Reviewer's report

Title: Triweekly Administration of Parathyroid Hormone (1-34) Accelerates Bone Healing in a Rat Refractory Fracture Model

Version: 0 Date: 22 Aug 2017

Reviewer: Melanie Haffner-Luntzer

Reviewer's report:
The authors investigated the effects of repeated PTH(1-34) administration on bone fracture healing in a non-union rat model. They used radiological, µCT, biomechanical and histological techniques to assess the healing outcome. The objectives of the study are of general interest and the study is well conducted. Materials und methods are well selected and clearly described. The manuscript is written in clear English. There are a only a few minor issues, which might need further attention before publication.

Specific comments:

Introduction and Discussion:
Please discuss the differences between intermittent and continuous PTH therapy. There are many papers available showing different molecular mechanisms depending on the treatment regime. This might also be relevant for the outcome of the present study.

Material and Methods:
Please describe the method how BMD was calculated. Did the authors use phantoms with defined HA density?

Please add a statement about normal distribution of the data to the Statistical Analysis-section.

Results:
Table 1: The sum of samples with non-union and union isn't 100% in both groups (31.3% union and 56.3% non-union in the control group f.ex.). Please justifyPlease add the values for bone
volume to tissue volume ratio (BV/TV) to the µCT data, since this is one of the most important parameters for fracture healing analysis.

**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.
Yes

**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.
I am able to assess the statistics

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

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