

**Prospectus Supplement No. 3  
(To Prospectus dated June 7, 2012)**

**NOVELOS THERAPEUTICS, INC.  
5,420,800 Units Consisting of  
5,420,800 Shares of Common Stock and  
Class A Warrants to Purchase 2,710,400 Shares of Common Stock  
Class B Warrants to Purchase 5,420,800 Shares of Common Stock**

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This prospectus supplement supplements the Prospectus dated June 7, 2012, relating to the sale of 5,420,800 units, consisting of 5,420,800 shares of our common stock, Class A Warrants to purchase up to 2,710,400 shares of our common stock and Class B Warrants to purchase up to 5,420,800 shares of our common stock. This prospectus supplement should be read in conjunction with the Prospectus.

**Exercise of Class B Warrants to Purchase 1,088,300 Shares of Common Stock**

On or before the expiration of the Class B Warrants on October 11, 2012, we received warrant exercises with respect to 1,088,300 shares of common stock underlying the Class B Warrants, and received aggregate cash proceeds of \$1,088,300 in respect of those exercises. The balance of the Class B Warrants, exercisable for up to 4,332,500 shares of common stock, expired. We intend to use the proceeds from the exercise of the Class B Warrants, for general corporate purposes.

At September 30, 2012, we had approximately \$5.6 million in cash and cash equivalents which, when added to the proceeds of exercises of Class B Warrants received in October 2012, we estimate will provide sufficient funds to operate our business at budgeted levels through May 2013.

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**Investing in our common stock involves a high degree of risk.  
See Risk Factors beginning on page 6 of the Prospectus.**

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**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.**

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The date of this prospectus supplement is October 15, 2012

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