



John T. McKenna  
T: +1 (650) 843 5059  
jmckenna@cooley.com

May 12, 2015

U.S. Securities and Exchange Commission  
Division of Corporation Finance  
100 F Street, N.E.  
Washington, D.C. 20549  
Attn: Jeffrey P. Riedler  
Christina De Rosa  
Daniel Greenspan

**RE: Axovant Sciences Ltd.**  
**Registration Statement on Form S-1**  
**Filed May 11, 2015**  
**File No. 333-204073**

Ladies and Gentlemen:

On behalf of Axovant Sciences Ltd. (the “**Company**”), in response to comments from the staff (the “**Staff**”) of the Securities and Exchange Commission (the “**Commission**”) received by letter dated April 20, 2015 (the “**Comment Letter**”), relating to the Company’s Registration Statement on Form S-1 (File No. 333-204073), originally confidentially submitted with the Commission on March 24, 2015, resubmitted to the Commission on April 29, 2015 and subsequently filed by the Company with the Commission on May 11, 2015 (the “**Registration Statement**”), we submit this supplemental letter to further address comment 15 of the Comment Letter.

Because of the commercially sensitive nature of information contained herein, this submission is accompanied by the Company’s request for confidential treatment for selected portions of this letter. The Company has filed a separate letter with the Office of Freedom of Information and Privacy Act Operations in connection with the confidential treatment request, pursuant to Rule 83 of the Commission’s Rules on Information and Requests, 17 C.F.R. § 200.83. For the Staff’s reference, we have enclosed a copy of the Company’s letter to the Office of Freedom of Information and Privacy Act Operations, as well as a copy of this correspondence, marked to show the portions redacted from the version filed via EDGAR and for which the Company is requesting confidential treatment.

For the convenience of the Staff, we have recited the prior comment from the Staff in italicized type and have followed the comment with the Company’s response.

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[\*]Certain confidential information contained in this letter, marked by brackets, has been omitted and filed separately with the Commission pursuant to 17 C.F.R. §200.83.

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15. *We may have additional comments on your accounting for equity issuances including stock compensation, underwriter and preferred stock warrant liability, and beneficial conversion features. Once you have an estimated offering price, please provide us an analysis explaining the reasons for the differences between recent valuations of your common stock leading up to the IPO and the estimated offering price.*

The Company advises the Staff that the Company preliminarily estimates a price range of approximately \$[\*] to \$[\*] per share (the “**Price Range**”) for its initial public offering (the “**IPO**”). The preliminary Price Range has been estimated based, in part, upon current market conditions, the Company’s financial condition and prospects and input received from the lead underwriters, including discussions that took place on May 7, 2015 between senior management of the Company and representatives of Jefferies LLC, Evercore Group, L.L.C. and RBC Capital Markets, LLC. The Price Range does not take into account the current lack of liquidity for the Company’s common stock and assumes a successful IPO with no weighting attributed to any other outcome for the Company’s business, such as remaining a privately-held company or being sold in an acquisition transaction. Prior to May 7, 2015, the Company and underwriters had not had any specific discussions regarding the Price Range.

The Company expects to include the Price Range in an amendment to the Registration Statement that would shortly precede the commencement of the Company’s road show. The Company confirms to the Staff that in accordance with Item 501(b)(3) of Regulation S-K and CD&I 134.04, the Price Range

will not be in excess of 20% of the high end of the range. The parameters of the narrower price range will be subject to then-current market conditions, continuing discussions with the underwriters and any business developments impacting the Company. At that time, the Company intends to disclose in its preliminary prospectus the factors the board of directors considered to determine the fair value of the common shares.

We are providing this information to the Staff supplementally to facilitate your review process. As previously provided to the Staff in our response letter of April 29, 2015, since inception the Company has granted the following equity awards:

Date of Grant	Shares Underlying Stock Options	Exercise Price	Original Fair Value Per Share
March 18, 2015	4,012,500	\$ 0.90	\$ 0.64
April 13, 2015	527,500	1.04	1.04

The Company has not granted any other equity awards since April 13, 2015.

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With the benefit of hindsight, for financial reporting purposes the Company has determined to record additional stock-based compensation charges assuming a fair value of \$[\*] per share, the midpoint of the Price Range, for the March and April 2015 grants.

Date of Grant	Shares Underlying Stock Options	Exercise Price	Revised Fair Value Per Share
March 18, 2015	4,012,500	\$ 0.90	\$ [*]
April 13, 2015	527,500	1.04	[*]

In addition, the valuation of the Company's common shares also impacts the value of BVC Ltd. As disclosed on page 56, F-11 and F-12 of the Registration Statement, certain employees of Roivant Sciences, Inc. have provided services to the Company and hold stock awards of BVC Ltd. These awards are re-measured at fair value each period and the Company's financial statements include an allocation of its share of the cost of these awards based on the amount of time the employees spent on Company matters (including any adjustments in expense related to changes in the fair value of the BVC stock).

As previously provided to the Staff in our response letter of April 29, 2015, anticipating that equity awards would be granted commencing in the first calendar quarter of 2015, the Company with the assistance of an unrelated third-party valuation firm performed a valuation of its common shares as of March 1, 2015 and April 7, 2015. The valuations were prepared in accordance with the guidance provided by the *American Institute of Certified Public Accountants Practice Guide, Valuation of Privately-Held-Company Equity Securities Issued as Compensation*. Given the absence of a public trading market for the common shares, the board of directors exercised reasonable judgment and considered a number of objective and subjective factors to determine the best estimate of the fair value of the common shares, including these third-party valuations; the Company's stage of development; progress of research and development efforts; equity market conditions affecting comparable public companies; and the lack of marketability of the common shares. In order to determine the estimated fair value of the common shares, the Company and the third-party valuation firm utilized the Probability Weighted Expected Return Method (the "PWERM").

The Company believes that the primary differences between the per share value determined by the valuations performed in March and April 2015 and the estimated Price Range are a result of the following:

1. There has been a renewed focus on potential treatments for Alzheimer's disease. Recent medical conferences have attracted significant interest not only from the scientific community, but also from the business and investment communities. Examples of these conferences include the 12th International Conference on Alzheimer's and Parkinson's Diseases and Related Neurological Disorders (AD/PD 2015) that was held from March 18-22, 2015, as well as the 67th American Academy of Neurology Annual Meeting that was held from April 18-25, 2015.

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Following these meetings, Fortune magazine had a cover story on new therapeutics for Alzheimer's disease that were prominently highlighted and described in detail, including new developments presented at these conferences. This recent spike of interest in Alzheimer's disease from the investment community stands in strong contrast to the investment community's reaction to prior drug development failures in this therapeutic area and the Company believes this may account for investors' apparent recent interest in Alzheimer's disease investment opportunities.

2. The Company has made highly qualified additions to the Company's leadership team, which has been favorably perceived by the investment community in its testing-the-waters meetings.
3. The average valuation of the peer comparable companies utilized in the valuations was approximately \$241.5 million. At the time of the valuations, the Company was just beginning the IPO process and had only recently mandated underwriters. Subsequently, as a result of test-the-waters meetings and input received from the Company's underwriters, the Company now estimates a preliminarily pre-IPO valuation of between \$1.0 billion and \$1.4 billion. The Company respectfully advises the Staff that to its knowledge only a few biotechnology companies have achieved this pre-IPO valuation in the past few years, with three in the 2015 alone, including Adaptimmune Therapeutics plc, Aduro Biotech Inc. and Cellectis SA. Further, Cellectis was already a publicly traded company on the Alternext market of Euronext in Paris (ALCLS) prior to its \$228.3 million U.S. IPO and experienced strong investor interest based on the potential of chimeric antigen receptors (CAR) T-Cell Therapy.
4. The Price Range represents a future price for shares of common stock that, if issued in the Company's IPO, will be immediately freely tradable in a public market, whereas the estimated fair value of the common stock as of the March and April 2015 grant dates represents a contemporaneous estimate of the fair value of the shares that were then illiquid, might never become liquid, might be for stock that is never publicly-traded and, even if an IPO is successfully completed, will remain illiquid at least until the expiration of the 180-day lockup period following the IPO.
5. As the Company is a private concern, the PWERM analysis appropriately applied a discount for lack of marketability of 15% to 37%.
6. The PWERM analysis applied a 35% probability to an IPO occurring in the short-term, whereas the Price Range necessarily assumes the successful completion of an IPO, subject to market conditions.

In addition, the Company supplementally advises the Staff that of the 21 biotechnology IPOs that priced between January 1, 2015 and May 6, 2015, seven priced below the preliminary price range indicated in the respective preliminary prospectus.

In summary, the Company respectfully submits that while the determination of the fair value of its common stock in March and April 2015 was consistent with the American Institute of

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Certified Public Accountants Practice Aid, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*, with the benefit of hindsight for financial reporting purposes, the Company has determined to record additional stock-based compensation expense with respect to such stock options based upon the midpoint of the Price Range.

Please contact me at (650) 843-5059 with any questions or further comments regarding our response to the Staff's comment.

Sincerely,

/s/ John T. McKenna

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John T. McKenna  
Cooley LLP

cc: Vivek Ramaswamy, *Axovant Sciences, Inc.*  
Alan S. Roemer, *Axovant Sciences, Inc.*  
Christine Mikail, *Axovant Sciences, Inc.*  
Marianne L. Romeo, *Axovant Sciences Ltd.*  
Frank F. Rahmani, *Cooley LLP*  
Divakar Gupta, *Cooley LLP*  
Alison Haggerty, *Cooley LLP*  
Marc D. Jaffe, *Latham & Watkins LLP*

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