Supervisor assessment

Author of thesis: Barbora Vrablíková

Title of thesis: Cytotoxicity of microtubule-stabilizing drug laulimalide in hypoxic cancer cell lines

Type of thesis *: Bachelor/~~Master of Science~~

	Evaluation criteria	Grades						
		A	B	C	D	E	F	non-evaluable
1	Interest in the topic (frequency of discussions with the adviser, knowledge of the literature)	X						
2	independence during the thesis writing	X						
3	language and stylistic quality of thesis	X						
4	working activity	X						
5	manual skills, accuracy and reliability	X						
6	self-reliance within the experiments	X						
7	analysis and interpretation of experimental data	X						

Note[1]: if impossible to apply, use "non-evaluable"
Note[2]: mark with "X"
Note[3]: final grade is based only on evaluable (A-F) items
*- select "Bachelor" or "Master of Science"

Grade (A-F)	A

Please, attach your comments and questions as well as reasons for your evaluation at the next page (pages)

Conclusion: thesis is recommended ~~/not recommend~~ to defence

Olomouc: 26.6.2020

Signature: Viswanath Das, Ph.D.

Comments and questions for the candidate:

The thesis by Barbora Vrablíková for her Bachelor's degree is on the cytotoxic effect of microtubule-stabilizing drugs, laulimalide, in hypoxic cancer cell lines. She has chosen two cancer cell lines for the study, colorectal HCT116 and lung A549 cancer cell lines. The thesis is spread into 49 pages and divided into 7 main chapters- Introduction, Aims of the Thesis, Literature Review, Materials and Methods, Results, Discussion, and Conclusion. The text cites all appropriate literature related to the thesis topic. The introduction and literature review describe the current knowledge on microtubules, microtubule-targeting drugs, and their relevance to cancer therapy, and carefully diverges into the issue of drug resistance due to hypoxia in solid tumors. The materials and methods describe all essential steps that were used to generate the results. It is written in detail and with accuracy. The results have been appropriately presented as figures and tables. The interpretation of data, discussion, and conclusion clearly shows the level of scientific maturity that is needed at this stage of studies. The bachelor's thesis is the first step into the research world. Barbora has not only learned new methods and techniques but also had her first glimpse of the research world. I congratulate her on completing the thesis and want to particularly acknowledge her courage in taking up this thesis work in English.

Four questions to the candidate:

Q1. After analyzing the data and studying the effects of laulimalide, what do you think about the prospect of laulimalide as a potential anti-cancer agent?

Q2. Both the cell lines in your study show elevated levels of polymerized tubulin under hypoxic conditions in the absence of drug treatment. What do you think is the reason for this?

Q3. Laulimalide or its analogs that bind to the non-taxane site on microtubules have good cytotoxic effects in hypoxic tumor cells. Which type of other microtubule-targeting drugs do you think can be used with laulimalide in combination therapy and why?

Q4. What other ways you could have used to find whether hypoxia resulted in the induction of a mesenchymal cell phenotype in A549 lung cancer cells?