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Posudek školitele k bakalářské práci Terezy Faitové:

In silico* characterization of the plastid proteomes of *Chromera velia* and *Vitrella brassicaformis

Terka came to our lab in the winter semester of 2017/2018 to do her bioinformatics internship with an extension to a full-length bachelor thesis. What seemed like an easy project of predictor comparison and characterization of a set of proteins, turned out to be a bit more complicated. Still, Terka proved to be highly motivated and hardworking to the last minute of the thesis submission and thus managed the work excellently.

The presented project comprised of three main parts, preparation of reference sets of proteins of known localization, comparison of predictor performances, and downstream analyses of the predicted plastid proteins. The first part necessitated an understanding of cellular biochemistry, why some biochemical pathways need to be organelle-localized, and how this arrangement is affected by endosymbiotic events. This understanding Terka showed by writing the introduction in the early phase of her work and by preparing the reference data, which was done mostly manually following available literature. During the second part, we came across complications with misannotated N-terminal ends of protein models, as well as potential oddities of chromerid metabolism. As a result, we had to discard some reference sequences and in fact this took a lot of time to accomplish, but the good reference set was essential to obtain reliable results. Quickly approaching the deadline, Terka then could move on to the third part of her work, the evaluation of the predicted plastid proteomic data. Here she learned to use several bioinformatics tools, as well as some basics of phylogenetics, which I consider essential for understanding the function and evolution of proteins. Throughout this work, Terka used shorter or longer codes, mostly in Python language, which made her work much more efficient. She also learned the importance of invisible characters in data analysis, which is a good benefit for a bioinformatician in her beginnings.

To sum up, Terka got to know a lot about science during the work on her thesis. She learned how to be knowledgeable in scientific literature, how to use various tools for sequence and data



analysis, how to structure and write scientific texts, how to present her data, and, importantly, how to work under time pressure. I was lucky to be her supervisor as she always came to work with a smile, and I gladly recommend her for obtaining the bachelor title at the Faculty of Science of the University of South-Bohemia in České Budějovice.

In České Budějovice, 24th May 2018

Mgr. Zoltán Füßy, Ph.D.