



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:** Sascha Gratzl

**Study program:** Biological Chemistry

**Department/Institute:** Institute of Parasitology, Biology Centre CAS

**Thesis title:** Post-transcriptional regulation of TbIF<sub>1</sub> in life cycle of *Trypanosoma brucei*

**Supervisor:** Ondřej Gahura

**Supervisor's affiliation:** Institute of Parasitology, Biology Centre CAS

### Comments of the supervisor on the student and the thesis:

Sascha participated in a project that aims to determine mechanisms of post-transcriptional regulation of trypanosomal TbIF<sub>1</sub>, a conserved proteinaceous inhibitor of the ATP hydrolytic activity of the mitochondrial ATP synthase. The ATPase activity of the enzyme is essential in the bloodstream form of *Trypanosoma brucei*, and therefore TbIF<sub>1</sub> has to be tightly repressed in this life cycle stage. Because *T. brucei* lacks transcriptional regulation, the downregulation of TbIF<sub>1</sub> is post-transcriptional. The goal of the Sascha's project was to find elements in 3'UTR of TbIF<sub>1</sub> responsible for the gene's repression, and to test, whether the repression is caused by decreased translation. To address these questions, he employed a series of CAT reporters, measured their expression on RNA and protein level, and based on the results determined the efficiency of translation of a subset of the reporters.

Sascha mastered a broad range of methods, including cell culture, transfection, RNA techniques, ELISA or qRT-PCR. I would like to point out that he significantly contributed to establishing of fractionation of ribosomal species on sucrose gradients in our lab. He performed several rounds of optimization and troubleshooting, often without my direct guidance and, together with other colleagues, developed a protocol we have been using since then. Sascha was on one hand very self-contained with a good grasp of methodology and lab routine, on the other hand, he was not afraid to approach me with meaningful questions in case of doubts. Sascha was hard-working and determined to make a progress in the project. He proved ability of critical thinking when performing experiments and fine tuning the protocols. For his future scientific career, he would benefit from somewhat improved organization of lab books and experimental data.

Writing up the thesis was an iterative process. Sascha started with writing well in advance, which allowed us several rounds on editing. In the initial stages we had to unify our views of the thesis structure, but Sascha readily reflected my comments and recommendations. At the same time, he asked for explanation or expressed disagreement, when he found it relevant. Although I helped with some formulations and scientifically appropriate terminology (which I view as a part of the teaching process), the text of the thesis is largely Sascha's work.

In summary, having a student such as Sascha is a pleasure for the supervisor and benefit for the project.

