

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

Post-Effective Amendment No. 1 to  
FORM S-1  
REGISTRATION STATEMENT  
*Under*  
**THE SECURITIES ACT OF 1933**

**NOVELOS THERAPEUTICS, INC.**  
(Exact name of registrant as specified in its charter)

**Delaware**  
(State or other jurisdiction  
of incorporation or organization)

**2834**  
(Primary Standard Industrial  
Classification Code Number)

**04-3321804**  
(I.R.S. employer  
identification number)

**One Gateway Center  
Suite 504  
Newton, Massachusetts 02458  
(617) 244-1616**  
(Address and telephone number of principal executive offices)

**Harry S. Palmin**  
**President and Chief Executive Officer**  
**Novelos Therapeutics, Inc.**  
**One Gateway Center, Suite 504**  
**Newton, Massachusetts 02458**  
**(617) 244-1616**  
(Name, address and telephone number of agent for service)

**Copies to:**  
**Paul Bork, Esq.**  
**Foley Hoag LLP**  
**155 Seaport Boulevard**  
**Boston, Massachusetts 02110**  
**(617) 832-1000**

**Approximate date of commencement of proposed sale to the public:** Not applicable.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933 check the following box:

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If the Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer   
Non-accelerated filer  (Do not check if a smaller reporting company)

Accelerated filer   
Smaller reporting company

---

## DEREGISTRATION OF UNSOLD SECURITIES

---

On June 3, 2008, Novelos Therapeutics, Inc. (the "Company") filed a Registration Statement on Form S-1 (File No. 333-151396) (the "Registration Statement") with the Securities and Exchange Commission, which was declared effective on June 23, 2008. The Registration Statement registered the resale, from time to time, of 6,888,413 shares (the "Shares") of the Company's common stock, par value \$0.00001 per share. The Shares were registered to permit resales of such Shares by the selling stockholders, as named in the Registration Statement, upon the exercise of warrants (the "Warrants") to purchase Shares that had been acquired in connection with the Company's private placements in 2005. All of the warrants expired unexercised on August 11, 2008, thus no Shares were acquired for resale by the selling stockholders.

In accordance with the undertaking of the Company contained in the Registration Statement pursuant to Item 512 of Regulation S-K, the Company is filing this Post-Effective Amendment No. 1 to the Registration Statement to deregister all of the Shares. The Company is seeking to deregister the Shares because its obligation to keep the Registration Statement effective pursuant to the terms of its registration rights agreements with the selling stockholders terminated upon the expiration of the Warrants. The Registration Statement is hereby amended to reflect the deregistration of all 6,888,413 of the Shares.

---

## SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this post-effective amendment to the registration statement to be signed on its behalf by the undersigned, thereunto duly authorized in the City of Newton, Commonwealth of Massachusetts, on September 29, 2008.

### NOVELOS THERAPEUTICS, INC.

September 29, 2008

By: /s/ Harry S. Palmin  
Harry S. Palmin  
President and Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated:

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Harry S. Palmin</u> Harry S. Palmin	Chief Executive Officer and Director ( <i>principal executive officer</i> )	September 29, 2008
<u>/s/ Joanne M. Protano</u> Joanne M. Protano	Chief Financial Officer ( <i>principal financial officer and principal accounting officer</i> )	September 29, 2008
<u>/s/ Stephen A. Hill*</u> Stephen A. Hill	Chairman of the Board of Directors	September 29, 2008
<u>/s/ Michael J. Doyle*</u> Michael J. Doyle	Director	September 29, 2008
<u>/s/ Sim Fass*</u> Sim Fass	Director	September 29, 2008
<u>/s/ James S. Manuso*</u> James S. Manuso	Director	September 29, 2008
<u>/s/ David B. McWilliams*</u> David B. McWilliams	Director	September 29, 2008
<u>/s/ Howard M. Schneider*</u> Howard M. Schneider	Director	September 29, 2008

\* Harry S. Palmin, as attorney-in-fact.

---