



Přírodovědecká
fakulta
Faculty
of Science

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

SUPERVISOR'S STATEMENT ON BACHELOR/DIPLOMA* THESIS

Name of the student: František Jiřík
Study program: Cross-Border Study of Biological Chemistry
Department/Institute: Institute of Chemistry and Biochemistry
Thesis title: The effect of selected pharmaceuticals on growth, biomass and activity of soil microorganisms

Supervisor: MSc. Zuzana Frková, PhD., RNDr. Alica Chroňáková, PhD.
Supervisor's affiliation: Institute of Soil Biology, Biology Centre CAS

	Point scale ¹	Points
(1) FORMAL REQUIREMENTS		
Formal and graphical quality of the thesis	0-3	3
Ability to work with literature	0-3	2
Language and stylistics	0-3	2
Formal requirements – points in total		7
(2) PRACTICAL REQUIREMENTS		
Fulfillment of the aims	0-3	3
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
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	3
Practical requirements – points in total		12
POINTS IN TOTAL (MAX/AWARDED)	24	19²

* Choose one

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

² Enter the number of points awarded.

Comments of the supervisor on the student and the thesis:

The thesis is based on manipulative experiments in order to evaluate how irbesartan (selected pharmaceutical) affect soil microbial communities immediately after amendments and in short term. Main aim was to perform the experiment, measure the bacterial abundance and activity in Irbesartan amended soil samples and untreated controls. In addition, three different doses of Irbesartan were applied. The experimental work was quite complex and required student's training in soil handling, soil-water extract preparation, epifluorescent microscopy, DNA hybridization, and radioisotope incorporation, data processing and statistical evaluation. From my point of view, František was motivated to fulfill all proposed aims of the thesis, however due to technical problems with quality of labelled oligonucleotide probes, and lack of time, he was not able to obtain CARD-FISH data on proposed bacterial populations. Nevertheless, data obtained were valuable to make conclusion within expected frame of the thesis.

During the stay in our group, František worked with help of my several colleagues (Zuzana Frková, Ludmila Kahounová and Jiří Nedoma) and performed some analyses independently after training. František performed independently data presentation and statistical evaluation. He discussed obtained results with those (quite little) known from literature. Main findings are presented in a clear way, and I hope they may contribute to the knowledge on effect of Irbesartan and similar compounds on soil microbiota. In addition, part of the data significantly contributed to research conducted in the frame of the project "Behavoir of pharmaceuticals in soil-water-plant system" (GAČR, Project No. 17-08937S).

Conclusion:

In conclusion, I

~~recommend / do not recommend*~~

the thesis for the defense.

In Ceske Budejovice date 24th July, 2020

Signature (RNDr. Alica Chroňáková, PhD. on behalf of both supervisors)