

Jury Member Report – Doctor of Philosophy thesis.

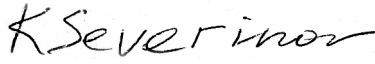
Name of Candidate: Valentina Burskaia

PhD Program: Life Sciences

Title of Thesis: Positive selection in parallel evolution

Supervisor: Associate Professor Georgii Bazykin

Name of the Reviewer: Konstantin Severinov

<p>I confirm the absence of any conflict of interest</p> <p>(Alternatively, Reviewer can formulate a possible conflict)</p>	<p>Signature:</p>  <p>Date: 03/11/2020</p>
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The purpose of this report is to obtain an independent review from the members of PhD defense Jury before the thesis defense. The members of PhD defense Jury are asked to submit signed copy of the report at least 30 days prior the thesis defense. The Reviewers are asked to bring a copy of the completed report to the thesis defense and to discuss the contents of each report with each other before the thesis defense.

If the reviewers have any queries about the thesis which they wish to raise in advance, please contact the Chair of the Jury.

Reviewer's Report

Reviewers report should contain the following items:

- Brief evaluation of the thesis quality and overall structure of the dissertation.
- The relevance of the topic of dissertation work to its actual content
- The relevance of the methods used in the dissertation
- The scientific significance of the results obtained and their compliance with the international level and current state of the art
- The relevance of the obtained results to applications (if applicable)
- The quality of publications

The summary of issues to be addressed before/during the thesis defense

This thesis concerns with analysis of two examples of positive selection driving parallel evolution, one in Lake Baikal amphipods, another - in mitochondrial genes of some birds. The results are presented in two separate chapters of the thesis, each with their own Introduction, Materials and methods, Results and Discussion subsections. Work on amphipods has recently been published, with Ms. Burskaia being the first (and corresponding) author. As presented in the thesis, this entire part as a word for word copy of the published work. I assume the other chapter is similarly a preprint of work submitted for publication. I think it is worth considering how appropriate this is. Even more time could have been saved when making this thesis by simply including the pdf of the published work, for example. On the other hand, since the published paper contains 8 authors and in the Personal Contribution section of the thesis it is stated that Valentina did "most of the bioinformatics and conceptual work", while Prof. Bazykin "...participated in writing", I can't help but wonder how much of the text of the thesis was actually written by its sole author. At the very least, I would like to see, for example, that Figures which were supplementary in the published work (and remained so in the thesis) were moved to the results part of the thesis and were more thoroughly discussed. If nothing else, this would make the text more accessible to readers outside of the immediate field.

I believe a better job needs to be done to show how the two parts of the work are related to each other, making a single thesis united by a common avenue of inquiry. Further, I would like to see a structured statement of the scientific problem being attacked followed by the aims, scope, and goals of the work presented. I would then like to see conclusions written not as a free narrative, as it is done now, but as an itemized list of statements that allow someone who is not an evolutionary biologist to understand what exactly was discovered during the work and how the field was advanced. A statement about possible practical implications of obtained results would have also been useful.

Provisional Recommendation

I recommend that the candidate should defend the thesis by means of a formal thesis defense

I recommend that the candidate should defend the thesis by means of a formal thesis defense only after appropriate changes would be introduced in candidate's thesis according to the recommendations of the present report

The thesis is not acceptable and I recommend that the candidate be exempt from the formal thesis defense