As filed with the Securities and Exchange Commission on May 31, 2019

Registration No. 333-

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM S-1
REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

CELLECTAR BIOSCIENCES, INC.

(Exact name of registrant as specified in its charter)

Delaware	**2834**	**04-3321804**
(State or other jurisdiction of incorporation or organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification No.)

100 Campus Drive, Florham Park, New Jersey 07932
Telephone (608) 441-8120
(Address, including zip code and telephone number, including area code, of registrant's principal executive offices)

James V. Caruso
President and Chief Executive Officer
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100 Campus Drive, Florham Park, New Jersey 07932
Telephone (608) 441-8120
(Name, address, including zip code and telephone number, including area code, of agent for service)

With copies to:
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Madison, Wisconsin 53703
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From time to time after the effectiveness of this registration statement.
As soon as practicable after this Registration Statement is declared effective.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box. ☒

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☐	Accelerated filer ☐	Non-accelerated filer ☒	Smaller reporting company ☒	Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act. ☐

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	**Amount to be Registered (1)**	**Proposed Maximum Offering Price per Share (2)**	**Proposed Maximum Aggregate Offering Price (2)**	**Amount of Registration Fee**
Common Stock	6,018,000	$ 1.93	$ 11,614,740	$ 1,407.71

(1) Consists of 2,018,000 shares of common stock of the registrant, par value $0.00001 per share ("Common Stock"), and 4,000,000 shares of Common Stock issuable upon exercise of certain outstanding warrants, to be offered and sold by the selling stockholders identified in this registration statement. This registration statement also relates to an indeterminate number of shares of common stock that may be issued upon stock splits, stock dividends or similar transactions in accordance with Rule 416 under the Securities Act of 1933, as amended (the "Securities Act").

(2) Estimated solely for the purpose of calculating the registration fee for the shares of common stock registered hereunder, including shares issuable upon the exercise of warrants to be registered in accordance with Rule 457(c) under the Securities Act, based upon the average of the high and low prices for a share of the registrant's common stock as reported on the Nasdaq Capital Market on May 23, 2019, which date is a date within five business days of the filing of this registration statement.

The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act, or until the registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

The information in this prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and we are not soliciting offers to buy these securities in any jurisdiction where the offer or sale is not permitted.

PROSPECTUS **SUBJECT TO COMPLETION, DATED MAY 31, 2019**

2,018,000 SHARES OF COMMON STOCK
4,000,000 SHARES OF COMMON STOCK ISSUABLE UPON EXERCISE OF OUTSTANDING WARRANTS

We are not selling any shares of our common stock under this prospectus and will not receive any proceeds from the sale of shares by the selling stockholders. This prospectus relates to the resale of up to 6,018,000 shares of our common stock including:

- 2,018,000 shares of common stock;
- 1,982,000 shares of common stock issuable upon the exercise of outstanding Series F warrants to purchase common stock; and
- 2,018,000 shares of common stock issuable upon the exercise of outstanding Series G warrants to purchase common stock.

The selling stockholders will bear all commissions and discounts, if any, attributable to the sale of the shares. We will bear all costs, expenses and fees in connection with the registration of the shares.

The selling stockholders may sell the shares of our common stock offered by this prospectus from time to time on terms to be determined at the time of sale through ordinary brokerage transactions or through any other means described in this prospectus under “Plan of Distribution”. The prices at which the selling stockholder may sell the shares will be determined by the prevailing market price for the shares or in negotiated transactions.

Our common stock is listed on the Nasdaq Capital Market under the symbol “CLRB”. On May 30, 2019, the last reported sale price of our common stock on the Nasdaq Capital Market was $2.31 per share.

Investing in our securities involves a high degree of risk. See “Risk Factors” on page 9 of this prospectus for more information.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is May 31, 2019.

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ABOUT THIS PROSPECTUS

You should rely only on the information we have provided or incorporated by reference into this prospectus and any related free writing prospectus. We have not authorized anyone to provide you with information different from that contained in this prospectus or any related free writing prospectus. No dealer, salesperson or other person is authorized to give any information or to represent anything not contained in this prospectus or any related free writing prospectus. You must not rely on any unauthorized information or representation. This prospectus is an offer to sell only the common stock offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. You should assume that the information in this prospectus or any related free writing prospectus is accurate only as of the date on the front of the document and that any information we have incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus or any sale of a security.

We may authorize one or more free writing prospectuses to be provided to you that may contain material information relating to that offering. We may also use any related free writing prospectus to add, update or change any of the information contained in this prospectus or in documents we have incorporated by reference. This prospectus, together with any related free writing prospectuses and the documents incorporated by reference into this prospectus, includes all material information relating to this offering. Please carefully read both this prospectus together with the additional information described below under “Incorporation of Documents by Reference”.

Unless otherwise stated or unless the context otherwise requires, all references to “we”, “us”, “our”, “our company” or “the Company” in this prospectus refer collectively to Cellectar Biosciences, Inc., a Delaware corporation.

PROSPECTUS SUMMARY

This summary highlights selected information contained elsewhere in this prospectus or incorporated by reference in this prospectus, and does not contain all of the information that you need to consider in making your investment decision. You should carefully read the entire prospectus and any related free writing prospectus, including the risks of investing in our common stock discussed under the heading "Risk Factors" contained in this prospectus and any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus. You should also carefully read the information incorporated by reference into this prospectus, including our financial statements, and the exhibits to the registration statement of which this prospectus forms a part.

Overview

We are a clinical stage biopharmaceutical company focused on the discovery, development and commercialization of drugs for the treatment of cancer. Our core objective is to leverage our proprietary phospholipid drug conjugate™ (PDCs™) delivery platform to develop PDCs that specifically target cancer cells to deliver improved efficacy and better safety as a result of fewer off-target effects. Our PDC platform possesses the potential for the discovery and development of the next generation of cancer-targeting treatments and we plan to develop PDCs independently and through research and development collaborations.

CLR 131 and PDC Platform

Our lead PDC candidate, CLR 131, provides targeted delivery of the cytotoxic (cell-killing) radioisotope iodine 131. CLR 131 is in a Phase 2 clinical study in relapsed or refractory (R/R) multiple myeloma (MM), diffuse large B-cell lymphoma (DLBCL), Waldenstrom's macroglobulinemia (LPL), mantle-cell lymphoma (MCL), marginal zone lymphoma (MZL) and chronic lymphoblastic lymphoma (CLL), and Phase 1 clinical study for Relapsed or Refractory Multiple Myeloma (R/R MM). Additionally, we have initiated a Phase 1 clinical study evaluating the following relapsed or refractory pediatric indications; brain tumors, neuroblastoma, osteosarcoma, rhabdomyosarcoma, Ewing's sarcoma, and several lymphomas.

In order to preserve financial resources, we have focused our proprietary early stage research efforts on projects that we believe can provide the greatest near-term value. Our pipeline includes a PDC chemotherapeutic program in drug discovery, CLR 1900. CLR 1900 is being targeted for solid tumors with a payload that inhibits mitosis (cell division) which is a validated pathway for treating cancers.

We have leveraged our PDC platform to establish four collaborations featuring five unique payloads and mechanisms of action. Through research and development collaborations, our strategy is to generate near-term capital, supplement internal resources, gain access to novel molecules or payloads, accelerate product candidate development and broaden our proprietary and partnered product pipelines.

Our PDC platform provides selective delivery of a diverse range of oncologic payloads to cancerous cells, whether a hematologic cancer or solid tumor, the primary tumor, or a metastatic tumor and cancer stem cells. The PDC platform's mechanism of entry does not rely upon specific cell surface epitopes or antigens as are required by other targeted delivery platforms. Our PDC platform takes advantage of a metabolic pathway utilized by all tumor cell types in all stages of the tumor "cycle". Tumor cells modify regions on the cell surface as a result of the utilization of this metabolic pathway, our PDCs bind to these regions and directly enter the intracellular compartment. This allows the PDC molecules to accumulate over time, which enhances drug efficacy, and to avoid the specialized highly acidic cellular compartment known as lysosomes, which allows the PDC to deliver molecules that previously could not be delivered. Additionally, molecules targeting specific cell surface epitopes face challenges in completely eliminating a tumor because the targeted antigens are limited in the total numbers on the cell surface, have longer cycling time from internalization to being present on the cell surface again upon binding and are not present on all tumor cells of a particular cancer type. This means a subpopulation of tumor cells will always exist that are non-targetable by therapies targeting specific surface epitopes. In addition to the benefits provided by the mechanism of entry, PDCs offer the potential advantage of having the ability to be conjugated to molecules in numerous ways, thereby increasing the types of molecules selectively delivered via the PDC.

The PDC platform features include the capacity to link with almost any molecule, provide a significant increase in targeted oncologic payload delivery and the ability to target all tumor cells. As a result, we believe that we can generate PDCs to treat a broad range of cancers with the potential to improve the therapeutic index of oncologic drug payloads, enhance or maintain efficacy while reducing adverse events by minimizing drug delivery to healthy cells, and increasing delivery to cancerous cells and cancer stem cells.

We employ a drug discovery and development approach that allows us to efficiently design, research and advance drug candidates. Our iterative process allows us to rapidly and systematically produce multiple generations of incrementally improved targeted drug candidates.

Supply of CLR 131

Centre for Probe Development and Commercialization ("CPDC") is our exclusive source to supply drug product for our ongoing research and clinical studies, including our Phase 1 and Phase 2 studies of CLR 131. On August 7, 2018, we were notified by CPDC that it was subject to an Import Alert 66-40, the ("Import Alert"), by the U. S. Food and Drug Administration ("FDA"). While the basis for the Import Alert was not related to CLR 131 or CPDC's production facility associated with CLR 131, CPDC informed us on August 8, 2018 that CPDC would not be able to supply CLR 131 to us until the Import Alert was lifted or alternative agreements were reached with the FDA. On March 19, 2019, we announced that the FDA had granted an exemption to the Import Alert in connection with our pediatric Investigational New Drug Application ("IND"). As previously announced on November 12, 2018, the FDA had granted an exemption to the CPDC Import Alert for our hematology IND. These exemptions allow us to enroll patients in all of our ongoing and planned clinical trials and CLR 131 is no longer subject to the CPDC's Import Alert for any of our existing INDs.

Clinical Pipeline

CLR 131 is a small-molecule, cancer-targeting radiotherapeutic PDC designed to deliver cytotoxic radiation directly and selectively to cancer cells and cancer stem cells. CLR 131 is our lead therapeutic PDC product candidate and is currently being evaluated in both Phase 2 and Phase 1 clinical studies. The initial IND application was accepted by the FDA in March 2014 with multiple INDs submitted since that time. Initiated in March 2017, the primary goal of the Phase 2 study is to assess the compound's efficacy in a broad range of hematologic cancers. The Phase 1 study is designed to assess the compound's safety and tolerability in patients with R/R MM (to determine maximum tolerated dose) and was initiated in April 2015. The FDA previously accepted our IND application for a Phase 1 open-label, dose-escalating study to evaluate the safety and tolerability of a single intravenous administration of CLR 131 in up to 30 children and adolescents with cancers including neuroblastoma, sarcomas, lymphomas (including Hodgkin's lymphoma) and malignant brain tumors. This study was initiated during the first quarter of 2019. These cancer types were selected for clinical, regulatory and commercial rationales, including the radiosensitive nature and continued unmet medical need in the relapse/refractory setting, and have been determined to be rare diseases by the FDA based upon the current definition within the Orphan Drug Act.

In December 2014, the FDA granted orphan drug designation for CLR 131 for the treatment of multiple myeloma. In 2018, the FDA granted orphan drug and rare pediatric disease designations for CLR 131 for the treatment of neuroblastoma, rhabdomyosarcoma, Ewing's sarcoma and osteosarcoma. The FDA will award priority review vouchers to sponsors of rare pediatric disease products that meet the specified criteria. The key criteria to receiving a priority review voucher is that the disease being treated is life-threatening and that it primarily effects individuals under the age of 18. Under this program, a sponsor who receives an approval for a drug or biologic for a "rare pediatric disease" can receive a priority review voucher that can be redeemed to receive a priority review of a subsequent marketing application for a different product. Additionally, these priority review vouchers can be exchanged or sold to other companies for them to use the voucher.

Phase 2 Study in Patients with R/R select B-Cell Malignancies

On May 13, 2019, we announced that the FDA has granted Fast Track designation for CLR 131 in fourth line or later relapse/refractory multiple myeloma in connection with our ongoing Phase 2 clinical study in patients with relapsed or refractory multiple myeloma and other select B-Cell lymphomas. On February 25, 2019 we announced positive top-line results from our ongoing Phase 2 clinical study of CLR 131. CLR 131 has demonstrated activity in at least three different hematologic malignancies. In the relapse refractory multiple myeloma cohort of this Phase 2 study, patients were administered one 30-minute infusion of 25mCi/m^2 and low dose dexamethasone (40mg weekly for up to 12 weeks). CLR 131 achieved a 30% overall response rate in the first 10 evaluable patients. Overall response rate means patients achieved a partial response or better. One patient had a very good partial response (a 90% or greater decrease in a surrogate marker) and two had partial responses (a 50% to 89% decrease in a surrogate marker) as defined by the International Myeloma Working Group. The patients in this cohort average six prior lines of systemic therapy. All patients in the multiple myeloma cohort achieved a minimum of stable disease. As a result of these outcomes, we have expanded this cohort to include up to 30 additional patients. Historically, patients receiving 4th line chemotherapy treatment have shown a 15% response rate, and patients receiving 5th line chemotherapy have shown an 8% response rate, whether dosed as mono-therapy or in combination. The multiple myeloma average treatment response rates ("RR") provided by line of therapy were obtained through Decision Resource Group, a global information and technology vendor specializing in healthcare data analysis utilizing over 12.5 billion U.S. insurance claims and 90 million electronic medical records. Based upon Phase 1 data, the dosing of CLR 131 in this Phase 2 study was recently modified for all indications to a 37.5mCi/m^2 fractionated dose of 18.75mCi/m^2 administered on days 1 and 8 which is approximately one and a half times more drug than the 25mCi/m^2 single infusion.

In July 2018, we announced that after a single 25mCi/m^2 IV administration of CLR 131, patients with relapsed/refractory aggressive DLBCL were assessed for response. These interim data showed a 33% Overall Response Rate (ORR) and a 50% clinical benefit response (CBR). In addition, the observed responses to date show overall tumor reduction ranged from 60% to greater than 90%. As a result of these favorable outcomes, we have expanded this cohort to include up to 30 additional patients. We also announced that a patient in the lymphoplasmacytic lymphoma (LPL) or Waldenstrom's macroglobulinemia arm showed a greater than 90% reduction in tumor burden and complete resolution in four of five masses with the fifth tumor being reduced by over 90% of its initial tumor volume after two doses of CLR 131 separated by 123 days. Efficacy for all lymphoma patients will be determined according to Lugano criteria. The Company intends to announce further data from additional cohorts later this year.

In July 2016, we were awarded a $2,000,000 National Cancer Institute (NCI) Fast-Track Small Business Innovation Research grant to further advance the clinical development of CLR 131. The funds are supporting the Phase 2 study initiated in March 2017 to define the clinical benefits of CLR 131 in R/R MM and other hematologic malignancies with unmet clinical need. These hematologic malignancies include Chronic Lymphocytic Leukemia, Small Lymphocytic Lymphoma, Marginal Zone Lymphoma, Lymphoplasmacytic Lymphoma and Diffuse Large B-Cell Lymphoma ("DLBCL"). The study is being conducted in approximately 10 U.S. cancer centers in patients with orphan-designated relapse or refractory hematologic cancers. The study's primary endpoint is CBR, with additional endpoints of ORR, PFS, median OS and other markers of efficacy following a single 25.0 mCi/m^2 dose of CLR 131, with the option for a second 25.0 mCi/m^2 dose approximately 75-180 days later. Based on the performance results from cohort 6 of our Phase 1 study in patients with R/R MM, reviewed below, we have modified the dosing regimen of this study to a 37.5mCi/m^2 fractionated dose of 18.75mCi/m^2 administered on days 1 and 8.

Phase 1 Study in Patients with R/R Multiple Myeloma

CLR 131 in combination with dexamethasone is currently under investigation in a Phase 1 study in adult patients with R/R MM following treatment with at least one proteasome inhibitor and at least one immunomodulatory agent. This clinical study is a standard three-by-three dose escalation safety study. Multiple myeloma is an incurable cancer of the plasma cells and is the second most common form of hematologic cancers. Secondary objectives include the evaluation of therapeutic activity by assessing surrogate efficacy markers, which include M protein, free light chain ("FLC"), progression free survival ("PFS") and overall survival ("OS"). All patients have been heavily pretreated with an average of six prior lines of therapy. CLR 131 was deemed by an independent data monitoring committee to be safe and tolerable up to its planned maximum single dose of 31.25 mCi/m^2. The four single dose cohorts examined were: 12.5 mCi/m^2, 18.75 mCi/m^2, 25 mCi/m^2, and 31.25 mCi/m^2, all in combination with low dose dexamethasone (40 mg weekly). Of the five patients in the first cohort, four achieved stable disease and one patient progressed at Day 15 after administration and was taken off the study. Of the five patients that have been admitted to the second cohort, four achieved stable disease and one patient progressed at Day 41 after administration and was taken off the study. Four patients were enrolled to the third cohort and all achieved stable disease. In September 2017, we announced results for cohort 4, showing that a single 30-minute infusion of 31.25mCi/m^2 of CLR 131 was safe and tolerated by the three patients in the cohort. Additionally, all three patients experienced clinical benefit with one patient achieving a partial response ("PR"). We use the International Myeloma Working Group (IMWG) definitions of response which involve monitoring the surrogate markers of efficacy, M protein and FLC. The IMWG defines a PR as a greater than or equal to 50% decrease in FLC levels (for patients in whom M protein is unmeasurable) or 50% or greater decrease in M protein. The patient experiencing a PR had an 82% reduction in FLC. This patient did not produce M protein, had received seven prior lines of treatment including radiation, stem cell transplantation and multiple triple combination treatments including one with daratumumab that was not tolerated. One patient experiencing stable disease attained a 44% reduction in M protein. On January 7, 2019, we announced that the pooled median Overall Survival ("mOS") data from the first four cohorts was 22.0 months. In late 2018, we modified this study to evaluate a fractionated dosing strategy to potentially increase efficacy and decrease adverse events.

The first fractionated dose cohort was cohort 5 in which patients received a dose of 15.625 mCi/m^2 administered on day 1 and day 8. Results from cohort 5 indicated enhanced tolerability and safety in comparison to cohort 4 despite an 18% increase in average total dose from 55.29 mCi to 65.15 mCi of CLR 131. Patients in cohort 5 required less supportive care such as transfusions of platelets or packed red blood cells than seen in previous cohorts. Similar to previous cohorts, patients experienced few off-target adverse events, i.e. no peripheral neuropathy, embolisms, gastrointestinal upset, etc. Furthermore, surrogate efficacy markers demonstrated that patients in cohort 5 monitored by M-protein showed a nearly 50% further reduction in M-Protein than seen in cohort 4. Based on these results, on December 4, 2018 the independent Data Monitoring Committee ("IDMC") recommended advancement to a sixth cohort. Cohort 6 was initiated in late December where patients received two doses of 18.75 mCi/m^2 administered approximately one week apart. On May 15, 2019, we announced that we had received initial results from the Cohort 6 study, which indicated that the 37.5mCi/m^2 fractionated dose was determined to be safe and tolerable by the IDMC. Following the determination, we initiated a Cohort 7 utilizing a 40mCi/m^2 fractionated dose (20mCi/m^2 dose on day 1 and day 8).

Phase 1 Study in R/R Pediatric Patients with Select Solid Tumors, Lymphomas and Malignant Brain Tumors

On December 21, 2017 the Division of Oncology at the FDA accepted our IND and study design for the Phase 1 study of CLR 131 in children and adolescents with select rare and orphan designated cancers. This study was initiated during the first quarter of 2019. The Phase 1 clinical study of CLR 131 is an open-label, sequential-group, dose-escalation study evaluating the safety and tolerability of intravenous administration of CLR 131 in up to 30 children and adolescents with cancers including neuroblastoma, sarcomas, lymphomas (including Hodgkin's lymphoma) and malignant brain tumors. Secondary objectives of the study are to identify the recommended Phase 2 dose of CLR 131 and to determine preliminary antitumor activity (treatment response) of CLR 131 in children and adolescents. In 2018, the FDA granted orphan drug and a Rare Pediatric Disease Designation ("RPDD") for CLR 131 for the treatment of neuroblastoma, rhabdomyosarcoma, Ewing's sarcoma and osteosarcoma. Should any of these indications reach approval, the RPDD would enable us to receive a priority review voucher. Priority review vouchers can be used by the sponsor to receive priority review for a future New Drug Application ("NDA") or Biologic License Application ("BLA") submission, which would reduce the FDA review time from 12 months to six months. Currently, these vouchers can also be transferred or sold to another entity.

We believe our PDC platform has the potential to provide targeted delivery of a diverse range of oncologic payloads, as exemplified by the product candidates listed above, that may result in improvements upon current standard of care ("SOC") for the treatment of a broad range of human cancers.

Preclinical Pipeline

- CLR 1800 Series is a collaborative PDC program with Pierre Fabre that was entered into in December 2015 and was last extended in 2018. Pierre Fabre is the third largest French pharmaceutical company with an extensive oncology research and development infrastructure. The objective of the collaboration was to leverage our expertise in conjugation, linker chemistry and phospholipid ether chemistry to codesign a library of PDCs employing Pierre Fabre's chemotherapeutics. The newly developed PDCs may provide enhanced therapeutic indices to otherwise highly potent, nontargeted payloads through the targeted delivery of the chemotherapeutic payload to cancer cells via our proprietary phospholipid ether delivery platform. The program has been successful in demonstrating improved tolerability and efficacy in multiple animal models. Although our agreement with Pierre Fabre expired in January 2019, the program is still under evaluation by both parties as a number of PDC molecules have the potential to be progressed toward and into IND enabling studies.

- CLR 1900 Series is an internally developed proprietary PDC program leveraging a novel small molecule cytotoxic compound as the payload. The payload inhibits mitosis (cell division) and targets a key pathway required to inhibit rapidly dividing cells that results in apoptosis. We believe that this program could produce a product candidate targeted to select solid tumors. Currently, the program is in preclinical development and if the Company elects to progress any molecules further, we would select a candidate later this year.

- CLR 2000 Series is a collaborative PDC program with Avicenna Oncology, or Avicenna, that we entered into in July 2017. Avicenna is a leading developer of antibody drug conjugates ("ADCs"). The objective of the research collaboration is to design and develop a series of PDCs utilizing Avicenna's proprietary cytotoxic payload. Although Avicenna is a leading developer of ADCs, this collaboration was sought as a means to overcome many of the challenges associated with ADCs, including those associated with the targeting of specific cell surface epitopes. The CLR 2000 series has demonstrated improved safety, efficacy and tissue distribution with the cytotoxic payload. A candidate molecule and a back-up have been selected for further advancement.

- CLR 2100 and 2200 Series are collaborative PDC programs with Onconova Therapeutics, Inc. ("Onconova") that we entered into in September 2017. Onconova is a biotechnology company specializing in the discovery and development of novel small molecule cancer therapies. The collaboration is structured such that we will design and develop a series of PDCs utilizing different small molecules that Onconova was developing as payloads with the intent to show improved targeting and specificity to the tumor. At least one of the molecules was taken into Phase 1 clinical studies previously by Onconova. We would own all new intellectual property associated with the design of the new PDCs, and both companies will have the option to advance compounds.

- CLR 12120 Series is a collaborative PRC program with Orano Med for the development of novel PRCs utilizing Orano Med's unique alpha emitter, lead 212 conjugated to our phospholipid ether (PLE); the companies intend to evaluate the new PDCs in up to three oncology indications. Currently, this series has shown efficacy in the first two animal models tested.

Corporate Information

Our shares are listed on the Nasdaq Capital Market under the symbol "CLRB".

Our principal executive offices are located at 100 Campus Drive, Florham Park, New Jersey 07932. We maintain a website at www.cellectar.com. The information included or referred to on, or accessible through, our website does not constitute part of, and is not incorporated by reference into, this prospectus.

Description of the Private Placement

On May 16, 2019, we entered into a Securities Purchase Agreement (the "Purchase Agreement") with certain purchasers named therein who are the selling stockholders identified in this prospectus under the caption "Selling Stockholders" (the "Purchasers") pursuant to which we issued and sold, in a registered offering directly to the Purchasers on May 20, 2019, an aggregate of 1,982,000 shares (the "Registered Shares") of our common stock at an offering price of $2.50 per share (the "Registered Offering").

In a concurrent private placement, we issued to the Purchasers who participated in the Registered Offering, Series F warrants to purchase an aggregate of 1,982,000 shares of Common Stock at an exercise price of $2.40 per share (the "Series F Warrants").

In a separate concurrent private placement transaction, we entered into a Private Placement Securities Purchase Agreement (the "Private Placement Purchase Agreement" and together with the Purchase Agreement, the "Purchase Agreements") with the Purchasers, pursuant to which we issued to the Purchasers an aggregate of 2,018,000 shares of Common Stock (the "Private Placement Shares" and together with the Registered Shares, the "Shares") together with Series G warrants to purchase an aggregate of up to 2,018,000 shares of Common Stock at an exercise price of $2.40 per share (the "Series G Warrants" and together with the Series F Warrants, the "Warrants"), at an offering price of $2.50 per share (the "Private Placement" and together with the Registered Offering, the "Offerings").

Gross proceeds of the Offerings were approximately $10.0 million before deducting the placement agent fee and related offering expenses. The Registered Shares were offered by us pursuant to a registration statement on Form S-3 (File No. 333-218514), which was declared effective by the Securities and Exchange Commission (the "SEC") on September 20, 2017. The Private Placement Shares, the Warrants and the shares of Common Stock issuable upon the exercise of the Warrants (the "Warrant Shares") were not registered under the Securities Act, were not offered pursuant to the Registration Statement and were offered pursuant to the exemption provided in Section 4(a)(2) under the Securities Act, and Rule 506(b) promulgated thereunder.

Each Warrant was immediately exercisable and expires five years from the date of issuance. If at any time after the six-month anniversary of the date of issuance there is no effective registration statement registering, or no current prospectus available for, the resale of the shares of common stock issuable upon the exercise of the Warrants, then the holders have the right to exercise the Warrants on a cashless basis at such time. Subject to limited exceptions, a holder of a Warrant does not have the right to exercise any portion of its Warrants if the holder, together with its affiliates, would beneficially own in excess of 4.99% of the number of shares of common stock outstanding immediately after giving effect to such exercise (the "Beneficial Ownership Limitation"); provided, however, that upon 61 days' prior notice to the Company, the holder may increase or decrease the Beneficial Ownership Limitation, provided further that in no event shall the Beneficial Ownership Limitation exceed 9.99%.

We filed the registration statement on Form S-1, of which this prospectus is a part, to fulfill our contractual obligations under the Purchase Agreements to provide for the resale by the Purchasers of up to 6,018,000 shares of Common Stock, including the Warrant Shares. We agreed to file a registration statement with respect to such Warrant Shares within 15 days following the date of issuance of the Private Placement Shares and the Warrants and to use reasonable best efforts to keep such registration statement effective at all times until (a) the warrant shares are sold under such registration statement or pursuant to Rule 144 under the Securities Act, (b) the warrant shares may be sold without volume or manner-of-sale restrictions pursuant to Rule 144 under the Securities Act.

The Offering

Shares of common stock offered by us:	None
Shares of common stock offered by the selling stockholders:	6,018,000 shares, including 4,000,000 Warrant Shares
Shares of common stock outstanding before this offering, assuming no exercise of the Warrants:	9,396,036
Shares of common stock outstanding after completion of this offering, assuming full exercise of the Warrants:	13,396,036 shares
Use of Proceeds:	We will not receive any proceeds from the resale of the shares of common stock by the selling stockholders.
Risk Factors:	See “Risk Factors” on page 9 and the other information included in this prospectus for a discussion of factors you should carefully consider before deciding whether to purchase our securities.
Nasdaq symbol for our common stock:	CLRB

The number of shares of our common stock outstanding before and after this offering is based on 9,396,036 shares of common stock outstanding as of May 30, 2019 and excludes, as of that date:

- an aggregate of 484,964 shares of common stock issuable upon the exercise of outstanding stock options issued to employees, directors and consultants;
- an aggregate of 537,500 shares of common stock issuable upon the conversion of outstanding shares of Series C preferred stock; and
- an aggregate of 9,318,747 additional shares of common stock reserved for issuance under outstanding warrants having expiration dates between August 20, 2019, and October 14, 2024, and exercise prices ranging from $2.40 to $468 per share.

RISK FACTORS

An investment in our securities is speculative and involves a high degree of risk. You should carefully consider the risks under the heading "Risk Factors" in our Annual Report on Form 10-K for the fiscal year ended December 31, 2018 filed with the SEC on February 26, 2019, and our Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2019, filed with the SEC on May 6, 2019, which information is incorporated by reference in this prospectus, and the additional risks described below and other information in this prospectus, the accompanying prospectus and the documents incorporated by reference herein and therein before deciding to invest in our common stock. If any of the risks described or incorporated by reference into this prospectus actually occur, our business, results of operations, financial condition and cash flows could be materially adversely affected, the trading price of our common stock could decline significantly, and you might lose all or part of your investment. Additional risks and uncertainties that we are unaware of or that we believe are not material at this time could also materially adversely affect our business, financial condition or results of operations. In any case, the value of our securities could decline, and you could lose all or part of your investment, or our use of the offering proceeds may not yield a favorable return on your investment. You should also refer to our financial statements and the notes to those statements, which are incorporated by reference in this prospectus. For more information, see "Where You Can Find More Information" and "Incorporation of Certain Information by Reference".

FORWARD-LOOKING STATEMENTS

This prospectus, including the documents that we incorporate by reference, contains forward-looking statements within the meaning of Section 27A of the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). Examples of our forward-looking statements include:

- our current views with respect to our business strategy, business plan and research and development activities;
- the progress of our product development programs, including clinical testing and the timing of commencement and results thereof;
- our projected operating results, including research and development expenses;
- our ability to continue development plans for CLR 131, CLR 1800 series, CLR 1900 series, CLR 2000 series, CLR 2100 series, CLR 2200 series and CLR 12120 series;
- our ability to maintain orphan drug designation and in the U.S. for CLR 131 as a therapeutic for the treatment of multiple myeloma, neuroblastoma, osteosarcoma, rhabdomyosarcoma and Ewing's sarcoma, and the expected benefits of orphan drug status;
- the volatile market for priority review vouchers;
- our ability to pursue strategic alternatives;
- our anticipated use of proceeds from this offering;
- our ability to advance our technologies into product candidates;
- our consumption of current resources and ability to obtain additional funding;
- our current view regarding general economic and market conditions, including our competitive strengths;
- assumptions underlying any of the foregoing; and
- any other statements that address events or developments that we intend or believe will or may occur in the future.

In some cases, you can identify forward-looking statements by terminology such as ""expects", "anticipates", "intends", "estimates", "plans", "believes", "seeks", "may", "should", "could" or the negative of such terms or other similar expressions. Accordingly, these statements involve estimates, assumptions and uncertainties that could cause actual results to differ materially from those expressed in them. Forward-looking statements also involve risks and uncertainties, many of which are beyond our control. Any forward-looking statements are qualified in their entirety by reference to the factors discussed throughout this prospectus.

You should read this prospectus and the documents that we reference herein and therein and have filed as exhibits to the registration statement, of which this prospectus is part, completely and with the understanding that our actual future results may be materially different from what we expect. You should assume that the information appearing in this prospectus is accurate only as of the date on the front cover of this prospectus or such prospectus. Because the risk factors referred to above could cause actual results or outcomes to differ materially from those expressed in any forward-looking statements made by us or on our behalf, you should not place undue reliance on any forward-looking statements. Further, any forward-looking statement speaks only as of the date on which it is made, and we undertake no obligation to update any forward-looking statement to reflect events or circumstances after the date on which the statement is made or to reflect the occurrence of unanticipated events. New factors emerge from time to time, and it is not possible for us to predict which factors will arise. In addition, we cannot assess the impact of each factor on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements. We qualify all of the information presented in this prospectus and any accompanying prospectus supplement, and particularly our forward-looking statements, by these cautionary statements.

USE OF PROCEEDS

All proceeds from the resale of the Private Placement Shares and the Warrant Shares offered by this prospectus will belong to the selling stockholders. We will not receive any proceeds from the sale or other disposition by the selling stockholders of the shares of our common stock covered by this prospectus. However, we will receive proceeds upon any cash exercise of the Warrants, the underlying shares of which are offered by this prospectus. If the Warrants are all exercised for cash, we will receive gross proceeds of $9.6 million. We intend to use any proceeds from any such exercise to fund our research and development activities, clinical studies and for general corporate purposes. There is no assurance, however, that the Warrants will ever be exercised.

SELLING STOCKHOLDERS

The common stock being offered by the selling stockholders are the Private Placement Shares and the Warrant Shares. For additional information regarding the issuances of the Private Placement Shares and the Warrant Shares, see “Description of the Private Placement” in this prospectus. We are registering the shares of common stock in order to permit the selling stockholders to offer the Private Placement Shares and the Warrant Shares for resale from time to time. Except for the ownership of our common stock and warrants, the selling stockholders have not had any material relationship with us within the past three years.

The table below lists the selling stockholders and other information regarding the beneficial ownership of the shares of common stock by each of the selling stockholders. The second column lists the number of shares of common stock beneficially owned by each selling stockholder, based on its ownership of the shares of common stock and warrants, as of May 30, 2019, assuming exercise of the warrants held by the selling stockholders on that date. The third column lists the shares of common stock being offered by this prospectus by the selling stockholders.

In accordance with the terms of a registration rights agreement with the selling stockholders, this prospectus generally covers the resale of the maximum number of shares of common stock issuable upon exercise of the Warrants, determined as if the Warrants were exercised in full as of the trading day immediately preceding the date this registration statement was initially filed with the SEC, each as of the trading day immediately preceding the applicable date of determination and all subject to adjustment as provided in the registration right agreement, without regard to any limitations on the exercise of the Warrants. The fourth column assumes the sale of all of the shares offered by the selling stockholders pursuant to this prospectus.

Under the terms of all of the warrants, a selling stockholder may not exercise the warrants to the extent such exercise would cause such selling stockholder, together with its affiliates and attribution parties, to beneficially own a number of shares of common stock which would exceed 4.99% of our then outstanding common stock following such exercise (9.99% in the case of Series F Warrants and Series G Warrants issued to Boxer Capital, LLC and Intracoastal Capital LLC), excluding for purposes of such determination shares of common stock issuable upon exercise of the warrants which have not been exercised (the "Beneficial Ownership Limitation"). The number of shares in the second column reflects the Beneficial Ownership Limitation when applicable. The selling stockholder may sell all, some or none of their shares in this offering. See "Plan of Distribution". The percentage of beneficial ownership after this offering is based on 9,396,036 shares outstanding on May 30, 2019.

Selling Stockholder [1]	Number of Shares of Common Stock Beneficially Owned Prior to Offering	Maximum Number of Shares of Common Stock to be Sold Pursuant to this Prospectus	Number of Shares of Common Stock Beneficially Owned After Offering	Percentage of Shares Beneficially Owned After Offering [2]
Anson Investments Master Fund LP [3]	468,862[14]	902,700[25]	291,395	2.83%
Altium Growth Fund, LP [4]	468,862[15]	601,800[26]	198,200	2.02%
Boxer Capital, LLC [5]	938,664[16]	1,384,140[27]	455,860	4.42%
CVI Investments, Inc. [6]	468,862[17]	722,160[28]	661,562	6.42%
Empery Asset Master, LTD [7]	460,013[18]	231,752[29]	228,261	2.33%
Empery Tax Efficient, LP [8]	98,126[19]	58,996[30]	39,130	*
Empery Tax Efficient II, LP [9]	418,661[20]	311,052[31]	107,609	1.11%
Intracoastal Capital LLC [10]	601,800[21]	601,800[32]	39,331	*
Iroquois Master Fund Ltd. [11]	468,862[22]	451,350[33]	219,733	2.25%
Iroquois Capital Investment Group, LLC. [12]	326,417[23]	150,450[34]	175,967	1.83%
Lincoln Park Capital Fund LLC [13]	468,862[24]	601,800[35]	1,001,543	9.45%

*Less than 1%

(1) This table and the information in the notes below are based upon information supplied by the selling stockholders.
(2) The amounts set forth in this column do not take into account any limitations on the exercise of existing warrants as a result of the Beneficial Ownership Limitation.
(3) Anson Advisors Inc and Anson Funds Management LP, the Co-Investment Advisers of Anson Investments Master Fund LP ("Anson"), hold voting and dispositive power over the Common Shares held by Anson. Bruce Winson is the managing member of Anson Management GP LLC, which is the general partner of Anson Funds Management LP. Moez Kassam and Amin Nathoo are directors of Anson Advisors Inc. Mr. Winson, Mr. Kassam and Mr. Mathoo each disclaim beneficial ownership of these Common Shares except to the extent of their pecuniary interest therein. The principal business address of Anson is 190 Elgin Ave; George Town, Grand Cayman.
(4) Altium Capital Management, LP, the investment manager of Altium Growth Fund, LP, has voting and investment power over these securities. Jacob Gottlieb is the managing member of Altium Capital Growth GP, LLC, which is the general partner of Altium Growth Fund, LP. Each of Altium Growth Fund, LP and Jacob Gottlieb disclaims beneficial ownership over these securities. The principal address of Altium Capital Management, LP is 551 Fifth Avenue, 19th Floor New York, New York 10176.
(5) The voting and investment power over these securities is controlled by a majority vote of the investment committee of Boxer Capital, LLC, which is comprised of Aaron Davis, Christopher Fuglesang and Shehan Dissanayake. Mr. Davis, Dr. Fuglesang and Dr. Dissanayake each disclaim beneficial ownership over these securities except to the extent of their pecuniary interest therein. The principal address of Boxer Capital, LLC is 11682 El Camino Real, Suite 320, San Diego, CA 92130.

(6) Heights Capital Management, Inc., the authorized agent of CVI Investments, Inc. ("CVI"), has discretionary authority to vote and dispose of the shares held by CVI and may be deemed to be the beneficial owner of these shares. Martin Kobinger, in his capacity as Investment Manager of Heights Capital Management, Inc., may also be deemed to have investment discretion and voting power over the shares held by CVI. Mr. Kobinger disclaims any such beneficial ownership of the shares. The principal address of Heights Capital Management, Inc. is 101 California Street, Suite 3250, San Francisco, CA 94111.

(7) Empery Asset Management, LP, the authorized agent of Empery Asset Master Ltd ("EAM"), has discretionary authority to vote and dispose of the shares held by EAM and may be deemed to be the beneficial owner of these shares. Martin Hoe and Ryan Lane, in their capacity as investment managers of Empery Asset Management LP, may also be deemed to have investment discretion and voting power over the shares held by EAM. EAM, Mr. Hoe and Mr. Lane each disclaim any beneficial ownership of these shares. The principal address of Emery Asset Management, LP is One Rockefeller Plaza, Suite 1205, New York City, New York, 10020.

(8) Empery Asset Management LP, the authorized agent of Empery Tax Efficient, LP ("ETE"), has discretionary authority to vote and dispose of the shares held by ETE and may be deemed to be the beneficial owner of these shares. Martin Hoe and Ryan Lane, in their capacity as investment managers of Empery Asset Management LP, may also be deemed to have investment discretion and voting power over the shares held by ETE. ETE, Mr. Hoe and Mr. Lane each disclaim any beneficial ownership of these shares. The principal address of Emery Asset Management, LP is One Rockefeller Plaza, Suite 1205, New York City, New York, 10020.

(9) Empery Asset Management LP, the authorized agent of Empery Tax Efficient II, LP ("ETE II"), has discretionary authority to vote and dispose of the shares held by the ETE II and may be deemed to be the beneficial owner of these shares. Martin Hoe and Ryan Lane, in their capacity as investment managers of Empery Asset Management LP, may also be deemed to have investment discretion and voting power over the shares held by ETE II. ETE II, Mr. Hoe and Mr. Lane each disclaim any beneficial ownership of these shares. The principal address of Emery Asset Management, LP is One Rockefeller Plaza, Suite 1205, New York City, New York, 10020.

(10) Mitchell P. Kopin ("Mr. Kopin") and Daniel B. Asher ("Mr. Asher"), each of whom are managers of Intracoastal Capital LLC ("Intracoastal"), have shared voting control and investment discretion over the securities reported herein that are held by Intracoastal. As a result, each of Mr. Kopin and Mr. Asher may be deemed to have beneficial ownership (as determined under Section 13(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act")) of the securities reported herein that are held by Intracoastal. The principal address of Intracoastal Capital LLC is 245 Palm Trail, Delray Beach, FL 33483.

(11) Richard Abbe is the Managing Member of Iroquois Capital Investment Group LLC and has voting and dispositive power over the shares held by Iroquois Capital Investment Group LLC. Excludes shares owned by Iroquois Master Fund Ltd. reflected elsewhere in this table, of which Mr. Abbe is the General Partner and over which shares Mr. Abbe also has voting and dispositive power. The principal address of Iroquois Capital Investment Group, LLC is 125 Park Avenue, 25th Floor, New York, New York 10017.

(12) Richard Abbe is the General Partner of Iroquois Master Fund Ltd. and has voting and dispositive power over the shares held by Iroquois Master Fund LtdAmount excludes shares owned by Iroquois Capital Investment Group LLC reflected elsewhere in this table, of which Mr. Abbe is the Managing Member and over which shares Mr. Abbe also has voting and dispositive power. The principal address of Iroquois Capital Investment Group, LLC is 125 Park Avenue, 25th Floor, New York, New York 10017.

(13) Josh Scheinfeld and Jonathan Cope, the Managing Members of Lincoln Park Capital, LLC, are deemed to be beneficial owners of all of the shares of Common Stock owned by Lincoln Park Capital Fund, LLC. Messrs. Cope and Scheinfeld have shared voting and investment power over the shares. The principal address of Lincoln Park Capital Fund, LLC is 440 N. Wells St., Suite 410, Chicago, IL 60654.

(14) Includes 302,700 shares of Common Stock and 166,162 shares of Common Stock issuable upon exercise of warrants. Excludes 725,233 shares of Common Stock issuable upon exercise of warrants due to the Beneficial Ownership Limitation.

(15) Includes 400,000 shares of Common Stock and 68,862 shares of Common Stock issuable upon exercise of warrants. Excludes 331,138 shares of Common Stock issuable upon exercise of warrants due to the Beneficial Ownership Limitation.

(16) Includes 920,000 shares of Common Stock and 18,664 shares of Common Stock issuable upon exercise of warrants. Excludes 901,336 shares of Common Stock issuable upon exercise of warrants due to the Beneficial Ownership Limitation.

(17) Includes 242,160 shares of Common Stock and 226,702 shares of Common Stock issuable upon exercise of warrants. Excludes 677,020 shares of Common Stock issuable upon exercise of warrants due to the Beneficial Ownership Limitation.

(18) Comprises 77,713 shares of Common Stock and 382,300 shares of Common Stock issuable upon exercise of warrants.

(19) Comprises 19,783 shares of Common Stock and 78,343 shares of Common Stock issuable upon exercise of warrants.

(20) Comprises 104,304 shares of Common Stock and 314,357 shares of Common Stock issuable upon exercise of warrants.

(21) Includes 201,800 shares of Common Stock and 400,000 shares of Common Stock issuable upon exercise of warrants. Excludes 39,331 shares of Common Stock issuable upon exercise of warrants due to the Beneficial Ownership Limitation, which is 4.99% for the 39,331 warrants not offered for resale pursuant to this prospectus.
(22) Includes 300,000 shares of Common Stock and 168,862 shares of Common Stock issuable upon exercise of warrants. Excludes 202,221 shares of Common Stock issuable upon exercise of warrants due to the Beneficial Ownership Limitation.
(23) Comprises 100,000 shares of Common Stock and 126,417 shares of Common Stock issuable upon exercise of warrants.
(24) Includes 400,000 shares of Common Stock and 68,862 shares of Common Stock issuable upon exercise of warrants. Excludes 1,134,481 shares of Common Stock issuable upon exercise of warrants due to the Beneficial Ownership Limitation.
(25) Comprises 302,700 shares of Common Stock and 600,000 shares of common stock issuable upon exercise of warrants.
(26) Comprises 201,800 shares of Common Stock and 400,000 shares of common stock issuable upon exercise of warrants.
(27) Comprises 464,140 shares of Common Stock and 920,000 shares of common stock issuable upon exercise of warrants.
(28) Comprises 242,160 shares of Common Stock and 480,000 shares of common stock issuable upon exercise of warrants.
(29) Comprises 77,713 shares of Common Stock and 154,039 shares of common stock issuable upon exercise of warrants.
(30) Comprises 19,783 shares of Common Stock and 39,213 shares of common stock issuable upon exercise of warrants.
(31) Comprises 104,304 shares of Common Stock and 206,748 shares of common stock issuable upon exercise of warrants.
(32) Comprises 201,800 shares of Common Stock and 400,000 shares of common stock issuable upon exercise of warrants.
(33) Comprises 151,350 shares of Common Stock and 300,000 shares of common stock issuable upon exercise of warrants.
(34) Comprises 50,450 shares of Common Stock and 100,000 shares of common stock issuable upon exercise of warrants.
(35) Comprises 201,800 shares of Common Stock and 400,000 shares of common stock issuable upon exercise of warrants.

PLAN OF DISTRIBUTION

Each selling stockholder and any of their pledgees, assignees and successors-in-interest may, from time to time, sell any or all of their securities covered hereby on the Nasdaq Capital Market or any other stock exchange, market or trading facility on which the securities are traded or in private transactions. These sales may be at fixed or negotiated prices. A selling stockholder may use any one or more of the following methods when selling securities:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the securities as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- settlement of short sales;
- in transactions through broker-dealers that agree with the selling stockholders to sell a specified number of such securities at a stipulated price per security;
- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- a combination of any such methods of sale; or
- any other method permitted pursuant to applicable law.

The selling stockholders may also sell securities under Rule 144 or any other exemption from registration under the Securities Act, if available, rather than under this prospectus.

Broker-dealers engaged by the selling stockholders may arrange for other broker-dealers to participate in sales. Broker-dealers may receive commissions or discounts from the selling stockholders (or, if any broker-dealer acts as agent for the purchaser of securities, from the purchaser) in amounts to be negotiated, but, except as set forth in a supplement to this Prospectus, in the case of an agency transaction not in excess of a customary brokerage commission in compliance with FINRA Rule 2440; and in the case of a principal transaction a markup or markdown in compliance with FINRA IM-2440.

In connection with the sale of the securities or interests therein, the selling stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the securities in the course of hedging the positions they assume. The selling stockholders may also sell securities short and deliver these securities to close out their short positions, or loan or pledge the securities to broker-dealers that in turn may sell these securities. The selling stockholders may also enter into option or other transactions with broker-dealers or other financial institutions or create one or more derivative securities which require the delivery to such broker-dealer or other financial institution of securities offered by this prospectus, which securities such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).

The selling stockholders and any broker-dealers or agents that are involved in selling the securities may be deemed to be “underwriters” within the meaning of the Securities Act in connection with such sales. In such event, any commissions received by such broker-dealers or agents and any profit on the resale of the securities purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act. Each selling stockholder has informed the Company that it does not have any written or oral agreement or understanding, directly or indirectly, with any person to distribute the securities.

The Company is required to pay certain fees and expenses incurred by the Company incident to the registration of the securities. The Company has agreed to indemnify the selling stockholders against certain losses, claims, damages and liabilities, including liabilities under the Securities Act.

We agreed to use reasonable best efforts to keep this prospectus effective until the earlier of (i) the date on which the securities may be resold by the selling stockholders without registration and without regard to any volume or manner-of-sale limitations by reason of Rule 144, without the requirement for the Company to be in compliance with the current public information under Rule 144 under the Securities Act or any other rule of similar effect, or (ii) all of the securities have been sold pursuant to this prospectus or Rule 144 under the Securities Act or any other rule of similar effect. The resale securities will be sold only through registered or licensed brokers or dealers if required under applicable state securities laws. In addition, in certain states, the resale securities covered hereby may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with.

Under applicable rules and regulations under the Exchange Act, any person engaged in the distribution of the resale securities may not simultaneously engage in market making activities with respect to the common stock for the applicable restricted period, as defined in Regulation M, prior to the commencement of the distribution. In addition, the selling stockholders will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including Regulation M, which may limit the timing of purchases and sales of the common stock by the selling stockholders or any other person. We will make copies of this prospectus available to the selling stockholders and have informed them of the need to deliver a copy of this prospectus to each purchaser at or prior to the time of the sale (including by compliance with Rule 172 under the Securities Act).

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-1 under the Securities Act with respect to the shares of common stock being offered by this prospectus. This prospectus does not contain all of the information in the registration statement and its exhibits. For further information with respect to us and the common stock offered by this prospectus, we refer you to the registration statement and its exhibits. Statements contained in this prospectus as to the contents of any contract or any other document referred to are not necessarily complete, and in each instance, we refer you to the copy of the contract or other document filed as an exhibit to the registration statement. Each of these statements is qualified in all respects by this reference.

You can read our Securities and Exchange Commission filings, including the registration statement, over the Internet at the SEC's website at www.sec.gov. You may also request a copy of these filings, at no cost, by writing us at 100 Campus Drive Florham Park, New Jersey 07932 or telephoning us at (608) 441-8120.

We are subject to the information and periodic reporting requirements of the Exchange Act, and we file periodic reports, proxy statements and other information with the SEC. These periodic reports, proxy statements and other information are available for inspection and copying at the website of the Securities and Exchange Commission referred to above. We maintain a website at https://www.cellectar.com. You may access our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act with the Securities and Exchange Commission free of charge at our website as soon as reasonably practicable after such material is electronically filed with, or furnished to, the Securities and Exchange Commission. The information contained in, or that can be accessed through, our website is not incorporated by reference in, and is not part of, this prospectus.

LEGAL MATTERS

The validity of the securities being offered by this prospectus has been passed upon for us by Michael Best & Friedrich LLP, Madison, Wisconsin.

EXPERTS

The audited financial statements incorporated by reference in this prospectus and elsewhere in the registration statement have been so incorporated by reference in reliance upon the report of Baker Tilly Virchow Krause, LLP, independent registered public accountants, upon the authority of said firm as experts in accounting and auditing. The report of Baker Tilly Virchow Krause, LLP includes an explanatory paragraph as to the Company's ability to continue as a going concern.

INCORPORATION OF DOCUMENTS BY REFERENCE

The SEC allows us to "incorporate by reference" information into this prospectus. This means that we can disclose important information to you by referring you to another document filed separately with the SEC. The information incorporated by reference is considered to be a part of this prospectus, except for any information that is superseded by other information that is included in this prospectus.

We incorporate by reference into this prospectus the following document, which we have previously filed with the SEC:

- our Annual Report on Form 10-K for the fiscal year ended December 31, 2018, filed with the SEC on February 26, 2019;
- our Quarterly Report on Form 10-Q for the quarter ended March 31, 2019, filed with the SEC on May 6, 2019;
- our Definitive Proxy Statement on Schedule 14A for the annual meeting of stockholders, filed with the SEC on April 29, 2019;
- our Current Report on Form 8-K, filed with the SEC on February 15, 2019;
- our Current Report on Form 8-K, filed with the SEC on March 8, 2019;
- our Current Report on Form 8-K, filed with the SEC on March 19, 2019;
- our Current Report on Form 8-K, filed with the SEC on April 19, 2019;
- our Current Report on Form 8-K, filed with the SEC on May 20, 2019; and
- the description of our securities contained in our Registration Statement on Form 8-A filed on April 18, 2016 including any amendment or report filed for the purpose of updating such description.

In addition, all documents subsequently filed by us pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act prior to the termination of the offering will be deemed to be incorporated by reference into this prospectus.

You should rely only on the information contained in this prospectus, as updated and supplemented by any prospectus supplement, or that information to which this prospectus or any prospectus supplement has referred you by reference. We have not authorized anyone to provide you with any additional information.

Any statement contained in a document incorporated or deemed to be incorporated by reference herein will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained herein modifies or supersedes such statement. Any statement so modified or superseded will not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

You may request and obtain a copy of any of the filings incorporated herein by reference, at no cost, by writing or telephoning us at the following address or phone number:

Cellectar Biosciences, Inc.
100 Campus Drive
Florham Park, New Jersey 07932
Attention: Chief Financial Officer (608) 441-8120

PROSPECTUS

2,018,000 SHARES OF COMMON STOCK
4,000,000 SHARES OF COMMON STOCK ISSUABLE UPON EXERCISE OF OUTSTANDING WARRANTS

We have not authorized any dealer, salesperson or other person to give any information or to make any representations not contained in this prospectus. You must not rely on any unauthorized information. This prospectus is not an offer to sell these securities in any jurisdiction where an offer or sale is not permitted. The information in this prospectus is current as of the date of this prospectus. You should not assume that this prospectus is accurate as of any other date.

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution

We estimate that expenses in connection with the distribution described in this registration statement (other than brokerage commissions, discounts or other expenses relating to the sale of the shares by the selling stockholders) will be as set forth below. We will pay all of the expenses with respect to the distribution, and such amounts, with the exception of the SEC registration fee is an estimate:

SEC registration fee	$	1,408
Accounting fees and expenses		10,000
Legal fees and expenses		30,000
Miscellaneous		4,000
Total	$	45,408

Item 14. Indemnification of Directors and Officers

Our charter contains provisions to indemnify our directors and officers to the maximum extent permitted by Delaware law. We believe that indemnification under our charter covers at least negligence on the part of an indemnified person. Our charter permits us to advance expenses incurred by an indemnified person in connection with the defense of any action or proceeding arising out of the person's status or service as our director, officer, employee or other agent upon an undertaking by the person to repay those advances if it is ultimately determined that the person is not entitled to indemnification.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable.

Item 15. Recent Sales of Unregistered Securities

2019 Private Placements

On May 16, 2019, we entered into a Securities Purchase Agreement with certain purchasers named therein (the "Purchasers"), pursuant to which issued and sold, in a registered offering directly to the Purchasers, an aggregate of 1,982,000 shares of Common Stock at an offering price of $2.50 per share. In a concurrent private placement, we issued to the Purchasers who participated in the registered offering, Series F warrants to purchase an aggregate of 1,982,000 shares of Common Stock at an exercise price of $2.40 per share. In a separate concurrent private placement transaction, we entered into a Private Placement Securities Purchase Agreement with the Purchasers, pursuant to which we agreed to issue to the Purchasers an aggregate of 2,018,000 shares of Common Stock together with Series G warrants to purchase an aggregate of up to 2,018,000 shares of Common Stock at an exercise price of $2.40 per share at an offering price of $2.50 per share. The shares of common stock, warrants and the shares of Common Stock issuable upon the exercise of the warrants were offered pursuant to the exemption provided in Section 4(a)(2) under the Securities Act, and Rule 506(b) promulgated thereunder.

2017 Private Placement

On October 12, 2017, we closed on a registered direct offering priced at-the-market, of 195,438 shares of our Common Stock and 41.0412949 shares of our Series B Preferred Stock. The Series B Preferred Stock was offered at $100,000 per share and was immediately convertible into approximately 5,337 shares of Common Stock for a total of 219,037 shares upon conversion at a price of $18.7375 per share. The Common Stock was offered at $18.7375 per share. Gross offering proceeds to us were $7.76 million. In a concurrent private placement, we offered purchasers in the registered direct offering Series D warrants to purchase an aggregate of 310,856 shares of common stock, or 0.75 shares of common stock for each share of common stock purchased directly or issuable upon conversion of shares of preferred stock. The Series B Preferred Stock is non-voting, has no dividend rights (except to the extent dividends are also paid on common stock), liquidation preference, or other preferences over common stock. The Series D warrants are immediately exercisable at an exercise price of $17.80 per share and expire seven years from the closing. The private placement of the Series D warrants was structured to comply with the requirements of Section 4(a)(2) under the Securities Act and Rule 506(b) promulgated thereunder.

2017 Grant to Employees

During the three months ended June 30, 2017, we issued 46,000 shares of restricted stock to members of our executive team, 14,667 of which have since been forfeited. The restricted stock was granted at a price of $21.00 per share, which was the closing price of the stock on the date of issuance, and vests in equal annual amounts over three years. The related expense will be amortized ratably over the vesting period. The restricted stock was issued in reliance on the exemption from registration provided in Section 4(a)(2) of the Securities Act, as amended, for transactions not involving any public offering. The restricted stock was subsequently registered pursuant to a reoffer prospectus on Form S-8 filed on November 9, 2017.

Item 16. Exhibits.

(a) Exhibits.

EXHIBIT INDEX

Exhibit No.	Description	Incorporated by Reference		
		Form	Filing Date	Exhibit No.
1.1	Private Placement Securities Purchase Agreement, dated as of May 16, 2019, by and among Cellectar Biosciences, Inc. Inc. and the Purchasers	8-K	May 20, 2019	1.1
2.1	Agreement and Plan of Merger by and among Novelos Therapeutics, Inc., Cell Acquisition Corp. and Cellectar, Inc. dated April 8, 2011	8-K	April 11, 2011	2.1
3.1	Second Amended and Restated Certificate of Incorporation	8-K	April 11, 2011	3.1
3.2	Certificate of Ownership and Merger of Cellectar Biosciences, Inc. with and into Novelos Therapeutics, Inc.	8-K	February 13, 2014	3.1
3.3	Certificate of Amendment to Second Amended and Restated Certificate of Incorporation	8-K	June 13, 2014	3.1
3.4	Certificate of Amendment to Second Amended and Restated Certificate of Incorporation	8-K	June 19, 2015	3.2
3.5	Certificate of Amendment to Second Amended and Restated Certificate of Incorporation	8-K	March 4, 2016	3.1
3.6	Certificate of Amendment to Second Amended and Restated Certificate of Incorporation	8-K	June 1, 2017	3.2
3.7	Certificate of Amendment of Second Amended and Restated Certificate of Incorporation	8-K	July 13, 2018	3.1
3.8	Amended and Restated By-laws	8-K	June 1, 2011	3.1
3.9	Form of Certificate of Designation of Series A Preferred Stock	S-1/A	November 18, 2016	3.7
3.10	Form of Certificate of Designation of Series B Preferred Stock	8-K	October 11, 2017	3.1
3.11	Form of Certificate of Designation of Series C Preferred Stock	S-1/A	July 18, 2018	3.11
4.1	Form of common stock certificate	S-1/A	November 9, 2011	4.1
4.2	Form of Series A Preferred Stock certificate	S-1/A	November 18, 2016	4.2
4.3	Form of Series B Preferred Stock certificate	8-K	October 11, 2017	4.2
4.4	Form of Series C Preferred Stock certificate	S-1/A	July 18, 2018	4.6
5.1*	Legal Opinion of Michael Best & Friedrich LLP			
10.1	2006 Stock Incentive Plan, as amended **	8-K	December 18, 2013	10.1
10.2	Form of Non-Statutory Stock Option under Novelos Therapeutics, Inc.'s 2006 Stock Incentive Plan**	8-K	December 15, 2006	10.2
10.3	Form of Convertible Debenture	8-K	February 10, 2014	4.1
10.4	Form of Warrant Agreement between Cellectar Biosciences, Inc. and American Stock Transfer and Trust Company	S-1/A	July 7, 2014	10.31
10.5	Form of Series B Pre-Funded Warrant	8-K	September 30, 2015	4.1
10.6	Registration Rights Agreement dated September 28, 2015	8-K	September 30, 2015	10.2
10.7	Amendment and Exchange Agreement dated April 13, 2016	S-1/A	April 14, 2016	10.43
10.8	Form of Series A Warrant	S-1/A	April 14, 2016	4.2
10.9	Form of Series B Pre-Funded Warrant	S-1/A	April 14, 2016	4.3
10.10	Form of Warrant Agency Agreement	S-1/A	April 14, 2016	4.4
10.11	Form of Series C Warrant	S-1/A	November 18, 2016	4.3
10.12	Form of Warrant Agency Agreement	S-1/A	November 18, 2016	4.4
10.13	Form of Restricted Common Stock Agreement**	10-Q	August 14, 2017	10.1

10.14	Securities Purchase Agreement, dated as of October 10, 2017, by and among Cellectar Biosciences, Inc. Inc. and the Purchasers	8-K	October 11, 2017	10.1
10.15	Form of Series D Common Stock Purchase Warrant	8-K	October 11, 2017	4.1
10.16	Registration Rights Agreement, dated as of October 10, 2017, by and among Cellectar Biosciences, Inc. Inc. and the Purchasers	8-K	October 11, 2017	10.2
10.17	Form of Non-Statutory Stock Option**	S-8	November 9, 2017	10.2
10.18	Stock Option Agreement with James V. Caruso**	S-8	November 9, 2017	10.4
10.19	Stock Option Agreement with Jarrod Longcor**	S-8	November 9, 2017	10.5
10.20	Master Services Agreement for Clinical Research and Related Services between the Company and INC Research, LLC dated October 6, 2016*			
10.21	Cellectar Biosciences, Inc. Amended and Restated 2015 Stock Incentive Plan**	8-K	June 1, 2018	10.1
10.22	Form of Underwriting Agreement	S-1/A	July 18, 2018	1.1
10.23	Series E Common Stock Purchase Warrant	S-1/A	July 18, 2018	4.5
10.24	Form of Warrant Agency Agreement	S-1/A	July 18, 2018	4.7
10.25	Agreement of Lease between the Company and KBS II 100-200 Campus Drive, LLC	S-1/A	July 18, 2018	10.35
10.26	Form of Non-Statutory Stock Option (Definitive/Contingent – Employees)**	10-Q	November 13, 2018	10.3
10.27	Form of Non-Statutory Stock Option (Definitive/Contingent – Directors)**	10-Q	November 13, 2018	10.4
10.28	Amended and Restated Employment Agreement between Company and James V. Caruso dated April 15, 2019**	8-K	April 19, 2019	10.1
10.29	Amended and Restated Employment Agreement between Company and Jarrod Longcor dated April 15, 2019**	8-K	April 19, 2019	10.2
10.30	Securities Purchase Agreement, dated as of May 16, 2019, by and among Cellectar Biosciences, Inc. and the Purchasers	8-K	May 20, 2019	10.1
10.31	Private Placement Securities Purchase Agreement, dated as of May 16, 2019, by and among Cellectar Biosciences, Inc. and the Purchasers	8-K	May 20, 2019	10.2
10.32	Registration Rights Agreement, dated as of May 16, 2019, by and among Cellectar Biosciences, Inc. and the Purchasers	8-K	May 20, 2019	10.3
10.33	Form of Series F Common Stock Purchase Warrant	8-K	May 20, 2019	4.1
10.34	Form of Series G Common Stock Purchase Warrant	8-K	May 20, 2019	4.2
21.1*	List of Subsidiaries			
23.1*	Consent of Michael Best & Friedrich LLP (included in Exhibit 5.1)			
23.2*	Consent of Baker Tilly Virchow Krause, LLP			
24.1*	Powers of Attorney (included on signature page)			

* Filed herewith.
** Compensatory contract or arrangement.

(b) Financial Statement Schedules.

Financial statement schedules have been omitted, as the information required to be set forth therein is included in the consolidated financial statements or notes thereto appearing in the prospectus made part of this registration statement.

Item 17. Undertakings.

(a) The undersigned registrant hereby undertakes:

1. To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

   (i) To include any prospectus required by section 10(a)(3) of the Securities Act of 1933;

   (ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement.

2. That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

3. To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

4. That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to the offering shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

5. That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities: The undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;

(ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;

(iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and

(iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

(b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to section 13(a) or section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(c) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-1 and has duly caused this amendment to the registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Florham Park, State of New Jersey, on May 31, 2019.

CELLECTAR BIOSCIENCES, INC.

By: /s/ James V. Caruso
James V. Caruso
President and Chief Executive Officer

POWER OF ATTORNEY

We, the undersigned officers and directors of Cellectar Biosciences, Inc., hereby severally constitute and appoint James V. Caruso and Charles T. Bernhardt, and each of them singly (with full power to each of them to act alone), our true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution in each of them for him and in his name, place and stead, and in any and all capacities, to sign for us and in our names in the capacities indicated below any and all amendments (including post-effective amendments) to this registration statement (or any other registration statement for the same offering that is to be effective upon filing pursuant to Rule 462(b) under the Securities Act of 1933, as amended), and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite or necessary to be done in and about the premises, as full to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or any of them, or their or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Signature	Title	Date
/s/ James V. Caruso James V. Caruso	Chief Executive Officer and Director (*principal executive officer*)	May 31, 2019
/s/ Charles T. Bernhardt Charles T. Bernhardt	Interim Chief Financial Officer (*principal financial officer and principal accounting officer*)	May 31, 2019
/s/ Frederick W. Driscoll Frederick W. Driscoll	Director	May 31, 2019
/s/ Stephen A. Hill Stephen A. Hill	Director	May 31, 2019
/s/ Stefan D. Loren Stefan D. Loren, Ph.D.	Director	May 31, 2019
/s/ John Neis John Neis	Director	May 31, 2019
/s/ Douglas J. Swirsky Douglas J. Swirsky	Director	May 31, 2019

Exhibit 5.1

Michael Best & Friedrich LLP
Attorneys at Law

May 31, 2019

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

Ladies and Gentlemen:

We have acted as counsel to Cellectar Biosciences, Inc., a Delaware corporation (the "Company"), in connection with the registration statement on Form S-1 (the "Registration Statement"), filed with the Securities and Exchange Commission (the "Commission") under the Securities Act of 1933, as amended (the "Act"), as to the offering by the Company (i) of 2,018,000 shares (the "Common Shares") of the Company's common stock, $0.00001 par value per share ("Common Stock") and (ii) 4,000,000 shares of the Company's Common Stock (the "Warrant Shares" and together with the Common Shares, the "Shares") that may be issued upon the exercise of certain outstanding warrants to purchase Common Stock issued by the Company on May 20, 2019 to the selling stockholders identified in the Registration Statement (the "Selling Stockholders"). The Shares are to be sold by the Selling Stockholders pursuant to the prospectus filed with the Registration Statement (the "Prospectus").

You have requested our opinion with respect to the matters set forth below.

We are familiar with the Company's Second Amended and Restated Certificate of Incorporation, as amended, its Bylaws, as amended and restated and in the form appearing in the Company's minute books, and the records of meetings and consents of its Board of Directors and committees thereof and of its stockholders provided to us by the Company. In addition, we have examined and relied on the originals or copies certified or otherwise identified to our satisfaction of all such corporate records of the Company and such other instruments and other certificates of public officials, officers and representatives of the Company and such other persons, and we have made such investigations of law, as we have deemed appropriate as a basis for the opinions expressed below.

We express no opinion as to the laws of any state or jurisdiction other than the General Corporation Law of the State of Delaware (including applicable provisions of the Delaware Constitution and reported judicial decisions interpreting such Law and such Constitution) and the federal laws of the United States of America.

Based upon and subject to the foregoing, it is our opinion that:

1. The issuance, offer and sale of the Shares, as described in the Registration Statement, have been duly authorized by all necessary corporate action on the part of the Company.

2. The Shares, when issued, sold and delivered in the manner and for the consideration set forth in the Prospectus, will be validly issued, fully paid and non-assessable.

We consent to the filing of this opinion as an exhibit to the Registration Statement and to the reference to us under the heading "Legal Matters" in the Prospectus. In giving such consent, we do not hereby admit that we are in the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the Securities and Exchange Commission.

This opinion letter is given as of the date hereof, and we express no opinion as to the effect of subsequent events or changes in law occurring or becoming effective after the date hereof. We assume no obligation to update this opinion letter or otherwise advise you with respect to any facts or circumstances or changes in law that may hereafter occur or come to our attention (even though the change may affect the legal conclusions stated in this opinion letter).

Very truly yours,

MICHAEL BEST & FRIEDRICH LLP

/s/ Michael Best & Friedrich LLP

Exhibit 21.1

CELLECTAR BIOSCIENCES, INC.
LIST OF SUBSIDIARIES

Set forth below is a list of the subsidiaries of Cellectar Biosciences, Inc.:

Subsidiary Name	**Jurisdiction of Organization**
Cellectar, Inc.	Wisconsin

Exhibit 23.2

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the use in this Registration Statement on Form S-1 of Cellectar Biosciences, Inc. and Subsidiary (the "Company") of our report dated February 26, 2019, which includes an explanatory paragraph as to the Company's ability to continue as a going concern, with respect to our audit of the consolidated financial statements of Cellectar Biosciences, Inc. and Subsidiary for the years ended December 31, 2018 and 2017 which are incorporated by reference in this Registration Statement. We also consent to the reference to us under the heading "Experts" in such Registration Statement.

Baker Tilly Virchow Krause, LLP

Madison, Wisconsin
May 31, 2019