

Posudek školitele na diplomovou práci

školitelský posudek

Jméno školitele: Tomáš Mašek

Datum: 5.9.2024

Autor: **Marharyta Ramanava**

Název práce:

Introducing of an experimental approach to study mitotic translation in human cell lines

Zadané cíle práce, včetně tématu literárního přehledu:

Current research in our lab is focused on regulation of translation in mitosis. We address two main questions: 1) What are mitotic-specific modifications of translational apparatus? 2) What mRNAs are translationally regulated in mitosis? When Rita became a team member, aims of her Master's thesis were set accordingly: a) Identification of new, yet unidentified direct or indirect binding proteins that interact with the translation factors eIF4E and eIF4E2 during mitosis in RPE-1 cells; b) Validation of mRNAs that have already been identified by ribosome profiling and whose translation is either upregulated or downregulated in mitosis of RPE-1 cells by polysome profiling and qRT-PCR analysis.

Přístup studenta k práci s literaturou:

Rita wrote the literature review independently; I just installed the citation software on her computer, and we discussed the chapters and their preliminary content.

Přístup studenta k práci v laboratoři (přístup při učení se nových metod, aktivita, samostatnost, systematická práce i docházky do laboratoře):

Marharyta started working in the lab in her final year of undergraduate studies. I see her as a motivated, hard-working student with a genuine interest in biology and the natural sciences. She has learned many techniques, is precise in performing experiments, and is now trained in complex experiments that require avoiding any technical errors. She is also able to interpret experimental results and put them into a biological context.

Přístup studenta při sepisování práce:

The completion of the planned experiments (by which I mean the collection of a sufficient number of biological replicates) was prevented by the unplanned closure of the laboratory for the installation of air conditioning. We had to stop work for 5 weeks and Rita was still finishing the last experiments at the end of June. The thesis itself was thus written up in record time of 5 weeks approximately, what led to some formal shortcomings in the thesis. Due to the lack of time to write up the thesis, Rita did not include some of her results, where she tested suitable lysis buffers for immunoprecipitation and tried to select a suitable compatible nuclease for cleaving RNA in immunocomplexes. She also did not report results where she

verified the functionality and correctness of all components needed to generate stable cell lines with inducible EIF4E2 expression.

Splnění cílů práce a celkové hodnocení:

Taken together, I evaluate Marharyta's work very high and I am convinced that the thesis meets the recognized standards of Charles University for the M.Sc. award. Therefore, I gladly recommend acceptance of this thesis and wish Marharyta a successful and meaningful professional career. Considering not only the thesis itself, but also the effort in conducting the experiments, the total amount of work, and the fact that Rita was forced by me to write the thesis in English, I rate the thesis as excellent overall.

Návrh hodnocení školitele:

výborně velmi dobře dobře nevyhověl(a)

Podpis školitele: