



DIVISION OF
CORPORATION FINANCE

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

August 30, 2011

Via E-mail

Mr. Harry S. Palmin
President and Chief Executive Officer
Novelos Therapeutics, Inc.
One Gateway center, Suite 504
Newton, MA 02458

**Re: Novelos Therapeutics, Inc.
Amendment No. 1 to Registration Statement on Form S-1/A
Filed August 15, 2011
File No. 333-175284**

Dear Mr. Palmin:

We have reviewed your amended registration statement and response letter filed August 15, 2011 and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by amending your registration statement and providing the requested information. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your registration statement and the information you provide in response to these comments, we may have additional comments.

Amendment No. 1 to Registration Statement on Form S-1/A

General

1. Please refer to the graphic information you provided in response to Comment 4. We note that you state in each graphic, "The images provided above are for illustrative purposes only and may not be indicative of all results." Please amend each graphic to make this disclaimer more prominent in both size and font. Please also include an additional legend stating that the illustrations do not refer to approved products and that the company has not received commercial revenue from the sale of any products.

Prospectus Summary

2. Please refer to your response to Comment 7. Please note that your use of a glossary does not remedy the use of non-plain English in the Prospectus Summary. Please refer to Staff Legal Bulletin 7. Please expand your disclosure to briefly explain in the text where each term is first used the meaning of the following terms:

- Radiolabeled;
- Radioisotope;
- Apoptosis;
- Akt;
- Caspase-mediated;
- Cytotoxic;
- Dosimetry.

Overview, page 1

3. Please refer to your discussion of your license agreement with the University of Michigan on page 2. You state that the license requires you to make payments to the University of Michigan ranging from \$50,000 to \$200,000 upon the achievement of certain key regulatory and commercial milestones. Please expand your disclosure, here and in the Business section, to disclose the aggregate amount of milestone payments potentially payable by you to the University of Michigan.

Risk Factors

“Our common stock constitutes a ‘penny stock’ under SEC rules” page 16

4. We note your response to Comment 27 and reissue the comment in part. Please expand your disclosure in this risk factor to discuss the specific legal remedies available to investors of penny stocks.

Use of Proceeds

5. Please refer to your response to Comment 30. We note your disclosure of the total costs of further developing each of your product candidates. However, your net proceeds from this offering, based upon your assumed public offering price, may be less than the cost of your company to operate through March 31, 2013. Please revise your discussion in this section to disclose where in the process of developing LIGHT, HOT, and COLD you expect the application of net proceeds will take you.

Management's Discussion and Analysis of Financial Condition and Results of Operations
Critical Accounting Policies
Stock-based Compensation, page 26

6. We may have additional comments on your accounting for stock compensation and related disclosure once you have disclosed an estimated offering price. At that time, please provide quantitative and qualitative disclosures explaining the difference between the estimated offering price and the fair value of each equity issuance.

Business
Business of Novelos, page 27

7. Please refer to your response to Comment 35. You state on page 28 that an IND has been sponsored for LIGHT by an investigator. Please expand your disclosure to identify the name of the party who filed an IND for LIGHT, and when the IND was filed with the FDA.

Legacy Products, page 32

8. We note your disclosure on page 33 that you do not expect to conduct any further development of NOV-002 and NOV-205. Please expand your discussion to indicate whether the INDs related to these legacy products continue to be active.

Novelos Therapeutics, Inc.
Statements of Stockholders' Equity, page F-5

9. The share and par amounts under the heading, Common Stock, appear to represent the historical amounts of Collectar, the acquirer for financial reporting purposes, not Novelos Therapeutics (Pre-Acquisition), the legal acquirer. Please revise these two columns to retroactively restate the share amounts and par values to reflect the effect of the exchange ratio in the merger. In this regard, the share and par amounts should be those of Novelos Therapeutics (Pre-Acquisition), consistent with amounts shown on page F-30. Also, revise the amount for the caption, "issuance of common stock in a business combination," to show the shares issued to former shareholders of Collectar (i.e. 17,001,596 shares), consistent with your disclosure on page F-7, and remove the caption "issuance of common stock upon conversion of convertible notes," as this transaction involved conversion of Collectar notes to its common stock prior to the reverse merger. In addition, revise your calculations of earnings per share, disclosures in related footnotes and MD&A and the pro forma condensed combined financial statements to conform to these changes in your statements of stockholders' equity. Refer to ASC 805-40-45-2 through ASC 805-40-45-4.

4. Acquisition, page F-12
Purchase Accounting

10. We acknowledge your response to prior comment 46. However, it is still unclear why you would use the estimated fair value of the Collectar shares issued in the private placement and convertible notes of \$0.75, when the quoted market price of Novelos shares is a more reliable basis for measuring fair value. Your reference to ASC 805-40-55-8 illustrates this point. Fair value of the consideration transferred should be based on the most reliable measure of fair value, which in this case appears to be quoted market price. Please tell us why you did not use the quoted market price of Novelos in calculating acquisition-date fair value and why you believe that the estimated fair value of Collectar is more reliable.

10. Stockholder's Equity, page F-16
Common Stock Warrants

11. We acknowledge your response to prior comment 51 and disclosure on page F-11, which states that you valued your warrant liability using the Black-Scholes option pricing model. This model does not appear to take into account the warrants' down-round protection. It appears to us that this price adjustment feature would add value to the warrant. Please explain to us why you used the Black-Scholes option pricing model to value your warrants, instead of a binomial or lattice pricing model, which appear to be better suited to handle the potential changes to your warrant exercise price.

Novelos Therapeutics, Inc. (Pre-Acquisition)
Notes to Financial Statements

6. Stockholders' Deficiency, page F-36

12. Please revise the exercise prices in the first table on page F-40 to reflect the 1-for-153 reverse split.

Notes to Unaudited Pro Forma Condensed Financial Statements

3. Pro Forma Adjustments, page F-65

13. Please explain your basis for not eliminating the entire preferred stock deemed dividend in pro forma adjustment "e." Also, explain how you considered the liquidated damages of \$819,000, which occurred in connection with the exchange of convertible preferred stock for common stock, in your pro forma financial statements.

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 the information the Securities Act of 1933 and all applicable Securities Act rules require. 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.

Mr. Harry S. Palmin
Novelos Therapeutics, Inc.
August 30, 2011
Page 5

Notwithstanding our comments, in the event you request acceleration of the effective date of the pending registration statement please provide a written statement from the company 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.

Please refer to Rules 460 and 461 regarding requests for acceleration. 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. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

You may contact Frank Wyman at (202) 551-3660 or Melissa Rocha at (202) 551-3854 if you have questions regarding comments on the financial statements and related matters. Please contact Rose Zukin at (202) 551-3239 or me at (202) 551-3710 with any other questions.

Sincerely,

/s/ Jeffrey P. Riedler

Jeffrey P. Riedler
Assistant Director

cc: Paul Bork, Esq.
Foley Hoag LLP
155 Seaport Boulevard
Boston, Massachusetts 02210