

Recommendation of the PhD advisor

Title of the PhD thesis: Genome analysis of the haloalkaliphilic bacterium
 Rhodobaca barguzinensis
Author: **Mgr. Karel Kopejtka**

Mr. Karel Kopejtka MSc. started his PhD programme in Molecular Biology in 2013 at the Faculty of Science, University of South Bohemia in České Budějovice. The experimental part of the thesis was conducted at the Institute of Microbiology CAS in Trebon. His PhD thesis focuses on the sequencing and analysis of the genome of phototrophic bacterium *Rhodobaca barguzinensis* which was selected as an organisms with physiology between aerobic anoxygenic phototrophs and purple non-sulfur bacteria.

During his work Karel learned and used a number of methods. First he had to purify and grow bacterial cultures. Then he needed to isolate genomic DNA with good quality. After the sequencing was performed he learned how to assemble and annotate the genome. He also analyzed the main metabolic pathways and performed phylogenetic comparison with other related members of family Rhodobacterales. In addition he also learned other laboratory techniques such as liquid gel electrophoresis, chromatography, spectroscopy etc. Karel also participated in field experiments and sampling of freshwater lakes conducted by our laboratory. Karel gradually mastered all necessary techniques, conducted his work with full interest without the need of much supervision. During tedious measurements he also proved his diligence, patience and persistence.

Karel fulfilled all the required study duties. He spend more than 4 months in the collaborating lab at the Helmholtz Institute for Infection Research in Braunschweig Germany. He presented his work at several international meeting. Namely at the *International Symposium of Phototrophic Prokaryotes* in Thübingen, Germany (poster) in 2015, *Roseobacter Workshop* in Braunschweig (poster) in 2016, and 2nd *Regional Symposium on Aquatic Microbial Ecology* in Hluboká nad Vltavou (lecture) in 2016. The teaching obligations were fulfilled at the Dept .of Genetics and Microbiology, Faculty of Science UK, in Prague.

Karel is currently the first author of two research papers, the third MS is currently submitted to Genome Biology and Evolution. In addition he is co-author of additional three published articles. Karel is also the first author of one science popularization paper for journal Vesmír (in Czech). Some other works are currently submitted or in preparation.

I conclude that Karel Kopejtka MSc. has fulfilled all his duties as PhD student and demonstrated all skills and knowledge for future scientific carrier. The present thesis fully meets international standards. Therefore I am glad to suggest its acceptance and recommend its positive evaluation.

In Třeboň, January 29th, 2019



Doc. Michal Koblížek Ph.D.
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PhD advisor