Reviewer's report

Title: Sesamin Stimulates Osteoblast Differentiation Through p38 and ERK1/2 MAPK Signaling Pathways

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Reviewer: Roberto Gambari

Reviewer's report:

The paper by Wanachewin et al. (Sesamin Stimulates Osteoblast Differentiation Through p38 and ERK1/2 MAPK Signaling Pathways) is of interest, but in my opinion, still need improvements before being considered for publication. The authors answered to several comments/objections raised by the referees. However, some other issues need consideration.

MAJOR POINTS.

1. The justification for using ADSC instead hFOB1.19 should be given in the text. I am not expert in the hFOB1.19 system and I wonder if the fact that this system does not show efficiency in alizarin red staining quality might affect the conclusion about the biochemical analysis shown in Figure 2. Please reply to this comment.

2. In the materials and methods section all the information on the monoclonal antibodies used (company, code ….) should be included to allow reproduction. This is particularly important since no phosphorylation of JNK was observed. Is this antibody the right one to pick up JNK phosphorylation? Please indicate in the text that positive controls (i.e. extracts from cells expressing activated JNK) demonstrate that the monoclonal antibody was working. This should be clearly stated to support the conclusion that no JNK expression on sesamin treatment was observed.

3. Figure 2. These determinations were done at 24 hours. I would like to known whether the effects on gene expression are observed at different length of time. I understand that the authors justified in the cover why they chosen the 24 hours time point. This should be included in the text.

4. Figure 1. From the legend we can conclude that results are representative of a single experiment, in which cells were grown in triplicate. If this conclusion is correct, please note that this is not acceptable. The experiment should be repeated (please note that this is important to confirm the 96 hr 140% increase of cell viability).

5. Please perform an MTT assay for ADSCs.

6. Legend to Figure 4: please state how many times your repeated the experiment.
MINOR ESSENTIAL POINTS.

1. Thanks for the quantification of band density was analyzed and normalized to total form. The band density values are now showed in the figures. However please state your opinion about the significance of the changes observed.

2. Legend to Figure 1, Figure 4: please state what kind of cells was employed.

3. Please check the English grammar: examples: “vary” might be changed to “different”; “times” should be changed in “fold”; “Data is shown” should be changed to “Data are shown). Legend to Figure 2: the sentence “Experiments were performed in three independent experiments” does not make sense.

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, and I have assessed the statistics in my report.