

Review on bachelor's thesis of Yifan Mayr entitled "Anti-inflammatory effects of tick salivary protease inhibitors on mouse microglial cells"

Yifan Mayr's work is devoted to interesting issues of test the anti-inflammatory effect of tick salivary protease inhibitors on mouse microglial cell.

The reviewed thesis is structured to nine standard sections. The text is written in a nice scientific style with minimal misspellings or type errors. I highly appreciate the student's intense effort to find and study literature and an overall active approach to the subject. Despite of this, here I would like to point out that the numbers (concentrations, volumes, cell numbers, etc.) should not be used at the beginning of the sentences. However, this fact does not reduce the scientific quality of work in any way, and it is primarily a question of practice in the writing of scientific texts.

The student has successfully mastered the designs of the experiments and also the laboratory material processing itself. The submitted work is at a very good level, with its overall quality and processing fully corresponds to the requirements of the bachelor thesis.

Despite of this, I have a few questions and I would like to know the author's opinion:

- In the list of material in the section Material and Methods (M&M), there is missing description or source in case of some chemicals, mainly in case of used antibiotics and antimycotics (which were used and in which concentrations), and headquarters of companies, where the chemicals were purchased;
- Within this thesis anti-inflammatory effects of several tick salivary protease inhibitors were tested on activated BV-2 microglial cells. These effects were tested by three parameters - NO production, cytokine production and cell adhesion. Why different protease inhibitors were used for testing of each parameter? The reasons should be briefly described in the experiments in M&M section;
- The M&M section was described very briefly in some points, especially the experiments and their aims, about which the reader learns later in the results section and is difficult to understand them. Based on this, I have a few other questions:
 - Chapter cell growth culture (M&M) – author describes that for the optimal timing and culture condition were tested different amount of cells. However, there is no other information about experiments and cell numbers tested, etc. Only in the results section is described that 80,000 was optimal. Which cell numbers were tested for the purposes of this study?
 - In the most of experiments, BV-2 cells were used. However, author used also IC-21 cells. Why? Why for the purposes of experiment focused on cytokines production? It should be more explained in the section M&M – the purpose of use and also more information about their cultivations.
 - In the chapter on cell adhesion (M&M), the author describes in the first sentence „several experiment were conduct“. It should be described in more details to readers understand easily.
- My last question relates to proved anti-inflammatory effects of selected protease inhibitors. Why agents G1, G2, G9, G16 and S8K were chosen for testing on BV-2 microglia? Their brief description is in the introduction section, but there in not much information whether they were already tested for an anti-inflammatory effect on some other models.

Despite all the queries and comments, I consider Yifan Mayr's work to be very successful and well done.

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