

Jury Member Report – Doctor of Philosophy thesis.

Name of Candidate: Kseniia Safina

PhD Program: Life Sciences

Title of Thesis: Molecular epidemiology of socially important infectious diseases

Supervisor: Professor Georgii Bazykin

Name of the Reviewer: Mikhail Gelfand

I confirm the absence of any conflict of interest

Date:

01-11-2021



Reviewer's Report

Sometimes it so happens that studies undertaken simply because the underlying science is exciting become socially important. This is what has happened with the candidate's work on epidemiology of viruses: the techniques developed for the long-standing and sort of commonly accepted epidemics of AIDS (caused by HIV - in this context it is important to distinguish between diseases and viruses causing them) have become extremely actual when the pandemics of COVID-19 (caused by SARS-CoV-2) has broken.

The structure of the dissertation is more or less standard, with a brief introduction outlining the project, a review chapter, two chapters of results (with its own brief introduction, methods, and discussion), and conclusions. This is natural, given that, for instance, data collection is clearly different in the two subprojects. The text is well written, logical, and easy to read.

The results are clearly important. While, given the circumstances, the observations on the SARS-CoV-2 naturally seem more actual (with long-reaching conclusions about the entry and routes of the epidemics in Russia, the epidemiology of the Vreden Institute outbreak, estimates of the transmission rates etc.), the HIV chapter also contains many interesting and important observations.

The candidate is the co-first author of a paper in Nature Communications (2021) and a co-author of one more paper on a related topic (the evolution of influenza viruses, PNAS, 2019) and a co-author of one more paper (Genome Biol. Evol. 2019), all with the Skoltech affiliation. Hence the formal Skoltech requirements on publications are met. There is no information about conferences, this needs to be addressed during the defense.

Technical comments on the previous version of the text have been adequately addressed.

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