



Přírodovědecká
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: **Nora Hagleitner**

Thesis title: **RNAi screen of selected NAD(H) binding proteins in Drosophila wing**
Supervisor: **RNDr. Alena Krejci, Ph.D.**

Reviewer: **Alexander W. Bruce, Ph.D.**

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

	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	2
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	2
Formal requirements – points in total		18
(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 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	2
Experimental difficulty of the thesis, independence in experimental work	0-3	2
Quality of experimental data presentation	0-3	3

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

The use of up-to-date techniques	0-3	2
Contribution of the thesis to the knowledge in the field and possibility to publish the results (after eventual supplementary experiments)	0-3	1
Formal requirements – points in total		21
POINTS IN TOTAL (MAX/AWARDED)	48	(39) ²

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

1. Can Nora comment on the gene CG11654 that was part of her screen. Its phenotype after RNAi mediated knockdown shows thick veins and Notches, typical features of Notch loss of function. However, she does not comment on this result in the discussion.
2. Do you know any other experimental approaches how to inactivate the expression of a gene of interest, apart of the RNAi approach?

Eventual mistakes, which the students should avoid in the future:

- Figures should be numbered as they appear in the text. For example, Nora's Figure 5 should have been Figure 7.
- Legend to figures should be self-explanatory and the description should not contain only a web link to the original source.

Eventual additional comments of the reviewer on the student and the thesis:

The Bachelors thesis of Nora Hagleitner touches on an interesting topic that deals with the interplay between metabolism and cell signalling. Her work was part of a bigger project conducted in the Krejci lab that aimed to identify metabolic sensors important during development, with the emphasis on their role in the Notch signalling pathway. She conducted an RNAi mini-screen with 40 candidate RNAi lines by down-regulating the expression of selected NAD(H) binding proteins in the posterior part of the wing using the engrailed-gal4 driver and looked for wing phenotypes in adults. She identified several interesting candidate genes whose down-regulation led to defects in wing development, some of which resembled the phenotype of Notch gain or loss of function. These genes are of particular interest as they may be the metabolic proteins sensors that regulate the metabolic response of the Notch pathway.

The work has been precisely conducted, testing the effects of the RNAi at various temperatures to control the strength of its effect. The introduction section of the thesis is well written although it stays quite on the surface of the topic and the sub-chapters about the interplay between metabolism and cell signalling would deserve more attention. The results are summarized in the form of an extensive table, supplemented by pictures of wings from selected interesting candidates. The discussion concentrates on the five most interesting genes and their possible role in Notch signalling. The wing phenotypes are well described in the context of other known data about the metabolic regulation of the Notch pathway and in the context of new experiments that other people in the lab performed based on the preliminary data Nora generated (I am informed). Finally, the discussion suggests future experimental approaches that should be taken, in order to link the interesting RNAi phenotypes to Notch signalling and metabolism.

Overall, the thesis is well written and I believe that the data Nora generated are of a good standard and of wider use to the Krejci laboratory. Occasional typos and briefness of certain

² Enter the number of points awarded.

sections could be a small reproach but it does not spoil the overall impression of the whole thesis.

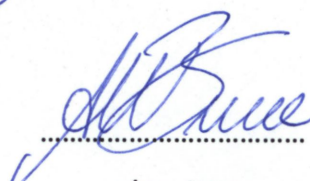
Conclusion:

In conclusion, I

r e c o m m e n d

the thesis for the defense and I suggest the grade excellent .³

In *Česté Bratjovce* date *13/9/2016*


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.