



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: **Matthias Kalthoff**

Thesis title: **Understanding the pathogenic life cycle of the Lyme disease pathogen
*Borrelia bavariensis***

Supervisor: **Ryan O.M. Rego, Ph.D.**

Reviewer: **Jaroslava Lieskovská, Ph.D.**

Reviewer's affiliation: **Faculty of Science, University of South Bohemia, České Budějovice**

	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	3
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		21
(2) PRACTICAL REQUIREMENTS		
Clarity and fulfillment of the aims	0-3	1.5
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	2.5
Practical requirements - points in total		25

POINTS IN TOTAL (MAX/AWARDED)	46	(0-48) ²
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Comments of the reviewer on the student and the thesis:

Thesis by Matthias Kalthoff deals with Lyme disease causing agent *Borrelia bavariensis*. This pathogen, relatively recently recognized as a new species of borrelia is associated with neuroborreliosis. The aim of the thesis was to establish animal tick model, to create red fluorescent *B. bavariensis* and obtain knock-out constructs of two infection relevant genes. Straightforward description is characteristic of all parts of thesis, including the introduction, methods and results. These are followed by proper discussion confined only to the results. The literature overview, methods and results sections are supplied with several illustrations and tables that properly document the studied topic and methodological approach. The thesis is very well written and it reads well. Concerning the results, the experimental work probably did not come up to full expectation however negative results are part of science and not the reason for criticism. I emphasize successful setting of tick-animal model which brings valuable information about life cycle of *B. bavariensis*. Also I would like to commend the broad scale of methods which were used by students.

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

Suggestion:

1. Write summary as a separate chapter.
2. Include list of abbreviation which is missing in the thesis.
3. Make corrections of species names of borrelia to italic in list of references.
4. Page 22, in methods, information about content of stacking and separating buffers is missing.

Question:

1. How would you compare your results obtained about life cycle of *B. bavariensis* with other strains of borrelia used in your laboratory? Did you notice some differences?
2. Were methods which you used for preparation of knock-out constructs successful with other strains of borrelia?
3. You write in discussion that pure DNA isolation could be behind the failure to detect of borrelial DNA from tissues. What is the principle of DNA isolation in used kit? Is there

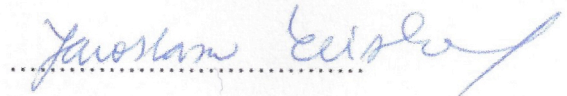
² Enter the number of points awarded.

different efficiency in isolating chromosomal borrelial DNA and plasmid DNA?

Conclusion:

In conclusion, I recommend the thesis for the defense and I suggest the grade excellent.³

In České Budějovice date 10. 9. 2018.



signature

³ 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).