Reviewer’s report

Title: Transcriptional profiling of mycobacterial antigen-induced responses in infants vaccinated with BCG at birth

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Reviewer: Martin Vordermeier

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This paper describes results of transcriptional profiling of in vitro stimulated PBMC from BCG-vaccinated infants. The results showed that stimulation with live BCG and PPD induced similar, yet not totally overlapping, expression profiles. Genes involved in the alternative, anti-inflammatory macrophage activation pathway were down-regulated, whereas BCG in vitro activation induced genes associated with macrophage-1 type cells (pro-inflammatory signals). The methodology is well described, the results support the authors’ conclusions, and are adequately discussed.

Minor Essential revisions:

1. It is somewhat surprising that the IFN-gamma gene is not more strongly up-regulated given data published earlier from Dr Hanekom's laboratory of IFN-gamma induction measured by EIA or ICS following BCG vaccination of infants and the same in vitro stimulation system. Could they give the actual induction value and p-value for IFN-gamma instead of stating < 2fold (last paragraph on discussion), please. Also they may want to expand why the transcriptome data is in contrast to their own protein data in earlier publications.

Minor discretionary revisions:

2. I wonder whether some of these effects seen (pro-inflammatory cytokines/chemokines for example) are due to BCG vaccination, or would they occur also in naive cells (i.e. monocytes) stimulated in vitro with BCG or PPD-B (which also contains ligands interacting with innate immune cells)? Would they care to speculate?

Level of interest: An article of importance in its field

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.