

Name of the student: Miriam Mueller

Supervisor's statement

At the initial interview, Miriam showed strong interest in epigenetics and aging. Therefore, in her project, she analysed expression changes of epigenetic factors during aging, and searched for differences between short-lived and long-lived species. Epigenetic changes are a hallmark of aging, but it remains to be elucidated whether for example higher stability of specific epigenetic marks, or specific epigenetic mechanisms are associated with longevity and healthy aging. Because of the big technical differences between the compared datasets, we aimed to identify only the biggest and most consistent changes in a relatively crude or naïve way. She started working on her project in October 2021 and completed it within seven months. During this relatively short period, she acquired skills in classical RNA-seq data processing and mapping and gene expression quantification, and she independently developed a number of Python scripts for downstream data analysis. Unfortunately, the first part took longer than expected, so there was not enough time to finish the second part, in which Miriam aimed to compare expression of epigenetic factors in young tissues of various short-lived and long-lived species. Nevertheless, she made important preparatory steps for this analysis, so it will be easy for someone to continue this project.

Miriam is a very self-motivated, driven and hard-working student and she has been constantly demonstrating it while working on her project. She was able to independently think about her project, suggest and develop new approaches for data analysis, critically evaluate the results and discuss them with existing literature. She was motivated to succeed, and she gets things done quickly, showing her dedication and determination.

In terms of analytical approaches, Miriam clearly showed she was able to perform all required bioinformatic analyses without much guidance from me, at a very high level for an undergraduate student. Regarding thesis, she made great progress between the first draft and final version. Nevertheless, I believe there was space for more improvement if there had been more time and will. When writing introduction, it seemed to be very difficult for Miriam to work with scientific literature and write in scientific language. However, in discussion, she showed a very good level of work with scientific literature, for the purposes of interpretation of her results and comparison with existing literature. I do not want to sound negative, as it is understandable that students have to learn somehow how to write good scientific text and particularly thesis, I just felt that it would be a shame if a student with a really good performance at practical work on the project did not submit an equally good thesis.

Overall, my impression of Miriam was positive, and she clearly showed she is highly capable of bioinformatic work. I recommend her thesis for defence.

In České Budějovice, on 3.5.2022

Mgr. Lenka Gahurová, Ph.D.