Registration No. 333-

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

FORM S-3

REGISTRATION STATEMENT UNDER

THE SECURITIES ACT OF 1933

ARCTURUS THERAPEUTICS HOLDINGS INC.

(Exact name of registrant as specified in its charter)

Delaware (State or other jurisdiction of incorporation or organization) 32-0595345 (I.R.S. Employer Identification Number)

10628 Science Center Drive, Suite 250 San Diego, California 92121 (858) 900-2660

(Address, including zip code, and telephone number, including area code, of principal executive offices)

Joseph E. Payne Arcturus Therapeutics Holdings Inc. 10628 Science Center Drive, Suite 250 San Diego, California 92121 (858) 900-2660 (Name, address, including zip code, and telephone number, including area code, of agent for service)

> With a copy to: Jeffrey A. Baumel, Esq. Greg Carney, Esq. Dentons US LLP 1221 Avenue of the Americas New York, NY 10020-1089 Telephone: (212) 768-6700

Approximate date of commencement of proposed sale to the public: From time to time after this Registration Statement becomes effective.

If the only securities being registered on this form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

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, as amended, other than securities offered only in connection with dividend or interest reinvestment plans, 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. 🖾 File No. 333-232281

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. \Box

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

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. (Check one):

Large accelerated filer

Non-accelerated filer

 \boxtimes

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 13(a) of the Exchange Act.

CALCULATION OF REGISTRATION FEE

	Proposed	
	Maximum	
Title of Each Class of	Aggregate	Amount of
Securities to be Registered(1)	Offering Price	Registration Fee
Common Stock	—	
Preferred Stock	—	
Debt Securities	—	
Warrants	—	
Units	—	
Total(2):	\$4,000,000.00	\$519.20(3)

⁽¹⁾ The Registrant previously registered securities, including common stock, preferred stock, debt securities, warrants and units comprised of same, with an aggregate offering price of \$100,000,000 on a Registration Statement on Form S-3 (File No. 333-232281) filed by the Registrant on June 21, 2019, as amended on June 26, 2019 and declared effective by the Securities and Exchange Commission on July 29, 2019 (the "Registration Statement"). In accordance with Rule 462(b) under the Securities Act, an additional amount of securities, including common stock, preferred stock, warrants, debt securities and units comprised of same having a proposed maximum aggregate offering price of \$4,000,000.00 is hereby registered, representing no more than 20% of the maximum aggregate offering price of securities available for issuance under the Registration Statement. In no event will the maximum aggregate offering price of all securities issued pursuant to this Registration Statement exceed that registered under such registration statements. The securities registered also include such indeterminate number of shares of common stock and preferred stock and amount of debt securities as may be issued upon conversion of or exchange for preferred stock or debt securities that provide for conversion or exchange, upon exercise of warrants or pursuant to the anti-dilution provisions of any such securities.

(2) Consisting of some or all of the securities listed above, in any combination, including common stock, preferred stock, debt securities, warrants and units.

(3) The registration fee has been calculated in accordance with Rule 457(o) under the Securities Act.

EXPLANATORY NOTE AND INCORPORATION BY REFERENCE

This registration statement is being filed to register an additional \$4,000,000.00 of securities, including common stock, preferred stock, debt securities, warrants and units comprised of same, of Arcturus Therapeutics Holdings Inc., a Delaware corporation, pursuant to Rule 462(b) under the Securities Act of 1933, as amended and General Instruction IV of Form S-3 (the "Prior Registration Statement"). This registration statement incorporates by reference the contents of the registrant's registration statement on Form S-3 (File No. 333-232281), which was declared effective by the Commission on July 29, 2019, including all amendments and exhibits thereto and all information incorporated by reference therein, other than the exhibits filed herewith. The Company is filing this Registration Statement for the sole purpose of increasing the maximum aggregate offering amount of securities registered under the Prior Registration Statement by \$4,000,000.00.

The required opinion and consent is listed on an Exhibit Index attached hereto and filed herewith.

The registrant hereby certifies to the Commission that (i) it has instructed its bank to pay the Commission the filing fee set forth in the cover page of this registration statement by wire transfer of such amount to the Commission's account as soon as practicable (but no later than the close of business on April 16, 2020); (ii) it will not revoke such instruction; and (iii) it has sufficient funds in the relevant account to cover the amount of such filing fee.

EXHIBIT INDEX

Exhibit Title

Number

- 5.1 23.1
- <u>Opinion of Dentons US_LLP</u> <u>Consent of Independent Registered Public Accounting Firm</u> <u>Consent of Dentons US_LLP (included in Exhibit 5.1 hereto).</u> 23.2

24.1* Power of Attorney.

*Previously filed

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in City of San Diego, State of California on the 16th day of April, 2020.

ARCTURUS THERAPEUTICS HOLDINGS INC.

By: /s/ Joseph E. Payne

Joseph E. Payne Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Joseph E. Payne Joseph E. Payne	President and Chief Executive Officer (principal executive officer)	April 16, 2020
/s/ Padmanabh Chivukula* Dr. Padmanabh Chivukula	Chief Scientific Officer, Chief Operating Officer and Secretary	April 16, 2020
/s/Peter Farrell* Peter Farrell	Chairman of the Board	April 16, 2020
/s/ Andrew Sassine* Andrew Sassine	Chief Financial Officer (principal financial officer)	April 16, 2020
/s/ Magda Marquet* Magda Marquet	Director	April 16, 2020
/s/ James Barlow* James Barlow	Director	April 16, 2020
Edward Holmes	Director	April 16, 2020
/s/ Karah Parschauer* Karah Parschauer	Director	April 16, 2020
/s/ Keith Kummerfeld* /s/ Keith Kummerfeld*	Vice President of Finance and Corporate Controller (principal accounting officer)	April 16, 2020
*By: /s/ Joseph E. Payne	Attorney-in-Fact	April 16, 2020

Exhibit 5.1



Dentons US LLP 1221 Avenue of the Americas New York, NY 10020-1089 United States

Calans FMC SNR Denton McKenna Long dentons.com

April 16, 2020

Arcturus Therapeutics Holdings Inc. 10628 Science Center Drive, Suite 250 San Diego, California 92121

Re: Arcturus Therapeutics Holdings Inc., Registration Statement on Form S-3

Ladies and Gentlemen:

We have acted as counsel to Arcturus Therapeutics Holdings Inc., a Delaware corporation (the "Company"), in connection with the preparation and filing of a Registration Statement on Form S-3 (as amended or supplemented, the "Earlier Registration Statement") and the Registration Statement filed pursuant to Rule 462(b) of the Securities Act of 1933, as amended (the "Securities Act") relating to such Earlier Registration Statement (the "462(b) Registration Statement," and together with the Earlier Registration Statement, the "Registration Statement"), with the Securities and Exchange Commission (the "Commission") under the Securities Act, relating to the registration under the Securities Act and the proposed issuance and sale from time to time by the Company of up to an aggregate initial offering amount of \$4,000,000 of the following securities (each a "Company Security" and collectively, or in any combination, the "Company Securities"):

(i) shares of the Company's common stock, no par value per share (the "Common Stock");

(ii) one or more classes or series of shares of the Company's preferred stock, no par value per share (the "Preferred Stock");

(iii) one or more series of debt securities, which may be senior or subordinated debt or senior or subordinated convertible debt (the "Debt Securities");

(iv) warrants representing the rights to purchase shares of Common Stock, Preferred Stock, or Debt Securities (the "Warrants"); and

(v) units comprised of one or more of the Company Securities in one or more series and in any combination (the "Units").

This opinion letter is being furnished to the Company in accordance with the requirements of Item 601(b)(5) of Regulation S-K.

The Company Securities may be issued and sold by the Company from time to time on a delayed or continuous basis pursuant to applicable provisions of Rule 415 under the Securities Act, in amounts, at prices and on terms to be determined in light of market conditions at the time of sale, and as set forth in the Registration Statement, any amendment thereto, the prospectus contained therein (the "Base Prospectus") and any supplements to the Prospectus (each, together with the Base Prospectus, a "Prospectus"). This opinion letter is limited to the laws, including the rules and regulations, as in effect on the date hereof. We are basing this opinion on our understanding that, prior to issuing any Company Securities in connection with the Registration Statement, the Company will advise us in writing of the terms thereof and other information material thereto, will afford us an opportunity to review the operative documents pursuant to which such Company Securities are to be issued (including the Registration Statement, the Prospectus, as then in effect) and will file such supplement or amendment to this opinion letter (if any) as we may reasonably consider necessary or appropriate with respect to such Company Securities. However, we undertake no responsibility to monitor the Company's future compliance with applicable laws, rules or regulations of the Commission or other governmental body.

In connection with rendering this opinion, we have examined originals, certified copies or copies otherwise identified as being true copies of the following:

(a) the Registration Statement;

- (b) the Certificate of Incorporation of the Company (the "Certificate of Incorporation");
- (c) the Bylaws of the Company, as amended to date (the "Bylaws");
- (d) corporate proceedings of the Company relating to its proposed issuance of the Company Securities; and

(e) such other instruments and documents as we have deemed relevant or necessary in connection with our opinions set forth herein.

Unless otherwise provided in any Prospectus relating to a particular series of Debt Securities, the Debt Securities will be issued pursuant to an indenture (the "Indenture") between the Company and a trustee to be named in the applicable supplement to the Prospectus (the "Trustee"). Any Debt Securities may be convertible into shares of Common Stock or other Company Securities. The Company Securities are to be sold pursuant to a purchase, underwriting or similar agreement in substantially the form to be filed under a Current Report on Form 8-K. The Warrants will be issued under one or more warrant agreements (each, a "Warrant Agreement"). The Units will be issued under one or more unit purchase agreements (each a "Unit Purchase Agreement").

In making the aforesaid examinations, we have assumed the genuineness and authenticity of all documents examined by us and all signatures therein and the conformity to originals of all copies of all documents examined by us. We have also assumed that the corporate records furnished to us by the Company include all corporate proceedings taken by it to date.

Based on and subject to the assumptions, qualifications and limitations set forth herein, we are of the opinion that:

(1) With respect to shares of Common Stock, when all necessary corporate action of the Company has been taken to approve an issuance of shares of Common Stock, and certificates representing the shares of Common Stock have been duly executed, countersigned, registered and delivered (or non-certificated shares of Common Stock shall have been properly issued), either (i) in accordance with the applicable definitive purchase, underwriting or similar agreement approved by the Board of Directors of the Company (the "Board of Directors"), upon payment of the consideration therefor (which consideration shall not be less than the par value of the Common Stock) provided for in such definitive purchase, underwriting or similar agreement, as applicable, or (ii) upon conversion, exchange or exercise of any other Company Security in accordance with the terms of such Company Security or the instrument governing such Company Security providing for the conversion, exchange or exercise as approved by the Board of Directors, for the consideration therefor set forth in the applicable agreement and approved by the Board of Directors, which consideration shall not be less than the par value of the Common Stock, including the shares of Common Stock that form a part of any Units, will be validly issued, fully paid and non-assessable.

(2) With respect to shares of any series of Preferred Stock, when all necessary corporate action of the Company has been taken to approve an issuance of shares of Preferred Stock and the terms of the shares of such series, including the adoption of a certificate of designation or amendment to the Certificate of Incorporation fixing and determining the terms of such Preferred Stock conforming to the Delaware General Corporation Law, the filing of a certificate or amendment, as applicable, with the Secretary of State of the State of Delaware, the payment in full of any filing fees attendant thereto, and the due reservation of any Common Stock and Preferred Stock for issuance, and certificates representing the shares of the series of Preferred Stock have been duly executed, countersigned, registered and delivered, either (i) in accordance with the applicable definitive purchase, underwriting or similar agreement approved by the Board of Directors, upon payment of the consideration therefor (which consideration shall not be less than the par value of the Preferred Stock) provided for in such definitive purchase, underwriting or similar agreement, as applicable, or (ii) upon conversion, exchange or exercise of such Company Security or the instrument governing such Company Security providing for the conversion, exchange or exercise as approved by the Board of Directors, for the consideration approved by the Board of Directors, which consideration shall not be less than the par value of the Preferred Stock, the shares of such series of Preferred Stock, including the shares of Preferred Stock that form a part of any Units, will be validly issued, fully paid and non-assessable.

(3) With respect to any series of Debt Securities, when (a) the Indenture and the applicable supplement, if any, to the Indenture have been duly authorized and validly executed and delivered by the Company and any Trustee named in the Prospectus relating to such series, (b) the Indenture, as then and theretofore amended or supplemented, has been duly qualified under the Trust Indenture Act of 1939, as amended (the "TIA"), (c) the Company has taken all necessary corporate action to authorize and approve the issuance and terms of such series of Debt Securities, (d) the terms of such Debt Securities and of their issuance and sale have been duly established in conformity with the applicable Indenture, and (e) such Debt Securities have been duly executed, authenticated, issued and delivered in accordance with the provisions of the Indenture and the applicable supplement, the Debt Securities of such series, including the Debt Securities that form a part of any Units, will constitute valid and binding obligations of the Company, enforceable against the Company in accordance with their terms.

(4) With respect to Warrants to be issued under a Warrant Agreement, when all necessary corporate action of the Company has been taken to approve the issuance and terms of such Warrants, the terms of the offering thereof and related matters, the Warrant Agreement has been duly executed and delivered by the Company, and such Warrants have been duly executed, issued and delivered in accordance with the terms of the Warrant Agreement and the applicable definitive purchase, underwriting or similar agreement approved by the Board of Directors, upon payment (or delivery) of the consideration therefor provided for therein, such Warrants, including the Warrants that form a part of any Units, will constitute valid and binding obligations of the Company, enforceable against the Company in accordance with their terms.

(5) With respect to the Units, when all necessary corporate action of the Company has been taken to approve and establish the terms of the Units and to authorize and approve the issuance of the Company Securities comprising the Units, the terms of the offering and related matters, the Unit Purchase Agreement has been duly authorized, validly executed and delivered by the parties thereto, and the Units and/or the Company Securities comprising the Units have been duly executed and delivered in accordance with the applicable definitive purchase, underwriting or similar agreement approved by the board of directors of the Company, upon payment of the consideration provided therefor in the definitive purchase, underwriting or similar agreement as applicable and approved by the Board of Directors, which consideration shall not be less than the aggregate par value of any Common Stock and/or Preferred Stock included in the Units, the Units will constitute valid and binding obligations of the Company, enforceable against the Company in accordance with their terms.

Our opinions are subject to the effect of federal and state bankruptcy, insolvency, reorganization, arrangement, moratorium, fraudulent conveyance and other laws relating to or affecting the rights of secured or unsecured creditors generally (or affecting the rights of only creditors of specific types of debtors), with respect to which we express no opinion.

Our opinions are subject to the effect of general principals of equity, whether applied by a court of law or equity, including, without limitation, concepts of materiality, good faith and fair dealing and upon the availability of injunctive relief or other equitable remedies, and the application of principles of equity (regardless of whether enforcement is considered in proceedings at law or in equity).

The Company has informed us that it intends to issue Company Securities from time to time on a delayed or continuous basis. The opinions set forth above are limited to applicable laws as in effect on the date hereof. Prior to issuing any Company Securities pursuant to the Registration Statement (i) the Company will advise us in writing of the terms thereof, and (ii) the Company will afford us an opportunity to review the documents pursuant to which such Company Securities are to be issued or sold (including the applicable offering documents), and the Company will file such supplement or amendment to this opinion (if any) as we may reasonably consider necessary or appropriate.

We express no opinion as to the laws of any jurisdiction other than (i) the corporate laws of the State of Delaware (including the Delaware General Corporation Law and applicable provisions of the Delaware constitution, but excluding local laws), (ii) with respect to opinion paragraphs 3 through 6, the laws of the State of New York, and (iii) the federal laws of the United States of America.

We hereby consent to the use of our opinion as herein set forth as an exhibit to the Registration Statement and to the use of our name under the caption "Legal Matters" in the prospectus forming a part of the Registration Statement. We do not, by giving such consent, admit that we are within the category of persons whose consent is required under Section 7 of the Act.

Very truly yours

/s/ Dentons US LLP

Dentons US LLP

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement on Form S-3 filed pursuant to Rule 462(b) of the Securities Act of 1933 of the reference to our firm under the caption "Experts" and to the incorporation by reference of our reports dated March 16, 2020, with respect to the consolidated financial statements of Arcturus Therapeutics Holdings, Inc. and its Subsidiaries, and the effectiveness of internal control over financial reporting of Arcturus Therapeutics Holdings Inc. and its Subsidiaries included in its Annual Report (Form 10-K) for the year ended December 31, 2019, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

San Diego, California April 16, 2020