



Přírodovědecká
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Faculty
of Science

Jihočeská univerzita
v Českých Budějovicích
University of South Bohemia
in České Budějovice

SUPERVISOR'S STATEMENT ON BACHELOR/DIPLOMA* THESIS

Name of the student: Tereza Kulhánková
Study program: Biological Chemistry
Department/Institute: Inst. of Chemistry
Thesis title:
Ultrastructural features of SARS-Cov-2 infection in the lungs

Supervisor: Marie Vancová, Ph.D.
Co-supervisor: Tomáš Bílý, Ph.D.
Supervisor's affiliation: Faculty of Science, University of South Bohemia in České Budějovice; Institute of Parasitology, Biology Centre of the CAS

	Point scale ¹	Points
(1) FORMAL REQUIREMENTS		
Formal and graphical quality of the thesis	0-3	3
Ability to work with literature	0-3	2
Language and stylistics	0-3	3
Formal requirements – points in total		8
(2) PRACTICAL REQUIREMENTS		
Fulfillment of the aims	0-3	2
Ability to understand the results, their interpretation, and clarity of the results, discussion, and conclusions	0-3	2
Discussion quality – interpretation of results and their discussion with the literature	0-3	2
Experimental difficulty of the thesis, independence in experimental work	0-3	1
Contribution of the thesis to the knowledge in the field and the possibility to publish the results (after eventual supplementary experiments)	0-3	1
Practical requirements – points in total		8

* Choose one

¹ Mark as: 0-unsatisfactory, 1-satisfactory, 2-average, 3-excellent.

Comments of the supervisor on the student and the thesis:

Tereza Kulhánková was offered the seemingly simple task of finding/describing changes associated with SARS-Cov2 virus replication in lung tissue of ACE2 humanized mice 2 and 5 DPI at high resolution. First, she had to learn TEM operation, to recognize the replicating virus in cells for which were available resin sections with embedded VERO cells infected in vitro with SARS-Cov2. Next, she had to learn the ultrastructure of different lung cell types, to recognize/identify cellular substructures from various alterations related or unrelated to virus replication. In parallel, other students also worked on the same type of samples to quantify ultrastructural changes using the SBF SEM technique, which was very helpful for better understanding/ interpretation of observed results obtained by TEM. However, the SBF SEM technique does not allow convinced identification of viruses due to lower resolution used. This work is therefore complementary to the BSc thesis of Andrea Hatmanstorfer and explains the similarity of Tereza's text to thesis of Andrea Hatmanstorfer. Unfortunately, Teresa did not detect any replicating viruses in the tissues, even at the 2 DPI interval, although suspicious areas of viral replication were found in parallel observations from other tissue areas. The planned electron topography and description of how virus-induced compartments are modified/formed in vivo and at high resolution could not then be performed. For this reason, she showed only a few results in the thesis, which could have been balanced by a more thorough literature review, which unfortunately, Tereza did not have enough time for, given the short time interval she had to write the thesis. Nevertheless, she finally managed to write a concise, and clearly written thesis that is relatively well constructed, which is indicative of her research skills.

Conclusion:

In conclusion, I r e c o m m e n d the thesis for the defense.

In České Budějovice

date

20.9.2023


signature

² Enter the number of points awarded.