



BIOLOGY CENTRE CAS

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Supervisor review of the bachelor thesis of Miss Kateřina Kabeláčová: The fitness of three strains of the alga *Chromera velia* - Salinity and pH

The bachelor thesis aims to compare three strains of *Chromera velia* in the physiological point of view. The study was focused on the ability to sustain growth in extreme environmental conditions like pH 10 or pH 6 and from zero to extra high salinity. The hypothesis is based on the comparison of lifestyles of some apicomplexans parasites, the closest photosynthetic relatives of *C. velia*, and their ability to cope with different extreme environments like bloodstream, insect gut, intracellular compartment etc. The study is divided into two parts. The results of the first part are obtained growing curves of particular strains in different conditions of salinity and pH. This approach requires handle laboratory routines as working in the sterile environment, preparing the cultivation media, take care of cultures, controlling the spectrophotometer. In all these processes Kateřina was very handy and was able to learn it during several days. Also, she was performing the regular measurements and sample harvesting for further analysis. The second part of the study is dealing with obtaining lipidomic profile by high performance liquid chromatography and mass spectrometry and its interpretation via multivariate statistical analysis. For the purposes of mass spectrometric approach, the lipids were extracted in chloroform and methanol solution. This was also Kateřina's job. Mass spectrometry and data interpretation were done by me. Because the mass spectrometer is a valuable piece of technology and controls it is not within the scope of bachelor thesis. However, Kateřina was present in a majority of measurements and fully understand of obtained data and interpretation of multivariate statistic analysis and its graphical outputs.

Even it is not very common for non-native English speakers I encourage Kateřina to write the thesis in English. The result is now not so satisfying but a lot of the terms in English are hard or almost impossible to translate appropriately and the experience for Kateřina is very valuable. What is very good, in my opinion, is the high number of used sources and cited papers pointing to good orientation in literature, which I consider as the most important part of bachelor thesis. I have also mentioned that even the bachelor work was time-consuming Kateřina participate in Erasmus project and one semester spent successfully in Norway.

Despite all the languages problems and some other relevant reviewer objections, I believe that bachelor thesis follows the university criteria and I recommend the thesis for the defence.

23.5.2018 in České Budějovice


RNDr. Aleš Tomčala Ph.D.