CHARLES UNIVERSITY

FACULTY OF PHARMACY IN HRADEC KRALOVE

Department: Biological and Medical Sciences Master´s degree program in Pharmacy

Opponent´s review of Master´s thesis

Student´s name: Sepideh Moeini

Mentor of the thesis: prof. PharmDr. Petr Nachtigal, Ph.D.

Opponent of the thesis: PharmDr. Jana U. Rathouská, Ph.D.

Year of the thesis defense: 2024

Title of the thesis:

Pharmacological modulation of endoglin expression in the liver in an animal model of nonalcoholic steatohepatitis

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Formal comments: number of pages: 80, number of figures: 16, number of tables: 8, number of references: 81.

Type of work: Experimental work

a) The aim of the thesis is: Fulfilled

b) Language and graphic level: Very good

c) Processing of the theory: Very good

d) Methods description: Excellent

e) Results description: Excellent

f) Discussion and conclusions: Excellent

I recommend Diploma thesis for the recognition as Rigorous thesis ☒.

Opponent´s comments:
The thesis nicely summarizes an experimental study performed in a mouse model of NASH. The aim was to emphasize an intricate relationship between diet-induced liver damage and therapeutic intervention with M1043 mouse monoclonal antibody.

Major points:
Overall, the thesis is well written, however, there are some striking mistakes (missing or excessive words in some sentences, sentences with a poor meaning etc.) made probably from inattention or with lack of care (e.g. strange formulation of the aims of the diploma thesis, duplication of the same statements in chapter 12.1.1., term increase instead of decrease in the text describing figure 15). Also the continuity of information sometimes does not make sense. Association of table 4 with figure 9 and table 8 with figure 10 does not look graphically well.

The chapter 3.1.3. "Clinical manifestation" is not about manifestation rather about diagnosis of NASH.

Figure 4 would deserve a legend describing the processes. It´s not explained even in the text.
The chapter 11.3. "Workflow of the western blot method" is partly a duplication of the chapter 9 "Western blot analysis".

Minor points:
Abbreviation breakdown of ICAM-1 and VCAM-1 in the abstract, list of abbreviations and introduction is incorrect, the same case for LFA-1. The list of abbreviations should be sorted alphabetically to avoid lengthy search. There are also minor inconsistencies in terminology (e.g. using capital and small letters with no rule, lack of capital letters in the titles of tables).

I wouldn´t consider liver as primary immune organ and chemiluminescence detection does not detect colored signal.

The chapter 11.6. "Statistical analysis" states the colours for relevant groups of mice in bar graphs, but the real graphs use different colours.

Questions:
1.) Please, describe the processes being illustrated in the figure 4 in detail. Complete the information about hepatic stellate cells, their location and effects in the course of liver damage.
2.) In the chapter 11.3.1. you state that in case of ICAM-1 you evaluated the protein amount in the total fraction of the homogenate and in case of ENG and VCAM-1 in the membrane fraction. What is the reason for using a specific fraction for a specific protein?
3.) What is the reason for using rat IgG as a control for M1043?

Evaluation of Master´s thesis: Excellent

Recommendations for the thesis defense: Recommended

In Hradec Kralove 28.5.2024 ……
Opponent´s signature