Reviewer's report

Title: Molecular Signaling Pathways Mediating Osteoclastogenesis Induced by Prostate Cancer Cells

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Reviewer: Jeanny Aragon-Ching

Reviewer's report:

General comments:
1. This study attempts to address the effects of soluble factors/mediators from prostate carcinoma cell lines on osteoclast formation.

Specific comments:
1. Could the authors postulate further why osteoclastogenesis in this model seemed to occur independently of RANK? Could the results be different with use of a different prostate cancer cell line?
2. Can the authors comment on the optimal timing of their cell culture and degree of differentiation of the murine monocytic cell line? In a prior study by Wittrant et al, Exp Cell Res 2004, the effects of RANKL and OPG during osteoclastogenesis using the RAW 264.7 cell line varied according to the differentiation state of the cells.
3. Can the authors provide the host of soluble factors studied in the experiments (i.e., the cytokines and growth factors tested?)
4. The authors found that inhibition of TGF-β signaling in osteoclast precursors attenuated osteoclastogenesis. Conversely, a study has found that RANKL increase has been observed in prostate tumor cell lines after treatment with TGF-β (Zhang et al. Prostate 2004). Would this finding link TGF-β signaling with RANKL pathway?

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

Quality of written English: Acceptable

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

Declaration of competing interests:
No conflict of interest