Skoltech
Skolkovo Institute of Science and Technology

Jury Member Report – Doctor of Philosophy thesis.

Name of Candidate: Daria Artamonova

PhD Program: Life Sciences

Title of Thesis: Comparative Analysis of the Action of Eubacterial Class 1 CRISPR-Cas Systems.

Supervisor: Professor Konstantin Severinov

Chair of PhD defense Jury: Professor Yuri Kotelevtsev ***Email:*** ***y.kotelevtsev@skoltech.ru***

Date of Thesis Defense: October 24, 2017

Name of Reviewer: Stan Brouns

I confirm the absence of any conflict of interest	**Signature:**  *Stan Brouns* **Date: 10-09-2017**

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 forward a completed copy of this report to the Chair of the Jury 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 relevancy of the topic of dissertation work to its actual content
- The relevancy 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

The Thesis of Ms Artamonova is generally of high quality and relevance. The CRISPR adaptive immune systems still is a scientifically exciting field, which has brought many innovations to research and development. The candidate has used a variety of complementary methods in her thesis, all performed to high standards.

Her publications are both in very good international journals (PNAS and NAR), and some unpublished work is likely going to result in publications as well.

The candidate has worked on elucidating the mechanism of priming in Type I systems, as well as understanding DNA targeting in the transcription dependent CRISPR type III. These are both highly relevant topics in the CRISPR field.

During the thesis defense I would like to discuss the strong statements regarding the requirements of Cas proteins in I-F naïve adaptation. Also I would like to discuss mechanisms of CRISPR escape for the various CRISPR types and how this affects the adaptations that mobile genetic elements may have developed. I will also discuss self targeting issues.

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*