognize a capital loss in the year that the U.S. Holder's right to receive further payments under the CVR terminates.

A payment to a U.S. Holder pursuant to a CVR (whether in cash or AcelRx Common Stock) would be treated as a payment under a contract for the sale or exchange of Tetraphase Common Stock. A portion of the payments made pursuant to the CVR Agreement may be treated as imputed interest, which would be ordinary income to the U.S. Holder of a CVR. The imputed interest amount would equal the excess of the amount of the CVR payment (i.e., the amount of cash paid, and the fair market value of the AcelRx Common Stock issued) over its present value at the closing of the Merger, calculated using the applicable federal rate as the discount rate. A U.S. Holder must include in its taxable income imputed interest in accordance with such U.S. Holder's regular method of accounting. The portion of the payment pursuant to a CVR that is not treated as imputed interest would generally be treated as a payment received in connection with the sale of Tetraphase Common Stock, as discussed above under "*Treatment of Consideration Received Upon Closing of the Merger—Treatment as Open Transaction.*"

Non-U.S. Holders

For purposes of this discussion, a "Non-U.S. Holder" means a beneficial holder of Tetraphase Common Stock that is neither a U.S. Holder nor a partnership (or other pass-through entity) for U.S. federal income tax purposes.

In general, any gain realized by a Non-U.S. Holder pursuant to the Merger generally will not be subject to U.S. federal income tax unless:

- the gain is effectively connected with a trade or business of such Non-U.S. Holder in the United States (and, if required by an applicable income tax treaty, is attributable to a permanent establishment maintained by such Non-U.S. Holder in the United States), in which case the Non-U.S. Holder generally will be taxed in the same manner as a U.S. Holder (as described above under "U.S. Holders"), except that, if the Non-U.S. Holder is a corporation, an additional branch profits tax may apply at a rate of 30% (or a lower rate under an applicable income tax treaty); or
- such Non-U.S. Holder is a nonresident alien individual who is present in the United States for 183 days or more in the taxable year in which the gain is realized, and certain other specified conditions are met, in which case such gain will be subject to U.S. federal income tax at a rate of 30% (or a lower rate under an applicable income tax treaty).

Generally, if payments are made to a Non-U.S. Holder with respect to CVRs, such Non-U.S. Holder may be subject to withholding at a rate of 30% (or a lower rate under an applicable income tax treaty) of the portion of any such payments treated as imputed interest (as described above under "*Treatment as Open Transaction*"), unless such Non-U.S. Holder establishes its entitlement to exemption from or a lower rate of withholding under

an applicable income tax treaty by providing the appropriate documentation (generally, IRS Form W-8BEN or W-8BEN-E or other applicable IRS Form W-8) to the applicable withholding agents. As discussed above, the tax treatment of the CVRs is unclear, and it is possible that AcelRx or its withholding agent may be required to withhold additional amounts on payments with respect to the CVRs.

Non-U.S. Holders are urged to consult their own tax advisors to determine the U.S. federal, state, local and non-U.S. income and other tax considerations that may be relevant to them in light of their particular circumstances.

The U.S. federal income tax treatment of the CVRs is not certain. There is no legal authority directly addressing the U.S. federal income tax consequences of the receipt of CVRs (or cash or AcelRx Common Stock in accordance with the terms of the CVR Agreement), and holders are urged to consult their tax advisers regarding the tax treatment of the issuance of the CVRs and any future payments under the CVR Agreement. Neither AcelRx nor Tetraphase intends to seek a ruling from the IRS regarding the tax treatment of the CVRs. Due to the legal and factual uncertainty regarding the valuation and tax treatment of the CVRs, holders are urged to consult their tax advisers concerning the recognition, timing and character of any gain or loss resulting from the Merger, including the receipt of the CVRs in the Merger, the tax consequences of the receipt of cash and/or AcelRx Common Stock under the CVR Agreement after the Merger, including any potential withholding taxes from such payments and the determination of such holders' adjusted tax basis and holding period with respect to any AcelRx Common Stock received (particularly any common stock received as a payment pursuant to a CVR).

Information Reporting, Backup Withholding, and FATCA

In general, cash payments made to a Tetraphase stockholder pursuant to the Merger (including amounts received in respect of CVRs) may be subject to information reporting unless such Tetraphase stockholder is a corporation, Non-U.S. Holder or other exempt recipient. Any payment to a U.S. Holder that is subject to information reporting generally will also be subject to backup withholding, currently at a rate of 24%, unless such U.S. Holder (i) provides the appropriate documentation (generally, IRS Form W-9) to the applicable withholding agent certifying that, among other things, its taxpayer identification number is correct, or otherwise establishes an exemption and (ii) with respect to payments on the CVRs, provides the rights agent with the certification documentation in clause (i) of this sentence or otherwise establishes an exemption from backup withholding.

The information reporting and backup withholding rules that apply to cash payments to a holder pursuant to the Merger generally will not apply to payments to a Non-U.S. Holder if such Non-U.S. Holder certifies under penalties of perjury that it is not a U.S. person (generally by providing an IRS Form W-8BEN or W-8BEN-E or other applicable IRS Form W-8) or otherwise establishes an exemption. Non-U.S. Holders should consult their own tax advisors to determine which Form W-8 is appropriate.

Under the "Foreign Account Tax Compliance Act" provisions of the Code, related U.S. Treasury guidance and related intergovernmental agreements ("FATCA"), AcelRx or another applicable withholding agent will be required to withhold tax at a rate of 30% on the portion of payments on the CVRs reported as imputed interest, or possibly the entire CVR payment depending on the U.S. federal income tax treatment of the receipt of the CVRs, if a Non-U.S. Holder fails to meet prescribed certification requirements. In general, no such withholding will be required with respect to a person that timely provides certifications that establish an exemption from FATCA withholding on a valid IRS Form W-8. A Non-U.S. Holder may be able to claim a credit or refund of the amount withheld under certain circumstances. Each Non-U.S. Holder should consult its own tax advisor regarding the application of FATCA to the CVRs.

Tetraphase has not sought and will not seek any opinion of counsel or any ruling from the IRS with respect to the matters discussed herein. Tetraphase urges holders of Tetraphase Common Stock to consult with their tax advisers with respect to the specific tax consequences to them in connection with the Merger in light of their own particular circumstances, including the tax consequences under state, local, non-U.S. and other tax laws.

UNAUDITED PRO FORMA CONDENSED COMBINED FINANCIAL INFORMATION

The following unaudited pro forma condensed combined financial information presents the combination of the historical financial statements of AcelRx and the historical financial statements of Tetraphase, after giving effect to the Merger, as further described in Note 1.

The unaudited pro forma condensed combined financial information is intended to reflect, with respect to the unaudited pro forma condensed combined balance sheet, the Merger as if it had occurred on December 31, 2019, and with respect to the unaudited condensed combined statement of operations, the Merger as if it had occurred on January 1, 2019.

The pro forma adjustments are based upon currently available information and certain assumptions that AcelRx's management believes are reasonable. The unaudited pro forma condensed combined financial information is presented for informational purposes only and is not intended to present or be indicative of what the results of operations or financial position would have been had the events actually occurred on the dates indicated, nor is it meant to be indicative of future results of operations or financial position for any future period or as of any future date. The unaudited pro forma condensed combined financial information does not give effect to the potential impact of current financial conditions, or any anticipated revenue enhancements, cost savings or operating synergies that may result from the Merger.

In the opinion of AcelRx's management, the pro forma adjustments reflected in the unaudited pro forma condensed combined financial information are based on events that are (1) directly attributable to the Merger, (2) factually supportable, and (3) with respect to the unaudited pro forma condensed combined statement of operations, expected to have a continuing impact on the combined results. The unaudited pro forma adjustments are based upon available information and certain assumptions that AcelRx's management believe are reasonable. Assumptions underlying the pro forma adjustments are described in the accompanying notes, which should be read in conjunction with the unaudited pro forma condensed combined financial information.

The unaudited pro forma condensed combined financial information was based on and should be read in conjunction with the following historical consolidated financial statements and accompanying notes, which are incorporated by reference:

- AcelRx's audited historical financial statements and related notes thereto contained in its Annual Report on Form 10-K as of and for the year ended December 31, 2019; and
- Tetraphase's audited historical financial statements and related notes thereto contained in its Annual Report on Form 10-K as of and for the year ended December 31, 2019.

AcelRx Pharmaceuticals, Inc.
UNAUDITED PRO FORMA CONDENSED COMBINED STATEMENT OF COMPREHENSIVE LOSS FOR THE YEAR ENDED DECEMBER 31, 2019
(In thousands, except share and per share data)

	Historical				
	AcelRx Pharmaceuticals, Inc.	Tetraphase Pharmaceuticals, Inc. (Note 3)	Pro Forma Adjustments (Note 6)	(Note 6)	Pro forma Combined
Revenue					
Product sales	$ 1,830	$ 3,575	$ —		$ 5,405
Contract and other collaboration	459	3,801	—		4,260
Total revenue	2,289	7,376	—		9,665
Operating costs and expenses:					
Cost of goods sold	6,806	3,080	2,321	(a)	12,207
Research and development	4,661	22,785	107	(b)	27,553
Selling, general and administrative	45,027	49,043	—		94,070
Total operating costs and expenses	56,494	74,908	2,428		133,830
Loss from operations	(54,205)	(67,532)	(2,428)		(124,165)
Other income (expense):					
Interest expense	(2,535)	(2,580)	—		(5,115)
Interest income and other income (expense), net	2,166	1,595	—		3,761
Non-cash interest income (expense) on liability related to sale of future royalties	1,337	—	—		1,337
Loss on extinguishment of debt	—	(1,568)	—		(1,568)
Total other income (expense)	968	(2,553)	—		(1,585)
Net loss before income taxes	(53,237)	(70,085)	(2,428)		(125,750)
Provision (benefit) for income taxes	3	—	—		3
Net loss	$ (53,240)	$ (70,085)	$ (2,428)		$ (125,753)
Net loss per share of common stock, basic and diluted (in dollars per share)	$ (0.67)				$ (1.35)
Shares used in computing net loss per share of common stock, basic and diluted	79,184,266		13,986,014	(c)	93,170,280

AcelRx Pharmaceuticals, Inc.
UNAUDITED PRO FORMA CONDENSED COMBINED BALANCE SHEET
AS OF DECEMBER 31, 2019
(In thousands)

	Historical				
	AcelRx Pharmaceuticals, Inc.	Tetraphase Pharmaceuticals, Inc. (Note 3)	Pro Forma Adjustments (Note 7)	(Note 7)	Pro Forma Combined
Assets					
Current Assets:					
Cash and cash equivalents	$ 14,684	$ 21,239	$ (16,515)	(a)	$ 19,408
Short-term investments	51,453	—	—		51,453
Accounts receivable, net	432	1,503	—		1,935
Tax receivable	88	—	—		88
Inventories, net	3,295	1,595	11,605	(b)	16,495
Prepaid expenses and other current assets	1,736	2,156	—		3,892
Total current assets	71,688	26,493	(4,910)		93,271
Operating lease right-of-use assets	3,928	4,836	—		8,764
Property and equipment, net	14,552	98	—		14,650
Long-term tax receivable	263	—	—		263
Other assets	925	—	—		925
Restricted cash	—	699	—		699
Intangible assets, net	—	4,259	741	(c)	5,000
Goodwill	—	—	1,315	(d)	1,315
Total Assets	$ 91,356	$ 36,385	$ (2,854)		$ 124,887
Liabilities and Stockholder's Equity (Deficit)					
Current Liabilities:					
Accounts payable	$ 1,720	$ 2,429	$ —		$ 4,149
Accrued liabilities	5,528	5,794	—		11,322
Long-term debt, current portion	4,630	—	—		4,630
Deferred revenue, current portion	411	—	—		411
Operating lease liabilities, current portion	970	1,547	—		2,517
Liability related to the sale of future royalties, current portion	352	—	—		352
Total current liabilities	13,611	9,770	—		23,381
Long-term debt, net of current portion	20,517	—	—		20,517
Deferred revenue, net of current portion	2,833	—	—		2,833
Operating lease liabilities, net of current portion	3,640	3,448	—		7,088
Liability related to the sale of future royalties, net of current portion	91,683	—	—		91,683
Other long-term liabilities	490	—	—		490
Contingent consideration	—	—	6,900	(e)	6,900
Total liabilities	132,774	13,218	6,900		152,892
Commitments and contingencies					
Stockholders' (Deficit) Equity:					
Common stock	79	3	11	(f)	33
Additional paid-in capital	356,609	627,291	(609,505)	(f)	374,395
Accumulated deficit	(398,106)	(604,127)	599,740	(g)	(402,493)
Total stockholders'(deficit) equity	(41,418)	23,167	(9,754)		(28,005)
Total Liabilities and Stockholders' (Deficit) Equity	$ 91,356	$ 36,385	$ (2,854)		$ 124,887

NOTES TO THE UNAUDITED PRO FORMA CONDENSED COMBINED FINANCIAL INFORMATION

Note 1 – Description of the Merger

On March 15, 2020, AcelRx, Tetraphase, and Consolidation Merger Sub, entered into an Agreement and Plan of Merger, pursuant to which, among other things, Merger Sub will be merged with and into Tetraphase, with Tetraphase continuing as the surviving corporation and an indirect wholly-owned subsidiary of AcelRx. Subject to the terms and conditions set forth in the Merger Agreement, at the effective time of the Merger, each share of common stock, par value $0.001 per share, of Tetraphase issued and outstanding immediately prior to the Effective Time (other than shares owned by AcelRx, Merger Sub or Tetraphase or any direct or indirect wholly-owned subsidiary of AcelRx or Tetraphase or by stockholders of Tetraphase who have exercised and perfected their statutory rights of appraisal under Delaware law) will be automatically converted into the right to receive (a) 0.6303 of a share of common stock, par value $0.001 per share, of AcelRx, plus (b) one contractual contingent value right to the aggregate right to receive up to $12.5 million in contingent consideration, in the form of cash or stock, conditioned upon the achievement of specified levels of annual net sales of XERAVA, plus (c) any cash payable in lieu of fractional shares of AcelRx Common Stock. The Exchange Ratio will be adjusted to the extent Tetraphase Net Cash is less than $5.0 million. The Merger Agreement also provides that: (a) each option to purchase Tetraphase Common Stock, whether vested or unvested, will terminate at the Effective Time and will be of no further force and effect; (b) each unvested (i) restricted stock unit representing the right to vest in and be issued shares of Tetraphase Common Stock that vests in whole or in part contingent upon the attainment of one or more performance goals, and (ii) each restricted stock unit representing the right to vest in and be issued shares of Tetraphase Common Stock that is not included in (i) shall vest in full; and (c) each warrant to purchase shares of Tetraphase Common Stock shall be treated in accordance with its terms, or as modified in any voting or exchange agreement entered into with an applicable holder of such warrant.

Based on the closing price of AcelRx common stock of $1.27 on March 27, 2019, the common stock component of the purchase price is $17.8 million. The total estimated purchase price inclusive of the fair value of shares issued for vested stock awards, pre-funded warrants, and the CVRs is $24.7 million.

The consummation of the Merger is subject to the satisfaction or waiver of certain customary conditions, including, among others, the adoption of the Merger Agreement by the holders of a majority of the Tetraphase Common Stock, the absence of any material adverse effect on Tetraphase or AcelRx occurring since the date of the Merger Agreement, the Form S-4 being declared effective by the SEC and a minimum Company Net Cash of $5.0 million.

Note 2 – Basis of Pro Forma Presentation

The unaudited pro forma condensed combined financial information was prepared using the acquisition method of accounting in accordance with *ASC 805, Business Combinations ("ASC 805")*. The acquisition method of accounting requires use of the fair value concepts defined in *ASC 820, Fair Value Measurement ("ASC 820")*.

ASC 805 requires the determination of the accounting acquirer, the acquisition date, the fair value of assets and liabilities of the acquiree and the measurement of goodwill or bargain purchase gain. AcelRx has been identified as the acquirer for accounting purposes based on the facts and circumstances specific to this Merger. As a result, AcelRx will record the business combination in its financial statements and will apply the acquisition method to account for the acquired assets and liabilities of Tetraphase. Applying the acquisition method includes recording the identifiable assets acquired and liabilities assumed at their fair values, and recording goodwill for the excess of the consideration transferred over the aggregate fair value of the identifiable assets acquired and liabilities assumed, or recording a bargain purchase gain for the excess of the aggregate fair value of the identifiable assets acquired and liabilities assumed over the consideration transferred. For purposes of the unaudited pro forma condensed combined financial information, the fair values of Tetraphase's identifiable assets acquired and

liabilities assumed were based on preliminary estimates. The final determination of the fair values of assets acquired and liabilities assumed could result in material changes to the amounts presented in the unaudited pro forma condensed combined financial information and future results of operations and financial position.

The historical financial information is adjusted in the unaudited condensed combined pro forma financial statements to give effect to unaudited pro forma adjustments that are (1) directly attributable to the Merger, (2) factually supportable, and (3) with respect to the unaudited pro forma condensed combined statements of operations, expected to have a continuing impact on the combined operating results.

The total equity purchase price will be paid with approximately 14.0 million shares of AcelRx common stock, that will be issued in exchange for all outstanding shares of Tetraphase Common Stock. The equity consideration is valued at $17.8 million, assuming an AcelRx share price of $1.27 per share, which is based on the closing price of AcelRx common stock on March 27, 2020.

The unaudited pro forma condensed combined financial information does not include the impacts of any revenue, costs or other operating synergies that may result from the Merger or any related restructuring costs that may be contemplated.

Note 3 – Conforming Accounting Policies

During the preparation of the unaudited pro forma condensed combined financial information, management performed an initial review of the accounting policies of Tetraphase to determine if differences in accounting policies require reclassification or adjustment. As result of that review, certain reclassifications have been made to the historical financial statements of Tetraphase to conform to AcelRx's presentation, which are discussed in more detail in "Note 4 – Reclassifications".

When management completes a final review of Tetraphase's accounting policies, additional differences may be identified that, when conformed, could have a material impact on the unaudited pro forma condensed combined financial information.

Note 4 – Reclassifications

Certain reclassification adjustments have been made to the historical financial statements of Tetraphase to conform to AcelRx's presentation as indicated in the tables below.

a) The reclassification adjustments to conform Tetraphase's Statement of Operations presentation to that of AcelRx have no impact on net income and are summarized below (in thousands):

Presentation in Tetraphase Financial Statements	Presentation in Unaudited Pro Forma Condensed Combined Statement of Operations	Amount
License and collaboration revenue	Contract and other collaboration	$2,000
Government revenue	Contract and other collaboration	$1,801
Cost of revenue - product sales	Cost of goods sold	$2,687
Cost of revenue - intangible asset amortization	Cost of goods sold	$ 393
Interest income	Interest income and other income (expense), net	$1,262
Other income	Interest income and other income (expense), net	$ 333

b) The reclassification adjustments to conform Tetraphase's balance sheet presentation to that of AcelRx have no impact on net assets and are summarized below (in thousands):

Presentation in Tetraphase Financial Statements	Presentation in Unaudited Pro Forma Condensed Combined Balance Sheet	Amount
Assets held for sale	Prepaid expenses and other current assets	$ 53
Accrued expenses and other	Accrued liabilities	$ 5,794
Operating lease liabilities	Operating lease liabilities, current portion	$ 1,547
Long-term operating lease liabilities	Operating lease liabilities, net of current portion	$ 3,448

Note 5 – Preliminary Estimate of Consideration Expected to be Transferred and Fair Value Estimate of Assets to be Acquired and Liabilities to be Assumed

The following is a preliminary estimate of the consideration expected to be transferred to affect the merger (in thousands, except share and per share data):

Tetraphase shares outstanding at March 6, 2020 [1]	10,800,166
Exchange ratio	0.6303
AcelRx shares to be issued to common stockholders	6,807,488
AcelRx shares to be issued to warrant stockholders	7,178,526
Total AcelRx shares to be issued	13,986,014
Closing price of AcelRx common stock on March 27, 2020	$ 1.27
Estimated fair value of stock consideration	$ 17,762
Estimated fair value of CVRs	6,900
Estimated fair value of total consideration to be transferred	$ 24,662

1 Includes shares to be issued in connection with pre-funded warrants and vested RSUs/PRSUs

The preliminary estimate of consideration expected to be transferred reflected in these unaudited pro forma condensed combined financial statements does not purport to represent what the actual consideration transferred will be when the merger is completed. For purposes of these unaudited pro forma condensed combined financial statements, the market price per share of AcelRx common stock on March 27, 2020 and the Tetraphase shares of common stock and share-based compensation awards outstanding as of March 6, 2020 were used to calculate the estimate of consideration expected to be transferred. Ultimately, the fair value of equity securities issued as the consideration transferred will be measured using the market price per share of AcelRx common stock on the closing date. The exchange ratio is fixed and is subject to change only in the limited circumstances as provided for in the Merger Agreement.

Additionally, as AcelRx is also obligated to grant CVRs to each owner of Tetraphase Common Stock as of the closing date as a form of contingent consideration, the fair value of the CVRs has been included in consideration transferred. The number of CVRs and shares of AcelRx common stock to be issued to holders of Tetraphase Common Stock are dependent on the number of shares of Tetraphase Common Stock outstanding on the closing date of the merger. The number of shares of AcelRx common stock to be issued to holders of the CVRs is dependent on the actual trading price of the AcelRx common stock during a defined period preceding the payment of the CVR (assuming AcelRx pays the CVRs in common stock).

The following is a preliminary estimate of the assets to be acquired and liabilities to be assumed by AcelRx in the merger, reconciled to the estimate of consideration expected to be transferred (in thousands):

Cash and cash equivalents	$ 9,073
Accounts receivable, net	1,503
Inventories, net	13,200
Prepaid expenses and other current assets	2,156
Operating lease right-of-use assets	4,836
Property and equipment, net	98
Restricted cash	699
Intangible assets	5,000
Accounts payable	(2,429)
Accrued liabilities	(5,794)
Operating lease liabilities, current portion	(1,547)
Operating lease liabilities, net of current portion	(3,448)
Goodwill	1,315
Estimate of consideration expected to be transferred	$24,662

Note 6 – Adjustments to the Unaudited Pro Forma Condensed Combined Statement of Operations

Adjustments included in the column under the heading “Pro Forma Adjustments” are primarily based on information contained within the Merger Agreement. Further analysis will be performed after the completion of the merger to confirm these estimates or make adjustments in the final purchase price allocation, as necessary.

Given Tetraphase’s and AcelRx’s history of net losses and valuation allowance, management assumed a statutory tax rate of 0%. Therefore, the pro forma adjustments to the condensed combined statements of comprehensive loss resulted in no additional income tax adjustment to the pro forma financials.

a) *Amortization of inventory step-up*

Reflects the $2.3 million amortization of the inventory step-up, based on the preliminary inventory adjustment and the estimated inventory turnover of five years.

b) *Amortization of intangible asset*

Reflects a pro forma adjustment to eliminate historical Tetraphase intangible asset amortization of $393 thousand and record new amortization of $500 thousand based on the fair value of intangible asset related to currently marketed product recognized as part of the business combination. New amortization is calculated using the straight-line method and a preliminary estimated useful life of 10 years.

c) *Weighted-average number of shares and net loss per share*

The unaudited pro forma combined basic net loss per share for the periods presented have been adjusted by the 13,986,014 AcelRx common shares expected to be issued in connection with the merger, which are assumed outstanding for the year ended December 31, 2019 for pro forma purposes. The unaudited pro forma diluted net loss per share for the year ended December 31, 2019 is equal to the unaudited pro forma basic net loss per share due to the combined company’s pro forma net loss.

Note 7 – Adjustments to the Unaudited Pro Forma Condensed Combined Balance Sheet as of December 31, 2019

a) *Cash and cash equivalents*

Reflects the adjustments to cash as follows:

Tetraphase's estimated transaction costs	$ (2,250)
Tetraphase's estimated precombination severance costs	(181)
Tetraphase's estimated precombination retention and bonus payout	(300)
Tetraphase's net cash adjustment to estimated net cash at closing of Merger	(5,835)
Tetraphase's estimated costs associated with insurance policy	(3,600)
AcelRx's estimated transaction costs	(2,500)
AcelRx's estimated severance costs for Tetraphase employees	(1,849)
Pro forma adjustment to cash	$(16,515)

b) *Inventory*

Reflects an $11.6 million adjustment to record inventory at fair value. The final fair value determination of inventory may differ from this preliminary determination, and such differences could be material.

c) *Other intangible assets*

Reflects an adjustment to record an intangible asset for currently marketed product at the estimated fair value of $5.0 million. The preliminary estimated useful life is 10 years. The final fair value determination of the identified intangible assets may differ from this preliminary determination, and such differences could be material.

d) Goodwill

Goodwill is calculated as the difference between the fair value of the consideration expected to be transferred and the fair values assigned to the assets acquired and liabilities assumed. The goodwill is attributable to the workforce of the business and the value of synergies expected to arise after the merger. The pro forma adjustment to goodwill is as follows (in thousands):

Consideration transferred	$ 24,662
Less: Fair value of net assets acquired	(23,347)
Pro forma adjustment to goodwill	$ 1,315

e) *Contingent consideration*

Reflects the adjustment to record contingent consideration of $6.9 million related to the estimated fair value of the CVR, which is conditioned upon the achievement of specified levels of annual net sales of XERAVA.

f) *Additional paid in capital*

To record the following adjustments to additional paid-in-capital (in thousands):

Elimination of Tetraphase's additional paid-in-capital	$(627,291)
AcelRx's stock issued for acquisition	17,748
AcelRx's stock issued for RSU awards	38
Total adjustment to additional paid-in-capital	$(609,505)

g) *Accumulated deficit*

To record the following adjustments to accumulated deficit (in thousands):

Elimination of Tetraphase's accumulated deficit	$604,127
AcelRx's estimated transaction costs	(2,500)
AcelRx's estimated severance costs for Tetraphase employees	(1,849)
AcelRx's stock issued for RSU awards	(38)
Total adjustment to accumulated deficit	$599,740

AcelRx's estimated transaction costs, and severance costs incurred subsequent to December 31, 2019 or expected to be incurred prior to the close of the Merger, are not reflected in the unaudited pro forma condensed combined statements of operations because these amounts are not expected to have a continuing effect on the operating results of the combined company.

Similarly, expected post-combination compensation expense of $38 thousand related to a number of Tetraphase' restricted stock units that vest upon, and in contemplation of, the Merger, is excluded from the unaudited pro forma condensed combined statements of operations because it is a charge directly attributable to the Merger that will not have a continuing impact on the Company's operations; however, the amount is reflected as an increase to accumulated deficit and additional paid-in-capital in the unaudited pro forma balance sheet.

CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

Tetraphase has not been a party to any transactions since January 1, 2018 in which any of Tetraphase's directors, executive officers or beneficial owners of more than 5% of its voting securities, or affiliates or immediate family members of any of Tetraphase's directors, executive officers or beneficial owners of more than 5% of its voting securities, had or will have a direct or indirect material interest, other than Mr. Boyd and Dr. Maher who are principals of Armistice.

Tetraphase entered into a consulting agreement with Mr. Macdonald pursuant to which he received $26,250 for consulting services provided to Tetraphase and the vesting of 21,000 shares of Tetraphase Common Stock were accelerated upon the termination of the consulting agreement.

On November 1, 2019, Armistice purchased, in a registered direct offering priced at-the-market, (i) 300,000 shares of Tetraphase Common Stock and accompanying warrants to purchase an aggregate of 300,000 shares of Tetraphase Common Stock (the "November Common Stock Warrants"), and (ii) pre-funded warrants to purchase up to an aggregate of 1,830,493 shares of Tetraphase Common Stock (the "November Pre-Funded Warrant") and accompanying November Common Stock Warrants to purchase an aggregate of 1,830,493 shares of Tetraphase Common Stock. Each share of Tetraphase Common Stock and accompanying November Common Stock Warrant was sold together at a combined price of $3.755, and each November Pre-Funded Warrant and accompanying November Common Stock Warrant was sold together at a combined price of $3.745.
On January 24, 2020, Armistice purchased, in a private placement priced at-the-market under Nasdaq rules, (i) 1,270,000 shares of Tetraphase Common Stock (the "Unregistered Shares") and accompanying warrants (the "Unregistered Common Warrants") to purchase an aggregate of 1,270,000 shares of Tetraphase Common Stock, for a combined price of $3.00, and (ii) pre-funded warrants to purchase 2,063,334 shares of Tetraphase Common Stock (the "Unregistered Pre-Funded Warrants") and accompanying Unregistered Common Warrants to purchase 2,063,334 shares of Tetraphase Common Stock, for a combined price of $2.999 (the "Private Placement"). As a result of the Private Placement the size of the Tetraphase's Board was increased from eight (8) to ten (10), and two directors designated by Armistice (Mr. Boyd and Dr. Maher) were elected to serve as Class III directors. As of March 31, 2020, Armistice beneficially owned approximately 19.6% of Tetraphase Common Stock on an outstanding basis. For additional information on the treatment of the warrants held by Armistice in the Merger, see "*The Merger Agreement—Merger Consideration and the Exchange Ratio*" beginning on page 90 of this proxy statement/prospectus and "*The Merger—Equity Awards Held by Tetraphase Directors Executive and Officers—Treatment of Outstanding Tetraphase Warrants*" beginning on page 81 of this proxy statement/prospectus.

LEGAL MATTERS

The validity of the shares of AcelRx Common Stock issuable pursuant to the Merger will be passed upon for AcelRx by Cooley LLP.

EXPERTS

AcelRx

OUM & Co. LLP, independent registered public accounting firm, has audited AcelRx's consolidated financial statements included in its Annual Report on Form 10-K for the year ended December 31, 2019, and the effectiveness of its internal control over financial reporting as of December 31, 2019, as set forth in their reports, which are incorporated by reference into this proxy statement/prospectus and elsewhere in the registration statement. AcelRx's financial statements are incorporated by reference in reliance on OUM & Co. LLP's reports, given on their authority as experts in accounting and auditing.

Tetraphase

The consolidated financial statements of Tetraphase Pharmaceuticals, Inc. at December 31, 2019 and 2018, and for each of the two years in the period ended December 31, 2019, incorporated in this proxy statement/prospectus by reference from Tetraphase Pharmaceuticals, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2019, have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their report thereon, which contains an explanatory paragraph describing conditions that raise substantial doubt about Tetraphase Pharmaceuticals, Inc.'s ability to continue as a going concern as described in Note 1 to the consolidated financial statements and are incorporated herein by reference in reliance upon such report given on the authority of such firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

This proxy statement/prospectus incorporates documents by reference which are not presented in or delivered with this proxy statement/prospectus. Tetraphase stockholders should rely only on the information contained in this proxy statement/prospectus and in the documents that AcelRx and Tetraphase have incorporated by reference into this proxy statement/prospectus. Tetraphase has not authorized anyone to provide stockholders with information that is different from or in addition to the information contained in this document or incorporated by reference into this proxy statement/prospectus.

AcelRx and Tetraphase each file annual, quarterly and current reports, proxy and registration statements and other information with the SEC. In addition, AcelRx's website is located at https://www.acelrx.com and Tetraphase's website is located at https://www.tphase.com. Through links on the "Investors" portion of AcelRx's and Tetraphase's respective websites, each makes available free of charge its Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, any amendments to those reports and other information filed with, or furnished to, the SEC pursuant to Section 13(a) or 15(d) of the Exchange Act. Such material is made available through AcelRx's and Tetraphase's respective websites as soon as reasonably practicable after AcelRx or Tetraphase, as applicable, electronically files the information with, or furnishes it to, the SEC. The information contained on or that can be accessed through AcelRx's and Tetraphase's respective websites does not constitute part of this proxy statement/prospectus, except for AcelRx's reports filed with the SEC that are specifically incorporated herein by reference. See "*Incorporation of Certain Information by Reference*" beginning on page 197 of this proxy statement/prospectus. The SEC also maintains an Internet site that contains reports, proxy and information statements and other information regarding issuers, including AcelRx and Tetraphase, that file electronically with the SEC. The address of that site is http://www.sec.gov.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows AcelRx and Tetraphase to "incorporate by reference" information into this proxy statement/prospectus, which means that AcelRx and Tetraphase can disclose important information about AcelRx, Tetraphase, and the Merger by referring you to another document filed separately by AcelRx or Tetraphase with the SEC. The information incorporated by reference herein is considered to be a part of this proxy statement/prospectus, and later information that AcelRx and Tetraphase file with the SEC will update and supersede that information. Each of AcelRx and Tetraphase incorporate by reference the documents listed below and any documents subsequently filed by it pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act and before the date of the Tetraphase Special Meeting. This proxy statement/prospectus incorporates by reference the documents and reports listed below (other than, in each case, the portions that are deemed to have been furnished and not filed in accordance with SEC rules):

The following documents, which were filed by AcelRx with the SEC, are incorporated by reference into this proxy statement/prospectus (other than information furnished pursuant to Item 2.02 or Item 7.01 of a Current Report on Form 8-K, or exhibits thereto under Item 9.01) and contain important information about AcelRx's business and AcelRx's financial performance:

AcelRx (SEC File No. 001-35068):

- AcelRx's Annual Report on Form 10-K for the year ended December 31, 2019, which was filed with the SEC on March 16, 2020, including the information specifically incorporated by reference into Part II of AcelRx's Annual Report on Form 10-K from AcelRx's proxy statement on Schedule 14A filed with the SEC on , 2020;
- AcelRx's Current Reports on Form 8-K which were filed on January 13, 2019 and March 16, 2020 (solely with respect to Items 1.01 and 8.01); and
- the description of AcelRx's Common Stock in its registration statement on Form 8-A filed with the SEC on February 1, 2011, including any amendments or reports filed for the purpose of updating such description.

AcelRx will provide to each person, including any beneficial owner, to whom a proxy statement/prospectus (or a notice of registration in lieu thereof) is delivered a copy of any or all of the documents incorporated by reference into this proxy statement/prospectus (including any exhibits that are specifically incorporated by reference in those documents) at no cost. Any such request can be made by writing or telephoning us at the following address and telephone number:

AcelRx Pharmaceuticals, Inc.
351 Galveston Drive
Redwood City, CA 94063
Attn: Investor Relations
(650) 216-3500

If you would like to request any documents, please do so by , 2020, of the date that is five business days before the date of the Special Meeting, in order to receive them before the Special Meeting.

Tetraphase (SEC File No. 001-35837):

The following documents, which were filed by Tetraphase with the SEC, are incorporated by reference into this proxy statement/prospectus (other than information furnished pursuant to Item 2.02 or Item 7.01 of a Current Report on Form 8-K, or exhibits thereto under Item 9.01) and contain important information about Tetraphase's business and Tetraphase's financial performance:

- Tetraphase's Annual Report on Form 10-K for the year ended December 31, 2019, filed with the SEC on March 12, 2020;
- Tetraphase's Current Reports on Form 8-K filed with the SEC on January 23, 2020 and March 16, 2020 (other than Items 2.02 and 9.01); and
- The description of Tetraphase Common Stock contained in Tetraphase's registration statement on Form 8-A filed on March 15, 2013, including any amendments or reports filed for the purpose of updating such description.

You may request a copy of this proxy statement/prospectus or any of the documents incorporated by reference into this proxy statement/prospectus or other information concerning Tetraphase, without charge, by written or telephonic request to:

Tetraphase Pharmaceuticals, Inc.
480 Arsenal Way
Watertown, Massachusetts 02472
Attn: Investor Relations
Telephone: (617) 715-3600

or from the SEC through the SEC website at the address provided above. Such request must be made no later than five business days before the date of the Special Meeting

Statements contained in this proxy statement/prospectus or in any document incorporated by reference into this proxy statement/prospectus regarding the contents of any contract or other document, are not necessarily complete and each such statement is qualified in its entirety by reference to the full text of that contract or other document filed as an exhibit with the SEC.

Annex A

AGREEMENT AND PLAN OF MERGER

among:

ACELRX PHARMACEUTICALS, INC.,
a Delaware corporation;

CONSOLIDATION MERGER SUB, INC.
a Delaware corporation; and

TETRAPHASE PHARMACEUTICALS, INC.,
a Delaware corporation

Dated as of March 15, 2020

TABLE OF CONTENTS

TABLE OF CONTENTS
(continued)

TABLE OF CONTENTS
(continued)

TABLE OF CONTENTS
(continued)

AGREEMENT AND PLAN OF MERGER

THIS AGREEMENT AND PLAN OF MERGER ("**Agreement**") is made and entered into as of March 15, 2020, by and among **ACELRX PHARMACEUTICALS, INC.**, a Delaware corporation ("**Parent**"); **CONSOLIDATION MERGER SUB, INC.**, a Delaware corporation and an indirect wholly-owned subsidiary of Parent ("**Merger Sub**"); and **TETRAPHASE PHARMACEUTICALS, INC.**, a Delaware corporation (the "**Company**"). Certain capitalized terms used in this Agreement are defined in **Exhibit A**.

RECITALS

A. Parent, Merger Sub and the Company intend to effect a merger of Merger Sub into the Company in accordance with this Agreement and the DGCL (the "**Merger**"). Upon consummation of the Merger, Merger Sub will cease to exist, and the Company will become a wholly-owned subsidiary of Parent.

B. The respective boards of directors of Parent, Merger Sub and the Company have approved the Merger and adopted this Agreement, and Parent, as sole stockholder of AcelRx Intermediate Sub, Inc., a Delaware corporation, will cause AcelRx Intermediate Sub, Inc., as sole stockholder of Merger Sub, to, immediately following the execution and delivery of this Agreement, approve the Merger and adopt this Agreement.

C. Upon the terms and subject to the conditions set forth in this Agreement, at or prior to the Effective Time, Parent and the Rights Agent will enter into the CVR Agreement.

D. In order to induce Parent to enter into this Agreement and cause the Merger to be consummated, certain stockholders of the Company are executing voting agreements in favor of Parent (the "**Company Stockholder Voting Agreements**") concurrently with the execution of this Agreement.

AGREEMENT

The parties to this Agreement, intending to be legally bound, agree as follows:

SECTION 1. DESCRIPTION OF TRANSACTION

1.1 Merger of Merger Sub into the Company. Upon the terms and subject to the conditions set forth in this Agreement, at the Effective Time, Merger Sub shall be merged with and into the Company. By virtue of the Merger, at the Effective Time, the separate existence of Merger Sub shall cease and the Company shall continue as the surviving corporation in the Merger (the "**Surviving Corporation**").

1.2 Effects of the Merger. The Merger shall have the effects set forth in this Agreement and in the applicable provisions of the DGCL.

1.3 Closing; Effective Time. The consummation of the Merger (the "**Closing**") shall take place at the offices of Cooley LLP, 101 California Street, San Francisco, CA 94111, or such other location or means as shall be mutually agreed by the parties, including by remote exchange of electronic copies of documents (including by portable document format (.pdf) delivered by electronic mail), on a date to be designated jointly by Parent and the Company, which shall be no later than the second Business Day after the satisfaction or waiver of the last to be satisfied or waived of the conditions set forth in Section 6 and Section 7 (other than the conditions, which by their nature are to be satisfied at the Closing, but subject to the satisfaction or waiver of each of such conditions). The date on which the Closing actually takes place is referred to as the "**Closing Date**." Subject to the provisions of this Agreement, a certificate of merger satisfying the applicable requirements of the DGCL shall be duly executed by the Company and concurrently with the Closing shall be filed with the Secretary of State of the State of Delaware. The Merger shall become effective at the time of the filing of such certificate of

merger with the Secretary of State of the State of Delaware or at such later time as may be designated jointly by Parent and the Company and specified in such certificate of merger (the time as of which the Merger becomes effective being referred to as the "**Effective Time**").

1.4 Certificate of Incorporation and Bylaws; Directors and Officers.

(a) The Certificate of Incorporation of the Surviving Corporation shall be amended and restated immediately after the Effective Time to read as set forth on **Exhibit B**;

(b) The Bylaws of the Surviving Corporation shall be amended and restated immediately after the Effective Time to read as set forth on **Exhibit C**; and

(c) The directors and officers of the Surviving Corporation immediately after the Effective Time shall be the respective individuals who are directors and officers of Merger Sub immediately prior to the Effective Time.

1.5 Conversion of Shares.

(a) Subject to the terms and conditions of this Agreement, at the Effective Time, by virtue of the Merger and without any further action on the part of Parent, Merger Sub, the Company or any stockholder of the Company:

(i) any shares of Company Common Stock held by the Company or any wholly-owned Subsidiary of the Company as of immediately prior to the Effective Time (or held in the Company's treasury) shall be canceled and retired and shall cease to exist, and no consideration shall be delivered in exchange therefor;

(ii) any shares of Company Common Stock held by Parent, Merger Sub or any other wholly-owned Subsidiary of Parent as of immediately prior to the Effective Time shall be canceled and retired and shall cease to exist, and no consideration shall be delivered in exchange therefor;

(iii) except as provided in clauses "(i)" and "(ii)" above and subject to Section 1.5(c), each share of Company Common Stock outstanding immediately prior to the Effective Time (other than any Dissenting Company Shares) shall be converted into the right to receive (A) a number of shares of Parent Common Stock equal to the Exchange Ratio and (B) one contingent value right per share (a "**CVR**") representing the right to receive the consideration set forth in the CVR Agreement (together with the Exchange Ratio, the "**Merger Consideration**"); and

(iv) each share of the Common Stock, $0.01 par value per share, of Merger Sub outstanding immediately prior to the Effective Time shall be converted into one share of common stock of the Surviving Corporation.

(b) If, during the period from the date of this Agreement through the Effective Time, the outstanding shares of Company Common Stock or Parent Common Stock are changed into a different number or class of shares by reason of any stock split, division or subdivision of shares, stock dividend, reverse stock split, consolidation of shares, reclassification, recapitalization or other similar transaction, or if a stock dividend is declared by the Company or Parent and a record date with respect to any such event shall occur during such period, then the Exchange Ratio shall be adjusted to the extent appropriate to provide the same economic effect as contemplated by this Agreement prior to such action; *provided* that nothing in this Section 1.5(b) shall be deemed to permit or authorize any party hereto to effect any such change that it is not otherwise authorized or permitted to undertake pursuant to this Agreement.

(c) No fractional shares of Parent Common Stock shall be issued in connection with the Merger, and no certificates or scrip for any such fractional shares shall be issued. Any holder of Company Common Stock

(other than any Dissenting Company Shares) who would otherwise be entitled to receive a fraction of a share of Parent Common Stock (after aggregating all fractional shares of Parent Common Stock issuable to such holder) shall, in lieu of such fraction of a share and upon surrender of such holder's Company Stock Certificate(s), or non-certificated shares of Company Common Stock represented by book entry ("**Book Entry Shares**"), be paid in cash the dollar amount (rounded to the nearest whole cent, with numbers ending with .5 or more being rounded up to the nearest whole cent), without interest, determined by multiplying such fraction by the average closing price of a share of Parent Common Stock on the Nasdaq Global Select Market for the 10 most recent trading days that Parent Common Stock has traded ending on the trading day one day prior to the date on which the Merger becomes effective.

(d) Notwithstanding anything to the contrary set forth in this Agreement, all shares of Company Common Stock issued and outstanding immediately prior to the Effective Time and held by a stockholder of the Company who (A) has not voted in favor of the Merger or consented thereto in writing and who has demanded appraisal for such shares in accordance with Section 262 of the DGCL, (B) has properly complied with Section 262 of the DGCL, and (C) has not effectively withdrawn or lost its rights to appraisal ("**Dissenting Company Shares**") shall not be converted into, or represent the right to receive, the Merger Consideration pursuant to this Section 1.5. By virtue of the Merger, all Dissenting Company Shares shall be cancelled and shall cease to exist and shall represent the right to receive only those rights provided under Section 262 of the DGCL; *provided*, *however*, that notwithstanding the foregoing, all Dissenting Company Shares held by a stockholder of the Company who shall have failed to perfect or who shall have effectively withdrawn or lost such stockholder's right to appraisal under such Section 262 of the DGCL shall thereupon be deemed to have been converted into, and to have become exchangeable for, the right to receive the Merger Consideration pursuant to Section 1.5(a), without any interest thereon, upon surrender of the Company Stock Certificate(s) or Book Entry Shares that formerly evidenced such shares of Company Common Stock in the manner set forth in Section 1.7. The Company shall give Parent (i) prompt notice of, together with copies of, any demand received by the Company for payment of the fair value of any Company Common Stock, withdrawals of such demands, and any other instruments received by the Company as part of any such demand for dissenter's rights and (ii) the opportunity to participate in all negotiations and proceedings with respect to demands for dissenter's rights under Delaware law in respect of Dissenting Company Shares. The Company shall not, except with the prior written consent of Parent, voluntarily make any payment with respect to any demands for appraisal rights or settle or offer to settle or compromise any such demands for payment in respect of Dissenting Company Shares.

1.6 Closing of the Company's Transfer Books. At the Effective Time: (a) except as provided in Section 1.5(a)(i) or Section 1.5(a)(ii), all shares of Company Common Stock outstanding immediately prior to the Effective Time shall automatically be canceled and retired and shall cease to exist, and all holders of Book Entry Shares or of certificates representing shares of Company Common Stock that were outstanding immediately prior to the Effective Time shall cease to have any rights as stockholders of the Company, except the right to receive shares of Parent Common Stock and CVRs as contemplated by Section 1.5, cash in lieu of any fractional shares of Parent Common Stock pursuant to Section 1.5(c) and any dividends or other distributions pursuant to Section 1.7(c); and (b) the stock transfer books of the Company shall be closed with respect to all shares of Company Common Stock outstanding immediately prior to the Effective Time. No further transfer of any such shares of Company Common Stock shall be made on such stock transfer books after the Effective Time. If, after the Effective Time, a valid certificate previously representing any shares of Company Common Stock outstanding immediately prior to the Effective Time (a "**Company Stock Certificate**") or a Book Entry Share is presented to the Exchange Agent or to the Surviving Corporation or Parent, such Company Stock Certificate or Book Entry Share shall be canceled and shall be exchanged as provided in Section 1.7.

1.7 Exchange of Certificates.

(a) Prior to the Closing, Parent shall select a reputable bank or trust company reasonably satisfactory to the Company to act as exchange agent in the Merger (the "**Exchange Agent**") and shall enter into an agreement reasonably acceptable to the Company with the Exchange Agent relating to the services to be

performed by the Exchange Agent. At the Closing, Parent shall issue and cause to be deposited with the Exchange Agent: (i) non-certificated shares of Parent Common Stock represented by book entry issuable pursuant to Section 1.5; and (ii) cash sufficient to make payments in lieu of fractional shares in accordance with Section 1.5(c). The shares of Parent Common Stock and cash amounts so deposited with the Exchange Agent, together with any dividends or distributions received by the Exchange Agent with respect to such shares of Parent Common Stock, are referred to collectively as the "**Exchange Fund**."

(b) Promptly after the Effective Time, Parent shall cause the Exchange Agent to mail to the Persons who were record holders of Company Stock Certificates or Book Entry Shares immediately prior to the Effective Time: (i) a letter of transmittal in customary form and containing such provisions as Parent may reasonably specify and the Company shall reasonably approve prior to the Effective Time (including a provision confirming that delivery of Company Stock Certificates or Book Entry Shares shall be effected, and risk of loss and title to Company Stock Certificates or Book Entry Shares shall pass, only upon delivery of such Company Stock Certificates or Book Entry Shares to the Exchange Agent); and (ii) instructions for use in effecting the surrender of Company Stock Certificates or Book Entry Shares in exchange for non-certificated shares of Parent Common Stock in book entry form, CVRs, and cash in lieu of any fractional share of Parent Common Stock pursuant to Section 1.5(c) and any dividends or other distributions pursuant to Section 1.7(c). Upon surrender of a Company Stock Certificate or Book Entry Shares to the Exchange Agent for exchange, together with a duly executed letter of transmittal and such other documents as may be reasonably required by the Exchange Agent or Parent: (A) the holder of such Company Stock Certificate or Book Entry Shares shall be entitled to receive, and the Exchange Agent shall (and Parent shall cause the Exchange Agent to) in exchange therefor transfer from the Exchange Fund to such holder the number of whole shares of Parent Common Stock and CVRs that such holder has the right to receive pursuant to the provisions of Section 1.5 (and cash in lieu of any fractional share of Parent Common Stock pursuant to Section 1.5(c) and any dividends or other distributions pursuant to Section 1.7(c)); and (B) the Company Stock Certificate or Book Entry Shares so surrendered shall be canceled. Until surrendered as contemplated by this Section 1.7(b), each Company Stock Certificate and Book Entry Share shall be deemed, from and after the Effective Time, to represent only the right to receive shares of Parent Common Stock and CVRs (and cash in lieu of any fractional share of Parent Common Stock pursuant to Section 1.5(c)) as contemplated by Section 1.5. If any Company Stock Certificate shall have been lost, stolen or destroyed, Parent may, in its reasonable discretion and as a condition to the issuance of any non-certificated shares of Parent Common Stock in book entry form and CVRs, require the owner of such lost, stolen or destroyed Company Stock Certificate to provide an appropriate affidavit and to deliver a reasonable and customary indemnification obligation against any claim that may be made against the Exchange Agent, Parent or the Surviving Corporation with respect to such Company Stock Certificate.

(c) No dividends or other distributions declared or made with respect to Parent Common Stock with a record date after the Effective Time shall be paid or otherwise delivered to the holder of any unsurrendered Company Stock Certificate or Book Entry Share with respect to the shares of Parent Common Stock that such holder has the right to receive in the Merger until such holder surrenders such Company Stock Certificate or Book Entry Share in accordance with this Section 1.7 (at which time such holder shall be entitled, subject to the effect of applicable abandoned property, escheat or similar laws, to receive all such dividends and distributions, without interest).

(d) Any portion of the Exchange Fund that remains undistributed to holders of Company Stock Certificates and Book Entry Shares as of the date that is one year after the date on which the Merger becomes effective shall be delivered to Parent upon demand, and any holders of Company Stock Certificates or Book Entry Shares who have not theretofore surrendered their Company Stock Certificates or Book Entry Shares in accordance with this Section 1.7 shall thereafter look only to Parent for, and be entitled to receive from Parent, satisfaction of their claims for Parent Common Stock, CVRs, cash in lieu of fractional shares of Parent Common Stock pursuant to Section 1.5(c), and any dividends or distributions with respect to shares of Parent Common Stock.

(e) Neither Parent nor the Surviving Corporation shall be liable to any holder or former holder of Company Common Stock or to any other Person with respect to any shares of Parent Common Stock (or dividends or distributions with respect thereto), any CVRs or for any cash amounts, delivered to any public official pursuant to any applicable abandoned property law, escheat law or other Legal Requirement.

1.8 Tax Treatment. For U.S. federal income tax purposes, the Merger is intended to be treated as a sale or exchange of Company Common Stock that is subject to Section 1001 of the Code. Notwithstanding any statement or inference to the contrary in any provision of this Agreement or any other agreement, no party shall be considered to have made any representations or warranties regarding the Tax treatment of the Contemplated Transactions, or any of the Tax consequences to any holder of Company securities of this Agreement or the CVR Agreement, or any other aspect of the Contemplated Transactions. The Company acknowledges that it and holders of its securities are relying solely on their own Tax advisors in connection with this Agreement, the CVR Agreement, and the Contemplated Transactions.

1.9 Withholding Rights. Each of the Exchange Agent, the Surviving Corporation, Parent and any of their respective affiliates shall be entitled to deduct and withhold from the amounts otherwise payable pursuant to this Agreement, the CVR Agreement and/or the Contemplated Transactions such amounts as it determines are required by any law to be deducted and withheld. To the extent that amounts are so withheld and remitted to the appropriate Governmental Body in accordance with applicable Legal Requirements, such withheld amounts shall be treated for all purposes of this Agreement as having been paid to the Person in respect of which such deduction and withholding was made.

1.10 Further Action. If, at any time after the Effective Time, any further action is necessary to carry out the purposes of this Agreement or to vest the Surviving Corporation with full right, title and possession of and to all rights and property of Merger Sub and the Company, the officers and directors of the Surviving Corporation and Parent shall be fully authorized (in the name of Merger Sub, in the name of the Company and otherwise) to take such action.

1.11 Calculation of Company Net Cash.

(a) For purposes of this Agreement, the "**Anticipated Closing Date**" shall be the anticipated date for Closing, as agreed upon by Parent and the Company at least 10 days prior to the Company Stockholders' Meeting, or, if Parent and Company cannot so agree, the scheduled date of the Company Stockholders' Meeting. At least five days prior to the Anticipated Closing Date, the Company shall deliver to Parent a schedule (the "**Net Cash Schedule**"), in the form set forth as Schedule I of the Company Disclosure Schedule, setting forth the Company's good faith estimate of Company Net Cash as of the Anticipated Closing Date (the "**Net Cash Calculation**"), prepared and certified by the Company's Chief Financial Officer (or if there is no Chief Financial Officer, the Company's principal accounting officer). The Company shall, during the period from delivery of the Net Cash Schedule until 5:00 p.m. Pacific Time on the Response Date, make available to Parent, or its accountants and/or counsel (in each case upon reasonable notice, at reasonable times and in a manner that does not interfere with the operation of the Company's business), the work papers and back-up materials used or useful in preparing the Net Cash Schedule, as reasonably requested by Parent.

(b) By 5:00 p.m. Pacific Time on the third calendar day after delivery of the Net Cash Schedule (the "**Response Date**"), Parent will have the right to dispute in good faith any part of the Net Cash Schedule by delivering a written notice to that effect to the Company (a "**Dispute Notice**"). Any Dispute Notice shall identify in reasonable detail the nature and amounts of any proposed revisions to the Net Cash Calculation. A Dispute Notice may only be given if the aggregate amount in dispute is greater than $250,000.

(c) If on or prior to the Response Date, Parent (i) timely notifies the Company in writing that it has no objections to the Net Cash Calculation or (ii) fails to timely deliver a Dispute Notice as provided in Section 1.11(b), then the Net Cash Calculation as set forth in the Net Cash Schedule shall be deemed to have

been finally determined for purposes of this Agreement and to represent Company Net Cash at the Closing Date for purposes of this Agreement.

(d) If Parent timely delivers a Dispute Notice on or prior to the Response Date, then Representatives of both parties shall promptly (and in any event within two days following timely delivery of the Dispute Notice) meet and attempt in good faith to resolve the disputed item(s) and negotiate an agreed-upon determination of Company Net Cash, which agreed upon Company Net Cash amount shall be deemed to have been finally determined for purposes of this Agreement and to represent the Company Net Cash at the Closing Date for purposes of this Agreement.

(e) If Representatives of Parent and the Company are unable to negotiate an agreed-upon determination of Company Net Cash at the Closing Date pursuant to Section 1.11(d) by 5:00 p.m. Eastern time on the third calendar day after delivery of the Dispute Notice (or such other period as Parent and the Company may mutually agree upon in writing), then Grant Thornton LLP, or such other independent auditor of recognized national standing as the Parent and the Company shall jointly select (the "**Accounting Firm**") to resolve any remaining disagreements as to the Net Cash Calculation. The Company shall promptly deliver to the Accounting Firm the work papers and back-up materials used in preparing the Net Cash Schedule, and Parent and the Company shall use reasonable best efforts to cause the Accounting Firm to make its determination within 10 calendar days after accepting its selection. The Company and Parent shall be afforded the opportunity to present to the Accounting Firm any material related to the unresolved disputes and to discuss the issues with the Accounting Firm; *provided*, that no such presentation or discussion shall occur without the presence of a Representative of each of the Company and Parent. In determining the Company Net Cash hereunder, the Accounting Firm shall act as an expert and not as an arbitrator, and the Accounting Firm's authority is limited to resolving disputed issues of fact (and not law). The procedures set forth in this Section 1.11(e) concerning the determination of Company Net Cash hereunder by the Accounting Firm shall be governed by the law of expert determination and appraisal rather than the law of arbitration. The determination of the Accounting Firm shall be limited to the disagreements submitted to the Accounting Firm. The determination of the amount of Company Net Cash made by the Accounting Firm shall be deemed to have been finally determined for purposes of this Agreement and to represent Company Net Cash at the Closing Date for purposes of this Agreement, and the parties shall delay the Closing until the resolution of the matters described in this Section 1.11(e) and, if necessary, the End Date shall be deemed extended to allow for such resolution. The fees and expenses of the Accounting Firm shall be allocated between Parent and Company in the same proportion that the disputed amount of Company Net Cash that was unsuccessfully disputed by such party (as finally determined by the Accounting Firm) bears to the total disputed amount of Company Net Cash (and for the avoidance of doubt the fees and expenses to be paid by the Company shall reduce Company Net Cash). If this Section 1.11(e) applies as to the determination of Company Net Cash at the Anticipated Closing Date, upon resolution of the matter in accordance with this Section 1.11(e), the Company Net Cash as so determined shall be deemed to be the Company Net Cash for all purposes of this Agreement, and shall not be subject to any re-determination.

1.12 CVR Agreement. At or prior to the Effective Time, Parent will authorize and duly adopt, execute and deliver, and will ensure that a duly qualified Rights Agent executes and delivers, the CVR Agreement, subject to any reasonable revisions to the CVR Agreement that are requested by such Rights Agent (provided that such revisions are not, individually or in the aggregate, detrimental to any holder of CVRs).

SECTION 2. REPRESENTATIONS AND WARRANTIES OF THE COMPANY

The Company represents and warrants to Parent and Merger Sub as follows (it being understood that each representation and warranty contained in this Section 2 (other than, in the case of clause (a) of this paragraph, the representations and warranties contained in Section 2.3) is qualified by and subject to: (a) the information set forth in any publicly available effective registration statement, prospectus, report, form, schedule or definitive proxy statement filed by the Company with the SEC at any time on or after December 31, 2018 and prior to the date hereof, but excluding any risk factor or similar disclosure under the headings "Risk Factors", "Forward-

Looking Statements" or any similar predictive or forward-looking sections; (b) the exceptions and disclosures set forth in the section or subsection of the Company Disclosure Schedule corresponding to the particular section or subsection in this Section 2 in which such representation and warranty appears; and (c) any exception or disclosure set forth in any other section or subsection of the Company Disclosure Schedule to the extent it is reasonably apparent on the face of such exception or disclosure that such exception or disclosure would qualify such representation and warranty):

2.1 Subsidiaries; Due Organization; Etc.

(a) Part 2.1(a) of the Company Disclosure Schedule identifies each Subsidiary of the Company and indicates its jurisdiction of organization. Neither the Company nor any of the Entities identified in Part 2.1(a) of the Company Disclosure Schedule owns any capital stock of, or any equity interest of any nature in, any other Entity, other than the Entities identified in Part 2.1(a) of the Company Disclosure Schedule. No Tetraphase Company has agreed or is obligated to make, or is bound by any Contract under which it may become obligated to make, any material future investment in or capital contribution to any other Entity.

(b) Each of the Tetraphase Companies is a corporation or other Entity duly organized, validly existing and in good standing (to the extent that the laws of the jurisdiction of its formation recognize the concept of good standing) under the laws of the jurisdiction of its incorporation and has all necessary corporate or similar power and authority: (i) to conduct its business in the manner in which its business is currently being conducted; (ii) to own and use its assets in the manner in which its assets are owned and used as of the date of this Agreement; and (iii) to perform its obligations under all Contracts by which it is bound, except, in the case of clauses "(i)" through "(iii)" of this sentence, as would not have a Company Material Adverse Effect.

(c) Each of the Tetraphase Companies (in jurisdictions that recognize the following concepts) is qualified to do business as a foreign corporation, and is in good standing, under the laws of all jurisdictions where the nature of its business requires such qualification, except for jurisdictions in which the failure to be so qualified or in good standing would not have a Company Material Adverse Effect.

2.2 Certificate of Incorporation and Bylaws. The Company has delivered or Made Available to Parent accurate and complete copies of the certificate of incorporation, bylaws, memorandum of association and articles of association or equivalent governing documents of each of the Tetraphase Companies, including all amendments thereto.

2.3 Capitalization, Etc.

(a) The authorized capital stock of the Company consists of: (i) 125,000,000 shares of Company Common Stock, of which 7,259,236 shares are issued and outstanding as of the Reference Date; and (ii) 5,000,000 shares of Company Preferred Stock, of which no shares of Company Preferred Stock are issued or outstanding as of the Reference Date. All of the outstanding shares of Company Common Stock have been duly authorized and validly issued, and are fully paid and nonassessable. None of the Tetraphase Companies (other than the Company) holds any shares of Company Common Stock or any rights to acquire shares of Company Common Stock.

(b) Except as set forth in Part 2.3(b) of the Company Disclosure Schedule: (i) none of the outstanding shares of Company Common Stock is entitled or subject to any preemptive right, right of repurchase or forfeiture, right of participation, right of maintenance or any similar right pursuant to any certificate of incorporation (or similar organizational document) or Contract to which any Tetraphase Company or, to the Company's knowledge, to which any stockholder of the Company, is a party; (ii) none of the outstanding shares of Company Common Stock is subject to any right of first refusal in favor of the Company; and (iii) there is no Company Contract relating to the voting or registration of, or restricting any Person from purchasing, selling, pledging or otherwise disposing of (or from granting any option or similar right with respect to), any shares of

Company Common Stock. None of the Tetraphase Companies is bound by any Contract pursuant to which it may become obligated to repurchase, redeem or otherwise acquire any outstanding shares of Company Common Stock or other securities, except for the Company's right to repurchase or reacquire restricted shares of Company Common Stock held by an employee of the Company upon termination of such employee's employment or upon any other forfeiture of a vesting condition.

(c) As of the Reference Date: (i) 160,307 shares of Company Common Stock are subject to issuance pursuant to Company Options; (ii) 2,506 shares of Company Common Stock are reserved for future issuance pursuant to the Tetraphase 2014 Employee Stock Purchase Plan (the "**Company ESPP**") and 0 shares of Company Common Stock are estimated to be subject to outstanding purchase rights under the Company ESPP (based on the fair market value of a share of Company Common Stock as of the trading date one (1) trading date prior to the date of this Agreement); (iii) 41,213 shares of Company Common Stock are subject to issuance upon vesting of grants of Company RSUs; (iv) 12,850 shares of Company Common Stock are subject to issuance upon vesting of grants of Company PRSUs; (v) 246,741 shares of Company Common Stock are reserved for future issuance pursuant to equity awards not yet granted under the Company Option Plans; and (vi) 11,478,477 shares of Company Common Stock are subject to issuance pursuant to Company Warrants.

(d) Part 2.3(d) of the Company Disclosure Schedule sets forth a complete and accurate list that sets forth with respect to each Company Equity Award outstanding as of the Reference Date the following information: (i) the particular plan (if any) pursuant to which such Company Equity Award was granted; (ii) the name of the holder of such Company Equity Award; (iii) the type of Company Equity Award (whether a Company Option, Company RSU, Company PRSU or another type of Company Equity Award); (iv) the number of shares of Company Common Stock subject to such Company Equity Award; (v) the per share exercise price (if any) of such Company Equity Award; (vi) the date on which such Company Equity Award was granted; (vii) the date on which such Company Equity Award expires (if applicable); and (viii) if such Company Equity Award is a Company Option, whether such Company Option is an "incentive stock option" (as defined in the Code) or a non-qualified stock option. The Company has Made Available to Parent accurate and complete copies of all equity plans pursuant to which any outstanding Company Equity Awards were granted by the Company, and the forms of all agreements evidencing such Company Equity Awards. The exercise price of each Company Option is not less than the fair market value of a share of Company Common Stock as determined on the date of grant of such Company Option. All grants of Company Equity Awards were recorded on the Company's financial statements (including any related notes thereto) contained in the Company SEC Documents in accordance with GAAP, and to the knowledge of the Company, no such grants involved any "back dating" or similar practices with respect to the effective date of grant (whether intentionally or otherwise). There are no outstanding or authorized stock appreciation, phantom stock, profit participation or similar rights or equity-based awards with respect to any of the Tetraphase Companies.

(e) Part 2.3(e) of the Company Disclosure Schedule sets forth a complete and accurate list that sets forth with respect to each Company Warrant outstanding as of the Reference Date the following information: (i) the name of the holder of such Company Warrant; (ii) the number of shares of Company Common Stock subject to such Company Warrant; (iii) the per share exercise price of such Company Warrant; and (iv) the date on which such Company Warrant expires.

(f) Except as set forth in Sections 2.3(a), 2.3(c) or 2.3(d), as of the Reference Date, there is no: (i) outstanding subscription, option, call, warrant or right (whether or not currently exercisable) to acquire any shares of the capital stock or other securities of any of the Tetraphase Companies; (ii) outstanding security, instrument or obligation that is or may become convertible into or exchangeable for any shares of the capital stock or other securities of any of the Tetraphase Companies; or (iii) stockholder rights plan (or similar plan commonly referred to as a "poison pill") or Contract under which any of the Tetraphase Companies is or may become obligated to sell or otherwise issue any shares of its capital stock or any other securities.

(g) All outstanding shares of Company Common Stock, and all options and other Company Equity Awards and other securities of the Tetraphase Companies, have been issued and granted in compliance in

all material respects with: (i) all applicable securities laws and other applicable Legal Requirements; and (ii) all requirements set forth in applicable Contracts.

(h) All of the outstanding shares of capital stock of each of the Company's Subsidiaries have been duly authorized and validly issued, are fully paid and nonassessable and free of preemptive rights, and are owned beneficially and of record by the Company, free and clear of any Encumbrances (other than restrictions on transfer imposed by applicable securities laws or any Company Permitted Encumbrances).

2.4 SEC Filings; Financial Statements.

(a) The Company has Made Available (or made available on the SEC website) to Parent accurate and complete copies of all registration statements, proxy statements, Company Certifications and other statements, reports, schedules, forms and other documents filed by the Company with the SEC between December 31, 2018 and, solely for purposes of this sentence, the date of this Agreement (and for all other purposes under this Agreement since December 31, 2018), including all amendments thereto since December 31, 2018 (collectively, the "**Company SEC Documents**"). All statements, reports, schedules, forms and other documents required to have been filed by the Company or its officers with the SEC since December 31, 2018 have been so filed on a timely basis. None of the Company's Subsidiaries is required to file any documents with the SEC. As of the time it was filed with the SEC (or, if amended or superseded by a filing prior to the date of this Agreement, then on the date of such filing): (i) each of the Company SEC Documents complied as to form in all material respects with the applicable requirements of the Securities Act or the Exchange Act (as the case may be); and (ii) none of the Company SEC Documents contained any untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading, except to the extent corrected: (A) in the case of Company SEC Documents filed or furnished on or prior to the date of this Agreement that were amended or superseded on or prior to the date of this Agreement, by filing or furnishing of the applicable amending or superseding Company SEC Document; and (B) in the case of Company SEC Documents filed or furnished after the date of this Agreement that are amended or superseded prior to the Effective Time, by the filing or furnishing of the applicable amending or superseding Company SEC Document. Each of the certifications and statements relating to the Company SEC Documents required by: (A) Rule 13a-14 or Rule 15d-14 under the Exchange Act; (B) 18 U.S.C. §1350 (Section 906 of the Sarbanes-Oxley Act); or (C) any other rule or regulation promulgated by the SEC or applicable to the Company SEC Documents (collectively, the "**Company Certifications**") is accurate and complete in all material respects, and complies as to form in all material respects with all applicable Legal Requirements. As used in the introduction to this Section 2 and 2.4, the term "**file**" and variations thereof shall be broadly construed to include any manner in which a document or information is filed, furnished, submitted, supplied or otherwise made available to the SEC or any member of its staff.

(b) The Company maintains disclosure controls and procedures required by Rule 13a-15 or 15d-15 under the Exchange Act. Such disclosure controls and procedures are designed to ensure that all material information concerning the Tetraphase Companies required to be disclosed by the Company in the reports that it is required to file, submit or furnish under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. The Company is in compliance in all material respects with the applicable listing requirements of the Nasdaq Global Select Market, and has not between December 31, 2018 and the date of this Agreement received any notice asserting any non-compliance with the listing requirements of the Nasdaq Global Select Market.

(c) The financial statements (including any related notes) contained or incorporated by reference in the Company SEC Documents: (i) complied as to form in all material respects with the published rules and regulations of the SEC applicable thereto; (ii) were prepared in accordance with GAAP applied on a consistent basis throughout the periods covered (except as may be indicated in the notes to such financial statements or, in the case of unaudited financial statements, as permitted by Form 10-Q, Form 8-K or any successor form under the Exchange Act, and except that the unaudited financial statements may not contain footnotes and are subject to

normal and recurring year-end adjustments); and (iii) fairly present, in all material respects, the consolidated financial position of the Company and its consolidated Subsidiaries as of the respective dates thereof and the consolidated results of operations and cash flows of the Company and its consolidated Subsidiaries for the periods covered thereby, in each case in accordance with GAAP. No financial statements of any Person other than the Tetraphase Companies are required by GAAP to be included in the consolidated financial statements of the Company.

(d) The Company's auditor has at all times since the date of enactment of the Sarbanes-Oxley Act been, to the knowledge of the Company: (i) a registered public accounting firm (as defined in Section 2(a)(12) of the Sarbanes-Oxley Act); (ii) "independent" with respect to the Company within the meaning of Regulation S-X under the Exchange Act; and (iii) in compliance with subsections (g) through (l) of Section 10A of the Exchange Act and the rules and regulations promulgated by the SEC and the Public Company Accounting Oversight Board thereunder. All non-audit services performed by the Company's auditors for the Tetraphase Companies that were required to be approved in accordance with Section 202 of the Sarbanes-Oxley Act were so approved.

(e) The Company maintains a system of internal controls over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) which is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP, and includes those policies and procedures that: (i) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the Tetraphase Companies; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and that receipts and expenditures are being made only in accordance with authorizations of management and directors of the Company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the assets of the Tetraphase Companies that could have a material effect on the Company's consolidated financial statements. The Company's management has completed an assessment of the effectiveness of the Company's system of internal controls over financial reporting in compliance with the requirements of Section 404 of the Sarbanes-Oxley Act for the fiscal year ended December 31, 2018, and, except as set forth in the Company SEC Documents filed prior to the date of this Agreement, such assessment concluded that such controls were effective and the Company's independent registered accountant has issued (and not subsequently withdrawn or qualified) an attestation report concluding that the Company maintained effective internal control over financial reporting as of December 31, 2018. To the knowledge of the Company, except as set forth in the Company SEC Documents filed prior to the date of this Agreement, between December 31, 2018 and the date of this Agreement, neither the Company nor any of its Subsidiaries nor the Company's independent registered accountant has identified or been made aware of: (A) any significant deficiency or material weakness in the design or operation of internal control over financial reporting utilized by the Tetraphase Companies; (B) any fraud, whether or not material, that involves the Company's management or other employees; or (C) any claim or allegation regarding any of the foregoing.

(f) As of the date of this Agreement, there are no outstanding or unresolved comments in comment letters received from the SEC with respect to the Company SEC Documents. To the knowledge of the Company, (i) none of the Company SEC Documents is the subject of ongoing SEC review, and (ii) there are no inquiries or investigations by the SEC or any internal investigations pending or threatened, in each case regarding any accounting practices of the Company.

(g) None of the Tetraphase Companies is a party to nor has any obligation or other commitment to become a party to any "off-balance sheet arrangements" (as defined in Item 303(a) of Regulation S-K under the Exchange Act).

2.5 Absence of Changes. Except as set forth in Part 2.5 of the Company Disclosure Schedule, between December 31, 2019 and the date of this Agreement, there has not been any (a) Company Material

Adverse Effect, or (b) action, event or occurrence that would have required the consent of the Parent pursuant to Section 4.2(b) (other than subsections (ii), (iii), (vii), (viii), (ix), (x), (xii), (xiii) and (xviii) thereof) had such action, event or occurrence taken place after the execution and delivery of this Agreement.

2.6 Title to Assets. The Tetraphase Companies own, and have good and valid title to, all material assets (excluding, for purposes of this Section 2.6, Intellectual Property and Intellectual Property Rights) purported to be owned by them, including: (a) all such assets reflected on the Company Audited Balance Sheet (except for inventory sold or otherwise disposed of in the ordinary course of business since the date of the Company Audited Balance Sheet); and (b) all other such assets reflected in the books and records of the Tetraphase Companies as being owned by the Tetraphase Companies. All of said assets are owned by the Tetraphase Companies free and clear of any Encumbrances, except for: (i) any lien for current Taxes not yet due and payable or Taxes being contested in good faith by appropriate proceedings; (ii) mechanics', carriers', workmen's, warehousemen's or other statutory liens arising in the ordinary course of business and for which appropriate reserves have been established on the face of the Company Audited Balance Sheet to the extent required by GAAP; (iii) liens on goods in transit incurred in the ordinary course of business; (iv) liens that have arisen in the ordinary course of business and that do not (in any individual case or in the aggregate) materially detract from the value of the assets subject thereto or materially impair the operations of the Tetraphase Companies, taken as a whole; and (v) liens described in Part 2.6 of the Company Disclosure Schedule (collectively, "**Company Permitted Encumbrances**"). The Tetraphase Companies are the lessees of, and hold valid leasehold interests in, all material assets purported to have been leased by them, including: (A) all such assets reflected as leased on the Company Audited Balance Sheet; and (B) all other such assets reflected in the books and records of the Tetraphase Companies as being leased to the Tetraphase Companies, and, as of the date of this Agreement, the Tetraphase Companies enjoy undisturbed possession of such leased assets.

2.7 Loans; Customers; Suppliers and Manufacturers.

(a) Part 2.7(a) of the Company Disclosure Schedule contains an accurate and complete list as of the date of this Agreement of all outstanding loans and advances made by any of the Tetraphase Companies to any Company Associate, other than routine travel advances made to directors or officers or other employees in the ordinary course of business.

(b) Part 2.7(b) of the Company Disclosure Schedule accurately identifies Tetraphase Companies' top five customers in the fiscal year ended in December 31, 2019 and the aggregate amount of gross sales in dollars made by the Tetraphase Companies during such period. As of the date of this Agreement, the Company has not received any written notice indicating that any customer or other Person identified or required to be identified in Part 2.7(b) of the Company Disclosure Schedule intends to cease dealing with or materially reduce its orders from any of the Tetraphase Companies.

(c) Part 2.7(c) of the Company Disclosure Schedule accurately identifies Tetraphase Companies' top 10 suppliers or manufacturers of the Tetraphase Companies in the fiscal year ended in December 31, 2019 and the aggregate purchase volume in dollars from such supplier or manufacturer made by the Tetraphase Companies during such period. As of the date of this Agreement, the Company has not received any written notice indicating that any supplier, manufacturer or other Person identified or required to be identified in Part 2.7(c) of the Company Disclosure Schedule intends to cease providing or materially reduce services or supplies to any of the Tetraphase Companies.

2.8 Equipment; Real Property; Leasehold.

(a) All material items of equipment and other material tangible assets owned by or leased to and necessary for the operation of the Tetraphase Companies are adequate for the uses to which they are, as of the date of this Agreement, being put, are, as of the date of this Agreement, in all material respects, in good condition and repair (ordinary wear and tear excepted) and are adequate for the conduct of the businesses of the Tetraphase Companies in the manner in which such businesses are being conducted on the date of this Agreement.

(b) No Tetraphase Company owns any real property.

(c) Part 2.8(c) of the Company Disclosure Schedule sets forth an accurate and complete list as of the date of this Agreement of each lease pursuant to which any of the Tetraphase Companies leases real property from any other Person (all real property leased to the Tetraphase Companies pursuant to the real property leases identified or required to be identified in Part 2.8(c) of the Company Disclosure Schedule, including all buildings, structures, fixtures and other improvements leased to the Tetraphase Companies, is referred to as the "**Tetraphase Leased Real Property**"). Part 2.8(c) of the Company Disclosure Schedule contains an accurate and complete list as of the date of this Agreement of all subleases, occupancy agreements and other Company Contracts granting to any Person (other than any Tetraphase Company) a right of use or occupancy of any of the Tetraphase Leased Real Property. Except as set forth in the leases or subleases identified in Part 2.8(c) of the Company Disclosure Schedule, there is no Person in possession of any Tetraphase Leased Real Property other than a Tetraphase Company. Between December 31, 2018 and the date of this Agreement, none of the Tetraphase Companies has received any written notice (or, to the knowledge of the Company, any other communication, whether written or otherwise) of a material default, alleged material failure to perform, or any material offset or counterclaim with respect to any occupancy agreement with respect to any Tetraphase Leased Real Property which has not been fully remedied and withdrawn.

2.9 Intellectual Property.

(a) Part 2.9(a) of the Company Disclosure Schedule accurately identifies: (i) each material item of Registered IP in which any of the Tetraphase Companies has or purports to have an ownership interest of any nature (whether exclusively, jointly with another Person or otherwise) or has or purports to have an interest of any nature that has been incorporated into any Company Product and has been licensed by any of the Tetraphase Companies on an exclusive basis (the "**Tetraphase Registered IP**"); (ii) the material jurisdiction in which such material Tetraphase Registered IP has been registered or filed and the applicable registration or serial number; (iii) any other Person that has a material ownership interest in such item of material Tetraphase Registered IP and the nature of such ownership interest; and (iv) all material filings required to be made with any Governmental Body as of the date of this Agreement with respect to each item of material Tetraphase Registered IP in order to maintain or renew the Tetraphase Registered IP during the 6 month period following the date of this Agreement.

(b) The Tetraphase Companies exclusively own all right, title and interest to and in the Company IP (other than Intellectual Property Rights or Intellectual Property co-owned with a third party or licensed to the Company) free and clear of any Encumbrances (other than Company Permitted Encumbrances and non-exclusive licenses granted by any Tetraphase Company in connection with the sale or license of Company Products in the ordinary course of business). For any Company IP incorporated into any Company Product that is co-owned, the Company has the exclusive rights to the co-owned Company IP. Without limiting the generality of the foregoing:

(i) all documents and instruments necessary to perfect the rights of the Tetraphase Companies in the Company IP that is Tetraphase Registered IP have been validly executed, delivered and filed in a timely manner with the appropriate Governmental Body;

(ii) no Company Associate has any claim, right (whether or not currently exercisable) or interest to or in any Company IP and each Company Associate who is or was involved in the creation or development of any Company IP incorporated into any Company Product has signed a valid, enforceable agreement containing an assignment of Intellectual Property Rights to the Tetraphase Companies and confidentiality provisions protecting such Company IP;

(iii) no funding, facilities or personnel of any Governmental Body or any university, college, research institute or other educational institution have been or are being, or are expected to be, used, directly or indirectly, to develop or create, in whole or in part, any Company IP or Company Product;

(iv) the Tetraphase Companies have taken reasonable steps to maintain the confidentiality of and otherwise protect and enforce their rights in all proprietary information held by any of the Tetraphase Companies, or purported to be held by the Tetraphase Companies, as a trade secret to the extent that such Tetraphase Companies have determined such proprietary information should be protected as a trade secret;

(v) none of the Tetraphase Companies is now or has ever been a member or promoter of, or a contributor to, any industry standards body or any similar organization that could reasonably be expected to require or obligate any of the Tetraphase Companies to grant or offer to any other Person any license or right to any Company IP; and

(vi) to the knowledge of the Company, the Tetraphase Companies own or otherwise have, and after the Closing the Surviving Corporation will continue to have, all Intellectual Property Rights needed to conduct the business of the Tetraphase Companies as conducted as of the date of this Agreement.

(c) To the knowledge of the Company, all Company IP that is material to the business of any of the Tetraphase Companies is valid, subsisting and enforceable. To the knowledge of the Company, there are no Intellectual Property Rights owned by any third party that (i) is required by the Company to conduct its business as currently conducted and (ii) the Company is not currently authorized to use.

(d) Neither the execution, delivery or performance of this Agreement nor the consummation of any of the Contemplated Transactions will, with or without notice or the lapse of time, result in or give any other Person the right or option to cause, create, impose or declare: (i) a loss of, or Encumbrance on, any Company IP; or (ii) the grant, assignment or transfer to any other Person of any license or other right or interest under, to or in any of the Company IP.

(e) To the knowledge of the Company, no Person has infringed, misappropriated or otherwise violated, and no Person is infringing, misappropriating or otherwise violating, any Company IP. Part 2.9(e) of the Company Disclosure Schedule: (i) accurately identifies (and the Company has provided to Parent an accurate and complete copy of) each letter or other written correspondence that has been received by Tetraphase Companies or any Representative of any of the Tetraphase Companies between December 31, 2018 and the date of this Agreement regarding any actual, alleged or suspected infringement or misappropriation of any Company IP; and (ii) provides a brief description of the current status of the matter referred to in such letter, communication or correspondence.

(f) To the knowledge of the Company, none of the Company Products has ever infringed (directly, contributorily, by inducement or otherwise), misappropriated or otherwise violated any Intellectual Property Right of any other Person.

(g) No infringement, misappropriation or similar claim or Legal Proceeding is or, between December 31, 2018 and the date of this Agreement, has been pending and served or, to the knowledge of the Company, pending and not served or threatened against any Tetraphase Company or against any other Person who is, or has asserted or would reasonably be expected to assert that it is, entitled to be indemnified, defended, held harmless or reimbursed by any Tetraphase Company with respect to such claim or Legal Proceeding (including any claim or Legal Proceeding that has been settled, dismissed or otherwise concluded), in each case which would be material to the Tetraphase Companies, taken as a whole.

(h) Except as set forth in Part 2.9(h) of the Company Disclosure Schedule, between December 31, 2018 and the date of this Agreement, none of the Tetraphase Companies has received any written notice or, to the knowledge of the Company, other communication relating to any actual, alleged or suspected infringement, misappropriation or violation of any Intellectual Property Right of another Person by any of the Tetraphase Companies or the Company Products, in each case which would be material to the Tetraphase Companies, taken as a whole.

(i) None of the Tetraphase Companies has transferred title to, or granted any exclusive license with respect to, any material Company IP.

(j) The IT Systems are, as a whole, adequate and sufficient, and in good working condition to effectively perform all information technology operations necessary, for the conduct of the business of the Company as currently conducted. The Company has not experienced within the 12 months prior to the date of this Agreement any material disruption to, or material interruption in, its conduct of its business attributable to a defect, bug, breakdown or other failure or deficiency on the part of the IT Systems.

(k) With respect to the business of the Tetraphase Companies, the Tetraphase Companies have implemented reasonable disclosures, policies and procedures with respect to the collection, use, disclosure, and storage of personally identifiable information that comply in all material respects with applicable Legal Requirements. As of the date of this Agreement, none of the Tetraphase Companies is a party to or the subject of any pending Legal Proceeding that alleges that it has violated any such Legal Requirements, except as would not be material to the Tetraphase Companies, taken as a whole. None of the Tetraphase Companies has knowledge of any information security breach of its systems that would require it (under applicable statutes or regulations) to notify any individuals.

2.10 Contracts.

(a) Part 2.10(a) of the Company Disclosure Schedule identifies, as of the date of this Agreement, each Company Contract that constitutes a Company Material Contract and which remains in effect as of the date hereof and under which a Tetraphase Company has remaining material rights or obligations. For purposes of this Agreement, each of the following Company Contracts shall be deemed to constitute a "**Company Material Contract**":

(i) any Contract in effect and which has been filed (or is required to be filed) by the Company as an exhibit pursuant to Item 601(b)(10) of Regulation S-K under the Exchange Act, or that would be required to be disclosed under Item 404 of Regulation S-K under the Exchange Act;

(ii) any Contract: (A) constituting a Company Employee Agreement under which annual salary or other stated annual cash compensation exceeds $200,000; (B) pursuant to which any of the Tetraphase Companies is or may become obligated to make any severance, termination or similar payment to any Company Associate or any spouse, heir or Representative of any Company Associate; (C) pursuant to which any of the Tetraphase Companies is or may become obligated to make any bonus or similar payment (other than payments constituting bonuses or commissions paid in the ordinary course of business); or (D) pursuant to which any of the Tetraphase Companies is or may become obligated to grant or accelerate the vesting of, or otherwise modify, any stock option, restricted stock, stock appreciation right or other equity interest in any of the Tetraphase Companies other than pursuant to agreements on forms described in Section 2.10(a)(i) above;

(iii) any Contract with any labor union or any collective bargaining agreement or similar Contract for the benefit of any Company Associate(s);

(iv) each material Contract pursuant to which any Intellectual Property Rights or Intellectual Property that has been incorporated into any Company Product and is licensed to any Tetraphase Company (other than non-exclusive licenses to unmodified commercially available third party software);

(v) each material Contract pursuant to which any Intellectual Property Rights or Intellectual Property incorporated into any Company Product are licensed by any Tetraphase Company;

(vi) any material Contract with any distributor and any material contract with any other reseller or sales representative, in each case that provides exclusivity rights to such distributor, reseller or sales representative, other than confidentiality or nondisclosure agreements entered into in the ordinary course of business;

(vii) any material Contract (other than any purchase order entered into in the ordinary course of business) with sole source or single source suppliers to any Tetraphase Company of products or services, other than confidentiality or nondisclosure agreements entered into in the ordinary course of business;

(viii) any Contract that provides for: (A) reimbursement of any Company Associate for, or advancement to any Company Associate of, legal fees or other expenses associated with any Legal Proceeding or the defense thereof; or (B) indemnification of any Company Associate;

(ix) any Contract (A) that restricts the ability of the Tetraphase Companies to compete in any business or with any Person in any geographical area; (B) in which the Company or any Tetraphase Company has granted development rights, "most favored nation" pricing provisions or marketing or distribution rights relating to any product or product candidate; (C) in which the Company or any Tetraphase Company has agreed to purchase a minimum quantity of goods relating to any product or product candidate; or (D) which provides for "exclusivity" or any similar requirement in favor of any third party, in each case which restriction would or would reasonably be expected to materially and adversely affect the conduct of the business of the Tetraphase Companies, taken as a whole, as currently conducted;

(x) any Contract incorporating or providing for any material guaranty, warranty, sharing of liabilities or indemnity (including any indemnity with respect to Intellectual Property or Intellectual Property Rights) or similar obligation, other than Contracts entered into in the ordinary course of business or that do not deviate in any material respect from the standard forms of Contracts previously Made Available by the Company to Parent;

(xi) any Contract providing for any currency hedging;

(xii) any Contract requiring that any of the Tetraphase Companies give any written notice or provide any information to any Person prior to responding to or prior to accepting any Acquisition Proposal or similar proposal, or prior to entering into any discussions, agreement, arrangement or understanding relating to any Acquisition Transaction;

(xiii) any Contract providing for the lease or sublease of Tetraphase Leased Real Property;

(xiv) any Contract that is a Government Contract;

(xv) any Contract, not covered by another clause of this Section 2.10(a), that: (A) involved the payment or delivery of cash or other consideration in an amount or having a value in excess of $200,000 in the fiscal year ending December 31, 2019; (B) requires by its terms the payment or delivery of cash or other consideration in an amount or having a value in excess of $200,000 in the fiscal year ending December 31, 2020; (C) involved the performance of services having a value in excess of $200,000 in the fiscal year ended December 31, 2019; or (D) requires by its terms the performance of services having a value in excess of $200,000 in the fiscal year ending December 31, 2020;

(xvi) any material Contract that has a term of more than one year and which may not be terminated by a Tetraphase Company (without penalty in excess of $75,000) within 120 days after the delivery of a termination notice by such Tetraphase Company (other than confidentiality or nondisclosure agreements entered into by any Tetraphase Company); and

(xvii) any Contract, the termination of which would have a Company Material Adverse Effect.

The Company has delivered or Made Available (including by filing with the SEC) to Parent an accurate and complete copy of each Company Contract that constitutes a Company Material Contract as of the date of this Agreement.

(b) Each Company Contract that constitutes a Company Material Contract is valid and in full force and effect (except for Contracts that are expired, terminated, and/or not renewed during the Pre-Closing Period), and is enforceable in accordance with its terms, subject to: (i) laws of general application relating to bankruptcy, insolvency and the relief of debtors; and (ii) rules of law governing specific performance, injunctive relief and other equitable remedies (the "**Enforceability Exceptions**").

(c) Except as set forth in Part 2.10(c) of the Company Disclosure Schedule: (i) none of the Tetraphase Companies has violated or breached in any material respect, or committed any default in any material respect under, any Company Material Contract; (ii) to the knowledge of the Company, no other Person has violated or breached in any material respect, or committed any default in any material respect under, any Company Material Contract; (iii) to the knowledge of the Company, no event has occurred, and no circumstance or condition exists, that (with or without notice or lapse of time) would reasonably be expected to: (A) result in a violation or breach in any material respect of any Company Material Contract; (B) give any Person the right to declare a default in any material respect under any Company Material Contract; (C) give any Person the right to accelerate in any material respect the maturity or performance of any Company Material Contract; or (D) give any Person the right to cancel, terminate or modify in any material respect any Company Material Contract; and (iv) between December 31, 2018 and the date of this Agreement, none of the Tetraphase Companies has received any written notice (or, to the knowledge of the Company, any other communication) regarding any actual or possible material violation or breach of, or material default under, any Company Material Contract.

2.11 Liabilities. None of the Tetraphase Companies has any material accrued, contingent or other liabilities of the type required by GAAP to be disclosed, accrued or reserved in the liabilities column of the consolidated balance sheet of the Tetraphase Companies, except for: (a) liabilities identified as such, or specifically reserved against, in the Company Audited Balance Sheet; (b) liabilities that have been incurred by the Tetraphase Companies since the date of the Company Audited Balance Sheet in the ordinary course of business consistent in all material respects with past practice; (c) liabilities for performance of obligations of the Tetraphase Companies pursuant to the express terms of Company Contracts Made Available to Parent prior to the date of this Agreement (or not required by this Agreement to be Made Available) and not arising under or resulting from any breach or nonperformance of such Company Contract; (d) liabilities under this Agreement or incurred in connection with the Contemplated Transactions; and (e) liabilities described in Part 2.11 of the Company Disclosure Schedule.

2.12 Compliance with Legal Requirements; Regulatory Matters.

(a) Each of the Tetraphase Companies is, and has during two years prior to the date of this Agreement been, in compliance in all material respects with all Legal Requirements, which are applicable to the business, properties, assets and activities of the Tetraphase Companies. During the two years prior to the date of this Agreement, none of the Tetraphase Companies has received any written notice or, to the knowledge of the Company, other communication from any Governmental Body or other Person regarding any actual or possible violation in any material respect of, or failure to comply in any material respect with, any Legal Requirement.

(b) Each Company Product is being or has been researched, developed, tested, manufactured, packaged, labeled, handled, stored, supplied, distributed, marketed, commercialized, imported, exported, and sold in compliance in all material respects with all Health Care Laws.

(c) The Company has Made Available to Parent complete and correct copies of each NDA and each IND submitted to the FDA with respect to the Company Products, including all supplements and amendments thereto.

(d) Between December 31, 2018 and the date of this Agreement, the Company has not received any written communication from the FDA or any other Governmental Body, including any warning letter or untitled letter, that alleges or suggests that the Tetraphase Companies are not in compliance in all material respects with any applicable requirements under the Health Care Laws.

(e) To the knowledge of the Company, as of the date of this Agreement, there are no pending or threatened material investigations, suits, claims, actions or other material Legal Proceeding against the Tetraphase Companies relating to the Company Products, including those relating to or arising under applicable Health Care Laws. Between December 31, 2018 and the date of this Agreement, no Tetraphase Company nor any of its officers or employees (in his or her capacity as such) has been or is subject to any enforcement proceedings by the FDA or any other Governmental Body. Between December 31, 2018 and the date of this Agreement, there has not been and is not now any Form FDA 483 observation, civil, criminal or administrative action, suit, demand, claim, complaint, hearing, investigation, demand letter, warning letter, untitled letter, proceeding or request for information pending or in effect against the Tetraphase Companies or any of its officers or employees with respect to the Company Products, and Tetraphase Companies have no material liability (whether actual or contingent) for failure to comply with the applicable Health Care Laws.

(f) The Tetraphase Companies have maintained reasonable records relating to the research, development, testing, manufacture, handling, labeling, packaging, storage, supply, promotion, distribution, marketing, commercialization, import, export, and sale of the Company Products in material compliance with the applicable Health Care Laws, and the Company has submitted to the FDA and other Governmental Bodies in a timely manner all required notices and annual or other reports, including adverse experience reports and annual reports, related to the research, development, testing, manufacture, handling, labeling, packaging, storage, supply, promotion, distribution, marketing, commercialization, import, export, and sale of the Company Products, except as would not be material to the Tetraphase Companies, taken as a whole.

(g) Neither any of the Tetraphase Companies nor, to the knowledge of the Company, any officer, employee or agent of any of the Tetraphase Companies, has made an untrue statement of a material fact or fraudulent statement to the FDA or any other Governmental Body, which administers Health Care Laws, failed to disclose a material fact required to be disclosed to the FDA or any other Governmental Body, which administers Health Care Laws, or committed an act, made a statement, or failed to make a statement that, at the time such disclosure was made, would reasonably be expected to provide a basis for the FDA or any other such Governmental Body to invoke its policy respecting "Fraud, Untrue Statements of Material Facts, Bribery, and Illegal Gratuities" Final Policy set forth in 56 Fed. Reg. 46191 (September 10, 1991) and any amendments thereto or any similar policy.

(h) All manufacturing operations relating to the Company Products conducted by or on behalf of Tetraphase Companies have been and are being conducted in compliance in all material respects with applicable provisions of Current Good Manufacturing Practice requirements as set forth in 21 U.S.C. § 351(a)(2)(B), 21 C.F.R. Parts 210 and 211, and applicable final guidance documents, as amended from time to time. As of the date of this Agreement, no Company Product has been voluntarily recalled, suspended, or discontinued by the Tetraphase Companies at the request of the FDA or any other Governmental Body. As of the date of this Agreement, no Tetraphase Company has received any notice from the FDA or any other applicable Governmental Body that it has commenced, or, to the knowledge of the Company, threatened to initiate, any action to withdraw approval, place sales or marketing restrictions on or request the recall of any Company Product, or that it has commenced or threatened to initiate any action to enjoin or place restrictions on the production of any Company Product, except as would not be material to the Tetraphase Companies, taken as a whole.

(i) All nonclinical studies and clinical trials relating to the Company Products conducted by or on behalf of the Tetraphase Companies have been, or are being, conducted in compliance in all material respects with the requirements of the FDA's Good Laboratory Practice and Good Clinical Practice requirements, including regulations under 21 C.F.R. Parts 50, 54, 56, 58, 312 and applicable guidance documents, as amended from time to time, the Animal Welfare Act, and all applicable similar Legal Requirements in other jurisdictions, and all Legal Requirements relating to protection of human subjects.

(j) The Tetraphase Companies have promoted the Company Products in compliance in all material respects with all applicable Health Care Laws and other Legal Requirements. As of the date of this

Agreement, the Tetraphase Companies have not received, and to the Company's knowledge, do not have pending or in effect any notice, civil, criminal or administrative action, suit, demand, claim, complaint, hearing, investigation, demand letter, warning letter, untitled letter, proceeding or request for information from the FDA or any Governmental Body concerning material noncompliance with Health Care Laws and other Legal Requirements with regard to promotion of Company Products.

(k) No Tetraphase Company, nor, to the Company's knowledge, its officers, employees, agents or contractors, have been debarred or have been convicted of any crime or engaged in any conduct that resulted in debarment under 21 U.S.C. § 335a or disqualification as a clinical investigator under 21 C.F.R. § 312.70 or any similar Health Care Laws, and no Tetraphase Companies or, to the knowledge of the Company, any of its officers, employees, agents or contractors, has engaged in any conduct that would reasonably be expected to result in debarment or disqualification as an investigator. No Tetraphase Company, nor, to the Company's knowledge, its officers, employees, agents or contractors, has been excluded or convicted of any crime for which exclusion from participating in the Federal health care programs under Section 1128 of the Social Security Act of 1935, as amended, or any similar Health Care Law, could result.

(l) The Company has Made Available to Parent accurate and complete copies of any Health Care Law compliance policy or similar codes, policies, or guidelines adopted by the any of the Tetraphase Companies.

2.13 Certain Business Practices. None of the Tetraphase Companies, and (to the knowledge of the Company) no Representative of any of the Tetraphase Companies with respect to any matter relating to any of the Tetraphase Companies, have: (a) used any funds for unlawful contributions, gifts, entertainment or other unlawful expenses relating to political activity; (b) made any unlawful payment to foreign or domestic government officials or employees or to foreign or domestic political parties or campaigns or violated any provision of the Foreign Corrupt Practices Act of 1977, as amended; or (c) made any other material unlawful payment.

2.14 Governmental Authorizations.

(a) The Tetraphase Companies hold all material Governmental Authorizations necessary to enable the Tetraphase Companies to conduct their respective businesses in the manner in which such businesses are currently being conducted. All such Governmental Authorizations are valid and in full force and effect. Each Tetraphase Company is, and at all times since December 31, 2018 has been, in compliance in all material respects with the terms and requirements of such Governmental Authorizations. Between December 31, 2018 and the date of this Agreement, none of the Tetraphase Companies have received any written notice (or, to the knowledge of the Company, any other communication) from any Governmental Body regarding: (i) any material violation of or failure to comply in any material respect by any of the Tetraphase Companies with any term or requirement of any of the Tetraphase Companies' material Governmental Authorization; or (ii) any revocation, withdrawal, suspension, cancellation, termination or modification of any material Governmental Authorization.

(b) Part 2.14(b) of the Company Disclosure Schedule lists each material grant, incentive or subsidy provided or made available to or for the benefit of any of the Tetraphase Companies by or on behalf of any U.S. federal, state or local Governmental Body or any foreign Governmental Body, whether directly or indirectly as a subcontractor, subrecipient, subgrantee, or similar (at any tier) in connection with a grant, incentive or subsidy between another Person and a Governmental Body. Each of the Tetraphase Companies is, and has been since December 31, 2018 in compliance in all material respects with all of the material terms and requirements of each grant, incentive and subsidy identified or required to be identified in Part 2.14(b) of the Company Disclosure Schedule. Neither the execution, delivery or performance by the Company of this Agreement, nor the consummation by the Company of the Merger or any of the other Contemplated Transactions, does, will or would reasonably be expected to (with or without notice or lapse of time) give any Person the right to revoke, withdraw, suspend, cancel, terminate or modify any grant, incentive or subsidy identified or required to be identified in Part 2.14(b) of the Company Disclosure Schedule.

2.15 Tax Matters.

(a) Each of the Tetraphase Companies has filed all material Tax Returns that they were required to file under applicable Legal Requirements, and all such Tax Returns are correct and complete in all material respects. All amounts shown on such Tax Returns to be due and owing (and all other material Taxes due and owing whether or not shown on any Tax Return) have been fully paid.

(b) The unpaid Taxes of the Tetraphase Companies did not, as of the date of the Company Audited Balance Sheet, materially exceed the reserve for Tax liability (excluding any reserve for deferred Taxes established to reflect timing differences between book and Tax items) set forth on the face of the Company Audited Balance Sheet. Since the date of the Company Audited Balance Sheet, the Company has not incurred any material liability for Taxes outside the ordinary course of business. There are no Encumbrances for Taxes (other than Taxes not yet due and payable) upon any of the assets of the Tetraphase Companies.

(c) All material Taxes that each of the Tetraphase Companies is or was required by Legal Requirements to withhold or collect have been duly and timely withheld or collected in all material respects on behalf of its respective employees, independent contractors, stockholders, lenders, customers or other third parties and, have been timely paid to the proper Governmental Body or other Person or properly set aside in accounts for this purpose.

(d) As of the date of this Agreement, no outstanding deficiencies for income or other material Taxes with respect to any of the Tetraphase Companies have been claimed, proposed, or assessed by any Governmental Body. As of the date of this Agreement, there are no pending (or, based on written notice, threatened) material audits, assessments or other Legal Proceedings for or relating to any Taxes or Tax Returns of any Tetraphase Company. None of the Tetraphase Companies has waived any statute of limitations in respect of income or other material Taxes or agreed to any extension of time with respect to an income or other material Tax assessment or deficiency, which waiver or extension is currently in effect.

(e) No written claim has been made within the five years preceding the date of this Agreement by any Governmental Body in a jurisdiction where a Tetraphase Company does not file a Tax Return that it is or may be subject to taxation by that jurisdiction.

(f) There are no Contracts relating to the allocating, sharing or indemnification of Taxes or similar arrangement with respect to Taxes to which any Tetraphase Company is a party to or is bound by, other than commercially reasonable agreements entered into in the ordinary course of business the primary purpose of which does not relate to Taxes (an "**Ordinary Commercial Agreement**"). No Tetraphase Company has been a member of a consolidated, combined or unitary Tax group (other than such a group the common parent of which is the Company). The Company does not have any liability for any material Taxes of any other Person (other than a Tetraphase Company) under Treasury Regulations Section 1.1502-6 (or any similar provision of state, local, or non-U.S. Legal Requirements), as a transferee or successor, by Contract, or otherwise (other than an Ordinary Commercial Agreement).

(g) Within the last three years, no Tetraphase Company has distributed stock of another Person, nor had its stock distributed by another Person, in a transaction that was purported or intended to be governed in whole or in part by Sections 355 or 361 of the Code.

(h) No Tetraphase Company is or has been a United States real property holding corporation within the meaning of Section 897(c)(2) of the Code during the applicable period specified in Section 897(c)(1)(A)(ii)of the Code.

(i) None of the Tetraphase Companies has participated in, or is currently participating in, a "listed transaction" within the meaning of Treasury Regulation Section 1.6011-4(b)(1) (or any other transaction that is subject to disclosure requirements pursuant to a corresponding or similar provision of state, local, or non-U.S. Tax Legal Requirements).

2.16 Employee and Labor Matters; Benefit Plans.

(a) Except as set forth in Part 2.16(a) of the Company Disclosure Schedule or as required by applicable Legal Requirements, the employment of each of the Tetraphase Companies' employees is terminable by the applicable Tetraphase Company at will, without a requirement of advance notice or payment of severance or similar benefit.

(b) Except as set forth in Part 2.16(b) of the Company Disclosure Schedule, none of the Tetraphase Companies is a party to, or has a duty to bargain for, any collective bargaining agreement or other Contract with a labor organization or works council representing any of its employees and there are no labor organizations or works councils representing, purporting to represent or, to the knowledge of the Company, seeking to represent any employees of any of the Tetraphase Companies. Between December 31, 2018 and the date of this Agreement, to the knowledge of the Company, there has not been any strike, slowdown, work stoppage, lockout, job action, picketing, labor dispute, question concerning representation, union organizing activity, or any threat thereof, or any similar activity or dispute, affecting any of the Tetraphase Companies or any of their employees. There is not pending as of the date of this Agreement, and, to the knowledge of the Company, no Person has threatened to commence, any such strike, slowdown, work stoppage, lockout, job action, picketing, labor dispute, question regarding representation or union organizing activity or any similar activity or dispute.

(c) Part 2.16(c) of the Company Disclosure Schedule sets forth all Company Employee Plans with respect to which any of the Tetraphase Companies or any Company Affiliate has or may incur or become subject to any material liability or obligation (collectively, the "**Material Company Plans**" and each a "**Material Company Plan**").

(d) None of the Tetraphase Companies intends, and none of the Tetraphase Companies has committed, to establish or enter into any new Material Company Plan. Except as required by this Agreement, neither the Company, nor, to the Company's knowledge, any other Person, intends to or has made any commitment to modify, change or terminate any Company Employee Plan, other than with respect to modifications, changes or terminations required by any Legal Requirements or that would not result in any material liability.

(e) The Company has delivered or Made Available to Parent a complete and accurate copy of all documents setting forth the terms of each material Company Employee Plan and all amendments thereto. With respect to each Company Employee Plan that is subject to ERISA or intended to be qualified under Section 401(a) of the Code, the Company has delivered or Made Available to Parent: (i) the three most recent annual reports (Form Series 5500 and all schedules and financial statements attached thereto), if any, required under applicable Legal Requirements in connection with each Company Employee Plan; (ii) if the Company Employee Plan is subject to the minimum funding standards of Section 302 of ERISA, the most recent annual and periodic accounting of Company Employee Plan assets, if any; (iii) the most recent summary plan description together with the summaries of material modifications thereto, if any, required under ERISA or any similar Legal Requirement with respect to each Company Employee Plan; (iv) all material written Contracts relating to each Company Employee Plan, including administrative service agreements, group insurance contracts and any trust agreement; (v) all discrimination tests required under the Code for each Company Employee Plan intended to be qualified under Section 401(a) of the Code for the three most recent plan years; (vi) the most recent IRS determination, advisory, or opinion letter issued with respect to each Company Employee Plan intended to be qualified under Section 401(a) of the Code; and (vii) all material correspondence in its possession regarding any Company Employee Plan regarding any audit, investigation or proceeding regarding such Company Employee Plan or any fiduciary thereof since December 31, 2018 through the date of this Agreement.

(f) Since January 1, 2014, neither the Company nor any Company Affiliate has maintained, established, participated in or contributed to, or is or has been required to contribute to, or has otherwise incurred

any obligation or liability (including any contingent liability) under a plan subject to Title IV of ERISA or Code Section 412, including any "single employer" defined benefit plan or any "multiemployer plan," each as defined in Section 4001 of ERISA. No Company Employee Plan is or has been funded by, associated with or related to a "voluntary employees' beneficiary association" within the meaning of Section 501(c)(9) of the Code. No Company Pension Plan holds the stock of any of the Tetraphase Companies or any Company Affiliate as a plan asset. No Company Employee Plan is subject to the Legal Requirements of any jurisdiction outside of the United States.

(g) Each Company Employee Plan that is intended to be "qualified" within the meaning of Section 401(a) of the Code has been the subject of a favorable determination letter (or, if applicable, advisory or opinion letter) from the IRS that has not been revoked (or if not determined to be so qualified, such Company Employee Plan may still be amended within the remedial amendment period to cure any qualification defect to the extent permitted by applicable Legal Requirements), and to the knowledge of the Company, no event has occurred and no condition exists that would reasonably be expected to materially adversely affect the qualified status of any such Company Employee Plan or the imposition of any material liability, penalty or tax under ERISA or the Code. None of the Tetraphase Companies have engaged in a transaction in connection with which such Tetraphase Company reasonably would be subject to either a material liability pursuant to Section 409 or 502(i) of ERISA or a Tax imposed pursuant to Section 4975 or 4976 of the Code that is not curable without material cost.

(h) Except as has not been or would not reasonably be expected to be material to the Tetraphase Companies, taken as a whole, (A) each Company Employee Plan has been operated and administered in accordance with its provisions and in compliance with all applicable Legal Requirements, including any applicable provisions of ERISA and the Code; and (B) all payments and contributions required to be made under the terms of any Company Employee Plan have been made or the amount of such payment or contribution obligation has been reflected in the Company SEC Documents filed prior to the date of this Agreement. Since December 31, 2018, the Tetraphase Companies have performed in all material respects all obligations required to be performed by them under, are not in any material respect in default under or in violation of, and, to the knowledge of the Company, there is no default or violation by any other party to, any Company Employee Plan. There are no material liabilities of the Tetraphase Companies with respect to any Company Employee Plan that are not properly accrued and reflected in the financial statements of the Company where required by GAAP.

(i) Except to the extent required under Section 601et seq. of ERISA or 4980B of the Code (or any other similar state or local Legal Requirement), neither the Tetraphase Companies nor any Company Employee Plan has any present or future obligation to provide post-employment welfare benefits to or make any payment to, or with respect to, any Company Employee pursuant to any retiree medical, retiree disability, retiree life insurance benefit plan or other retiree welfare plan. None of the Tetraphase Companies maintains, sponsors or contributes to any Company Employee Plan that is an employee welfare benefit plan (as such term is defined in Section 3(1) of ERISA) and that is, in whole or in part, self-funded or self-insured other than severance.

(j) None of the Tetraphase Companies has effectuated any "plant closing," "relocation" or "mass layoff" (as defined in the Worker Adjustment and Retraining Notification Act or any similar Legal Requirement) since December 31, 2018.

(k) Except as set forth in Part 2.16(k) of the Company Disclosure Schedule and except has not been, and as would not be reasonably expected to be, material to the Tetraphase Companies, taken as a whole, each of the Tetraphase Companies and Company Affiliates: (i) is, and since December 31, 2018 has been, in compliance in all material respects with all applicable Legal Requirements related to employment and employment practices (including any Order or arbitration award of any court, arbitrator or any Governmental Body), including payment of wages, hours of work, harassment, discrimination, retaliation, employee safety or health, and labor relations; (ii) has withheld and reported all material amounts required by applicable Legal Requirements or by Contract to be withheld and reported with respect to wages, salaries and other payments to

Company Associates; (iii) is not liable in any material respect for any arrears of wages or any taxes or any interest or penalty for failure to comply with the Legal Requirements applicable of the foregoing; and (iv) is not liable for any material payment to any trust or other fund governed by or maintained by or on behalf of any Governmental Body with respect to unemployment compensation benefits, social security, social charges or other benefits or obligations for Company Associates (other than routine payments to be made in the ordinary course of business consistent with past practice).

(l) Except as set forth in Part 2.16(l) of the Company Disclosure Schedule or pursuant to Section 5.3 or 5.4 hereof, neither the execution of this Agreement nor the consummation of the Merger (including in combination with other events or circumstances) will (i) entitle any Company Employee to severance pay or any material increase in severance pay, (ii) accelerate the time of payment or vesting, or increase the amount of, compensation or benefits due to any such Company Employee, (iii) directly or indirectly cause the Tetraphase Companies to transfer or set aside any material assets to fund any benefits under any Company Employee Plan, (iv) otherwise give rise to any material liability under any Company Employee Plan, (v) limit or restrict the right to merge, amend, terminate or transfer any material assets of any Company Employee Plan on or following the Effective Time or (vi) result in the payment of any amount that would reasonably be expected, individually or in combination with any other such payment, to constitute an "excess parachute payment" as defined in Section 280G(b)(1) of the Code.

(m) Each Company Employee Plan that is subject to Section 409A of the Code has been administered in compliance with its terms and the operational and documentary requirements of Section 409A of the Code and the regulations thereunder, except for any instances of noncompliance that would not reasonably be expected to result in a material liability to the Tetraphase Companies. No Company Employee Plan provides for an obligation to gross-up, indemnify or otherwise reimburse any Company Employee for any Tax incurred by such Company Employee pursuant to Section 409A or 4999 of the Code. Neither the terms nor the performance of any Company Employee Plan could reasonably be expected to result in gross income inclusion after the Effective Time pursuant to Section 409A(a)(1)(A) of the Code.

(n) The Tetraphase Companies and their Company Affiliates have made an offer of affordable minimum essential coverage to their respective employees in the manner contemplated under Section 4980H of the Code to the extent required to avoid the adverse tax consequences thereunder, and neither the Tetraphase Companies nor any of their Company Affiliates is otherwise liable or responsible for any assessable payment, taxes, or other penalties under Section 4980H of the Code or otherwise under the Affordable Care Act or in connection with requirements relating thereto.

(o) Part 2.16(o) of the Company Disclosure Schedule sets forth a true and complete list of the loans provided under any Company Employee Plan intended to be qualified under Section 401(a) of the Code (the "**Qualified Plan Loans**"). Except for the Qualified Plan Loans, as of the date of this Agreement, there are no loans or extensions of credit from any Company Employee Plan, the Tetraphase Companies or any Company Affiliate to any Company Employee.

(p) As of the date of this Agreement, there are no actions, suits, claims, charges, complaints, grievances, arbitrations, investigations or other Legal Proceedings pending or, to the knowledge of the Company threatened against any of the Tetraphase Companies and Company Affiliates relating to the employment or engagement of any Company Associate, other than any routine claims for benefits.

2.17 Environmental Matters.

(a) Since December 31, 2014, the Tetraphase Companies have been and are in compliance in all material respects with all applicable Environmental Laws, including possessing and complying in all material respects with the terms of all Orders required for their operations under applicable Environmental Laws. Between December 31, 2018 and the date of this Agreement, none of the Tetraphase Companies have received any written

notice (or, to the knowledge of the Company, any other communication, whether written or otherwise), whether from a Governmental Body, citizens group, Company Associate or otherwise, that alleges that any of the Tetraphase Companies is not or might not be in compliance in all material respects with any Environmental Law, which non-compliance has not been cured or for which there is any remaining material liability.

(b) To the knowledge of the Company: (i) all Tetraphase Leased Real Property and any other property that is or was leased to or controlled or used by any of the Tetraphase Companies, and all surface water, groundwater and soil associated with or adjacent to such property, is free of any Materials of Environmental Concern or material environmental contamination except as would not reasonably be expected to require any material corrective action or other material remedial obligations under Environmental Laws by the Tetraphase Companies; (ii) none of the Tetraphase Leased Real Property or any other property that is or was leased to or controlled or used by any of the Tetraphase Companies contains any underground storage tanks, asbestos, equipment using polychlorinated biphenyls or underground injection wells; and (iii) none of the Tetraphase Leased Real Property or any other property that is or was leased to or controlled or used by any of the Tetraphase Companies contains any septic tanks in which process wastewater or any Materials of Environmental Concern that have been Released.

(c) To the knowledge of the Company, no Tetraphase Company has ever sent or transported, or arranged to send or transport, any Materials of Environmental Concern to a site that, pursuant to any applicable Environmental Law: (i) has been placed on the "National Priorities List" of hazardous waste sites or any similar state list; (ii) is otherwise designated or identified as a potential site for remediation, cleanup, closure or other environmental remedial activity; or (iii) is subject to a Legal Requirement to take "removal" or "remedial" action as detailed in any applicable Environmental Law or to make payment for the cost of cleaning up any site.

(d) None of the Tetraphase Companies have entered into any Company Contract that would reasonably be expected to require any of them to guarantee, reimburse, defend, hold harmless or indemnify any other party with respect to material liabilities arising out of Environmental Laws, or the activities of the Tetraphase Companies or any other Person relating to Materials of Environmental Concern

(e) For purposes of this Agreement: (i) "**Environmental Law**" means any federal, state, local or foreign Legal Requirement relating to pollution worker safety, exposure of any individual to Materials of Environmental Concern or protection of human health or the environment (including ambient air, surface water, ground water, land surface or subsurface strata), including any Legal Requirement relating to emissions, discharges, releases or threatened releases of Materials of Environmental Concern, or otherwise relating to the manufacture, processing, distribution, use, treatment, storage, disposal, transport or handling of Materials of Environmental Concern; (ii) "**Materials of Environmental Concern**" include chemicals, pollutants, contaminants, wastes, toxic substances, petroleum and petroleum products and any other substance that is now or hereafter regulated by any Environmental Law or that is otherwise a danger to health, reproduction or the environment; and (iii) "**Release**" means any spilling, leaking, emitting, discharging, depositing, escaping, leaching, dumping or other releasing into the environment, whether intentional or unintentional.

2.18 Insurance. Each material insurance policy, and each material self-insurance program and arrangement, of the Tetraphase Companies relating to the business, assets and operations of the Tetraphase Companies is in full force and effect. Between December 31, 2018 and the date of this Agreement, none of the Tetraphase Companies have received any written notice (or, to the knowledge of the Company, any other communication) regarding any actual or possible: (a) cancellation or invalidation of any material insurance policy; (b) refusal of any coverage or rejection of any material claim under any material insurance policy; or (c) material adjustment in the amount of the premiums payable with respect to any material insurance policy. As of the date of this Agreement, there is no pending workers' compensation or other claim under or based upon any material insurance policy of any of the Tetraphase Companies involving an amount in excess of $50,000 in any individual case or $150,000 in the aggregate.

2.19 Transactions with Affiliates. Except as set forth in the Company SEC Documents filed prior to the date of this Agreement, during the period commencing on the date of the Company's last proxy statement filed with the SEC through the date of this Agreement, no event has occurred that would be required to be reported by the Company pursuant to Item 404(a) of Regulation S-K promulgated by the SEC.

2.20 Legal Proceedings; Orders.

(a) Except as set forth in Part 2.20(a) of the Company Disclosure Schedule, there is no, as of the date hereof, and there has not been between December 31, 2018 and the date of this Agreement any, pending and served Legal Proceeding, and, to the knowledge of the Company, there is no pending but not served Legal Proceeding and, during such period no Person has threatened in writing or, to the Company's knowledge, otherwise to commence any material Legal Proceeding: (i) that names any of the Tetraphase Companies, any business of any of the Tetraphase Companies, any of the assets owned, leased or used by any of the Tetraphase Companies or, to the knowledge of the Company, any Company Associate, except as would not be material to the Tetraphase Companies, taken as a whole; or (ii) that challenges, or that may have the effect of preventing, delaying, making illegal or otherwise interfering with, the Merger or any of the other Contemplated Transactions.

(b) As of the date of this Agreement, there is no material Order to which any of the Tetraphase Companies, or any of the material assets owned or used by any of the Tetraphase Companies, is subject. To the knowledge of the Company, no officer or other key employee of any of the Tetraphase Companies is subject to any Order that prohibits such officer or other key employee from engaging in or continuing any conduct, activity or practice relating to the business of any of the Tetraphase Companies.

2.21 Government Contracts.

(a) As of and since December 31, 2019, the Tetraphase Companies have not been party to, and have not incurred any liabilities with respect to, any Government Contracts, nor does any Tetraphase Company have any Government Contract Bids.

(b) Neither the Tetraphase Companies nor any of their respective owners, officers, directors, or employees, nor to the knowledge of the Company any of its consultants, agents, or representatives (acting in their capacities as such) is as of the date of this Agreement debarred or suspended from doing business with any Governmental Body, or proposed for debarment or suspension, or otherwise ineligible to do business with any Governmental Body.

2.22 Authority; Binding Nature of Agreement. The Company has the corporate power and authority to enter into and, subject to obtaining the Required Company Stockholder Vote, to perform its obligations under this Agreement. The Company Board (at a meeting duly called and held) has: (a) unanimously determined that, as of the date of this Agreement, the Merger is advisable and fair to, and in the best interests of, the Company and its stockholders; (b) unanimously authorized and approved the execution, delivery and performance of this Agreement by the Company and unanimously approved the Merger; and (c) unanimously recommended, as of the date of this Agreement, the adoption of this Agreement by the holders of Company Common Stock and directed that this Agreement and the Merger be submitted for consideration by the Company's stockholders at the Company Stockholders' Meeting. Assuming the due authorization, execution and delivery of this Agreement by Parent and Merger Sub, this Agreement constitutes the valid and binding obligation of the Company, enforceable against the Company in accordance with its terms, subject to the Enforceability Exceptions.

2.23 Inapplicability of Section 203 of the DGCL. Assuming the accuracy of the representation by Parent and Merger Sub set forth in Section 3.8, the Company Board has taken all actions necessary to ensure that the restrictions applicable to business combinations contained in Section 203 of the DGCL are not, and will not be, applicable to the execution, delivery or performance of this Agreement, the Company Stockholder Voting Agreements, or to the consummation of the Merger or any of the other Contemplated Transactions.

2.24 Vote Required. The affirmative vote of the holders of a majority of the voting power of the shares of Company Common Stock outstanding on the record date for the Company Stockholders' Meeting (the "**Required Company Stockholder Vote**") is the only vote of the holders of any class or series of the Company's capital stock necessary to adopt this Agreement.

2.25 Non-Contravention; Consents. Assuming compliance with the applicable provisions of the DGCL, the rules and regulations of the SEC, and the listing requirements of the Nasdaq Global Market, except (i) as set forth in Part 2.25 of the Company Disclosure Schedule or (ii) in the case of clauses (b) through (e) as would not be material to the Tetraphase Companies, taken as a whole, neither (1) the execution, delivery or performance by the Company of this Agreement, nor (2) the consummation by the Company of the Merger or any of the other Contemplated Transactions, would reasonably be expected to, directly or indirectly (with or without notice or lapse of time):

(a) contravene, conflict with or result in a violation of: any of the provisions of the certificate of incorporation, bylaws or other charter or organizational documents of any of the Tetraphase Companies;

(b) contravene, conflict with or result in a violation of any Legal Requirement or any Order to which any of the Tetraphase Companies, or any of the assets owned or used by any of the Tetraphase Companies, is subject;

(c) contravene, conflict with or result in a violation of any of the terms or requirements of, or give any Governmental Body the right to revoke, withdraw, suspend, cancel, terminate or modify, any Governmental Authorization that is held by any of the Tetraphase Companies;

(d) contravene, conflict with or result in a violation or breach of, or result in a default under, any provision of any Company Material Contract, or give any Person the right to: (i) declare a default or exercise any remedy under any such Company Material Contract; (ii) accelerate the maturity or performance of any such Company Material Contract; or (iii) cancel, terminate or modify any right, benefit, obligation or other term of such Company Material Contract; or

(e) result in the imposition or creation of any Encumbrance upon or with respect to any tangible asset owned or used by any of the Tetraphase Companies (except for the Company Permitted Encumbrances).

Except as may be required by the Exchange Act, the DGCL and the listing requirements of the Nasdaq Global Market (to the extent they relate to the Proxy Statement/Prospectus and the Form S-4 Registration Statement), none of the Tetraphase Companies was, is or will be required to make any filing with or give any notice to, or to obtain any Consent from, any Person in connection with: (x) the execution, delivery or performance of this Agreement by the Company; or (y) the consummation by the Company of the Merger or any of the other Contemplated Transactions, except where the failure to make any such filing or give any such notice or to obtain any such Consent would not would not be material to the Tetraphase Companies, taken as a whole.

2.26 Opinion of Financial Advisor. The Company Board has received the opinion (to be confirmed in writing) of Janney Montgomery Scott LLC (the "**Company's Financial Advisor**"), financial advisor to the Company, dated March 15, 2020 to the effect that the Merger Consideration is fair, from a financial point of view, to the common stockholders of the Company. The Company will make available to Parent solely for informational purposes a copy of such fairness opinion promptly following the date of this Agreement.

2.27 Financial Advisor. Except for the Company's Financial Advisor, no broker, finder or investment banker is entitled to any brokerage, finder's or other fee or commission in connection with the Merger or any of the other Contemplated Transactions based upon arrangements made by or on behalf of any of the Tetraphase Companies. The Company has Made Available to Parent accurate and complete copies of all agreements related to the engagement of the Company's Financial Advisor.

2.28 Disclosure. None of the information to be supplied by or on behalf of the Company in writing for inclusion or incorporation by reference in the Form S-4 Registration Statement will, at the time the Form S-4 Registration Statement is filed with the SEC or at the time it becomes effective under the Securities Act, contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they are made, not misleading. None of the information supplied or to be supplied by or on behalf of the Company in writing for inclusion or incorporation by reference in the Proxy Statement/Prospectus will, at the time the Proxy Statement/Prospectus is mailed to the stockholders of the Company or at the time of the Company Stockholders' Meeting (or any adjournment or postponement thereof), contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they are made, not misleading.

2.29 Acknowledgement by the Company. The Company is not relying and has not relied on any representations or warranties whatsoever regarding the subject matter of this Agreement, express or implied, except for the representations and warranties in Section 3. Such representations and warranties by Parent constitute the sole and exclusive representations and warranties of Parent in connection with the Contemplated Transactions and the Company understands, acknowledges and agrees that all other representations and warranties of any kind or nature whether express, implied or statutory are specifically disclaimed by Parent.

SECTION 3. Representations and Warranties of Parent and Merger Sub

Parent and Merger Sub represent and warrant to the Company as follows (it being understood that each representation and warranty contained in this Section 3 (other than, in the case of clause (a) of this paragraph, the representations and warranties contained in Section 3.3) is qualified by and subject to: (a) the information set forth in any publicly available effective registration statement, prospectus, report, form, schedule or definitive proxy statement filed by Parent with the SEC at any time on or after December 31, 2018 and prior to the date hereof, but excluding any risk factor or similar disclosure under the headings "Risk Factors", "Forward-Looking Statements" or any similar predictive or forward-looking sections; (b) the exceptions and disclosures set forth in the section or subsection of the Parent Disclosure Schedule corresponding to the particular section or subsection in this Section 3 in which such representation and warranty appears; and (c) any exception or disclosure set forth in any other section or subsection of the Parent Disclosure Schedule to the extent it is reasonably apparent on the face of such exception or disclosure that such exception or disclosure would qualify such representation and warranty):

3.1 Due Organization; Etc.

(a) Each of the AcelRx Companies is a corporation or other Entity duly organized, validly existing and in good standing (or equivalent status) under the laws of the jurisdiction of its incorporation and has all necessary corporate or similar power and authority: (i) to conduct its business in the manner in which its business is currently being conducted; (ii) to own and use its assets in the manner in which its assets are owned and used as of the date of this Agreement; and (iii) to perform its obligations under all Contracts by which it is bound, except, in the case of clauses "(i)" through "(iii)" of this sentence, as would not have a Parent Material Adverse Effect.

(b) Each of the AcelRx Companies is qualified to do business as a foreign corporation, and is in good standing, under the laws of all jurisdictions where the nature of its business requires such qualification, except for jurisdictions in which the failure to be so qualified or in good standing would not have a Parent Material Adverse Effect.

3.2 Certification of Incorporation and Bylaws. Parent has Made Available to the Company accurate and complete copies of the amended and restated certificate of incorporation and amended and restated bylaws of Parent, including all amendments thereto.

3.3 Capitalization, Etc.

(a) The authorized capital stock of the Parent consists of: (i) 200,000,000 shares of Parent Common Stock, of which 80,411,856 shares are issued and outstanding as of Reference Date; and (ii) 10,000,000 shares of Parent Preferred Stock, of which no shares of Parent Preferred Stock are issued or outstanding as of the Reference Date. All of the outstanding shares of Parent Common Stock have been duly authorized and validly issued, and are fully paid and nonassessable. None of the AcelRx Companies (other than Parent) holds any shares of Parent Common Stock or any rights to acquire shares of Parent Common Stock.

(b) (i) None of the outstanding shares of Parent Common Stock is entitled or subject to any preemptive right, right of repurchase or forfeiture, right of participation, right of maintenance or any similar right pursuant to the certificate of incorporation (or similar organizational document) or Contract to which any AcelRx Company or, to Parent's knowledge, to which any stockholder of Parent, is a party; (ii) none of the outstanding shares of Parent Common Stock is subject to any right of first refusal in favor of the Parent; and (iii) there is no Parent Contract relating to the voting or registration of, or restricting any Person from purchasing, selling, pledging or otherwise disposing of (or from granting any option or similar right with respect to), any shares of Parent Common Stock. None of the AcelRx Companies is bound by any Contract pursuant to which it may become obligated to repurchase, redeem or otherwise acquire any outstanding shares of Parent Common Stock or other securities, except for the Parent's right to repurchase or reacquire restricted shares of Parent Common Stock held by an employee of the Parent upon termination of such employee's employment or upon any other forfeiture of a vesting condition.

(c) As of the Reference Date: (i) 13,339,337 shares of Parent Common Stock are subject to issuance pursuant to Parent Options; (ii) 2,069,206 shares of Parent Common Stock are reserved for future issuance pursuant to the Parent ESPP; (iii) 1,131,469 shares of Parent Common Stock are subject to issuance upon the vesting of Parent RSUs; (iv) 4,037,524 shares of Parent Common Stock are reserved for future issuance pursuant to equity awards not yet granted under the Parent Option Plans; and (v) 176,679 shares of Parent Common Stock are subject to issuance pursuant to Parent Warrants.

(d) Except as set forth in Sections 3.3(a) and 3.3(c), as of the Reference Date there is no: (i) outstanding subscription, option, call, warrant or right (whether or not currently exercisable) to acquire any shares of the capital stock or other securities of any of the AcelRx Companies; (ii) outstanding security, instrument or obligation that is or may become convertible into or exchangeable for any shares of the capital stock or other securities of any of the AcelRx Companies; or (iii) stockholder rights plan (or similar plan commonly referred to as a "poison pill") or Contract under which any of the AcelRx Companies are or may become obligated to sell or otherwise issue any shares of its capital stock or any other securities.

(e) All outstanding shares of Parent Common Stock, and all options and other Parent Equity Awards and other securities of the AcelRx Companies, have been issued and granted in compliance in all material respects with: (i) all applicable securities laws and other applicable Legal Requirements; and (ii) all requirements set forth in applicable Contracts.

(f) All of the outstanding shares of capital stock of each of the Parent's Subsidiaries have been duly authorized and validly issued, are fully paid and nonassessable and free of preemptive rights, and are owned beneficially and of record by the Parent, free and clear of any Encumbrances, other than restrictions under applicable securities laws and Parent Permitted Encumbrances.

3.4 SEC Filings; Financial Statements.

(a) Parent has Made Available (or made available on the SEC website) to the Company accurate and complete copies of all registration statements, proxy statements, Parent Certifications and other statements, reports, schedules, forms and other documents filed by Parent with the SEC between December 31, 2018 and,

solely for purposes of this sentence, the date of this Agreement (and for all other purposes under this Agreement since December 31, 2018), including all amendments thereto since December 31, 2018 (collectively, the "**Parent SEC Documents**"). All statements, reports, schedules, forms and other documents required to have been filed by Parent or its officers with the SEC since December 31, 2018 have been so filed on a timely basis. None of Parent's Subsidiaries is required to file any documents with the SEC. As of the time it was filed with the SEC (or, if amended or superseded by a filing prior to the date of this Agreement, then on the date of such filing): (i) each of the Parent SEC Documents complied as to form in all material respects with the applicable requirements of the Securities Act or the Exchange Act (as the case may be); and (ii) none of the Parent SEC Documents contained any untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading, except to the extent corrected: (A) in the case of Parent SEC Documents filed or furnished on or prior to the date of this Agreement that were amended or superseded on or prior to the date of this Agreement, by the filing or furnishing of the applicable amending or superseding Parent SEC Document; and (B) in the case of Parent SEC Documents filed or furnished after the date of this Agreement that are amended or superseded prior to the Effective Time, by the filing or furnishing of the applicable amending or superseding Parent SEC Document. Each of the certifications and statements relating to the Parent SEC Documents required by: (A) Rule 13a-14 or Rule 15d-14 under the Exchange Act; (B) 18 U.S.C. §1350 (Section 906 of the Sarbanes-Oxley Act); or (C) any other rule or regulation promulgated by the SEC or applicable to the Parent SEC Documents (collectively, the "**Parent Certifications**") is accurate and complete, in all material respects and complies as to form in all material respects with all applicable Legal Requirements. As used in the introduction to this Section 3 and in this Section 3.4, the term "**file**" and variations thereof shall be broadly construed to include any manner in which a document or information is filed, furnished, submitted, supplied or otherwise made available to the SEC or any member of its staff.

(b) Parent maintains disclosure controls and procedures required by Rule 13a-15 or 15d-15 under the Exchange Act. Such disclosure controls and procedures are designed to ensure that all material information concerning the AcelRx Companies required to be disclosed by Parent in the reports that it is required to file, submit or furnish under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Parent is in compliance in all material respects with the applicable listing requirements of the Nasdaq Global Market, and has not between December 31, 2018 and the date of this Agreement received any notice asserting any non-compliance with the listing requirements of the Nasdaq Global Market.

(c) The financial statements (including any related notes) contained or incorporated by reference in the Parent SEC Documents: (i) complied as to form in all material respects with the published rules and regulations of the SEC applicable thereto; (ii) were prepared in accordance with GAAP applied on a consistent basis throughout the periods covered (except as may be indicated in the notes to such financial statements or, in the case of unaudited financial statements, as permitted by Form 10-Q, Form 8-K or any successor form under the Exchange Act, and except that the unaudited financial statements may not contain footnotes and are subject to normal and recurring year-end adjustments); and (iii) fairly present, in all material respects, the consolidated financial position of Parent and its consolidated Subsidiaries as of the respective dates thereof and the consolidated results of operations and cash flows of Parent and its consolidated Subsidiaries for the periods covered thereby, in each case in accordance with GAAP. No financial statements of any Person other than the AcelRx Companies are required by GAAP to be included in the consolidated financial statements of the Parent.

(d) Parent's auditor has at all times since the date of enactment of the Sarbanes-Oxley Act been, to the knowledge of Parent: (i) a registered public accounting firm (as defined in Section 2(a)(12) of the Sarbanes-Oxley Act); (ii) "independent" with respect to Parent within the meaning of Regulation S-X under the Exchange Act; and (iii) in compliance with subsections (g) through (l) of Section 10A of the Exchange Act and the rules and regulations promulgated by the SEC and the Public Company Accounting Oversight Board thereunder. All non-audit services performed by Parent's auditors for the AcelRx Companies that were required to be approved in accordance with Section 202 of the Sarbanes-Oxley Act were so approved.

(e) Parent maintains a system of internal controls over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) which is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP, and includes those policies and procedures that: (i) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the AcelRx Companies; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and that receipts and expenditures are being made only in accordance with authorizations of management and directors of Parent; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the assets of the AcelRx Companies that could have a material effect on Parent's consolidated financial statements. Parent's management has completed an assessment of the effectiveness of Parent's system of internal controls over financial reporting in compliance with the requirements of Section 404 of the Sarbanes-Oxley Act for the fiscal year ended December 31, 2018, and, except as set forth in the Parent SEC Documents filed prior to the date of this Agreement, such assessment concluded that such controls were effective and Parent's independent registered accountant has issued (and not subsequently withdrawn or qualified) an attestation report concluding that Parent maintained effective internal control over financial reporting as of December 31, 2018. To the knowledge of Parent, except as set forth in the Parent SEC Documents filed prior to the date of this Agreement, between December 31, 2018 and the date of this Agreement, neither Parent nor any of its Subsidiaries nor Parent's independent registered accountant has identified or been made aware of: (A) any significant deficiency or material weakness in the design or operation of internal control over financial reporting utilized by the AcelRx Companies; (B) any fraud, whether or not material, that involves Parent's management or other employees; or (C) any claim or allegation regarding any of the foregoing.

(f) As of the date of this Agreement, there are no outstanding or unresolved comments in comment letters received from the SEC with respect to the Parent SEC Documents. To the knowledge of Parent, (i) none of the Parent SEC Documents is the subject of ongoing SEC review, and (ii) there are no inquiries or investigations by the SEC or any internal investigations pending or threatened, in each case regarding any accounting practices of Parent.

(g) None of the AcelRx Companies is a party to nor has any obligation or other commitment to become a party to any "off-balance sheet arrangements" (as defined in Item 303(a) of Regulation S-K under the Exchange Act).

3.5 Absence of Changes. Between September 30, 2019 and the date of this Agreement, there has not been any Parent Material Adverse Effect, and no event has occurred or circumstance has arisen that would have a Parent Material Adverse Effect.

3.6 Legal Proceedings; Orders.

(a) There is no, as of the date hereof, and there has not been between December 31, 2018 and the date of this Agreement, any pending and served Legal Proceeding, and, to the knowledge of Parent, there is no pending but not served Legal Proceeding and, during such period no Person has threatened in writing or, to the knowledge of Parent, otherwise to commence any material Legal Proceeding: (i) that names any of the AcelRx Companies, any business of any of the AcelRx Companies, any of the assets owned, leased or used by any of the AcelRx Companies or, to the knowledge of the Parent, any officer or key employee of any AcelRx Company, except as would not be material to the AcelRx Companies, taken as a whole; or (ii) that challenges, or that may have the effect of preventing, delaying, making illegal or otherwise interfering with, the Merger or any of the other Contemplated Transactions.

(b) As of the date of this Agreement, there is no material Order to which any of the AcelRx Companies, or any of the material assets owned or used by any of the AcelRx Companies, is subject.

3.7 Authority; Binding Nature of Agreement. Parent and Merger Sub have the corporate power and authority to enter into and perform their respective obligations under this Agreement and the CVR Agreement. The Parent Board (at a meeting duly called and held) has authorized and approved the execution, delivery and performance of this Agreement and the CVR Agreement by Parent and the issuance of shares of Parent Common Stock pursuant to this Agreement. Assuming the due authorization, execution and delivery of this Agreement by the Company and of the CVR Agreement by the Rights Agent, this Agreement constitutes, and the CVR Agreement will constitute, the valid and binding obligation of each of Parent and Merger Sub, enforceable against each of Parent and Merger Sub in accordance with its terms, subject to the Enforceability Exceptions.

3.8 Intellectual Property. The AcelRx Companies exclusively own, possess or have valid, sufficient and enforceable licenses to use all Parent IP necessary for the conduct of the AcelRx Companies' business as now conducted or as described in Parent SEC Documents to be conducted, except as such failure to own or possess, would not reasonably be expected to be material to the AcelRx Companies, taken as a whole. Furthermore, except as disclosed in Parent SEC Documents or as would not reasonably be expected, individually or in the aggregate, be material to the AcelRx Companies, taken as a whole: (A) to Parent's knowledge, there is no infringement, misappropriation or violation by third parties of any such Parent IP; (B) there is no pending or, to Parent's knowledge, threatened, action, suit, proceeding or claim by others challenging Parent's or any of its Subsidiaries' rights in or to any such Parent IP; (C) all documents and instruments necessary to perfect the rights of the AcelRx Companies in the Parent IP that is material Registered IP have been validly executed, delivered and filed in a timely manner with the appropriate Governmental Body; (D) the Parent IP owned by Parent and its Subsidiaries, and to Parent's knowledge, the Parent IP licensed to Parent and its Subsidiaries, has not been adjudged invalid or unenforceable, in whole or in part, and there is no pending or, to Parent's knowledge, threatened action, suit, proceeding or claim by others challenging the validity or scope of any such Parent IP; (E) there is no pending or, to Parent's knowledge, threatened action, suit, proceeding or claim by others that Parent or any of its Subsidiaries infringes, misappropriates or otherwise violates any Intellectual Property or other proprietary rights of others, and neither Parent or any of its Subsidiaries has received any written notice of such claim; (F) each current or former officer, employee, independent contractor, consultant or director, of or to any of the AcelRx Companies who is or was involved in the creation or development of any Parent IP that is Registered IP has signed a valid, enforceable agreement containing an assignment of Intellectual Property Rights to the AcelRx Companies and confidentiality provisions protecting such Parent IP; (G) the AcelRx Companies have taken reasonable steps to maintain the confidentiality of and otherwise protect and enforce their rights in all proprietary information held by any of the AcelRx Companies, or purported to be held by the AcelRx Companies, as a trade secret to the extent that such AcelRx Companies have determined such proprietary information should be protected as a trade secret; and (H) to Parent's knowledge, no employee of the Parent or any of its Subsidiaries is in or has ever been in violation of any term of any employment contract, patent disclosure agreement, invention assignment agreement, non-competition agreement, non-solicitation agreement, nondisclosure agreement or any restrictive covenant to or with a former employer where the basis of such violation relates to such employee's employment with Parent or any of its Subsidiaries or actions undertaken by the employee while employed with Parent or any of its Subsidiaries.

3.9 Ownership of Company Capital Stock. None of Parent, Merger Sub or any of their "affiliates" or "associates" "owns," or has "owned" in the past three years, any shares of Company Common Stock, as those terms are defined in Section 203 of the DGCL. Terms used in this Section 3.9 will be given the meaning set forth in Section 13 of the Exchange Act and the rules and regulations promulgated thereunder or Section 203 of the DGCL, as the case may be.

3.10 Compliance with Legal Requirements; Regulatory Matters.

(a) Each of the AcelRx Companies is, and has at all times in the two years prior to the date of this Agreement (if applicable) been, in compliance in all material respects with all applicable Legal Requirements. During the two years prior to the date of this Agreement, none of the Parent Companies has

received any written notice or, to the knowledge of Parent, any other communication from any Governmental Body or other Person regarding any actual or possible violation in any material respect of, or failure to comply in any material respect with, any Legal Requirement. Each Parent Product is being or has been researched, developed, tested, manufactured, packaged, labeled, handled, stored, supplied, distributed, marketed, commercialized, imported, exported, and sold in compliance in all material respects with all Health Care Laws. Between December 31, 2018 and the date of this Agreement, Parent has not received any written communication from the FDA or any other Governmental Body, including any warning letter or untitled letter, that alleges or suggests that the AcelRx Companies are not in compliance in all material respects with any applicable requirements under the Health Care Laws.

(b) To the knowledge of the Parent, as of the date of this Agreement, there are no pending or threatened material investigations, suits, claims, actions or other material Legal Proceeding against the AcelRx Companies relating to the Parent Products, including those relating to or arising under applicable Health Care Laws. Between December 31, 2018 and the date of this Agreement, no AcelRx Company nor any of its officers or employees (in his or her capacity as such) has been or is subject to any enforcement proceedings by the FDA or any other Governmental Body. Between December 31, 2018 and the date of this Agreement, there has not been and is not now any Form FDA 483 observation, civil, criminal or administrative action, suit, demand, claim, complaint, hearing, investigation, demand letter, warning letter, untitled letter, proceeding or request for information pending or in effect against the AcelRx Companies or any of its officers or employees with respect to the Parent Products, and the AcelRx Companies have no material liability (whether actual or contingent) for failure to comply with the applicable Health Care Laws, except, in each case, as would not be material to the AcelRx Companies, taken as a whole.

(c) Neither any of the AcelRx Companies nor, to the knowledge of Parent, any officer, employee or agent of any of the AcelRx Companies, has made an untrue statement of a material fact or fraudulent statement to the FDA or any other Governmental Body, which administers Health Care Laws, failed to disclose a material fact required to be disclosed to the FDA or any other Governmental Body, which administers Health Care Laws, or committed an act, made a statement, or failed to make a statement that, at the time such disclosure was made, would reasonably be expected to provide a basis for the FDA or any other such Governmental Body to invoke its policy respecting "Fraud, Untrue Statements of Material Facts, Bribery, and Illegal Gratuities" Final Policy set forth in 56 Fed. Reg. 46191 (September 10, 1991) and any amendments thereto or any similar policy.

(d) All manufacturing operations relating to the Parent Products conducted by or on behalf of Parent Companies have been and are being conducted in compliance in all material respects with applicable provisions of Current Good Manufacturing Practice requirements as set forth in 21 U.S.C. § 351(a)(2)(B), 21 C.F.R. Parts 210 and 211, and applicable final guidance documents, as amended from time to time. As of the date of this Agreement, no Parent Product has been voluntarily recalled, suspended, or discontinued by the AcelRx Companies at the request of the FDA or any other applicable Governmental Body. As of the date of this Agreement, no AcelRx Company has received any notice from the FDA or any other Governmental Body that it has commenced, or, to the knowledge of Parent, threatened to initiate, any action to withdraw approval, place sales or marketing restrictions on or request the recall of any Parent Product, or that it has commenced or threatened to initiate any action to enjoin or place restrictions on the production of any Parent Product, except as would not be material to the AcelRx Companies, taken as a whole. All nonclinical studies and clinical trials relating to the Parent Products conducted by or on behalf of the AcelRx Companies have been, or are being, conducted in compliance in all material respects with the requirements of the FDA's Good Laboratory Practice and Good Clinical Practice requirements, including regulations under 21 C.F.R. Parts 50, 54, 56, 58, 312 and applicable guidance documents, as amended from time to time, the Animal Welfare Act, and all applicable similar Legal Requirements in other jurisdictions, and all Legal Requirements relating to protection of human subjects.

(e) The AcelRx Companies have promoted the Parent Products in compliance in all material respects with all applicable Health Care Laws and other Legal Requirements. As of the date of this Agreement,

the AcelRx Companies have not received and, to the Parent's knowledge, do not have pending or in effect any notice, civil, criminal or administrative action, suit, demand, claim, complaint, hearing, investigation, demand letter, warning letter, untitled letter, proceeding or request for information from the FDA or any Governmental Body concerning material noncompliance with Health Care Laws and other Legal Requirements with regard to promotion of Parent Products.

(f) No AcelRx Company, nor, to Parent's knowledge, its officers, employees, agents or contractors, have been debarred or have been convicted of any crime or engaged in any conduct that resulted in debarment under 21 U.S.C. § 335a or disqualification as a clinical investigator under 21 C.F.R. § 312.70 or any similar Health Care Laws, and no AcelRx Companies or to the knowledge of the Parent, any of its officers, employees, agents or contractors, has engaged in any conduct that would reasonably be expected to result in debarment or disqualification as an investigator. No AcelRx Company, nor, to Parent's knowledge, its officers, employees, agents or contractors, has been excluded or convicted of any crime for which exclusion from participating in the Federal health care programs under Section 1128 of the Social Security Act of 1935, as amended, or any similar Health Care Law, could result.

3.11 Liabilities. None of the AcelRx Companies has any material accrued, contingent or other liabilities of the type required by GAAP to be disclosed, accrued or reserved in the liabilities column of the consolidated balance sheet of the AcelRx Companies, except for: (a) liabilities identified as such, or specifically reserved against, in the Parent Unaudited Balance Sheet; (b) liabilities that have been incurred by the AcelRx Companies since the date of the Parent Unaudited Balance Sheet in the ordinary course of business consistent in all material respects with past practice; (c) liabilities for performance of obligations of the Tetraphase Companies pursuant to the express terms of Contracts filed with the Parent SEC Documents prior to the date of this Agreement (or not required by this Agreement to be Made Available) and not arising under or resulting from any breach or nonperformance of such Contract; (d) liabilities under this Agreement or incurred in connection with the Contemplated Transactions; and (e) liabilities described in Part 3.11 of the Parent Disclosure Schedule.

3.12 Tax Matters. Parent and each of its Subsidiaries have filed all Tax Returns which have been required to be filed, and all amounts shown on such Tax Returns to be due and owing (and all other Taxes due and owing whether or not shown on any Tax Return) have been fully paid, except where the failure to so file or pay would not have a Parent Material Adverse Effect. As of the date of this Agreement, except as otherwise disclosed in Parent SEC Documents, no outstanding deficiencies for income or other Taxes with respect to Parent and its Subsidiaries have been claimed, processed or assessed by any Governmental Body, in each case which has had, individually or in the aggregate, a Parent Material Adverse Effect.

3.13 Non-Contravention; Consents. Assuming compliance with the applicable provisions of the DGCL, the rules and regulations of the SEC and the listing requirements of the Nasdaq Global Market, except (i) as set forth in Part 3.12 of the Parent Disclosure Schedule, or (ii) in the case of clauses (b) through (e) as would not be material to the AcelRx Companies as a whole, neither (1) the execution, delivery or performance by the Parent and Merger Sub of this Agreement and the CVR Agreement, nor (2) the consummation by Parent and Merger Sub of the Merger or any of the other Contemplated Transactions, would reasonably be expected to, directly or indirectly (with or without notice or lapse of time):

(a) contravene, conflict with or result in a violation of any of the provisions of the certificate of incorporation, bylaws or other charter or organizational documents of any of the AcelRx Companies;

(b) contravene, conflict with or result in a violation of any Legal Requirement or any Order to which any of the AcelRx Companies, or any of the assets owned or used by any of the AcelRx Companies, is subject;

(c) contravene, conflict with or result in a violation of any of the terms or requirements of, or give any Governmental Body the right to revoke, withdraw, suspend, cancel, terminate or modify, any Governmental Authorization that is held by any of the AcelRx Companies;

(d) contravene, conflict with or result in a violation or breach of, or result in a default under, any provision of any Contract to which and AcelRx Company is a party and that is material to the AcelRx Companies, taken as a whole, or give any Person the right to: (i) declare a default or exercise any remedy under any such Parent Contract; (ii) accelerate the maturity or performance of any such Parent Contract; or (iii) cancel, terminate or modify any right, benefit, obligation or other term of such Parent Contract; or

(e) result in the imposition or creation of any Encumbrance upon or with respect to any asset owned or used by any of the AcelRx Companies (except for Parent Permitted Encumbrances).

Except as may be required by the Exchange Act, the DGCL, the listing requirements of the Nasdaq Global Market (as they relate to the Proxy Statement/Prospectus and the Form S-4 Registration Statement) and the Oxford Loan Agreement, none of the AcelRx Companies was, is or will be required to make any filing with or give any notice to, or to obtain any Consent from, any Person in connection with: (x) the execution, delivery or performance by the Parent and Merger Sub of this Agreement; or (y) the consummation by the Parent and Merger Sub of the Merger or any of the other Contemplated Transactions, except where the failure to make any such filing or give any such notice or to obtain any such Consent would not be material to the AcelRx Companies, taken as a whole.

3.14 Certain Business Practices. None of the AcelRx Companies, and (to the knowledge of the Parent) no Representative of any of the AcelRx Companies with respect to any matter relating to any of the AcelRx Companies, have: (a) used any funds for unlawful contributions, gifts, entertainment or other unlawful expenses relating to political activity; (b) made any unlawful payment to foreign or domestic government officials or employees or to foreign or domestic political parties or campaigns or violated any provision of the Foreign Corrupt Practices Act of 1977, as amended; or (c) made any other material unlawful payment.

3.15 Financial Advisor. Except as set forth on Part 3.14 of the Parent Disclosure Schedule, no broker, finder or investment banker is entitled to any brokerage, finder's or other fee or commission in connection with the Merger or any of the other Contemplated Transactions based upon arrangements made by or on behalf of Parent.

3.16 Disclosure. None of the information to be supplied by or on behalf of Parent in writing for inclusion or incorporation by reference in the Form S-4 Registration Statement will, at the time the Form S-4 Registration Statement is filed with the SEC or at the time it, or any amendment or supplement thereto, becomes effective under the Securities Act, contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they are made, not misleading. None of the information supplied or to be supplied by or on behalf of Parent in writing for inclusion or incorporation by reference in the Proxy Statement/Prospectus will, at the time the Proxy Statement/Prospectus is mailed to the stockholders of the Company or at the time of the Company Stockholders' Meeting (or any adjournment or postponement thereof), contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they are made, not misleading.

3.17 Valid Issuance. The Parent Common Stock to be issued in the Merger, including the Parent Common Stock to be issued upon the exercise of assumed and converted Company Warrants, has been duly authorized and will, when issued in accordance with the provisions of this Agreement, be validly issued, fully paid and nonassessable and will not be subject to any restriction on resale under the Securities Act, other than restrictions imposed by Rules 144 and 145 under the Securities Act.

3.18 Acknowledgement by Parent. Neither Parent nor Merger Sub is relying and neither Parent nor Merger Sub has relied on any representations or warranties whatsoever regarding the subject matter of this Agreement, express or implied, except for the representations and warranties in Section 2. Such representations and warranties by the Company constitute the sole and exclusive representations and warranties of the Company

in connection with the Contemplated Transactions and each of Parent and Merger Sub understands, acknowledges and agrees that all other representations and warranties of any kind or nature whether express, implied or statutory are specifically disclaimed by the Company.

3.19 Merger Sub. Merger Sub was formed solely for the purpose of engaging in the Contemplated Transactions and has not engaged in any business activities or conducted any operations other than in connection with the Contemplated Transactions.

3.20 Transaction with Affiliates. Except as set forth in the Parent SEC Documents filed prior to the date of this Agreement, during the period commencing on the date of the Parent's last proxy statement filed with the SEC through the date of this Agreement, no event has occurred that would be required to be reported by the Parent pursuant to Item 404(a) of Regulation S-K promulgated by the SEC.

SECTION 4. CERTAIN COVENANTS OF THE PARTIES REGARDING OPERATIONS DURING THE PRE-CLOSING PERIOD

4.1 Access and Investigation. During the period commencing on the date of this Agreement and ending as of the earlier of the termination of this Agreement in accordance with Section 8 or the Effective Time (the "**Pre-Closing Period**"), subject to applicable Legal Requirements (including attorney-client privilege and work product doctrine) and the terms of any confidentiality restrictions under Contracts of a party as of the date hereof, upon reasonable notice the Company and Parent shall each, and shall cause each of their respective Subsidiaries to: (a) provide the Representatives of the other party with reasonable access during normal business hours to its Representatives and assets and to all existing books, records, Tax Returns, work papers and other documents and information relating to such Entity or any of its Subsidiaries, in each case as reasonably requested by Parent or the Company, as the case may be; and (b) provide the Representatives of the other party with such copies of the existing books, records, Tax Returns, work papers and other documents and information relating to such Entity and its Subsidiaries as reasonably requested by Parent or the Company, as the case may be. During the Pre-Closing Period, the Company and the Parent shall, and shall cause their respective Representatives to, cause their senior officers to meet, upon reasonable notice and during normal business hours, with their respective chief financial officers and other officers responsible for the Company's and Parent's financial statements and the internal controls, respectively, to discuss such matters as the Company or Parent may deem necessary or appropriate. Without limiting the generality of any of the foregoing, during the Pre-Closing Period (but subject to applicable Legal Requirements, and except in the case of any document relating to any Acquisition Proposal, Superior Offer or Triggering Event), the Company and Parent shall each promptly provide the other with copies of any notice, report or other document filed with or sent to any Governmental Body on behalf of any of the Tetraphase Companies or Parent or Merger Sub in connection with the Merger or any of the other Contemplated Transactions a reasonable time in advance of the filing or sending of such document in order to permit a review thereof. Nothing herein shall require the Company or Parent to disclose any information if such disclosure would jeopardize any attorney-client privilege or contravene any applicable Legal Requirement or binding agreement entered into prior to the date of this Agreement; provided that the parties shall cooperate to disclose such information without jeopardizing such privilege or contravening such Legal Requirements or binding agreements. All information exchanged pursuant to this Section 4.1 shall be subject to the Confidentiality Agreement.

4.2 Operation of the Business of the Tetraphase Companies.

(a) During the Pre-Closing Period, except as set forth in Part 4.2 of the Company Disclosure Schedule, as otherwise contemplated by this Agreement, as required by Legal Requirements or by any Company Contract in effect and Made Available to Parent or any other Company Contract not required by this Agreement to be made available to Parent as of the date of this Agreement or to the extent that Parent shall otherwise consent in writing (which consent shall not be unreasonably withheld, conditioned or delayed): (i) the Company shall use commercially reasonable efforts to cause each of the Tetraphase Companies to conduct its business and

operations in the ordinary course and in accordance in all material respects with past practice and to pay its debt, payables and Taxes when due (including Taxes due in connection with the vesting or settlement of Company RSUs or Company PRSUs pursuant to Section 5.3(a)); and (ii) the Company shall use commercially reasonable efforts to attempt to ensure that each of the Tetraphase Companies preserves intact the material components of its current business organization and maintains its relations and goodwill with all material suppliers, material customers, material licensors and Governmental Bodies.

(b) During the Pre-Closing Period, except as set forth in Part 4.2 of the Company Disclosure Schedule, as otherwise contemplated by this Agreement, or as required by Legal Requirements, the Company shall not (without the prior written consent of Parent, which consent shall not be unreasonably withheld, conditioned or delayed (it being agreed that, in the case of a consent requested under Section 4.2(b)(viii), Parent shall be deemed to have given such consent if it does not indicate its withholding of consent in writing to the Company by the third Business Day after the Company so requests such consent by e-mail to the individuals listed on Part 4.2(b) of the Parent Disclosure Schedule)), and the Company shall ensure that each of the other Tetraphase Companies does not (except as otherwise contemplated by this Agreement, as required by Legal Requirements or with the prior written consent of Parent, which consent shall not be unreasonably withheld, conditioned or delayed):

(i) declare, accrue, set aside or pay any dividend or make any other distribution in respect of any shares of capital stock, or repurchase, redeem or otherwise reacquire any shares of capital stock or other securities, other than: (A) dividends or distributions between or among any of the Tetraphase Companies to the extent consistent with past practice; (B) pursuant to the Company's right to repurchase restricted stock held by an employee of the Company upon termination of such employee's employment; or (C) in connection with the withholding of shares of Company Common Stock to satisfy Tax obligations with respect to the exercise of Company Options, vesting of Company RSUs or settlement of Company PRSUs;

(ii) sell, issue, grant or authorize the sale, issuance or grant of: (A) any capital stock or other security; (B) any option, call, warrant or right to acquire any capital stock or other security; or (C) any instrument convertible into or exchangeable for any capital stock or other security (except that the Company may issue shares of Company Common Stock upon the valid exercise of Company Options or Company Warrants outstanding as of the date of this Agreement);

(iii) amend or waive any of its rights under, or accelerate the vesting under, any provision of any of the Company Option Plans, any provision of any agreement evidencing any outstanding stock option, any restricted stock unit grant, or performance-based vesting restricted stock unit grant, or otherwise modify any of the terms of any outstanding option, restricted stock unit, warrant or other security or any related Contract;

(iv) subject to the provisions of Section 4.4(g) amend, terminate or grant any waiver under any standstill agreements;

(v) amend or permit the adoption of any amendment to its certificate of incorporation or bylaws or other charter or organizational documents;

(vi) (A) acquire any equity interest or other interest in any other Entity; (B) form any Subsidiary; (C) effect or become a party to, or adopt a plan of complete or partial liquidation, dissolution, business combination, amalgamation, merger, consolidation, employee restructuring, recapitalization, other reorganization of the Tetraphase Companies, or any share exchange, reclassification of shares, stock split, reverse stock split, division or subdivision of shares, consolidation of shares or similar transaction;

(vii) make any capital expenditure (except that the Tetraphase Companies may make any capital expenditure that: (A) is provided for in the Company's budget Made Available to Parent prior to the date of this Agreement; or (B) when added to all other capital expenditures made on behalf of all of the Tetraphase Companies since the date of this Agreement but not provided for in the Company's budget delivered or Made Available to Parent prior to the date of this Agreement, does not exceed $50,000 in the aggregate);

(viii) (A) enter into or become bound by, or permit any of the assets owned or used by it to become bound by, any Company Material Contract or any other Contract that would be a Company Material Contract had it been in effect on the data hereof; or (B) amend, terminate, or waive any material right or remedy under, any Company Material Contract, other than termination thereof upon the expiration of any such Contract in accordance with its terms or if permitted by the terms of such Company Material Contract, upon a material breach thereof by the counterparty thereto;

(ix) acquire, lease or license any right or other asset from any other Person or sell or otherwise dispose of, or lease or license, any right or other asset to any other Person (except in each case for assets: (A) acquired, leased, licensed or disposed of by the Company in the ordinary course of business consistent in all material respects with past practice; or (B) that are immaterial to the business of the Tetraphase Companies, taken as a whole);

(x) make any pledge of any of its material assets or permit any of its material assets to become subject to any Encumbrances, except for Company Permitted Encumbrances and Encumbrances that do not materially detract from the value of such assets or that do not materially impair the operations of any of the Tetraphase Companies (taken as a whole);

(xi) lend money to any Person (other than intercompany indebtedness and routine travel and business expense advances made to directors or employees, in each case in the ordinary course of business), or, except in the ordinary course of business consistent in all material respects with past practice, incur or guarantee any indebtedness;

(xii) establish, adopt, enter into any new, amend, terminate or take any action to accelerate rights or payments under, or exercise discretion with respect to performance under, any Company Employee Plan or Company Employee Agreement (except entering into customary releases with departing employees in accordance with the personnel plan agreed by the parties prior to the date of this Agreement), pay any bonus or make any profit-sharing or similar payment to, or increase the amount of the wages, salary, commissions, fringe benefits or other compensation (including equity-based compensation, whether payable in stock, cash or other property), any other similar payment (including severance, change of control or termination payments) or remuneration payable to, any of its directors or any of its officers or other employees (except that the Company: (A) may amend the Company Employee Plans to the extent required by applicable Legal Requirements or Sections 5.3 or 5.4 hereof; and (B) may make payments and provide such benefits in accordance with Company Employee Agreements and Company Employee Plans existing on the date of this Agreement);

(xiii) hire any employee;

(xiv) other than as required by concurrent changes in GAAP or SEC rules and regulations, change any of its methods of accounting or accounting practices in any respect;

(xv) make, change or revoke any material election in respect of Taxes, amend any material Tax Return, adopt or change any material accounting method in respect of Taxes, settle or compromise any material governmental proceeding with respect to Taxes, surrender any right or claim of a material refund of Tax, request any Tax ruling, enter into any closing agreement within the meaning of Section 7121 of the Code (or any similar provision of other applicable Legal Requirement), enter into any Tax sharing or similar Contract or arrangement, consent to any extension or waiver of the limitation period applicable to any Tax claim or assessment (other than in the ordinary course of an audit);

(xvi) commence any Legal Proceeding, except with respect to: (A) routine matters in the ordinary course of business consistent in all material respects with past practice involving only claims for monetary damages of not more than $200,000 in the aggregate; (B) in such cases where the Company reasonably determines in good faith that the failure to commence suit could result in a material impairment of a valuable

aspect of its business (*provided* that the Company consults with Parent and considers the views and comments of Parent with respect to such Legal Proceedings prior to commencement thereof); or (C) in connection with the Contemplated Transactions or a breach of this Agreement or the other agreements listed in the definition of "Contemplated Transactions;"

(xvii) settle any material Legal Proceeding, other than pursuant to a settlement: (A) that results solely in monetary obligation involving payment by the Tetraphase Companies of the amount specifically reserved in accordance with GAAP with respect to such Legal Proceedings on the Company Audited Balance Sheet; (B) that results solely in monetary obligation involving only the payment of monies by the Tetraphase Companies of not more than $50,000 in the aggregate; or (C) pursuant to or otherwise in accordance with Section 5.13;

(xviii) enter into any Contract covering any Company Employee, or make any payment to any Company Employee, that, considered individually or considered collectively with any other such Contracts or payments, will, or would reasonably be expected to, be characterized as a "parachute payment" within the meaning of Section 280G(b)(2) of the Code in connection with the Contemplated Transactions;

(xix) recognize, or enter into, any collective bargaining agreement or any other Contract or other agreement with any labor organization, except as otherwise required by applicable Legal Requirements and after advance notice to Parent; or

(xx) agree or commit to take any of the actions described in clauses "(i)" through "(xix)" of this Section 4.2(b).

(c) During the Pre-Closing Period, the Company shall promptly notify Parent in writing upon obtaining Company knowledge of any event, condition, fact or circumstance that would reasonably be expected to make the satisfaction of any of the conditions set forth in Section 6 prior to the End Date impossible or that has had a Company Material Adverse Effect. Without limiting the generality of the foregoing, the Company shall promptly advise Parent in writing upon obtaining Company knowledge of any claim asserted or Legal Proceeding commenced, or, to the Company's knowledge, either: (A) with respect to a Governmental Body, overtly threatened; or (B) with respect to any other Person, threatened in writing, in each case against, relating to or involving any of the Contemplated Transactions. No notification given to Parent pursuant to this Section 4.2(c) shall limit or otherwise affect any of the representations, warranties, covenants or obligations of the Company contained in this Agreement.

(d) During the Pre-Closing Period, upon request by Parent, the Company shall provide an unaudited report setting forth the Company's estimate of the Company Net Cash expected at Closing which shall be delivered within 30 days after the end of each such full calendar month during the Pre-Closing Period, or such longer periods as the parties may agree to in writing.

4.3 Operation of the Business of the Parent Companies.

(a) During the Pre-Closing Period, except (x) a Permitted Acquisition or Permitted Financing, (y) as otherwise contemplated by this Agreement, or (z) as required by Legal Requirements or by Contracts in effect as of the date of this Agreement and Made Available to the Company or to the extent that the Company shall otherwise consent in writing (which consent shall not be unreasonably withheld, conditioned or delayed): (i) Parent shall use commercially reasonable efforts to cause each of the Parent Companies to conduct its business and operations in the ordinary course and consistent in all material respects with past practice; (ii) Parent shall use commercially reasonable efforts to attempt to ensure that each of the Parent Companies preserves intact the material components of its current business organization and maintains its relations and goodwill with all material suppliers, material customers, material licensors, and Governmental Bodies; and (iii) Parent shall promptly notify Company following its becoming aware of any claim asserted or Legal Proceeding commenced,

or, to Parent's knowledge, either: (A) with respect to a Governmental Body, threatened; or (B) with respect to any other Person, threatened in writing, in either case of clause "(A)" or "(B)" of this sentence, against, relating to, involving or otherwise affecting any of the Parent Companies and that relates to any of the Contemplated Transactions.

(b) Except as otherwise contemplated by this Agreement or as required by Legal Requirements or by Contracts in effect as of the date of this Agreement and Made Available to the Company, during the Pre-Closing Period, Parent shall not (without the prior written consent of Company, which consent shall not be unreasonably withheld, conditioned or delayed), and Parent shall ensure that each of the other AcelRx Companies does not (without the prior written consent of the Company, which consent shall not be unreasonably withheld, conditioned or delayed):

(i) declare, accrue, set aside or pay any dividend or make any other distribution in respect of any shares of capital stock, or repurchase, redeem or otherwise reacquire any shares of capital stock or other securities, other than: (A) dividends or distributions between or among any of the Parent Companies to the extent consistent with past practice; (B) pursuant to Parent's right to repurchase shares of Parent restricted stock held by an employee of Parent upon termination of such employee's employment; or (C) in connection with the withholding of shares of Parent Common Stock to satisfy Tax obligations with respect to the exercise of Parent Options or the vesting of Parent RSUs;

(ii) other than to the extent required to consummate a Permitted Acquisition or a Permitted Financing, amend or permit the adoption of any amendment to its certificate of incorporation or bylaws or other charter or organizational documents;

(iii) other than a Permitted Acquisition or a Permitted Financing: (A) except in the ordinary course of business consistent in all material respects with past practice acquire any equity interest or other interest in any other Entity; (B) effect or become a party to any merger, consolidation, share exchange, business combination, amalgamation, recapitalization, reclassification of shares, stock split, reverse stock split, division or subdivision of shares, consolidation of shares or similar transaction;

(iv) other than in the ordinary course of business consistent in all material respects with past practice or as required by concurrent changes in GAAP or SEC rules and regulations, change any of its methods of accounting or accounting practices in any respect; or

(v) agree or commit to take any of the actions described in clauses "(i)" through "(iv)" of this Section 4.3(b).

(c) During the Pre-Closing Period, Parent shall promptly notify the Company in writing upon obtaining Parent knowledge of any event, condition, fact or circumstance that would reasonably be expected to make the satisfaction of any of the conditions set forth in Section 7 prior to the End Date impossible or that has had a Parent Material Adverse Effect. Without limiting the generality of the foregoing, Parent shall promptly advise the Company in writing upon obtaining Parent knowledge of any claim asserted or Legal Proceeding commenced, or, to the Parent's knowledge, either: (A) with respect to a Governmental Body, overtly threatened; or (B) with respect to any other Person, threatened in writing, in each case against, relating to or involving any of the Contemplated Transactions. No notification given to the Company pursuant to this Section 4.3(c) shall limit or otherwise affect any of the representations, warranties, covenants or obligations of Parent contained in this Agreement.

4.4 No Solicitation.

(a) For the purposes of this Agreement, "**Acceptable Confidentiality Agreement**" means any customary confidentiality agreement that (i) contains provisions as to confidentiality that are materially no less

favorable to the Company than those contained in the Confidentiality Agreement and (ii) does not prohibit the Company from providing any information to Parent in accordance with this Section 4.4 or Section 5.2(b) or Section 5.2(c) or otherwise prohibit the Company from complying with its obligations under this Section 4.4 or Section 5.2(b) or Section 5.2(c).

(b) The Company shall (and shall cause the other Tetraphase Companies to) and shall direct their Representatives to immediately cease any solicitation, discussions or negotiations with any Persons that may be ongoing as of the date of this Agreement with respect to an Acquisition Proposal. Except as permitted by this Section 4.4 or Section 5.2, until the Specified Time the Company shall not, and shall cause each other Tetraphase Company and cause its and their Representatives not to, directly or indirectly, (i) solicit, initiate or knowingly facilitate or knowingly encourage any inquiries or the making of any proposal or offer that constitutes, or would reasonably be expected to lead to, an Acquisition Proposal, (ii) engage in, continue or otherwise participate in any discussions or negotiations regarding, or furnish to any other Person any non-public information in connection with an Acquisition Proposal or any proposal or offer that would reasonably be expected to lead to an Acquisition Proposal, or (iii) adopt any resolution for the purpose of exempting any Person (other than Parent and its Subsidiaries) from the restriction on "business combinations" or any similar provision contained in applicable Anti-Takeover Law or the Company's organizational or other governing documents.

(c) The Company shall, and shall cause the other Tetraphase Companies and direct its and their Representatives to, promptly (but in no event later than within five Business Days of the date of this Agreement), request the return from, or destruction by, all third parties of all non-public information previously furnished or made available to such parties by or on behalf of the Tetraphase Companies relating to any possible Acquisition Proposal within six months prior to the date of this Agreement (and the Company shall use commercially reasonable efforts to have such information returned or destroyed) and on the date of this Agreement terminate all physical and electronic data room access previously granted to any such party or its Representatives.

(d) Notwithstanding anything else in this Agreement to the contrary, if at any time on or after the date hereof and prior to the Specified Time, any Tetraphase Company or any of its Representatives receives a *bona fide* written Acquisition Proposal from any Person or group of Persons, which Acquisition Proposal was made or renewed on or after the date hereof (and has not been withdrawn) and did not result from any material breach of Section 5.2(b) or 5.2(c) or Section 4.4(b), if the Company Board determines in good faith, after consultation with its independent financial advisors and outside legal counsel, that such Acquisition Proposal constitutes or could reasonably be expected to lead to a Superior Offer and that failure to take such action could reasonably be expected to be inconsistent with the fiduciary duties of the Company Board to the Company's stockholders under applicable Legal Requirements, then the Company and its Representatives may (x) furnish, pursuant to (but only pursuant to) an Acceptable Confidentiality Agreement, information (including non-public information) to the Person or group of Persons who has made such Acquisition Proposal (*provided* that the Company shall provide to Parent (substantially concurrently with providing access to any such other Person) any such non-public information that is provided to any Person given such access which was not previously made available to Parent or its Representatives), and (y) engage in, continue (subject to Section 4.4(c)) or otherwise participate in discussions or negotiations (including the solicitation of revised Acquisition Proposals) (and waive such Person's noncompliance with provisions of any "standstill" agreement to the extent (but only to the extent) necessary to permit such discussions) with the Person or group of Persons making such Acquisition Proposal and its or their Representatives.

(e) The Company shall (i) promptly (and in any event within one Business Day) notify Parent orally and in writing of any Acquisition Proposal that is received by any Tetraphase Company or any of its Representatives, (ii) provide to Parent the identity of the Person making or submitting such Acquisition Proposal, a copy of any written Acquisition Proposal (and any other written material provided by such Person with respect to such Acquisition Proposal to the extent setting forth a material clarification to the material terms and conditions thereof) from such Person and a summary of the material terms and conditions of any such Acquisition Proposal that is presented orally, and (iii) keep Parent reasonably informed of any material

developments regarding any such Acquisition Proposal on a reasonably prompt basis, including by providing reasonably prompt (and in any event within one Business Day) notice of all material amendments or modifications thereto and a copy of any final definitive agreement in respect of such Acquisition Proposal the Company would be prepared to execute, subject to the terms and conditions of this Agreement. The Company agrees that it and its Subsidiaries will not enter into any confidentiality agreement with any Person subsequent to the date of this Agreement which prohibits the Company from providing any information to Parent in accordance with this Section 4.4.

(f) Nothing in this Section 4.4 or elsewhere in this Agreement shall prohibit the Company from (i) taking and disclosing to the stockholders of the Company a position contemplated by Rule 14e-2(a), Rule 14d-9 or Item 1012(a) of Regulation M-A promulgated under the Exchange Act, (ii) making any disclosure to the Company's stockholders if, in the good faith judgment of the Company Board, after consultation with outside counsel, failure to so disclose would be reasonably likely to be inconsistent with its fiduciary duties under applicable Legal Requirements or (iii) making any "stop, look and listen" communication pursuant to Rule 14d-9(f) promulgated under the Exchange Act; *provided* that (1) any such disclosure or position described in this paragraph (f) shall not be deemed to be a Company Adverse Change in Recommendation in and of itself and shall not in and of itself require the giving of any Determination Notice, and (2) this Section 4.4(f) shall not permit the Company Board to make a Company Adverse Change in Recommendation except to the extent expressly permitted by, and in accordance with, Section 5.2(b) and 5.2(c).

(g) The Company (other than as permitted under Section 4.4(d)) (i) agrees that it will not, and it shall ensure that none of the other Tetraphase Companies will, release or permit the release of any Person from, or amend, waive or permit the amendment or waiver of any provision of, any "standstill" or similar agreement or provision to which any of the Tetraphase Companies is or becomes a party or under which any of the Tetraphase Companies has or acquires any rights and (ii) will use its reasonable best efforts to enforce or cause to be enforced each such agreement or provision.

(h) The Company agrees that in the event that any Tetraphase Company or any Representative of any Tetraphase Company takes any action which, if taken by the Company, would constitute a breach of this Section 4.4, the Company shall be deemed to be in breach of this Section 4.4.

SECTION 5. ADDITIONAL COVENANTS OF THE PARTIES

5.1 Registration Statement; Proxy Statement/Prospectus.

(a) As promptly as practicable after the date of this Agreement (but in no event later than 10 Business Days following the date of this Agreement), Parent and the Company shall jointly prepare and Parent shall cause to be filed with the SEC the Form S-4 Registration Statement, in which the Proxy Statement/Prospectus will be included as a prospectus. Each of Parent and the Company shall notify the other party promptly of the receipt of any comments from the SEC or staff of the SEC, for amendments or supplements to the Form S-4 Registration Statement or the Proxy Statement/Prospectus or for additional information, and shall supply the other party with copies of all correspondence between such party or any of its Representatives, on the one hand, and the SEC or the staff of the SEC, on the other hand, with respect to the Form S-4 Registration Statement or the Proxy Statement/Prospectus. Each of Parent and the Company shall use commercially reasonable efforts: (i) to cause the Form S-4 Registration Statement and the Proxy Statement/Prospectus to comply with the applicable rules and regulations promulgated by the SEC; (ii) to promptly notify the other of, cooperate with each other with respect to, provide the other party (and its counsel) with a reasonable opportunity to review and comment on, and respond promptly to, in each case, any comments of the SEC or its staff with respect to the Form S-4 Registration Statement and the Proxy Statement/Prospectus; (iii) to provide the other party (and its counsel) with a reasonable opportunity to review and comment on the Form S-4 Registration Statement and the Proxy Statement/Prospectus, and any amendment or supplement thereto, prior to filing of any such document with the SEC; (iv) to have the Form S-4 Registration Statement become effective under the

Securities Act as promptly as practicable after it is filed with the SEC; and (v) to keep the Form S-4 Registration Statement effective through the Closing in order to permit the consummation of the Merger. The Company shall use commercially reasonable efforts to cause the Proxy Statement/Prospectus to be mailed to the Company's stockholders, as promptly as practicable after the Form S-4 Registration Statement becomes effective under the Securities Act. Each of Parent and the Company shall promptly furnish the other party all information concerning such party, its Subsidiaries and stockholders that may be required or reasonably requested in connection with any action contemplated by this Section 5.1. Each party will use commercially reasonable efforts to cause to be delivered to Parent a consent letter of such party's independent accounting firm, before the date on which the Form S-4 Registration Statement becomes effective (and reasonably satisfactory in form and substance to the other party), that is customary in scope and substance for consent letters delivered by independent public accountants in connection with registration statements similar to the Form S-4 Registration Statement. If either Parent or the Company becomes aware of any information that should be disclosed in an amendment or supplement to the Form S-4 Registration Statement or the Proxy Statement/Prospectus, then such party shall: (i) promptly inform the other party thereof; (ii) provide the other party (and its counsel) with a reasonable opportunity to review and comment on any amendment or supplement to the Form S-4 Registration Statement or the Proxy Statement/Prospectus prior to it being filed with the SEC; (iii) provide the other party with a copy of such amendment or supplement promptly after it is filed with the SEC; and (iv) cooperate, if appropriate, in mailing such amendment or supplement to the stockholders of the Company.

(b) Prior to the Effective Time, Parent shall use commercially reasonable efforts to obtain all regulatory approvals needed to ensure that the Parent Common Stock to be issued in the Merger will (to the extent required) be registered or qualified or exempt from registration or qualification under the securities law of every state of the United States in which any registered holder of Company Common Stock has an address of record on the record date for determining the stockholders entitled to notice of and to vote at the Company Stockholders' Meeting; *provided*, that Parent shall not be required: (i) to qualify to do business as a foreign corporation in any jurisdiction in which it is not now qualified; or (ii) to file a general consent to service of process in any jurisdiction.

5.2 Company Stockholders' Meeting.

(a) As promptly as reasonably practicable after the Form S-4 Registration Statement is declared effective, the Company: (i) shall take all action necessary under all applicable Legal Requirements to establish a record date for, duly call, give notice of and, in accordance with this Section 5.2, convene a meeting of the holders of Company Common Stock (the "**Company Stockholders' Meeting**") to vote on a proposal to adopt this Agreement; and (ii) shall submit such proposal to such holders at the Company Stockholders' Meeting and shall not submit any other proposal to such holders in connection with the Company Stockholders' Meeting without the prior written consent of Parent. The Company in consultation with Parent shall set a record date for persons entitled to notice of, and to vote at, the Company Stockholders' Meeting. Subject to the rights to postpone or adjourn the Company Stockholders' Meeting set forth below, the Company Stockholders' Meeting shall be held (on a date selected by the Company in consultation with Parent) as promptly as reasonably practicable after the Form S-4 Registration Statement is declared effective under the Securities Act, and in any event shall be initially scheduled to be held no later than 45 days thereafter. The Company shall use commercially reasonable efforts to ensure that all proxies solicited by the Tetraphase Companies and their Representatives in connection with the Company Stockholders' Meeting are solicited in compliance with all applicable Legal Requirements. Notwithstanding anything to the contrary contained in this Agreement, if either Parent or the Company reasonably believes it is necessary to ensure that (A) the Company will receive proxies sufficient to obtain the required approval of the holders of Company Common Stock at the Company Stockholders' Meeting for the adoption of this Agreement, whether or not a quorum would be present at the Company Stockholders' Meeting, or (B) the Company will have sufficient shares of Company Common Stock represented (whether in person or by proxy) to constitute a quorum necessary to conduct the business of the Company Stockholders' Meeting, the Company may, or, at the request of Parent, shall, postpone or adjourn the Company Stockholders' Meeting, on one or multiple occasions, as long as the date of the Company

Stockholders' Meeting is not postponed or adjourned more than an aggregate of 45 calendar days in connection with such postponement or adjournment. The Company agrees that, unless this Agreement shall have been terminated in accordance with Section 8, its obligation to hold the Company Stockholders' Meeting pursuant to this Section 5.2(a) shall not be affected by the commencement, public proposal, public disclosure or communication to any Tetraphase Company of any Acquisition Proposal or by any Company Adverse Change in Recommendation.

(b) Subject to Section 5.2(c) and Section 8.1(f): (i) the Proxy Statement/Prospectus shall include a statement to the effect that the Company Board has determined that this Agreement and the Merger are advisable and fair to, and in the best interests of, the Company and its stockholders, and recommends that the Company's stockholders vote to adopt this Agreement at the Company Stockholders' Meeting (the recommendation of the Company Board that the Company's stockholders vote to adopt this Agreement being referred to as the "**Company Board Recommendation**"); (ii) until the Specified Time, neither the Company Board nor any committee thereof shall (1) (A) withhold, withdraw, qualify or modify in a manner adverse to Parent, or resolve to or publicly propose to withhold, withdraw, qualify, or modify in a manner adverse to Parent, the Company Board Recommendation, (B) remove the Company Board Recommendation from or fail to include the Company Board Recommendation in the Proxy Statement/Prospectus or (C) approve, recommend or declare advisable, or publicly propose to approve, recommend or declare advisable, any Acquisition Proposal (any action described in this clause (1) being referred to as a "**Company Adverse Change in Recommendation**") or (2) adopt, approve, recommend, submit to stockholders or declare advisable, or propose to adopt, approve, recommend, submit to stockholders or declare advisable, or allow any Tetraphase Company to execute or enter into any letter of intent (whether or not binding), term sheet, merger agreement, acquisition agreement, option agreement, agreement in principle or similar agreement providing for any Acquisition Proposal, or requiring the Company to abandon, terminate, delay or fail to consummate the Contemplated Transactions (other than an Acceptable Confidentiality Agreement) (any such Contract, an "**Alternative Acquisition Agreement**").

(c) Notwithstanding anything to the contrary contained in this Agreement, at any time prior to the adoption of this Agreement by the Required Company Stockholder Vote:

(i) if the Company has received a *bona fide* written Acquisition Proposal (which Acquisition Proposal did not arise out of a material breach of Section 4.4(b), (c), (d) or (e)) from any Person that has not been withdrawn and after consultation with outside legal counsel and independent financial advisors, the Company Board shall have determined in good faith that such Acquisition Proposal is a Superior Offer, (x) the Company Board may make a Company Adverse Change in Recommendation, and/or (y) the Company may terminate this Agreement to substantially concurrently therewith enter into a Specified Agreement with respect to such Superior Offer and pay the Termination Fee pursuant to Section 8.3, in each case if and only if: (A) the Company Board determines in good faith, after consultation with the Company's outside legal counsel and independent financial advisors, that the failure to take such action could reasonably be expected to be inconsistent with the fiduciary duties of the Company Board to the Company's stockholders under applicable Legal Requirements; (B) the Company shall have given Parent prior written notice of its intention to consider making a Company Adverse Change in Recommendation or terminate this Agreement pursuant to Section 8.1(f) at least four Business Days prior to making any such Company Adverse Change in Recommendation or termination (a "**Determination Notice**") (which notice shall not in and of itself constitute a Company Adverse Change in Recommendation or a termination of this Agreement); and (C) (1) the Company shall have made available to Parent the identity of the offeror, a summary of the material terms and conditions of the Acquisition Proposal and copies of all written materials and other documents required by Section 4.4(e), (2) the Company shall have given Parent the four Business Days after the Determination Notice to propose revisions to the terms of this Agreement or make other proposals and shall have made available its Representatives to negotiate with Parent with respect to such proposed revisions or other proposal, if any (*provided*, that Parent may revise such offer or proposal in response to any revisions to a Superior Offer), (3) after considering any such revised proposal from Parent, including whether such proposal was a written, binding and irrevocable offer, and the results of any such negotiations and giving effect to the proposals made by Parent, if any, after consultation with

outside legal counsel and its independent financial advisors, the Company Board shall have determined in good faith that such Acquisition Proposal is a Superior Offer and that the failure to make the Company Adverse Change in Recommendation and/or terminate this Agreement pursuant to Section 8.1(f) could reasonably be expected to be inconsistent with the fiduciary duties of the Company Board to the Company's stockholders under applicable Legal Requirements and (4) if the Company intends to terminate this Agreement to enter into a Specified Agreement, the Company shall have complied with Section 8.1(f). The provisions of this Section 5.2(c)(i) shall also apply to any material amendment (which shall include any revision to the amount, form or mix of consideration the Company's stockholder would receive) to any Acquisition Proposal and require a new Determination Notice, except that, in the case of material amendments to any Acquisition Proposal, the references to four Business Days shall be deemed to be two Business Days; or

(ii) other than in connection with a Superior Offer (which shall be subject to Section 5.2(c)(i)), the Company Board may make a Company Adverse Change in Recommendation in response to a Change in Circumstance, if and only if: (A) the Company Board determines in good faith, after consultation with the Company's outside legal counsel, that the failure to take such action could reasonably be expected to be inconsistent with the fiduciary duties of the Company Board to the Company's stockholders under applicable Legal Requirements; (B) the Company shall have given Parent a Determination Notice at least four Business Days prior to making any such Company Adverse Change in Recommendation; and (C) (1) the Company shall have specified the Change in Circumstance in reasonable detail including a summary of the material facts and circumstances involved in such Change in Circumstance, (2) the Company shall have given Parent the four Business Days after the Determination Notice to propose revisions to the terms of this Agreement or make other proposals and shall have made available its Representatives to negotiate with Parent with respect to such proposed revisions or other proposal, if any, such that the applicable Change in Circumstance would no longer necessitate a Company Adverse Change in Recommendation under this Section 5.2(c), and (3) after considering any such proposal, including whether such proposal was a written, binding and irrevocable offer, and the results of such negotiations and giving effect to the proposals made by Parent, if any, after consultation with outside legal counsel and its independent financial advisors, the Company Board shall have determined in good faith that the failure to make the Company Adverse Change in Recommendation could reasonably be expected to be inconsistent with the fiduciary duties of the Company Board to the Company's stockholders under applicable Legal Requirements. The provisions of this Section 5.2(c)(ii) shall also apply to any material change to the facts and circumstances relating to such Change in Circumstance and require a new Determination Notice, except that, in the case of material changes to any facts and circumstances relating to such Change in Circumstance, the references to four Business Days shall be deemed to be two Business Days.

(d) The Company shall ensure that any withdrawal or modification of the Company Board Recommendation does not have the effect of causing any corporate takeover law of the State of Delaware or any other state to be applicable to this Agreement or any of the Company Stockholder Voting Agreements, the Merger or any of the other Contemplated Transactions.

5.3 Warrants, Stock Options, RSUs, PRSUs and Company ESPP.

(a) Treatment of Company Stock Options, RSUs and PRSUs.

(i) All Company Options, whether vested or unvested, will terminate at the Effective Time and will be of no further force and effect.

(ii) Effective as of 5 Business Days prior to the Closing Date, the vesting of each unvested Company RSU and Company PRSU shall vest in full, and pursuant to the terms of the applicable Company RSU and Company PRSU award agreement, a portion of the shares of Company Common Stock issued upon the vesting of such Company RSUs or Company PRSUs shall be sold automatically and the proceeds from such sale shall be remitted to the Company for further remittance to the applicable Governmental Body, and all such shares of Company Common Stock issued in connection with such Company RSU or Company PRSUs shall be treated

as outstanding shares of Company Common Stock at the Effective Time and shall be converted into the right to receive the Merger Consideration pursuant to the Merger.

(b) At the Effective Time, Parent shall (if Parent determines that it desires to do so) assume any or all of the Company Option Plans.

(c) Prior to the Effective Time, the Company shall satisfy all of its notification requirements under the terms of each outstanding and unexercised Company Warrant. The Company Warrants shall each be treated in accordance with their terms, or as modified in any applicable Company Stockholder Voting Agreement or any exchange agreement entered into with an applicable holder of Company Warrants on the date hereof. All shares of Parent Common Stock issued to holders of Company Warrants pursuant to an exercise of Company Warrants shall be issued as Book Entry Shares.

(d) Prior to the Effective Time, the Company shall take all action to terminate the Company ESPP (including the six month offering period under the Company ESPP that commenced on November 15, 2019) in accordance with Section 18 of the Company ESPP with any payroll deductions accumulated through the date of such Company ESPP termination being returned to the plan participants and with no shares of Company Common Stock being purchased under the Company ESPP after the date hereof.

5.4 Employee Benefits.

(a) Parent agrees that, subject to any commercially reasonable transition period and subject to any applicable plan provisions, contractual requirements or Legal Requirements, all employees of the Tetraphase Companies who continue employment with Parent, the Surviving Corporation or any Subsidiary of the Surviving Corporation after the Effective Time ("**Continuing Employees**") shall be eligible to participate in Parent's health, vacation, 401(k) plans, and other employee benefit plans and perquisites to substantially the same extent as similarly situated employees of Parent; *provided* that until the date that is six months following the Closing Date, Parent shall, and shall cause its Subsidiaries (including the Surviving Corporation) to, provide each Continuing Employee with, as applicable, (i) a rate of salary, bonus opportunity and commission opportunity payable or otherwise provided to such Continuing Employee that is substantially comparable in the aggregate to that provided to such Continuing Employee immediately prior to the Effective Time, and (ii) severance and similar benefits that are no less favorable than the severance and similar benefits provided to the applicable employees of the Company as of the date hereof, as set forth on Section 5.4(a) of the Company Disclosure Schedule.

(b) Nothing in this Section 5.4 or elsewhere in this Agreement shall be construed to create a right in any Company Associate to employment with Parent, the Surviving Corporation or any other Subsidiary of Parent. Except for Indemnified Persons to the extent of their respective rights pursuant to Section 5.5, no Company Associate, and no Continuing Employee, shall be deemed to be a third party beneficiary of this Agreement.

(c) If requested by Parent at least five days prior to the Closing, the Company shall take (or cause to be taken) all actions necessary or appropriate to terminate, effective no later than the day prior to the date on which the Merger becomes effective, any Company Employee Plan that contains a cash or deferred arrangement intended to qualify under Section 401(k) of the Code (a "**Company 401(k) Plan**"). If the Company is required to terminate any Company 401(k) Plan, then the Company shall provide to Parent prior to the Closing Date written evidence of the adoption by the Company Board of resolutions authorizing the termination of such Company 401(k) Plan (the form and substance of which resolutions shall be subject to the prior review and approval of Parent, such approval not to be unreasonably withheld, conditioned or delayed).

(d) With respect to each "employee benefit plan" as defined in Section 3(3) of ERISA and each vacation or paid time off and severance plan (that is not an "employee benefit plan" as defined in Section 3(3) of

ERISA) maintained by Parent or any Subsidiary of Parent (collectively, the "**Parent Benefit Plans**") in which any Continuing Employee will participate after the Effective Time, Parent shall, or shall cause the Surviving Corporation to, recognize all service of the Continuing Employees with the Company or a Subsidiary, as the case may be, for purposes of eligibility, vesting and participation (but not for purposes of benefit accrual other than with respect to vacation, paid time off, or severance), in any such Parent Benefit Plan to the extent such service was credited under the applicable Company Employee Plan or Company policy. In addition, and subject to the concurrence of any third-party insurers, Parent shall use commercially reasonable efforts to or shall cause the Surviving Corporation to use commercially reasonable efforts to: (i) waive all limitations as to preexisting conditions, exclusions and waiting periods with respect to participation and coverage requirements applicable to the Continuing Employees under any Parent Benefit Plan that is a welfare benefit plan in which such Continuing Employees may be eligible to participate after the Effective Time, other than preexisting condition limitations, exclusions or waiting periods that are already in effect with respect to such Continuing Employees and that have not been satisfied or waived as of the Effective Time under any welfare benefit plan maintained for the Continuing Employees immediately prior to the Effective Time; and (ii) provide each Continuing Employee with credit for any co-payments and deductibles paid prior to the Effective Time in satisfying any applicable deductible or out-of-pocket requirements under any Parent Benefit Plan that is a welfare plan in which such Continuing Employees may be eligible to participate after the Effective Time.

5.5 Indemnification of Officers and Directors.

(a) Parent shall cause all rights to indemnification, advancement of expenses and exculpation from liabilities by the Company or its Subsidiaries existing in favor of those Persons who are current or former directors or officers of the Company or its Subsidiaries at or prior to the Effective Time (the "**Indemnified Persons**") for their acts and omissions as directors and officers, employees or agents of the Company or its Subsidiaries occurring prior to the Effective Time, as provided in the Company's certificate of incorporation or bylaws (as in effect as of the date of this Agreement) and as provided in any indemnification agreements between the Company and said Indemnified Persons (as in effect as of the date of this Agreement) identified in Part 2.10(a)(viii) of the Company Disclosure Schedule, to survive the Merger and be observed and performed by the Surviving Corporation and any applicable Subsidiaries to the fullest extent permitted by Delaware law for a period of six years from the Closing Date, which provisions governing such rights shall not be amended, repealed, abrogated or otherwise modified in any manner that would adversely affect any Indemnified Persons. Parent shall, for a period of six years from the Closing Date, cause the certificate of incorporation and bylaws (or comparable organizational documents) of the Surviving Corporation and its Subsidiaries to contain provisions no less favorable with respect to indemnification, advancement of expenses and exculpation of Indemnified Persons as are presently set forth in the certificate of incorporation and bylaws of the Company and such Subsidiaries, and such provisions shall not be amended, repealed or otherwise modified in any manner that would adversely affect any right thereunder of any Person benefited by such provisions without such person's prior written consent. Parent guarantees the full and timely performance of the obligations of the Surviving Corporation and its Subsidiaries under this Section 5.5(a).

(b) From the Effective Time until the sixth anniversary of the date on which the Merger becomes effective, the Surviving Corporation shall maintain in effect, for the benefit of the Indemnified Persons with respect to their acts and omissions as directors and officers of the Company occurring prior to the Effective Time, the existing policy of directors' and officers' liability insurance maintained by the Company as of the date of this Agreement in the form delivered or Made Available by the Company to Parent prior to the date of this Agreement (the "**Existing D&O Policy**"), to the extent that, with respect to such Indemnified Persons, such policies are fully prepaid; *provided, however,* that: (i) the Surviving Corporation may substitute for the Existing D&O Policy a fully prepaid policy or policies of comparable coverage or purchase, at the Company's expense, a six year "tail policy" for the Existing D&O Policy (the "**D&O Tail Policy**"); and (ii) the Surviving Corporation shall not be required to pay annual premiums for the Existing D&O Policy (or for any D&O Tail Policy) in excess of 300% of the annual premiums currently paid by the Company for such insurance (the "**Maximum Premium**"); *provided*, that the Company may, at its sole option, purchase a D&O Tail Policy prior to the

Closing. In the event any future annual premiums for the Existing D&O Policy (or any D&O Tail Policy) exceed the Maximum Premium, the Surviving Corporation shall be entitled to reduce the amount of coverage of the Existing D&O Policy (or any D&O Tail Policy) to the amount of coverage that can be obtained for a premium equal to the Maximum Premium.

(c) In the event Parent or the Surviving Corporation or any of their respective successors or assigns (i) consolidates with or merges into any other Person and shall not be the continuing or surviving corporation or entity of such consolidation or merger or (ii) transfers all or substantially all of its properties and assets to any Person, then, and in each such case, Parent shall ensure that the successors and assigns of Parent or the Surviving Corporation, as the case may be, shall assume the obligations set forth in this Section 5.5.

(d) The provisions of this Section 5.5 shall survive the consummation of the Merger and are (i) intended to be for the benefit of, and will be enforceable by, each of the Indemnified Persons and their successors, assigns and heirs and (ii) in addition to, and not in substitution for, any other rights to indemnification or contribution that any such Person may have by contract or otherwise.

5.6 Regulatory Approvals and Related Matters.

(a) Each party shall cooperate with each other party and shall use reasonable best efforts to file, as soon as practicable after the date of this Agreement, all notices, reports and other documents required to be filed by such party with any Governmental Body with respect to the Merger and the other Contemplated Transactions, and to submit promptly any information reasonably requested by any Governmental Body. Each of the Company and Parent shall give the other party prompt notice upon becoming aware of the commencement or known threat of commencement of any Legal Proceeding by or before any Governmental Body with respect to the Merger or any of the other Contemplated Transactions, keep the other party reasonably informed as to the status of any such Legal Proceeding or threat, and in connection with any such Legal Proceeding, each of the Company or Parent will permit authorized representatives of the other party to be present at each meeting or conference relating to any such Legal Proceeding and to have access to and be consulted in connection with any document, opinion or proposal made or submitted to any Governmental Body in connection with any such Legal Proceeding.

(b) Parent and the Company shall use reasonable best efforts to take, or cause to be taken, all actions necessary to consummate the Merger and make effective the other Contemplated Transactions. Without limiting the generality of the foregoing, each party to this Agreement: (i) shall make all filings (if any) and give all notices (if any) required to be made and given by such party in connection with the Merger and the other Contemplated Transactions; (ii) shall use reasonable best efforts to obtain each Consent (if any) required to be obtained (pursuant to any applicable Legal Requirement or Contract, or otherwise) by such party in connection with the Merger or any of the other Contemplated Transactions (*provided*, that in no event shall Parent, Merger Sub, the Company or any of its Subsidiaries be required to pay any monies or agree to any material undertaking in connection with the foregoing); and (iii) shall use reasonable best efforts to lift any restraint, injunction or other legal bar to the Merger.

5.7 Disclosure. Parent and the Company shall consult with each other before issuing any press release(s) or otherwise making any public statement or making any announcement to Company Associates (to the extent not previously issued or made in accordance with this Agreement) with respect to the Merger, this Agreement or any of the other Contemplated Transactions and shall not issue any such press release, public statement or announcement to Company Associates without the other party's written consent (which consent shall not be unreasonably withheld, delayed or conditioned). Notwithstanding the foregoing: (a) each party may, without such consultation or consent, make any public statement in response to questions from the press, analysts, investors or those attending industry conferences, make internal announcements to employees and make disclosures in Company SEC Documents or Parent SEC Documents, so long as such statements are consistent with previous press releases, public disclosures or public statements made jointly by the parties (or individually,

if approved by the other party), (b) a party may, without the prior consent of the other party but subject, to the extent practical, to giving advance notice to the other party and giving due consideration to comments from the other party, issue any such press release or make any such public announcement or statement as may be required by Legal Requirement and (c) no party need consult with the other parties in connection with any press release, public statement or filing to be issued or made pursuant to or in connection with Section 4.4(f) or in connection with any Acquisition Proposal, Superior Offer or Company Adverse Change in Recommendation; *provided* that nothing in this Section 5.7 limits or otherwise modifies the Company's obligations under Section 4.4, Section 5.2(b) or Section 5.2(c).

5.8 [Intentionally Omitted].

5.9 Listing. Parent shall (a) file a Listing of Additional Shares Notification Form with respect to the shares of Parent Common Stock to be issued in the Merger, and (b) use reasonable best efforts to receive an email from Nasdaq stating that their review is complete at or prior to the Effective Time.

5.10 Resignation of Officers and Directors. The Company shall use commercially reasonable efforts to obtain and deliver to Parent at or prior to the Effective Time the resignation of each officer and director of each of the Tetraphase Companies.

5.11 Section 16 Matters. Subject to the following sentence, prior to the Effective Time, Parent and the Company shall take all such steps as may be required (to the extent permitted under applicable Legal Requirements and no-action letters issued by the SEC) to cause any dispositions of Company Common Stock (including derivative securities with respect to Company Common Stock) resulting from the Contemplated Transactions by each individual who is subject to the reporting requirements of Section 16(a) of the Exchange Act with respect to the Company, and the acquisition of Parent Common Stock (including derivative securities with respect to Parent Common Stock) by each individual who is or will be subject to the reporting requirements of Section 16(a) of the Exchange Act with respect to Parent, to be exempt under Rule 16b-3 under the Exchange Act. At least 15 days prior to the Closing Date, the Company shall furnish the following information to Parent for each individual who Parent has advised the Company in writing will, immediately after the Effective Time, become subject to the reporting requirements of Section 16(a) of the Exchange Act with respect to Parent: (a) the number of shares of Company Common Stock held by such individual and expected to be exchanged for shares of Parent Common Stock pursuant to the Merger; and (b) the number of other derivative securities (if any) with respect to Company Common Stock held by such individual and expected to be converted into shares of Parent Common Stock or derivative securities with respect to Parent Common Stock in connection with the Merger.

5.12 Obligations of Merger Sub. Parent shall take all action necessary to cause Merger Sub and, after the Effective Time, the Surviving Corporation to perform their respective obligations under this Agreement and to consummate the Contemplated Transactions upon the terms and subject to the conditions set forth in this Agreement.

5.13 Securityholder Litigation. In the event that any litigation related to this Agreement or the Contemplated Transactions is brought by any stockholder of the Company or any holder of the Company's other securities against the Company and/or its directors or officers, the Company shall promptly notify Parent of such litigation and shall keep Parent reasonably informed with respect to the status thereof. Notwithstanding anything to the contrary herein (but subject to the following sentence), the Company shall have the right to control the defense of any litigation related to this Agreement or the Contemplated Transactions brought by any stockholder of the Company or any holder of the Company's other securities against the Company and/or its directors or officers; *provided* that the Company shall give the Parent the opportunity to participate, at the Parent's expense, in the defense of any such litigation and the Company shall give due consideration to the Parent's advice with respect to such litigation. Notwithstanding anything to the contrary contained in this Agreement, the Company shall not settle or enter into any negotiations or agreement with respect to the settlement of any such litigation without the prior written consent of Parent, which consent shall not be unreasonably conditioned, withheld or

delayed (*provided* that Parent shall not withhold its consent if the settlement involves (a) solely the payment of an aggregate amount not to exceed $400,000 and supplemental disclosure (*provided*, *further* that the Parent shall be given reasonable opportunity to review and comment on any supplemental disclosure and the Company shall consider in good faith any reasonable changes thereto proposed by Parent), (b) no admission of wrongdoing or liability, (c) no injunctive or similar relief, (d) a complete and unconditional release from the named plaintiff(s) of all defendants in respect of all disclosure claims then pending relating to this Agreement and the Contemplated Transactions and (e) the withdrawal or dismissal of all claims and actions then pending relating to this Agreement and the Contemplated Transactions). Each of the Parent and the Company shall notify the other promptly of the commencement of any such stockholder litigation of which it has received notice.

5.14 Stock Exchange Delisting; Deregistration. Prior to the Effective Time, the Company shall cooperate with Parent and use its reasonable best efforts to take, or cause to be taken, all actions, and do or cause to be done all things, reasonably necessary, proper or advisable (to the extent that such actions can reasonably be taken prior to the Effective Time) on its part under applicable laws and rules and policies of the Nasdaq Global Select Market to enable the delisting by the Surviving Corporation of the shares of Company Common Stock from the Nasdaq Global Select Market and the deregistration of the shares of Company Common Stock under the Exchange Act as promptly as practicable after the Effective Time.

5.15 State Takeover Laws. If any Anti-Takeover Law is or may become applicable to any of the transactions contemplated by this Agreement or the CVR Agreement, the Company, the Company Board, Parent and Merger Sub, as applicable, each shall use its respective reasonable best efforts to (a) take such actions as are reasonably necessary so that the transactions contemplated hereunder may be consummated as promptly as practicable on the terms contemplated hereby and (b) otherwise take all such actions as are necessary to eliminate the effects of any such statute or regulation on such transactions.

5.16 Pediatric Trial Waiver. The Company shall, prior to the Closing, in good faith request from the FDA a full waiver under 21 USC 355c(a)(5)(A) of pediatric studies 3472-1 and 3472 from the FDA approval letter dated August 27, 2019 of NDA 21109.

SECTION 6. CONDITIONS PRECEDENT TO OBLIGATIONS OF PARENT AND MERGER SUB

The obligations of Parent and Merger Sub to cause the Merger to be effected and otherwise cause the Contemplated Transactions to be consummated are subject to the satisfaction, at or prior to the Closing, of each of the following conditions:

6.1 Accuracy of Representations.

(a) Each of the Company Designated Representations shall be accurate in all material respects as of the Closing Date as if made on and as of the Closing Date (except for any such representations and warranties made as of a specific date, which shall have been accurate in all material respects as of such date); *provided*, *however*, that, for purposes of determining the accuracy of such representations and warranties as of the foregoing dates, (i) all materiality qualifications limiting the scope of such representations and warrants shall be disregarded an (ii) unless Parent shall have otherwise consented, any update of or modification to the Company Disclosure Schedule made or purported to have been made on or after the date of this Agreement shall be disregarded.

(b) Each of the Company Capitalization Representations be accurate in all respects as of the Closing Date as if made on the Closing Date (except for any such representations and warranties made as of a specific date, which shall have been true and correct in all respects as of such date), except to the extent the failures of the Company Capitalization Representations to be true and correct in all respects individually or in the aggregate would not reasonably be expected to result in an increase in the aggregate value of the consideration payable by Parent in connection with the Merger of more than $325,000 in the aggregate (valuing any shares of Parent Common Stock that Parent is required to issue in connection therewith pursuant to the terms of this

Agreement in the same manner used to determine the Exchange Ratio), as compared to what such aggregate amount would have been if such representations and warranties had been true and correct in all respects.

(c) Each of the representations and warranties of the Company (other than the Company Designated Representations and the Company Capitalization Representations) shall be accurate in all respects as of the Closing Date as if made on and as of the Closing Date (except for any such representations and warranties made as of a specific date, which shall have been accurate in all respects as of such date); *provided, however,* that: (i) for purposes of determining the accuracy of such representations and warranties as of the foregoing dates: (A) all materiality qualifications limiting the scope of such representations and warranties shall be disregarded; and (B) unless Parent shall have otherwise consented, any update of or modification to the Company Disclosure Schedule made or purported to have been made on or after the date of this Agreement shall be disregarded; and (ii) any inaccuracies in such representations and warranties will be disregarded if all such inaccuracies (considered collectively) do not constitute a Company Material Adverse Effect.

6.2 Performance of Covenants. The covenants and obligations in this Agreement that the Company is required to comply with or to perform at or prior to the Closing shall have been complied with and performed in all material respects.

6.3 Effectiveness of Registration Statement. The Form S-4 Registration Statement shall have become effective in accordance with the provisions of the Securities Act; no stop order shall have been issued by the SEC and shall remain in effect with respect to the Form S-4 Registration Statement; and no proceeding seeking such a stop order shall have been initiated by the SEC and remain pending or shall be threatened in writing by the SEC.

6.4 Stockholder Approval. This Agreement shall have been duly adopted by the Required Company Stockholder Vote.

6.5 Documents. Parent and Merger Sub shall have received a certificate executed by the Chief Executive Officer of the Company confirming that the conditions set forth in 6.1, 6.2, 6.4, 6.6 and 6.10 have been duly satisfied.

6.6 No Company Material Adverse Effect. Since the date of this Agreement, there shall not have occurred any Company Material Adverse Effect.

6.7 No Restraints. No temporary restraining order, preliminary or permanent injunction or other Order preventing the consummation of the Merger shall have been issued by any court of competent jurisdiction or other Governmental Body and remain in effect, and there shall not be any Legal Requirement enacted or deemed applicable to the Merger that makes consummation of the Merger illegal.

6.8 No Governmental Litigation. There shall not be pending any Legal Proceeding in which a Governmental Body is a party: (a) challenging or seeking to restrain, prohibit, rescind or unwind the consummation of the Merger; (b) seeking to prohibit or limit in any material respect Parent's ability to vote, transfer, receive dividends with respect to or otherwise exercise ownership rights with respect to the stock of the Surviving Corporation; (c) relating to the Merger and that would reasonably be expected to materially and adversely affect the right or ability of Parent to own any of the material assets or materially limit the operation of the business of the Tetraphase Companies, taken as a whole; (d) seeking to compel any of the Tetraphase Companies, Parent or any Subsidiary of Parent to dispose of or hold separate any material assets or material business as a result of the Merger; or (e) relating to the Merger and seeking to impose (or that would reasonably be expected to result in the imposition of) any criminal sanctions or criminal liability on Parent or any of the Tetraphase Companies.

6.9 FIRPTA Matters. The Company shall have delivered to Parent (A) a duly executed certificate, in form and substance as prescribed by Treasury Regulations promulgated under Section 1445 of the Code,

signed under penalties of perjury by the Company, that satisfies the requirements of Treasury Regulation Sections 1.897-2(h) and 1.1445-2(c)(3) and confirms that the Company is not, nor has it been within five years of the date of the certification, a "United States real property holding corporation" as defined in Section 897 of the Code and (B) a notice addressed to the IRS, signed by the Company, that satisfies the requirements of Treasury Regulation Section 1.897-2(h)(2) to be submitted by Parent to the IRS as agent for the Company, in each case, in form reasonable satisfactory to Parent.

6.10 Company Net Cash. As of the Closing Date, the Company Net Cash is equal to or greater than $5,000,000.00.

SECTION 7. CONDITIONS PRECEDENT TO OBLIGATIONS OF THE COMPANY

The obligation of the Company to effect the Merger and otherwise consummate the Contemplated Transactions is subject to the satisfaction, at or prior to the Closing, of each of the following conditions:

7.1 Accuracy of Representations.

(a) Each of the Parent Designated Representations shall be accurate in all material respects as of the Closing Date as if made on and as of the Closing Date (except for any such representations and warranties made as of a specific date, which shall have been accurate in all material respects as of such date); *provided*, *however*, that, for purposes of determining the accuracy of such representations and warranties as of the foregoing dates, (i) all materiality qualifications limiting the scope of such representations and warranties shall be disregarded, and (ii) unless the Company shall have otherwise consented, any update of or modification to the Parent Disclosure Schedule made or purported to have been made on or after the date of this Agreement shall be disregarded.

(b) Each of the representations and warranties of Parent and Merger Sub (other than the Parent Designated Representations) shall be accurate in all respects as of the Closing Date as if made on and as of the Closing Date (except for any such representations and warranties made as of a specific date, which shall have been accurate in all respects as of such date); *provided*, *however*, that: (i) for purposes of determining the accuracy of such representations and warranties as of the foregoing dates: (A) all materiality qualifications limiting the scope of such representations and warranties shall be disregarded; and (B) unless the Company shall have otherwise consented, any update of or modification to the Parent Disclosure Schedule made or purported to have been made on or after the date of this Agreement shall be disregarded; and (ii) any inaccuracies in such representations and warranties will be disregarded if all such inaccuracies (considered collectively) do not constitute, and would not have, a Parent Material Adverse Effect.

7.2 Performance of Covenants. The covenants and obligations in this Agreement that Parent and Merger Sub are required to comply with or to perform at or prior to the Closing shall have been complied with and performed in all material respects.

7.3 Effectiveness of Registration Statement. The Form S-4 Registration Statement shall have become effective in accordance with the provisions of the Securities Act; no stop order shall have been issued by the SEC and shall remain in effect with respect to the Form S-4 Registration Statement; and no proceeding seeking such a stop order shall have been initiated by the SEC and remain pending or shall be threatened in writing by the SEC.

7.4 Stockholder Approval. This Agreement shall have been duly adopted by the Required Company Stockholder Vote.

7.5 Documents. The Company shall have received a certificate executed by the Chief Executive Officer of Parent confirming that the conditions set forth in Sections 7.1, 7.2, 7.3, 7.6, and 7.7 have been duly satisfied.

7.6 No Parent Material Adverse Effect. Since the date of this Agreement, there shall not have occurred any Parent Material Adverse Effect.

7.7 Listing. Nasdaq shall have completed its review of the Listing of Additional Shares Notification Form with respect to the shares of Parent Common Stock to be issued in the Merger and such shares of Parent Common Stock shall have been approved for listing on the Nasdaq Global Market.

7.8 No Restraints. No temporary restraining order, preliminary or permanent injunction or other Order preventing the consummation of the Merger shall have been issued by any court of competent jurisdiction or other Governmental Body and remain in effect, and there shall not be any Legal Requirement enacted or deemed applicable to the Merger that makes consummation of the Merger illegal.

7.9 No Governmental Litigation. There shall not be pending any Legal Proceeding in which a Governmental Body is a party: (a) challenging or seeking to restrain, prohibit, rescind or unwind the consummation of the Merger; (b) seeking to prohibit or limit in any material respect Parent's ability to vote, transfer, receive dividends with respect to or otherwise exercise ownership rights with respect to the stock of the Surviving Corporation; (c) that would reasonably be expected to materially and adversely affect the right or ability of Parent or any of the Tetraphase Companies to own any of the material assets or materially limit the operation of the business of the Tetraphase Companies, taken as a whole; (d) seeking to compel any of the Tetraphase Companies, Parent or any Subsidiary of Parent to dispose of or hold separate any material assets or material business as a result of the Merger; or (e) relating to the Merger and seeking to impose (or that would reasonably be expected to result in the imposition of) any criminal sanctions or criminal liability on Parent or any of the Tetraphase Companies.

7.10 CVR Agreement. The CVR Agreement shall have been executed by Parent and the Rights Agent and shall be in full force and effect.

SECTION 8. TERMINATION

8.1 Termination. This Agreement may be terminated (with respect to Section 8.1(b) through (h), by written notice by the terminating party to the other party, with termination by Parent also being an effective termination by Merger Sub) prior to the Effective Time (whether before or after adoption of this Agreement by the Company's stockholders):

(a) by mutual written consent of Parent and the Company;

(b) by either Parent or the Company if a court of competent jurisdiction or other Governmental Body shall have issued a final and nonappealable Order, or shall have taken any other final and nonappealable action, having the effect of permanently restraining, enjoining or otherwise prohibiting the Merger; *provided* that a party shall not be permitted to terminate this Agreement pursuant to this Section 8.1(b) if the issuance of such final and nonappealable Order results primarily from the failure on the part of such party to perform any covenant or obligation in this Agreement required to be performed by such party at or prior to the Effective Time;

(c) by either Parent or the Company if: (i) the Company Stockholders' Meeting (including any adjournments and postponements thereof) shall have been held and completed and the Company's stockholders shall have taken a final vote on a proposal to adopt this Agreement; and (ii) this Agreement shall not have been adopted at the Company Stockholders' Meeting (and shall not have been adopted at any adjournment or postponement thereof) by the Required Company Stockholder Vote;

(d) by Parent (at any time prior to the adoption of this Agreement by the Required Company Stockholder Vote) if, whether or not permitted to do so: (i) the Company Board or any committee thereof shall

have made a Company Adverse Change in Recommendation; (ii) the Company, Company Board or any committee thereof shall have adopted, approved, recommended, submitted to stockholders, declared advisable, executed or entered into (or resolved, determined or proposed to adopt, approve, recommend, submit to stockholders, declare advisable, execute or enter into) any Alternative Acquisition Agreement (other than an Acceptable Confidentiality Agreement entered into pursuant to Section 4.4 or Section 5.2); (iii) following the public disclosure of an Acquisition Proposal (other than a tender or exchange offer which is the subject of clause (iv) below), the Company Board fails to publicly reaffirm the Company Board Recommendation within five Business Days after Parent so requests in writing (*provided* that Parent may only make such request on two occasions); (iv) a tender offer or exchange offer for outstanding shares of Company Common Stock shall have been commenced (other than by the Parent or a Parent Affiliate) and the Company Board shall have recommended that the stockholders of the Company tender their shares in such tender or exchange offer or, within 10 Business Days after the commencement of such tender or exchange offer, the Company Board shall have failed to recommend against acceptance of such offer; (v) the Company shall have materially breached its obligations under Section 4.4, Section 5.2(b) or Section 5.2(c); or (vi) other than in connection with an Acquisition Proposal, the Company shall have failed to issue a press release that reaffirms the Company Board Recommendation within five Business Days after Parent so requests in writing (*provided* that Parent may only make such request on two occasions) (each of the foregoing "**Triggering Event**"); *provided*, that any such termination under this paragraph (d) must occur within 10 Business Days of the applicable Triggering Event;

(e) by either Parent or the Company if the Merger shall not have been consummated by July 15, 2020 (the "**End Date**"); *provided, however,* that a party shall not be permitted to terminate this Agreement pursuant to this Section 8.1(e) if the failure to consummate the Merger by the End Date resulted primarily from a failure on the part of such party to perform any covenant or obligation in this Agreement required to be performed by such party at or prior to the Effective Time;

(f) by the Company (at any time prior to the adoption of this Agreement by the Required Company Stockholder Vote) in order to, substantially concurrent with such termination, enter into a binding written definitive acquisition agreement providing for the consummation of a transaction constituting a Superior Offer (a "**Specified Agreement**") if (i) the Company has not materially breached the requirements of Section 4.4, Section 5.2(b) and Section 5.2(c) with respect to such Superior Offer, (ii) the Company Board shall have authorized the Company to enter into such Specified Agreement and (iii) substantially concurrently with such termination, the Company pays the Termination Fee as provided in Section 8.3(b);

(g) by Parent if: (i) any of the Company's representations and warranties contained in this Agreement shall be inaccurate such that the condition set forth in Section 6.1(a), Section 6.1(b) or Section 6.1(c) would not be satisfied; or (ii) any of the Company's covenants or obligations contained in this Agreement shall have been breached such that the condition set forth in Section 6.2 would not be satisfied; *provided, however*, that, (A) for purposes of clauses "(i)" and "(ii)" above, if an inaccuracy in any of the Company's representations and warranties or a breach of a covenant or obligation by the Company is capable of being cured by the End Date, then Parent may not terminate this Agreement under this Section 8.1(g) on account of such inaccuracy or breach unless such inaccuracy or breach shall remain uncured for a period of 30 days commencing on the date that Parent gives the Company notice of such inaccuracy or breach, and (B) Parent may not terminate under this paragraph (g) if the Parent or Merger Sub is then in material breach of any of its representations, warranties, covenants or obligations under this Agreement; or

(h) by the Company if: (i) any of Parent's representations and warranties contained in this Agreement shall be inaccurate such that the condition set forth in Section 7.1(a) or Section 7.1(b) would not be satisfied; or (ii) any of Parent's covenants or obligations contained in this Agreement shall have been breached such that the condition set forth in Section 7.2 would not be satisfied; *provided, however*, that, (A) for purposes of clauses "(i)" and "(ii)" above, if an inaccuracy in any of Parent's representations and warranties or a breach of a covenant or obligation by Parent is capable of being cured by the End Date, then the Company may not terminate this Agreement under this Section 8.1(h) on account of such inaccuracy or breach unless such

inaccuracy or breach shall remain uncured for a period of 30 days commencing on the date that the Company gives Parent notice of such inaccuracy or breach, and (B) the Company may not terminate under this paragraph (h) if the Company is then in material breach of any of its representations, warranties, covenants or obligations under this Agreement.

8.2 Effect of Termination. In the event of the termination of this Agreement as provided in Section 8.1, written notice thereof shall be given to the other party or parties, specifying the provision hereof pursuant to which such termination is made, and this Agreement shall be of no further force or effect and there shall be no liability on the part of Parent, Merger Sub or the Company or their respective Representatives, stockholders and affiliates following any such termination; *provided*, *however*, that (a) this Section 8.2, Section 8.3 and Section 9 shall survive the termination of this Agreement and shall remain in full force and effect, (b) the Confidentiality Agreement shall survive the termination of this Agreement and shall remain in full force and effect in accordance with its terms and (c) the termination of this Agreement shall not relieve any party from any liability for intentional common law fraud or the Company's Willful Breach of Section 4.2(b)(vi)(C) by entering into or otherwise initiating bankruptcy proceedings. Nothing shall limit or prevent any party from exercising, prior to any termination of this Agreement, any rights it may have to specific performance under Section 9.5 in lieu of terminating this Agreement pursuant to Section 8.1.

8.3 Expenses; Termination Fees.

(a) Except as set forth in this Section 8.3, all Transaction Expenses shall be paid by the party incurring such expenses, whether or not the Merger is consummated; *provided*, *however*, that Parent and the Company shall share equally all fees and expenses, other than attorneys' fees, incurred in connection with the filing, printing and mailing of the Form S-4 Registration Statement and the Proxy Statement/Prospectus and any amendments or supplements thereto

(b) If this Agreement is terminated:

(i) by the Company pursuant to Section 8.1(f);

(ii) by Parent pursuant to Section 8.1(d); or

(iii) by Parent or the Company pursuant to Section 8.1(c) or Section 8.1(e) or by Parent pursuant to Section 8.1(g), and: (A) any Person shall have publicly disclosed an Acquisition Proposal after the date of this Agreement and prior to such termination (unless withdrawn prior to such termination); and (B) within 12 months of such termination the Company shall have consummated an Acquisition Proposal or shall have entered into a definitive agreement with respect to any Acquisition Proposal that is thereafter consummated (*provided* that for purposes of this clause (B) the references to "15%" in the definition of "**Acquisition Transaction**" shall be deemed to be references to "50%"),

then, in any such event under clause "(i)", "(ii)" or "(iii)" of this Section 8.3(b), the Company shall pay to Parent the Termination Fee by wire transfer of same day funds (x) in the case of Section 8.3(b)(i), prior to or concurrently with the termination of this Agreement and execution of the Specified Agreement, (y) in the case of Section 8.3(b)(ii), within two Business Days after such termination or (z) in the case of Section 8.3(b)(iii), two Business Days after consummation of the Acquisition Proposal referred to in subclause (iii)(B) above; *it being understood* that in no event shall the Company be required to pay the Termination Fee on more than one occasion. As used herein, "**Termination Fee**" means a cash amount equal to $810,000. In the event that the Parent shall receive the Termination Fee, the receipt of such fee shall be deemed to be liquidated damages for any and all losses or damages suffered or incurred by the Parent, the Merger Sub, any Parent Affiliates or any other Person in connection with this Agreement (and the termination hereof) or the Contemplated Transactions (and the abandonment thereof), or any matter forming the basis for such termination, and none of the Parent, the Merger Sub, any Parent Affiliates or any other Person shall be entitled to bring or maintain any other claim,

action or proceeding against the Company or any Company Affiliates or any Representative of the Company or any Company Affiliates arising out of this Agreement, any of the Contemplated Transactions or any matters forming the basis for such termination; *provided*, *however*, that nothing in this Section 8.3(b) shall relieve any party from any liability for intentional common law fraud.

(c) If this Agreement is terminated by Parent or the Company pursuant to Section 8.1(c), the Company shall reimburse Parent promptly upon demand (but in any event within two Business Days after the date of such demand), by wire transfer of same day funds, any Transaction Expenses (including disbursements and fees of outside legal counsel and outside strategic advisors) incurred by Parent in connection with this Agreement or the Contemplated Transactions ("**Parent Expenses**"); *provided* that the Parent Expenses shall not exceed $200,000.

(d) The parties acknowledge that the agreements contained in this Section 8.3 are an integral part of the Contemplated Transactions and that, without these agreements, the parties would not enter into this Agreement; accordingly, if the Company fails to timely pay any amount due pursuant to this Section 8.3, and, in order to obtain the payment, Parent commences a Legal Proceeding which results in a judgment against the Company, the Company shall pay Parent its reasonable and documented costs and expenses (including reasonable and documented fees of outside legal counsel) in connection with such suit, together with interest on such amount and the Termination Fee or Parent Expenses at the prime rate as published in the Wall Street Journal in effect on the date such payment was required to be made, plus 2% per annum, through the date such payment was actually received.

SECTION 9. MISCELLANEOUS PROVISIONS

9.1 Amendment. This Agreement may be amended with the approval of the respective boards of directors of the Company and Parent at any time (whether before or after the adoption of this Agreement by the Company's stockholders); *provided*, *however*, that: (a) after any such adoption of this Agreement by the Company's stockholders, no amendment shall be made which by applicable Legal Requirements requires further approval of the stockholders of the Company without the further approval of such stockholders; and (b) no amendment shall be made which by law or regulation of the Nasdaq Global Market requires further approval of Parent's stockholders without the further approval of such stockholders. This Agreement may not be amended except by an instrument in writing signed on behalf of each of the parties hereto.

9.2 Waiver.

(a) Subject to Sections 9.2(b) and 9.2(c), at any time prior to the Effective Time, any party hereto may: (i) extend the time for the performance of any of the obligations or other acts of the other parties to this Agreement; (ii) waive any inaccuracy in or breach of any representation, warranty, covenant or obligation of the other party in this Agreement or in any document delivered pursuant to this Agreement; and (iii) waive compliance with any covenant, obligation or condition for the benefit of such party contained in this Agreement.

(b) No failure on the part of any party to exercise any power, right, privilege or remedy under this Agreement, and no delay on the part of any party in exercising any power, right, privilege or remedy under this Agreement, shall operate as a waiver of such power, right, privilege or remedy; and no single or partial exercise of any such power, right, privilege or remedy shall preclude any other or further exercise thereof or of any other power, right, privilege or remedy.

(c) No party shall be deemed to have waived any claim arising out of this Agreement, or any power, right, privilege or remedy under this Agreement, unless the waiver of such claim, power, right, privilege or remedy is expressly set forth in a written instrument duly executed and delivered on behalf of such party; and any such waiver shall not be applicable or have any effect except in the specific instance in which it is given.

9.3 No Survival of Representations and Warranties. None of the representations and warranties contained in this Agreement or in any certificate delivered pursuant to this Agreement shall survive the Merger.

9.4 Entire Agreement; Counterparts; Exchanges by Facsimile or Electronic Delivery. This Agreement and the other agreements, exhibits and disclosure schedules referred to herein (including the CVR Agreement) constitute the entire agreement and supersede all prior agreements and understandings, both written and oral, among or between any of the parties with respect to the subject matter hereof and thereof; *provided, however*, that except as otherwise set forth in this Agreement, the Confidentiality Agreement shall not be superseded and shall remain in full force and effect in accordance with its terms (it being understood that no provision in this Agreement or in the Confidentiality Agreement shall limit any party's rights or remedies in the case of intentional common law fraud). This Agreement may be executed in separate counterparts (including by facsimile or by an electronic scan, including portable document format (.pdf) delivered by electronic mail), each of which shall be deemed an original and all of which shall constitute one and the same instrument. The exchange of a fully executed Agreement (in counterparts or otherwise) by facsimile or by other electronic delivery shall be sufficient to bind the parties to the terms and conditions of this Agreement.

9.5 Applicable Law; Jurisdiction; Specific Performance; Remedies. This Agreement shall be governed by, and construed in accordance with, the laws of the State of Delaware, without giving effect to any laws, rules or provisions that would cause the application of the laws of any jurisdiction other than the State of Delaware. In any action between any of the parties arising out of or relating to this Agreement or any of the Contemplated Transactions: (a) each of the parties irrevocably and unconditionally consents and submits to the exclusive jurisdiction and venue of the Chancery Court of the State of Delaware; and (b) each of the parties irrevocably waives the right to trial by jury. The parties agree that irreparable damage would occur and that the parties would not have any adequate remedy at law in the event that any of the provisions of this Agreement were not performed in accordance with their specific terms or were otherwise breached. It is accordingly agreed that the parties shall be entitled to an injunction or injunctions to prevent breaches of this Agreement and to enforce specifically the terms and provisions of this Agreement, this being in addition to any other remedy to which they are entitled at law or in equity. All rights and remedies existing under this Agreement are cumulative to, and not exclusive of, any rights or remedies otherwise available. The parties hereto further agree not to assert that a remedy of specific enforcement is unenforceable, invalid, contrary to Legal Requirements or inequitable for any reason, and agree not to assert that a remedy of monetary damages would provide an adequate remedy.

9.6 Disclosure Schedules. The Company Disclosure Schedule shall be arranged in separate parts corresponding to the numbered and lettered sections contained in Section 2. The Parent Disclosure Schedule shall be arranged in separate parts corresponding to the numbered and lettered sections contained in Section 3. The Company Disclosure Schedule and Parent Disclosure Schedule shall each be delivered as of the date hereof, and no amendments or modifications thereto shall be made. Any purported update or modification to the Company Disclosure Schedule or Parent Disclosure Schedule after the date hereof shall be disregarded. The inclusion of any information in the Company Disclosure Schedule or Parent Disclosure Schedule shall not be deemed to be an admission or acknowledgment, in and of itself, that such information is required by the terms hereof to be disclosed, is material, has resulted in or would result in a Company Material Adverse Effect or Parent Material Adverse Effect, or is outside the ordinary course of business.

9.7 [Intentionally Omitted].

9.8 Assignability; No Third Party Rights. This Agreement shall be binding upon, and shall be enforceable by and inure solely to the benefit of, the parties hereto and their respective successors and assigns; *provided, however,* that neither this Agreement nor any party's rights or obligations hereunder may be assigned or delegated by such party without the prior written consent of the other parties, and any attempted assignment or delegation of this Agreement or any of such rights or obligations by any party without the prior written consent of the other parties shall be void and of no effect. Nothing in this Agreement, express or implied, is intended to or shall confer upon any Person (other than the parties hereto) any right, benefit or remedy of any nature whatsoever

under or by reason of this Agreement, except (i) as specifically provided in Section 5.5 and (ii) after the Effective Time, with respect to the payment of consideration to holders of Company Common Stock pursuant to Section 1 hereof.

9.9 Notices. All notices, requests, demands and other communications under this Agreement shall be in writing and shall be deemed to have been duly given or made as follows: (a) if sent by registered or certified mail in the United States return receipt requested, upon receipt; (b) if sent designated for overnight delivery by nationally recognized overnight air courier (such as Federal Express), one Business Day after mailing; (c) if sent by facsimile transmission or e-mail before 5:00 p.m. Eastern Time, when transmitted and receipt is confirmed; (d) if sent by facsimile transmission after 5:00 p.m. Eastern Time and receipt is confirmed, on the following Business Day; and (e) if otherwise actually personally delivered, when delivered, provided that such notices, requests, demands and other communications are delivered to the physical address or facsimile number set forth below, or to such other address as any party shall provide by like notice to the other parties to this Agreement:

if to Parent or Merger Sub:

AcelRx Pharmaceuticals, Inc.
351 Galveston Drive
Redwood City, California 94063
Tel: (650) 216-3500
Attention: Chief Financial Officer
E-mail: legal@acelrx.com

with a copy (which shall not constitute notice) to:

Cooley LLP
101 California Street, 5th Floor
San Francisco, CA 94111
Attention: Robert Phillips; Rama Padmanabhan
E-mail: rphillips@cooley.com; rama@cooley.com
Facsimile: (415) 693-2222

if to the Company:

Tetraphase Pharmaceuticals, Inc.
480 Arsenal Way
Watertown, Massachusetts 02472
Attention: Larry Edwards
E-Mail: ledwards@tphase.com
Facsimile: (617) 926-3557

with a copy (which shall not constitute notice) to:

Wilmer, Cutler, Pickering, Hale and Dorr LLP
60 State Street
Boston, MA 02109
Tel: (617) 526-6000
Attention: Hal J. Leibowitz, Esq.;
Stuart Falber, Esq.;
Christopher D. Barnstable-Brown, Esq.
E-Mail: hal.leibowitz@wilmerhale.com;
stuart.falber@wilmerhale.com;
chris.barnstable-brown@wilmerhale.com
Facsimile: (617) 526-5000

9.10 Severability. Any term or provision of this Agreement that is invalid or unenforceable in any situation in any jurisdiction shall not affect the validity or enforceability of the remaining terms and provisions of this Agreement or the validity or enforceability of the offending term or provision in any other situation or in any other jurisdiction. If a final judgment of a court of competent jurisdiction declares that any term or provision of this Agreement is invalid or unenforceable, the parties hereto agree that the court making such determination shall have the power to limit such term or provision, to delete specific words or phrases or to replace such term or provision with a term or provision that is valid and enforceable and that comes closest to expressing the intention of the invalid or unenforceable term or provision, and this Agreement shall be valid and enforceable as so modified. In the event such court does not exercise the power granted to it in the prior sentence, the parties hereto agree to replace such invalid or unenforceable term or provision with a valid and enforceable term or provision that will achieve, to the extent possible, the economic, business and other purposes of such invalid or unenforceable term or provision.

9.11 Construction.

(a) For purposes of this Agreement, whenever the context requires: the singular number shall include the plural, and vice versa; the masculine gender shall include the feminine and neuter genders; the feminine gender shall include the masculine and neuter genders; and the neuter gender shall include masculine and feminine genders.

(b) The parties hereto agree that any rule of construction to the effect that ambiguities are to be resolved against the drafting party shall not be applied in the construction or interpretation of this Agreement.

(c) As used in this Agreement, the words “include” and “including,” and variations thereof, shall not be deemed to be terms of limitation, but rather shall be deemed to be followed by the words “without limitation.”

(d) Except as otherwise indicated, all references in this Agreement to “Sections,” “Exhibits” and “Schedules” are intended to refer to Sections of this Agreement and Exhibits or Schedules to this Agreement.

(e) The bold-faced headings contained in this Agreement are for convenience of reference only, shall not be deemed to be a part of this Agreement and shall not be referred to in connection with the construction or interpretation of this Agreement.

(f) The phrases “currently conducted” and “currently being conducted” means conducted on the date of this Agreement.

(g) The term “material” as used in Section 2 or Section 3 of this Agreement (and in the related definitions set forth in Exhibit A) means material to the Tetraphase Companies taken as a whole, or the AcelRx Companies taken as a whole, as applicable.

(h) References to the “date hereof” refer to the date set forth in the initial caption of this Agreement.

(i) Any payment to be made pursuant hereto shall be made in U.S. dollars and by wire transfer of immediately available funds.

[*Remainder of page intentionally left blank*]

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed as of the date first above written.

ACELRX PHARMACEUTICALS, INC.

By: /s/ Vincent J. Angotti
Name: Vincent J. Angotti
Title: Chief Executive Officer

CONSOLIDATION MERGER SUB, INC.

By: /s/ Vincent J. Angotti
Name: Vincent J. Angotti
Title: President

TETRAPHASE PHARMACEUTICALS, INC.

By: /s/ Larry Edwards
Name: Larry Edwards
Title: President and Chief Executive Officer

EXHIBIT A

CERTAIN DEFINITIONS

For purposes of the Agreement (including this **Exhibit A**):

Acquisition Proposal. "Acquisition Proposal" shall mean any offer or proposal (other than an offer or proposal by Parent) for an Acquisition Transaction.

Acquisition Transaction. "Acquisition Transaction" shall mean any transaction or series of related transactions (other than the Contemplated Transactions) for:

(a) any acquisition or purchase from any Tetraphase Company by any Person or "group" (as defined in or under Section 13(d) of the Exchange Act), directly or indirectly, of more than a 15% beneficial or record interest in the total outstanding voting securities of any class (or instruments convertible into or exercisable or exchangeable for more than 15% of any such class) of the Company, including pursuant to a stock purchase, merger, consolidation, tender offer, share exchange or other transaction involving the Company or any of its Subsidiaries;

(b) any tender offer (including self-tender) or exchange offer that if consummated would result in any Person or "group" (as defined in or under Section 13(d) of the Exchange Act) owning (beneficially or on record) more than 15% of the total outstanding voting securities of any class (or instruments convertible into or exercisable or exchangeable for more than 15% of any such class) of the Company;

(c) any merger, consolidation, business combination, share exchange, issuance of securities, acquisition of securities, reorganization, recapitalization or other similar transaction for more than 15% of the voting securities of the Company or the consolidated assets of the Tetraphase Companies, taken as a whole;

(d) any sale, lease, exchange, transfer, exclusive license or disposition, in each case, other than in the ordinary course of business, of more than 15% of the consolidated assets of the Tetraphase Companies, taken as a whole (measured by the lesser of book or fair market value thereof); or

(e) any combination of the foregoing.

Anti-Takeover Law. "Anti-Takeover Law" shall mean all "moratorium," "fair price," "business combination," "control share acquisition" or similar provision of any state anti-takeover Legal Requirement.

AcelRx Companies or Parent Companies. "AcelRx Companies" or "Parent Companies" shall each mean (a) Parent and (b) each of Parent's Subsidiaries.

Black-Scholes Warrants. "Black-Scholes Warrants" means those certain Company Warrants sold pursuant to that certain (a) Securities Purchase Agreement, dated as of October 29, 2019, among the Company and the purchaser identified therein, (b) Securities Purchase Agreement, dated as of January 22, 2020, between the Company and each purchaser named therein and (c) Securities Purchase Agreement, dated as of January 22, 2020, between the Company and each purchaser named therein, in each case other than the Pre-Funded Warrants.

Business Day. A "Business Day" means any day other than (a) a Saturday or a Sunday or (b) a day on which commercial banking institutions are authorized or required by applicable Legal Requirements to be closed in Boston, Massachusetts or San Francisco, California.

Cash and Cash Equivalents. "Cash and Cash Equivalents" shall mean all cash and cash equivalents determined in a manner consistent with the manner in which such items were historically determined and in accordance with the Company's financial statements (including any related notes) contained or incorporated by reference in the Company SEC Documents, and/or the Company Audited Balance Sheet, including, for the avoidance of doubt, any cash deposits or similar amounts with respect to the Company's credit card program.

Change in Circumstance. "Change in Circumstance" shall mean any material event, development or change in circumstances with respect to the Tetraphase Companies that (a) was neither known to, nor was reasonably foreseeable by, the Company Board on or prior to the date of this Agreement and (b) does not relate to an Acquisition Proposal.

Code. "Code" shall mean the United States Internal Revenue Code of 1986, as amended.

Company Affiliate. "Company Affiliate" shall mean any Person under common control with any of the Tetraphase Companies within the meaning of Section 414(b), Section 414(c), Section 414(m) or Section 414(o) of the Code, and the regulations issued thereunder.

Company Associate. "Company Associate" shall mean any current or former officer, employee, independent contractor, consultant or director, of or to any of the Tetraphase Companies.

Company Audited Balance Sheet. "Company Audited Balance Sheet" shall mean the audited consolidated balance sheet of the Company and its consolidated Subsidiaries as of December 31, 2019 included in the Company's Annual Report on Form 10-K for the year ended December 31, 2019.

Company Board. "Company Board" shall mean the Company's board of directors.

Company Capitalization Representations. "Company Capitalization Representations" shall mean the representations and warranties set forth in Sections 2.3(a) (the first sentence only), 2.3(c) and 2.3(f).

Company Common Stock. "Company Common Stock" shall mean the Common Stock, $0.001 par value per share, of the Company.

Company Contract. "Company Contract" shall mean any Contract: (a) to which any of the Tetraphase Companies is a party; and (b) by which any of the Tetraphase Companies is bound or under which any of the Tetraphase Companies has any express right or obligation.

Company Designated Representations. "Company Designated Representations" shall mean the representations and warranties set forth in Sections 2.1, 2.22, 2.24 and 2.27.

Company Disclosure Schedule. "Company Disclosure Schedule" shall mean the Company Disclosure Schedule that has been prepared by the Company in accordance with the requirements of Section 9.6 of the Agreement and that has been delivered by the Company to Parent on the date of the Agreement.

Company Employee. "Company Employee" shall mean any officer or other employee of any of the Tetraphase Companies.

Company Employee Agreement. "Company Employee Agreement" shall mean each management, employment, consulting, separation, relocation, repatriation or expatriation agreement or other similar Contract between: (a) any of the Tetraphase Companies; and (b) any current or former Company Associate.

Company Employee Plan. "Company Employee Plan" shall mean each Company Employee Agreement and each other plan, program, policy, practice or Contract providing for compensation, including bonus or other incentive compensation, stock purchase, stock option and other equity compensation, severance or other termination benefits, deferred compensation, salary continuation, supplemental unemployment compensation, employee loan, retention or change in control benefits, transaction bonus, tax gross-up, relocation, expatriation, repatriation, hospitalization, medical, health, or life insurance coverage (including any self-insured arrangements), commission, death or disability benefits, employee assistance program, workers' compensation, fringe benefits, sick pay, paid time off, vacation pay, profit sharing, retirement benefits or other similar benefits or remuneration of any kind, whether or not in writing and whether or not funded, including each "employee benefit plan," within the meaning of Section 3(3) of ERISA (whether or not ERISA is applicable to such plan):

(a) that is or has been maintained or contributed to, or required to be maintained or contributed to, by any of the Tetraphase Companies or any Company Affiliate for the benefit of any Company Associate; or (b) with respect to which any of the Tetraphase Companies or any Company Affiliate has or may incur or become subject to any liability or obligation.

Company Equity Award. "Company Equity Award" shall mean any form of compensation (including deferred compensation) that is or may be paid or settled in Company Common Stock and includes the Company Options, Company RSUs and Company PRSUs.

Company IP. "Company IP" shall mean: (a) all material Intellectual Property Rights in or to the Company Products; and (b) all other material Intellectual Property Rights and Intellectual Property with respect to which any of the Tetraphase Companies has (or purports to have) an ownership interest or an exclusive license or similar exclusive right.

Company Material Adverse Effect. "Company Material Adverse Effect" shall mean any effect, change, claim, event or circumstance (collectively, "**Effect**") that, considered together with all other Effects, is or would reasonably be expected to become materially adverse to, or has or would reasonably be expected to have or result in a material adverse effect on the business, financial condition or results of operations of the Tetraphase Companies taken as a whole; *provided, however*, that, in no event shall any Effects resulting from any of the following, alone or in combination, be deemed to constitute, or be taken into account in determining whether there has occurred or could or would occur, a Company Material Adverse Effect: (i) conditions generally affecting the industry in which any Tetraphase Company participates or the U.S. or global economy as a whole, to the extent that such conditions do not have a materially disproportionate impact on the Tetraphase Companies taken as a whole as compared to other industry participants; (ii) general conditions in the financial markets, and any changes therein, and any changes arising out of acts of terrorism, war, weather conditions, viruses or pandemics or other force majeure events, to the extent that such conditions do not have a materially disproportionate impact on the Tetraphase Companies, taken as a whole, as compared to other industry participants; (iii) changes in the trading price or trading volume of Company Common Stock, or the suspension of trading in or delisting of the Company's securities on the Nasdaq Global Market (it being understood, however, that except as otherwise provided in this sentence, any Effect giving rise to or contributing to such changes in the trading price or trading volume of Company Common Stock may give rise to a Company Material Adverse Effect and may be taken into account in determining whether a Company Material Adverse Effect has occurred or could or would occur); (iv) changes in GAAP (or any interpretations of GAAP) or Legal Requirements applicable to Company or any of its Subsidiaries; (v) the failure to meet public estimates or forecasts of revenues, earnings of other financial metrics, in and of itself, or the failure to meet internal projections, forecasts or budgets of revenues, earnings or other financial metrics, in and of itself (it being understood, however, that, except as otherwise provided in this sentence, any Effect giving rise to or contributing to any such failure may give rise to a Company Material Adverse Effect and may be taken into account in determining whether a Company Material Adverse Effect has occurred or could or would occur); (vi) any stockholder litigation arising from or relating to this Agreement or the Contemplated Transactions and/or relating to a breach of the fiduciary duties of the Company Board to the Company's stockholders under applicable Legal Requirements; (vii) resulting or arising out of the execution, announcement or performance of this Agreement or any of the Contemplated Transactions, including the loss of employees, suppliers or customers (including customer orders or Contracts); or (viii) the taking of any action expressly required to be taken pursuant to this Agreement or the taking of any action requested by Parent to be taken pursuant to the terms of the Agreement to the extent taken in accordance with such request.

Company Net Cash. "Company Net Cash" shall mean, without duplication and determined in a manner consistent with the manner in which such items were historically determined and in accordance with the Company's financial statements (including any related notes) contained or incorporated by reference in the Company SEC Documents, the Company Audited Balance Sheet and/or the Company Audited Balance Sheet, and Schedule I of the Company Disclosure Schedule (a) the sum of the Tetraphase Companies' Cash and Cash

Equivalents, in each case as of the Anticipated Closing Date, minus (b) the amount of all fees and expenses incurred by the Tetraphase Companies in connection with the Contemplated Transactions, including for the avoidance of doubt Transaction Expenses of the Tetraphase Companies, to the extent unpaid as of the Closing, minus (c) the cash cost of any unpaid "single trigger" (or "double trigger," to the extent the second trigger occurs in connection with or within 90 days following the Closing) change of control payments or severance, termination or similar payments pursuant to a Contract or applicable Legal Requirements that are or become due to any current or former employee, director or independent contractor of the Tetraphase Companies, minus (d) the cash cost of any accrued and unpaid retention payments or other bonuses due to any current or former employee, director or independent contractor of the Tetraphase Companies as of the Closing, minus (e) all payroll or employment Taxes incurred by the Tetraphase Companies in connection with any payment amounts set forth in clauses (c) or (d), the exercise of any Company Option at or prior to the Effective Time, or the vesting and settlement of Company RSUs or Company PRSUs at or prior to the Effective Time (including, for the avoidance of doubt, pursuant to Section 5.3(a)), minus (f) all withholding Taxes deducted or withheld on or prior to the Closing Date and not paid to the appropriate Governmental Body prior to the determination of Company Net Cash, minus (g) the expected costs and/or any premium related to the D&O Tail Policy, minus (h) the amount of any accounts payable of the Tetraphase Companies to the extent such Tetraphase Company is delinquent in payment by more than 60 days, minus (i) payments of the unpaid deductible amount under the Company's D&O insurance reasonably expected to be payable in connection with Legal Proceedings initiated following the date of this Agreement and before the Closing assumed by the insurer or expected to be assumed by the insurer (and if such Legal Proceeding relates to the Contemplated Transactions, provided that, for purposes of the reduction of Company Net Cash under this clause (i), such amount shall not exceed $400,000). For illustrative purposes only, a sample statement of Company Net Cash as of the date described therein is set forth on Schedule I of the Company Disclosure Schedule.

Company Option Plans. "Company Option Plans" shall mean: (a) the Company's 2006 Stock Plan; and (b) the Company's 2013 Stock Incentive Plan.

Company Options. "Company Options" shall mean options to purchase shares of Company Common Stock from the Company (whether granted by the Company pursuant to the Company Option Plans, assumed by the Company or otherwise).

Company Pension Plan. "Company Pension Plan" shall mean each: (a) Company Employee Plan that is an "employee pension benefit plan," within the meaning of Section 3(2) of ERISA; or (b) other occupational pension plan, including any final salary or money purchase plan.

Company Preferred Stock. "Company Preferred Stock" shall mean the Preferred Stock, $0.001 par value per share, of the Company.

Company Product. "Company Product" shall mean XERAVA and any other clinical or pre-clinical products that have reached the development candidate stage owned by, or licensed to, the Company or any Tetraphase Company, or which the Company or any Tetraphase Company is currently developing, manufacturing, using or holding for use (whether or not in collaboration with another Person).

Company PRSU. "Company PRSU" shall mean each restricted stock unit representing the right to vest in and be issued shares of Company Common Stock by the Company, and which vests in whole or in part contingent upon the attainment of one or more performance goals, granted by the Company pursuant to a Company Option Plan.

Company RSU. "Company RSU" shall mean each restricted stock unit representing the right to vest in and be issued shares of Company Common Stock by the Company, granted by the Company pursuant to a Company Option Plan, and which is not a Company PRSU.

Company Warrantholder Payout. "**Company Warrantholder Payout.** "Company Warrantholder Payout" shall mean $10,265,292.

Company Warrants. "Company Warrants" shall mean the (a) warrants to purchase Company Common Stock issued, on November 2, 2018, to Solar Capital Ltd., SCP Private Credit Income Fund L.P. and Crystal Financial LLC; (b) the Pre-Funded Warrants; and (c) the Black-Scholes Warrants.

Confidentiality Agreement. "Confidentiality Agreement" shall mean that certain Mutual Confidentiality Agreement dated as of July 29, 2019, as amended as of January 3, 2020, between the Company and Parent.

Consent. "Consent" shall mean any approval, consent, ratification, permission, waiver or authorization (including any Governmental Authorization).

Contemplated Transactions. "Contemplated Transactions" shall mean the Merger and the other transactions contemplated by the Agreement, the CVR Agreement and the Company Stockholder Voting Agreements.

Contract. "Contract" shall mean any agreement, contract, subcontract, grant, funding agreement, lease, instrument, note, option, warranty, purchase order, license, sublicense, insurance policy, benefit plan or other legally binding understanding, arrangement, commitment or undertaking.

CVR Agreement. "CVR Agreement" shall mean a contingent value rights agreement in substantially the form attached as **Exhibit D**.

DGCL. "DGCL" shall mean the Delaware General Corporation Law.

Encumbrance. "Encumbrance" shall mean any lien, pledge, hypothecation, charge, mortgage, easement, encroachment, imperfection of title, title exception, title defect, right of possession, lease, tenancy license, security interest, or similar encumbrance.

Entity. "Entity" shall mean any corporation (including any non-profit corporation), general partnership, limited partnership, limited liability partnership, joint venture, estate, trust, company (including any company limited by shares, limited liability company or joint stock company), firm, society or other enterprise, association, organization or entity.

ERISA. "ERISA" shall mean the Employee Retirement Income Security Act of 1974, as amended.

Exchange Act. "Exchange Act" shall mean the Securities Exchange Act of 1934, as amended.

Exchange Ratio. "Exchange Ratio" shall mean 0.6303; *provided* that if the Company Net Cash is less than the Target Net Cash, Exchange Ratio shall mean: (a) (A) Residual Equity Value, *divided* by (B) Reference Company Fully Diluted Shares, *divided* by (b) the Reference Company Per Share Price.

FDA. "FDA" shall mean the U.S. Food and Drug Administration or any successor Governmental Body thereto.

FDA Act. "FDA Act" shall mean the U.S. Federal Food, Drug, and Cosmetic Act, as amended.

Form S-4 Registration Statement. "Form S-4 Registration Statement" shall mean the registration statement on Form S-4 to be filed with the SEC by Parent in connection with the issuance of Parent Common Stock in the Merger and the CVRs, as said registration statement may be amended prior to the time it is declared effective by the SEC.

GAAP. "GAAP" shall mean generally accepted accounting principles in the United States.

Government Contract. "Government Contract" shall mean any Contract that (a) is between any Tetraphase Company, on the one hand, and a Governmental Body, on the other hand or (b) is entered into by any Tetraphase

Company as a subcontractor (at any tier) in connection with a Contract between another Person and a Governmental Body. All orders or calls under a Government Contract shall be deemed part of the same Government Contract.

Government Contract Bid. "Government Contract Bid" shall mean any quotation, offer, bid or proposal made by the Company prior to the Effective Time that, if accepted, would result in or lead to a Government Contract. For avoidance of doubt, the term Government Contract Bid includes only quotations, offers, bids or proposals that have not expired and for which award has not been made.

Governmental Authorization. "Governmental Authorization" shall mean any: (a) permit, license, certificate, franchise, permission, variance, clearance, registration, qualification or authorization issued, granted, given or otherwise made available by or under the authority of any Governmental Body or pursuant to any Legal Requirement; or (b) right under any Contract with any Governmental Body.

Governmental Body. "Governmental Body" shall mean any: (a) nation, state, commonwealth, province, territory, county, municipality, district or other jurisdiction of any nature; (b) federal, state, local, municipal, foreign or other government; (c) governmental or quasi-governmental authority of any nature (including any governmental division, department, agency, commission, instrumentality, official, ministry, fund, foundation, center, organization, unit, body or Entity and any court or other tribunal); or (d) self-regulatory organization (including the Nasdaq Global Market).

Health Care Laws. "Health Care Laws" shall mean (a) the FDA Act and the regulations promulgated thereunder, (b) the Public Health Service Act (42 U.S.C. § 201 et seq.), and the regulations promulgated thereunder, (c) all federal and state fraud and abuse laws, including the Federal Anti-Kickback Statute (42 U.S.C. §1320a-7b(b)), the civil False Claims Act (31 U.S.C. §3729 et seq.), the administrative False Claims Law (42 U.S.C. §1320a-7b(a)), the Anti-Inducement Law (42 U.S.C. §1320a-7a(a)(5)), the exclusion laws (42 U.S.C. §1320a-7), and the regulations promulgated pursuant to such statutes, (d) the Health Insurance Portability and Accountability Act of 1996 (42 U.S.C. §§1320d et seq.), the regulations promulgated thereunder and comparable state laws, (e) the Controlled Substances Act (21 U.S.C. § 801 et seq.), (f) Titles XVIII (42 U.S.C. §1395 et seq.) and XIX (42 U.S.C. §1396 et seq.) of the Social Security Act and the regulations promulgated thereunder, (g) the Clinical Laboratories Improvement Amendments (42 U.S.C. §263a et seq.), and (h) all applicable laws, rules and regulations, ordinances, judgments, decrees, orders, writs and injunctions administered by the FDA and other Governmental Bodies.

Intellectual Property. "Intellectual Property" shall mean United States, foreign and international material patents, patent applications, including provisional applications, statutory invention registrations, invention disclosures, inventions, trademarks, service marks, trade names, domain names, URLs, trade dress, logos and other source identifiers, including registrations and applications for registration thereof, together with the goodwill symbolized by any of the foregoing, copyrights, including registrations and applications for registration thereof, software, formulae, trade secrets, know-how, methods, processes, protocols, specifications, techniques, and other forms of technology (whether or not embodied in any tangible form and including all tangible embodiments of the foregoing, such as laboratory notebooks, samples, studies and summaries).

Intellectual Property Rights. "Intellectual Property Rights" shall mean all rights of the following types, which may exist or be created under the laws of any jurisdiction in the world: (a) rights associated with works of authorship, including exclusive exploitation rights, copyrights, moral rights and mask works; (b) trademark, trade name and domain name rights and similar rights; (c) trade secret rights; (d) patent and industrial property rights; (e) other proprietary rights in Intellectual Property; and (f) rights in or relating to registrations, renewals, extensions, combinations, divisions and reissues of, and applications for, any of the rights referred to in clauses "(a)" through "(e)" above.

IRS. "IRS" shall mean the United States Internal Revenue Service.

IT Systems. "IT Systems" shall mean any information technology systems used in connection with, and material to, the operation of the business of the Company, including any software and any servers, systems, sites, circuits, networks, interfaces, platforms and other computer and telecom assets and equipment.

knowledge of the Company. "knowledge of the Company" or a similar phrase shall mean the actual knowledge as of the date of this Agreement of Larry Edwards, Maria Stahl and Christopher Watt.

knowledge of Parent. "knowledge of Parent" or a similar phrase shall mean the actual knowledge as of the date of this Agreement of Vincent Angotti, Raffi Asadorian and Ruben Garcia.

Legal Proceeding. "Legal Proceeding" shall mean any action, suit, litigation, arbitration, proceeding (including any civil, criminal, administrative, investigative or appellate proceeding), hearing, inquiry, audit, examination or investigation commenced, brought, conducted or heard by or before, or otherwise involving, any court or other Governmental Body or any arbitrator or arbitration panel.

Legal Requirement. "Legal Requirement" shall mean any federal, state, local, municipal, foreign or other law, statute, constitution, principle of common law, resolution, ordinance, code, edict, decree, rule, regulation, order, award, ruling or requirement issued, enacted, adopted, promulgated, implemented or otherwise put into effect by or under the authority of any Governmental Body (or under the authority of the Nasdaq Global Market or Nasdaq Global Select Market).

Made Available. Any statement in the Agreement to the effect that any information, document or other material has been "Made Available" shall mean that: (a) with respect to such information, document or other material Made Available by the Company: (i) such information, document or material was made available prior to the execution of the Agreement in the virtual data room maintained by the Company with iDeals Solutions in connection with the Contemplated Transactions or (ii) such information, document or material was publicly filed by the Company prior to the execution of this Agreement, and (b) with respect to information, document or other material Made Available by Parent: (i) such information, document or material was made available prior to the execution of the Agreement by e-mail to the Company or its Representatives; or (ii) such information, document or material was publicly filed by Parent prior to the execution of this Agreement.

Order. "Order" shall mean any order, writ, injunction, judgment or decree.

Oxford Loan Agreement. "Oxford Loan Agreement" shall mean the Loan and Security Agreement, dated May 30, 2019, between Parent and Oxford Finance LLC.

Parent Affiliate. "Parent Affiliate" shall mean any Person under common control with any of the AcelRx Companies within the meaning of Section 414(b), Section 414(c), Section 414(m) or Section 414(o) of the Code, and the regulations issued thereunder.

Parent Board. "Parent Board" shall mean Parent's board of directors.

Parent Common Stock. "Parent Common Stock" shall mean the Common Stock, $0.001 par value per share, of Parent.

Parent Contract. "Parent Contract" shall mean any Contract: (a) to which any of the AcelRx Companies is a party; and (b) by which any of the AcelRx Companies is bound or under which any of the AcelRx Companies has, or may become subject to, any express right or obligation.

Parent Designated Representations. "Parent Designated Representations" shall mean the representations and warranties set forth in Section 3.1, Section 3.3(a) (the first sentence only), 3.3(c), 3.7, and 3.9.

Parent Disclosure Schedule. "Parent Disclosure Schedule" shall mean the Parent Disclosure Schedule that has been prepared by Parent in accordance with the requirements of Section 9.6 of the Agreement and that has been delivered by Parent to the Company on the date of the Agreement.

Parent Equity Award. "Parent Equity Award" shall mean the Parent Options, Parent RSUs and Parent PRSUs.

Parent ESPP. "Parent ESPP" shall mean Parent's 2011 Employee Stock Purchase Plan.

Parent IP. "Parent IP" shall mean: (a) all material Intellectual Property Rights in or to the Parent Products; and (b) all other material Intellectual Property Rights and Intellectual Property with respect to which any of the AcelRx Companies has (or purports to have) an ownership interest or an exclusive license or similar exclusive right.

Parent Material Adverse Effect. "Parent Material Adverse Effect" shall mean any Effect that, considered together with all other Effects, is or would reasonably be expected to be or to become materially adverse to, or has or would reasonably be expected to have or result in a material adverse effect on the business, financial condition or results of operations of Parent and its Subsidiaries taken as a whole; *provided*, *however*, that, in no event shall any Effects resulting from any of the following, alone or in combination, be deemed to constitute, or be taken into account in determining whether there has occurred or could or would occur, a Parent Material Adverse Effect: (i) conditions generally affecting the industries in which any AcelRx Companies participates or the U.S. or global economy as a whole, to the extent that such conditions do not have a materially disproportionate impact on the Parent Companies, taken as a whole as compared to other industry participants; (ii) general conditions in the financial markets, and any changes therein, and any changes arising out of acts of terrorism, war, weather conditions, viruses, pandemics or other force majeure events, to the extent that such conditions do not have a materially disproportionate impact on the Parent Companies, taken as a whole, as compared to other industry participants; (iii) changes in the trading price or trading volume of Parent Common Stock, or the suspension of trading in or delisting of Parent's securities on the Nasdaq Global Select Market (it being understood, however, that, except as otherwise provided in this sentence, any Effect giving rise to or contributing to such changes in the trading price or trading volume, or suspension or delisting of Parent Common Stock may give rise to a Parent Material Adverse Effect and may be taken into account in determining whether a Parent Material Adverse Effect has occurred or could or would occur); (iv) changes in GAAP (or any interpretations of GAAP) or Legal Requirements applicable to Parent or any of its Subsidiaries; (v) the failure to meet public estimates or forecasts of revenues, earnings of other financial metrics, in and of itself, or the failure to meet internal projections, forecasts or budgets of revenues, earnings or other financial metrics, in and of itself (it being understood, however, that, except as otherwise provided in this sentence, any Effect giving rise to or contributing to any such failure may give rise to a Parent Material Adverse Effect and may be taken into account in determining whether a Parent Material Adverse Effect has occurred or could or would occur); (vi) any stockholder litigation arising from or relating to this Agreement or the Contemplated Transactions and/or relating to a breach of the fiduciary duties of the Parent's board of directors to the Parent's stockholders under applicable Legal Requirements; (vii) resulting or arising out of the execution, announcement or performance of this Agreement or the Contemplated Transactions, including loss of employees, suppliers or customers (including customer orders or Contracts) resulting directly from the announcement or pendency of this Agreement or any of the Contemplated Transactions; or (viii) the taking of any action expressly required to be taken pursuant to this Agreement or the taking of any action requested by the Company to be taken pursuant to the terms of the Agreement to the extent taken in accordance with such request.

Parent Options. "Parent Options" shall mean options to purchase shares of Parent Common Stock from Parent (whether granted by Parent pursuant to the Parent Option Plans, assumed by Parent or otherwise).

Parent Option Plans. "Parent Option Plans" shall mean: (a) Parent's 2006 Stock Plan, as amended; (b) Parent's 2011 Equity Incentive Plan; and (c) any other equity incentive plan of Parent adopted following the date hereof and prior to the Effective Time.

Parent Permitted Encumbrances. "Parent Permitted Encumbrances" shall mean: (i) any lien for current Taxes not yet due and payable or Taxes being contested in good faith by appropriate proceedings; (ii) mechanics', carriers', workmen's, warehousemen's or other statutory liens arising in the ordinary course of business and for which appropriate reserves have been established on the face of the Parent Unaudited Balance Sheet to the extent required by GAAP; (iii) liens on goods in transit incurred in the ordinary course of business; and (iv) liens that have arisen in the ordinary course of business and that do not (in any individual case or in the aggregate) materially detract from the value of the assets subject thereto or materially impair the operations of the AcelRx Companies, taken as a whole.

Parent Preferred Stock. "Parent Preferred Stock" shall mean the Preferred Stock, $0.001 par value per share, of Parent.

Parent Product. "Parent Product" shall mean DSUVIA, DZUVEO and Zalviso, and any other clinical or pre-clinical products that have reached the development candidate stage owned by, or licensed to, the Parent or any AcelRx Company, or which the Parent or any AcelRx Company is currently developing, manufacturing, using or holding for use (whether or not in collaboration with another Person).

Parent PRSU. "Parent PRSU" shall mean each restricted stock unit representing the right to vest in and be issued shares of Parent Common Stock by Parent, and which vests in whole or in part contingent upon the attainment of one or more performance goals, whether granted by Parent pursuant to a Parent Option Plan, assumed by Parent in connection with any merger, acquisition or similar transaction or otherwise issued or granted and whether vested or unvested.

Parent RSU. "Parent RSU" shall mean each restricted stock unit representing the right to vest in and be issued shares of Parent Common Stock by Parent, whether granted by Parent pursuant to a Parent Option Plan, assumed by Parent in connection with any merger, acquisition or similar transaction or otherwise issued or granted and whether vested or unvested, and which is not a Parent PRSU.

Parent Unaudited Balance Sheet. "Parent Unaudited Balance Sheet" shall mean the unaudited consolidated balance sheet of the Parent and its consolidated Subsidiaries as of September 30, 2019 included in the Parent's Quarterly Report on Form 10-Q for the period ended September 30, 2019.

Parent Warrants. "Parent Warrants" shall mean the warrants to purchase Parent Common Stock issued, on May 30, 2019, to Oxford Finance LLC and its affiliates.

Permitted Acquisition. "Permitted Acquisition" shall mean a merger, acquisition, share exchange, business combination, in-licensing, out-licensing or similar transaction (other than a Prohibited Acquisition) with respect to an AcelRx Company, in each case as would not reasonably be expected to, individually or in the aggregate with any other Permitted Acquisition(s), impair or delay, in any material respect, Parent's ability to consummate the Contemplated Transactions on or before the End Date.

Permitted Financing. "Permitted Financing" shall mean any bona fide financing (including any equity financing involving Parent Common Stock (including warrants) or any debt financing, but excluding an equity financing involving Parent Preferred Stock).

Person. "Person" shall mean any individual, Entity or Governmental Body, including Parent, the Company and Merger Sub.

Pre-Funded Warrants. "Pre-Funded Warrants" shall mean those certain pre-funded warrants to purchase Company Common Stock sold pursuant to that certain (a) Securities Purchase Agreement, dated as of October 29, 2019, among the Company and the purchaser identified therein, (b) Securities Purchase Agreement, dated as of January 22, 2020, between the Company and each purchaser named therein and (c) Securities Purchase Agreement, dated as of January 22, 2020, between the Company and each purchaser named therein, in each case other than the Black-Scholes Warrants.

Prohibited Acquisition. "Prohibited Acquisition" shall mean any acquisition by Parent of an antibiotic product through a merger, acquisition, share exchange, business combination, in-licensing or similar transaction.

Proxy Statement/Prospectus. "Proxy Statement/Prospectus" shall mean the proxy statement to be sent to the Company's stockholders in connection with the Company Stockholders' Meeting.

Reference Company Fully Diluted Shares. "Reference Company Fully Diluted Shares" means 10,800,166.

Reference Company Per Share Price. "Reference Company Per Share Price" shall mean $1.43.

Reference Date. "Reference Date" shall mean March 13, 2020.

Registered IP. "Registered IP" shall mean all Intellectual Property Rights that are registered, filed or issued with, by or under the authority of any Governmental Body, including all patents, registered copyrights, registered mask works and registered trademarks and all applications for any of the foregoing.

Representatives. "Representatives" shall mean directors, officers, other employees, agents, attorneys, accountants, investment bankers, other advisors and representatives.

Residual Equity Value. "Residual Equity Value" shall mean (a) $20,000,000, *minus* (b) the dollar amount by which the Company Net Cash is less than the Target Net Cash, *minus* (c) the Company Warrantholder Payout.

Rights Agent. "Rights Agent" shall mean a rights agent with respect to the CVRs mutually agreeable to Parent and the Company.

Sarbanes-Oxley Act. "Sarbanes-Oxley Act" shall mean the Sarbanes-Oxley Act of 2002, as it may be amended from time to time.

SEC. "SEC" shall mean the United States Securities and Exchange Commission.

Securities Act. "Securities Act" shall mean the Securities Act of 1933, as amended.

Specified Time. "Specified Time" shall mean the earlier of (a) the time at which this Agreement is terminated in accordance with the terms hereof and (b) the date on which the Required Company Stockholder Vote is obtained.

Subsidiary. An Entity shall be deemed to be a "Subsidiary" of another Person if such Person directly or indirectly owns beneficially or of record: (a) an amount of voting securities of or other interests in such Entity that is sufficient to enable such Person to elect at least a majority of the members of such Entity's board of directors or other governing body; or (b) at least 50% of the outstanding equity, voting or financial interests in such Entity.

Superior Offer. "Superior Offer" means any *bona fide* written Acquisition Proposal involving an Acquisition Transaction that is not subject to any financing contingency, which the Company Board shall have determined (after consultation with its independent financial advisor and its outside legal counsel) (a) is reasonably likely to be consummated in accordance with its terms, taking into account all legal, regulatory and financing aspects (including certainty of financing and certainty of closing) of the proposal, the Person making the proposal and other aspects of the Acquisition Proposal that the Company Board deems relevant and (b) if consummated, would be more favorable to the Company's stockholders (in their capacity as such) and creditors than the Contemplated Transactions; *provided* that for purposes of the definition of "Superior Offer", the references to "15%" in the definition of Acquisition Proposal shall be deemed to be references to "80%."

Target Net Cash. "Target Net Cash" shall mean $5,000,000.

Tax. "Tax" shall mean any and all (a) federal, state, local, foreign or other tax (including any income tax, franchise tax, profits tax, license tax, capital gains tax, gross receipts tax, value-added tax, surtax, estimated tax, employment tax, unemployment tax, national health insurance tax, excise tax, ad valorem tax, transfer tax, stamp tax, sales tax, use tax, property tax, business tax, withholding tax, payroll tax, environmental tax, escheat or unclaimed property obligation, custom tax, goods and services tax, service use tax, license tax, profit tax or other like assessments or charges of any kind whatsoever), and (b) charge, fine, penalty, interest, additions to tax, or additional amounts imposed by any Governmental Body in connection with (i) any item described in clause (a) above or (ii) the failure to comply with any requirement imposed with respect to any Tax Returns.

Tax Return. "Tax Return" shall mean any return (including any information return), report, statement, declaration, estimate, schedule, notice, notification, form, election, certificate or other document or information, and any amendment or supplement to any of the foregoing, filed with or submitted to, or required to be filed with or submitted to, any Governmental Body in connection with the determination, assessment, collection or payment of any Tax or in connection with the administration, implementation or enforcement of or compliance with any Legal Requirement relating to any Tax.

Tetraphase Companies. "Tetraphase Companies" shall mean: (a) the Company; and (b) each of Company's Subsidiaries.

Transaction Expenses. "Transaction Expenses" shall mean, without duplication and subject to Section 8.3 (including with respect to any sharing of fees and/or expenses contemplated by this Agreement), with respect to each party, all fees and expenses incurred by such party at or prior to the Effective Time in connection with the Contemplated Transactions and this Agreement, including (a) any fees and expenses of legal counsel and accountants, the amount of fees and expenses payable to financial advisors, investment bankers, brokers, consultants, and other advisors of such party; (b) fees paid to the SEC in connection with filing the Form S-4 Registration Statement, the Proxy Statement/Prospectus, and any amendments and supplements thereto, with the SEC; (c) any fees and expenses in connection with the printing, mailing and distribution of the Form S-4 Registration Statement, the Proxy Statement/Prospectus and any amendments and supplements thereto; (d) only with respect to Parent, any fees associated with listing the shares of Parent Common Stock in connection with the Contemplated Transactions on the Nasdaq Global Market, including the portion of Parent's periodic Nasdaq fees that is attributable to the shares of Parent Common Stock to be issued in connection with the Contemplated Transactions; and (e) only with respect to the Company, any "single-trigger" (or "double trigger," to the extent the second trigger occurs in connection with or within 90 days following the Closing), bonus, severance, change-in-control payments or similar payment obligations that become due or payable to any director, officer, employee or consultant of the Company upon, and solely as a result of, the consummation of the Contemplated Transactions (*provided*, that Transaction Expenses shall not include any amounts (i) payable as a result of any arrangements implemented or actions taken by the Parent, or by the Tetraphase Companies after the Effective Time, or (ii) discharged prior to the Closing).

Willful Breach. "Willful Breach" shall mean a material breach of any covenant or agreement set forth in this Agreement that is a consequence of an act, or failure to act, undertaken by the breaching party with the actual knowledge that the taking of such act, or failure to act, would result in such breach.

Other Defined Terms. In addition, each of the following terms shall have the meaning given to such term in the applicable Section of the Agreement listed opposite such term:

Term	Section
Acceptable Confidentiality Agreement	4.4(a)
Accounting Firm	1.11(e)
Agreement	Preamble
Alternative Acquisition Agreement	5.2(b)
Anticipated Closing Date	1.11(a)
Book Entry Shares	1.5(c)
Closing	1.3
Closing Date	1.3
Company	Preamble
Company 401(k) Plan	5.4(c)
Company Adverse Change in Recommendation	5.2(b)
Company Board Recommendation	5.2(b)
Company Certifications	2.4(a)
Company ESPP	2.3(c)
Company's Financial Advisor	2.26
Company Material Contract	2.10(a)
Company Permitted Encumbrances	2.6
Company SEC Documents	2.4(a)
Company Stock Certificate	1.6
Company Stockholder Voting Agreements	Recitals
Company Stockholders' Meeting	5.2(a)
Continuing Employees	5.4(a)
D&O Tail Policy	5.5(b)
Determination Notice	5.2(c)(i)
Dispute Notice	1.11(b)
Dissenting Company Shares	1.5(d)
Effective Time	1.3
End Date	8.1(e)
Enforceability Exceptions	2.10(b)
Environmental Law	2.17(e)
Exchange Agent	1.7(a)
Exchange Fund	1.7(a)
Existing D&O Policy	5.5(b)
file	3.4(a)
Indemnified Persons	5.5(a)
Material Company Plan	2.16(c)
Material Company Plans	2.16(c)
Materials of Environmental Concern	2.17(e)
Maximum Premium	5.5(b)
Merger	Recitals
Merger Sub	Preamble
Net Cash Calculation	1.11(a)
Net Cash Schedule	1.11(a)
Ordinary Commercial Agreement	2.15(f)
Parent	Preamble
Parent Benefit Plans	5.4(d)
Parent Certifications	3.4(a)
Parent Expenses	8.3(c)
Parent SEC Documents	3.4(a)
Pre-Closing Period	4.1

Term	Section
Qualified Plan Loans	2.16(o)
Release	2.17(e)
Required Company Stockholder Vote	2.24
Response Date	1.11(b)
Specified Agreement	8.1(f)
Surviving Corporation	1.1
Tetraphase Leased Real Property	2.8(c)
Tetraphase Registered IP	2.9(a)
Termination Fee	8.3(b)(iii)
Triggering Event	8.1(d)

Annex B

FORM OF VOTING AGREEMENT

This VOTING AGREEMENT (this "Agreement"), dated as of March 15, 2020, is entered into by and among AcelRx Pharmaceuticals, Inc., a Delaware Corporation ("Parent"), Consolidation Merger Sub, Inc., a Delaware corporation and a wholly owned subsidiary of Parent ("Merger Sub"), and each of the stockholders of Tetraphase Pharmaceuticals, Inc. set forth on Schedule A hereto (each, a "Stockholder"). Capitalized terms used but not otherwise defined in this Agreement shall have the respective meanings ascribed to such terms in the Merger Agreement (as defined below).

WHEREAS, as of the date hereof, each Stockholder is the record and beneficial owner (as defined in Rule 13d-3 under the Exchange Act) of the number of shares of Company Common Stock set forth opposite such Stockholder's name on Schedule A (all such shares, the "Subject Shares");

WHEREAS, as of the date hereof, each Stockholder is the record and beneficial owner (as defined in Rule 13d-3 under the Exchange Act) of the warrants to purchase Company Common Stock set forth opposite such Stockholder's name on Schedule A (all such Warrants, the "Subject Warrants", and together with the Subject Shares, the "Subject Securities");

WHEREAS, concurrently with the execution hereof, Parent, Merger Sub and Tetraphase Pharmaceuticals, Inc., a Delaware corporation (the "Company"), are entering into an Agreement and Plan of Merger, dated as of the date hereof (as it may be amended from time to time, the "Merger Agreement"), which provides, among other things, for the merger of Merger Sub with and into the Company, with the Company surviving the Merger and becoming a wholly-owned subsidiary of Parent, upon the terms and subject to the conditions set forth in the Merger Agreement; and

WHEREAS, as a condition to their willingness to enter into the Merger Agreement, and as an inducement and in consideration for Parent and Merger Sub to enter into the Merger Agreement, each Stockholder, severally and not jointly, and on such Stockholder's own account with respect to the Subject Shares, has agreed to enter into this Agreement.

NOW, THEREFORE, in consideration of the foregoing and the respective representations, warranties, covenants and agreements set forth below and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto, intending to be legally bound, do hereby agree as follows:

ARTICLE I
AGREEMENT TO VOTE

1.1. **Agreement to Vote**. Subject to the terms of this Agreement, each Stockholder, severally and not jointly as to such Stockholder's Subject Shares, hereby irrevocably and unconditionally agrees that, until the termination of this Agreement pursuant to Section 5.2, at any annual or special meeting of the stockholders of the Company, however called, including any adjournment or postponement thereof, and in connection with any action proposed to be taken by written consent of the stockholders of the Company, such Stockholder shall, in each case to the fullest extent that such Stockholder's Subject Shares are entitled to vote thereon: (a) appear at each such meeting or otherwise cause all such Subject Shares to be counted as present thereat for purposes of determining a quorum; and (b) be present (in person or by proxy) and vote (or cause to be voted), or deliver (or cause to be delivered) a written consent with respect to, all of its Subject Shares (i) in favor of adopting the Merger Agreement; and (ii) against (A) any Acquisition Proposal and against any other action, agreement or transaction involving the Company that would reasonably be expected to cause the Company to abandon,

terminate or fail to consummate the Merger or (B) any liquidation, dissolution, extraordinary dividend or other significant corporate reorganization of the Company. Subject to the proxy granted under Section 1.2, each Stockholder shall retain at all times the right to vote the Subject Shares in such Stockholder's sole discretion, and without any other limitation, on any matters other than those set forth in this Section 1.1 that are at any time or from time to time presented for consideration to the Company's stockholders generally.

ARTICLE II
REPRESENTATIONS AND WARRANTIES OF THE STOCKHOLDERS

Each Stockholder represents and warrants, severally and not jointly and on its own account with respect to the Subject Securities, to Parent and Merger Sub as to such Stockholder that:

2.1. **Authorization; Binding Agreement**. If such Stockholder is not an individual, such Stockholder is duly organized and validly existing in good standing under the laws of the jurisdiction in which it is incorporated or constituted and the consummation of the transactions contemplated hereby are within such Stockholder's entity powers and have been duly authorized by all necessary entity actions on the part of such Stockholder, and such Stockholder has full power and authority to execute, deliver and perform this Agreement and to consummate the transactions contemplated hereby. If such Stockholder is an individual, such Stockholder has full legal capacity, right and authority to execute and deliver this Agreement and to perform such Stockholder's obligations hereunder. This Agreement has been duly and validly executed and delivered by such Stockholder and constitutes a valid and binding obligation of such Stockholder enforceable against such Stockholder in accordance with its terms, subject to the effects of bankruptcy, insolvency, fraudulent conveyance, reorganization, moratorium and other similar Legal Requirements relating to or affecting creditors' rights generally and general equitable principles (whether considered in a proceeding in equity or at law).

2.2. **Non-Contravention**. Neither the execution and delivery of this Agreement by such Stockholder nor the consummation by such Stockholder of the transactions contemplated hereby nor compliance by such Stockholder with any provisions herein will (a) if such Stockholder is not an individual, contravene, conflict with or result in a violation of any of the provisions of the certificate of incorporation, bylaws or other similar charter or organizational documents of such Stockholder, (b) require any consent, approval, authorization or permit of, or filing with or notification to, any supranational, national, foreign, federal, state or local government or subdivision thereof, or governmental, judicial, legislative, executive, administrative or regulatory authority on the part of such Stockholder, except for compliance with the applicable requirements of the Securities Act, the Exchange Act or any other United States or federal securities laws and the rules and regulations promulgated thereunder, (c) contravene, conflict with or result in a violation or breach of, or result in a default under (or give rise to any right of termination, cancellation, modification or acceleration) under any of the terms, conditions or provisions of any note, license, agreement, contract, indenture or other instrument or obligation to which such Stockholder is a party or by which such Stockholder or any of its assets may be bound, (d) result (or, with the giving of notice, the passage of time or otherwise, would result) in the creation or imposition of any mortgage, lien, pledge, charge, security interest or encumbrance of any kind on any asset of such Stockholder (other than one created by Parent or Merger Sub), or (e) violate any order, writ, injunction, decree, statute, rule or regulation applicable to such Stockholder or by which any of its assets are bound, except as would not, in the case of each of clauses (b), (c), (d) and (e), reasonably be expected to have, individually or in the aggregate, a material adverse effect on such Stockholder's ability to perform its obligations under this Agreement.

2.3. **Ownership of Subject Shares; Total Shares**. Such Stockholder is the record and beneficial owner (as defined in Rule 13d-3 under the Exchange Act) of all such Stockholder's Subject Securities and has good and marketable title to all such Subject Securities free and clear of any liens, claims, proxies, voting trusts or agreements, options, rights, understandings or arrangements or any other encumbrances or restrictions whatsoever on title, transfer or exercise of any rights of such Stockholder in respect of such Subject Securities (collectively, "Encumbrances"), except for any such Encumbrance that may be imposed pursuant to (i) this

Agreement; (ii) any applicable restrictions on transfer under the Securities Act or any other applicable securities law; (iii) any written policies of the Company with respect to the trading of securities in connection with insider trading restrictions, applicable securities laws and similar considerations; (iv) any lien for current Taxes not yet due and payable or Taxes being contested in good faith by appropriate proceedings; and (v) liens that do not (in any individual case or in the aggregate) restrict in any material respect the ability of such Stockholder to comply with its obligations under this Agreement (collectively, "Permitted Encumbrances"). Except to the extent acquired after the date hereof, the Subject Shares listed on Schedule A opposite such Stockholder's name constitute all of the shares of "voting stock" of the Company of which such Stockholder is the "owner" (as such terms are defined in Section 203 of the Delaware General Corporation Law) as of the time that the Company Board approved the Merger Agreement.

2.4. **Voting Power**. Such Stockholder has full voting power with respect to all such Stockholder's Subject Shares, and full power of disposition (except for Permitted Encumbrances), full power to issue instructions with respect to the matters set forth herein and full power to agree to all of the matters set forth in this Agreement, in each case with respect to all such Stockholder's Subject Securities. None of such Stockholder's Subject Shares are subject to any stockholders' agreement, proxy, voting trust or other agreement or arrangement with respect to the voting of such Subject Shares, except as provided hereunder.

2.5. **Reliance**. Such Stockholder understands and acknowledges that Parent and Merger Sub are entering into the Merger Agreement in reliance upon such Stockholder's execution, delivery and performance of this Agreement.

2.6. **Absence of Litigation**. With respect to such Stockholder, as of the date hereof, there is no Legal Proceeding pending against, or, to the actual knowledge of such Stockholder, threatened in writing against such Stockholder or any of such Stockholder's properties or assets (including any Shares beneficially owned by such Stockholder) before or by any Governmental Body that would reasonably be expected to prevent or otherwise materially impair the ability of such Stockholder to perform the obligations of such Stockholder under this Agreement.

ARTICLE III
REPRESENTATIONS AND WARRANTIES OF PARENT AND MERGER SUB

Parent and Merger Sub represent and warrant to the Stockholders that:

3.1. **Organization and Qualification**. Each of Parent and Merger Sub is a duly organized and validly existing corporation in good standing under the laws of the jurisdiction of its organization.

3.2. **Authority for this Agreement**. Each of Parent and Merger Sub has all requisite entity power and authority to execute, deliver and perform its obligations under this Agreement and to consummate the transactions contemplated hereby. The execution and delivery of this Agreement by Parent and Merger Sub have been duly and validly authorized by all necessary entity action on the part of each of Parent and Merger Sub, and no other entity proceedings on the part of Parent and Merger Sub are necessary to authorize this Agreement. This Agreement has been duly and validly executed and delivered by Parent and Merger Sub and, assuming the due authorization, execution and delivery by the Stockholder, constitutes legal, valid and binding obligation of each of Parent and Merger Sub, enforceable against each of Parent and Merger Sub in accordance with its terms, subject to the effects of bankruptcy, insolvency, fraudulent conveyance, reorganization, moratorium and other similar Legal Requirements relating to or affecting creditors' rights generally and general equitable principles (whether considered in a proceeding in equity or at law).

ARTICLE IV
ADDITIONAL COVENANTS OF THE STOCKHOLDERS

Each Stockholder, severally and not jointly and solely with respect to such Stockholder's Subject Shares, hereby covenants and agrees that until the termination of this Agreement:

4.1. **No Transfer or Encumbrance; No Inconsistent Arrangements**. Except as provided hereunder or under the Merger Agreement, from and after the date hereof and until this Agreement is terminated, such Stockholder shall not, directly or indirectly, (a) create or permit to exist any Encumbrance, other than Permitted Encumbrances, on any of such Stockholder's Subject Shares, (b) transfer, sell, assign, gift, hedge, pledge or otherwise dispose of, or enter into any derivative arrangement with respect to (collectively, "Transfer"), any of such Stockholder's Subject Shares, or any right or interest therein (or consent to any of the foregoing), (c) enter into any Contract providing for any Transfer of such Stockholder's Subject Shares or any interest therein, (d) grant or permit the grant of any proxy, power-of-attorney or other authorization or consent in or with respect to any such Stockholder's Subject Shares, (e) deposit or permit the deposit of any of such Stockholder's Subject Shares into a voting trust or enter into a voting agreement or arrangement with respect to any of such Stockholder's Subject Shares or (f) take or permit any other action that would restrict, limit or interfere with the performance of such Stockholder's obligations hereunder in any material respect. Any action taken in violation of the foregoing sentence shall be null and void *ab initio*. Notwithstanding the foregoing, any Stockholder may Transfer Subject Shares (i) to any member of such Stockholder's immediate family, (ii) to a trust for the sole benefit of such Stockholder or any member of such Stockholder's immediate family, the sole trustees of which are such Stockholder or any member of such Stockholder's immediate family or (iii) by will or under the laws of intestacy upon the death of such Stockholder, *provided*, that a transfer referred to in clause (i) through (iii) of this sentence shall be permitted only if all the representations and warranties in this Agreement with respect to such Stockholder would, to the extent applicable, be true and correct upon such Transfer and the transferee agrees in writing to accept such Subject Shares subject to the terms of this Agreement and to be bound by the terms of this Agreement and to agree and acknowledge that such Person shall constitute a "Stockholder" for all purposes of this Agreement. If any involuntary Transfer of any of such Stockholder's Subject Shares in the Company shall occur (including, but not limited to, a sale by such Stockholder's trustee in any bankruptcy, or a sale to a purchaser at any creditor's or court sale), the transferee (which term, as used herein, shall include any and all transferees and subsequent transferees of the initial transferee) shall take and hold such Subject Shares subject to all of the restrictions, liabilities and rights under this Agreement, which shall continue in full force and effect until valid termination of this Agreement. Notwithstanding the foregoing, such Stockholder may make Transfers of its Subject Shares as Parent may agree in writing in its sole discretion.

4.2. **Documentation and Information**. From the date of this Agreement until the Closing, such Stockholder shall not make any public announcement regarding this Agreement, the Contemplated Transactions and the other transactions contemplated hereby without the prior written consent of Parent, except (a) as may be required by applicable Legal Requirements (provided that reasonable notice of any such disclosure will be provided to Parent) or (b) to the extent such announcement contains information that has been previously disclosed publicly. Such Stockholder consents to and hereby authorizes Parent and Merger Sub to publish and disclose in all documents and schedules filed with the SEC, and any press release or other disclosure document necessary in connection with the Merger and the Contemplated Transactions, the existence of this Agreement and the nature of such Stockholder's commitments and obligations under this Agreement, and such Stockholder acknowledges that Parent and Merger Sub may, in Parent's sole discretion, file this Agreement or a form hereof with the SEC or any other Governmental Body. Such Stockholder agrees to promptly give Parent and the Company any information either may reasonably require for the preparation of any such disclosure documents, and such Stockholder agrees to promptly notify Parent and the Company upon becoming aware of any required corrections with respect to any written information supplied by such Stockholder specifically for use in any such disclosure document, if and to the extent that any such information shall have become false or misleading in any material respect.

4.3. **Adjustments**. In the event of any stock split, stock dividend, merger, reorganization, recapitalization, reclassification, combination, exchange of shares or the like of the capital stock of the Company affecting the Subject Shares, the terms of this Agreement shall apply to the resulting securities.

4.4. **Waiver of Certain Actions**. Each Stockholder hereby agrees not to commence or participate in, and to take all actions necessary to opt out of any class in any class action with respect to, any claim, derivative or otherwise, against Parent, Merger Sub or any of their respective successors (a) challenging the validity of, or seeking to enjoin or delay the operation of, any provision of this Agreement or the Merger Agreement (including any claim seeking to enjoin or delay the Closing) or (b) alleging a breach of any duty of the Company Board in connection with the Merger Agreement, this Agreement or the transactions contemplated thereby or hereby.

4.5. **No Solicitation**. Subject to Section 4.4 (No Solicitation) of the Merger Agreement, each Stockholder agrees that such Stockholder shall immediately cease any solicitation, discussions or negotiations with any Persons that may be ongoing by such Stockholder as of the date of this Agreement with respect to an Acquisition Proposal. Until the Specified Time, such Stockholder shall not, directly or indirectly, (a) solicit, initiate or knowingly facilitate or knowingly encourage any inquiries or the making of any proposal or offer that constitutes, or would reasonably be expected to lead to, an Acquisition Proposal or (b) engage in, continue or otherwise participate in any discussions or negotiations regarding, or furnish to any other Person any non-public information in connection with an Acquisition Proposal or any proposal or offer that would reasonably be expected to lead to an Acquisition Proposal.

ARTICLE V
WARRANT TREATMENT

[(a)] Each Stockholder acknowledges and agrees, severally and not jointly and solely with respect to such Stockholder's Subject Warrants, that, at the Effective Time, each Subject Warrant owned by such Stockholder that is then-outstanding and unexercised as of immediately prior to the Effective Time shall, pursuant to the terms hereof and as a result of the Merger and without any other action on the part of such Stockholder, receive, in lieu of any other amount or consideration to which such Stockholder might otherwise have been entitled to receive pursuant to such Subject Warrant, (i) 0.8813 of a share of Parent Common Stock for each share of Company Common Stock for which such November Warrant (as set forth on Schedule A) was exercisable immediately prior to the Effective Time (subject to adjustment in the event of a stock split, division or subdivision, stock dividend, reverse stock split, consolidation, reclassification, recapitalization or other similar transaction affecting the Company Common Stock or the Parent Common Stock, [plus (ii) 0.9087 of a share of Parent Common Stock for each share of Company Common Stock for which such January Warrant (as set forth on Schedule A) was exercisable immediately prior to the Effective Time (subject to adjustment in the event of a stock split, division or subdivision, stock dividend, reverse stock split, consolidation, reclassification, recapitalization or other similar transaction affecting the Company Common Stock or the Parent Common Stock, plus (iii) in lieu of any fractional shares of Parent Common Stock otherwise issuable under clauses (i) [or (ii)] hereof after aggregating the shares of Parent Common Stock to be issued with respect to the Subject Warrant thereunder, cash in a dollar amount (rounded to the nearest whole cent, with numbers ending with .5 or more being rounded up to the nearest whole cent), without interest, determined by multiplying such fraction by the average closing price of a share of Parent Common Stock on the Nasdaq Global Select Market for the 10 most recent trading days that Parent Common Stock has traded ending on the trading day one day prior to the Effective Time.

[(b) At the Effective Time, each Pre-Funded Warrant that is then-outstanding and unexercised as of immediately prior to the Effective Time shall, as a result of the Merger and without any action on the part of any holder of a Pre-Funded Warrant, receive, in lieu of any other amount or consideration to which such Stockholder might otherwise have been entitled to receive pursuant to such Pre-Funded Warrant, (1) the product of (i) (A) the aggregate number of shares of Common Stock for which such Pre-Funded Warrant was exercisable immediately

prior to the Effective Time, multiplied by (B) in the case of November Pre-Funded Warrants (set forth on Schedule B), 98.89052%, and in the case of January Pre-Funded Warrants (set forth on Schedule B), 99.88906%, and (ii) the Merger Consideration, plus (2) in lieu of any fractional shares of Parent Common Stock otherwise issuable under clause (1) hereof, cash in a dollar amount (rounded to the nearest whole cent, with numbers ending with .5 or more being rounded up to the nearest whole cent), without interest, determined by multiplying such fraction by the average closing price of a share of Parent Common Stock on the Nasdaq Global Select Market for the 10 most recent trading days that Parent Common Stock has traded ending on the trading day one day prior to the Effective Time.]

ARTICLE VI
MISCELLANEOUS

6.1. **Notices**. All notices, requests, demands and other communications under this Agreement shall be in writing and shall be deemed to have been duly given or made as follows: (a) if sent by registered or certified mail in the United States return receipt requested, upon receipt; (b) if sent designated for overnight delivery by nationally recognized overnight air courier (such as Federal Express), one business day after mailing; (c) if sent by facsimile transmission or e-mail before 5:00 p.m. Eastern Time, when transmitted and receipt is confirmed; (d) if sent by facsimile transmission or e-mail after 5:00 p.m. Eastern Time and receipt is confirmed, on the following business day; and (e) if otherwise actually personally delivered, when delivered; *provided*, that the notice or other communication is sent to the address, facsimile number or email address set forth (i) in the case to Parent or Merger Sub, to the address or e-mail address set forth in Section 9.9 of the Merger Agreement and (ii) if to a Stockholder, to such Stockholder's address, facsimile number or e-mail address set forth on a signature page hereto, or to such other address, facsimile number or e-mail address as such party may hereafter specify for the purpose by notice to each other party hereto.

6.2. **Termination**. This Agreement shall terminate automatically with respect to a Stockholder, without any notice or other action by any Person, upon the first to occur of (a) the termination of the Merger Agreement in accordance with its terms, (b) the Effective Time, (c) any amendment to the Merger Agreement that reduces the amount, or changes the form, of consideration payable to such Stockholder in the Contemplated Transactions, imposes additional restrictions on such Stockholder or otherwise materially and adversely impacts such Stockholder, (d) a Company Adverse Change in Recommendation or (e) the mutual written consent of Parent and such Stockholder. Upon termination of this Agreement, no party shall have any further obligations or liabilities under this Agreement; *provided*, *however*, that (x) nothing set forth in this Section 6.2 shall relieve any party from liability for any Willful Breach of this Agreement prior to termination hereof and (y) the provisions of this Article V shall survive any termination of this Agreement.

6.3. **Amendments and Waivers**.

(a) Any provision of this Agreement may be amended or waived if such amendment or waiver is in writing and is signed, in the case of an amendment, by each party to this Agreement or, in the case of a waiver, by each party against whom the waiver is to be effective.

(b) No failure on the part of any party to exercise any power, right, privilege or remedy under this Agreement, and no delay on the part of any party in exercising any power, right, privilege or remedy under this Agreement, shall operate as a waiver of such power, right, privilege or remedy; and no single or partial exercise of any such power, right, privilege or remedy shall preclude any other or further exercise thereof or of any other power, right, privilege or remedy.

6.4. **Expenses**. All fees and expenses incurred in connection herewith and the transactions contemplated hereby shall be paid by the party incurring such fees and expenses, whether or not the Merger is consummated.

6.5. **Entire Agreement; Assignment**. This Agreement, together with Schedule A, and the other documents and certificates delivered pursuant hereto, constitute the entire agreement, and supersede all prior agreements and understandings, both written and oral, among the parties with respect to the subject matter of this Agreement. Neither this Agreement nor any party's rights or obligations hereunder may be assigned or delegated by such party without the prior written consent of the other parties, and any attempted assignment or delegation of this Agreement or any of such rights or obligations by any party without the prior written consent of the other parties shall be void and of no effect; *provided*, that Parent or Merger Sub may assign any of their respective rights and obligations to any direct or indirect Subsidiary of Parent, but no such assignment shall relieve Parent or Merger Sub, as the case may be, of its obligations hereunder.

6.6. **Enforcement of the Agreement**. The parties agree that irreparable damage would occur in the event that any Stockholder did not perform any of the provisions of this Agreement in accordance with their specific terms or otherwise breached any such provisions. It is accordingly agreed that Parent and Merger Sub shall be entitled to an injunction or injunctions to prevent breaches of this Agreement and to enforce specifically the terms and provisions of this Agreement in addition to any other remedy to which they are entitled at law or in equity. Any and all remedies herein expressly conferred upon Parent and Merger Sub will be deemed cumulative with and not exclusive of any other remedy conferred hereby, or by law or equity upon Parent or Merger Sub, and the exercise by Parent or Merger Sub of any one remedy will not preclude the exercise of any other remedy.

6.7. **Jurisdiction; Waiver of Jury Trial**.

(a) This Agreement shall be governed by, and construed in accordance with, the laws of the State of Delaware, without giving effect to any laws, rules or provisions that would cause the application of the laws of any jurisdiction other than the State of Delaware. In any action between any of the parties arising out of or relating to this Agreement or the transactions contemplated hereby, each of the parties irrevocably and unconditionally consents and submits to the exclusive jurisdiction and venue of the Chancery Court of the State of Delaware. The parties agree that irreparable damage would occur and that the parties would not have any adequate remedy at law in the event that any of the provisions of this Agreement were not performed in accordance with their specific terms or were otherwise breached. It is accordingly agreed that the parties shall be entitled to an injunction or injunctions to prevent breaches of this Agreement and to enforce specifically the terms and provisions of this Agreement, this being in addition to any other remedy to which they are entitled at law or in equity. All rights and remedies existing under this Agreement are cumulative to, and not exclusive of, any rights or remedies otherwise available. Each Stockholder hereby agrees that service of any process, summons, notice or document by U.S. registered mail in accordance with Section 6.1 shall be effective service of process for any proceeding arising out of, relating to or in connection with this Agreement or the transactions contemplated hereby.

(b) EACH STOCKHOLDER ACKNOWLEDGES AND AGREES THAT ANY CONTROVERSY WHICH MAY ARISE UNDER THIS AGREEMENT IS LIKELY TO INVOLVE COMPLICATED AND DIFFICULT ISSUES, AND THEREFORE EACH SUCH PARTY HEREBY IRREVOCABLY AND UNCONDITIONALLY WAIVES ANY RIGHT SUCH PARTY MAY HAVE TO A TRIAL BY JURY IN ANY LITIGATION ARISING OUT OF, RELATING TO OR IN CONNECTION WITH THIS AGREEMENT. EACH STOCKHOLDER CERTIFIES AND ACKNOWLEDGES THAT (I) NO REPRESENTATIVE, AGENT OR ATTORNEY OF PARENT OR MERGER SUB HAS REPRESENTED, EXPRESSLY OR OTHERWISE, THAT PARENT OR MERGER SUB WOULD NOT, IN THE EVENT OF LITIGATION, SEEK TO ENFORCE THE FOREGOING WAIVER, (II) EACH STOCKHOLDER UNDERSTANDS AND HAS CONSIDERED THE IMPLICATION OF THIS WAIVER, (III) EACH STOCKHOLDER MAKES THIS WAIVER VOLUNTARILY, AND (IV) EACH STOCKHOLDER HAS BEEN INDUCED TO ENTER INTO THIS AGREEMENT BY, AMONG OTHER THINGS, THE MUTUAL WAIVERS AND CERTIFICATIONS IN THIS SECTION.

6.8. **Descriptive Headings**. The descriptive headings herein are inserted for convenience of reference only and are not intended to be part of or to affect the meaning or interpretation of this Agreement.

6.9. **Parties in Interest**. This Agreement shall be binding upon and inure solely to the benefit of each party hereto, and nothing in this Agreement, express or implied, is intended to confer upon any other Person any rights or remedies of any nature whatsoever under or by reason of this Agreement.

6.10. **Severability**. Any term or provision of this Agreement that is invalid or unenforceable in any situation in any jurisdiction shall not affect the validity or enforceability of the remaining terms and provisions of this Agreement or the validity or enforceability of the offending term or provision in any other situation or in any other jurisdiction. If a final judgment of a court of competent jurisdiction declares that any term or provision of this Agreement is invalid or unenforceable, the parties hereto agree that the court making such determination shall have the power to limit such term or provision, to delete specific words or phrases or to replace such term or provision with a term or provision that is valid and enforceable and that comes closest to expressing the intention of the invalid or unenforceable term or provision, and this Agreement shall be valid and enforceable as so modified. In the event such court does not exercise the power granted to it in the prior sentence, the parties hereto agree to replace such invalid or unenforceable term or provision with a valid and enforceable term or provision that will achieve, to the extent possible, the economic, business and other purposes of such invalid or unenforceable term or provision.

6.11. **Counterparts**. This Agreement may be executed in counterparts, each of which shall be deemed to be an original, but all of which, taken together, shall constitute one and the same agreement. This Agreement or any counterpart may be executed and delivered by facsimile copies or delivered by electronic communications by portable document format (.pdf), each of which shall be deemed an original.

6.12. **Construction**.

(a) For purposes of this Agreement, whenever the context requires: the singular number shall include the plural, and vice versa; the masculine gender shall include the feminine and neuter genders; the feminine gender shall include the masculine and neuter genders; and the neuter gender shall include masculine and feminine genders.

(b) The parties hereto agree that any rule of construction to the effect that ambiguities are to be resolved against the drafting party shall not be applied in the construction or interpretation of this Agreement.

(c) As used in this Agreement, the words “include” and “including,” and variations thereof, shall not be deemed to be terms of limitation, but rather shall be deemed to be followed by the words “without limitation.”

(d) Except as otherwise indicated, all references in this Agreement to “Sections” and “Schedules” are intended to refer to Sections of this Agreement and Schedules to this Agreement.

(e) The bold-faced headings contained in this Agreement are for convenience of reference only, shall not be deemed to be a part of this Agreement and shall not be referred to in connection with the construction or interpretation of this Agreement.

6.13. **Further Assurances**. Each Stockholder will execute and deliver, or cause to be executed and delivered, all further documents and instruments and use its reasonable best efforts to take, or cause to be taken, all actions and to do, or cause to be done, all things necessary, proper or advisable under applicable Legal Requirements, to perform its obligations under this Agreement.

6.14. **No Agreement Until Executed**. This Agreement shall not be effective unless and until (a) the Merger Agreement is executed by all parties thereto and (b) this Agreement is executed by all parties hereto.

6.15. **Stockholder Obligation Several and Not Joint**. The obligations of each Stockholder hereunder shall be several and not joint, and no Stockholder shall be liable for any breach of the terms of this Agreement by any other Stockholder.

6.16. **Capacity as Stockholder.** Each Stockholder signs this Agreement solely in such Stockholder's capacity as a stockholder and warrantholder of the Company, and not in such Stockholder's capacity as a director, officer or employee of the Company. Notwithstanding anything herein to the contrary, nothing herein shall in any way restrict a director or officer of the Company (including any director or officer who is an Affiliate of a Stockholder) in the taking of any actions (or failure to act) in his or her capacity as a director or officer of the Company, or in the exercise of his or her fiduciary duties as a director or officer of the Company, or prevent or be construed to create any obligation on the part of any director or officer of the Company from taking any action in his or her capacity as such director or officer, and no action taken in any such capacity as an officer or director of the Company shall be deemed to constitute a breach of this Agreement.

[*Signature Pages Follow*]

The parties are executing this Agreement on the date set forth in the introductory clause.

PARENT

ACELRX PHARMACEUTICALS, INC.

By: _____
Name:
Title:

MERGER SUB

CONSOLIDATION MERGER SUB, INC.

By: _____
Name:
Title:

[*Signature Page to Voting Agreement*]

STOCKHOLDER

[STOCKHOLDER]

By: _____
Name:
Title:

Address: [●]

Schedule A

Stockholder	Subject Shares	November Warrants	January Warrants	Date of Issuance of Subject Warrants	Number of Shares Underlying Subject Warrants

Schedule B

Stockholder	November Pre-Funded Warrants	January Pre-Funded Warrants	Date of Issuance of Pre-Funded Warrants	Number of Shares Underlying Pre-Funded Warrants

Annex C

EXCHANGE AGREEMENT

This EXCHANGE AGREEMENT (this "Agreement"), dated as of March 15, 2020, is entered into by and among AcelRx Pharmaceuticals, Inc., a Delaware corporation ("Parent"), Consolidation Merger Sub, Inc., a Delaware corporation and a wholly owned subsidiary of Parent ("Merger Sub"), and the stockholder of Tetraphase Pharmaceuticals, Inc. set forth on Schedule A hereto (the "Stockholder"). Capitalized terms used but not otherwise defined in this Agreement shall have the respective meanings ascribed to such terms in the Merger Agreement (as defined below).

WHEREAS, as of the date hereof, the Stockholder is the record and beneficial owner (as defined in Rule 13d-3 under the Exchange Act) of the warrants to purchase Company Common Stock set forth opposite the Stockholder's name on Schedule A (all such Warrants, the "Subject Warrants");

WHEREAS, concurrently with the execution hereof, Parent, Merger Sub and Tetraphase Pharmaceuticals, Inc., a Delaware corporation (the "Company"), are entering into an Agreement and Plan of Merger, dated as of the date hereof (as it may be amended from time to time, the "Merger Agreement"), which provides, among other things, for the merger of Merger Sub with and into the Company, with the Company surviving the Merger and becoming a wholly-owned subsidiary of Parent, upon the terms and subject to the conditions set forth in the Merger Agreement; and

WHEREAS, as a condition to their willingness to enter into the Merger Agreement, and as an inducement and in consideration for Parent and Merger Sub to enter into the Merger Agreement, the Stockholder, severally and not jointly, and on the Stockholder's own account with respect to the Subject Warrants, has agreed to enter into this Agreement.

NOW, THEREFORE, in consideration of the foregoing and the respective representations, warranties, covenants and agreements set forth below and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto, intending to be legally bound, do hereby agree as follows:

ARTICLE I
[INTENTIONALLY LEFT BLANK]

ARTICLE II
REPRESENTATIONS AND WARRANTIES OF THE STOCKHOLDERS

The Stockholder represents and warrants to Parent and Merger Sub that:

2.1. **Authorization; Binding Agreement**. If the Stockholder is not an individual, the Stockholder is duly organized and validly existing in good standing under the laws of the jurisdiction in which it is incorporated or constituted and the consummation of the transactions contemplated hereby are within the Stockholder's entity powers and have been duly authorized by all necessary entity actions on the part of the Stockholder, and the Stockholder has full power and authority to execute, deliver and perform this Agreement and to consummate the transactions contemplated hereby. If the Stockholder is an individual, the Stockholder has full legal capacity, right and authority to execute and deliver this Agreement and to perform the Stockholder's obligations hereunder. This Agreement has been duly and validly executed and delivered by the Stockholder and constitutes a valid and binding obligation of the Stockholder enforceable against the Stockholder in accordance with its terms, subject to the effects of bankruptcy, insolvency, fraudulent conveyance, reorganization, moratorium and other similar Legal Requirements relating to or affecting creditors' rights generally and general equitable principles (whether considered in a proceeding in equity or at law).

2.2. **Non-Contravention**. Neither the execution and delivery of this Agreement by the Stockholder nor the consummation by the Stockholder of the transactions contemplated hereby nor compliance by the Stockholder with any provisions herein will (a) if the Stockholder is not an individual, contravene, conflict with or result in a violation of any of the provisions of the certificate of incorporation, bylaws or other similar charter or organizational documents of the Stockholder, (b) require any consent, approval, authorization or permit of, or filing with or notification to, any supranational, national, foreign, federal, state or local government or subdivision thereof, or governmental, judicial, legislative, executive, administrative or regulatory authority on the part of the Stockholder, except for compliance with the applicable requirements of the Securities Act, the Exchange Act or any other United States or federal securities laws and the rules and regulations promulgated thereunder, (c) contravene, conflict with or result in a violation or breach of, or result in a default under (or give rise to any right of termination, cancellation, modification or acceleration) under any of the terms, conditions or provisions of any note, license, agreement, contract, indenture or other instrument or obligation to which the Stockholder is a party or by which the Stockholder or any of its assets may be bound, (d) result (or, with the giving of notice, the passage of time or otherwise, would result) in the creation or imposition of any mortgage, lien, pledge, charge, security interest or encumbrance of any kind on any asset of the Stockholder (other than one created by Parent or Merger Sub), or (e) violate any order, writ, injunction, decree, statute, rule or regulation applicable to the Stockholder or by which any of its assets are bound, except as would not, in the case of each of clauses (b), (c), (d) and (e), reasonably be expected to have, individually or in the aggregate, a material adverse effect on the Stockholder's ability to perform its obligations under this Agreement.

2.3. **Ownership of Subject Warrants**. The Stockholder is the record and beneficial owner (as defined in Rule 13d-3 under the Exchange Act) of all the Stockholder's Subject Warrants and has good and marketable title to all such Subject Warrants free and clear of any liens, claims, proxies, voting trusts or agreements, options, rights, understandings or arrangements or any other encumbrances or restrictions whatsoever on title, transfer or exercise of any rights of the Stockholder in respect of such Subject Warrants (collectively, "Encumbrances"), except for any such Encumbrance that may be imposed pursuant to (i) this Agreement; (ii) any applicable restrictions on transfer under the Securities Act or any other applicable securities law; (iii) any written policies of the Company with respect to the trading of securities in connection with insider trading restrictions, applicable securities laws and similar considerations; (iv) any lien for current Taxes not yet due and payable or Taxes being contested in good faith by appropriate proceedings; and (v) liens that do not (in any individual case or in the aggregate) restrict in any material respect the ability of the Stockholder to comply with its obligations under this Agreement (collectively, "Permitted Encumbrances").

2.4. Intentionally Left Blank

2.5. **Reliance**. The Stockholder understands and acknowledges that Parent and Merger Sub are entering into the Merger Agreement in reliance upon the Stockholder's execution, delivery and performance of this Agreement.

2.6. **Absence of Litigation**. With respect to the Stockholder, as of the date hereof, there is no Legal Proceeding pending against, or, to the actual knowledge of the Stockholder, threatened in writing against the Stockholder or any of the Stockholder's properties or assets (including any Shares beneficially owned by the Stockholder) before or by any Governmental Body that would reasonably be expected to prevent or otherwise materially impair the ability of the Stockholder to perform the obligations of the Stockholder under this Agreement.

ARTICLE III
REPRESENTATIONS AND WARRANTIES OF PARENT AND MERGER SUB

Parent and Merger Sub represent and warrant to the Stockholders that:

3.1. **Organization and Qualification**. Each of Parent and Merger Sub is a duly organized and validly existing corporation in good standing under the laws of the jurisdiction of its organization.

3.2. **Authority for this Agreement**. Each of Parent and Merger Sub has all requisite entity power and authority to execute, deliver and perform its obligations under this Agreement and to consummate the transactions contemplated hereby. The execution and delivery of this Agreement by Parent and Merger Sub have been duly and validly authorized by all necessary entity action on the part of each of Parent and Merger Sub, and no other entity proceedings on the part of Parent and Merger Sub are necessary to authorize this Agreement. This Agreement has been duly and validly executed and delivered by Parent and Merger Sub and, assuming the due authorization, execution and delivery by the Stockholder, constitutes legal, valid and binding obligation of each of Parent and Merger Sub, enforceable against each of Parent and Merger Sub in accordance with its terms, subject to the effects of bankruptcy, insolvency, fraudulent conveyance, reorganization, moratorium and other similar Legal Requirements relating to or affecting creditors' rights generally and general equitable principles (whether considered in a proceeding in equity or at law).

ARTICLE IV
ADDITIONAL COVENANTS OF THE STOCKHOLDER

The Stockholder hereby covenants and agrees that until the termination of this Agreement:

4.1. Intentionally Omitted.

4.2. **Documentation and Information**. From the date of thus Agreement until the Closing, the Stockholder shall not make any public announcement regarding this Agreement, the Contemplated Transactions and the other transactions contemplated hereby without the prior written consent of Parent, except (a) as may be required by applicable Legal Requirements (provided that reasonable notice of any such disclosure will be provided to Parent) or (b) to the extent such announcement contains information that has been previously disclosed publicly. The Stockholder consents to and hereby authorizes Parent and Merger Sub to publish and disclose in all documents and schedules filed with the SEC, and any press release or other disclosure document necessary in connection with the Merger and the Contemplated Transactions, the existence of this Agreement and the nature of the Stockholder's commitments and obligations under this Agreement, and the Stockholder acknowledges that Parent and Merger Sub may, in Parent's sole discretion, file this Agreement or a form hereof with the SEC or any other Governmental Body. The Stockholder agrees to promptly give Parent and the Company any information either may reasonably require for the preparation of any such disclosure documents, and the Stockholder agrees to promptly notify Parent and the Company upon becoming aware of any required corrections with respect to any written information supplied by the Stockholder specifically for use in any such disclosure document, if and to the extent that any such information shall have become false or misleading in any material respect.

4.3. **Adjustments**. In the event of any stock split, stock dividend, merger, reorganization, recapitalization, reclassification, combination, exchange of shares or the like of the capital stock of the Company affecting the Subject Warrants, the terms of this Agreement shall apply to the resulting securities.

4.4. **Waiver of Certain Actions**. The Stockholder hereby agrees not to commence or participate in, and to take all actions necessary to opt out of any class in any class action with respect to, any claim, derivative or otherwise, against Parent, Merger Sub or any of their respective successors (a) challenging the validity of, or seeking to enjoin or delay the operation of, any provision of this Agreement or the Merger Agreement (including any claim seeking to enjoin or delay the Closing) or (b) alleging a breach of any duty of the Company Board in connection with the Merger Agreement, this Agreement or the transactions contemplated thereby or hereby.

4.5. **No Solicitation**. Subject to Section 4.4 (No Solicitation) of the Merger Agreement, the Stockholder agrees that the Stockholder shall immediately cease any solicitation, discussions or negotiations with any Persons that may be ongoing by such Stockholder as of the date of this Agreement with respect to an

Acquisition Proposal. Until the Specified Time, such Stockholder shall not, directly or indirectly, (a) solicit, initiate or knowingly facilitate or knowingly encourage any inquiries or the making of any proposal or offer that constitutes, or would reasonably be expected to lead to, an Acquisition Proposal or (b) engage in, continue or otherwise participate in any discussions or negotiations regarding, or furnish to any other Person any non-public information in connection with an Acquisition Proposal or any proposal or offer that would reasonably be expected to lead to an Acquisition Proposal.

ARTICLE V
WARRANT TREATMENT

The Stockholder acknowledges and agrees, severally and not jointly and solely with respect to the Stockholder's Subject Warrants, that, at the Effective Time, each Subject Warrant owned by the Stockholder that is then-outstanding and unexercised as of immediately prior to the Effective Time shall, pursuant to the terms hereof, Section 3(d) of the Subject Warrants and as a result of the Merger and without any other action on the part of the Stockholder, receive, in lieu of any other amount or consideration to which the Stockholder might otherwise have been entitled to receive pursuant to such Subject Warrant, (i) 0.9087 of a share of Parent Common Stock for each share of Company Common Stock for which such Subject Warrant was exercisable immediately prior to the Effective Time (subject to adjustment in the event of a stock split, division or subdivision, stock dividend, reverse stock split, consolidation, reclassification, recapitalization or other similar transaction affecting the Company Common Stock or the Parent Common Stock), plus (ii) in lieu of any fractional shares of Parent Common Stock otherwise issuable under clause (i) hereof after aggregating the shares of Parent Common Stock to be issued with respect to the Subject Warrant thereunder, cash in a dollar amount (rounded to the nearest whole cent, with numbers ending with .5 or more being rounded up to the nearest whole cent), without interest, determined by multiplying such fraction by the average closing price of a share of Parent Common Stock on the Nasdaq Global Select Market for the 10 most recent trading days that Parent Common Stock has traded ending on the trading day one day prior to the Effective Time.

ARTICLE VI
MISCELLANEOUS

6.1. **Notices**. All notices, requests, demands and other communications under this Agreement shall be in writing and shall be deemed to have been duly given or made as follows: (a) if sent by registered or certified mail in the United States return receipt requested, upon receipt; (b) if sent designated for overnight delivery by nationally recognized overnight air courier (such as Federal Express), one business day after mailing; (c) if sent by facsimile transmission or e-mail before 5:00 p.m. Eastern Time, when transmitted and receipt is confirmed; (d) if sent by facsimile transmission or e-mail after 5:00 p.m. Eastern Time and receipt is confirmed, on the following business day; and (e) if otherwise actually personally delivered, when delivered; *provided*, that the notice or other communication is sent to the address, facsimile number or email address set forth (i) in the case to Parent or Merger Sub, to the address or e-mail address set forth in Section 9.9 of the Merger Agreement and (ii) if to a Stockholder, to the Stockholder's address, facsimile number or e-mail address set forth on a signature page hereto, or to such other address, facsimile number or e-mail address as such party may hereafter specify for the purpose by notice to each other party hereto.

6.2. **Termination**. This Agreement shall terminate automatically with respect to a Stockholder, without any notice or other action by any Person, upon the first to occur of (a) the termination of the Merger Agreement in accordance with its terms, (b) the Effective Time, (c) any amendment to the Merger Agreement that reduces the amount, or changes the form, of consideration payable to the Stockholder in the Contemplated Transactions, imposes additional restrictions on the Stockholder or otherwise materially and adversely impacts the Stockholder, (d) a Company Adverse Change in Recommendation or (e) the mutual written consent of Parent and the Stockholder. Upon termination of this Agreement, no party shall have any further obligations or liabilities under this Agreement; *provided*, *however*, that (x) nothing set forth in this Section 6.2 shall relieve any party from liability for any Willful Breach of this Agreement prior to termination hereof and (y) the provisions of this Article V shall survive any termination of this Agreement.

6.3. Amendments and Waivers.

(a) Any provision of this Agreement may be amended or waived if such amendment or waiver is in writing and is signed, in the case of an amendment, by each party to this Agreement or, in the case of a waiver, by each party against whom the waiver is to be effective.

(b) No failure on the part of any party to exercise any power, right, privilege or remedy under this Agreement, and no delay on the part of any party in exercising any power, right, privilege or remedy under this Agreement, shall operate as a waiver of such power, right, privilege or remedy; and no single or partial exercise of any such power, right, privilege or remedy shall preclude any other or further exercise thereof or of any other power, right, privilege or remedy.

6.4. **Expenses**. All fees and expenses incurred in connection herewith and the transactions contemplated hereby shall be paid by the party incurring such fees and expenses, whether or not the Merger is consummated.

6.5. **Entire Agreement; Assignment**. This Agreement, together with Schedule A, and the other documents and certificates delivered pursuant hereto, constitute the entire agreement, and supersede all prior agreements and understandings, both written and oral, among the parties with respect to the subject matter of this Agreement. Neither this Agreement nor any party's rights or obligations hereunder may be assigned or delegated by such party without the prior written consent of the other parties, and any attempted assignment or delegation of this Agreement or any of such rights or obligations by any party without the prior written consent of the other parties shall be void and of no effect; *provided*, that Parent or Merger Sub may assign any of their respective rights and obligations to any direct or indirect Subsidiary of Parent, but no such assignment shall relieve Parent or Merger Sub, as the case may be, of its obligations hereunder.

6.6. **Enforcement of the Agreement**. The parties agree that irreparable damage would occur in the event that any Stockholder did not perform any of the provisions of this Agreement in accordance with their specific terms or otherwise breached any such provisions. It is accordingly agreed that Parent and Merger Sub shall be entitled to an injunction or injunctions to prevent breaches of this Agreement and to enforce specifically the terms and provisions of this Agreement in addition to any other remedy to which they are entitled at law or in equity. Any and all remedies herein expressly conferred upon Parent and Merger Sub will be deemed cumulative with and not exclusive of any other remedy conferred hereby, or by law or equity upon Parent or Merger Sub, and the exercise by Parent or Merger Sub of any one remedy will not preclude the exercise of any other remedy.

6.7. **Jurisdiction; Waiver of Jury Trial.**

(a) This Agreement shall be governed by, and construed in accordance with, the laws of the State of Delaware, without giving effect to any laws, rules or provisions that would cause the application of the laws of any jurisdiction other than the State of Delaware. In any action between any of the parties arising out of or relating to this Agreement or the transactions contemplated hereby, each of the parties irrevocably and unconditionally consents and submits to the exclusive jurisdiction and venue of the Chancery Court of the State of Delaware. The parties agree that irreparable damage would occur and that the parties would not have any adequate remedy at law in the event that any of the provisions of this Agreement were not performed in accordance with their specific terms or were otherwise breached. It is accordingly agreed that the parties shall be entitled to an injunction or injunctions to prevent breaches of this Agreement and to enforce specifically the terms and provisions of this Agreement, this being in addition to any other remedy to which they are entitled at law or in equity. All rights and remedies existing under this Agreement are cumulative to, and not exclusive of, any rights or remedies otherwise available. The Stockholder hereby agrees that service of any process, summons, notice or document by U.S. registered mail in accordance with Section 6.1 shall be effective service of process for any proceeding arising out of, relating to or in connection with this Agreement or the transactions contemplated hereby.

(b) THE STOCKHOLDER ACKNOWLEDGES AND AGREES THAT ANY CONTROVERSY WHICH MAY ARISE UNDER THIS AGREEMENT IS LIKELY TO INVOLVE COMPLICATED AND DIFFICULT ISSUES, AND THEREFORE EACH SUCH PARTY HEREBY IRREVOCABLY AND UNCONDITIONALLY WAIVES ANY RIGHT SUCH PARTY MAY HAVE TO A TRIAL BY JURY IN ANY LITIGATION ARISING OUT OF, RELATING TO OR IN CONNECTION WITH THIS AGREEMENT. THE STOCKHOLDER CERTIFIES AND ACKNOWLEDGES THAT (I) NO REPRESENTATIVE, AGENT OR ATTORNEY OF PARENT OR MERGER SUB HAS REPRESENTED, EXPRESSLY OR OTHERWISE, THAT PARENT OR MERGER SUB WOULD NOT, IN THE EVENT OF LITIGATION, SEEK TO ENFORCE THE FOREGOING WAIVER, (II) THE STOCKHOLDER UNDERSTANDS AND HAS CONSIDERED THE IMPLICATION OF THIS WAIVER, (III) THE STOCKHOLDER MAKES THIS WAIVER VOLUNTARILY, AND (IV) THE STOCKHOLDER HAS BEEN INDUCED TO ENTER INTO THIS AGREEMENT BY, AMONG OTHER THINGS, THE MUTUAL WAIVERS AND CERTIFICATIONS IN THIS SECTION.

6.8. **Descriptive Headings**. The descriptive headings herein are inserted for convenience of reference only and are not intended to be part of or to affect the meaning or interpretation of this Agreement.

6.9. **Parties in Interest**. This Agreement shall be binding upon and inure solely to the benefit of each party hereto, and nothing in this Agreement, express or implied, is intended to confer upon any other Person any rights or remedies of any nature whatsoever under or by reason of this Agreement.

6.10. **Severability**. Any term or provision of this Agreement that is invalid or unenforceable in any situation in any jurisdiction shall not affect the validity or enforceability of the remaining terms and provisions of this Agreement or the validity or enforceability of the offending term or provision in any other situation or in any other jurisdiction. If a final judgment of a court of competent jurisdiction declares that any term or provision of this Agreement is invalid or unenforceable, the parties hereto agree that the court making such determination shall have the power to limit such term or provision, to delete specific words or phrases or to replace such term or provision with a term or provision that is valid and enforceable and that comes closest to expressing the intention of the invalid or unenforceable term or provision, and this Agreement shall be valid and enforceable as so modified. In the event such court does not exercise the power granted to it in the prior sentence, the parties hereto agree to replace such invalid or unenforceable term or provision with a valid and enforceable term or provision that will achieve, to the extent possible, the economic, business and other purposes of such invalid or unenforceable term or provision.

6.11. **Counterparts**. This Agreement may be executed in counterparts, each of which shall be deemed to be an original, but all of which, taken together, shall constitute one and the same agreement. This Agreement or any counterpart may be executed and delivered by facsimile copies or delivered by electronic communications by portable document format (.pdf), each of which shall be deemed an original.

6.12. **Construction**.

(a) For purposes of this Agreement, whenever the context requires: the singular number shall include the plural, and vice versa; the masculine gender shall include the feminine and neuter genders; the feminine gender shall include the masculine and neuter genders; and the neuter gender shall include masculine and feminine genders.

(b) The parties hereto agree that any rule of construction to the effect that ambiguities are to be resolved against the drafting party shall not be applied in the construction or interpretation of this Agreement.

(c) As used in this Agreement, the words “include” and “including,” and variations thereof, shall not be deemed to be terms of limitation, but rather shall be deemed to be followed by the words “without limitation.”

(d) Except as otherwise indicated, all references in this Agreement to “Sections” and “Schedules” are intended to refer to Sections of this Agreement and Schedules to this Agreement.

(e) The bold-faced headings contained in this Agreement are for convenience of reference only, shall not be deemed to be a part of this Agreement and shall not be referred to in connection with the construction or interpretation of this Agreement.

6.13. **Further Assurances**. The Stockholder will execute and deliver, or cause to be executed and delivered, all further documents and instruments and use its reasonable best efforts to take, or cause to be taken, all actions and to do, or cause to be done, all things necessary, proper or advisable under applicable Legal Requirements, to perform its obligations under this Agreement.

6.14. **No Agreement Until Executed**. This Agreement shall not be effective unless and until (a) the Merger Agreement is executed by all parties thereto and (b) this Agreement is executed by all parties hereto.

6.15. **Stockholder Obligation Several and Not Joint**. The obligations of the Stockholder hereunder shall be several and not joint, and no Stockholder shall be liable for any breach of the terms of this Agreement by any other Stockholder.

6.16. **Capacity as Stockholder.** The Stockholder signs this Agreement solely in the Stockholder's capacity as a stockholder and warrantholder of the Company, and not in the Stockholder's capacity as a director, officer or employee of the Company. Notwithstanding anything herein to the contrary, nothing herein shall in any way restrict a director or officer of the Company (including any director or officer who is an Affiliate of a Stockholder) in the taking of any actions (or failure to act) in his or her capacity as a director or officer of the Company, or in the exercise of his or her fiduciary duties as a director or officer of the Company, or prevent or be construed to create any obligation on the part of any director or officer of the Company from taking any action in his or her capacity as such director or officer, and no action taken in any such capacity as an officer or director of the Company shall be deemed to constitute a breach of this Agreement.

[*Signature Pages Follow*]

The parties are executing this Agreement on the date set forth in the introductory clause.

PARENT

ACELRX PHARMACEUTICALS, INC.

By: _____
Name:
Title:

MERGER SUB

CONSOLIDATION MERGER SUB, INC.

By: _____
Name:
Title:

STOCKHOLDER

[STOCKHOLDER]

By: _____
Name:
Title:

Address: [●]

Schedule A

Annex D

FORM OF CONTINGENT VALUE RIGHTS AGREEMENT

THIS CONTINGENT VALUE RIGHTS AGREEMENT, dated as of [ ], 2020 (this "**Agreement**"), is entered into by and between AcelRx Pharmaceuticals, Inc., a Delaware corporation ("**Parent**"), and [ ], as Rights Agent (the "**Rights Agent**").

RECITALS

WHEREAS, Parent, Consolidation Merger Sub, Inc., a Delaware corporation and a wholly-owned indirect subsidiary of Parent ("**Merger Sub**"), and Tetraphase Pharmaceuticals, Inc., a Delaware corporation (including in its capacity as the surviving corporation in the Merger, the "**Company**"), have entered into an Agreement and Plan of Merger dated as of March 15, 2020 (as it may be amended or supplemented from time to time pursuant to the terms thereof, the "**Merger Agreement**"), pursuant to which, at the Effective Time (as defined in the Merger Agreement, the "**Effective Time**"), Merger Sub will merge with and into Company (the "**Merger**"), with the Company continuing as the surviving corporation and as a wholly owned indirect subsidiary of the Parent;

WHEREAS, pursuant to the Merger Agreement, Parent has agreed to provide to the Company's stockholders the right to receive contingent value rights as hereinafter described;

WHEREAS, a registration statement on Form S-4 (No. [ ]) with respect to the shares of Parent Common Stock issuable pursuant to the Merger Agreement and issuable pursuant to the contingent value rights as provided herein has been prepared and filed by Parent with the Securities and Exchange Commission and has become effective in accordance with the Securities Act of 1933, as amended (the "**Securities Act**"); and

WHEREAS, the Rights Agent is willing to act in connection with the issuance, transfer, exchange and payment of such contingent value rights as provided herein.

NOW, THEREFORE, in consideration of the premises and mutual agreements herein, Parent and the Rights Agent hereby agree as follows:

1. DEFINITIONS

1.1. Definitions. Capitalized terms used but not otherwise defined herein shall have the meanings ascribed to them in the Merger Agreement. As used in this Agreement, the following terms shall have the following meanings:

"**Acting Holders**" means, at the time of determination, Holders of at least 40% of the outstanding CVRs as set forth on the CVR Register.

"**Affiliate**" means, with respect to any specified Person, any other Person that, directly or indirectly, through one or more intermediaries, controls, is controlled by or is under common control with such specified Person; "control" means the ownership, directly or indirectly, of more than 50% of the voting securities entitled to vote for the directors (or similar officials) of a Person or the possession, by contract or otherwise, of the authority to direct the management and policies of a Person.

"**Calendar Quarter**" means each period of three consecutive months commencing on January 1, April 1, July 1 and October 1 of each calendar year.

"**Calendar Year**" means the period of four consecutive Calendar Quarters beginning on January 1 and ending on December 31 of each calendar year.

"**Change of Control**" means (i) a sale or other disposition of all or substantially all of the assets of either Parent or the Company on a consolidated basis (other than to any direct or indirect wholly owned subsidiary of Parent), (ii) a merger or consolidation involving either Parent or the Company in which Parent or the Company, respectively, is not the surviving entity, and (iii) any other transaction involving either Parent or the Company in which Parent or the Company, respectively, is the surviving entity but in which the stockholders of Parent or the Company, respectively, immediately prior to such transaction own less than fifty percent (50%) of the surviving entity's voting power immediately after the transaction, other than any *bona fide* equity financing transaction solely related to the continued financing of the operations of Parent and its subsidiaries.

"**Commercially Reasonable Efforts**" means, with respect to a task related to a product, the efforts required to carry out such task in a diligent and sustained manner without undue interruption, pause or delay, which level is at least commensurate with the level of efforts that a pharmaceutical company of comparable size and resources as those of Parent and its Affiliates would devote to a product of similar potential (including commercial potential), taking into account its proprietary position and profitability (including pricing and reimbursement status, but excluding the obligation to pay the Milestone Amounts under this Agreement), anticipated or actual market conditions and economic return potential, the regulatory environment, and other relevant technical, commercial, legal, scientific and/or medical factors.

"**CVRs**" means the rights of Holders to receive contingent payments of cash and Parent Common Stock pursuant to the Merger Agreement and this Agreement.

"**CVR Register**" has the meaning set forth in Section 2.3(b).

"**DTC**" means The Depository Trust Company or any successor entity thereto.

"Event of Default" has the meaning set forth in Section 6.1(a).

"**Holder**" means a Person in whose name a CVR is registered in the CVR Register at the applicable time.

"Independent Accountant" has the meaning set forth in Section 4.5(a).

"**Licensee**" means any non-Affiliate third party granted a license by Parent or its Affiliates under the Company IP to make, have made, use, sell, offer for sale, or import XERAVA in the U.S., but shall exclude any (i) third party distributor of XERAVA that has no royalty or other payment obligations to any Parent or any of its Affiliates that are calculated based on amounts invoiced or received by such third party for sales of XERAVA or (ii) a third party distributor of XEVARA that (x) does not take title to XEVARA, (y) does not invoice XEVARA sales to third party customers and (z) is responsible only for inventory management and distribution with respect XEVARA on behalf of Parent or its Affiliates.

"**Milestone**" means each of Milestone 1, Milestone 2 and Milestone 3.

"**Milestone 1**" means achievement of annual Net Sales of at least $20,000,000 during the Calendar Year ending on December 31, 2021.

"**Milestone 2**" means achievement of annual Net Sales of at least $35,000,000 during any Calendar Year ending on or before December 31, 2024.

"**Milestone 3**" means achievement of annual Net Sales of at least $55,000,000 during any calendar year ending on or before December 31, 2024.

"**Milestone Amount**" means each of Milestone 1 Amount, Milestone 2 Amount and Milestone 3 Amount.

"**Milestone 1 Amount**" means, with respect to the achievement of Milestone 1, an amount per CVR equal to the quotient of $2,500,000 divided by the aggregate number of CVRs issued pursuant to the Merger Agreement and this Agreement, without interest (it being understood and agreed that all Milestones or a combination of any two Milestones can be earned in the same year, in which case all such applicable Milestone Amounts shall be payable).

"**Milestone 2 Amount**" means, with respect to the achievement of Milestone 2, an amount per CVR equal to the quotient of $4,500,000 divided by the aggregate number of CVRs issued pursuant to the Merger Agreement and this Agreement, without interest (it being understood and agreed that all Milestones or a combination of any two Milestones can be earned in the same year, in which case all such applicable Milestone Amounts shall be payable).

"**Milestone 3 Amount**" means, with respect to the achievement of Milestone 3, an amount per CVR equal to the quotient of $5,500,000 divided by the aggregate number of CVRs issued pursuant to the Merger Agreement and this Agreement, without interest (it being understood and agreed that all Milestones or a combination of any two Milestones can be earned in the same year, in which case all such applicable Milestone Amounts shall be payable).

"**Milestone Cash Amount**" has the meaning set forth in Section 2.4(a)(i)

"**Milestone Non-Achievement Certificate**" has the meaning set forth in Section 2.4(g).

"**Milestone Notice**" has the meaning set forth in Section 2.4(a)(i)

"**Milestone Payment Date**" has the meaning set forth in Section 2.4(a).

"**Milestone Stock Amount**" has the meaning set forth in Section 2.4(a)(i)

"**Milestone Stock Price**" means the average closing price of a share of Parent Common Stock on the Nasdaq Global Select Market for the 10 most recent trading days that Parent Common Stock has traded ending on the trading day one day prior to the date of the applicable Milestone Payment Date.

"**Net Sales**" means the gross amount invoiced by Parent, any of its Affiliates (including the Surviving Corporation) or any of its Licensees (each, a "**Selling Party**") to a third party for sales or distribution of XERAVA in the U.S., less the following deductions as calculated in accordance with GAAP consistently applied:

(i) customary trade, cash and quantity discounts given to customers;

(ii) rebates, credits and allowances given by reason of rejections returns, damaged or defective product or recalls;

(iii) government-mandated rebates, credits and adjustments paid or deducted;

(iv) customary price adjustments, allowances, credits, chargeback payments, discounts, rebates, free of charge concessions, fees and reimbursements granted or made to managed care organizations, group purchasing organizations or other buying groups, pharmacy benefit management companies, health maintenance organizations and any other providers of health insurance coverage, health care organizations or other health care institutions (including hospitals), health care administrators, patient assistance or other similar programs, or to federal state/provincial, local and other governments, including their agencies;

(v) reasonable and customary freight, shipping, insurance and other transportation expenses, if borne by the applicable Selling Party without reimbursement from any third party;

(vi) amounts written off as uncollectable debt; provided that the amount of any uncollectable debt deducted pursuant to this exception and actually collected in a subsequent Calendar Quarter shall be included in Net Sales for such subsequent Calendar Quarter; and

(vii) sales, value-added, excise taxes, tariffs and duties, and other taxes and government charges directly related to the sale, delivery or use of XERAVA (but not including taxes assessed against the net income derived from such sale).

Furthermore, Net Sales shall not include use of or sale at or below the direct manufacturing cost of XERAVA by Parent, its Affiliates (including the Surviving Corporation) and/or its sublicensees of XERAVA for non-clinical or clinical studies, patient-assistance programs or charitable donations.

Resales or sales of XERAVA made in good faith between or among any Selling Party shall not be included in the calculation of Net Sales but the subsequent resale or sale to a non-Affiliate third party (other than a Selling Party) shall be included in the computation of Net Sales.

All Net Sales shall be computed in Dollars, and where any Net Sales are calculated in a currency other than Dollars, they shall be translated into Dollars in accordance with GAAP.

"**Officer's Certificate**" means a certificate signed by the chief executive officer, president, chief financial officer, any vice president, the controller, the treasurer or the secretary, in each case of Parent, in his or her capacity as such an officer, and delivered to the Rights Agent.

"**Parent Share Cap**" shall mean a number of shares of Parent Common Stock (rounded down to the nearest whole share) equal to 19.9% of the total number of shares of Parent Common Stock that are issued and outstanding immediately prior to the execution and delivery of the Merger Agreement by Parent, Merger Sub and the Company.

"**Permitted Transfer**" means a transfer of CVRs (a) upon death of a Holder by will or intestacy; (b) by instrument to an inter vivos or testamentary trust in which the CVRs are to be passed to beneficiaries upon the death of the trustee; (c) pursuant to a court order; (d) by operation of law (including by consolidation or merger) or without consideration in connection with the dissolution, liquidation or termination of any corporation, limited liability company, partnership or other entity; (e) in the case of CVRs held in book-entry or other similar nominee form, from a nominee to a beneficial owner and, if applicable, through an intermediary, as allowable by DTC; or (f) as provided in Section 2.13.

"**Reorganization**" has the meaning set forth in Section 2.7(a) .

"**Rights Agent**" means the Rights Agent named in the first paragraph of this Agreement, until a successor Rights Agent becomes such pursuant to the applicable provisions of this Agreement, and thereafter "Rights Agent" shall mean such successor Rights Agent.

"**Share**" means each share of Company Common Stock outstanding immediately prior to the Effective Time, except any (i) shares of Company Common Stock held by the Company or any wholly-owned Subsidiary of the Company as of immediately prior to the Effective Time (or held in the Company's treasury), (ii) shares of Company Common Stock held by Parent, Merger Sub or any other wholly-owned Subsidiary of Parent as of immediately prior to the Effective Time or (iii) Dissenting Company Shares.

"**Transfer Agent**" has the meaning set forth in Section 2.6(b).

"**U.S.**" means the United States of America and its territories, districts and possessions.

1.2. Rules of Construction. For purposes of this Agreement, the parties hereto agree that: (a) whenever the context requires, the singular number shall include the plural, and vice versa; (b) the masculine gender shall include the feminine and neuter genders; the feminine gender shall include the masculine and neuter genders; and the neuter gender shall include masculine and feminine genders; (c) the word "extent" in the phrase "to the extent" means the degree to which a subject or other thing extends, and does not simply mean "if"; (d) the words "include" and "including," and variations thereof, shall not be deemed to be terms of limitation, but rather shall be deemed to be followed by the words "without limitation;" (e) the meaning assigned to each capitalized term defined and used in this Agreement is equally applicable to both the singular and the plural forms of such term, and words denoting any gender include all genders; (f) where a word or phrase is defined in this Agreement, each of its other grammatical forms has a corresponding meaning unless the context otherwise requires; (g) a reference to any specific Legal Requirement or to any provision of any Legal Requirement includes any amendment to, and any modification, re-enactment or successor thereof, any legislative provision substituted therefor and all rules, regulations and statutory instruments issued thereunder or pursuant thereto; (h) references to any agreement or Contract are to that agreement or Contract as amended, modified or supplemented; (i) they have been represented by legal counsel during the negotiation and execution and delivery of this Agreement and therefore waive the application of any Legal Requirement, holding or rule of construction providing that ambiguities in an agreement or other document will be construed against the party drafting such agreement or document; and (j) the word "or" shall not be exclusive (i.e., "or" shall be deemed to mean "and/or") unless the subjects of the conjunction are mutually exclusive. The headings contained in this Agreement are for convenience of reference only, shall not be deemed to be a part of this Agreement and shall not be referred to in connection with the construction or interpretation of this Agreement. All references to "Dollars" or "$" are to United States Dollars, unless expressly stated otherwise.

2. CONTINGENT VALUE RIGHTS

2.1. CVRs. As provided in the Merger Agreement, effective as of the Effective Time, (i) each Share shall be converted into the right to receive the Merger Consideration, which includes one CVR, and (ii) each Company Warrant that is assumed and converted pursuant to Section 5.3(c) of the Merger Agreement shall be treated in accordance with its terms. The initial Holders shall be determined pursuant to the terms of the Merger Agreement and this Agreement, and a list of the initial Holders shall be furnished to the Rights Agent by or on behalf of Parent in accordance with Section 4.1 hereof.

2.2. Non-transferable. The CVRs may not be sold, assigned, transferred, pledged, encumbered or in any other manner transferred or disposed of, in whole or in part, other than through a Permitted Transfer, and, in the case of a Permitted Transfer, only in accordance with Section 2.3(c) hereof and in compliance with applicable United States federal and state securities laws and the terms and conditions hereto. Any such sale, assignment, transfer, pledge, encumbrance or disposal of CVRs, in whole or in part, in violation of this Section 2.2, shall be null and void and of no effect.

2.3. No Certificate; Registration; Registration of Transfer; Change of Address.

(a) The CVRs shall not be evidenced by a certificate or other instrument.

(b) The Rights Agent shall keep a register (the "**CVR Register**") for the purpose of identifying the Holders and registering CVRs and transfers of CVRs as herein provided. The CVR Register will initially show one position for Cede & Co. representing all of the CVRs that are issued to the holders of Shares held by DTC on behalf of the street holders of the Shares. The Rights Agent will have no responsibility whatsoever directly to the street name holders or DTC participants with respect to transfers of CVRs. With respect to any payments to be made under Section 2.4 below, the Rights Agent will accomplish such payment to any former street name holders of the Shares by sending such payments to DTC. The Rights Agent will have no responsibilities whatsoever with regard to the distribution of payments by DTC to such street name holders.

(c) Subject to the restrictions on transferability set forth in Section 2.2, every request made to transfer a CVR must be in writing and accompanied by a written instrument of transfer in form reasonably satisfactory to the Rights Agent pursuant to its written guidelines, duly executed by the Holder thereof, the Holder's attorney duly authorized in writing, the Holder's personal representative or the Holder's survivor, as applicable, and setting forth in reasonable detail the circumstances relating to the transfer. Upon receipt of such written notice, the Rights Agent shall, subject to its reasonable determination that the transfer instrument is in proper form and the transfer otherwise complies with the other terms and conditions of this Agreement (including the provisions of Section 2.2), register the transfer of the CVRs in the CVR Register and notify the Parent of the same. Any registration, transfer or assignment of the CVRs shall be without charge to the Holder (other than payment of a sum to the extent necessary to cover any stamp or other Tax or other governmental charge that is imposed in connection with any such registration, transfer or assignment). All duly transferred CVRs registered in the CVR Register shall be the valid obligations of Parent and shall entitle the transferee to the same benefits and rights under this Agreement as those held immediately prior to the transfer by the transferor. No transfer of a CVR shall be valid unless and until registered in the CVR Register.

(d) A Holder may make a written request to the Rights Agent to change such Holder's address of record in the CVR Register. The written request must be duly executed by the Holder. Upon receipt of such written request, the Rights Agent is hereby authorized to, and shall promptly, record the change of address in the CVR Register.

2.4. Payment Procedures.

(a) If any Milestone is achieved, then, in each case, on a date (a "**Milestone Payment Date**") that is within 60 days following the last day of such Calendar Quarter in which such Milestone is achieved:

(i) Parent will deliver to the Rights Agent (A) a notice (a "**Milestone Notice**") indicating (1) the achievement of such Milestone and that the Holders are entitled to receive the applicable Milestone Amount, and (2) Parent's election as to which portion of such Milestone Amount shall be settled by payment of cash (the "**Milestone Cash Amount**") pursuant to Section 2.4(b) or by credit of Parent Common Stock (the **"Milestone Stock Amount**") pursuant to Section 2.4(c), and (B) cash in the aggregate amount of the Milestone Cash Amount (if such amount is greater than zero).

(ii) Subject to the terms of this Agreement, including Section 2.4(d), each CVR shall entitle the Holder thereof to receive from Parent the number of fully paid and nonassessable shares of Parent Common Stock equal to the applicable Milestone Stock Amount (determined by dividing such amount by the Milestone Stock Price), together, if applicable, with any Milestone Cash Amount, any cash payable in lieu of fractional shares as provided in Section 2.8 and any dividends or distributions payable as provided Section 2.9, in each case subject to any applicable withholding Tax.

(b) The Rights Agent shall promptly, and in any event within 10 Business Days of receipt of a Milestone Notice, as well as any letter of instruction reasonably required by the Rights Agent, send each Holder at its registered address a copy of such Milestone Notice. If any Milestone Cash Amount is payable to the Holders, then at the time the Rights Agent sends a copy of such Milestone Notice to the Holders, the Rights Agent shall also pay to each Holder, subject to any applicable withholding Tax, the applicable Milestone Cash Amount (the amount of which each Holder is entitled to receive shall be based on the applicable Milestone Cash Amount multiplied by the number of CVRs held by such Holder as reflected in the CVR Register), in accordance with the corresponding letter of instruction (i) by check mailed to the address of such Holder reflected in the CVR Register as of 5:00 p.m. New York City time on the date of the applicable Milestone Notice or (ii) with respect to any such Holder that is due an amount in excess of $100,000 in the aggregate who has provided the Rights Agent wiring instructions in writing as of the close of business on the date of the Milestone Notice, by wire transfer of immediately available funds to the account specified on such instruction.

(c) Promptly following the Milestone Payment Date, and in any event within 10 Business Days, subject to any withholding Tax, Parent shall (i) pay the applicable Milestone Stock Amount by crediting (or shall

cause its Transfer Agent to credit) the appropriate number of book-entry shares of Parent Common Stock (as determined in accordance with Section 2.4(a)(ii)) to each Holder in the name of such Holder as recorded in the CVR Register, and such book-entry shares of Parent Common Stock shall be deemed to have been issued and any person so named therein shall be deemed to have become a holder of record of such shares of Parent Common Stock as of the applicable Milestone Payment Date, and (ii) deliver to the Rights Agent any cash necessary to be paid to Holders in lieu of fractional shares as provided in Section 2.8 hereof, and the Rights Agent shall deliver to each Holder at his, her or its address appearing on the CVR Register, (x) a written notice specifying the number of shares of Parent Common Stock (if any) paid for each CVR and to whom the shares of Parent Common Stock were issued and the Rights Agent shall promptly record such issuance in the CVR Register and (y) a check reflecting the amount of any cash in lieu of fractional shares to be provided to such Holder as provided in Section 2.8 hereof and, if applicable, amounts payable pursuant to Section 2.9.

(d) Notwithstanding anything to the contrary herein, in no event shall Parent credit (or have any obligation to credit) pursuant to, or in connection with, the CVRs a number of shares of Parent Common Stock that exceeds the Parent Share Cap; provided that this Section 2.4(d) shall not be deemed to limit any Holder's right to receive any Milestone Amount in full (it being understood that any portion of a Milestone Amount that would otherwise exceed the Parent Share Cap shall be paid as a Milestone Cash Amount).

(e) Notwithstanding any other provisions of this Agreement, any portion of the cash provided by Parent to the Rights Agent as a reserve for purposes of payments to Holders of cash in lieu of fractional shares pursuant to Section 2.8 hereof and, if applicable, amounts payable pursuant to Section 2.4(b) or Section 2.9 that remains unclaimed as of the first anniversary of the applicable Milestone Payment Date (including by means of uncashed checks or invalid addresses on the CVR Register) shall be delivered to Parent or its designee and not disbursed to the Holders, and, thereafter, such Holders shall be entitled to look to Parent (subject to abandoned property, escheat and other similar Laws) only as general creditors thereof with respect to such cash that may be payable.

(f) Neither Parent, the Rights Agent nor any of their Affiliates shall be liable to any Holder for any payments delivered to a public official pursuant to any abandoned property, escheat law or other similar Legal Requirements.

(g) If a Milestone is not achieved during any one of the 2021, 2022, 2023 or 2024 Calendar Years, then on or before the date that is 60 days after the expiration of each such applicable Calendar Year period, Parent shall deliver to the Rights Agent a certificate certifying that such Milestone has not occurred, accompanied by a statement setting forth, in reasonable detail, a calculation of Net Sales for the applicable period (each, a "**Milestone Non-Achievement Certificate**"). The Rights Agent shall promptly, and in any event within 10 Business Days of receipt of a Milestone Non-Achievement Certificate, send each Holder at its registered address a copy of such Milestone Non-Achievement Certificate, including detail regarding the ability of a Holder or Holders to dispute or contest such determination of non-achievement of a Milestone pursuant to this Agreement. If the Rights Agent does not receive from the Acting Holders a written objection to (i) a Milestone Non-Achievement Certificate with respect to Milestone 1, if any, within 180 days of the delivery by the Rights Agent of such Milestone Non-Achievement Certificate to the Holders in accordance with this Section 2.4(g), the Holders shall be deemed to have accepted such Milestone Non-Achievement Certificate and Parent and its Affiliates shall have no further obligation with respect to Milestone 1 and the Milestone 1 Amount, and/or (ii) a Milestone Non-Achievement Certificate with respect to Milestone 2 Milestone 3, and/or Milestone 4, if any, within 180 days of the delivery by the Rights Agent of such Milestone Non-Achievement Certificate with respect the 2024 Calendar Year to the Holders in accordance with this Section 2.4(g), the Holders shall be deemed to have accepted such Milestone Non-Achievement Certificate and Parent and its Affiliates shall have no further obligation with respect to each such Milestone and the applicable Milestone Amount.

2.5. Withholding. Each of Parent, the Rights Agent, the Exchange Agent, the Surviving Corporation, their respective Affiliates, and any other Person who has any obligation to deduct or withhold from any consideration payable pursuant to this Agreement shall be entitled to deduct and withhold from the amounts otherwise payable pursuant to this Agreement such amounts as are required by any law to be deducted and

withheld, as may be reasonably determined by such Person. To the extent that amounts are so withheld and remitted to the appropriate Governmental Body in accordance with applicable Legal Requirements, such withheld amounts shall be treated for all purposes of this Agreement as having been paid to the Person in respect of which such deduction and withholding was made.

2.6. Reservation of Parent Common Stock.

(a) Parent will at all times reserve and keep available, free from preemptive rights, out of the aggregate of its authorized but unissued Parent Common Stock or the authorized and issued Parent Common Stock held in its treasury, for the purpose of enabling it to satisfy any obligation to issue shares of Parent Common Stock to the Holders of CVRs, the maximum number of shares of Parent Common Stock, subject to Section 2.4(d), which may then be deliverable to the Holders of all outstanding CVRs.

(b) Parent will keep a copy of this Agreement on file with the transfer agent for Parent Common Stock (the "**Transfer Agent**") and with every subsequent transfer agent for any shares of Parent Common Stock issuable to Holders of the CVRs. Parent will provide or otherwise make available any cash which may be payable as provided in Section 2.8 and Section 2.9 hereof. Parent will furnish such Transfer Agent a copy of all notices of adjustments and certificates related thereto transmitted to each Holder pursuant to Section 2.10 hereof.

(c) Parent covenants that all shares of Parent Common Stock which may be issued upon payment of CVRs will, upon issue, be validly authorized and issued, fully paid, nonassessable, free of preemptive rights and free from all taxes, liens, charges and security interests with respect to the issuance thereof. Parent will use its reasonable best efforts to obtain all such authorizations, exemptions or consents from any public regulatory body having jurisdiction thereof as may be necessary to enable Parent to perform its obligations under this Agreement.

2.7. Adjustment of CVRs.

(a) In case of any capital reorganization, other than any capital reorganization that does not result in any reclassification of the outstanding shares of Parent Common Stock into shares of other stock or other securities or property (collectively any such actions being hereinafter referred to as "**Reorganizations**") and/or any Change of Control, appropriate adjustment shall be made in the application of the provisions herein set forth with respect to the rights and interests of Holders so that the provisions set forth herein shall thereafter be applicable, as nearly as possible, in relation to any such shares or other securities, property or cash thereafter deliverable upon payment of CVRs.

(b) Whenever an adjustment is made to the terms of the CVRs pursuant to this Section 2.7, Parent will deliver to the Rights Agent a notice of such Reorganization or Change of Control within 3 Business Days of the closing of such Reorganization or Change of Control, setting forth in reasonable detail the terms of such Reorganization or Change of Control and any adjustments made pursuant to this Section 2.7. The Rights Agent shall promptly, and in any event within 10 Business Days of receipt of such a notice, send each Holder a copy of such notice in accordance with Section 7.2

(c) The Rights Agent has no duty to determine when an adjustment under this Section 2.7 should be made, how it should be made or what it should be. The Rights Agent makes no representation as to the validity or value of any securities or assets issuable upon payment of CVRs. The Rights Agent shall not be responsible for the Parent's failure to comply with this Section 2.7.

(d) For purpose of this Section 2.7, the term "shares of Parent Common Stock" shall mean (i) shares of the class of stock designated as Common Stock, par value $0.001 per share, of Parent as of the date of this Agreement, and (ii) shares of any other class of stock resulting from successive changes or reclassification of such shares consisting solely of changes in par value, or from par value to no par value, or from no par value to par value. In the event that at any time, as a result of an adjustment made pursuant to this Section 2.7, the Holders of CVRs shall become entitled to receive any securities of Parent other than, or in addition to, shares of Parent Common Stock, thereafter the number or amount of such other securities so issuable upon payment of each CVR shall be subject to terms as nearly equivalent as practicable to the provisions with respect to the shares of Parent Common Stock issuable hereunder.

2.8. No Fractional Shares. Parent shall not be required to issue fractional shares of Parent Common Stock upon payment of CVRs, and no certificates or scrip for any such fractional shares shall be issued. If more than one CVR shall be payable at the same time with respect to the same Holder, the number of full shares of Parent Common Stock which shall be issuable upon the payment thereof shall be computed on the basis of the aggregate number of shares of Parent Common Stock issuable upon the payment of such CVRs. If any fraction of a share of Parent Common Stock would, except for the provisions of this Section 2.8, be issuable on the payment of any CVRs, Parent shall pay in cash the dollar amount (rounded to the nearest whole cent, with numbers ending with .5 or more being rounded up to the nearest whole cent), without interest, determined by multiplying such fraction by the Milestone Stock Price.

2.9. Dividends or Other Distributions. No dividend or other distribution declared with respect to Parent Common Stock with a record date prior to the applicable Milestone Payment Date shall be paid to Holders of CVRs. To the extent any shares of Parent Common Stock are issued to Holders pursuant to Section 2.4(a)(ii), there shall be paid to such Holders the amount of dividends or other distributions, without interest, declared with a record date after the applicable Milestone Payment Date.

2.10. Notices to CVR Holders. Upon any adjustment pursuant to Section 2.7, Parent shall give prompt written notice of such adjustment to the Rights Agent and shall cause the Rights Agent, on behalf of and at the expense of Parent, within 10 days after notification is received by the Rights Agent of such adjustment, to mail by first class mail, postage prepaid, to each Holder a notice of such adjustment(s) and shall deliver to the Rights Agent a certificate of the Chief Financial Officer of Parent, setting forth in reasonable detail (i) the terms of such adjustment(s), (ii) a brief statement of the facts requiring such adjustment(s) and (iii) the computation by which such adjustment(s) was made. Where appropriate, such notice by Parent may be given in advance and included as a part of the notice to the Holders required under the other provisions of this Section 2.10.

2.11. Holding of Funds. All funds received by the Rights Agent under this Agreement that are to be distributed or applied by the Rights Agent in the performance of services hereunder (the "**Funds**") shall be held by the Rights Agent as agent for Parent and deposited in one or more bank accounts to be maintained by the Rights Agent in its name as agent for Parent. Until paid pursuant to the terms of this Agreement, the Rights Agent will hold the Funds through such accounts in: deposit accounts of commercial banks with Tier 1 capital exceeding $1 billion or with an average rating above investment grade by S&P (LT Local Issuer Credit Rating), Moody's (Long Term Rating) and Fitch Ratings, Inc. (LT Issuer Default Rating) (each as reported by Bloomberg Finance L.P.). The Rights Agent shall have no responsibility or liability for any diminution of the Funds that may result from any deposit made by the Rights Agent in accordance with this paragraph, including any losses resulting from a default by any bank, financial institution or other third party; *provided* that in the event the Funds are diminished below the level required for the Rights Agent to make cash payments as required under this Agreement, including any such diminishment as a result of investment losses, Parent shall promptly pay additional cash to the Rights Agent in an amount equal to the deficiency in the amount required to make such payments. The Rights Agent may from time to time receive interest, dividends or other earnings in connection with such deposits. The Rights Agent shall not be obligated to pay such interest, dividends or earnings to the Parent, any Holder or any other Person, unless there is a diminution of the Funds due to a deposit or investment made by the Rights Agent, in which case, the Rights Agent agrees that such interest, dividends or earnings shall accrue to the benefit of Parent to the extent of such diminution of the Funds.

2.12. No Voting, Dividends or Interest; No Equity or Ownership Interest.

(a) Nothing contained in this Agreement shall be construed as conferring upon any Holder, by virtue of being a Holder of a CVR (and not, for the avoidance of doubt, shares of Parent Common Stock issued pursuant to a CVR), the right to receive dividends other than as provided in Section 2.9, or the right to vote or to consent or to receive notice as stockholders in respect of the meetings of stockholders or the election of directors of Parent or any or any other matter, or any other rights of any kind or nature whatsoever as a stockholder of Parent, either at law or in equity.

(b) The CVRs shall not represent any equity or ownership interest in Parent or in any constituent company to the Merger or any of their respective Subsidiaries or Affiliates. The rights of a Holder in respect of the CVRs are limited to those expressed in this Agreement and the Merger Agreement.

2.13. Ability to Abandon CVR. A Holder may at any time, at such Holder's option, abandon all of such Holder's remaining rights in a CVR by transferring such CVR to Parent or any of its Affiliates without consideration therefor. Nothing in this Agreement shall prohibit Parent or any of its Affiliates from offering to acquire or acquiring any CVRs for consideration from the Holders, in private transactions or otherwise, in its sole discretion. Any CVRs acquired by Parent or any of its Affiliates shall be automatically deemed extinguished and no longer outstanding for purposes of the definition of Acting Holders and Section 5 and Section 6.

3. THE RIGHTS AGENT

3.1. Certain Duties and Responsibilities. Parent hereby appoints the Rights Agent to act as rights agent for Parent in accordance with the express terms and conditions set forth in this Agreement (and no implied terms and conditions), and the Rights Agent hereby accepts such appointment. The Rights Agent shall not have any liability for any actions taken, suffered or omitted to be taken in connection with this Agreement, except to the extent of its gross negligence, bad faith or willful or intentional misconduct.

3.2. Certain Rights of the Rights Agent. The Rights Agent undertakes to perform such duties and only such duties as are specifically set forth in this Agreement, and no implied covenants or obligations shall be read into this Agreement against the Rights Agent. In addition:

(a) the Rights Agent may rely and shall be protected and held harmless by Parent in acting or refraining from acting upon any resolution, certificate, statement, instrument, opinion, report, notice, request, direction, consent, order or other paper or document believed by it in good faith to be genuine and to have been signed or presented by the proper party or parties;

(b) whenever the Rights Agent shall deem it desirable that a matter be proved or established prior to taking, suffering or omitting any action hereunder, the Rights Agent may rely upon an Officer's Certificate, which certificate shall be full authorization and protection to the Rights Agent, and the Rights Agent shall, in the absence of gross negligence, bad faith or willful or intentional misconduct on its part, incur no liability and be held harmless by Parent for or in respect of any action taken, suffered or omitted to be taken by it under the provisions of this Agreement in reliance upon such certificate;

(c) the Rights Agent may engage and consult with counsel of its selection and the written advice of such counsel or any opinion of counsel shall be full and complete authorization and protection and shall be held harmless by Parent in respect of any action taken, suffered or omitted by it hereunder in good faith and in reliance thereon;

(d) the permissive rights of the Rights Agent to do things enumerated in this Agreement shall not be construed as a duty;

(e) the Rights Agent shall not be required to give any note or surety in respect of the execution of such powers or otherwise in respect of the premises;

(f) the Rights Agent shall not be liable for or by reason of, and shall be held harmless by Parent with respect to any of the statements of fact or recitals contained in this Agreement or be required to verify the same, but all such statements and recitals are and shall be deemed to have been made by Parent only;

(g) the Rights Agent shall have no liability and shall be held harmless by Parent in respect of the validity of this Agreement or the execution and delivery hereof (except the due execution and delivery hereof by the Rights Agent and the enforceability of this Agreement against the Rights Agent assuming the due execution and delivery hereof by Parent); nor shall it be responsible for any breach by Parent of any covenant or condition contained in this Agreement;

(h) Parent agrees to indemnify the Rights Agent for, and hold the Rights Agent harmless against, any loss, liability, damage, judgement, fine, penalty, claim, demands, suits or expense arising out of or in connection with Rights Agent's duties under this Agreement, including the reasonable out-of-pocket costs and expenses of counsel in defending Rights Agent against any loss, liability, damage, judgement, fine, penalty, claim, demands, suits or expense, unless such loss has been determined by a court of competent jurisdiction to be a result of Rights Agent's gross negligence, bad faith or willful or intentional misconduct;

(i) Anything to the contrary notwithstanding, in the absence of fraud or willful or intentional misconduct on the part of the Rights Agent, (i) the Rights Agent shall not be liable for any special, punitive, indirect, consequential or incidental loss or damage of any kind whatsoever (including but not limited to lost profits) arising out of any act or failure to act hereunder, even if the Rights Agent has been advised of the likelihood of such loss or damage or has foreseen the possibility or likelihood of such damages and (ii) the aggregate liability of the Rights Agent arising in connection with this Agreement, whether in contract, or in tort, or otherwise, is limited to, and shall not exceed, the amounts paid or payable hereunder by Parent to the Rights Agent as fees and charges;

(j) Parent agrees (i) to pay the fees and expenses of the Rights Agent in connection with this Agreement agreed upon in writing by the Rights Agent and Parent prior to the data hereof, and (ii) to reimburse the Rights Agent for all taxes and governmental charges, reasonable out-of-pocket expenses and other charges of any kind and nature incurred by the Rights Agent in the execution of this Agreement (other than Taxes imposed on or measured by the Rights Agent's net income and franchise or similar Taxes imposed on it (in lieu of net income Taxes)); and

(k) No provision of this Agreement shall require the Rights Agent to expend or risk its own funds or otherwise incur any financial liability in the performance of any of its duties hereunder or in the exercise of its rights if there shall be reasonable grounds for believing that repayment of such funds or adequate indemnification against such risk or liability is not reasonably assured to it.

3.3. Resignation and Removal; Appointment of Successor.

(a) The Rights Agent may resign at any time by giving written notice thereof to Parent specifying a date when such resignation shall take effect, which notice shall be sent at least 60 days prior to the date so specified but in no event shall such resignation become effective until a successor Rights Agent has been appointed and accepted such appointment in accordance with Section 3.4. Parent has the right to remove the Rights Agent at any time by specifying a date when such removal shall take effect but no such removal shall become effective until a successor Rights Agent has been appointed and accepted such appointment in accordance with Section 3.4. Notice of such removal shall be given by Parent to the Rights Agent, which notice shall be sent at least 60 days prior to the date so specified.

(b) If the Rights Agent provides notice of its intent to resign, is removed or becomes incapable of acting, Parent shall, as soon as is reasonably practicable, appoint a qualified successor Rights Agent who shall be a stock transfer agent of national reputation or the corporate trust department of a commercial bank. Notwithstanding the foregoing, if Parent shall fail to make such appointment within a period of sixty (60) days after giving notice of such removal or after it has been notified in writing of such resignation or incapacity by the resigning or incapacitated Rights Agent, then the incumbent Rights Agent may apply to any court of competent jurisdiction for the appointment of a new Rights Agent. The successor Rights Agent so appointed shall, forthwith upon its acceptance of such appointment in accordance with Section 3.4, become the successor Rights Agent.

(c) Parent shall give notice of each resignation and each removal of a Rights Agent and each appointment of a successor Rights Agent through the facilities of DTC in accordance with DTC's procedures and/or by mailing written notice of such event by first-class mail to the Holders as their names and addresses appear in the CVR Register. Each notice shall include the name and address of the successor Rights Agent. If Parent fails to send such notice within 10 Business Days after acceptance of appointment by a successor Rights Agent, the successor Rights Agent shall cause the notice to be transmitted at the expense of Parent. Failure to

give any notice provided for in this Section 3.3, however, shall not affect the legality or validity of the resignation or removal of the Rights Agent or the appointment of the successor Rights Agent, as the case may be.

(d) Notwithstanding anything else in this Section 3.3, unless consented to in writing by the Acting Holders, Parent shall not appoint as a successor Rights Agent any Person that is not a stock transfer agent of national reputation or the corporate trust department of an international commercial bank.

3.4. Acceptance of Appointment by Successor. Every successor Rights Agent appointed hereunder shall, at or prior to such appointment, execute, acknowledge and deliver to Parent and to the retiring Rights Agent an instrument accepting such appointment and a counterpart of this Agreement, and thereupon such successor Rights Agent, without any further act, deed or conveyance, shall become vested with all the rights, powers, trusts and duties of the retiring Rights Agent. On request of Parent or the successor Rights Agent, the retiring Rights Agent shall execute and deliver an instrument transferring to the successor Rights Agent all the rights, powers, trusts and duties of the retiring Rights Agent.

4. COVENANTS

4.1. List of Holders. Parent shall furnish or cause to be furnished to the Rights Agent, in a form as received from Parent's Transfer Agent, the names and addresses of the Holders within 10 days of the Effective Time.

4.2. Books and Records. Parent shall, and shall cause its subsidiaries to, keep true, complete and accurate records in sufficient detail to enable the Holders and their consultants or professional advisors to determine the amounts payable hereunder.

4.3. Payment of Milestone Cash Amounts. Parent shall duly and promptly deposit with the Rights Agent for payment to the Holders the Milestone Cash Amounts, if any, in the manner provided for in Section 2.4 and in accordance with the terms of this Agreement.

4.4. Further Assurances. Parent agrees that it will perform, execute, acknowledge and deliver or cause to be performed, executed, acknowledged and delivered, all such further and other acts, instruments and assurances as may reasonably be required by the Rights Agent for the carrying out or performing by the Rights Agent of the provisions of this Agreement.

4.5. Audit Rights.

(a) Until December 31, 2025, upon reasonable advance written notice from the Acting Holders, Parent shall permit an independent certified public accounting firm of nationally recognized standing selected by such Acting Holders and reasonably acceptable to Parent (the "**Independent Accountant**") to have access at reasonable times during normal business hours to the books and records of Parent and its Affiliates as may be reasonably necessary to evaluate and verify Parent's calculation of Net Sales hereunder; provided that (x) such Acting Holders (and the Independent Accountant) enter into customary confidentiality agreements reasonably satisfactory to Parent with respect to the confidential information of Parent or its Affiliates to be furnished pursuant to this Section 4.5 and (y) such access does not unreasonably interfere with the conduct of the business of Parent or any of its Affiliates. The fees charged by such accounting firm shall be borne by Parent. The Independent Accountant shall provide Parent with a copy of all disclosures made to the Acting Holders. The decision of such accounting firm shall be final, conclusive and binding on Parent and the Holders, shall be nonappealable and shall not be subject to further review, absent manifest error. Parent shall not enter into any transaction constituting a Change of Control unless such agreement contains provisions that would permit such accounting firm with such access to the records of the other party in such Change of Control if and to the extent as are reasonably necessary to ensure compliance with this Section 4.5. The audit rights set forth in this Section 4.5(a) may not be exercised by the Acting Holders more than once in any given twelve (12) month period.

(b) If, in accordance with the procedures set forth in Section 4.5(a), the Independent Accountant concludes that any Milestone Amount should have been paid but was not paid when due, Parent shall promptly, and in any event within thirty (30) days of the date the Independent Accountant delivers to Parent the Independent Accountant's written report, pay each Holder such Milestone Amount (to the extent not paid on a subsequent date), plus interest at the thirty (30) day U.S. dollar "prime rate" effective for the date such payment was due, as reported by Bloomberg, from when such Milestone Amount should have been paid, as applicable, to the date of actual payment, pursuant to Section 2.4(a)(i) and Sections 2.4(b) and 2.4(c), as applicable.

4.6. Commercially Reasonable Efforts. Commencing upon the Closing and continuing until the earlier of December 31, 2024 or the achievement of all Milestones, Parent shall, and shall cause its Affiliates and Licensees to, use Commercially Reasonable Efforts to achieve the Milestones. Without limiting the foregoing, neither Parent nor any of its Affiliates shall act in bad faith for the purpose of avoiding achievement of any Milestone or the payment of any Milestone Amount.

5. AMENDMENTS

5.1. Amendments without Consent of Holders.

(a) Without the consent of any Holders, Parent, at any time and from time to time, may enter into one or more amendments hereto, for any of the following purposes:

(i) to evidence the succession of another person to Parent and the assumption by any such successor of the covenants of Parent herein; provided that such succession and assumption is in accordance with the terms of this Agreement;

(ii) to evidence the succession of another Person as a successor Rights Agent and the assumption by any such successor of the covenants and obligations of the Rights Agent herein; provided that such succession and assumption is in accordance with the terms of this Agreement;

(iii) to add to the covenants of Parent such further covenants, restrictions, conditions or provisions as Parent shall consider to be for the protection of the Holders; provided that, in each case, such provisions do not adversely affect the interests of the Holders;

(iv) to cure any ambiguity, to correct or supplement any provision herein that may be defective or inconsistent with any other provision herein or in the Merger Agreement, or to make any other provisions with respect to matters or questions arising under this Agreement; provided that, in each case, such provisions do not adversely affect the interests of the Holders;

(v) as may be necessary or appropriate to ensure that the CVRs are not subject to registration under the Securities Act, the Exchange Act or any applicable state securities or "blue sky" laws; provided that, such provisions shall not adversely affect the interests of the Holders;

(vi) to evidence the assignment of this Agreement by Parent as provided in Section 7.3; or

(vii) as may be necessary or appropriate to ensure that the Company complies with applicable law.

In addition to the foregoing, upon the request of Parent, the Rights Agent hereby agrees to enter into one or more amendments hereto to evidence the succession of another person as a successor Rights Agent in accordance with the terms of this Agreement and the assumption by any successor of the covenants and obligations of such Rights Agent herein, without modification of such covenants or obligations other than as permitted by this Section 5.1.

(b) Without the consent of any Holders, Parent and the Rights Agent, at any time and from time to time, may enter into one or more amendments hereto to reduce the number of CVRs, in the event any Holder agrees to renounce such Holder's rights under this Agreement in accordance with Section 7.4 or to transfer CVRs to Parent pursuant to Section 2.13.

(c) Promptly after the execution by Parent and the Rights Agent of any amendment pursuant to the provisions of this Section 5.1, Parent shall mail (or cause the Rights Agent to mail) a notice thereof through the facilities of DTC in accordance with DTC's procedures and/or by first class mail to the Holders at their addresses as they appear on the CVR Register, setting forth such amendment.

5.2. Amendments with Consent of Holders.

(a) Subject to Section 5.1 (which amendments pursuant to Section 5.1 may be made without the consent of any Holder), with the written consent of the Holders of not less than a majority of the outstanding CVRs as set forth in the CVR Register, whether evidenced in writing or taken at a meeting of the Holders, Parent and the Rights Agent may enter into one or more amendments hereto for the purpose of adding, eliminating or changing any provisions of this Agreement, even if such addition, elimination or change is materially adverse to the interest of the Holders.

(b) Promptly after the execution by Parent and the Rights Agent of any amendment pursuant to the provisions of this Section 5.2, Parent shall mail (or cause the Rights Agent to mail) a notice thereof through the facilities of DTC in accordance with DTC's procedures and/or by first class mail to the Holders at their addresses as they appear on the CVR Register, setting forth such amendment.

5.3. Execution of Amendments. Prior to executing any amendment permitted by this Section 5, the Rights Agent shall be entitled to receive, and shall be fully protected in relying upon, an opinion of counsel selected by Parent and reasonably acceptable to Rights Agent stating that the execution of such amendment is authorized or permitted by this Agreement.

5.4. Effect of Amendments. Upon the execution of any amendment under this Section 5, this Agreement shall be modified in accordance therewith, such amendment shall form a part of this Agreement for all purposes and every Holder shall be bound thereby.

6. REMEDIES OF THE HOLDERS

6.1. Event of Default.

(a) "**Event of Default**" with respect to the CVRs, means each one of the following events which shall have occurred and be continuing (whatever the reason for such Event of Default and whether it shall be voluntary or involuntary or be effected by operation of Legal Requirements, pursuant to any judgment, decree or order of any court or any order, rule or regulation of any Governmental Body or otherwise): (i) default in the payment by Parent pursuant to the terms of this Agreement of all or any part of a Milestone Amount after a period of ten (10) Business Days after the Milestone Amount shall become due and payable and (ii) material default in the performance, or breach in any material respect, of any other covenant or warranty of Parent hereunder, and continuance of such default or breach for a period of sixty (60) days after a written notice specifying such default or breach and requiring it to be remedied is given, which written notice states that it is a "Notice of Default" hereunder and is sent by registered or certified mail to Parent and the Rights Agent by the Acting Holders.

(b) If an Event of Default described above occurs and is continuing (and has not been cured or waived), then, and in each and every such case, the Acting Holders by notice in writing to Parent and the Rights Agent, may, in their discretion, commence a suit to protect the rights of the Holders, including to obtain payment for any amounts then due and payable.

6.2. Suits by Holders. Except for the rights of the Rights Agent set forth herein, the Acting Holders will have the sole right, on behalf of all Holders, by virtue of or under any provision of this Agreement, to institute any action or proceeding with respect to this Agreement, and no individual Holder or other group of Holders will be entitled to exercise such rights. Notwithstanding the foregoing, (a) the right of any Holder of any CVR to receive payment of the amounts that a Milestone Notice indicates are payable in respect of such CVR on or after

the applicable due date, or to institute any action or proceeding for the enforcement of any such payment on or after such due date, shall not be impaired or affected without the consent of such Holder and (b) in the event of an insolvency proceeding of the Parent, individual Holders shall be entitled to assert claims in such insolvency proceeding and take related actions in pursuit of such claims with respect to any payment that may be claimed by or on behalf of the Parent or by any creditor of the Parent.

7. OTHER PROVISIONS OF GENERAL APPLICATION

7.1. Notices to the Rights Agent and Parent. Any notice or other communication required or permitted to be delivered to Parent or the Rights Agent under this Agreement shall be in writing and shall be deemed properly delivered, given and received (a) upon receipt when delivered by hand, (b) two Business Days after being sent by registered mail or by courier or express delivery service, (c) if sent by email transmission prior to 6:00 p.m. recipient's local time, upon transmission when receipt is confirmed or (d) if sent by email transmission after 6:00 p.m. recipient's local time and receipt is confirmed, the Business Day following the date of transmission; *provided* that in each case the notice or other communication is sent to the physical address or email address, as applicable, set forth beneath the name of such party below (or to such other physical address or email address as such party shall have specified in a written notice given to the other party):

If to the Rights Agent, to it at:

[ ]
[Address]
Attention: [ ]
Facsimile: [ ]
Email: [ ]

If to Parent, to it at:

AcelRx Pharmaceuticals, Inc.
351 Galveston Drive
Redwood City, California 94063
Attention: Chief Financial Officer
Phone: 650-216-3500

with a copy to:

AcelRx Pharmaceuticals, Inc.
351 Galveston Drive
Redwood City, California 94063
Attention: Legal Department
Phone: 650-216-3500
Email: legal@acelrx.com

with a copy to:

Cooley LLP
101 California Street, 5th Floor
San Francisco, CA 94111
Attention: Robert Phillips; Rama Padmanabhan
E-mail: rphillips@cooley.com; rama@cooley.com
Facsimile: (415) 693-2222

The Rights Agent or Parent may specify a different address, facsimile number or email address by giving notice in accordance with this Section 7.1.

7.2. Notice to Holders. Where this Agreement provides for notice to Holders, such notice shall be sufficiently given (unless otherwise herein expressly provided) if in writing and transmitted through the facilities of DTC in accordance with DTC's procedures or mailed, first-class postage prepaid, to each Holder affected by such event, at the Holder's address as it appears in the CVR Register, not later than the latest date, and not earlier than the earliest date, if any, prescribed for the giving of such notice. In any case where notice to Holders is given by mail, neither the failure to mail such notice, nor any defect in any notice so mailed, to any particular Holder shall affect the sufficiency of such notice with respect to other Holders.

7.3. Successors and Assigns. Parent may assign, in its sole discretion and without the consent of any other Person, any or all of its rights, interests and obligations hereunder to one or more direct or indirect wholly owned subsidiaries of Parent for so long as they remain wholly owned subsidiaries of Parent and any such subsidiary may assign any or all of its rights, interests and obligations hereunder to one or more other direct or indirect wholly owned subsidiaries of Parent for so long as they remain wholly owned subsidiaries of Parent; *provided* that each such assignee agrees to assume and be bound by all of the terms and conditions of this Agreement; *provided*, *further*, that Parent shall remain liable for the performance by each such assignee of all covenants, agreements and obligations of Parent hereunder. This Agreement will be binding upon, inure to the benefit of and be enforceable by Parent's successors and each assignee. Each of Parent's successors and each assignee shall, by a supplemental contingent consideration payment agreement or other acknowledgement executed and delivered to the Rights Agent, expressly agree to assume and be bound by all of the terms and conditions of this Agreement. This Agreement shall not restrict Parent's or any successor's ability to merge or consolidate or enter into or consummate any Change of Control; *provided*, that in the event of a Change of Control, Parent or the Company, as applicable, shall cause the acquirer to assume Parent's obligations, duties and covenants under this Agreement, in which case the obligation to issue Parent Common Stock set forth herein shall be assumed by the ultimate parent company in such Change of Control and the equity issuable hereunder shall be the equity of such new Person. Except as otherwise permitted herein, Parent may not assign this Agreement without the prior written consent of the Acting Holders. Any attempted assignment of this Agreement or any such rights in violation of this Section 7.3 shall be void and of no effect.

7.4. No Third Party Beneficiaries. Nothing in this Agreement, express or implied, shall give to any Person (other than the Rights Agent and its permitted successors and assigns, Parent, Parent's permitted successors and assignees, and the Holders and the Holders' successors and assigns pursuant to Permitted Transfers, each of whom is intended to be, and is, a third party beneficiary hereunder) any benefit or any legal or equitable right, remedy or claim under this Agreement or under any covenant or provision herein contained, all such covenants and provisions being for the sole benefit of the Rights Agent and its permitted successors and assigns, Parent, Parent's permitted successors and assignees, and the Holders and the Holders' successors and assigns pursuant to Permitted Transfers. The rights hereunder of Holders and their successors and assigns pursuant to Permitted Transfers are limited to those expressly provided in this Agreement. Notwithstanding anything to the contrary contained herein, any Holder or Holder's successor or assign pursuant to a Permitted Transfer may at any time agree to renounce, in whole or in part, whether or not for consideration, its rights under this Agreement by written notice to the Rights Agent and Parent, which notice, if given, shall be irrevocable, and Parent may, in its sole discretion, at any time offer consideration to Holders in exchange for their agreement to irrevocably renounce their rights, in whole or in part, hereunder.

7.5. Governing Law; Jurisdiction. This Agreement, the CVRs and all actions arising under or in connection herewith and therewith (whether sounding in contract, tort or otherwise) shall be governed by and construed in accordance with the he laws of the State of Delaware, without giving effect to any laws, rules or provisions that would cause the application of the laws of any jurisdiction other than the State of Delaware. In any action between any of the parties arising out of or relating to this Agreement or the CVRs: (a) each of the parties irrevocably and unconditionally consents and submits to the exclusive jurisdiction and venue of the Chancery Court of the State of Delaware; and (b) each of the parties irrevocably waives the right to trial by jury. All rights and remedies existing under this Agreement are cumulative to, and not exclusive of, any rights or remedies otherwise available.

7.6. Severability. In the event that any provision of this Agreement, or the application thereof, becomes or is declared by a court of competent jurisdiction to be illegal, void or unenforceable, the remainder of this Agreement shall continue in full force and effect and the application of such provision to other Persons or circumstances shall be interpreted so as reasonably to effect the intent of the parties. The parties further agree to replace such void or unenforceable provision of this Agreement with a valid and enforceable provision that will achieve, to the extent possible, the economic, business and other purposes of such void or unenforceable provision.

7.7. Termination. This Agreement shall be terminated and of no force or effect, the parties hereto shall have no liability hereunder (other than with respect to monies due and owing by Parent to Rights Agent), and no payments shall be required to be made, or stock to be credited, upon the earlier to occur of (a) the payment in full of the Milestone 1 Amount, the Milestone 2 Amount and the Milestone 3 Amount, by Parent crediting (or cause its Transfer Agent to credit) the full amount of shares of Parent Common Stock reflecting each Milestone Stock Amount to each Holder in the name of such Holder as recorded in the CVR Register and the mailing by the Rights Agent to the address of each Holder as reflected in the CVR Register the full amount of each Milestone Cash Amount and the potential cash payments in lieu of fractional shares, in each case, as required to be credited or paid, as applicable, under the terms of this Agreement, (b) December 31, 2024, if Milestone 2 and/or Milestone 3 has not been achieved on or prior to such date, and (c) the termination of the Merger Agreement in accordance with its terms. Notwithstanding the foregoing, no such termination shall affect any rights or obligations accrued prior to the effective date of such termination or Sections 2.4(e), 2.4(f), 2.4(g), 3.2, 4.5, 7.4, 7.5, 7.6, 7.8, 7.9, 7.10 or this Section 7.7, which shall survive the termination of this Agreement, or the resignation, replacement or removal of the Rights Agent.

7.8. Entire Agreement; Counterparts. As it relates to the Rights Agent, this Agreement constitutes the entire agreement of the parties hereto and supersedes all contemporaneous and prior agreements and understandings, both written and oral, among or between any of the parties hereto, with respect to the subject matter hereof. As between the Parent and the Company this Agreement and the Merger Agreement constitute the entire agreement and supersede all contemporaneous and prior agreements and understandings, both written and oral, among or between any of the parties, with respect to the subject matter hereof. If and to the extent that any provision of this Agreement is inconsistent or conflicts with the Merger Agreement, this Agreement shall govern and be controlling. This Agreement may be executed in counterparts, each of which shall be deemed an original and all of which shall constitute one and the same instrument. The exchange of a fully executed Agreement (in counterparts or otherwise) by PDF shall be sufficient to bind the parties hereto to the terms and conditions of this Agreement.

7.9. No Fiduciary Obligations. Each of Parent and the Rights Agent acknowledges and agrees that the other party, its Affiliates and their respective officers, directors and controlling Persons do not owe any fiduciary duties to the first party or any of its respective Affiliates, officers, directors or controlling Persons. The only obligations of the Parent and the Rights Agent to each other and their Affiliates and their respective officers, directors and controlling Persons arising out of this Agreement are the contractual obligations expressly set forth in this Agreement.

7.10. Confidentiality. The Rights Agent and the Parent agree that all books, records, information and data pertaining to the business of the other party, including inter alia, personal, non-public Holder information, which are exchanged or received pursuant to the negotiation or the carrying out of this Agreement including the fees for services set forth in the attached schedule shall remain confidential, and shall not be voluntarily disclosed to any other person, except as may be required by a valid order of an arbitration panel, court or governmental body of competent jurisdiction or is otherwise required by law or regulation, including SEC or Nasdaq rules and regulations, or pursuant to subpoenas from state or federal government authorities (e.g., in divorce and criminal actions).

[*REMAINDER OF PAGE INTENTIONALLY LEFT BLANK*]

IN WITNESS WHEREOF, each of the parties has caused this Agreement to be executed on its behalf by its duly authorized officers as of the day and year first above written.

ACELRX PHARMACEUTICALS, INC.

By: _____
Name: _____
Title: _____

[Rights Agent]

By:
Name: _____
Title: _____

ANNEX E

INVESTMENT BANKING
JANNEY MONTGOMERY SCOTT LLC
1717 Arch Street
Philadelphia, PA 19103

www.janney.com

March 15, 2020

Members of The Board of Directors
Tetraphase Pharmaceuticals, Inc.
480 Arsenal Way, Suite 110
Watertown, MA 02472

Members of The Board of Directors:

Tetraphase Pharmaceuticals, Inc., a Delaware corporation ("Tetraphase" or including its subsidiaries, the "Company"), and AcelRx Pharmaceuticals, Inc., a Delaware corporation ("AcelRx"), are entering into an Agreement and Plan of Merger (the "Agreement"), pursuant to which AcelRx will acquire all of the issued and outstanding shares of common stock of Tetraphase through a reverse triangular merger (the "Merger"), for consideration consisting of (i) 0.6303 of a share of AcelRx common stock in exchange for each share of Tetraphase common stock outstanding immediately prior to the effective time of the Merger (the "Exchange Ratio") and (ii) one contingent value right per share (a "CVR") for each share of Tetraphase common stock outstanding immediately prior to the effective time of the Merger, representing the right to receive consideration set forth in the CVR Agreement in Exhibit D to the Agreement (together with the Exchange Ratio, the "Merger Consideration"). The milestone amounts in the CVR Agreement include: (a) $2.5 million if Xerava annual net sales meet or exceed $20 million in the calendar year ending on December 31, 2021, (b) $4.5 million if Xerava annual net sales meet or exceed $35 million in any calendar year ending on or before December 31, 2024, and (c) $5.5 million if Xerava annual net sales meet or exceed $55 million in any calendar year ending on or before December 31, 2024. The terms and conditions of the Merger are more fully set forth in the Agreement. All dollar figures are stated in U.S. dollars.

You have asked our opinion, as of the date hereof, whether the Merger Consideration to be received in the Merger is fair, from a financial point of view, to the common stockholders of Tetraphase.

Our opinion does not address, among other things, (i) the relative merits of the Merger as compared to other business strategies or transactions that might be available to the Company, (ii) the underlying business decision of the Company or any other party to proceed with or effect the Merger or (iii) the terms of any arrangements, understandings, agreements or documents related to, or the form, structure or any other portion or aspect of, the Merger or otherwise (other than the Merger Consideration to the extent expressly specified herein). Our opinion does not constitute a recommendation to any shareholder as to whether such shareholder should tender its shares, or how such shareholder should vote or act with respect to the Merger or any warrant holder as to whether and when to exercise its warrant in connection with the Merger. At your direction, we have not been asked to, nor do we, offer any opinion as to the terms, other than the Merger Consideration to the extent expressly specified herein, of the Agreement, the CVR Agreement, the Voting Agreement, or the structure of the Merger. In rendering this opinion, we have assumed, with your consent, that (i) the final executed form of each of the Agreement, the CVR Agreement and the Voting Agreement will not differ in any material respect from the drafts dated March 13, 2020 that we have reviewed, (ii) the Company and AcelRx will comply with all material terms of the Agreement, the CVR Agreement and the Voting Agreements, and (iii) the Merger will be consummated in accordance with the terms of the Agreement without any waiver or amendment of any material term or condition thereof. We have also assumed that all governmental, regulatory or other consents and approvals necessary for

the consummation of the Merger, will be obtained without any material delay or adverse effect on the Company or AcelRx or the Merger.

In rendering our opinion, we have made such reviews, analyses and inquiries as we have deemed necessary and appropriate under the circumstances including, among other things, the following:

(a) reviewed certain publicly available information such as annual reports, quarterly reports and SEC filings of the Company and AcelRx, respectively;

(b) reviewed the historical financial performance, current financial position and general prospects of the Company and AcelRx, respectively;

(c) reviewed certain internal financial and operating information with respect to the business, operations and general prospects of the Company and AcelRx, including certain historical financial adjustments and financial forecasts prepared by the management of the Company and the management of AcelRx;

(d) discussed the Company's historical financial performance, current financial position and general prospects with members of the Company's senior management team;

(e) discussed AcelRx's historical financial performance, current financial position and general prospects with members of the AcelRx's senior management team;

(f) reviewed the pro forma impact of the Merger on the Company's cash flow, consolidated capitalization and certain financial measures;

(g) reviewed the proposed financial terms of the Merger, as set forth in the draft Agreement, dated March 13, 2020, the CVR Agreement, dated March 13, 2020, and the Voting Agreement, dated March 13, 2020;

(h) reviewed the current and historical price ranges and trading activity of Tetraphase's common stock and AcelRx's common stock;

(i) to the extent deemed relevant, analyzed the premiums paid for certain selected recent control merger and acquisition transactions of publicly traded companies and compared the implied premium of the Merger Consideration to these transactions;

(j) to the extent deemed relevant, analyzed information of certain selected publicly traded companies;

(k) to the extent deemed relevant, analyzed information of certain other selected merger and acquisition transactions and compared the Merger from a financial point of view to these other transactions to the extent information concerning such transactions was publicly available;

(l) discussed with the Board and certain members of senior management of the Company the strategic aspects of the Merger, including, but not limited to, past and current business operations, financial condition and prospects (including their views on the risks and uncertainties of achieving the Company's forecasts);

(m) discussed with AcelRx senior management the strategic aspects of the Merger, including, but not limited to, past and current business operations, financial condition and prospects (including their views on the risks and uncertainties of achieving the forecasts); and

(n) performed such other analyses and examinations as we deemed necessary.

In performing our review, we have relied (without independent investigation) upon the accuracy and completeness of all of the financial and other information that was available to us from public sources, that was provided to us by the Company and its representatives and by AcelRx and its representatives or that was otherwise reviewed by us and have assumed such accuracy and completeness for purposes of rendering this opinion. We have further relied on the assurances of management of the Company and management of AcelRx that they are not aware of any facts or circumstances that would make any of such information inaccurate or misleading. We have not been asked to and have not undertaken any independent verification of any of such information and we do not assume any responsibility or liability for the accuracy or completeness thereof. For

purposes of this opinion, we have not been requested to, and did not, make an independent evaluation or appraisal of any of the assets or liabilities (contingent or otherwise) of the Company or any of its affiliates and we have not been furnished with any such evaluation or appraisal. We have not made any physical inspection of the properties or assets of the Company. With respect to the financial forecasts prepared by the Company's management or those prepared by AcelRx's management, both management teams have confirmed that they have been prepared in good faith and reflect the best currently available estimates and judgments of such management of the future financial performance of each respective company. We express no opinion or view as to such financial projections or the assumptions on which they are based or whether if the Merger were not consummated that the Company's performance would be consistent with such forecasts. For purposes of rendering this opinion, we have relied only on the Company's and AcelRx's historical financial information, except for the financial forecasts prepared by the Company's management and the management team of AcelRx (which we have assumed will be achieved) in connection with our analysis. We have relied on (without independent investigation) the assessment by management of the Company of the strategic, financial and other benefits (including their ability to integrate the businesses) expected to result from the Merger, that such benefits will be realized in the amounts and the time periods indicated thereby, and we express no opinion with respect to such benefits or the assumptions on which they are based. At your direction, we have relied upon and assumed, without independent verification, that the actual amounts due under the CVR Agreement and the actual Merger Consideration calculated at the closing of the Merger will not differ from the amounts thereof we have been directed to assume in any respect that would be material to our analyses or this opinion. We have assumed in all respects material to our analysis that all of the representations and warranties contained in the Agreement, the CVR Agreement, the Voting Agreements and all related agreements are true and correct, that each party to such agreements will perform all of the covenants required to be performed by such party under such agreements, that the conditions precedent to the Agreement are not waived and that the Merger will be consummated in a timely manner in accordance with the terms described in the Agreement in the form provided to us without any amendments or modifications thereto. Our opinion does not in any manner address the prices at which AcelRx common stock will trade following consummation of the Merger or at any time and we express no opinion or recommendation as to how the shareholders of the Company should vote at the shareholders' meetings to be held in connection with the Merger. As you are aware, the financial and stock markets have been experiencing unusual volatility and we express no opinion or view as to any potential effects of such volatility on the Merger, the Company, or AcelRx and our opinion does not purport to address potential developments in any such markets.

Janney Montgomery Scott LLC, as part of its investment banking business, is engaged in the valuation of companies and their securities in connection with mergers and acquisitions. We have acted as financial advisor to Tetraphase in connection with the Merger, and have participated in certain of the negotiations with respect thereto. We will receive a fee for our financial advisory services, and approximately half of the total fees, including the fee earned for this opinion and for acting as a financial advisor, are contingent upon the successful completion of the Merger. We will also receive a fee for rendering this opinion (which fee is not contingent on the successful completion of the Merger or the conclusions expressed herein). The Company has agreed to reimburse certain of our expenses and to indemnify us for certain liabilities arising out of our engagement as financial advisor to the Company and rendering this opinion. In the ordinary course of our business as a broker-dealer, we may, from time to time, have a long or short position in, and buy or sell, debt or equity securities of the Company or AcelRx for our own account or for the accounts of customers. As of the date hereof, we, on behalf of our own account and for the accounts of our customers, hold 23,100 shares of common stock of Tetraphase and hold 23,635 shares of common stock of AcelRx, which constitutes 0.3% and less than 0.1% of Tetraphase's and AcelRx's issued and outstanding common stock, respectively. Except as described herein, there are no other material relationships that existed during the two years prior to the date hereof or that are mutually understood to be contemplated in which any compensation was received or is intended to be received as a result of the relationship between us and any party to the Merger. We may provide investment banking services to AcelRx or its affiliates in the future for which we would seek customary compensation.

Our conclusion is rendered on the basis of market, economic and other conditions prevailing as of the date hereof and on the conditions and prospects, financial and otherwise, of the Company, as they exist and are known to us on the date hereof and, except for the delivery of one or more updated opinions at the request of the Company for an additional fee (which fee is not contingent on the successful completion of the Merger or the conclusions expressed in such opinion), we assume no responsibility for updating, revising or reaffirming this opinion based on circumstances, developments or events occurring after the date hereof. Our opinion is furnished solely for the use and benefit of the Board of Directors of the Company in connection with its consideration of the Merger, and does not constitute a recommendation to any shareholder of the Company as to whether such shareholder should tender its shares, or how such shareholder should vote or act on the Merger or to any warrant holder as to whether or when to exercise its warrant in connection with the Merger. Our opinion may not be relied upon by any creditors, stockholders, warrant holders, other equity holders or other stakeholders of the Company. Our opinion is directed only to the fairness, from a financial point of view, as of the date hereof, of the Merger Consideration to be received by holders of shares of Tetraphase common stock and not any other constituency of the Company and does not address the fairness of the Merger to, or any consideration received in connection therewith by, or the amount or nature of any compensation to be paid or payable to any of the officers, directors or employees of the Company, whether relative to the Merger Consideration or otherwise. We are not expressing any opinion as to the solvency or viability of the Company, any of the other parties to the Agreement, the CVR Agreement, the Voting Agreements or AcelRx or their ability to pay their debts when they become due, including any impact of the Merger thereon. Our opinion does not address the fairness of the Merger to, or any consideration received in connection therewith by, any warrant holders of the Company. This opinion should not be construed as creating any fiduciary duty on our part to any party. This opinion shall not be reproduced, summarized, described or referred to without Janney's prior written consent and accompanied by customary disclaimers; provided, that, this opinion may be reproduced in any public document relating to a proposed transaction filed with the Securities and Exchange Commission and distributed to the Company's shareholders (each such document, a "Filing"), so long as this opinion is reproduced in such Filing in its entirety and any description of or reference to Janney Montgomery Scott LLC, and the summary of such opinion and the analysis underlying the opinion included in such Filing, is required to be included in such Filing by applicable securities or other laws and regulations and is approved by us in writing in advance of such Filing. Furthermore, no opinion, counsel or interpretation is intended in matters that require legal, regulatory, accounting, insurance, tax or other similar professional advice. It is assumed that such opinions, counsel or interpretations have been or will be obtained from the appropriate professional sources. Furthermore, we have relied, with your consent, on the assessments by the Company and its advisers, as to all legal, regulatory, accounting, insurance and tax matters with respect to the Company and the Merger. This opinion has been approved by our fairness opinion committee.

On the basis of and subject to the foregoing, we are of the opinion that, as of the date hereof, the Merger Consideration to be received in the Merger is fair, from a financial point of view, to the common stockholders of Tetraphase.

Very truly yours,

/s/ Janney Montgomery Scott LLC
JANNEY MONTGOMERY SCOTT LLC

ANNEX F

GENERAL CORPORATION LAW OF THE STATE OF DELAWARE REGARDING APPRAISAL RIGHTS

SECTION 262 OF THE GENERAL CORPORATION LAW OF THE STATE OF DELAWARE

§ 262. Appraisal rights.

(a) Any stockholder of a corporation of this State who holds shares of stock on the date of the making of a demand pursuant to subsection (d) of this section with respect to such shares, who continuously holds such shares through the effective date of the merger or consolidation, who has otherwise complied with subsection (d) of this section and who has neither voted in favor of the merger or consolidation nor consented thereto in writing pursuant to § 228 of this title shall be entitled to an appraisal by the Court of Chancery of the fair value of the stockholder's shares of stock under the circumstances described in subsections (b) and (c) of this section. As used in this section, the word "stockholder" means a holder of record of stock in a corporation; the words "stock" and "share" mean and include what is ordinarily meant by those words; and the words "depository receipt" mean a receipt or other instrument issued by a depository representing an interest in 1 or more shares, or fractions thereof, solely of stock of a corporation, which stock is deposited with the depository.

(b) Appraisal rights shall be available for the shares of any class or series of stock of a constituent corporation in a merger or consolidation to be effected pursuant to § 251 (other than a merger effected pursuant to § 251(g) of this title), § 252, § 254, § 255, § 256, § 257, § 258, § 263 or § 264 of this title:

(1) Provided, however, that, except as expressly provided in § 363(b) of this title, no appraisal rights under this section shall be available for the shares of any class or series of stock, which stock, or depository receipts in respect thereof, at the record date fixed to determine the stockholders entitled to receive notice of the meeting of stockholders to act upon the agreement of merger or consolidation (or, in the case of a merger pursuant to § 251(h), as of immediately prior to the execution of the agreement of merger), were either: (i) listed on a national securities exchange or (ii) held of record by more than 2,000 holders; and further provided that no appraisal rights shall be available for any shares of stock of the constituent corporation surviving a merger if the merger did not require for its approval the vote of the stockholders of the surviving corporation as provided in § 251(f) of this title.

(2) Notwithstanding paragraph (b)(1) of this section, appraisal rights under this section shall be available for the shares of any class or series of stock of a constituent corporation if the holders thereof are required by the terms of an agreement of merger or consolidation pursuant to §§ 251, 252, 254, 255, 256, 257, 258, 263 and 264 of this title to accept for such stock anything except:

a. Shares of stock of the corporation surviving or resulting from such merger or consolidation, or depository receipts in respect thereof;

b. Shares of stock of any other corporation, or depository receipts in respect thereof, which shares of stock (or depository receipts in respect thereof) or depository receipts at the effective date of the merger or consolidation will be either listed on a national securities exchange or held of record by more than 2,000 holders;

c. Cash in lieu of fractional shares or fractional depository receipts described in the foregoing paragraphs (b)(2)a. and b. of this section; or

d. Any combination of the shares of stock, depository receipts and cash in lieu of fractional shares or fractional depository receipts described in the foregoing paragraphs (b)(2)a., b. and c. of this section.

(3) In the event all of the stock of a subsidiary Delaware corporation party to a merger effected under § 253 or § 267 of this title is not owned by the parent immediately prior to the merger, appraisal rights shall be available for the shares of the subsidiary Delaware corporation.

(4) In the event of an amendment to a corporation's certificate of incorporation contemplated by § 363(a) of this title, appraisal rights shall be available as contemplated by § 363(b) of this title, and the procedures of this section, including those set forth in subsections (d) and (e) of this section, shall apply as nearly as practicable, with the word "amendment" substituted for the words "merger or consolidation," and the word "corporation" substituted for the words "constituent corporation" and/or "surviving or resulting corporation."

(c) Any corporation may provide in its certificate of incorporation that appraisal rights under this section shall be available for the shares of any class or series of its stock as a result of an amendment to its certificate of incorporation, any merger or consolidation in which the corporation is a constituent corporation or the sale of all or substantially all of the assets of the corporation. If the certificate of incorporation contains such a provision, the provisions of this section, including those set forth in subsections (d),(e), and (g) of this section, shall apply as nearly as is practicable.

(d) Appraisal rights shall be perfected as follows:

(1) If a proposed merger or consolidation for which appraisal rights are provided under this section is to be submitted for approval at a meeting of stockholders, the corporation, not less than 20 days prior to the meeting, shall notify each of its stockholders who was such on the record date for notice of such meeting (or such members who received notice in accordance with § 255(c) of this title) with respect to shares for which appraisal rights are available pursuant to subsection (b) or (c) of this section that appraisal rights are available for any or all of the shares of the constituent corporations, and shall include in such notice a copy of this section and, if 1 of the constituent corporations is a nonstock corporation, a copy of § 114 of this title. Each stockholder electing to demand the appraisal of such stockholder's shares shall deliver to the corporation, before the taking of the vote on the merger or consolidation, a written demand for appraisal of such stockholder's shares; provided that a demand may be delivered to the corporation by electronic transmission if directed to an information processing system (if any) expressly designated for that purpose in such notice. Such demand will be sufficient if it reasonably informs the corporation of the identity of the stockholder and that the stockholder intends thereby to demand the appraisal of such stockholder's shares. A proxy or vote against the merger or consolidation shall not constitute such a demand. A stockholder electing to take such action must do so by a separate written demand as herein provided. Within 10 days after the effective date of such merger or consolidation, the surviving or resulting corporation shall notify each stockholder of each constituent corporation who has complied with this subsection and has not voted in favor of or consented to the merger or consolidation of the date that the merger or consolidation has become effective; or

(2) If the merger or consolidation was approved pursuant to § 228, § 251(h), § 253, or § 267 of this title, then either a constituent corporation before the effective date of the merger or consolidation or the surviving or resulting corporation within 10 days thereafter shall notify each of the holders of any class or series of stock of such constituent corporation who are entitled to appraisal rights of the approval of the merger or consolidation and that appraisal rights are available for any or all shares of such class or series of stock of such constituent corporation, and shall include in such notice a copy of this section and, if 1 of the constituent corporations is a nonstock corporation, a copy of § 114 of this title. Such notice may, and, if given on or after the effective date of the merger or consolidation, shall, also notify such stockholders of the effective date of the merger or consolidation. Any stockholder entitled to appraisal rights may, within 20 days after the date of giving such notice or, in the case of a merger approved pursuant to § 251(h) of this title, within the later of the consummation of the offer contemplated by § 251(h) of this title and 20 days after the date of giving such notice, demand in writing from the surviving or resulting corporation the appraisal of such holder's shares; provided that a demand may be delivered to the corporation by electronic transmission if directed to an information

processing system (if any) expressly designated for that purpose in such notice. Such demand will be sufficient if it reasonably informs the corporation of the identity of the stockholder and that the stockholder intends thereby to demand the appraisal of such holder's shares. If such notice did not notify stockholders of the effective date of the merger or consolidation, either (i) each such constituent corporation shall send a second notice before the effective date of the merger or consolidation notifying each of the holders of any class or series of stock of such constituent corporation that are entitled to appraisal rights of the effective date of the merger or consolidation or (ii) the surviving or resulting corporation shall send such a second notice to all such holders on or within 10 days after such effective date; provided, however, that if such second notice is sent more than 20 days following the sending of the first notice or, in the case of a merger approved pursuant to § 251(h) of this title, later than the later of the consummation of the offer contemplated by § 251(h) of this title and 20 days following the sending of the first notice, such second notice need only be sent to each stockholder who is entitled to appraisal rights and who has demanded appraisal of such holder's shares in accordance with this subsection. An affidavit of the secretary or assistant secretary or of the transfer agent of the corporation that is required to give either notice that such notice has been given shall, in the absence of fraud, be prima facie evidence of the facts stated therein. For purposes of determining the stockholders entitled to receive either notice, each constituent corporation may fix, in advance, a record date that shall be not more than 10 days prior to the date the notice is given, provided, that if the notice is given on or after the effective date of the merger or consolidation, the record date shall be such effective date. If no record date is fixed and the notice is given prior to the effective date, the record date shall be the close of business on the day next preceding the day on which the notice is given.

(e) Within 120 days after the effective date of the merger or consolidation, the surviving or resulting corporation or any stockholder who has complied with subsections (a) and (d) of this section hereof and who is otherwise entitled to appraisal rights, may commence an appraisal proceeding by filing a petition in the Court of Chancery demanding a determination of the value of the stock of all such stockholders. Notwithstanding the foregoing, at any time within 60 days after the effective date of the merger or consolidation, any stockholder who has not commenced an appraisal proceeding or joined that proceeding as a named party shall have the right to withdraw such stockholder's demand for appraisal and to accept the terms offered upon the merger or consolidation. Within 120 days after the effective date of the merger or consolidation, any stockholder who has complied with the requirements of subsections (a) and (d) of this section hereof, upon request given in writing (or by electronic transmission directed to an information processing system (if any) expressly designated for that purpose in the notice of appraisal), shall be entitled to receive from the corporation surviving the merger or resulting from the consolidation a statement setting forth the aggregate number of shares not voted in favor of the merger or consolidation (or, in the case of a merger approved pursuant to § 251(h) of this title, the aggregate number of shares (other than any excluded stock (as defined in § 251(h)(6)d. of this title)) that were the subject of, and were not tendered into, and accepted for purchase or exchange in, the offer referred to in § 251(h)(2)), and, in either case, with respect to which demands for appraisal have been received and the aggregate number of holders of such shares. Such statement shall be given to the stockholder within 10 days after such stockholder's request for such a statement is received by the surviving or resulting corporation or within 10 days after expiration of the period for delivery of demands for appraisal under subsection (d) of this section hereof, whichever is later. Notwithstanding subsection (a) of this section, a person who is the beneficial owner of shares of such stock held either in a voting trust or by a nominee on behalf of such person may, in such person's own name, file a petition or request from the corporation the statement described in this subsection.

(f) Upon the filing of any such petition by a stockholder, service of a copy thereof shall be made upon the surviving or resulting corporation, which shall within 20 days after such service file in the office of the Register in Chancery in which the petition was filed a duly verified list containing the names and addresses of all stockholders who have demanded payment for their shares and with whom agreements as to the value of their shares have not been reached by the surviving or resulting corporation. If the petition shall be filed by the surviving or resulting corporation, the petition shall be accompanied by such a duly verified list. The Register in Chancery, if so ordered by the Court, shall give notice of the time and place fixed for the hearing

of such petition by registered or certified mail to the surviving or resulting corporation and to the stockholders shown on the list at the addresses therein stated. Such notice shall also be given by 1 or more publications at least 1 week before the day of the hearing, in a newspaper of general circulation published in the City of Wilmington, Delaware or such publication as the Court deems advisable. The forms of the notices by mail and by publication shall be approved by the Court, and the costs thereof shall be borne by the surviving or resulting corporation.

(g) At the hearing on such petition, the Court shall determine the stockholders who have complied with this section and who have become entitled to appraisal rights. The Court may require the stockholders who have demanded an appraisal for their shares and who hold stock represented by certificates to submit their certificates of stock to the Register in Chancery for notation thereon of the pendency of the appraisal proceedings; and if any stockholder fails to comply with such direction, the Court may dismiss the proceedings as to such stockholder. If immediately before the merger or consolidation the shares of the class or series of stock of the constituent corporation as to which appraisal rights are available were listed on a national securities exchange, the Court shall dismiss the proceedings as to all holders of such shares who are otherwise entitled to appraisal rights unless (1) the total number of shares entitled to appraisal exceeds 1% of the outstanding shares of the class or series eligible for appraisal, (2) the value of the consideration provided in the merger or consolidation for such total number of shares exceeds $1 million, or (3) the merger was approved pursuant to § 253 or § 267 of this title.

(h) After the Court determines the stockholders entitled to an appraisal, the appraisal proceeding shall be conducted in accordance with the rules of the Court of Chancery, including any rules specifically governing appraisal proceedings. Through such proceeding the Court shall determine the fair value of the shares exclusive of any element of value arising from the accomplishment or expectation of the merger or consolidation, together with interest, if any, to be paid upon the amount determined to be the fair value. In determining such fair value, the Court shall take into account all relevant factors. Unless the Court in its discretion determines otherwise for good cause shown, and except as provided in this subsection, interest from the effective date of the merger through the date of payment of the judgment shall be compounded quarterly and shall accrue at 5% over the Federal Reserve discount rate (including any surcharge) as established from time to time during the period between the effective date of the merger and the date of payment of the judgment. At any time before the entry of judgment in the proceedings, the surviving corporation may pay to each stockholder entitled to appraisal an amount in cash, in which case interest shall accrue thereafter as provided herein only upon the sum of (1) the difference, if any, between the amount so paid and the fair value of the shares as determined by the Court, and (2) interest theretofore accrued, unless paid at that time. Upon application by the surviving or resulting corporation or by any stockholder entitled to participate in the appraisal proceeding, the Court may, in its discretion, proceed to trial upon the appraisal prior to the final determination of the stockholders entitled to an appraisal. Any stockholder whose name appears on the list filed by the surviving or resulting corporation pursuant to subsection (f) of this section and who has submitted such stockholder's certificates of stock to the Register in Chancery, if such is required, may participate fully in all proceedings until it is finally determined that such stockholder is not entitled to appraisal rights under this section.

(i) The Court shall direct the payment of the fair value of the shares, together with interest, if any, by the surviving or resulting corporation to the stockholders entitled thereto. Payment shall be so made to each such stockholder, in the case of holders of uncertificated stock forthwith, and the case of holders of shares represented by certificates upon the surrender to the corporation of the certificates representing such stock. The Court's decree may be enforced as other decrees in the Court of Chancery may be enforced, whether such surviving or resulting corporation be a corporation of this State or of any state.

(j) The costs of the proceeding may be determined by the Court and taxed upon the parties as the Court deems equitable in the circumstances. Upon application of a stockholder, the Court may order all or a portion of the expenses incurred by any stockholder in connection with the appraisal proceeding, including, without limitation, reasonable attorney's fees and the fees and expenses of experts, to be charged pro rata against the value of all the shares entitled to an appraisal.

(k) From and after the effective date of the merger or consolidation, no stockholder who has demanded appraisal rights as provided in subsection (d) of this section shall be entitled to vote such stock for any purpose or to receive payment of dividends or other distributions on the stock (except dividends or other distributions payable to stockholders of record at a date which is prior to the effective date of the merger or consolidation); provided, however, that if no petition for an appraisal shall be filed within the time provided in subsection (e) of this section, or if such stockholder shall deliver to the surviving or resulting corporation a written withdrawal of such stockholder's demand for an appraisal and an acceptance of the merger or consolidation, either within 60 days after the effective date of the merger or consolidation as provided in subsection (e) of this section or thereafter with the written approval of the corporation, then the right of such stockholder to an appraisal shall cease. Notwithstanding the foregoing, no appraisal proceeding in the Court of Chancery shall be dismissed as to any stockholder without the approval of the Court, and such approval may be conditioned upon such terms as the Court deems just; provided, however that this provision shall not affect the right of any stockholder who has not commenced an appraisal proceeding or joined that proceeding as a named party to withdraw such stockholder's demand for appraisal and to accept the terms offered upon the merger or consolidation within 60 days after the effective date of the merger or consolidation, as set forth in subsection (e) of this section.

(l) The shares of the surviving or resulting corporation to which the shares of such objecting stockholders would have been converted had they assented to the merger or consolidation shall have the status of authorized and unissued shares of the surviving or resulting corporation.

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 20. Indemnification of Directors and Officers.

The following summary is qualified in its entirety by reference to the complete copy of the DGCL, AcelRx Charter and AcelRx Bylaws.

Section 145 of the DGCL authorizes a court to award, or a corporation's board of directors to grant indemnity to directors and officers under certain circumstances and subject to certain limitations. The terms of Section 145 of the DGCL are sufficiently broad to permit indemnification under certain circumstances for liabilities, including reimbursement of expenses incurred, arising under the Securities Act.

As permitted by the DGCL, the AcelRx Charter contains provisions that eliminate the personal liability of its directors for monetary damages for any breach of fiduciary duties as a director, except liability for the following:

- any breach of the director's duty of loyalty to AcelRx or its stockholders;
- acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law;
- under Section 174 of the DGCL (regarding unlawful dividends and stock purchases); or
- any transaction from which the director derived an improper personal benefit.

As permitted by the DGCL, AcelRx Bylaws provide that:

- AcelRx is required to indemnify its directors and executive officers to the fullest extent permitted by the DGCL, subject to very limited exceptions;
- AcelRx may indemnify its other employees and agents as set forth in the DGCL;
- AcelRx is required to advance expenses, as incurred, to its directors and executive officers in connection with a legal proceeding to the fullest extent permitted by the DGCL, subject to very limited exceptions; and
- the rights conferred in the bylaws are not exclusive.

AcelRx has entered, and intends to continue to enter, into separate indemnification agreements with its directors and executive officers to provide these directors and executive officers additional contractual assurances regarding the scope of the indemnification set forth in the AcelRx Charter and AcelRx Bylaws and to provide additional procedural protections. At present, there is no pending litigation or proceeding involving a director or executive officer of AcelRx regarding which indemnification is sought. The indemnification provisions in the AcelRx Charter, AcelRx Bylaws and the indemnification agreements entered into or to be entered into between AcelRx and each of its directors and executive officers may be sufficiently broad to permit indemnification of AcelRx's directors and executive officers for liabilities arising under the Securities Act. Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of AcelRx pursuant to the foregoing provisions, or otherwise, AcelRx has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable.

AcelRx currently carries liability insurance for its directors and officers.

Item 21. Exhibits and Financial Statement Schedules.

Exhibit Number	Description
2.1	Agreement and Plan of Merger, by and among Tetraphase, AcelRx and Merger Sub, dated as of March 15, 2020 (attached as Annex A to the proxy statement/prospectus which forms a part of this Registration Statement on Form S-4 and incorporated herein by reference).
2.2	Form of Voting Agreement (attached as Annex B to the proxy statement/prospectus which forms a part of this Registration Statement on Form S-4 and incorporated herein by reference).
2.3	Form of Exchange Agreement (attached as Annex C to the proxy statement/prospectus which forms a part of this Registration Statement on Form S-4 and incorporated herein by reference).
2.4	Form of CVR Agreement (attached as Annex D to the proxy statement/prospectus which forms a part of this Registration Statement on Form S-4 and incorporated herein by reference).
3.1	Amended and Restated Certificate of Incorporation of AcelRx (incorporated by reference to Exhibit 3.1 to AcelRx's Current Report on Form 8-K filed with the SEC on February 18, 2011).
3.2	Certificate of Amendment of Amended and Restated Certificate of Incorporation of AcelRx (incorporated by reference to Exhibit 3.1 to AcelRx's Current Report on Form 8-K filed with the SEC on June 25, 2019).
3.3	Amended and Restated Bylaws of AcelRx (incorporated by reference to Exhibit 3.4 to AcelRx's Registration Statement on Form S-1 filed with the SEC on January 7, 2011).
3.4	Amended and Restated Certificate of Incorporation of Tetraphase (incorporated by reference to Exhibit 3.1 to Tetraphase's Quarterly Report on Form 10-Q filed with the SEC on November 12, 2019).
3.5	Amended and Restated Bylaws of Tetraphase (incorporated by reference to Exhibit 3.2 to Tetraphase's Quarterly Report on Form 10-Q filed with the SEC on May 13, 2013).
5.1*	Opinion of Cooley LLP as to the validity of the shares of AcelRx Common Stock to be issued in the Merger.
21.1	Subsidiaries of AcelRx (incorporated by reference to Exhibit 21.2 to AcelRx's Annual Report on Form 10-K, filed with the SEC on March 16, 2020).
23.1	Consent of OUM & CO. LLP in respect of AcelRx's financial statements.
23.2	Consent of Ernst & Young LLP in respect of Tetraphase's financial statements.
23.3*	Consent of Cooley LLP (included in Exhibit 5.1).
24.1	Power of Attorney (included on signature page).
99.1	Consent of Janney Montgomery Scott LLC.
99.2*	Form of Tetraphase Proxy Card.

* To be filed by amendment.

Item 22. Undertakings.

(a) The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933.

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Securities and Exchange Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement.

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser, if the registrant is subject to Rule 430C, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness; provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

(5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;

(ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;

(iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and

(iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

(b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof

(c) (1) The undersigned registrant hereby undertakes as follows: that prior to any public reoffering of the securities registered hereunder through use of a prospectus which is a part of this registration statement, by any person or party who is deemed to be an underwriter within the meaning of Rule 145(c), the issuer undertakes that such reoffering prospectus will contain the information called for by the applicable registration form with respect to reofferings by persons who may be deemed underwriters, in addition to the information called for by the other items of the applicable form. (2) The registrant undertakes that every prospectus: (i) that is filed pursuant to paragraph (1) immediately preceding, or (ii) that purports to meet the requirements of Section 10(a)(3) of the Securities Act of 1933 and is used in connection with an offering of securities subject to Rule 415, will be filed as a part of an amendment to the registration statement and will not be used until such amendment is effective, and that, for purposes of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(d) The undersigned registrant hereby undertakes to respond to requests for information that is incorporated by reference into the proxy statement/prospectus pursuant to Item 4, 10(b), 11 or 13 of this form, within one business day of receipt of such request, and to send the incorporated documents by first class mail or other equally prompt means. This includes information contained in documents filed subsequent to the effective date of the registration statement through the date of responding to the request.

(e) The undersigned registrant hereby undertakes to supply by means of a post-effective amendment all information concerning a transaction, and the company being acquired involved therein, that was not the subject of and included in the registration statement when it became effective.

(f) Insofar as indemnification for liabilities under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act of 1933 and is therefore unenforceable. In the event a claim of indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in a successful defense of any action, suit or proceeding) is asserted by such director, officer, or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act of 1933 and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the city of Redwood City, California, on the 6th day of April, 2020.

ACELRX PHARMACEUTICALS, INC.

By: /s/ Vincent J. Angotti
Vincent J. Angotti
Chief Executive Officer

POWER OF ATTORNEY

Each person whose signature appears below constitutes and appoints Vincent J. Angotti and Raffi Asadorian, or either of them individually, as his or her true and lawful attorney in fact and agent, with full powers of substitution and resubstitution, for and in his or her name, place and stead, in any and all capacities, to sign any and all amendments (including post effective amendments, exhibits thereto and other documents in connection therewith) to this registration statement and any subsequent registration statement we may hereafter file with the Securities and Exchange Commission pursuant to Rule 462(b) under the Securities Act of 1933, as amended, to register additional securities in connection with this registration statement, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys in fact and agents, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys in fact and agents, or any of them individually, or his or her substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Vincent J. Angotti Vincent J. Angotti	Chief Executive Officer and Director (*Principal Executive Officer*)	April 6, 2020
/s/ Raffi Asadorian Raffi Asadorian	Chief Financial Officer (*Principal Financial and Accounting Officer*)	April 6, 2020
/s/ Adrian Adams Adrian Adams	Chairman	April 6, 2020
/s/ Pamela P. Palmer Pamela P. Palmer, M.D., Ph.D.	Director	April 6, 2020
/s/ Mark G. Edwards Mark G. Edwards	Director	April 6, 2020
/s/ Stephen J. Hoffman Stephen J. Hoffman, Ph.D., M.D.	Director	April 6, 2020
/s/ Richard Afable Richard Afable, M.D.	Director	April 6, 2020
/s/ Howard B. Rosen Howard B. Rosen	Director	April 6, 2020
/s/ Mark Wan Mark Wan	Director	April 6, 2020

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in this Registration Statement on Form S-4 of AcelRx Pharmaceuticals, Inc. of our reports dated March 16, 2020, relating to the consolidated financial statements and the effectiveness of internal control over financial reporting of AcelRx Pharmaceuticals, Inc. appearing in the Company's Annual Report on Form 10-K for the year ended December 31, 2019.

We also consent to the reference to us under the heading "Experts" in such Registration Statement.

/s/ OUM & CO. LLP

San Francisco, California
April 6, 2020

EXHIBIT 23.2

Consent of Independent Registered Public Accounting Firm

We consent to the reference to our firm under the caption “Experts” in the joint proxy statement/prospectus (Form S-4) of AcelRx Pharmaceuticals, Inc. and Tetraphase Pharmaceuticals, Inc. for the registration of common shares of AcelRx Pharmaceuticals, Inc. and to the incorporation by reference therein of our report dated March 11, 2020, with respect to the consolidated financial statements of Tetraphase Pharmaceuticals, Inc. included in its Annual Report (Form 10-K) for the year ended December 31, 2019, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Boston, Massachusetts
April 6, 2020

EXHIBIT 99.1

INVESTMENT BANKING
JANNEY MONTGOMERY SCOTT LLC
1717 Arch Street
Philadelphia, PA 19103

www.janney.com

April 6, 2020

Members of The Board of Directors
Tetraphase Pharmaceuticals, Inc.
480 Arsenal Way
Watertown, MA 02472

We hereby consent to (i) the use of our opinion letter dated March 15, 2020 to the Board of Directors of Tetraphase Pharmaceuticals, Inc. (the "Company") included in Annex E to the Proxy Statement/Prospectus which forms a part of the registration statement on Form S-4 (the "Registration Statement") filed by AcelRx Pharmaceuticals, Inc. ("AcelRx") relating to the proposed merger of the Company and AcelRx, and (ii) the references to such opinion under the captions "Summary – Opinion of Janney Montgomery Scott LLC, Tetraphase's Financial Advisor" and "The Merger – Opinion of Janney Montgomery Scott LLC, Tetraphase's Financial Advisor" in such Registration Statement. In giving such consent, we do not admit that we come within the category of persons whose consent is required under Section 7 of the Securities Act of 1933, as amended, or the rules and regulations of the Securities and Exchange Commission thereunder, nor do we hereby admit that we are experts with respect to any part of such Registration Statement within the meaning of the term "experts" as used in the Securities Act of 1933, as amended, or the rules and regulations of the Securities and Exchange Commission thereunder.

Very truly yours,

/s/ Janney Montgomery Scott LLC

JANNEY MONTGOMERY SCOTT LLC