



Přirodovědecká
fakulta
Faculty
of Science

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

OPPONENT'S REVIEW ON BACHELOR/~~DIPLOMA~~* THESIS

Name of the student: Michael A. Holzer

Thesis title: Assaying the effect of VEGFR2 receptor inhibition on preimplantation mouse embryo development.

Supervisor: doc. Alexander W. Bruce, Ph.D.
Lenka Gahurová, Ph.D.

Referee: Ing. Anna Tětková

Referee's affiliation: Institute of Animal Physiology and Genetics, Czech Academy of Sciences

| | Point scale ¹ | Points |
|---|--------------------------|--------|
| (1) FORMAL REQUIREMENTS | | |
| Extent of the thesis (for bachelor theses min. 18 pages, for masters theses min. 25 pages), balanced length of the thesis parts (recommended length of the theoretical part is max. 1/3 of the total length), logical structure of the thesis | 0-3 | 3 |
| Quality of the theoretical part (review) (number and relevancy of the references, recency of the references) | 0-3 | 2 |
| Accuracy in citing of the references (presence of uncited sources, uniform style of the references, use of correct journal titles and abbreviations) | 0-3 | 3 |
| Graphic layout of the text and of the figures/tables | 0-3 | 2 |
| Quality of the annotation | 0-3 | 3 |
| Language and stylistics, complying with the valid terminology | 0-3 | 3 |
| Accuracy and completeness of figures/tables legends (clarity without reading the rest of the text, explanation of the symbols and labeling, indication of the units) | 0-3 | 2 |
| Formal requirements – points in total | | 18 |
| (2) PRACTICAL REQUIREMENTS | | |
| Clarity and fulfillment of the aims | 0-3 | 2 |
| Ability to understand the results, their interpretation, and clarity of the results, discussion, and conclusions | 0-3 | 2 |
| Discussion quality – interpretation of the results and their discussion with the literature (absence of discussion with the literature is not acceptable) | 0-3 | 2 |
| Logic in the course of the experimental work | 0-3 | 3 |

* Choose one

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

could be useful for further works of the student:

- Schematic visualizations of the experiments in the practical part are helpful and simplify understanding the text, as well as usage of pictures and schemas in the theoretical part of the work.
- The student uses appropriate language, stylistics and terminology.
- The thesis contains discussed problems that appeared during performing experiments and suggestions for possible future experiments.

Minor comments:

- Some abbreviations are not explained in the text.
- Detail of the fragmented nucleus (Fig. 25) would be useful.
- Although all recommendations for further experiments are appreciated, they should be mentioned altogether in Discussion. Conclusions should just briefly summarize all findings.
- The reviewer recommends to avoid citations of textbooks such as Molecular biology of the cell (Alberts *et al.*) in future works of the student.

Questions:

1. Why did you use agar during the embryo fixation?
2. How did you select the initial concentration of Vandetanib (20 μ M)?
3. Why were different concentrations (compared to experiments 1-4) of the inhibitor used in the last experiment?
4. How many times were the experiments repeated? It is not clear from the results.
5. Why is in experiments 1, 4 and 5 such a low number of embryos in some experimental groups? Do you think using more embryos would change the results?
6. Why did you treat the embryos from E1.5 in the experiment 5? Would it be possible to postpone the treatment for later stages?
7. Would it be possible to use a different approach/assay (besides IF staining) to achieve required goals and data determining the role of VEGFR2 in the preimplantation embryo development?