

**Prospectus Supplement No. 7
(To Prospectus dated April 27, 2009)**

NOVELOS THERAPEUTICS, INC.

12,000,000 shares of common stock

This prospectus supplement supplements the Prospectus dated April 27, 2009, relating to the resale of 12,000,000 shares of our common stock. This prospectus supplement should be read in conjunction with the Prospectus.

Announcement of Phase 3 Clinical Trial Results

On February 23, 2010, we received a report of the top-line results of our pivotal Phase 3 clinical trial in advanced non-small cell lung cancer studying our lead product, NOV-002, in combination with first-line chemotherapy. Upon evaluation and review of the data contained in the report, we determined that the primary endpoint of improvement in overall survival was not met in the trial.

Based on a preliminary analysis of the clinical trial data, it appears that internal simulations suggesting positive trial results were inaccurate due to the deviation of certain trial data from our statistical model, the impact of censoring patterns and the survival of patients in the control arm exceeding our expectations, which had been based on historical precedents. We expect to present detailed Phase 3 lung cancer trial results at an appropriate scientific venue later this year.

**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 February 24, 2010
