Reviewer's report

Title: Modulation of hepatic PPAR expression during Ft LVS LPS-induced protection from Francisella tularensis LVS infection

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Reviewer: Anders Sjöstedt

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The study of Mohapatra describes the transcriptional response in the liver after administration of F. tularensis LPS followed by intraperitoneal challenge with F. tularensis LVS. The aim was to understand how the administration of LPS confers protection to the subsequent bacterial challenge. They identified > 3,000 genes that differentially transcribed and and a gene set enrichment analysis identified significant up-regulation of the fatty acid metabolism pathway. Central to the regulation of this pathway is PPAR# and # both of which were found to be upregulated after LPS treatment. Although rather limited in scope, the manuscript is succinctly written and identifies an interesting role of PPARs. The main problem with the manuscript in its present form is that the key findings presented in figures 4 and 5 are difficult to understand. In figure 4, there is insufficient information regarding the statistical comparisons and it is not obvious from the figure how the comparisons were performed. Moreover, it is stated that the comparisons were performed using t-test but is this test appropriate for this sort of comparisons?

The information provided in the legend to figure 5 is insufficient since it is unclear which time points that were analyzed and what the data represent. Were PPAR-alpha and -gamma upregulated 0.9 times post-infection and down-regulated 1.2 and 1.1 times post-LPS treatment? It needs to be explained why 0.9 denotes an upregulation. Moreover, these numbers do not appear to agree with the text in the Results section.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that I have no competing interests