

October 25, 2019

Raffi M. Asadorian  
Chief Financial Officer  
ACELRX PHARMACEUTICALS INC  
351 Galveston Drive  
Redwood City, CA 94063

Re: ACELRX PHARMACEUTICALS INC  
Form 10-K for the Fiscal Year Ended December 31, 2018  
Filed March 7, 2019  
File No. 001-35068

Dear Mr. Asadorian:

We have reviewed your filing and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to these comments within ten business days by providing the requested information or advise us as soon as possible when you will respond. If you do not believe our comments apply to your facts and circumstances, please tell us why in your response.

After reviewing your response to these comments, we may have additional comments.

Form 10-K for the Fiscal Year Ended December 31, 2018

Business  
Clinical Trials, page 8

1. Please address the following regarding your disclosure of certain serious adverse events (SAEs) experienced by patients in the clinical trials of certain product candidates:

You disclose in a risk factor on page 34 that in the phase 3 active-comparator clinical trial (IAP309), double-blind, placebo-controlled, orthopedic surgery trial (IAP311) and phase 3 multi-center, open-label study (IAP312), patients experienced serious adverse events (SAEs) that were assessed as "possibly or probably related to the study drug." Please provide us proposed disclosure to be provided in future filings identifying each treatment-related SAE "possibly or probably" related to Zalviso.

Further on page 9, you disclose that in the IAP312 study "A total of 5 patients experienced serious adverse events, but all were considered unrelated to study drug

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by investigators." This disclosure appears to contradict your disclosure on page 34. Please clarify for us whether the SAEs in the IAP312 study were related or unrelated to Zalviso. Revise such disclosure in future filings to reconcile the apparent contradiction.

We remind you that the company and its management are responsible for the accuracy and adequacy of their disclosures, notwithstanding any review, comments, action or absence of action by the staff.

You may contact Sasha Parikh at 202-551-3627 or Kevin Vaughn at 202-551-3494 if you have any questions.

FirstName LastNameRaffi M. Asadorian  
Comapany NameACELRX PHARMACEUTICALS INC

Corporation Finance  
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Sciences  
FirstName LastName

Sincerely,  
Division of  
Office of Life