Reviewer's report

Title: Alterations in Osteoclast Function and Phenotype Induced by Different Inhibitors of Bone Resorption - Implications for Osteoclast Quality

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Reviewer: Anita Undale

Reviewer's report:

The manuscript titled "Alterations in Osteoclast Function and Phenotype Induced by Different Inhibitors of Bone Resorption - Implications for Osteoclast Quality" by Neutzsky-Wulff AV et al, describes the role of different osteoclastic inhibitors including inhibitors of acidification and/or proteolysis in osteoclast mediated bone resorption. The effect of these inhibitors on osteoclast mediated resorption was assessed by measurement of resorption markers such as CTX-1, ICTP, TRACP activity as well as scoring of resorption pits and release of calcium.

Minor Essential Revisions:

1. The authors have done a good job of addressing the aims they proposed in this manuscript by using relevant methods and assays. However, the authors do not provide any background information and clear explanation for using osteoclasts derived from CD14+ peripheral blood cells as their model system. Studying the effects of these specific inhibitors on bone marrow derived osteoclasts could also be very informative and might show some differences or similarities between the bone marrow versus peripheral blood derived osteoclasts.

2. The criteria used for selection of mature osteoclasts obtained from CD14+ peripheral blood cultures are not clear in this paper.

3. Since TRACP is known to be produced by monocytes especially macrophages, it can not be used as a single criteria to assess maturity of osteoclasts in the presence or absence of inhibitors. The authors need to include other marker/s (e.g. CD11a, CD63 etc.) to identify percent macrophages in the cultures in the presence or absence of inhibitors.

4. Page 13, line 8, values for inhibition of...

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

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the
statistics.

Declaration of competing interests:

I declare that I have no competing interests.