



## STATEMENT OF THE BACHELOR/DIPLOMA\* THESIS REVIEWER

Name of the student: *Dajana Tanasic*

Thesis title: *The expression pattern of CG18446 gene in *Drosophila melanogaster**

Supervisor: *Alena Krejci, PhD*

Reviewer: *CASPER GROTTH, PhD*

Reviewer's affiliation: *The Czech Academy of Sciences*

	Point scale <sup>1</sup>	Points
<b>(1) FORMAL REQUIREMENTS</b>		
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	2
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	2
Formal requirements – points in total		17
<b>(2) PRACTICAL REQUIREMENTS</b>		
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	3
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	3
Quality of experimental data presentation	0-3	3
The use of up-to-date techniques	0-3	3

\* Choose one

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

Contribution of the thesis to the knowledge in the field and possibility to publish the results (after eventual supplementary experiments)	0-3	3
Formal requirements – points in total		26
<b>POINTS IN TOTAL (MAX/AWARDED)</b>	<b>48</b>	<b>(0-48)<sup>2</sup></b>

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

*see accompanying sheet of paper.*

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

*repeated species nomenclature mistakes, Species names must be*

**Eventual additional comments of the reviewer on the student and the thesis:** *in italics.*

**Conclusion:**

In conclusion, I

recommend / do not recommend\*

the thesis for the defense and I suggest the grade <sup>3</sup>

In date

*11/6/2014*

*[Handwritten Signature]*  
signature

<sup>2</sup> Enter the number of points awarded.

<sup>3</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.

Dajana Tanasic  
BSc thesis report/evaluation

Ms Tanasic set out to describe the expression pattern of the putative Notch target gene CG18446 in *Drosophila melanogaster* using a FlyFos construct, containing a 30 Kb genomic region encompassing CG18446 and tagged with GFP, termed CG18446-GFP. CG18446-GF transgenic flies were subsequently used to identify the expression pattern of CG18446 in the lymph gland, adult ovaries, larval ovaries and testes, as well as larval fat body tissue.

Given that CG18446 is expressed in the ovaries, Ms Tanasic was able to show that CG18446-deficient flies exhibit a significant reduction in egg laying capacity compared to wildtype flies, thus implicating a role of CG18446 in oogenesis. Furthermore, CG18446 mutant flies show a marked reduction in the number of eggs hatched compared to wildtype eggs, and a rescue-construct, thus substantiating that CG18446 plays an important function during oogenesis and general development.

She further set out to show that the expression of CG18446 is upregulated in immune-challenged larvae, following larval infection with wasp eggs (in collaboration with Dr Tomas Dolezal).

Finally, she provides preliminary evidence that CG18446 mutant flies are subject to decreased survival rate following starvation compared to wildtype flies, thus linking the expression of CG18446 in fat tissues to the physiological homeostasis of energy metabolism.

The study is well carried out and shows that Ms Tanasic has gained a detailed understanding of the Notch signaling pathway, and its regulation of development and adult tissue homeostasis.

Question 1:

What is the distinguishing feature of signal transduction of the Notch signaling pathway compared to other signal transduction pathways?

Question 2:

CG18446-deficient male and female survival rates (Fig. 22 and 23) are markedly different following starvation. How is this explained and what should be done to further explore this intriguing result?



Casper Groth, PhD  
11/6/2014