



OPPONENT'S REVIEW ON BACHELOR THESIS

Name of the student: Zoja Lakovic

Thesis title: Role of adenosine deaminase in regulation of energy during bacterial infection in adult *Drosophila melanogaster*

Supervisor: Mgr. Adam Bajgar, Ph.D. & doc. Tomas Dolezal, Ph.D.

Referee: RNDr. Alena Krejci, Ph.D.

Referee's affiliation: University of South Bohemia, Faculty of Science

	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	2
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	2
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		19
(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	2
Discussion quality – interpretation of the results and their discussion with the literature (absence of discussion with the literature is not acceptable)	0-3	2
Logic in the course of the experimental work	0-3	3
Completeness of the description of the used techniques	0-3	3
Experimental difficulty of the thesis, independence in experimental work	0-3	2

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

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
Practical requirements – points in total		23
POINTS IN TOTAL (MAX/AWARDED)	48	42

Comments of the reviewer on the student and the thesis:

The thesis is very well written on the formal side, with a logical structure, clear presentation of results and minimum of typos. The exceptions of the overall excellent formal quality of the thesis may be these few inaccuracies:

- the titles of Fig.1, 2 and 3 seems to be a little bit confusing. For example, what 'ADGF-A whole flies time row FC' means? Maybe 'Adgf-A expression time course'? I do not know what FC means and it is not explained in the text.
- the *white* gene is recessive and therefore should be written as *w*, not *W* (f.e. Fig.4, Fig.5).
- typos in pages 15, 16 and 17 where several times * is used instead of x to describe the crossed flies
- the source of reverse transcriptase is not stated (company)

The data are overall well described although their significance, potential alternative explanations and the place of the new observations in the current model of the fly immune response could certainly be more expanded in the discussion.

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

Mistakes, which the students should avoid in the future:

Questions that could addressed during the defence:

1. The reason to select Adgf-A for specific knockdown in hemocytes is not entirely clear to the readers from the 'Introduction'. Why Adgf-A and not B, A2, C, D or E? Would you expect different or similar results when downregulating any of the other genes in hemocytes? Is there a *Drosophila* homologue of ADA1? In the chapter 'Aims' Adgf-A gene is not mentioned, only a general term adenosine deaminase (that can mean any of the 6 genes).

2. As it was shown by *Bajgar, 2015* adenosine is needed for the induction of the metabolic changes and immune response after the infection. In this respect, one would expect that the enzyme that degrades adenosine should be inhibited at the beginning of infection, to allow adenosine increase. However, you see the opposite in your results of mRNA expression. How do you explain this (maybe seemingly) contradictory observation? How would your data fit into the overall model of the fly immune response?

3. How could you explain your results in Fig.5 where *AdgfA-RNAi x w* behaves differently in the chill coma recovery assay than *w* controls? Is AdgfA-RNAi expressed in the progeny from the *AdgfA-RNAi x w* cross?


Conclusion:

In conclusion, I

r e c o m m e n d

the thesis for the defense and I suggest the grade excellent

In Ceske Budejovice date 12/9/2018


.....
signature