Reviewer's report

Title: Hyperadiponectinemia enhances osteogenesis through osteoblast formation in mice

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Reviewer: Wenhan Chang

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Mitsui et al. tested if an increase in the level of circulating adiponectin produces bone anabolism by examining changes in bone-remodeling markers in sera and skeletal changes by X-ray imaging, histomorphometry, and immunohistochemistry in transgenic (Tg) mice overexpressing the human adiponectin in the liver vs control mice. They found increased serum levels of osteocalcin but not RANKL, OPG, and TRAP5b in Tg mice. These biochemical changes were accompanied by increased bone mass and osteogenic parameters without changes in osteoclastogenic parameters. They concluded that hyperadiponectinemia enhances osteogenesis through osteoblast formation in the Tg mice.

Although the data presented by the authors generally support their conclusion, the lack of experimental details on histomorphometry and immunohistochemistry make it difficult to judge the validity of the data. For example, the authors need to describe how regions of interest were chosen, how many sections from each bone were analysed, and how the osteogenic and osteoclastogenic parameters were determined and quantified. The authors also need to state the number of animals or samples in each experiment.

Other suggestions:

Materials and Methods:
- page 5, line 8-10: rephrase the sentence.
- page 5, line 20: provide detailed method in the preparation of undecalcified bone sections.
- page 6, line 15: please confirm whether samples were fixed in paraformaldehyde or formaldehyde
- page 7, line 5: please clarify what “n=8” means?

Results:
- page 7, line 5: please clarify what “no gross histomorphological defects” means.
- page 8, line 13: radiographs for BMD measurements and bone sections stained for histomorphometric analyses need be presented.

Level of interest: An article of importance in its field
Quality of written English: Acceptable

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

Declaration of competing interests:

I declare that I have no competing interests.