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Karen Dempsey
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April 3, 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 on February 17, 2015
File No. 333-202124

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 March 2, 2015, relating to the Registration Statement on Form S-1 (the “Registration Statement”) filed on February 17, 2015. Amendment No. 1 to the Registration Statement (“Amendment No. 1”) is being submitted 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. We have enclosed with the copy of this letter that is being transmitted via overnight delivery six (6) copies of Amendment No. 1 in paper format, which have been marked to show changes from the Registration Statement filed on February 17, 2015.

Exhibit 5.1

1. ***Please file the legal opinion as Exhibit 5.1 prior to requesting effectiveness.***

In order to facilitate the review of the Registration Statement, the Company hereby provides the Staff with a draft of the form of legal opinion of Orrick, Herrington & Sutcliffe LLP, legal counsel to the Company, attached hereto as Exhibit A. The Company will file the final form of such opinion as Exhibit 5.1 prior to requesting effectiveness of the Registration Statement.

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2. ***Please update your financial statements pursuant to Rule 3-12(b) and (d) of Regulation S-X.***

In response to the Staff’s comment, the Company has included in Amendment No. 1 updated financial information for the year ended December 31, 2014.

Please direct your questions or comments regarding the Company’s responses or Amendment No. 1 to the undersigned at (415) 773-4140 or by email at kdempsey@orrick.com or, in my absence, to 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

In connection with this response, the Company hereby acknowledges that:

- the Company is responsible for the adequacy and accuracy of the disclosure in its filings;
- the Staff's comments or changes to disclosure in response to the Staff's comments do not foreclose the Commission from taking any action with respect to the filings; and
- the Company may not assert the Staff's comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Acknowledged:

/s/ Eric J. Rey

Eric J. Rey

President and Chief Executive Officer

Exhibit A



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, 2015

Arcadia Biosciences, Inc.
 202 Cousteau Place, Suite 200
 Davis, CA 95618

Re: Registration Statement on Form S-1

Ladies and Gentlemen:

We are acting as counsel for Arcadia Biosciences, Inc., a Delaware corporation (the "Company"), in connection with the registration statement on Form S-1 filed by the Company with the Securities and Exchange Commission (the "Commission") on February 17, 2015 (File No. 333-202124), as amended (the "Registration Statement"), under the Securities Act of 1933, as amended (the "Securities Act"). The Registration Statement relates to the registration of [·] shares of common stock of the Company, par value \$0.001 per share, (the "Primary Shares") and [·] shares of which may be purchased by the underwriters pursuant to an option to purchase additional shares (the "Overallotment Shares," and together with the Primary Shares, the "Shares"). We understand that the Shares are to be sold to the underwriters for resale to the public as described in the Registration Statement and pursuant to an underwriting agreement, substantially in the form filed as an exhibit to the Registration Statement, to be entered into by and among the Company and the underwriters (the "Underwriting Agreement").

In connection with rendering the opinion set forth below, we have examined and relied upon originals or copies, certified or otherwise identified to our satisfaction, of instruments, documents, and records which we deemed relevant and necessary for the purpose of rendering our opinion set forth below. In such examination, we have assumed the following: (a) the

authenticity of original documents and the genuineness of all signatures, (b) the conformity to the originals of all documents submitted to us as copies, (c) the representations of officers and employees are correct as to questions of fact, and (d) the Registration Statement has been declared effective pursuant to the Securities Act and (e) a pricing committee of the board of directors will have taken action necessary to set the sale price of the Shares.

Our opinion herein is limited to the General Corporation Law of the State of Delaware.

Based upon the foregoing, we are of the opinion that the Shares to issued and sold by the Company have been duly authorized and, when such Shares are issued and paid for in accordance with the terms of the Underwriting Agreement, 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 we further consent to the use of our name under the caption "Legal Matters" in the Registration Statement and the prospectus that forms a part thereof. In giving these consents, we do not thereby admit that we are within the

category of persons whose consent is required under Section 7 of the Securities Act or the Rules and Regulations of the Commission promulgated thereunder, nor do we thereby admit that we are “experts” within the meaning of such term as used in the Securities Act with respect to any part of the Registration Statement, including this opinion letter as an exhibit or otherwise.

Very truly yours,

ORRICK, HERRINGTON & SUTCLIFFE LLP