Reviewer’s report

Title: Genetic Polymorphisms in Bone Morphogenetic Protein Receptor Type IA Gene predisposes individuals to Ossification of the Posterior Longitudinal Ligament of the Cervical Spine via the Smad signaling pathway

Version: 1 Date: 08 Dec 2017

Reviewer: Marina Feigenson

Reviewer’s report:

The objective of the authors was to describe the molecular mechanism of OCLL-a deliberating disease in which there is an ossification of the spine. Previous study from the lab recognized several SNP associated with OCLL, BMPR-1A is one of them. Here, the authors test whether the different SNPs in the BMPR-IA result in changes in Smad signaling in in vitro setting.

The manuscript is suitable for BMC and the findings are interesting. However, the conclusion that the authors arrive to is not supported enough by the experiments decibed. In addition, the manuscript is poorly written and difficult to read. I would recommend using a help from scientific writer or an English native speaker to rewrite the manuscript.

1-The manuscript should be written in more clear way.

2-Focuses a lot on talking about receptor affinities but the studies do not address this aspect of BMP signaling.

3-More description about the in vitro cell cultures should be provide: were the cultures induced to differentiate?

4-Please provide more details about the in vitro experimental design-when you transfect BMPR-IA into cell-line-what happens? Where the cells treated with differentiation media ? How long were they cultured?

Major concern

5-The authors concluded that changes in Smad signaling play major role in the pathophysiology of OPLL due to SNPs in BMPR-IA. However, there are not enough evidence to draw this conclusion. More studies should be done to show that those changes causing the pathological outcome.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.
No

** Does the work include the necessary controls? **
If not, please specify which controls are required in your comments to the authors.

No

** Are the conclusions drawn adequately supported by the data shown? **
If not, please explain in your comments to the authors.

No

** 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 recommend additional statistical review

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

Needs some language corrections before being published

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