

March 26, 2013

United States Securities and Exchange Commission
Division of Corporate Finance
Mail Stop 6010
100 F Street, N.E.
Washington, D.C. 20549
Attn: Jeffrey Riedler
Austin Stephenson

**Re: Chimerix, Inc.
Registration Statement on Form S-1
Filed March 8, 2013
File No. 333-187145**

Dear Mr. Riedler:

Enclosed for electronic filing via EDGAR pursuant to the Securities Act of 1933, as amended, on behalf of our client, Chimerix, Inc. (the "**Company**"), is Amendment No. 1 (the "**Amendment**") to the Company's Registration Statement on Form S-1 (the "**Registration Statement**") originally filed with the Securities and Exchange Commission (the "**Commission**") on March 8, 2013. The copy of the Amendment that is enclosed with the paper copy of this letter is marked to show changes from the Registration Statement as originally filed on March 8, 2013.

The Amendment is being submitted in response to the following:

- comments received from the staff of the Commission (the "**Staff**") by letter dated March 19, 2013 with respect to the Registration Statement (the "**S-1 Comment Letter**"),
- a comment received from the Staff by letter dated March 19, 2013 with respect to the Company's related application for confidential treatment (the "**CTR Comment Letter**"), and
- a comment received from Dana Hartz of the Staff via telephone on March 22, 2013 with respect to our March 20, 2013 letter addressing Comment No. 10 of the Staff's letter dated February 26, 2013.

The numbering of the paragraphs below corresponds to the numbering in the S-1 Comment Letter and the CTR Comment Letter, the text of which we have incorporated into this response letter for convenience. Except where otherwise indicated, page references in the text of the responses below correspond to the page numbers of the Amendment.

Staff Comments and Company Responses to S-1 Comment Letter

General

1. Please note that when you file a pre-effective amendment containing pricing related information, we may have additional comments. As you are likely aware, you must file this amendment prior to circulating the prospectus. Please note that when you file a pre-effective amendment that includes your price range, it must be bone fide. We interpret this to mean that your range may not exceed \$2 if you price up to \$10 and 20% if you price above \$10.

Response: The Company acknowledges the Staff's comment.

Prospectus Summary, page 1

2. We note your response to our prior comment 5 and your revised disclosure relating to CMX001's method of action. Please additionally revise the second paragraph on this page to explain in simpler language the meaning of the phrase "alternative substrate in a replicating virus."

Response: In response to the Staff's comment, the Company has revised the disclosure on pages 1 and 71 of the Registration Statement as requested.

Business, page 70

CMX001 as a Medical Countermeasure against Smallpox, page 82

3. We note your discussion about development of CMX001 as a countermeasure to smallpox. Please expand your disclosure to clarify what sort of regulatory approval, if any, you will require from the FDA in developing CMX001 for this indication. Specifically, please disclose whether you will have to seek an investigational new drug application, a new drug application, or a biologics license application for the potential smallpox treatment. Please also expand your disclosure to explain the FDA's Animal Efficacy Rule and how it relates to your clinical trials. In particular, please consider explaining how you plan to test your compound when smallpox is no longer a communicable disease in humans.

Response: In response to the Staff's comment, the Company has revised the disclosure on pages 93 and 94 of the Registration Statement as requested.

Staff Comment and Company Response to CTR Comment Letter

Exhibit 10.21 – License Agreement with the University of California dated May 13, 2002.

1. We note your response to our prior comment 6 that the Regents of the University of California agreed that you had satisfied the Article 3.3(a)(5) due diligence requirement in a timely manner. But on page 11 of your registration statement, you state, “To date, we have not completed Phase 3 clinical trials or obtained regulatory approval for any of our product candidates, and none of our product candidates have been commercialized.” Please revise your prospectus to include a discussion of the original Article 3.3(a)(5) requirement in the Regents UC agreement. Please explain your disclosure the way in which you “satisfied” the requirement. For example, did you receive a waiver for the requirement or amend the original agreement? Please also supply us with the letter from Regents UC that you reference in your correspondence from March 8, 2013. You may supply us with this letter as supplemental information on a confidential basis pursuant to Rule 418 of the Securities Act, if desired.

Response: In response to the Staff’s comment, the Company has revised the disclosure on page 102 of the Registration Statement as requested. Additionally, the UC letter referenced by the Staff will be supplementally provided under separate cover as requested.

Staff Comment Provided by Telephone on March 22, 2013 and Company Response

We note your response dated March 20, 2013 in response to Comment No. 10 from our letter dated February 26, 2013. Please tell us how you determined the assigned IPO probability, specifically the 30% at the December 31, 2012 valuation date and the 45% at the March 1, 2013 valuation date, given that you filed your Form S-1 on January 30, 2013 and that you were well into the IPO process and weeks away from your roadshow at March 1, 2013.

Response: The Company respectfully advises the Staff that it conducted an in-depth management assessment for purposes of determining the probability of an IPO, as well as the probability of alternative potential outcomes, as of the December 31, 2012 and March 1, 2013 valuation dates. The Company informs the Staff that at each of the valuation dates referred to in the Staff’s comment, the Company was engaged in substantive discussions with a large international pharmaceutical company regarding a potential acquisition of the Company, and as a result there existed on those dates a significant probability of an acquisition outcome as an alternative to the IPO. These acquisition discussions commenced in mid-2012 and intensified during the period of time from November 2012 to early March 2013. If the Company had proceeded with an acquisition arising from such discussions, the IPO would not have occurred. Accordingly, the assigned IPO probability as of each of the valuation dates referred to in the Staff’s comment was substantially lower than it would have been had the Company not been engaged in these acquisition discussions. The Company advises the Staff that during the second week of March 2013, its discussions with the large international pharmaceutical company regarding a potential acquisition were discontinued. Therefore, as a result of this elimination of the acquisition outcome, the IPO probability that would be assigned on and after the discontinuance of such discussions was, and continues to be, substantially higher than the IPO probability assigned on each of the valuation dates referred to in the Staff’s comment.

Other Disclosure in the Amendment

In addition to the revisions made to the Registration Statement to address the Staff’s comments set forth above, the Company informs the Staff that it has (1) revised the Registration Statement to reflect the impact of a 3.55-for-1 reverse stock split of the Company’s common stock that was effected on March 25, 2013, and (2) added disclosure on the cover page of the prospectus and in several other sections of the Registration Statement to address indications of interest received by the Company from entities affiliated with certain of its existing stockholders and directors. With respect to the disclosure referred to in item (2), the Company informs the Staff that it has also received a preliminary indication of interest from a new investor. In the Company’s pre-effective amendment containing pricing-related information, the Company intends to revise the disclosure referred to in item (2) to identify the new investor and to insert an aggregate dollar amount for the indications of interest collectively received from the entities affiliated with certain of the Company’s existing stockholders and directors and the new investor, respectively.

As requested by the Staff, the Company acknowledges that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the Company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the Company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

The Company respectfully requests the Staff's assistance in completing the review of the Registration Statement and the Amendment as soon as possible. Please advise us if we can provide any further information or assistance to facilitate your review. Please direct any further comments or questions regarding the Amendment or this response letter to me at (858) 550-6044.

Sincerely,

Cooley LLP

/s/ Jason Kent

Jason L. Kent, Esq.

cc: Kenneth I. Moch, Chimerix, Inc.
Timothy W. Trost, Chimerix, Inc.
Michael Alrutz, Chimerix, Inc.
Richard D. Truesdell, Jr., Davis Polk & Wardwell LLP