

July 2, 2015

United States Securities and Exchange Commission
Division of Corporate Finance
100 F Street, N.E.
Washington, D.C. 20549
Attn: Jeffrey P. Riedler

**Re: Kura Oncology, Inc.
Amendment No. 1 to Registration Statement on Form S-1
Filed June 2, 2015
File No. 333-203503**

Dear Mr. Riedler:

Enclosed on behalf of our client, Kura Oncology, Inc. (the "**Company**"), is Amendment No. 2 to the Company's Registration Statement on Form S-1 ("**Amendment No. 2**"). Amendment No. 2 updates the Company's Registration Statement on Form S-1, originally filed with the Securities and Exchange Commission (the "**Commission**") on April 17, 2015, and amended by Amendment No. 1, filed on June 2, 2015 (the "**Registration Statement**"). The copy of Amendment No. 2 that is enclosed with the paper copy of this letter is marked to show changes from Amendment No. 1 to the Registration Statement filed on June 2, 2015.

Amendment No. 2 is being submitted in response to comments received from the staff of the Commission (the "**Staff**") by letter dated June 17, 2015 with respect to the Registration Statement (the "**Comment Letter**"). The numbering of the paragraphs below corresponds to the numbering in the Comment Letter, the text of which we have incorporated into this response letter for convenience. Except where otherwise indicated, page references in the text of the responses below correspond to the page numbers of Amendment No. 2.

Staff Comments and Company Responses

Audited Financial Statements of Kura Oncology, Inc. for the Period from August 22, 2014 (Inception) to December 31, 2014, F-3

1. *Please revise these financial statements and notes to retroactively reflect the effect of the March 6, 2015 Merger, which you indicate is a reverse merger accounted for as a capital transaction.*

Response: The Company acknowledges the Staff's comment and has revised the Audited Financial Statements of Kura Oncology, Inc. for the Period from August 22, 2014 (Inception) to December 31, 2014 on pages F-3 to F-20.

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2. *Considering that the transactions that give pro form effect in the unaudited pro forma condensed combined balance sheet and statements of operations presented beginning on page 46 are now included in the March 31, 2015 historical financial statements, please remove those unaudited pro forma condensed financial statements.*

Response: The Company acknowledges the Staff's comment and has removed the unaudited pro forma condensed combined financial statements.

3. *Since the March 6, 2015 Merger is reflected in the March 31, 2015 financial statements of the company, please remove the Zeta Acquisition Corp. III financial statements beginning at page F-32.*

Response: The Company acknowledges the Staff's comment and has removed the Zeta Acquisition Corp. III financial statements.

Notes to Financial Statements

9. Stockholders' Equity

Restricted Stock Awards, page F-15

4. *It appears that you do not recognize any expense related to a non-employee restricted stock award until it vests, which you assert is the measurement date. Tell us why you do not recognize an expense before the vesting date for these awards to account for the services you are receiving. Reference for us the applicable authoritative literature to which you rely.*

Response: The Company acknowledges the Staff's comment and respectfully advises the Staff that the Company recognizes expense related to non-employee restricted stock awards ("**RSAs**") on a straight line basis over the requisite service of the award. During the period from inception to December 31, 2014, the Company recognized expense when the non-employee RSAs vest. The Company considered but did not recognize the expense related to non-employee RSAs for the period from the last monthly vesting date through December 31, 2014. Since the majority of the non-employee RSAs vest monthly, at or near the end of the month, the Company determined that the expense for the awards which were in the process of vesting at December 31, 2014 was immaterial and did not record the expense for the partial vesting of the non-employee RSAs. The unrecognized expense for awards which were in the process of vesting was approximately \$7,800 as of December 31, 2014.

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The Company respectfully requests the Staff's assistance in completing the review of Amendment No. 2 as soon as possible. Please advise us if we can provide any further information or assistance to facilitate your review. Please direct any further comments or questions regarding Amendment No. 2 or this response letter to me at (858) 550-6142.

Sincerely,

Cooley LLP

/s/ Charles J. Bair, Esq.

Charles J. Bair Esq.

cc: Heidi Henson, Kura Oncology, Inc.
Annette North, Kura Oncology, Inc.
James Pennington, Cooley LLP

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