Reviewer’s report

Title: Inhibitory effects of ChondroT and its constituent herbs on RANKL-induced osteoclastogenesis

Version: 1 Date: 13 Aug 2019

Reviewer: Yuankun Zhai

Reviewer's report:

The present study demonstrates that ChondroT and its constituent herbs shown inhibitory effects on RANKL-induced osteoclastogenesis. The experiments are well conducted using appropriate designs and methodology as well as adequate statistical analysis. The interpretations are in accord with the results obtained. However, there are still some revisions are required before this paper can be accepted.

1. Please draw a cartoon to show the main constituent and mechanisms of Chondro T, including inhibit/stimulate specific proteins, how to effects on NF-κB and MAPKs pathways, this will make the research more clear.

2. In the reagents part, please indicate the catalog number of all antibodies.

3. Generally, the detection of the cell viability always use the absorbance at 490 nm if the formazan crystals were dissolved by DMSO [reference: 1. Controlled growth and differentiation of MSCs on grooved films assembled from monodisperse biological nanofibers with genetically tunable surface chemistries, Biomaterials. 2011; 2. Expression and role of SDF-1α-CXCR4 axis in Human Dental Pulp, J Endod. 2008], and at 570 nm if the formazan dissolved in DMF/SDS (pH 4.7), [reference: 3. Measurement of cellular 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) reduction activity and lactate dehydrogenase release using MTT, Neuroscience Research, 2000], please explain why you choose the test wavelength at 570 nm, and whether use a reference wavelength in your calibration.

4. In the Figure 1 and Figure 2, it looks Phellodendron amurense Rupr. (P) even have stronger inhibition effects on osteoblasts, it means Only Phellodendron amurense Rupr. (P) can inhibit osteoclastogenesis already. If you can decrease the concentration of P, it should have good inhibition effects and also lower cytotoxic effects. Can the authors give some supplementary data show the cytotoxic effects at lower concentration?

5. Please add the scale bar in Figure 1, 2 and 3.

6. The current manuscript only show inhibition effects on osteoclasts, and lack data of animal experiment, if the author can show the osteoprotective effects in vivo, it will make data more solid, at least the authors need give some discussion about the osteoprotective
effects in vivo and predict its ability which been developed into a new drug for osteoporosis therapy.

**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.

Unable to assess

**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.

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

Needs some language corrections before being published

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