Přírodovědecká fakulta
Faculty of Science

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

SUPERVISOR'S STATEMENT ON DIPLOMA THESIS

Name of the student: Bc. Hana Pejšová
Study program: Clinical Biology
Department/Institute: Institute of Chemistry
Thesis title: Subgenomic flaviviral RNA and its role in host cells

Supervisor: RNDr. Martin Selinger, Ph.D.
Supervisor`s affiliation: Faculty of Science, University of South Bohemia

	Point scale[1]	Points
(1) FORMAL REQUIREMENTS		
Formal and graphical quality of the thesis	0-3	3
Ability to work with literature	0-3	3
Language and stylistics	0-3	3
Formal requirements – points in total		9
(2) PRACTICAL REQUIREMENTS		
Fulfillment of the aims	0-3	3
Ability to understand the results, their interpretation, and clarity of the results, discussion, and conclusions	0-3	2.5
Discussion quality – interpretation of results and their discussion with the literature	0-3	2.5
Experimental difficulty of the thesis, independence in experimental work	0-3	3
Contribution of the thesis to the knowledge in the field and the possibility to publish the results (after eventual supplementary experiments)	0-3	3
Practical requirements – points in total		14
POINTS IN TOTAL (MAX/AWARDED)	24	23

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

Comments of the supervisor on the student and the thesis:

Hana did her Bachelor thesis in our lab under the supervision of dr. Štěrba, so she was already an experienced student in various biochemistry-based methods when she started working on her diploma thesis. Nevertheless, the chosen topic of virus-host interactions was quite new to Hana and proved to be a challenge for her. However, I am glad to say that Hana handled it in an outstanding way – despite experiencing the real face of science through many unsuccessful attempts during her optimization experiments, Hana always remained positive, patient and deeply focused on the problem.

In order to be more specific about her work, Hana was given a task to further develop our knowledge about TBEV-induced reduction of host *de novo* synthesized proteins and RNA, which was described in one of our publications in 2019. Based on the literature, a promising candidate molecule was chosen – small non-coding RNA derived from the 3'UTR of TBEV genome called subgenomic flavivirus RNA (sfRNA). Firstly, she optimized the transfection procedure for sfRNAs derived from dengue, zika and tick-borne encephalitis viruses. Following metabolic labelling experiments identified sfRNA as a potent inhibitor of host *de novo* protein synthesis. Secondly, Hana did a great job in patient optimization of FISH protocol for *in situ* sfRNA detection. The obtained data from metabolic labelling are of great importance and will be surely used as a part of a scientific publication dealing with the role of sfRNA on host environment modulation.

Overall, I am highly satisfied with Hana's work and it was my pleasure to supervise her. During her time in our laboratory Hana proved to be a diligent, independent, and an active student, who is able to correctly interpret the obtained data and develop new approaches when facing a problem. She mastered a wide spectrum of advanced methods including real-time PCR, fluorescence *in situ* hybridization or non-radioactive metabolic labelling technique. Furthermore, I also need to emphasize the fact that Hana joined the faculty team for SARS-CoV-2 testing, while working on her thesis.

Conclusion:

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

In České Budějovice, 16.1. 2021

Martin Selinger

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