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### **Supervisor's evaluation of Kateřina Malinová for the purpose of her Bachelor thesis defense**

**Thesis title: Phycobilin pigments as building blocks of artificial light-harvesting structures**

Kateřina did her thesis as part of her study of the cross-border Biological Chemistry program. Kateřina conducted most of the experimental work during the spring 2020 lockdown of our country due to the COVID-19 crisis. Kateřina quickly oriented herself in our laboratory, understood and learned all skills and methods necessary for working on her thesis and she was able to carry out most of the experimental work in a relatively short amount of time. Kateřina has a cheerful, easygoing personality and good work ethic which made my supervisor's work a pleasure. Due in part to the relatively free scheduling, Kateřina quickly carried out the initial experiments of the work, namely the pre-purification of the water soluble protein fraction from the cells and the different hydrolysis protocols we wanted to test. She managed perfectly the purification of phycocyanobilin by TLC as well as the esterification procedures. Although this is not the first thesis on this topic to come out of our laboratory, we are still slowed down by low availability of purified bilin. Unfortunately the bilin purification is labor-intensive. Kateřina managed to repeatedly prepare enough source material to make all the necessary HPLC tests and analyses.

In writing the thesis, Kateřina managed to mostly stay self-sufficient and she did not need major input from me. The process of writing was negatively impacted by the return to normal school regime and the need to catch-up with all the delayed school seminars and lab exercises. Kateřina learned to understand field-specific literature at a level expected of an undergraduate student. Kateřina also learned how to find relevant references and how to extract key information from them. Thanks to this we have significantly improved our understanding of the phycobilin chemistry. Essentially the only negative comment from me is on the quality of English writing. While not at all bad, there is quite a lot of room for improvement for Kateřina and I'm sure she is well aware of it. I'm mostly mentioning this because English is the language of instruction in the Biological Chemistry program and therefore the expectations are a bit higher than in the case of students from Czech study programs. Nevertheless, I believe the presented thesis meets or exceeds the requirements demanded of such a work at our

university both in terms of the amount of experimental work and in terms of final written thesis presentation.

**In conclusion**, I believe Kateřina fulfilled all criteria required of a bachelor student in preparation of a thesis and I very much **recommend her thesis for defense**.

In České Budějovice, 22 January, 2021

