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February 11, 2013

Jennifer Riegel, Special Counsel
Securities and Exchange Commission
Division of Corporate Finance
100 F Street, N.E.
Washington, D.C. 20549

Re: **Responses to the Securities and Exchange Commission
Staff Comments dated January 29, 2013, regarding
Lorus Therapeutics Inc., Form 20-F
Filed September 28, 2012
File No. 001-32001**

Dear Ms. Riegel:

On behalf of our client Lorus Therapeutics Inc. (the "Company"), we are transmitting for your review the Company's response to the comments of the staff (the "Staff") of the U.S. Securities and Exchange Commission set forth in the January 29, 2013 letter (the "Comment Letter") regarding the above-referenced annual report on Form 20-F (the "Annual Report"). For your convenience, the Staff's comment is included below and we have numbered our response accordingly.

To facilitate the Staff's review, we have included in this letter the caption and numbered comment from the Comment Letter in bold text and have provided the Company's response immediately following the numbered comment.

Our response is as follows:

Item 4.B Business Overview, page 18
License Agreement, page 21

Staff Comment:

1. Please provide proposed draft disclosure for inclusion in future filings that expands your disclosure with respect to your license agreement with Genentech to disclose the amounts paid to date, aggregate potential milestone payments and a percentage point range (not to exceed ten percentage points) within which the applicable royalty rate falls. Please also disclose the term of the agreement and any termination provisions.

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Lorus Therapeutics Inc.'s Response:

The Company intends to include disclosure in future filings in substantially the form presented below:

The Company holds a non-exclusive license from Genentech to certain patent rights to develop and sub-license a certain polypeptide. In consideration of the license the Company paid an upfront amount and could be required to pay additional milestones and royalties on sales. The initial amount paid upfront was a one time non-creditable, non-refundable fee which was immaterial to the Company. The aggregate milestone payments under the agreement total \$2,325,000. Additionally, the Company is obligated to make royalty payments after the first commercial sale of the polypeptide within a range of 1% - 5% on a country by country basis on an aggregate worldwide scale of net sales. The Company does not expect to make any milestone or royalty payments under this agreement in fiscal years ended May 31, 2013 or 2014, and cannot reasonably predict when such royalties will become payable, if at all. The agreement will terminate upon the expiration of the last patent, which is expected to be in 2020. The agreement may be terminated (i) by the Company for any reason upon 60 days prior written notice to Genentech or (ii) by Genentech for any material breach of the agreement by the Company, provided that the Company has the option to cure such breach within 30 days following written notice by Genentech.

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Lorus Therapeutics Inc. hereby acknowledges that:

- Lorus Therapeutics Inc. is responsible for the adequacy and accuracy of the disclosure in the filing.
- Staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing.
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As always, should you have further comments or require further information, or if any questions should arise in connection with this submission, please call the undersigned at (416) 367-7377. You also may email me at nauth.daniel@dorsey.com or fax me at (416) 367-7371.

Yours truly,

/s/ Daniel D. Nauth
Daniel D. Nauth

cc: Elizabeth Williams, Director of Finance – Lorus Therapeutics Inc.

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