

## Jury Member Report – Doctor of Philosophy thesis.

**Name of Candidate:** Smirnov Dmitrii

**PhD Program:** Life Sciences

**Title of Thesis:** Investigation of the role of SIRT6 in molecular mechanisms of the gene expression regulation, metabolism and aging

**Supervisors:**

Assistant Professor Ekaterina Khrameeva, Skoltech

Associate Professor Deborah Toiber, Ben-Gurion University

**Name of the Reviewer:** Dr. Leon Peshkin, Harvard Medical School

I confirm the absence of any conflict of interest <input checked="" type="checkbox"/>	<b>10-11-2023</b>
(Alternatively, Reviewer can formulate a possible conflict)	<b>Date: DD-MM-YYYY</b>

*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.*

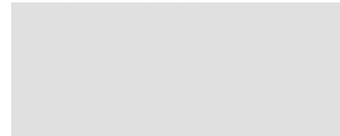
### Reviewer's Report

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

I find the dissertation satisfactory and recommend moving on with the defense. The dissertation is of sufficient technical and scientific quality and constitutes a contribution worthy of dissemination to the international community of scientists. The application is well motivated and relevant, the methods and approaches are adequate. Below I make several suggestions which would benefit the dissertation but strictly speaking are not necessary to move ahead.



1. The literature review is substantial, but the overall flow and narrative could be improved.
2. Chapter 3 should state clearly what was the contribution, which challenges arose in the process of creating the pipeline and how these were addressed. Clearly state the novelty. Also discuss separately the issues of lipid species identification, absolute and relative quantitation and give a clear idea of what can be done confidently and what are the outstanding issues.
3. Chapter 4 should discuss the limitations of making the inference about activity of such pathways from transcriptomics data as opposed to proteomic and metabolomic measurements and posttranslational controls of enzymes. Separately discuss the relevance of cell culture validation to the observations done in tissue based data.
4. Chapter 5 needs to be augmented / expanded it appears to be hastily put together.
5. Discussion would benefit from some evolutionary perspective on SIRT family expansion and functional conservation, tissue and cell type distributions.

#### 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*