

April 28, 2006

Mail Stop 6010

E Kevin Hrusovsky
President and Chief Executive Officer
Caliper Life Sciences, Inc.
68 Elm Street
Hopkinton, MA 01748

**Re: Caliper Life Sciences, Inc.
Registration Statement on Form S-4
Filed April 3, 2006
File No. 333-132931
and Documents Incorporated By Reference
File No. 000-28229**

Dear Mr. Hrusovsky:

We have reviewed your filing and have the following comments. Where indicated, we think you should revise your document in response to these comments. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure. After reviewing this information, we may raise additional comments.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. We welcome any questions you may have about our comments or any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

General

1. In the forepart of your prospectus, please highlight the trading price of Caliper's and Xenogen's common stock and estimated value of Xenogen's warrants as of February 10, 2006 (the last completed trading day prior to the announcement of the merger) and as of a recent practical date. Clearly compare this information with the pro forma equivalent value per share (assuming application of the 0.574 exchange ratio) of Xenogen's common stock and pro forma equivalent value per warrant (assuming application of the 0.223 exchange ratio) of Xenogen's warrants, in each case as of February 10, 2006 and as of a recent practicable date. Also disclose the implied value of the total consideration to be paid to Xenogen's

stockholders and warrant holders based on the closing price of Caliper's common stock as of February 10, 2006 and as of a recent practical date.

Outside Front Cover Page of Joint Proxy Statement/Prospectus

2. Your cover page exceeds the one page limit imposed by Item 501 of Regulation S-K as it appears you have two separate cover pages for this prospectus. Please revise to limit the length to one page.
3. You state that "it is presently expected" that each holder would receive the described consideration assuming options are calculated on a "Net Exercise Basis." Please revise your description to explain your exchange ratio without using defined terms that are only defined later in the document.
4. Please revise to identify the precise number of Caliper shares covered by the prospectus. See Item 501(b)(2) of Regulation S-K.
5. Disclose that the exchange rate may differ from the example as of the latest practicable date and that Xenogen stockholders may not know the exchange rate before submitting their vote on the proposal to adopt the merger agreement and approve the related transactions. What time period, if any, do you anticipate between the stockholder vote and the closing of the merger?

Notice of Annual Meeting of Stockholders of Caliper Life Sciences

6. Please clarify what it means to elect two "continuing" directors." We note your disclosure on page I-9 regarding two nominees of Xenogen to the Caliper Board.

Questions and Answers about the Merger, page I-1

7. We note that the first few questions and answers are written from the perspective of describing the transaction, rather than how it will affect stockholders. Please revise to include a question and answer discussing what you are asking Xenogen stockholders to vote on and describe the appraisal rights of holders of Xenogen securities. Also, include a question and answer discussing what you are asking Caliper stockholders to vote on. In addition, you currently repeat information in both your Q&A section and your summary. The Q&A should not repeat any of the information that appears in the summary and vice versa. For purposes of eliminating redundancies and grouping similar information together, view your Q&A and summary as one section.

Do the Board of Directors of Caliper and Xenogen recommend..., page I-2

8. Please explain what it means to have "unanimous vote of those directors voting on such matters" so that it is clear that the entire board has not approved the transaction.

Summary, page I-5

9. Please revise the introductory paragraph to clarify, if true, that the summary discusses all material aspects of the merger.

Merger Consideration page I-7

10. Please explain the business reasons for structuring the transaction to issue warrants to the Xenogen stockholders in addition to common stock.
11. Because the exchange ratios, and therefore the consideration Xenogen stockholders and warrant holders will receive, are subject to adjustment depending on the number of outstanding shares, warrants and options to purchase Xenogen common stock at the effective time of the merger, please add to the Summary section an illustrative table indicating the sensitivity of the exchange ratios to such changes, using a reasonable range of the number of outstanding shares, options and warrants to purchase Xenogen common stock and other relevant information. Also include in such table the pro forma equivalent value per share or warrant, as applicable (assuming application of the relevant exchange ratio), of Xenogen common stock and warrants as of February 10, 2006 and as of a recent practicable date. Provide a thorough discussion of such information elsewhere in your joint proxy statement/prospectus, where applicable, including a discussion of the minimum consideration holders of Xenogen common stock, warrants and options could reasonably expect to receive. In your response tell us why you picked the range of Xenogen shares, options and warrants used in the requested table. Revise the table and related disclosure on pages I-96 through I-98 accordingly. In its current form, the table and related disclosure on such pages do not appear to sufficiently explain the connection between the share price of Xenogen common stock, the exercise of outstanding Xenogen options and warrants, and the ultimate stock and warrant exchange ratios.

New Directors Following the Merger, page I-9

12. Please explain how and when this nomination to the board of the two new directors is intended to occur. Explain whether these director nominees have been identified and if not, when they will be.

Voting Agreements, page I-9

13. Please identify the "certain" executive officers, directors and stockholders of Xenogen and Caliper that have entered into voting agreements regarding the merger.

Interests of Certain Persons in the Merger, page I-10

14. Please name the “certain” Xenogen officers and Xenogen and Caliper directors that may have interests in the merger that may be different from the interests of Xenogen or Caliper stockholders. Quantify the benefits these directors and officers are expected to receive as a result of these interests. Please also disclose the amount and percentage of outstanding Xenogen and Caliper common stock beneficially owned by these individuals.

Treatment of Xenogen Stock Options and Warrants, page I-10

15. Please clarify here that the outstanding employee options to which you refer in the last sentence of this paragraph represent *all* outstanding options to purchase Xenogen common stock. We note your disclosure on page I-98.
16. Please supplement your disclosure to better explain what will happen to Xenogen’s outstanding warrants that are not exercised immediately prior to the merger. As we discussed on a conference call on April 27, 2006 between the Staff and Ms. Megan Gates of Mintz Levin, your counsel, your disclosure on pages I-4, I-7, I-10, I-50, I-95 through I-98 and elsewhere in your prospectus regarding what happens to Xenogen warrants that are outstanding at the effective time of the merger is unclear. For example, will the Xenogen warrants be converted into Caliper warrants upon consummation of the merger or remain Xenogen warrants that are exercisable for Caliper shares and warrants as suggested by the second paragraphs on pages I-7, I-50 and I-96? What happens to Xenogen warrants that are and will likely remain “out of the money,” which your disclosure regarding exercise prices in the paragraph on page I-96 suggests is a likely scenario as to some of these warrants? Do they terminate? If not, what will Xenogen warrant holders receive upon exercise and how was this calculated? Why is the fifth anniversary referenced on page I-10 significant? In providing disclosure in response to this comment, please revise all relevant sections of the joint proxy statement/prospectus, including the cover page.

Conditions to Completion of the Merger, page I-11

17. Tell us your intentions regarding how you will proceed with the solicitation or merger if you waive a material condition.

Comparative Per Share Data, page I-17

18. Please revise to include the market value per share information required by Item 3(g) of the Form S-4 rules.

Risk Factors, page I-19

The value of the shares of Caliper common stock and warrants..., page I-21

19. Discuss here or in a separate risk factor the risk to Xenogen stockholders resulting from that fact that the exchange ratios may be subject to adjustment following their vote at their special meeting.

Xenogen has recently begun a more extensive..., page I-46

20. Please expand to explain the proper reflection of the settlement expense accrual and how that would affect Caliper's ability to evaluate its internal controls after the merger.

The Merger Transaction, page I-50

The Background of the Merger, page I-50

21. Please provide on a supplemental basis copies of the materials that Thomas Weisel Partners and Cowen & Co. prepared in connection with their respective fairness opinions or otherwise provided to the Xenogen and Caliper boards, respectively, in connection with this transaction, including, among other things, any "board books," drafts of fairness opinions provided to the boards, and summaries of all oral presentations made to the boards. We may have additional comments after we review those materials.
22. Please provide more detailed disclosure regarding Xenogen's discussions with Company A and Company B and why such discussions were subsequently terminated.
23. Please disclose which directors of Xenogen determined the merger agreement was fair and in the best interests of Xenogen's stockholders and approved the merger and merger agreement. We note the disclosure in the last paragraph on page I-55 that Mssrs. Hrusovsky and Breckon were not at the February 10, 2006 meeting. Disclose the same information in the paragraph on page I-71 below the heading "Recommendation of Xenogen's Board of Directors."
24. Please reconcile the disclosure in the second paragraph on page I-53 regarding meetings being held on December 5 and 6, 2005 among representatives of, among other parties, "Cowen" and your disclosure in the sixth paragraph regarding the Caliper board's authorization on December 22, 2005 of its management to engage Cowen & Co.

Opinion of Caliper's Financial Advisor, page I-59

25. Disclose whether Caliper determined the amount of consideration to be paid or whether Cowen & Co. recommended the amount of consideration to be paid. See Regulation M-A Item 1015(b)(5). Provide the same information for Xenogen and Thomas Weisel Partners.
26. Expand your disclosure on page I-68 to quantify the fees Cowen & Co. has been paid and will receive in connection with material transactions with the parties during the past two years and currently contemplated transactions. Also, in your prospectus summary quantify the portion of the fee that is contingent upon completion of the merger.

Material U.S. Federal Income Tax Consequences, page I-80

27. Please file the opinions of counsel regarding tax consequences and describe the "assumptions," "limitations" and "qualifications" of such opinions referred to in your disclosure.

Unaudited Pro Forma Condensed Combined Consolidated Financial Statements for the Year Ended December 31, 2005, page I-85

Purchase Price Allocation, page I-89

28. Please tell us the difference between the 11,988,000 Caliper shares discussed in this section and the 13.2 million shares discussed on pages I-7 and I-17.
29. We reference the discussion on page I-98 that Caliper will assume all outstanding warrants to purchase Xenogen common stock. Please tell us how the exercise price on these warrants assumed by Caliper will be determined. In addition, clarify how these warrants were valued using the Black Scholes model. If the exercise price of certain warrants were adjusted to bring these "in-the-money," clarify how this was considered in the valuation and in the purchase price allocation.

Xenogen Pro Forma Adjustments, page I-92

30. Please revise to disclose the nature of the adjustment to deferred revenue in Note (g) on page I-87 and clarify what caused the adjustment.
31. Please tell us the difference between the estimated direct transaction costs in Note (i) of \$2.6 million and the amount included in the table on page I-89 of \$2,250,000.
32. Please revise to clarify the significant estimates and assumptions used to determine the preliminary estimates of the identifiable intangibles and goodwill in

Notes (vi) and (vii). The components of the identifiable intangibles should be quantified in Note (vi). In addition, the factors that contributed to the goodwill that will be recorded should also be discussed.

Information Regarding Xenogen, page IV-1

Security Ownership of Certain Beneficial Owners and Management, page IV-34

33. Please identify the individuals who have beneficial ownership of the shares held by the entities described in the footnotes. Please provide the same information with respect to the security ownership table of Caliper found on page VI-13.

Compensation of Executive Officers, page VI-18

34. Please complete the information in the table for the 2005 bonus amounts.

Employment, Severance and Change in Control Agreements, page VI-21

35. We note the disclosure regarding Dr. Kisner's employment agreement. Please explain whether the fees described on page VI-16 are in addition to the amounts payable under the agreement. Explain what payouts would be anticipated if he is not re-elected to the Board of Directors.

Xenogen Financial Statements

General

36. Please update the audited financial statements when required by Item 3-12 of Regulation S-X.
37. Please include updated accountants' consents with all amendments to the filing.

Consolidated Statements of Operations, page F-4

38. Please revise future filings to remove the totals for stock-based compensation from the tables included as a footnote on the face of your statements of operations. As indicated in SAB Topic 14-F, you could include the related stock-based compensation charges in a parenthetical note to the appropriate income statement line items. That guidance also indicates that you may present the information in the notes to the financial statements or within MD&A.

Note 1. Stock-Based compensation, page F-14

39. Please tell us about the \$2.6 million expense increase in pro forma stock-based compensation for fiscal year 2005 related to the acceleration of the vesting discussed on page F-15. Your response should indicate how this amount was determined and how it was recorded.

Annex B, Opinion of Cowen & Co., page B-1

40. We note the first sentence in the penultimate paragraph regarding use of this opinion. Stockholders are entitled to rely on your opinion. Please remove this limitation. Please also remove the similar limitation found in the penultimate sentence of the opinion of Thomas Weisel Partners attached as Annex C.

Exhibits

Exhibit 5

41. Please file a dated and signed opinion, rather than the form of opinion you appear to have filed.
42. We note your opinion makes various assumptions in the penultimate sentence of the third paragraph. Such assumptions are inappropriate conclusions of law which are necessary requirements of the ultimate legality opinion. Please revise your opinion to remove such assumptions.
43. We note the last sentence in your opinion. Stockholders are entitled to rely on your opinion, please remove this limitation.

Undertakings

44. Include the undertaking set forth in Item 512(a) of Regulation S- K.

Proxy Cards

45. Please file copies of the forms of proxy to be used in connection with the solicitation of proxies to be used at Caliper's and Xenogen's stockholder meetings as appendices to the proxy statement/prospectus as required by the note to paragraph (a)(3) of Rule 14a-4.

Caliper Form 10-K for the fiscal year ended December 31, 2005

Consolidated Statements of Operations, page F-4

46. Please revise the statements of operations in future filings to present expense for stock-based compensation in the same line or lines as cash compensation paid to the same employees in accordance with SAB Topic 14F. The stock-based compensation charges could be included in a parenthetical note to the appropriate income statement line items as long as total stock-based compensation is not presented. This information may also be presented in the notes to the financial statements or within MD&A.

Note 2. Revenue Recognition, page F-7

47. Please tell us and disclose in future filings the accounting for sales with return rights or privileges as discussed on page F-7 under customer accounts receivable. In addition, clarify the specific revenue arrangements with multiple contractual elements and the related accounting treatment.
48. Please tell us and include additional disclosure in future filings about deferred revenue and customer deposits, including the nature of these amounts and the related accounting policy.

Note 3. Acquisitions of NovaScreen Biosciences Corporation, page F-16

49. We reference the discussion on page F-18 that the pro forma financial results reflect certain adjustments to exclude non-recurring effects associated with the acquisition of NovaScreen. Please tell us about the specific adjustments and the basis for the amounts excluded from the pro forma results.

Segment Reporting, page F-10

50. We note your disclosure that you operate in only one segment. From the business section of your Form 10-K, you state that you have two markets: 1) drug discovery and development - which is targeted to pharmaceutical companies in their discovery stage and 2) diagnostics - which is still in its “development stage” as you are working with collaboration partners in this area. With the acquisition of NovaScreen, you expanded your development services, but you also now provide *in vitro* ADME and *in vitro* TOX services, screening, testing and database development to government agencies as well as serve a broad customer base outside of the U.S. in various industries. You also noted that the NovaScreen acquisition allows you to “participate in the emerging trend towards outsourced services.” We also note from your discussion of results of operations, you discuss separately the revenues and costs associated with your drug discovery and drug development product “family/line.” You note that you experience a less competitive environment for your drug development products and for your drug discovery products. In light of the above, please address the following:
 - Please tell us briefly about the specific financial information reviewed by your chief operating decision maker in general and for each of the product lines identified above.
 - Please explain how you considered SFAS 131, including paragraphs 10 – 24, in determining that you have only one reportable segment. Please note that if you applied the aggregation criteria in paragraph 17 of SFAS 131 that fact should be disclosed and your response should address how you reviewed each of the criteria in that paragraph, including the requirement for similar economic characteristics,

in determining that the identified segments were properly aggregated under SFAS 131.

As appropriate, please amend your registration statement in response to these comments. You may wish to provide us with marked copies of the amendment to expedite our review. Please furnish a cover letter with your amendment that keys your responses to our comments and provides any requested information. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your amendment and responses to our comments.

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 all information required under the Securities Act of 1933 and that they have provided all information investors require for an informed investment decision. 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 the company requests acceleration of the effective date of the pending registration statement, it should furnish a letter, at the time of such request, 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.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in connection with our review of your filing or in response to our comments on your filing.

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. We will act on the request and, pursuant to delegated authority, grant acceleration of the effective date.

Kevin Hrusovsky
Caliper Life Sciences, Inc.
April 28, 2006
Page 11

We direct your attention to Rules 460 and 461 regarding requesting acceleration of a registration statement. Please allow adequate time after the filing of any amendment for further review before submitting a request for acceleration. Please provide this request at least two business days in advance of the requested effective date.

You may contact Praveen Kartholy at (202) 551-3778 or in his absence, Brian Cascio at (202) 551-3676 if you have questions regarding comments on the financial statements and related matters. Please contact Jay Mumford at (202) 551-3637 or me at (202) 551-3444 with any other questions.

Sincerely,

Perry Hindin
Special Counsel

cc: William T. Whelan, Esq.
Megan N. Gates, Esq.