Reviewer’s report

Title: Expression of adiponectin in the subchondral bone of lumbar facet joints with different degrees of degeneration.

Version: 0 Date: 30 Jun 2017

Reviewer: Murali Malliga Raman

Reviewer's report:

* For qPCR the product size might be designed less than 200 bp for better efficiency rather than 285 bp for actin and 214 base pair for adiponectin.

* How the primers was designed for qPCR experiment? The primer sequence provided for ADIPOQ, F5′-CATGCCCATTCGCTTACCA-3′ and R5′-GGAGGCCTGGGTCCACATTAT-3′, does not produce any match or sequence similarity to Homo sapiens adiponectin gene through NCBI primer blast or ClustalW sequence alignment. This leaves the uncertainty of whether the desirable product (adiponectin) was amplified through qPCR.

* Which statistical package (SPSS, Graphpad…..) has been used for statistical analysis?

* Why the ELISA results are produced in μg/mL? It will be appropriate either expressing as μg/mg tissue or μg/mg total protein. This will be more important for the precise understanding on the quantity of test substance. Also, methods section has only explained that 30 mg of tissue was used to perform each ELISA and haven't mentioned in how much volume the 30 mg tissue was homogenized.

* Authors are requested to provide additional details on ELISA experiment and also need to provide the details on the standard used by them for calculation.

* Authors are also advised to check their units "μg/mL", Assuming 30 mg of tissue was used, adiponectin concentration was too high as the mean value is almost 6 mg adiponectin (5968.03 ± 3756.21 μg/mL).

* The standard deviation in the ELISA results is too high and hence leaving behind the unsatisfactory result. For an example of adiponectin concentration, the maximum adiponectin concentration in the analyzed samples is 12,385.44 μg and the minimum concentration is 438.16 μg. This is a huge difference. The authors need to meticulously analyze the data and remove the outlier values for appropriate statistical calculations.

* Similar to adiponectin, the standard deviation for IL-1β and Leptin is very high and which is not acceptable.
* Figure 2 is not appropriate to understand the correlation, for correlation analysis scatter plot is preferred.

* Figure legends was not provided, this makes it difficult to understand the figures. Example, Figure 3, a, b, c represents what? It was neither explained in the results sections also.

* Figure 4 has statistical significance (***)) in all groups (normal, degeneration, severe degeneration), these three groups are compared to which group to provide the significance?

* What is ND, DG and SDG in figure 5, these abbreviations never appear in the manuscript or the figure legends.

* Overall English language can be improved

**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.

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 recommend additional statistical review

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

Needs some language corrections before being published
**Declaration of competing interests**

Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organisation that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license ([http://creativecommons.org/licenses/by/4.0/](http://creativecommons.org/licenses/by/4.0/)). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal

Do you want to get recognition for reviewing this manuscript? Add a record of this review to Publons to track and showcase your reviewing expertise across the world’s journals. Signing up is quick, easy and free!

Yes