Reviewer's report

Title: Mucosal gene therapy using a pseudotyped lentivirus vector encoding murine interleukin-10 (mIL-10) suppresses the development and relapse of experimental murine colitis

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Reviewer: Roberto Calcedo

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The manuscript “Mucosal gene therapy using a pseudotyped lentivirus vector encoding murine interleukin-10 (mIL-10) suppresses the development and relapse of experimental murine colitis” by Matsumoto, H et al describes the use of a lentiviral vector encoding IL-10 administered locally in a mouse model of enterocolitis. Authors showed the treatment suppress the development and the relapse of colitis.

Although the study is well conducted and the manuscript is well written additional information and corrections are needed:

Major compulsory revision:

1. Methods: page 11. Authors design the study using 4 experimental groups: NC, Mock, LV1 and LV2. Author did not include mIL-10 plasmid alone group that would control for the levels of correction obtained only with plasmid DNA. Do author have any data showing levels of mIL-10 using just plasmid in the gut? The second group that is missing is the LV without mIL10, this group would control for the LV specific CD4 T-cell response. How do authors know that the effect they see is caused by mIL-10 and not by LV CD4 T cells changing the cytokine milieu in the lamina propria?

2. Discussion: page 22. “In the context, it is notable that IL-10 levels were comparable between the single dose and the double dose groups…”. It could be that the second administration does not have an effect because of neutralizing antibodies to LV, developed after the first LV administration, blocking gene transfer. Do authors have any data on antibodies (sIgA) or neutralizing antibodies to LV?

Minor compulsory revision:

1. Figure 2e. Authors added in the graph: “Pre-treatment before gene transduction” This statement is confusing. Mice were injected with LV vector so there is gene transfer so why this “before”?

2. Results: page 18. The cytokine data should be presented as a plot. If the journal does not allow more figures in the manuscript, include histology pictures (fig 5a-5h) as supplementary data.

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

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests