Reviewer's report

Title: Passively transferred human NMO-IgG exacerbates demyelination in mouse experimental autoimmune encephalomyelitis

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Reviewer: Scott S Zamvil

Reviewer's report:

Minor Essential Revisions
1. Please define “behavioral worsening” in relation to EAE in the mice. The term is used several times but not explained.

2. The legend for Figure 2 needs to be clarified. Although one could guess, it is not stated that micrographs A and B were stained with anti-human antibody, as is said for micrograph C. If the tissue section in D is stained with anti-AQP4, what is section E stained with? The relationship between the sections and the staining needs explanation, i.e. which colors are associated with which antibody? This is not even in their Supplementary Table 1, which gives the details of the antibodies used. Is E a merger of C and D?

3. In the legend for Figure 3, the staining or lack thereof (since black and white) in micrographs G, H and I is not addressed, nor what the arrows are pointing to: supposedly AQP4 staining, but that was red in Figure 2 and only one anti-AQP4 antibody was used, according to Table 1. This is not explained in the text either (i.e. fluorescence versus light microscopy). It is not acceptable to show sections that were wrinkled during processing. Of all the mice included in the experiment shown and the mentioned repeat, there should be examples that show the tissues better for publication.

4. The text in the legend of Figure 4 is incorrect in stating that 80% of all the demyelinated lesions in the NMO-IgG group were greater than 10,000um2. Both the data in Figure 4B and the text in Results section, paragraph 4 show close to 40%. Figure 4A also shows the same section of wrinkled tissue as Figure 3A.

5. The micrographs in Figure 6 are not of a high enough resolution to see the cell types being referred to. A higher magnification is needed. As is the issue in all of the figures with tissue staining, reference needs to be made to which sections were stained with which antibody, rather than glossed over as if it was text in the body of the text. Why are there pictures labeled E and F without a D?

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

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