



Přirodovědecká
fakulta
Faculty
of Science

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

STATEMENT OF THE BACHELOR THESIS REVIEWER

Name of the student: Lawrence Rudy Cadena III

Thesis title: Insights into the Evolutionary Conserved Mitochondrial Contact Site and Cristae Organization System in *Trypanosoma brucei* Through RNA Interference

Supervisor: Hassan Hashimi Ph.D.

Co-Supervisor: Iosif Kaurov M.Sc.

Reviewer: Eva Doleželová Ph.D.

Reviewer's affiliation: Biology Centre, CAS, Institute of Parasitology, Ceske Budejovice

	Point scale ¹	Points
(1) FORMAL REQUIREMENTS		
Extent of the thesis (for bachelor theses min. 18 pages, for masters theses min. 25 pages), balanced length of the thesis parts (recommended length of the theoretical part is max. 1/3 of the total length), logical structure of the thesis	0-3	3
Quality of the theoretical part (review) (number and relevancy of the references, recency of the references)	0-3	3
Accuracy in citing of the references (presence of uncited sources, uniform style of the references, use of correct journal titles and abbreviations)	0-3	2
Graphic layout of the text and of the figures/tables	0-3	3
Quality of the annotation	0-3	3
Language and stylistics, complying with the valid terminology	0-3	3
Accuracy and completeness of figures/tables legends (clarity without reading the rest of the text, explanation of the symbols and labeling, indication of the units)	0-3	3
Formal requirements – points in total		20
(2) PRACTICAL REQUIREMENTS		
Clarity and fulfillment of the aims	0-3	3
Ability to understand the results, their interpretation, and clarity of the results, discussion, and conclusions	0-3	3
Discussion quality – interpretation of the results and their discussion with the literature (absence of discussion with the literature is not acceptable)	0-3	3
Logic in the course of the experimental work	0-3	3

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

Completeness of the description of the used techniques	0-3	3
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	3
Practical requirements – points in total		27
POINTS IN TOTAL (MAX/AWARDED)	48	47

Comments of the reviewer on the student and the thesis:

Suggestions and questions, to which the student has to answer during the defense. Mistakes, which the students should avoid in the future:

As a reviewer, I am impressed by the way the thesis is written. I highly appreciate the scientific value of this work and by my opinion it could even match the criteria for Master's thesis. In the thesis, I have found just two minor formal weak points. First, I would appreciate page numbers in the Table of contents. Second, I would recommend the unification of the reference style in the list of references.

The introduction part is very well organized and is well researched. The references are well chosen. I really like the figures 5 and 7, which help to better understand the text.

The methods section is very detailed, precise and organized with few mistakes, such as:

1. The nitrocellulose membrane was probably not pretreated with methanol (page 17, 4.4.3.).
2. I am not sure if the author really incubated E.coli for 24 hrs for miniprep isolation (page 14, 4.1.10). Is not it too long?
3. There are two different concentration of phleomycin in chapter 4.2.2. (in the text and in the footnote). Are you sure that also other antibiotics concentrations are correct (page 15)?
4. There is a typo in the Fig. 8 legend – HindII instead of HindIII.
5. Sometimes there are used "where" instead of "were" (page 11, 4.1.3.).
6. Also I am not sure about using the verb "disregard" in the whole Method section, for example "Eluate is disregard from the collection tube".
7. On the page 12 there is probably wrong concentration of TAE buffer, 1x instead of 10x.
8. There is quite a jump in the 4.2.3. chapter. It would be probably more fluent if the paragraph with antibodies would be placed under Western Blotting chapter.

The results and discussion part is packed with results and these are very well described. I have just a few comments.

1. Fig. 11: Do you really expect the backbone plasmid size around 7 kb. after the digestion with HindIII? Should not it be around 5.5 kb.? Also I would appreciate a better description of the wells of the gel.
2. Did you try to quantify the efficiency of RNAi (figure 13)?
3. Could you explain why did you use LDS-PAGE? Did you try regular SDS-PAGE?
4. In the discussion in the second paragraph... you lost NOT in the sentence about TbMIC16 and about the growth phenotype.

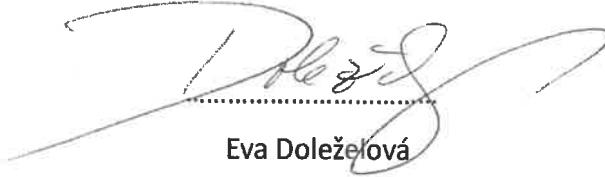
Questions for discussion:

1. Do you have any explanation why is TbMIC10-1 downregulated during RNAi of TbSAM50?
2. Could you discuss how is possible that TbMic16 does not exhibit a growth phenotype although TbMIC10-1 is downregulated in this cell line (TbMIC10-1 is essential for growth of *T.b.*, isn't it?)?
3. Did TbERV1 ever co-immunoprecipitate with TbMIC10-1?

Conclusion:

In conclusion, I recommend the thesis for the defense and I suggest the grade excellent.

In České Budějovice, 12. 6. 2018



Eva Doleželová