

CHARLES UNIVERSITY
FACULTY OF PHARMACY IN HRADEC KRALOVE
Department of Organic and Bioorganic Chemistry

Study program: Pharmacy

Opinion of the Thesis Tutor/Consultant about the Diploma Thesis

Year of assignment: 2022

Year of the defense: 2024

Student: **Mohammadreza Shojaei**
Thesis Tutor: PharmDr. Lukáš Opálka, Ph.D.
Consultant: PharmDr. Pavla Jančálková
Opponent: PharmDr. Lukáš Lochman, Ph.D.
Thesis title: **Quantification of skin lipids in mouse model of induced psoriasis**

Scope of work, number of: 61 pages, 25 figures, 0 tables, 98 citations

Evaluation of experimental work:

- | | |
|---|-----------|
| a) Evaluation of methodological procedures: | Excellent |
| b) Skill in the laboratory or in obtaining experimental data: | Excellent |
| c) Independence: | Excellent |
| d) Initiative: | Excellent |
| e) Diligence and conscientiousness: | Excellent |

Evaluating the processing of results and writing up the thesis:

- | | |
|---|-----------|
| a) Processing of results (diligence and independence): | Excellent |
| b) Interpretation and discussion of results: | Excellent |
| c) Literary research: | Excellent |
| d) Text processing (stylistic level): | Excellent |
| e) Formal level of the work (text structure, graphic design): | Excellent |

I recommend the thesis for recognition as a rigorous thesis

Verbal evaluation, distinctive features of the author, and the thesis:

Mohammadreza Shojaei started working on his thesis at the Department of Organic and Bioorganic Chemistry in the Skin Barrier Research Group in 2022, which was the fourth year of his studies. The aim of the work was to process and analyze skin ceramides from the tapes strips collected from mice with induced psoriasis.

The whole project was done in collaboration with Dr. Michal Kořínek from Chang Gung University College of Medicine in Taiwan. Since it is known that the mice with pharmacologically induced psoriasis have altered levels of skin ceramides including the ceramide EOS, the formulation containing non-physiological ceramide EOS was prepared in our laboratory and sent to Taiwan for the topical application on their mice model. The skin samples were collected by tape-stripping and sent back to our laboratory for analysis. The targeted LC-MS/MS analysis was focused on 16 most common subclasses of skin ceramides. The results indicate that the composition of ceramides in this mice model is partly different compared to skin of patients with psoriasis. We were able to deliver significant quantities of non-physiological ceramide EOS into the mice skin, however it seemed that the skin condition did not improve after this topical treatment.

Reza started his work with excitement and very quickly learned how to orient in the scientific literature and how to handle all the necessary processes required for the sample preparation, including protein content measurements and lipid extractions and how to process obtained chromatograms, make necessary calculations and data interpretation. The LC-MS/MS measurements were done with the assistance of the supervisor. For most of the project, Reza worked almost independently, he was patient and thorough. Unfortunately, during the project, Reza interrupted his work for more than a year because of personal reasons. During thesis writing, Reza was also independent and the results he delivered were always of very high quality.

Evaluation of the thesis: Excellent

**For the Recommend
defense:**

In Hradec Králové

31. srpna 2024

signature of the opponent