

Via Facsimile and U.S. Mail
Mail Stop 6010

December 16, 2005

Mr. Steven Anderson
President, CEO, and
Chairman of the Board
Cryolife, Inc.
1655 Roberts Boulevard N.W.
Kennesaw, GA 30144

Re: Cryolife, Inc.
Form 10-K for Fiscal Year Ended December 31, 2004
Filed March 3, 2005
File No. 001-13165

Dear Mr. Anderson:

We have limited our review of your filing to those issues we have addressed in our comments. In our comments, we ask you to provide us with information so we may better understand your disclosure.

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.

Form 10-K for the year ended December 31, 2004

Notes to Consolidated Financial Statements

Note 1. Summary of Significant Accounting Policies

Revenue Recognition, page F-9

1. Please provide us, in disclosure-type format, your revenue recognition policy related to grant revenue. We noted that you received funds from the Department of Defense for the development of BioFoam in the third quarter and you will begin recording revenues related to this grant in the fourth quarter of 2005.

Deferred Preservation Costs, page F-10

2. With regards to your accounting policy for preservation costs, please provide us, additional discussion in disclosure-type format,

that explains the reason it is appropriate to defer the costs until revenue is recognized upon shipment.

3. Please tell us why it is appropriate to defer the preservation costs since it appears based on the repeated write-offs that you are unable to make reasonable estimates. We noted the write-down for December 31, 2004 was \$6.6 million and \$1.3 million for the nine months ending September 30, 2005. In addition, your disclosure on page 54 states "management believes that its estimates approximate the actual costs of these services." This appears to conflict with the explanation provided on the same page that states "These charges

reflect the write-down of the value of certain deferred tissue preservation costs that exceeded management's estimates of the tissue's market value ..." Please reconcile these statements.

4. In addition, please refer to page 54. With regards to your yield estimates, provide for us, in disclosure type format, the change in estimates for the periods presented and the reasons for the changes.

If you deem these changes to be immaterial, so state and tell us

your
basis for determining materiality.

* * * *

Please provide us the information requested within 10
business
days of the date of this letter or tell us when you will provide a
response prior to the expiration of the 10-day period. Please
furnish
a letter with your responses that keys your responses to our
comments. Detailed letters greatly facilitate our review. You
should
file the letter on EDGAR under the form type label CORRESP.
Please
understand that we may have additional comments after reviewing
your
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
Exchange Act of 1934 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.

In connection with responding to our comments, please
provide,
in your letter, a statement from the company acknowledging that:

- * the company 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; and
- * the company may not assert staff comments 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 our review of your filing or in
response to our comments on your filing.

You may contact Sasha Parikh, Staff Accountant, at (202)
551-
3627 or Mary Mast, Review Accountant, at (202) 551-3613 if you
have
questions regarding the comments. In this regard, do not hesitate
to
contact me, at (202) 551-3679.

Sincerely,

Jim B. Rosenberg
Senior Assistant Chief

Accountant

??

??

??

??

Steven Anderson
Cryolife, Inc.
December 16, 2005
Page 3 of 3

