Reviewer's report

Title: Lipopolysaccharide treatment protects B10.BR male mice from spontaneously developing ankylosing enthesopathy: the potential role of interleukin-10

Version: 1 Date: 29 February 2012

Reviewer: Jane Goodall

Reviewer's report:

The authors have previously noted that ANKENT is not observed in susceptible mice when housed in germ free conditions. Given the role of commensal bacteria in ANKENT, the authors have addressed whether LPS stimulation may also modulate the susceptibility to this spontaneous joint disease.

This paper reports the interesting finding that the administration of multiple LPS administrations inhibits the development of ANKENT. The phenotype of immunological cells and cytokine production was analysed following this administration. The authors clearly show differences in IL-10 production in LPS treated mice and suggest that the protection from ANKENT may be mediated via the expression this cytokine.

The question addressed in this work is well defined and the analysis of cytokines and cellular subsets seems appropriate. It was disappointing that the authors did not utilise IL-10 KO mice to determine if the LPS protective effect was mediated by this cytokine.

Major compulsory revisions for inclusion in the discussion.

It seemed surprising that serum IL-6 in both LPS and untreated mice was elevated at 22-24 weeks. It would be useful to know if there a difference in serum IL-6 and TNF# between mice that were affected or unaffected with ANKENT in the control group?

The authors state that commensal bacteria play a role in susceptibility to ANKENT. Commensal bacteria may deliver stimuli that will be localised to the gut and the lamina propria whereas systemic injection of LPS will deliver LPS to other lymphoid organs. Could the authors discuss the decision to introduce LPS via this route. Was there weight loss observed in the LPS administered mice? Can the authors discuss how such routes of LPS stimulation may confer different effects on inflammation and autoimmunity compared to the introduction of commensal bacteria which they have previously shown to increase susceptibility to ANKENT.

Tolerogenic effects on splenic responses to LPS were not detected by invitro studies on splenocytes isolated following LPS treatment, were the LPS doses utilised similar to other studies that noted LPS tolerogenic effects?
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