



Přírodovědecká  
fakulta  
Faculty  
of Science

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

## OPPONENT'S REVIEW ON DIPLOMA\* THESIS

Name of the student: Bc. Hana Pejšová

Thesis title: Subgenomic flaviviral RNA and its role in host cells

Supervisor: RNDr. Martin Selinger, Ph.D.

Referee: RNDr. Zdeněk Franta, Ph.D.

Referee's affiliation: UCH

	Point scale <sup>1</sup>	Points
<b>(1) FORMAL REQUIREMENTS</b>		
<b>Extent of the thesis</b> (for bachelor theses min. 18 pages, for masters theses min. 25 pages), <b>balanced length of the thesis parts</b> (recommended length of the theoretical part is max. 1/3 of the total length), <b>logical structure of the thesis</b>	0-3	3
<b>Quality of the theoretical part (review)</b> (number and relevancy of the references, recency of the references)	0-3	2,5
<b>Accuracy in citing of the references</b> (presence of uncited sources, uniform style of the references, use of correct journal titles and abbreviations)	0-3	3
<b>Graphic layout of the text and of the figures/tables</b>	0-3	2,5
<b>Quality of the annotation</b>	0-3	3
<b>Language and stylistics, complying with the valid terminology</b>	0-3	3
<b>Accuracy and completeness of figures/tables legends</b> (clarity without reading the rest of the text, explanation of the symbols and labeling, indication of the units)	0-3	2,5
<b>Formal requirements – points in total</b>		19,5
<b>(2) PRACTICAL REQUIREMENTS</b>		
<b>Clarity and fulfillment of the aims</b>	0-3	3
<b>Ability to understand the results, their interpretation, and clarity of the results, discussion, and conclusions</b>	0-3	3
<b>Discussion quality – interpretation of the results and their discussion with the literature</b> (absence of discussion with the literature is not acceptable)	0-3	3
<b>Logic in the course of the experimental work</b>	0-3	3
<b>Completeness of the description of the used techniques</b>	0-3	2,5

\* Choose one

<sup>1</sup> Mark as: 0-unsatisfactory, 1-satisfactory, 2-average, 3-excellent.

Experimental difficulty of the thesis, independence in experimental work	0-3	3
Quality of experimental data presentation	0-3	3
The use of up-to-date techniques	0-3	3
Contribution of the thesis to the knowledge in the field and possibility to publish the results (after eventual supplementary experiments)	0-3	2
<b>Practical requirements – points in total</b>		<b>25,5</b>
<b>POINTS IN TOTAL (MAX/AWARDED)</b>	<b>48</b>	<b>45</b>

**Comments of the reviewer on the student and the thesis:**

Diploma thesis of Bc. Hana Pejřšová exploits the role of sfRNA in the host cells. The thesis has 75 pages and is divided into seven chapters (Preface, Introduction, Aims and objectives, Materials and methods, Results, Discussion, Conclusion, List of abbreviations and References). The language style is quite good and contains only a few typos. The topic is very interesting and the used approaches are up to date.

**Suggestions and questions, to which the student has to answer during the defense.**

**Mistakes, which the students should avoid in the future:**

Introduction:

The introduction is in general good written, My only comment goes to quality of picture 2 and 5, which are a bit blurry. I am also missing more data about the 3'UTR of TBEV, DENV and ZIKA. There is a schematic representation of DENV 3'UTR (figure 4), but nothing about the TBEV and ZIKA. What is the homology of 3'UTR of these three viruses? How similar are they structurally?

M&N:

1 – Why did you use relative quantification instead of absolute one? This could give you results that are more exact. Did you check any other reference genes?

2 – What was the reason for various primers concentration? Did you check for reaction efficiencies of individual set ups, which could influence the results?

Results:

1 – I am missing more data about the transcribed RNA. What was the yield and the quality? Did you run the agarose gel to verify the presence of expected RNA?

2 – It is interesting to see the difference in *de novo* protein synthesis for two TBEV strains. Do you have any hypothesis for this? Is there anything know about the structure of their sfRNA and how do they differ?

3 – The microscopy images of FISH experiments are a bit hard to read. I know it is always hassle to present images, but I would recommend scaling it up and maybe only shows the best results and the others put into the supplement. I would also appreciate some guiding arrows in the pictures.

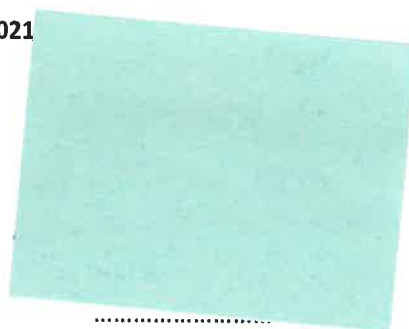
**Conclusion:** Despite all my comments and question, diploma thesis of Bc. Hana Pejšová is well written and the author proved that she mastered various techniques during her master studies. I am convinced that the presented thesis fulfills all the criteria of Faculty of Science at University of South Bohemia and I have no hesitation in recommending the thesis of Bc. Hana Pejšová for Mgr. defense

In conclusion, I

r e c o m m e n d

the thesis for the defense and I suggest the grade 1 .<sup>2</sup>

In České Budějovice      date      08.01.2021



.....  
signature

---

<sup>2</sup> You can suggest a grade, which can be modified during the defense based on the presentation. However, if the reviewer is not present at the defense, the grade will not be counted. Grades: excellent (1). Very good (2), Good (3), Unsatisfactory/failed (4).