UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

SCHEDULE 14A

Proxy Statement Pursuant to Section 14(a) of the Securities Exchange Act of 1934

Filed by a party other than the Registrant □
Check the appropriate box:
 □ Preliminary Proxy Statement □ Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2)) □ Definitive Proxy Statement □ Definitive Additional Materials □ Soliciting Material under §240.14a-12
CELLECTAR BIOSCIENCES, INC. (Name of Registrant as Specified in its Charter)
(Name of Person(s) Filing Proxy Statement, if other than the Registrant)
Payment of Filing Fee (Check all boxes that apply):
 No fee required. □ Fee paid previously with preliminary materials. □ Fee computed on table in exhibit required by Item 25(b) per Exchange Act Rules 14a-6(i)(1) and 0-11.

Cellectar Biosciences, Inc. 100 Campus Drive Florham Park, New Jersey 07932

SUPPLEMENT TO PROXY STATEMENT DATED APRIL 26, 2024 FOR THE ANNUAL MEETING OF STOCKHOLDERS TO BE HELD ON JUNE 14, 2024

This supplement (this "Supplement"), dated May 16, 2024, supplements and amends the definitive proxy statement (the "Proxy Statement") filed by Cellectar Biosciences, Inc., a Delaware corporation (the "Company"), with the Securities and Exchange Commission on April 26, 2024 for the 2024 Annual Meeting of Stockholders to be held on June 14, 2024 (the "Annual Meeting"). This Supplement is being filed to correct certain virtual meeting and proxy material access information as described in the Proxy Statement.

Accordingly, the Proxy Statement is hereby amended as follows:

Filed by the Registrant⊠

In the "Notice of 2024 Annual Meeting of Stockholders to be Held on June 14, 2024", the following paragraphs are amended as follows:

- The 2024 Annual Meeting of Stockholders (the "Annual Meeting") of Cellectar Biosciences, Inc. (the "Company") will be held on Friday, June 14, 2024 at 10:00 A.M., local time, virtually over the internet. You will be able to attend the Annual Meeting, vote your shares electronically and submit your questions online by visiting http://www.viewproxy.com/clrb/2024 and entering the 11-digit control number included in the notice containing instructions on how to access Annual Meeting materials, your proxy card, or the voting instructions that accompanied the proxy materials. We will hold the Annual Meeting for the following purposes:
- The Notice of the Annual Meeting, the Proxy Statement and the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2023, are available at http://www.viewproxy.com/clrb/2024.

Under the heading "General Information", the following paragraphs are amended as follows:

- We will hold the Annual Meeting as a virtual meeting held entirely over the Internet. You will be able to attend the Annual Meeting, vote your shares electronically and submit your questions online by visiting http://www.viewproxy.com/clrb/2024 and entering the 11-digit control number included in your Notice of Internet Availability of Proxy Materials (the "Notice"), your proxy card, or the voting instructions that accompanied these proxy materials. We believe that conducting the Annual Meeting as a virtual meeting will encourage higher levels of stockholder participation.
- As permitted by the rules of the SEC, we are making this proxy statement and our Annual Report on Form 10-K for the fiscal year ended December 31, 2023, available to our stockholders electronically via the Internet at http://www.viewproxy.com/clrb/2024. On or about April 26, 2024, we mailed to our stockholders a Notice containing instructions on how to access this proxy statement and vote online. If you received a Notice by mail, you will not receive a printed copy of the proxy materials in the mail unless you specifically request them pursuant to the instructions provided in the Notice. This process allows us to provide our stockholders with the information they need on a more timely basis, while reducing the environmental impact and lowering the costs of printing and distributing our proxy materials.

 $\label{thm:continuity:equation:continuity:equation:continuity:equation:continuity:equation: Under the heading ``What do I need for admission to our Annual Meeting'', the response is amended as follows:$

• You will be able to attend the Annual Meeting by visiting http://www.viewproxy.com/clrb/2024 and using your 11-digit control number included on your Notice, on your Proxy Card, or on the instructions that accompanied your Proxy Materials to enter the meeting.

• The virtual meeting platform is fully supported across major web browsers and multiple device types. Participants should ensure that they have a strong internet connection wherever they intend to participate in the Annual Meeting. Please allow ample time for online check-in, which will begin at 9:45 a.m. Eastern Time. We will have technicians ready to assist you with any technical difficulties you may have accessing the virtual Annual Meeting. If you encounter any difficulties accessing the virtual Annual Meeting during check-in or during the meeting, please call the technical support number that will be posted on the virtual meeting login page. We will endeavor to answer as many questions submitted by stockholders as time permits at the Annual Meeting. Further information regarding procedures for asking questions and rules of conduct for the meeting will be posted on the virtual meeting login page. A replay of our Annual Meeting webcast will be available at http://www.viewproxy.com/clrb/2024 and will remain there for one year.

Under the heading "Form 10-K", the following paragraph is amended as follows:

• We will make available, on or about April 26, 2024, the proxy materials, including our Annual Report on Form 10-K for the fiscal year ended December 31, 2023 at http://www.viewproxy.com/clrb/2024. Our Annual Report on Form 10-K for the fiscal year ended December 31, 2023 is also available on the investor relations page of our website at https://investor.cellectar.com.

Except as specifically supplemented by the information contained herein, this Supplement does not revise or update any of the other information set forth in the Proxy Statement. From and after the date of this Supplement, any references to "Proxy Statement" are to the Proxy Statement as supplemented hereby. If you have already returned your proxy or voting instruction card or provided voting instructions, you do not need to take any further action unless you wish to change your vote.

This Supplement does not provide all of the information that is important to your voting decisions at the Annual Meeting, and the Proxy Statement contains other important additional information. This Supplement should be read in conjunction with the Proxy Statement.