

December 29, 2008

Mail Stop 3030

Kenneth J. Collins
President and Chief Executive Officer
Replidyne, Inc.
1450 Infinite Dr.
Louisville, CO 80027

**Re: Replidyne, Inc.
Registration Statement on Form S-4
Filed December 3, 2008
File No. 333-155887**

Dear Mr. Collins:

We have limited our review of your filing to those issues we have addressed in our 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.

Unaudited Pro Forma Condensed Combined Financial Statements, pages 236-243

1. We reference your discussion on page 236 that Replidyne does not meet the definition of a business in accordance with SFAS 141. Please revise to clarify the reason that you believe that Replidyne does not meet the definition of a business, how this was considered in determining the accounting treatment for the transaction and why you believe it meets the requirements to be accounted for as a reverse merger.

2. We reference your discussion of Replidyne's current efforts to sell or otherwise dispose of its operating assets and liabilities on page 236. Please tell us whether you have met the requirements to record these operations as discontinued in accordance with paragraph 42 of SFAS 144.
3. We reference your discussion on page 236 that you have made allocations of the estimated purchase price to the assets to be acquired and liabilities to be assumed based preliminary estimates of their fair value. Please revise to disclose how you determined the fair value of these assets and liabilities.
4. Please clearly disclose how the issuance of new shares of Replidyne common stock discussed in Note (B) is reflected in the pro forma balance sheet on page 238. In addition, disclose how the number of shares to be issued was determined based on the purchase price disclosed on page 242.
5. Please separately disclose the components of stockholders' equity (deficit) for Replidyne and CSI in the pro forma balance sheet on page 238 and clearly indicate how each of the components of the Replidyne equity is eliminated upon the consummation of the transaction in Note (D). It appears that some of the pro forma adjustments are presented net on the face of the pro forma balance sheet. Please note that all adjustments should be presented gross on the face of the pro forma statements. Alternatively, a more detailed explanation of the components of the adjustments may be presented in the footnotes to the pro forma statements. Refer to Article 11-02(b)(6) of Regulation S-X.
6. Please revise to clarify the nature of the pro forma adjustment in Note (C), including how these amounts are recorded in equity and how the warrants were valued.
7. Please revise to clarify how you determined the pro forma adjustments in Note (E). Clarify whether the property and equipment and other assets of Replidyne are being acquired by CSI.

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.

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.

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You may contact Jong Hwang at (202) 551-3327 or Brian Cascio at (202) 551-3676 if you have questions regarding comments on the financial statements and related matters. Please contact Joseph McCann at (202) 551-6262 or me at (202) 551-3805 with any other questions.

Sincerely,

Peggy Fisher
Assistant Director

cc (via fax): James C. T. Linfield, Esq. – Cooley Godward Kronish LLP
Robert K. Ranum, Esq.— Fredrikson & Byron, P.A.