



SUPERVISOR'S STATEMENT ON BACHELOR/DIPLOMA* THESIS

Name of the student: Verena Fettingner

Study program: Biological Chemistry

Department/Institute: Institute of Chemistry

Thesis title: Influence of Juvenile Hormone and its Receptor on the Immune system during Metamorphosis of *Drosophila melanogaster*

Supervisor: Marek Jindra

Supervisor's affiliation: Department of Molecular Biology and Genetics

	Point scale ¹	Points
(1) FORMAL REQUIREMENTS		
Formal and graphical quality of the thesis	0-3	1
Ability to work with literature	0-3	2
Language and stylistics	0-3	2
Formal requirements – points in total		5
(2) PRACTICAL REQUIREMENTS		
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	0-3	2
Experimental difficulty of the thesis, independence in experimental work	0-3	2
Contribution of the thesis to the knowledge in the field and the possibility to publish the results (after eventual supplementary experiments)	0-3	2
Practical requirements – points in total		12
POINTS IN TOTAL (MAX/AWARDED)	24	17²

* Choose one

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

² Enter the number of points awarded.

Comments of the supervisor on the student and the thesis:

Verena Fettinger worked in my laboratory to explore a hypothesis that juvenile hormone (JH) regulates the insect immune system during metamorphosis. The idea was that the large-scale rebuilding of insect tissues, such as the gut, during metamorphosis presents a natural immune challenge, and that JH, which regulates metamorphosis also modulates the immune response. To address the hypothesis, Verena used the genetic model *Drosophila melanogaster*, where mutants lacking JH receptor genes are available.

Verena managed to largely confirm this hypothesis as she has shown that several antimicrobial peptide genes become upregulated in the absence of the JH receptor proteins in mutant *Drosophila*.

Verena quickly learned the basic fly genetics and mastered the method of qRT-PCR starting from RNA isolation from adult flies. She worked very carefully, and her results were mostly reproducible and reliable. She showed good understanding not only of the method but also of the entire scientific problem at hand. It was a pleasure to supervise her in the lab.

The weak part of the entire project was the long interruption following the stay, and the insufficient time provided for the experimental work. The quality of the thesis itself was also compromised by this, and by the short time Verena eventually spent on its preparation almost two years after leaving my lab. Overall, however, I would agree that Verena has earned her bachelor's degree.

Conclusion:

In conclusion, I

recommend / ~~do not recommend~~*

the thesis for the defense.

In **České Budějovice** date **28.7.2020**

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signature