



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: **Aljosa Smajic**

Thesis title: **Creation of *Drosophila melanogaster* mutant for sirt2 and sirt7 genes**

Supervisor: **Dr. Alena Krejci**

Reviewer: **David Dolezel**

Reviewer`s affiliation: **Dpt. of Molecular Biology, Faculty of Science, Uni. of S. 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	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	3
Graphic layout of the text and of the figures/tables	0-3	2
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	3
Formal requirements – points in total		20

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

(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 the 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
Contribution of the thesis to the knowledge in the field and possibility to publish the results (after eventual supplementary experiments)	0-3	3
Practical requirements – points in total		26

POINTS IN TOTAL (MAX/AWARDED)

48

46

Comments of the reviewer on the student and the thesis:

Aljosa Smajic's thesis aimed to create multiple mutants for sirtuin genes in the fruitfly, *Drosophila melanogaster*. It is very ambitious project resulting in double mutant fly. In essence, the student had to absorb basics of *Drosophila* genetics, learn logic of CRISPR/CAS9 methodology and of course obtain training in molecular biology techniques. The amount of work might be even sufficient for master thesis

Aljosa's thesis has classical structure, detailed introduction, result section and discussion. Number of typos is relatively low. But --- It is important to be consistent with latin names – sometimes in italics, sometimes not. Genus name starts with capital, species name not (i.e., *melanogaster* should not start with capital, page 16).

Technical aspects of the work. Given the number of work done, I would expect slightly better gel picture for the Figure 11, where contamination with marker was loaded... But more importantly, **the very same picture** was presented by Paraskevi Tziortzouda (in her thesis as a figure 14...). WHY??? (that is just rhetorical question...).

As I wrote before the thesis is of excellent experimental quality, huge amount of work was done and Aljosa Smajic certainly achieved the aims she set.

Suggestions and questions, to which the student has to answer during the defense. Mistakes, which the students should avoid in the future:

Small things: p. 12, Fig 8 – bad resolution, I cannot read numbers in the figure

page 16: "...Dependent on the media the virgins were collected ..." – better to explain that if flies were kept at 25C, virgins were collected in 8hrs intervals, and when flies were at 18C, virgins were collected at 18hrs intervals..

p. 17 "...and transferred to squashing buffer" - if you write a paper, a thesis, or any other technical report, you need to provide sufficient information, here constitution of the buffer (squishing/squashing buffer).

p.21 the chapter is named "Digestion of purified PCR products by T7 endonuclease". But basically

you describe recipe for DNA precipitation/purification and corresponding title would be better. You should also briefly explain why you need to precipitate PCR products. (I would guess that you want to have clean DNA and you want to provide the right buffer for T7 endonuclease, so you get rid of PCR buffer, free nucleotides...).

On page 34 you write: "However, we can clean individual chromosomes by crossing and recombining for at least six generation with a wild type strain." Why six generations?

Please, suggest some possibilities, how to minimize problems with offtargeting.

Conclusion:

In conclusion, I r e c o m m e n d the thesis to be defended with the grade excellent or very good, depending on quality of the presentation.

In Ceske Budejovice date 12th September 2017

David Doležel

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signature

