

**CHARLES UNIVERSITY  
FACULTY OF PHARMACY IN HRADEC KRALOVE**

Department of Pharmaceutical Technology

Study program: Pharmacy

**Opinion of the Opponent Diploma Thesis**

Year of defense: 2023

Student: **Fatemeh Kheirabadi**  
Thesis Tutor: PharmDr. Ondřej Holas, Ph.D.  
Consultant: prof. Anette Mullertz, Ph.D.  
Opponent: assoc. prof. PharmDr. Barbora Vraníková, Ph.D.  
Thesis title: **Study of the effect of biomolecules on the solubility of poorly soluble drugs**

Scope of work, number of: 76 pages, 20 figures, 8 tables, 127 citations

**Evaluation of the work:**

- |   |           |
|---|-----------|
| a) Topicality/ originality of the topic:                      | Excellent |
| b) Processing of the theoretical part:                        | Excellent |
| c) Transparency and clarity of the text:                      | Excellent |
| d) Concision and adequacy of conclusions:                     | Very good |
| e) Meeting the objectives of the work:                        | Excellent |
| f) Quantity and up to date of references:                     | Excellent |
| g) Language level (stylistic and grammatical level):          | Excellent |
| h) Formal level of the work (text structure, graphic design): | Excellent |

Comments on the evaluation:

The theoretical part of the presented diploma thesis describes the different parts of the gastrointestinal tract and deals with the topic of poorly water-soluble drugs. The experimental part was focused on the evaluation of the apparent solubility of three model compounds in Fasted State Simulated Colon Fluid containing three types of proteins (bovine serum albumin, mucin-type II and porcine intestinal mucus).

In general, the thesis is well-written and easy to follow. Its structure slightly differs from the other diploma thesis at the Department of Pharmaceutical Technology but still provides all the necessary parts. In my opinion, the diploma thesis of Fatemeh Kheirabadi fulfils all the criteria required for this type of thesis and, therefore, I recommend it for defence.

Questions and comments to student:

Formal comments:

- there are some smaller grammar, formal and spelling mistakes throughout the text (e.g. missing punctuation)
- word of Latin origin should be written in italics (e.g., *in vivo*)
- all figures, tables and equations should be mentioned in the text
- some abbreviations are used only once - in my opinion, it is not necessary to introduce such abbreviations; other abbreviations are explained in the text several times (e.g., BCS), and some are not explained at all (e.g. QT)

- Chapter 4.4 is mentioned on page 44; however, such a chapter is not included in the thesis

Questions:

1. How long can protein solutions in the FaSSCoF media be stored?
2. How much of the powder drug has been used for the solubility determination?
3. Several types of used drugs are described in the theoretical part. Which ones were used in this thesis?
4. What are the reasons behind the second centrifugation of samples?
5. It is described in Chapter 3.4 that samples were collected at regular intervals. Which time interval has been selected for the data presentation?
6. How the results of this thesis can be used to formulate drug delivery systems?

**Evaluation of the thesis: Excellent**

**For the            Recommend  
defense:**

In Hradec Králové

6. září 2023

signature of the opponent