



Přírodovědecká
fakulta
Faculty
of Science

Jihočeská univerzita
v Českých Budějovicích
University of South Bohemia
in České Budějovice

SUPERVISOR'S STATEMENT ON BACHELOR THESIS

Name of the student: Agop Kabrelian
Study program: Biological Chemistry
Department/Institute: Institute of Chemistry and Biochemistry
Thesis title: Reverse pharmacology: Searching for novel drugs in ticks and testing their effects on host immune cells

Supervisor: RNDr. Jindřich Chmelař, Ph.D.
Supervisor's affiliation: Department of Medical Biology

	Point scale ¹	Points
(1) FORMAL REQUIREMENTS		
Formal and graphical quality of the thesis	0-3	2
Ability to work with literature	0-3	3 2
Language and stylistics	0-3	2
Formal requirements – points in total		7 6
(2) PRACTICAL REQUIREMENTS		
Fulfillment of the aims	0-3	2 1,5
Ability to understand the results, their interpretation, and clarity of the results, discussion, and conclusions	0-3	2
Discussion quality – interpretation of results and their discussion with the literature	0-3	2

¹ Mark as: 0-unsatisfactory, 1-satisfactory, 2-average, 3-excellent.

Experimental difficulty of the thesis, independence in experimental work	0-3	2
Contribution of the thesis to the knowledge in the field and the possibility to publish the results (after eventual supplementary experiments)	0-3	1
Practical requirements – points in total		9,8

POINTS IN TOTAL (MAX/AWARDED)	24	18
		16,5

Comments of the supervisor on the student and the thesis:

Agop started his work under my supervision in the autumn of 2016. He was very eager to learn everything and do everything to make his work and project excellent. He also applied successfully for SGA grant. So definitely one Agop's virtue is that he is ambitious and tries his best to push his career forward.

Unfortunately, this goes together with absent-mindedness and often with his inability to focus. Agop wanted to pursue the topic of reverse pharmacology and he wanted to learn as many methods and techniques as possible. Therefore, we put together a topic that could encompass all steps of reverse genetic approach in drug discovery. Such project, however, would have need much more time to be finished successfully in all aspects than 6 months. It includes bioinformatics, molecular cloning, protein expression and purification and protein testing in bioassays. I chose Da-p36 family from *Ixodes ricinus*, as described by Schwarz et al., 2013. Agop spent more than month with alignments and phylogenetics and he was very independent in this. However, he felt that the time is running so we started with PCR amplification of three family members. This was not successful, so Agop started to be afraid that he would not be able to do all other stuff, as he was interested especially in bioassays and immunology. Therefore, we agreed that Agop start with testing some of our recombinants in THP-1 cell adhesion, CD4+ proliferation and that he tries platelet isolation and aggregation assay. The most of the time Agop spent with adhesion and after few experiments, he was able to do the assay independently. CD4+ proliferation was done under supervision of Honza Kotál. Than we started to do platelet aggregation assay, according to one article. It was already at the end of Agop's time

here and we waited long time for antibodies, so finally we were able to do only few replications and measurements. However, Agop started the optimization of the technique we are using now. I think that Agop learned a lot of laboratory techniques, including preparation of media and buffers. He could not, however, go deeper into problematics due to his orientation to method learning, which resulted in worse understanding of the topic and principles of the methods he learned to perform.

The writing of the thesis itself would need more time to polish everything and to catch all the bugs, but the time was not available.

Overall, I think Agop is very ambitious and eager to learn. However, he needs to learn to focus on a scientific problematics, not only to techniques and to methods. This will be crucial in his future scientific career.

Conclusion:

In conclusion, I r e c o m m e n d the thesis for the defense.

In **České Budějovice** date **17.9.2018**

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signature