

**Prospectus Supplement No. 6
(To Prospectus dated May 9, 2013)**

**NOVELOS THERAPEUTICS, INC.
4,000,000 shares of common stock**

This prospectus supplement supplements the Prospectus dated May 9, 2013, relating to the resale, from time to time, of up to 4,000,000 shares of our common stock by the stockholders referred to throughout the Prospectus as “selling stockholder.” This prospectus supplement should be read in conjunction with the Prospectus.

Results of Special Meeting of Stockholders

On December 12, 2013, we held a special meeting in lieu of annual meeting of stockholders (the “Meeting”). At the Meeting, our stockholders voted to reelect our incumbent Class II director, Paul Berns, for a three-year term, approved an amendment to our 2006 Stock Incentive Plan to increase the number of shares of our common stock authorized for issuance thereunder to 14,000,000 from 10,000,000 and also ratified the appointment of Grant Thornton LLP as our independent registered accounting firm for 2013.

We filed with the Securities and Exchange Commission the Novelos Therapeutics, Inc. 2006 Stock Incentive Plan, as amended on Form 8-K on December 18, 2013.

Compensatory Arrangements of Certain Officers

On December 13, 2013, our board of directors granted options to purchase a total of 940,000 shares of the Company’s common stock under the 2006 Stock Incentive Plan to directors, officers, employees and consultants of the Company. The option grants included grants to J. Patrick Genn, a named executive officer, and Jamey Weichert, our Chief Scientific Officer and a director, for options to purchase 125,000 shares and 250,000 shares of common stock, respectively, at an exercise price of \$0.37 per share, which options will vest in equal quarterly installments over a three-year period.

**Investing in our common stock involves a high degree of risk.
See Risk Factors beginning on page 6 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 December 18, 2013.
