

Mail Stop 6010

June 21, 2006

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

**Re: Replidyne, Inc.
Amendment No. 2 to Form S-1 Registration Statement
File No. 333-133021**

Dear Mr. Collins:

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 supplemental information so we may better understand your disclosure. After reviewing this information, we may or may not 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 on any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

If our product candidates are unable to compete effectively with generic and branded antibiotics, or commercial opportunity will be reduced or eliminated. – page 11

1. We note the revisions you made here and on page 23 in response to comment 4 in our last letter. Please confirm to us that this disclosure does not mean that your product will be subject to generic competition within four years after FDA approval.

Experts, page 112

1. If the reference to an independent valuation is retained please name Huron Consulting as an expert here and file its consent as an exhibit to the filing.

(9) Stock Options and Employee Benefits, page F-30

2. We have considered your response to comment 4 and reiterate that comment. The result of a contemporaneous valuation must be reasonable. Accordingly, the valuation at the date of filing the S-1 would approximate the estimated filing range at that date. Please explain more fully how you valued the common stock in August 2005. Tell us why you believed a sale of the company to be a possible outcome prior to the Forest agreement and
3. how you determined the amount of sale proceeds at each date. Also explain why an IPO was considered a possible outcome prior to the Forest agreement. More fully explain your valuations at each date including quantification.

We also note that the change in the filing range from April 5 to June 13 would be due to changes in market conditions between those dates so the fair value of the common stock at April 5 would be \$15-17.

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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 supplemental information. Detailed cover letters greatly facilitate our review. We may have additional comments after reviewing your amendment and responses to our comments.

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You may contact Keira Ino at 202-551-3659 or Oscar Young at 202-551-3622 if you have questions regarding comments on the financial statements and related matters. Please contact Mary K. Fraser at 202-551-3609 or me at 202-551-3610 with any other questions.

Regards,

Jeffrey P. Riedler
Assistant Director

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