Reviewer’s report

Title: Cobalt Chloride Compromises Transepithelial Barrier Properties of CaCo-2 BBe Human Gastrointestinal Epithelial Cell Layers

Version: 1 Date: 23 Aug 2017

Reviewer: Rita Rosenthal

Reviewer's report:

James Mullin and coworkers have submitted the revision of their original manuscript entitled "Cobalt Chloride Compromises Transepithelial Barrier Properties of CACO-2 Human Gastrointestinal Epithelial Cell Layers" to BMC Gastroenterology.

First of all, the authors uploaded wrong figures in the revised version of the manuscript, some figures are missing and the figure legends do not correspond to the figure legends and the notes in the text.

The authors have changed in some points according to the reviewer's suggestion. Unfortunately, some major points are not considered, some figures are changed, but sometimes, the quality of the figures is not increased, e.g. correct wording in the figures (HIF-1ß as in the text instead of HIF-1B).

Fig. 1A: Expression of HIF-1α. It is not detectable from these Western blots that CoCl2, especially in a concentration of 125 µM, induces an increase in HIF-1α expression, to confirm this, the authors should present the densitometric analysis in combination with the Western blots. The increase in HIF-1α expression induced by CoCl2 is the major statement of the manuscript and should be demonstrated very clearly.

Fig. 2: I would suggest to present the Western blots in combination with the densitometric analysis, this is one lane above the bar diagrams, this is more comfortable for the reader than to open the supplemental figures.

Fig. 7A: Instead of numbers 1-8, Control KD and HIF-1ß KD (Not HIF-1B), the same description as in Fig. 7B.

The authors discuss the role of tight junction proteins in barrier function, they should mention, that Caco-2 BBE cells express a lot of other tight junction proteins than occludin, claudin-5 and claudin-7, which are not investigated in this revised study and that changes in these tight junction proteins could also contribute to the effect of CoCl2 on barrier function.
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.

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 am able to assess the statistics

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

Acceptable

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

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 organization 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/). 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