Prospectus Supplement No. 2 (To Prospectus dated December 15, 2005)

14,831,798 shares of common stock

NOVELOS THERAPEUTICS, INC.

This prospectus supplement supplements the Prospectus dated December 15, 2005 relating to the resale of 14,831,798 shares of our common stock. This prospectus supplement should be read in conjunction with the Prospectus.

Execution of Securities Purchase Agreement

On March 2, 2006, we entered into a securities purchase agreement with approximately 35 accredited investors whereby we sold 11,154,073 shares of our common stock and agreed to issue warrants to purchase 8,365,542 shares of our common stock for an aggregate purchase price of \$15,058,005. The warrants are exercisable until March 2011 at an exercise price of \$2.50 per share.

We agreed to register the resale of the shares of common stock sold in the offering and issuable upon exercise of the warrants. We are required to file the registration statement with the SEC by 30 days after the closing and use our best efforts to cause the registration statement to be declared effective under the Securities Act of 1933, as amended, within 120 days after the closing of the offering. We are 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 that the registration statement is not filed or declared effective when due, we are obligated to pay the investors liquidated damages in the amount of 1% of the purchase price for each month in which we are in default.

Oppenheimer & Co., Inc. acted as the placement agent and Rodman & Renshaw, LLC acted as the subplacement agent in connection with the offering. The aggregate commissions payable to Oppenheimer and Rodman & Renshaw in connection with the private placement were approximately \$1,000,000. In addition, we issued them warrants to purchase 669,244 shares of common stock identical to those sold to the investors.

Investing in our common stock involves a high degree of risk. See risk factors beginning on page 4 of the Prospectus.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR DETERMINED IF THIS PROSPECTUS SUPPLEMENT IS TRUTHFUL OR COMPLETE. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

The date of this prospectus supplement is March 2, 2006