Reviewer's report

Title: Effects of antibody to receptor activator of nuclear factor kappa-B ligand on inflammation and cartilage degradation in collagen antibody-induced arthritis in mice

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Reviewer: Jean-Pierre David

Reviewer's report:

The paper need major compulsory revision.

The authors analyze the potential protective effect of a RANKL neutralizing antibody on the joint using collagen antibody-induced arthritis model. They report that the treatment do not protect against inflammation ad cartilage destruction.

1-The increased bone mass, around 3% depicted on the figure 2 is quite surprising high given the fact that the treatment with anti-Rankl antibody is short (9 days). Is it realistic? Could the authors provide a clear histomorphometric analysis of the data?

2-A quantitative analysis of serum levels for markers of bone remodeling would be helpful.

3-Although as claimed by the authors, the injection of anti-RANKL antibody may not protect against joint inflammation and cartilage destruction, the arthritis scoring (Figure 3) suggests that it would rather increase and may be initiate the disease. Indeed, in the presence of the antibody, the arthritis score seemed to worsened and even some sign of arthritis may be seen in the RA-/AB+ group, could the author comment on this? Can they provide an explanation? Did they performed long term experiment to see whether the scoring will be significantly raising?

4-I am not convinced by the histological pictures where it is very difficult to evaluate the presence of inflammation, for instance, the arrow on figure 4 O does not appear to point to inflamed area but rather on the meniscus. Could quantitative date be provided for the inflammation and the cartilage destruction? Thus, although the work is potentially important, I think that the claim of the paper is not strongly supported by the data.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

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