Reviewer's report

Title: Multiple proteins and biological processes up-regulated during maxillary expansion in rats

Version: 1 Date: 10 December 2007

Reviewer: Antonella Forlino

Reviewer's report:

The paper "Multiple proteins and biological processes up regulated during maxillary expansion in rats" by Ma J et al. described the effects of mechanical maxillary expansion in rat using histological and proteomic techniques. The results are novel, the data are convincing and the chosen approach valid, but the paper needs some revision before publication.

Comments:

Major Compulsory Revisions:

1. To accept the presented proteomic data obtained by 2-DE and mass spectrometry in Table 1 the authors should also report the fold difference of the differentially expressed proteins, the Accession number, the Entrez Gene ID, the number of mass values matched, the Sequence coverage (%), the MASCOT Score. Table 1 will also be easier to read if the identified proteins could be organized based on their role/function.

2. Also the CV (%) for the number of detected spots in the replicates as well as the CV of their intensity should be reported to demonstrate the validity and reproducibility of the data.

3. To prove the presence of new bone it will be nice to have some immunostaining of bone specific protein together with type I collagen like osteocalcon or ALP.

4. In the growth curve it is necessary to include the SD and to evaluate if the decrease in body weight even at the end of the treatment is statistically significant. If this is the case the authors should discuss possible effects of this on their data.

5. Fig. 2 should include at least other two panels showing the sections of control samples at the beginning and at the end of the treatment (d=0 and d=11) to allow the effective comparison of control and treated animals.

6. Nothing is mention about the diet of the rats. Do they receive normal pellet food or wet food and was the food the same for control and treated animals?

7. In the discussion the paragraph on UPR need to be changed, UPR is not simply activated by GRP78, it is a more complex system that includes GRP78.

8. The discussion in general is too long, it should be shortened and more focused
on the message that the authors want to give.

Minor Essential Revision:

9. In Fig. 8 SD bars are missing.
10. The paper need a carefully spelling check.

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article of importance in its field

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

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' below