



1,500,000 SHARES OF COMMON STOCK

OFFERED BY SELLING STOCKHOLDERS

This prospectus supplement relates to the resale of up to 1,500,000 shares of our common stock issuable upon the exercise of outstanding warrants to purchase common stock. We are not selling any shares of our common stock under this prospectus supplement and will not receive any proceeds from the sale of shares by the selling stockholders. 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 supplement 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 supplement 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 December 17, 2015, the last reported sale price of our common stock on the NASDAQ Capital Market was \$0.87 per share.

Investing in our securities involves a high degree of risk. See "Risk Factors" on page S-4 of this prospectus supplement 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 supplement. Any representation to the contrary is a criminal offense.

The date of this prospectus supplement is December 18, 2015.

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ABOUT THIS PROSPECTUS SUPPLEMENT

This document is part of a registration statement that we have filed with the Securities and Exchange Commission (the “SEC”) utilizing a shelf registration process. Using the shelf registration process, the selling stockholders may, from time to time, offer and sell shares of our common stock pursuant to this prospectus supplement. You should not assume that the information contained in this prospectus supplement is accurate on any date subsequent to the date set forth on the front of the document or that any information we have incorporated by reference is correct on any date subsequent to the date of the document incorporated by reference, even though this prospectus supplement is delivered or securities are sold on a later date. It is important for you to read and consider all information contained in this prospectus supplement, including the documents incorporated by reference therein, in making your investment decision. You should also read and consider the information in the documents to which we have referred you under the caption “Where You Can Find More Information” in the prospectus.

We have not authorized any dealer, salesman or other person to give any information or to make any representation other than those contained or incorporated by reference in this prospectus supplement. You must not rely upon any information or representation not contained or incorporated by reference in this prospectus supplement. This prospectus supplement does not constitute an offer to sell or the solicitation of an offer to buy any securities other than the registered securities to which it relates, nor does this prospectus supplement constitute an offer to sell or the solicitation of an offer to buy securities in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction.

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

SUMMARY

This section contains a general summary of the information contained in this prospectus supplement. It may not include all of the information that is important to you. You should read the entire prospectus, any accompanying prospectus supplement and the documents incorporated by reference before making an investment decision.

Overview

Cellectar Biosciences, Inc. (the Company) is a biopharmaceutical company developing phospholipid ether-drug conjugates (PDCs) for the treatment and diagnostic imaging of cancer. Our PDC platform is based on our cancer-targeting and delivery technology which provides selective delivery of a diverse range of oncologic payloads to cancer cells and cancer stem cells. By linking various payloads to our proprietary phospholipid ether cancer-targeting vehicle, we believe we can create PDCs with the potential to provide highly targeted delivery of chemotherapeutic and radiotherapeutic payloads to a broad range of cancers. As a result, our PDC platform has the potential to improve the therapeutic index of payloads by minimizing delivery to healthy cells while enhancing delivery to a broad range of cancers.

The Company currently has several product candidates in development, all based on the Company's proprietary PDC delivery platform, including:

- CLR 131 is a small-molecule, broad-spectrum, cancer-targeting radiotherapeutic PDC that is designed to deliver cytotoxic (cell-killing) radiation directly and selectively to cancer cells and cancer stem cells. I-131-CLR1404 is our lead PDC therapeutic product candidate and is currently being evaluated in a phase I study in relapse/refractory multiple myeloma. Multiple myeloma is an incurable cancer of plasma cells. This indication was selected for clinical and business related reasons including multiple myeloma's highly radiosensitive nature, clear unmet medical need in the relapse/refractory setting and orphan drug designation. The Investigational New Drug (IND) application was accepted by the U.S. Food and Drug Administration (FDA) in March 2014. In December 2014, the FDA granted orphan drug designation for CLR 131 for the treatment of multiple myeloma. We initiated the phase I study in April of this year and anticipate evaluating our first cohort and initiating the second cohort in the first half of 2016. The primary goals of the phase I study are to assess the compound's safety, identify a phase II dose, and possibly obtain an early evaluation of low dose efficacy.
- CLR 1601-PTX and CLR 1603-PTX are small-molecule, broad-spectrum, cancer-targeting therapeutic PDCs designed to deliver paclitaxel, a chemotherapeutic payload, selectively and directly to cancer cells and cancer stem cells. The Company is exploring the creation of additional PDCs which incorporate other well-known chemotherapeutic payloads under its CLR CTX Chemotherapeutic PDC program. All chemotherapeutic PDCs are pre-clinical, and we are developing in vitro and in vivo data to demonstrate the stability and efficacy of these PDCs.
- CLR 124 is a small-molecule, broad-spectrum, cancer-targeting positron emission tomography (PET) imaging PDC that we believe has the potential to be the first of its kind for the selective detection of tumors and metastases in a broad range of cancers. CLR 124 has been used for PET/CT imaging in a broad array of tumor types via both Company and investigator-sponsored clinical trials, and we are in the process of evaluating the data from those studies. In April 2014, the FDA granted CLR 124 orphan status as a diagnostic for the management of glioma.
- CLR 1502 is a small-molecule, broad-spectrum cancer-targeting, NIR-fluorophore optical imaging PDC for intraoperative tumor and tumor margin illumination. This past June, after review of the Company's IND application, the FDA determined that CLR 1502 will be evaluated as a combination product and assigned to the Center for Devices and Radiological Health (CDRH). As a result of this classification, the FDA has advised Cellectar that it will need to submit a new investigational application for the combination product prior to initiating its phase I study in breast cancer surgery. As a result, Cellectar is identifying the optimal clinical development pathway. Based on our assessment, the Company believes that product will be similarly treated post marketing approval regardless of regulatory pathway.

We believe our PDC platform has 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 and diagnostic imaging of a broad range of human cancers.

Corporate Information

Our headquarters and manufacturing operation is located at 3301 Agriculture Drive, Madison, Wisconsin 53716. 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 supplement.

Recent Developments

On October 1, 2015, pursuant to a securities purchase agreement, we issued Series A warrants to purchase an aggregate of 1,500,000 shares of common stock (the “Series A Warrants”) at an exercise price of \$2.83 per share in a private placement (the “Private Placement”), which warrants become exercisable on April 1, 2016 and expire on April 1, 2021. We concurrently sold 1,017,272 shares of our common stock at an offering price of \$2.20 per share and Series B pre-funded warrants to purchase an aggregate of 482,728 shares of common stock pursuant to a shelf registration statement on Form S-3 (the “Public Offering and, together with the Private Placement, the “Offerings”). The gross proceeds of the Offerings was \$3,300,000 before expenses, estimated to be approximately \$417,500. Pursuant to the terms of a placement agency agreement, we paid Ladenburg Thalmann & Co. Inc. (“Ladenburg”) a fee equal to 7.5% on aggregate gross proceeds, excluding the proceeds, if any, from the exercise of the Series A Warrants, and to issue to Ladenburg a warrant to purchase up to 37,500 shares of our common stock at an adjusted exercise price of \$2.83 per share.

The Offering

<i>Shares of common stock offered by us:</i>	None
<i>Shares of common stock offered by the selling stockholders:</i>	1,500,000 shares issuable upon the exercise of outstanding warrants to purchase common stock
<i>Shares of common stock outstanding before this offering, assuming no exercise of the Series A Warrants:</i>	8,581,405 shares
<i>Shares of common stock outstanding after completion of this offering, assuming full exercise of the Series A Warrants:</i>	10,081,405 shares
<i>Use of Proceeds:</i>	We will not receive any proceeds from the resale of the shares of common stock by the selling stockholders.
<i>Risk Factors:</i>	See “Risk Factors” on page S-4 and the other information included in this prospectus supplement for a discussion of factors you should carefully consider before deciding whether to purchase our securities.
<i>NASDAQ symbol for our common stock:</i>	CLRB

Unless we specifically state otherwise, the share information in this prospectus supplement, including the number of shares of common stock outstanding before this offering, is as of December 11, 2015 and reflects or assumes no exercise of outstanding options or warrants to purchase shares of our common stock.

The number of shares of our common stock outstanding before and after this offering is based on 8,581,405 shares of common stock outstanding as of December 11, 2015 and excludes, as of that date:

- the 1,500,000 shares issuable upon exercise of the Series A Warrants and offered hereby;
- an aggregate of 788,383 shares of common stock issuable upon the exercise of outstanding stock options issued to employees, directors and consultants;
- an aggregate of 986,649 additional shares of common stock reserved for future issuance under our 2015 Stock Incentive Plan;
- an aggregate of 482,728 additional shares of common stock issuable upon the exercise of Series B pre-funded warrants issued on October 1, 2015; and
- an aggregate of 6,597,483 additional shares of common stock reserved for issuance under outstanding warrant agreements having expiration dates between December 31, 2015 and August 20, 2019, and exercise prices ranging from \$2.20 per share to \$2,019.60 per share.

RISK FACTORS

Prior to making an investment decision, prospective investors should carefully consider, in light of their particular investment objectives and financial circumstances, the specific factors set forth under the caption “Risk Factors” in the applicable prospectus supplement pertaining thereto and in our most recent annual report on Form 10-K/A and any subsequent quarterly reports on Form 10-Q filed with the SEC, as well as any amendments thereto reflected in subsequent filings with the SEC, and in any of our other filings with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, or the Exchange Act, incorporated by reference into this prospectus supplement and any other applicable prospectus supplement. For more information, see “Where You Can Find More Information” and “Incorporation of Certain Information by Reference.”

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement and the documents incorporated by reference in this prospectus supplement, contain forward-looking statements. You should carefully consider the various risk factors described above that are incorporated by reference into this prospectus supplement from our SEC filings, which risk factors may cause our actual results to differ materially from those indicated by such forward-looking statements. You should not place undue reliance on our forward-looking statements.

USE OF PROCEEDS

All proceeds from the resale of the shares of our common stock offered by this prospectus supplement 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 supplement. However, we will receive proceeds upon any cash exercise of the Series A Warrants, the underlying shares of which are offered by this prospectus supplement. If the Series A Warrants are all exercised for cash, we will receive gross proceeds of approximately \$4,245,000. We intend to use any proceeds from any such exercise to fund our research and development activities and for general corporate purposes. There is no assurance that the Series A Warrants will ever be exercised.

SELLING STOCKHOLDERS

This prospectus supplement relates to the offering by the selling stockholders of up to 1,500,000 shares of common stock issuable upon exercise of warrants.

The following table sets forth, based on information provided to us by the selling stockholders or known to us, the name of the selling stockholders, the nature of any position, office or other material relationship, if any, which the selling stockholders have had, within the past three years, with us or with any of our predecessors or affiliates, and the number of shares of our common stock beneficially owned by the selling stockholders before this offering, in each case as of December 11, 2015. The number of shares owned are those beneficially owned, as determined under the rules of the SEC, and the information is not necessarily indicative of beneficial ownership for any other purpose. Under these rules, beneficial ownership includes any shares of common stock as to which a person has sole or shared voting power or investment power and any shares of common stock which the person has the right to acquire within 60 days through the exercise of any option, warrant or right, through conversion of any security or pursuant to the automatic termination of a power of attorney or revocation of a trust, discretionary account or similar arrangement. No selling stockholder is a broker-dealer or an affiliate of a broker-dealer.

We have assumed all shares of common stock reflected on the table will be sold from time to time in the offering covered by this prospectus supplement. Because the selling stockholders may offer all or any portions of the shares of common stock listed in the table below, no estimate can be given as to the amount of those shares of common stock covered by this prospectus supplement that will be held by the selling stockholders upon the termination of the offering. As of December 11, 2015, there were 8,581,405 shares of our common stock issued and outstanding.

Selling Stockholder	Number of Shares Beneficially Owned Before Offering (1)	Number of Shares Offered (1)	Number of Shares Beneficially Owned After Offering (1)	Percentage of Shares Beneficially Owned After Offering (1)
Lincoln Park Capital Fund LLC (2)	53,281	636,364	53,281	4.99%
Sabby Healthcare Master Fund, Ltd. (2)	926,273	424,242	926,273	4.99%
Sabby Volatility Warrant Master Fund, Ltd. (2)	340,472	212,122	340,472	4.99%
Greenway Properties, Inc. (2)	2,163,558	227,272	2,163,558	24.7%

(1) The Series A Warrants do not become exercisable until April 1, 2016. Because that date is more than 60 days from the date of this prospectus supplement, the shares of common stock offered hereby, which are issuable upon exercise of the Series A Warrants, are not included in the number of shares beneficially owned before or after the offering, or in the calculation of the percentage of shares beneficially owned after the offering.

(2) Based on information provided by Selling Stockholder.

PLAN OF DISTRIBUTION

Each selling stockholder (the “Selling Stockholders”) of the securities 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 Stock 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 under the Securities Act, if available, rather than under this prospectus supplement.

Broker-dealers engaged by the Selling Stockholders may arrange for other brokers-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 prospectus supplement, 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 supplement, which securities such broker-dealer or other financial institution may resell pursuant to this prospectus supplement.

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 keep the shelf registration statement 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 supplement 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 supplement available to the Selling Stockholders and have informed them of the need to deliver a copy of this prospectus supplement to each purchaser at or prior to the time of the sale (including by compliance with Rule 172 under the Securities Act).

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The Securities and Exchange Commission allows us to incorporate by reference information into this prospectus supplement. 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 supplement, except for any information that is superseded by information that is included directly in this prospectus supplement or incorporated by reference subsequent to the date of this prospectus supplement. We do not incorporate the contents of our website into this prospectus supplement. We incorporate by reference the filed documents listed below, except as superseded, supplemented or modified by this prospectus supplement, and any future filings we will make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act until the selling stockholders sell all of our securities registered under this prospectus supplement:

- our Annual Report on Form 10-K/A for the fiscal year ended December 31, 2014 filed on May 20, 2015;
- our Quarterly Report on Form 10-Q for the quarter ended March 31, 2015 filed on May 20, 2015;
- our Quarterly Report on Form 10-Q for the quarter ended June 30, 2015 filed on August 12, 2015;
- our Quarterly Report on Form 10-Q for the quarter ended September 30, 2015 filed on November 12, 2015;
- our Definitive Proxy Statement on Schedule 14A for our 2015 annual meeting of stockholders, filed with the SEC on April 22, 2015;

- our Definitive Proxy Statement on Schedule 14A for a special meeting of stockholders, filed with the SEC on October 28, 2015;
- our Current Report on Form 8-K for the event date of May 14, 2015, filed with the SEC on May 18, 2015;
- our Current Report on Form 8-K for the event date of June 9, 2015 filed on June 11, 2015;
- our Current Report on Form 8-K for the event date of June 15, 2015 filed on June 16, 2015;
- our Current Report on Form 8-K for the event date of June 15, 2015 filed on June 19, 2015;
- our Current Report on Form 8-K for the event date of July 1, 2015 filed on July 8, 2015;
- our Current Report on Form 8-K for the event date of July 28, 2015 filed on July 31, 2015;
- our Current Report on Form 8-K for the event date of August 14, 2015 filed on August 19, 2015;
- our Current Report on Form 8-K for the event date of September 28, 2015 filed on September 30, 2015;
- our Current Report on Form 8-K for the event date of November 30, 2015 filed on December 1, 2015;
- our Current Report on Form 8-K for the event date of December 14, 2015 filed on December 17, 2015; and
- the description of our securities contained in our Registration Statement on Form 8-A filed on August 14, 2014, including any amendment or report filed for the purpose of updating such description.

In addition, we incorporate by reference all documents that we may file with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act on or after (1) the date of the initial registration statement and prior to the effectiveness of the registration statement and (2) the date of effectiveness of the registration statement until the date on which this registration statement has been withdrawn. These documents will become a part of this prospectus supplement from the date that the documents are filed with the SEC. These documents include periodic reports, such as annual reports on Form 10-K, quarterly reports on Form 10-Q and current reports on Form 8-K, excluding any information filed or furnished pursuant to Item 2.02, Item 7.01 or Item 9.01 and excluding any information furnished pursuant to Item 8.01 of any current report on Form 8-K solely for purposes of satisfying the requirements of Regulation FD under the Exchange Act, unless such Form 8-K expressly provides to the contrary.

Upon oral or written request and at no cost to the requester, we will provide to each person, including any beneficial owner, to whom a prospectus is delivered, a copy of any or all of the information that has been incorporated by reference in this prospectus supplement but not delivered with this prospectus supplement. You may request copies of these filings, at no cost, by writing to us at Cellectar Biosciences, Inc., 3301 Agriculture Drive, Madison, WI 53716, Attention: Chief Financial Officer.

This prospectus supplement is part of a registration statement on Form S-3 that we filed with the SEC under the Securities Act. This prospectus supplement does not contain all of the information contained in the registration statement. For further information about us and our securities, you should read the prospectus and the exhibits filed with the registration statement, as well as all prospectus supplements.

WHERE YOU CAN FIND MORE INFORMATION

We are a reporting company and file annual, quarterly and special reports, and other information with the Securities and Exchange Commission. Copies of the reports and other information may be read and copied at the SEC's Public Reference Room at 100 F Street NE, Washington, D.C. 20549. You can request copies of such documents by writing to the SEC and paying a fee for the copying cost. You may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC maintains a web site at <http://www.sec.gov> that contains reports, proxy and information statements and other information regarding registrants that file electronically with the SEC.

LEGAL MATTERS

The validity of the securities being offered by this prospectus supplement has been passed upon for us by Foley Hoag LLP, Boston, Massachusetts.

EXPERTS

The audited financial statements incorporated by reference in this prospectus supplement and elsewhere in the registration statement have been so incorporated by reference in reliance upon the report of Grant Thornton LLP, independent registered public accountants, upon the authority of said firm as experts in accounting and auditing.

PROSPECTUS

SUBJECT TO COMPLETION, DATED NOVEMBER 24, 2015



1,500,000 SHARES OF COMMON STOCK

OFFERED BY SELLING STOCKHOLDERS

This prospectus relates to the resale of up to 1,500,000 shares of our common stock issuable upon the exercise of outstanding warrants to purchase common stock. 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. 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 November 19, 2015, the last reported sale price of our common stock on the NASDAQ Capital Market was \$1.26 per share.

Investing in our securities involves a high degree of risk. See "Risk Factors" on page 4 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 , 2015.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we have filed with the Securities and Exchange Commission (the “SEC”) utilizing a shelf registration process. Using the shelf registration process, the selling stockholders may, from time to time, offer and sell shares of our common stock pursuant to this prospectus. You should not assume that the information contained in this prospectus is accurate on any date subsequent to the date set forth on the front of the document or that any information we have incorporated by reference is correct on any date subsequent to the date of the document incorporated by reference, even though this prospectus is delivered or securities are sold on a later date. It is important for you to read and consider all information contained in this prospectus, including the documents incorporated by reference therein, in making your investment decision. You should also read and consider the information in the documents to which we have referred you under the caption “Where You Can Find More Information” in the prospectus.

We have not authorized any dealer, salesman or other person to give any information or to make any representation other than those contained or incorporated by reference in this prospectus. You must not rely upon any information or representation not contained or incorporated by reference in this prospectus. This prospectus does not constitute an offer to sell or the solicitation of an offer to buy any securities other than the registered securities to which it relates, nor does this prospectus constitute an offer to sell or the solicitation of an offer to buy securities in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction.

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 Collectar Biosciences, Inc., a Delaware corporation.

PROSPECTUS SUMMARY

This section contains a general summary of the information contained in this prospectus. It may not include all of the information that is important to you. You should read the entire prospectus, any accompanying prospectus supplement and the documents incorporated by reference before making an investment decision.

Overview

Cellectar Biosciences, Inc. (the Company) is a biopharmaceutical company developing phospholipid ether-drug conjugates (PDCs) for the treatment and diagnostic imaging of cancer. Our PDC platform is based on our cancer-targeting and delivery technology which provides selective delivery of a diverse range of oncologic payloads to cancer cells and cancer stem cells. By linking various payloads to our proprietary phospholipid ether cancer-targeting vehicle, we believe we can create PDCs with the potential to provide highly targeted delivery of chemotherapeutic and radiotherapeutic payloads to a broad range of cancers. As a result, our PDC platform has the potential to improve the therapeutic index of payloads by minimizing delivery to healthy cells while enhancing delivery to a broad range of cancers.

The Company currently has several product candidates in development, all based on the Company's proprietary PDC delivery platform, including:

- CLR 131 is a small-molecule, broad-spectrum, cancer-targeting radiotherapeutic PDC that is designed to deliver cytotoxic (cell-killing) radiation directly and selectively to cancer cells and cancer stem cells. I-131-CLR1404 is our lead PDC therapeutic product candidate and is currently being evaluated in a phase I study in relapse/refractory multiple myeloma. Multiple myeloma is an incurable cancer of plasma cells. This indication was selected for clinical and business related reasons including multiple myeloma's highly radiosensitive nature, clear unmet medical need in the relapse/refractory setting and orphan drug designation. The Investigational New Drug (IND) application was accepted by the U.S. Food and Drug Administration (FDA) in March 2014. In December 2014, the FDA granted orphan drug designation for CLR 131 for the treatment of multiple myeloma. We initiated the phase I study in April of this year and anticipate evaluating our first cohort and initiating the second cohort in the first half of 2016. The primary goals of the phase I study are to assess the compound's safety, identify a phase II dose, and possibly obtain an early evaluation of low dose efficacy.
- CLR 1601-PTX and CLR 1603-PTX are small-molecule, broad-spectrum, cancer-targeting therapeutic PDCs designed to deliver paclitaxel, a chemotherapeutic payload, selectively and directly to cancer cells and cancer stem cells. The Company is exploring the creation of additional PDCs which incorporate other well-known chemotherapeutic payloads under its CLR CTX Chemotherapeutic PDC program. All chemotherapeutic PDCs are pre-clinical, and we are developing in vitro and in vivo data to demonstrate the stability and efficacy of these PDCs.
- CLR 124 is a small-molecule, broad-spectrum, cancer-targeting positron emission tomography (PET) imaging PDC that we believe has the potential to be the first of its kind for the selective detection of tumors and metastases in a broad range of cancers. CLR 124 has been used for PET/CT imaging in a broad array of tumor types via both Company and investigator-sponsored clinical trials, and we are in the process of evaluating the data from those studies. In April 2014, the FDA granted CLR 124 orphan status as a diagnostic for the management of glioma.
- CLR 1502 is a small-molecule, broad-spectrum cancer-targeting, NIR-fluorophore optical imaging PDC for intraoperative tumor and tumor margin illumination. This past June, after review of the Company's IND application, the FDA determined that CLR 1502 will be evaluated as a combination product and assigned to the Center for Devices and Radiological Health (CDRH). As a result of this classification, the FDA has advised Cellectar that it will need to submit a new investigational application for the combination product prior to initiating its phase I study in breast cancer surgery. As a result, Cellectar is identifying the optimal clinical development pathway. Based on our assessment, the Company believes that product will be similarly treated post marketing approval regardless of regulatory pathway.

We believe our PDC platform has 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 and diagnostic imaging of a broad range of human cancers.

Corporate Information

Our headquarters and manufacturing operation is located at 3301 Agriculture Drive, Madison, Wisconsin 53716. 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.

Recent Developments

On October 1, 2015, pursuant to a securities purchase agreement, we issued Series A warrants to purchase an aggregate of 1,500,000 shares of common stock (the “Series A Warrants”) at an exercise price of \$2.83 per share in a private placement (the “Private Placement”), which warrants become exercisable on April 1, 2016 and expire on April 1, 2021. We concurrently sold 1,017,272 shares of our common stock at an offering price of \$2.20 per share and Series B pre-funded warrants to purchase an aggregate of 482,728 shares of common stock pursuant to a shelf registration statement on Form S-3 (the “Public Offering and, together with the Private Placement, the “Offerings”). The gross proceeds of the Offerings was \$3,300,000 before expenses, estimated to be approximately \$417,500. Pursuant to the terms of a placement agency agreement, we paid Ladenburg Thalmann & Co. Inc. (“Ladenburg”) a fee equal to 7.5% on aggregate gross proceeds, excluding the proceeds, if any, from the exercise of the Series A Warrants, and to issue to Ladenburg a warrant to purchase up to 37,500 shares of our common stock at an adjusted exercise price of \$2.83 per share.

The Offering

<i>Shares of common stock offered by us:</i>	None
<i>Shares of common stock offered by the selling stockholders:</i>	1,500,000 shares issuable upon the exercise of outstanding warrants to purchase common stock
<i>Shares of common stock outstanding before this offering, assuming no exercise of the Series A Warrants:</i>	8,581,405 shares
<i>Shares of common stock outstanding after completion of this offering, assuming full exercise of the Series A Warrants:</i>	10,081,405 shares
<i>Use of Proceeds:</i>	We will not receive any proceeds from the resale of the shares of common stock by the selling stockholders.
<i>Risk Factors:</i>	See “Risk Factors” on page 4 and the other information included in this prospectus for a discussion of factors you should carefully consider before deciding whether to purchase our securities.
<i>NASDAQ symbol for our common stock:</i>	CLRB

Unless we specifically state otherwise, the share information in this prospectus, including the number of shares of common stock outstanding before this offering, is as of November 19, 2015 and reflects or assumes no exercise of outstanding options or warrants to purchase shares of our common stock.

The number of shares of our common stock outstanding before and after this offering is based on 8,581,405 shares of common stock outstanding as of November 19, 2015 and excludes, as of that date:

- the 1,500,000 shares issuable upon exercise of the Series A Warrants and offered hereby;
- an aggregate of 788,383 shares of common stock issuable upon the exercise of outstanding stock options issued to employees, directors and consultants;
- an aggregate of 986,649 additional shares of common stock reserved for future issuance under our 2015 Stock Incentive Plan;
- an aggregate of 482,728 additional shares of common stock issuable upon the exercise of Series B pre-funded warrants issued on October 1, 2015; and
- an aggregate of 6,597,483 additional shares of common stock reserved for issuance under outstanding warrant agreements having expiration dates between December 31, 2015 and August 20, 2019, and exercise prices ranging from \$2.20 per share to \$2,019.60 per share.

RISK FACTORS

Prior to making an investment decision, prospective investors should carefully consider, in light of their particular investment objectives and financial circumstances, the specific factors set forth under the caption “Risk Factors” in the applicable prospectus supplement pertaining thereto and in our most recent annual report on Form 10-K/A and any subsequent quarterly reports on Form 10-Q filed with the SEC, as well as any amendments thereto reflected in subsequent filings with the SEC, and in any of our other filings with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, or the Exchange Act, incorporated by reference into this prospectus and the applicable prospectus supplement. For more information, see “Where You Can Find More Information” and “Incorporation of Certain Information by Reference.”

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the documents incorporated by reference in this prospectus, contain forward-looking statements. You should carefully consider the various risk factors described above that are incorporated by reference into this prospectus from our SEC filings, which risk factors may cause our actual results to differ materially from those indicated by such forward-looking statements. You should not place undue reliance on our forward-looking statements.

USE OF PROCEEDS

All proceeds from the resale of the shares of our common stock 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 Series A Warrants, the underlying shares of which are offered by this prospectus. If the Series A Warrants are all exercised for cash, we will receive gross proceeds of approximately \$4,245,000. We intend to use any proceeds from any such exercise to fund our research and development activities and for general corporate purposes. There is no assurance that the Series A Warrants will ever be exercised.

SELLING STOCKHOLDERS

This prospectus relates to the offering by the selling stockholders of up to 1,500,000 shares of common stock issuable upon exercise of warrants.

The following table sets forth, based on information provided to us by the selling stockholders or known to us, the name of the selling stockholders, the nature of any position, office or other material relationship, if any, which the selling stockholders have had, within the past three years, with us or with any of our predecessors or affiliates, and the number of shares of our common stock beneficially owned by the selling stockholders before this offering, in each case as of November 19, 2015. The number of shares owned are those beneficially owned, as determined under the rules of the SEC, and the information is not necessarily indicative of beneficial ownership for any other purpose. Under these rules, beneficial ownership includes any shares of common stock as to which a person has sole or shared voting power or investment power and any shares of common stock which the person has the right to acquire within 60 days through the exercise of any option, warrant or right, through conversion of any security or pursuant to the automatic termination of a power of attorney or revocation of a trust, discretionary account or similar arrangement. No selling stockholder is a broker-dealer or an affiliate of a broker-dealer.

We have assumed all shares of common stock reflected on the table will be sold from time to time in the offering covered by this prospectus. Because the selling stockholders may offer all or any portions of the shares of common stock listed in the table below, no estimate can be given as to the amount of those shares of common stock covered by this prospectus that will be held by the selling stockholders upon the termination of the offering. As of November 19, 2015, there were 8,581,405 shares of our common stock issued and outstanding.

Selling Stockholder	Number of Shares Beneficially Owned Before Offering (1)	Number of Shares Offered (1)	Number of Shares Beneficially Owned After Offering (1)	Percentage of Shares Beneficially Owned After Offering (1)
Lincoln Park Capital Fund LLC (2)	53,281	636,364	53,281	4.99%
Sabby Healthcare Master Fund, Ltd. (2)	926,273	424,242	926,273	4.99%
Sabby Volatility Warrant Master Fund, Ltd. (2)	340,472	212,122	340,472	4.99%
Greenway Properties, Inc. (2)	2,163,558	227,272	2,163,558	24.7%

(1) The Series A Warrants do not become exercisable until April 1, 2016. Because that date is more than 60 days from the date of this prospectus, the shares of common stock offered hereby, which are issuable upon exercise of the Series A Warrants, are not included in the number of shares beneficially owned before or after the offering, or in the calculation of the percentage of shares beneficially owned after the offering.

(2) Based on information provided by Selling Stockholder.

PLAN OF DISTRIBUTION

Each selling stockholder (the “Selling Stockholders”) of the securities 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 Stock 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 under the Securities Act, if available, rather than under this prospectus.

Broker-dealers engaged by the Selling Stockholders may arrange for other brokers-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 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).

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The Securities and Exchange Commission 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 information that is included directly in this prospectus or incorporated by reference subsequent to the date of this prospectus. We do not incorporate the contents of our website into this prospectus. We incorporate by reference the filed documents listed below, except as superseded, supplemented or modified by this prospectus, and any future filings we will make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act until the selling stockholders sell all of our securities registered under this prospectus:

- our Annual Report on Form 10-K/A for the fiscal year ended December 31, 2014 filed on May 20, 2015;
- our Quarterly Report on Form 10-Q for the quarter ended March 31, 2015 filed on May 20, 2015;
- our Quarterly Report on Form 10-Q for the quarter ended June 30, 2015 filed on August 12, 2015;
- our Quarterly Report on Form 10-Q for the quarter ended September 30, 2015 filed on November 12, 2015;
- our Definitive Proxy Statement on Schedule 14A for our 2015 annual meeting of stockholders, filed with the SEC on April 22, 2015;

- our Definitive Proxy Statement on Schedule 14A for a special meeting of stockholders, filed with the SEC on October 28, 2015;
- our Current Report on Form 8-K for the event date of May 14, 2015, filed with the SEC on May 18, 2015;
- our Current Report on Form 8-K for the event date of June 9, 2015 filed on June 11, 2015;
- our Current Report on Form 8-K for the event date of June 15, 2015 filed on June 16, 2015;
- our Current Report on Form 8-K for the event date of June 15, 2015 filed on June 19, 2015;
- our Current Report on Form 8-K for the event date of July 1, 2015 filed on July 8, 2015;
- our Current Report on Form 8-K for the event date of July 28, 2015 filed on July 31, 2015;
- our Current Report on Form 8-K for the event date of August 14, 2015 filed on August 19, 2015;
- our Current Report on Form 8-K for the event date of September 28, 2015, filed with the SEC on September 30, 2015; and
- the description of our securities contained in our Registration Statement on Form 8-A filed on August 14, 2014, including any amendment or report filed for the purpose of updating such description.

In addition, we incorporate by reference all documents that we may file with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act on or after (1) the date of the initial registration statement and prior to the effectiveness of the registration statement and (2) the date of effectiveness of the registration statement until the date on which this registration statement has been withdrawn. These documents will become a part of this prospectus from the date that the documents are filed with the SEC. These documents include periodic reports, such as annual reports on Form 10-K, quarterly reports on Form 10-Q and current reports on Form 8-K, excluding any information filed or furnished pursuant to Item 2.02, Item 7.01 or Item 9.01 and excluding any information furnished pursuant to Item 8.01 of any current report on Form 8-K solely for purposes of satisfying the requirements of Regulation FD under the Exchange Act, unless such Form 8-K expressly provides to the contrary.

Upon oral or written request and at no cost to the requester, we will provide to each person, including any beneficial owner, to whom a prospectus is delivered, a copy of any or all of the information that has been incorporated by reference in this prospectus but not delivered with this prospectus. You may request copies of these filings, at no cost, by writing to us at Cellerar Biosciences, Inc., 3301 Agriculture Drive, Madison, WI 53716, Attention: Chief Financial Officer.

This prospectus is part of a registration statement on Form S-3 that we filed with the SEC under the Securities Act. This prospectus does not contain all of the information contained in the registration statement. For further information about us and our securities, you should read the prospectus and the exhibits filed with the registration statement, as well as all prospectus supplements.

WHERE YOU CAN FIND MORE INFORMATION

We are a reporting company and file annual, quarterly and special reports, and other information with the Securities and Exchange Commission. Copies of the reports and other information may be read and copied at the SEC's Public Reference Room at 100 F Street NE, Washington, D.C. 20549. You can request copies of such documents by writing to the SEC and paying a fee for the copying cost. You may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC maintains a web site at <http://www.sec.gov> that contains reports, proxy and information statements and other information regarding registrants that file electronically with the SEC.

LEGAL MATTERS

The validity of the securities being offered by this prospectus has been passed upon for us by Foley Hoag LLP, Boston, Massachusetts.

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 Grant Thornton LLP, independent registered public accountants, upon the authority of said firm as experts in accounting and auditing.



1,500,000 Shares of Common Stock

Prospectus Supplement

December 18, 2015
