Reviewer’s report

Title: In vitro and in vivo characterization of the JAK1 selectivity of upadacitinib (ABT-494)

Version: 0 Date: 16 Apr 2018

Reviewer: Wen Feng Tan

Reviewer's report:

The authors present an interesting data about the in vitro and in vivo characterization of the JAK1 selectivity of upadacitinib. The presented data highlight the JAK1 selectivity of upadacitinib and supports its therapeutic role for the treatment of RA

This is an interesting, clearly structured manuscript and may be acceptable upon appropriate revision.

1. Compared with AIA model, collagen-induced arthritis (CIA) are more identical to human RA. Therefore, it seems more appropriate to expand relevant research in CIA model.

2. Figure 2 studied the effect of upadacitinib on bone erosion in AIA. The author only showed the changes of bone volume as assessed by micro CT after upadacitinib treatment. The bone volume only represents the bone mass rather than bone erosion. Did author evaluate AIA histologically?

3. Figure 3-4 showed the more safety of upadacitinib on reticulocytes and NK cells naive rats, as compared with tofacitinib. Did author test the drug concentration in these animals? whether could the drug levels in serum affect the safety?

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes
Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

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