

Prospectus Supplement No. 1
(To Prospectus dated March 28, 2007)

NOVELOS THERAPEUTICS, INC.

34,285,449 shares of common stock

This prospectus supplement supplements the Prospectus dated March 28, 2007, relating to the resale of 34,285,449 shares of our common stock. This prospectus supplement should be read in conjunction with the Prospectus.

Securities Purchase Agreement

On April 12, 2007, we entered into a securities purchase agreement (the "Purchase Agreement") with accredited investors whereby we agreed to sell 1,500 shares of a newly created series of our preferred stock, designated "Series B Convertible Preferred Stock", par value \$0.00001 per share (the "Series B Preferred Stock") and agreed to issue warrants to purchase 7,500,000 shares of our common stock for an aggregate purchase price of \$15,000,000. Pursuant to the purchase agreement, from and after the closing, Xmark Opportunity Fund, L.P., Xmark Opportunity Fund, Ltd. and Xmark JV Investment Partners LLC (collectively, the "Xmark Entities"), will have the right to designate one member to our Board of Directors. This right shall last until such time as the Xmark Entities no longer hold at least one-third of the Series B Preferred Stock issued to them at closing. In addition, the Xmark Entities, Caduceus Master Fund Limited, Caduceus Capital II, L.P., UBS Eucalyptus Fund, L.L.C., PW Eucalyptus Fund, Ltd. and HFR SHC Aggressive Master Trust (collectively, the "Lead Investors") will have the right to designate one observer to attend all meetings of our Board of Directors, committees thereof and access to all information made available to members of the Board. This right shall last until such time as the Lead Investors no longer hold at least one-third of the Series B Preferred Stock issued to them at closing.

As a condition to closing the preferred stock and warrant financing, the holders of our existing Series A preferred stock must exchange their shares of Series A preferred stock for shares of a new Series C convertible preferred stock, the rights and preferences of which are junior to the Series B preferred stock. As an inducement for the holders of the Series A preferred stock to exchange their shares, we expect to issue warrants to purchase shares of our common stock and pay a cash restructuring fee to holders of the Series A preferred stock.

Series B Preferred Stock

The shares of Series B Preferred Stock to be issued upon the closing of the preferred stock and warrant financing will be convertible into shares of our common stock any time after issuance at the option of the holder at \$1.00 per share of common stock. If there is an effective registration statement covering the shares of common stock underlying the Series B Preferred Stock and the VWAP, as defined in the Series B Certificate of Designations, of our common stock exceeds \$2.00 for 20 consecutive trading days, then the outstanding Series B Preferred Stock will automatically convert into common stock at the conversion price then in effect. The conversion price will be subject to adjustment for stock dividends, stock splits or similar capital reorganizations.

The Series B Preferred Stock will have an annual dividend rate of 9%, payable semi-annually on September 30 and March 31. Such dividends may be paid in cash or in registered shares of the Company's common stock at the Company's option.

For as long as any shares of Series B Preferred Stock remain outstanding, we will be prohibited from (i) paying dividends to our common stockholders, (ii) amending our certificate of incorporation (except to increase the number of shares of authorized common stock to 150,000,000), (iii) issuing any equity security or any security convertible into or exercisable for any equity security at a price of \$1.00 or less or with rights senior to the Series B Preferred Stock (except for certain exempted issuances), (iv) increasing the number of shares of Series B Preferred Stock or issuing any additional shares of Series B Preferred Stock, (v) selling or otherwise disposing of all or substantially all our assets or intellectual property or entering into a merger or consolidation with another company unless we are the surviving corporation, the Series B Preferred Stock remains outstanding and there are no changes to the rights and preferences of the Series B Preferred Stock, (vi) redeeming or repurchasing any capital stock other than Series B Preferred Stock, (vii) incurring any new debt for borrowed money and (viii) changing the number of our directors.

Common Stock Purchase Warrants

The common stock purchase warrants to be issued to the investors upon closing will be exercisable for an aggregate of 7,500,000 shares of our common stock at an exercise price of \$1.25. The warrants will expire five years from the date of issuance. If after the first anniversary of the date of issuance of the warrant there is no effective registration statement registering, or no current prospectus available for, the resale of the shares issuable upon the exercise of the warrants, the holder may conduct a cashless exercise whereby the holder may elect to pay the exercise price by having us withhold, upon exercise, shares having a fair market value equal to the applicable aggregate exercise price. In the event of a cashless exercise, we would receive no proceeds from the sale of our common stock in connection with such exercise.

The warrant exercise price and/or number of warrants will be subject to adjustment for stock dividends, stock splits or similar capital reorganizations so that the rights of the warrant holders after such event will be equivalent to the rights of warrant holders prior to such event.

If there is an effective registration statement covering the shares underlying the warrants and the VWAP, as defined in the warrant, of our common stock exceeds \$2.25 for 20 consecutive trading days, then on the 31st day following the end of such period any remaining warrants for which a notice of exercise was not delivered shall no longer be exercisable and shall be converted into a right to receive \$.01 per share.

Registration Rights Agreement

At the closing, the Company and the investors will execute a registration rights agreement which will require us to file with the Securities and Exchange Commission no later than 30 days following the closing of the transaction, a registration statement covering the resale of a number of shares of common stock equal to 100% of the shares issuable upon conversion of the preferred stock and exercise of the warrants as of the date of filing of the registration statement. The registration statement covering these shares must be declared effective by the Securities and Exchange Commission no later than 90 days following the closing (or in the event there is a review, no later than 120 days from the closing). We will be required to use our best efforts to keep the registration statement continuously effective under the Securities Act until the earlier of the date when all the registrable securities covered by the registration statement have been sold or the second anniversary of the closing. In the event we fail to file the registration statement or it is not declared effective within the timeframes specified by the Registration Rights Agreement, we will be required to pay to the Investors liquidated damages equal to 1.5% per month (but pro-rated on a daily basis for any period of less than a full month) of the aggregate purchase price of the preferred stock and warrants until we file the delinquent registration statement or the registration statement is declared effective, as applicable. We will be allowed to suspend the use of the registration statement for not more than 15 consecutive days or for a total of not more than 30 days in any 12 month period without incurring liability for the liquidated damages in certain circumstances.

Placement Agent Agreement

Upon the closing of the preferred stock and warrant financing we are obligated to pay Rodman & Renshaw LLC ("Rodman") a cash fee and issue Rodman warrants to purchase a total of 900,000 shares of our common stock with the same terms as the warrants issued to the investors.

We have agreed to indemnify Rodman from claims arising in relation to the services it provides to us in connection with this agreement.

**Investing in our common stock involves a high degree of risk.
See Risk Factors beginning on page 7 of the Prospectus.**

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed on the adequacy or accuracy of this prospectus supplement. Any representation to the contrary is a criminal offense.

The date of this prospectus supplement is April 13, 2007