Prospectus Supplement No. 8 (To Prospectus dated May 9, 2013)

CELLECTAR BIOSCIENCES, 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.

Change in Corporate Name

On February 11, 2014, we changed our name from Novelos Therapeutics, Inc. to Cellectar Biosciences, Inc. The name change was effected pursuant to the short form merger of a wholly-owned Delaware subsidiary named Cellectar Biosciences, Inc. with and into Novelos Therapeutics, Inc. which resulted in the change to the name of the parent company to Cellectar Biosciences, Inc.

The ticker symbol of our common stock was changed from NVLT to CLRB in connection with the name change.

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 February 13, 2014.