

Prospectus Supplement No. 6
(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.

Compensatory Arrangements of Certain Officers

On December 8, 2009, the board of directors of Novelos Therapeutics, Inc. (the “Company”) approved a special bonus plan for all employees of the Company (the “Plan”). The Plan provides for the payment of contingent cash bonuses in three equal installments in aggregate amounts ranging from 80% to 150% of annual 2009 salaries for each employee. All payments under the Plan are conditioned upon the achievement of favorable results for the Phase 3 clinical trial of NOV-002 in non-small cell lung cancer (the “Phase 3 Trial”), as described below.

The first installment will become payable immediately upon the satisfaction of both of the following conditions:

- the announcement results for the Phase 3 Trial showing statistically significant improvement in median overall survival; and
- the receipt by the Company of at least \$20 million in proceeds from either the sale of its capital stock or a partnering transaction, or upon a change in control of the Company.

The second and third installments will be payable on the first and second anniversaries of the announcement of the results of the Phase 3 Trial following the satisfaction of either of the following conditions:

- the results of the Phase 3 Trial show 25% or greater improvement in median overall survival of patients receiving NOV-002 and chemotherapy as compared to patients receiving chemotherapy alone; or
- the results of the Phase 3 Trial show statistically significant improvement in median overall survival and United States Food and Drug Administration approves NOV-002 for use in the treatment of advanced non-small cell lung cancer in combination with first-line chemotherapy (paclitaxel and carboplatin) without requiring an additional efficacy trial.

The payment of the second and third installments is subject to acceleration in the event of a change in control of the Company, provided that the above conditions have been satisfied.

All of the Company’s employees are eligible for participation in the Plan, including the following executive officers, who were identified as Named Executive Officers, or NEOs, in our annual report on Form 10-K for the year ended December 31, 2008. If the conditions to the payments of the bonuses provided under the Plan are satisfied, our NEOs will receive the following amounts:

	Installment 1	Installment 2	Installment 3
Harry S. Palmin	\$ 125,000	\$ 125,000	\$ 125,000
Christopher J. Pazoles	86,167	86,167	86,167
Kristin C. Schuhwerk	100,000	100,000	100,000

**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 December 14, 2009
