

Response to reviewers

Reviewer 1

This is an interesting study regarding the use of Recombinant OprF-LTB protein to prevent *Pseudomonas aeruginosa* burn infection in mice. The subject is clinically relevant, and the findings of this study is significant. I would recommend expanding the discussion section to explain the potential use of this therapy as a prophylactic agent in humans.

Author's response: Thanks for your comments

Reviewer 2

1) Section 2.9, please provide the temperature used for the thermal burn.

Author's response: Provided as 120 °C.

2) The results should provide evidence of the uniformity of depth of burn.

Author's response: Part 3.4 clearly shows the uniformity.

3) Section 3.4, add CFU units to bacterial load per gram tissue.

Author's response: Added

4) It is unclear to this reviewer as to whether the intent is to use OprF-LTB as a vaccine or post-burn therapeutic. The abstract states LTB-fused OprF might be a potential candidate protein for a prophylactic measure; however, the Intro states the aim was to evaluate the ability of this protein to induce an immune response, which suggests a vaccination approach. Please clarify.

Author's response: The "immune response" in the introduction was changed to "immunity". This should serve the reviewer's purpose.

5) For the efficacy study, it is unclear as to the timing of challenge with respect to immunizations. Please provide a more clear description of the immunization and challenge schedule.

Author's response: Please see the section 2.13 where we state that "The animals were monitored for mortality for seven days". Usually the burn experiments are monitored for 72 hours for efficacy while we have monitored for 7 days.

6) Please provide further discussion as to the practicality of using OprF-LTB as a vaccine or post-burn therapeutic with respect to the clinical timing and presentation of *Pseudomonas* infection in burn patients.

Author's response: The following sentence was added to the last part of the "Discussion":
OprF-LTB seems to be used as a vaccine candidate where *Pseudomonas* infections are potential threat in burn patients.