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February 17, 2015

VIA EDGAR AND OVERNIGHT COURIER

U.S. Securities and Exchange Commission
100 F Street, N.E.
Washington, D.C. 20549

Attn: Anne Nguyen Parker, Assistant Director
Julie Griffith
Stephen Kim
Doug Jones

**Re: Arcadia Biosciences, Inc.
Registration Statement on Form S-1
Filed February 17, 2015
CIK No. 0001469443**

Ladies and Gentlemen:

We are submitting this letter on behalf of our client, Arcadia Biosciences, Inc. (“we,” “us” or the “Company”), in response to the comments from the staff (the “Staff”) of the Securities and Exchange Commission (the “Commission”), received by letter dated December 30, 2014, relating to Amendment No. 1 (“Amendment No. 1”) to the draft registration statement on Form S-1 confidentially submitted on December 22, 2014 (the “Registration Statement”). The Registration Statement on Form S-1 (the “Form S-1”) is being filed concurrently herewith. The numbered paragraphs below correspond to the numbered comments in the Staff’s letter and the Staff’s comments are presented in bold italics. Except as otherwise specifically indicated, page references herein correspond to the pages of the Form S-1. We have also enclosed with the copy of this letter that is being transmitted via overnight delivery, six (6) copies of the Form S-1 in paper format, which have been marked to show changes from Amendment No. 1.

Prospectus Summary, page 1

Overview, page 1

- 1. Please provide disclosure in your filing regarding the basis for your statement that you are “leading.” With respect to our comment regarding the size of your company, we note the added disclosure on page 95 that you are “positioned at the nexus of basic research and commercial product development.” Please provide this disclosure or similar disclosure the first time you mention that you are “leading.”***

In response to the Staff’s comment, the Company has revised its disclosures in the first paragraph of the Prospectus Summary on page 1 of the Form S-1 to indicate the basis as to why it believes it is a leading trait development company. With respect to the Staff’s comment in the second sentence as to the Company’s statement that it believes it is “positioned at the nexus of basic research and commercial product development,” the Company notes that the statement also appears near the first time the Company mentions that it is “leading,” in the second sentence of the second paragraph of the Prospectus Summary on page 1.

Industry Overview, page 67

Innovation and Commercialization Process in Biotech Seed Traits, page 67

- 2. We note your response to prior comment 14. Please provide this information in the filing.***

In response to the Staff’s comment, additional disclosure has been added to page 68 of the Form S-1 to explain how the development stages initially developed and utilized by Monsanto have now been adopted by other companies and research analysts and are generally applicable to other seed trait companies, due in part to the impact of plant biology on the development process and timeline.

Notes to Consolidated Financial Statements, page F-7

Note 9. Common Stock and Redeemable and Convertible Preferred Stock, page F-24

Redeemable and Convertible Preferred Stock, page F-24

3. You disclose that:

- (a) the redemption amount of the Series D preferred stock shall be the greater of (i) two times the original issue price of the Series D redeemable convertible preferred stock plus accrued and unpaid dividends through the redemption date, or (ii) the fair market value of the Series D redeemable convertible preferred stock,
- (b) the holders of record of shares of Series D redeemable convertible preferred stock are initially entitled to a 15% dividend that accrues annually until the five-year anniversary of the issuance date, and
- (c) you recorded a discount of \$2.5 million on the issuance of the Series D preferred stock.

Please tell us and disclose how you computed the amount of “accretion of redeemable convertible preferred stock to redemption value” of \$2.088 million presented on the

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statement of operations for the nine months ended September 30, 2014. In so doing, tell us and disclose:

- (i) the amount of dividends that has been accrued on Series D preferred stock,
- (ii) how the amount of dividends accrued has been computed,
- (iii) where such dividends are reflected in the financial statements,
- (iv) the effect given to such dividends in the loss per share computation,
- (v) the amount of discount recognized on the issuance of Series D that has been accreted and where it is reported in the financial statements, including the effect of such on the loss per share computation, and
- (vi) how the redemption value for Series D indicated in the first sentence of this comment was reflected in your computation.

Refer to ASC 260-10-50-1.b, ASC 505-10-50-5.b and Rule 5-02.27(b) of Regulation S-X for further guidance in regard to disclosure requirements.

The Company respectfully advises the Staff that it accretes changes in redemption value over the period through the earliest redemption date using the interest method, as disclosed in page F-25 of the Form S-1, in accordance with ASC 480-10-S99-3A-15(a). The redemption amount used in the accretion computation is the greater of (i) two times the original issue price of the Series D redeemable convertible preferred stock plus accrued and unpaid dividends through the redemption date, which we refer to as the “*minimum redemption value*,” or (ii) the fair market value of the Series D redeemable convertible preferred stock. The Company used the minimum redemption value in its accretion computation for September 30, 2014, as it was higher than the fair market value of the Series D redeemable convertible preferred stock. In addition, the redemption value includes dividends, which are payable in arrears upon redemption and aggregate to \$97 million over the redemption period of eight years. Total dividends payable upon redemption are calculated based on an annually compounded dividend rate of 15% for the first five years and 20% thereafter.

In addition, the Company respectfully advises the staff that dividends for Series D redeemable convertible preferred stock are cumulative but not payable unless declared by the Company’s Board of Directors (the “*Board*”). As the Board has not declared any such dividends, the undeclared dividends of \$2.2 million have not been accrued as of September 30, 2014. However, all dividends payable upon redemption, as well as the discount recognized on the issuance of Series D redeemable convertible preferred stock, are included in the computation of the accreted redemption value using the effective interest method. The \$2.088 million of accretion recorded for the nine months ended September 30, 2014 have been reflected as an increase to the net carrying value of the Series D redeemable convertible preferred stock with a corresponding charge to additional paid-in capital in the Consolidated Statements of Redeemable and Convertible Preferred Stock and Stockholders’ Deficit. The accretion amount is included in the net loss attributable to common stockholders used in the loss per share computation and shown on the face of the Consolidated Statements of Operations.

In response to the Staff’s comment, the Company has revised its disclosures on pages F-25 and F-27 of the Form S-1.

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Please direct your questions or comments regarding the Company’s responses or the Form S-1 to the undersigned at (415) 773-4140 or by email at kdempsey@orrick.com or, in my absence, Christopher Austin at (212) 506-5234 or by email at caustin@orrick.com.

Sincerely,

ORRICK, HERRINGTON & SUTCLIFFE, LLP

/s/ Karen A. Dempsey
Karen A. Dempsey

cc: Eric J. Rey, Arcadia Biosciences, Inc.
Wendy S. Neal, Arcadia Biosciences, Inc.
Christopher Austin, Orrick, Herrington & Sutcliffe, LLP
Drew Williamson, Cooley LLP

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