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Review of bachelor thesis written by Lovelyna Eromonsele, named

Overexpression of a tick salivary cysteine protease inhibitor in prokaryotic expression systém

The bachelor work of Lovelyna Eromonsele focused on the overexpression of tick salivary cystatin and an optimization of the refolding conditions. The work is divided into 5 main sections – Introduction, Materials, Methods, Results and Discussion with conclusion.

Overall I find the work a bit disappointing. Theoretical parts, like the introduction and discussion contain repetitive passages and a lot of ballast writing without any concrete information. Both parts deserve more attention, more concrete descriptions and for sure more references. There are also some factual errors, e.g. tick bite, they don't sting or infest tissues, ticks are not insects. Some formulations are vague and unacceptable for scientific writing, like "Tick-borne diseases are everywhere and they can be similar or quite different between regions". The part about protein overexpression and refolding is not coherent, it is too detailed and too vague at once.

The list of material and chemical used in experiments is well done as well as the method part. Here, however, I disagree with one thing. Every method is first explained theoretically and then the protocol is described. In my opinion, methods should contain actual procedures only, not an explanation of method's principle. On the other hand, bachelor work is mainly about learning methods and techniques, so for bachelor theses it is OK (not for scientific paper). The methods themselves are written in details, which I appreciate.

The results show that the protein was successfully overexpressed and that some conditions were better than others for yield or inhibitory activity. In some places, results are mixed with method description, author should be more careful about this. To results I have following questions:

1. From what the standard errors are calculated, how many samples, is it standard error of mean or standard deviation
2. In figure 8, I find it quite inconsistent with figure 6 and 7 that 240mM NaCl shows no band on the gel. How could you explain this?

The discussion does not discuss the results, it is rather a summary of the results and proposition, what more optimization could have been done. The sentence that the results and the literature confirm that inhibitors of cathepsin L are immunomodulators is not true (at least the results from this work don't imply that conclusion).

I appreciate the work that was done on this project, as I know, how tough and unpredictable the expression and refolding of recombinant protein can be. I think Lovelyna learned some techniques that can be useful for her future in the laboratory. However, if she wants to follow scientific career, she must focus more on the writing and the work with the literature to learn proper requirements for each part of the research paper.

Despite my many comments, I recommend the work of Lovelyna Eromonsele for the defense. The grade will depend of Lovelyna's performance during the defense.

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