Reviewer’s report

Title: Experimental Research on the Relationship between the Stiffness and the Expressions of Fibronectin Proteins and Adaptor Proteins of Rat Trabecular Meshwork Cells

Version: 0 Date: 31 Jul 2017

Reviewer: Sergio Saccà

Reviewer's report:
I have read the article very carefully: "Experimental Research on the Relationship between the Stiffness and the Expressions of Fibronectin Proteins and Adaptor Proteins of Rat Trabecular Meshwork Cells" by Wang et al. Below my considerations:

1. Abbreviations should be put into the text the first time they are using. Even if they are put (if it allows the publisher) in the abstract too.

2. Last year an article was published about TM functioning , Saccà et al. The Outflow Pathway: A Tissue With Morphological and Functional Unity. J Cell Physiol. 2016;231:1876-93, which summarizes all the functional aspects of the TM, it should be inserted.

3. Another article authors have to cite: . Saccà et al.. From DNA damage to functional changes of the trabecular meshwork in aging and glaucoma Ageing Res Rev. 2016;29:26-41. Here it is explained why the flow resistance increases during glaucoma.

4. The authors speak of cell stiffness and this is a limitation to their research, because these cells are constantly changing shape. They must therefore say what they mean by better cellular stiffness. The most striking feature of TM cells is that are equipped with the cytoskeleton and thus are able to change their shape, furthermore their cytoskeleton is attached to the nuclear membrane and can in millionths of a second send signals to the nucleus to alter the gene expression in an attempt to adapt to the biomechanical insult. Perhaps the authors believe that the cells can lose their ability to adapt to the biomechanical
insults and so this is the main responsible for the increase in the flow resistance. But that must be said.

5 Another article to mention is Wang et al. Trabecular meshwork stiffness in glaucoma. Exp Eye Res. 2017;158:3-12.

6 Mifepristone is a synthetic progesterone antagonist that influence ER stress response. This must be explained too.

7 A phrase that we do not understand the meaning is "The increases of aqueous humor outflow can directly result in the decrease of IOP, although the quantitative relationship between IOP and outflow resistance was not evident. Must be removed or rewritten it.

8 The authors state that the relationship between IOP and aqueous out flow resistance has remained unclear. By now, however, it is quite obvious that if the TM does not works, it loses its characteristics: the barrier functions and aqueous humour outflow are altered and so the IOP increases.

9 Authors affar that There is growing evidence suggesting that mechanical properties of TM may be involved in ocular hypertension associated with glaucoma. In my opinion, the metabolic and homeostatic conditions of TM cells are changing with DEX and MIF.

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.
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.
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