

Comment: The manuscript presents an exciting approach with promising outcomes. However, clarity could be enhanced by addressing the following inconsistencies in its narrative.

EIC Specific comments:

- 1) The current title did not reflect on the content: "Low-intensity pulsed ultrasound reduces alveolar bone resorption during orthodontic treatment via Lamin A/C-yes-associated protein axis" – neither specific to the cells applied nor captured.
- 2) Page 3, paragraph 3: "It's also reported that LIPUS could reduce the duration of orthodontic treatment, however, how LIPUS regulates the bone metabolism during orthodontic treatment process is still unclear." Comment: The grammar error surfaced as a comma splice error.
- 3) Page 5, the second to the last paragraph: "It's unclear whether LIPUS regulate the alveolar bone remodeling." [use regulates].
- 4) Page 4, the last paragraph: "Besides, MSCs encapsulated in hydrogels of certain specific stiffness shows enhanced osteogenesis ability under LIPUS[14]." [use show, as MSCs, plural nouns is the sentence's subject].
- 5) Page 6, paragraph 4: "Briefly, we obtained nucleated cells from the jaw bone," – indicating that the authors used nucleated cells, not BMSCs, which is specifically for bone marrow-derived MSCs (Citation 16). The authors should provide the biomarker profiles for the jaw bone-derived nucleated cells. It contradicted page 5: "human bone marrow mesenchymal stem cells (hBMSCs) were isolated to detect their osteogenic differentiation." Citation 16 was for BMSC; however, citation 15 is not for BMSC "15 Yamaza T, Ren G, Akiyama K, Chen C, Shi Y, Shi S. Mouse mandible contains distinctive mesenchymal stem cells. J Dent Res 2011; 90: 317-324 [PMID: 21076121 DOI: 10.1177/0022034510387796]." Which cell type did they use?
- 6) Page 7: "Compression force was applied to the BMSCs to mimic stress during orthodontic movement." What was the citation? What was the calibration of the force?
- 7) Page 7: "LIPUS treatment" – any citations?
- 8) Page 13, last paragraph: "To explore whether the role of LIPUS in regulating the cytoskeleton in BMSCs" is Not an English expression.
- 9) Page 9, last paragraph: "In total, 27 rats were randomized to the control, force or force + LIPUS group." Male? Female? How did they determine the number of rats? Statistical power calling? Did they access the stem cell status? If not, there was a disjoint between the in vitro and in vivo data sets.