Reviewer's report

Title: Role of CD8+ T cells in protection against Leishmania donovani infection in healed Visceral Leishmaniasis individuals

Version: 2 Date: 2 October 2014

Reviewer: Nathan Peters

Reviewer's report:

Major Compulsory Revisions

The data demonstrating that >99% of the cells were viable after 120 hours of re-stimulation needs to be shown or this needs to be re-evaluated. This is a remarkably high number for a long-term (120 hr.) in-vitro re-stimulation assay.

The authors need to confirm that their statistical tests were two-tailed.

I would like to see the IFN-g versus Granzyme B correlation.

The authors reference two reviews (References 5 and 6) to support the statement: "Previous studies have shown that majority of individuals who had VL or asymptomatic infection acquired strong immunity against re-infection with the same subspecies [5, 6]." Both of these references deal with cutaneous Leishmaniasis not visceral Leishmaniasis. The authors need to either acknowledge that prior infection MAY protect against re-infection with VL as is seen with cutaneous infection or find references that show it is also true for VL.

Minor Essential Revisions

The authors report the % of CD4 cells that are CD69+IFN-g+ in 4A but the dot plots in 4B report the frequency of IFN-g+ cells within the CD69+ (Gated on activated T cells) population. This is inconsistent and does not convey how the authors determined that cells were both CD69+ AND IFN-g+. Can the authors please plot CD69 versus IFN-g within the CD3+CD4+ population or some how convey how they determined the frequencies reported in 4A.

Discretionary Revisions

The axis and frequency text in Figure 4B are difficult to read.

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, and I have assessed the statistics in my report.
Declaration of competing interests:

'I declare that I have no competing interests'