



Přírodovědecká
fakulta
Faculty
of Science

Jihočeská univerzita
v Českých Budějovicích
University of South Bohemia
in České Budějovice

SUPERVISOR'S STATEMENT ON BACHELOR THESIS

Name of the student: Maly Bertolutti
Study program: Biological Chemistry
Department/Institute: Institute of Chemistry, Faculty of Science, University of South Bohemia
Thesis title: CRISPR/CAS9 Genome editing in *Pyrrhocoris apterus*

Supervisor: Joanna Kotwica-Rolinska and David Dolezel
Supervisor's affiliation: Institute of Entomology, Biology Centre, Czech Academy of Sciences

	Point scale ¹	Points
(1) FORMAL REQUIREMENTS		
Formal and graphical quality of the thesis	0-3	3
Ability to work with literature	0-3	2
Language and stylistics	0-3	3
Formal requirements – points in total		8
(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	2
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	3
Practical requirements – points in total		12
POINTS IN TOTAL (MAX/AWARDED)	24	(20)

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

Comments of the supervisor on the student and the thesis:

Maly Bertolutti started to work under my supervision in November 2018. The subject of Maly' thesis was to use the CRISPR/Cas9 technology for genome editing in *Pyrrhocoris apterus*. In order to do so, the student needed to:

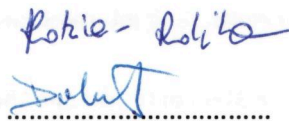
- analyze the sequence of CRY2 protein,
- find the part of the sequence which, when modified should disrupt but not destroy the function of the protein,
- design and test different guide RNAs
- and with luck produce desired mutants.

During practical part of the thesis Maly did all planned experiments by herself, with exception of eggs injections. Results obtained by Maly, which are presented in her thesis, were of very good quality and are included in the methodological publication concerning CRISPR/Cas9 genome editing in *Pyrrhocoris apterus*, where Maly also figures as a co-author. What I would like to emphasize is that student did more of laboratory work, than is presented in the thesis. For example, she tested efficiency of 4 additional guide RNAs, took care of G0 and F1 generation of putative CRY2 mutants, almost reaching the point of F1 screening, and also participated in our first trial of mutagenesis by CRISPR/Cas9 and homology directed repair. Maly followed instructions flawlessly, both, while performing experiments and then describing and discussing results. However in my opinion, she still needs to work harder in order to demonstrate scientific independency.

Conclusion:

In conclusion, I r e c o m m e n d the thesis for the defense.

In České Budějovice date 03.02.2020



signature