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Skolkovo Institute of Science and Technology

Thesis Changes Log

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

The thesis document includes the following changes in answer to the external review process.

Reviewer 1, Comment 1: I would recommend to expand figure legends where necessary.
Author: Legends for the Figures 10, 22 and 28 were expanded.

Reviewer 2, Comment 1: Clearly it is hard to predict future practical application involving molecular mechanisms described in this dissertation, but maybe it is possible to discuss these applications in future publications or at the time of dissertation defense.
Author: Discussion of the possibility to apply the investigation of interference by III-A and III-B subtype CRISPR-Cas system for modification of the method of screening mutation in genomes of prokaryotic cells was added (pages 108-109).

Reviewer 2, Comment 2: The conclusions are clear, but it may be better to expand this section a bit and add few sentences describing contexts (e.g "this was not known before", or "this is a qualitatively new mechanism" or else), so the impact of the findings would be more clear to a non-specialist in this particular field. One more column in table 6 with such comments may really help with this respect as well.
Author: The section “Conclusions” was expanded with some comments about the novelty of results and a possible reason for negative results. All information in table 6 without any references actually demonstrates major findings obtained in this work.

Reviewer 3, Comment 1: The literature overview is extremely hard to follow due to the absence of any illustrations. Parts 1.3, 2.2, 3.2, 3.3 should be illustrated with the figures from original publication or reviews with appropriate citing to simplify reading. Partial crystal structure of Cas1-Cas2 complex with DNA with marked regions discussed in the text will also improve thesis.
Author: Agreed. Additional illustrations (Figures 3-9) were added to the parts 1.3, 2.1, 2.2, 3.3, 5.1 of the chapter “Review of literature”. In the part 3.2, references to the Figures 5 and 6 were added. The chapter was also supplied with Figures 7 and 9 with crystal structures of DNA-bound Cas1-Cas2 complex and effector crRNP complex Cascade, respectively.