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: Kui Zhang

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Review for BMC Infectious Diseases

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

Authors: Mohapatra et al.

This is a revised manuscript submitted to BMC Infectious Diseases. To investigate the molecular mechanisms that underlie Ft LVS LPS-mediated protection, the authors performed the microarray experiments to study the changes of gene expression. They found more than 3,000 genes were differentially expressed at 48 hours post infection. They also found significant up-regulation of the fatty acid metabolism pathway gene set enrichment analysis. These findings are important. As a statistical reviewer, my comments focus on their analysis methods. The authors performed the following statistical analysis: (1) the raw microarray data were preprocessed using the Bioconductor package “affy” and then filtered using the software package “limma”; (2) the gene set enrichment analysis was carried out by the bioconductor package “GSEABase”; (3) the comparison of gene expression of three PPAR isoforms due to LPS treatment was performed using a normal distribution; (4) the comparison of gene expression due to LPS treatment and infection on fatty acid metabolism was performed using a normal distribution. These analysis methods were described in great detail with appropriate formulas. The software packages used in the analysis were appropriate and commonly used by other researchers. In summary, I do not have any major concerns about the statistical analysis in this manuscript.

Minor Comments:

Page 8: Since there were three samples in each group, it is not clear if the values of d0, d1, and d1 were the average difference of 3 samples between two groups.

Page 9: Since there were three samples in each group, it is not clear if the values of Dp and Di were the average difference of 3 samples between two groups.

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

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:
I declare that I have no competing interests