



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: Laura Zellner
Study program: Biological Chemistry
Department/Institute: Biology Centre CAS, Institute of Parasitology
Thesis title: Preparation of antibodies to determine the association of mitoribosomal complexes with mitochondrial membrane

Supervisor: Ondřej Gahura
Supervisor`s affiliation: Biology Centre CAS, Institute of Parasitology

	Point scale ¹	Points
(1) FORMAL REQUIREMENTS		
Formal and graphical quality of the thesis	0-3	2.5
Ability to work with literature	0-3	2.5
Language and stylistics	0-3	2.5
Formal requirements - points in total		7.5
(2) PRACTICAL REQUIREMENTS		
Fulfillment of the aims	0-3	2
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	3
Experimental difficulty of the thesis, independence in experimental work	0-3	3
Contribution of the thesis to the knowledge in the field and the possibility to publish the results (after eventual supplementary experiments)	0-3	2.5
Practical requirements - points in total		13.5
POINTS IN TOTAL (MAX/AWARDED)	24	21

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

Comments of the supervisor on the student and the thesis:

The main goal of Laura's thesis was to produce antibodies against four proteins associated with mitochondrial translation in *Trypanosoma brucei*. The antibodies were then used in several pilot experiments, employing methodology previously not established in our group. Laura performed all steps to produce recombinant antigens (cloning, expression optimization and affinity purification). After the antibodies were produced, she tested them extensively on whole-cell lysates and subcellular fractions. Finally, Laura performed experiments that should ultimately answer the question whether the precursor of the small mitoribosomal subunit (mtSSU), which we study, is associated with the inner mt membrane during mtSSU assembly.

Laura's work was affected by two unfortunate factors - covid19-related delays and the fact, the antibodies turned out to be rather poor, with limited use. Despite these circumstances, Laura performed impressive number of experiments and generated valuable data. Most importantly, she substantially helped to establish and optimize several protocols, which are now used in several projects in our lab. Although the results presented in the thesis are preliminary, they provided a good starting point - I have already successfully tested some modifications of protocols proposed in the discussion.

In the frame of the project, Laura experienced, and in here case, I can safely say mastered, exceptionally large number of diverse techniques of biochemistry and molecular biology (molecular cloning, protein expression and purification, cell culture, western blotting, subcellular and submitochondrial fractionation, gradient centrifugation, RNA isolation and analyses by blotting and autoradiography,...), using two organisms (*E. coli* and *T. brucei*). She always wanted not only to perform the experiments precisely, but also understand the principles of methodology. On top of that, she worked very reliably and independently, with minimal requirements on guidance.

Conclusion:

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

In *C.B.* date *25.1.2021*

