



DIVISION OF
CORPORATION FINANCE

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

November 20, 2013

Via E-mail

Richard Chin, M.D.
President and Chief Executive Officer
Kindred Biosciences, Inc.
1499 Bayshore Highway, Suite 226
Burlingame, California 94010

**Re: Kindred Biosciences, Inc.
Amendment No. 1 to Registration Statement on Form S-1
Filed November 13, 2013
File No. 333-192242**

Dear Dr. Chin:

We have reviewed your registration statement 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 this letter by amending your registration statement and providing the requested information. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your registration statement and the information you provide in response to these comments, we may have additional comments.

Use of Proceeds, page 31

1. Please expand your disclosure to state the approximate amount of proceeds intended to be used for each product candidate by indication, and the stage of development of your product candidate that you expect to reach using the allocated proceeds.

Business, page 53

2. We note your graphic on page on page 55. We also note your disclosure on page 64 that you are developing SentiKin initially as a therapeutic to manage post-operative pain in dogs, cats and horses. Please provide us, with a view toward disclosure in the prospectus, the status of SentiKin for treatment of post-operative pain in cats and any considerations or decisions you have made about developing this treatment.

3. We note your disclosure on page 69 that you are negotiating a Protocol Concurrence with the FDA for the pivotal trial for SentiKin for post-operative pain in dogs, and also expect to develop SentiKin for post-operative pain in cats. Please clarify if you are developing SentiKin for treatment of horses.

Leverage our current product pipeline in additional animal species, page 57

4. Please expand your disclosure to clarify that your current primary focus is developing product candidates for dogs and cats. Alternatively, please expand your disclosure to state your current development plans for product candidates to treat horses. Additionally, please identify any other animal species for which you intend to develop product candidates to treat, or clarify that there is no additional species at this time.

Security Ownership of Certain Beneficial Owners and Management, page 93

5. We note that Oleg Nodelman and EcoR1 Capital Fund are listed as beneficial owners and that Mr. Nodelman has voting and investment power over the securities held by EcoR1 Capital Fund. Please expand the footnote disclosure to clarify the extent to which the same shares are included multiple times in the table, e.g. do the shares reflected as owned by Mr. Nodelman include the shares owned by EcoR1 Capital Fund.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Act of 1933 and all applicable Securities Act rules require. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

Notwithstanding our comments, in the event you request acceleration of the effective date of the pending registration statement please provide a written statement from the company acknowledging 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.

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Please refer to Rules 460 and 461 regarding requests for acceleration. We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

You may contact Vanessa Robertson at (202) 551-3649 or Jim Rosenberg at (202) 551-3679 if you have questions regarding comments on the financial statements and related matters. Please contact Matthew Jones at (202) 551-3786, John Krug at (202) 551-3862 or me at (202) 551-3715 with any other questions.

Sincerely,

/s/ Daniel Greenspan for

Jeffrey P. Riedler
Assistant Director

cc: Via E-mail
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