Reviewer's report

Title: DPOFA, a Cl-/HCO3- Exchanger Antagonist, Stimulates Fluid Absorption Across Basolateral Surface of the Retinal Pigment Epithelium.

Version: 2 Date: 23 June 2011

Reviewer: Dongli Yang

Reviewer's report:

In this study titled “DPOFA, a Cl-/HCO3- exchanger antagonist, stimulates fluid absorption across basolateral surface of the retinal pigment epithelium”, Dr. Iserovich and collaborators assessed the effect of DPOFA on fluid transport using the bovine choroid-RPE ex vivo system in the hope of predicting DPOFA response in human RPE. The authors also provide evidence that transcripts for anion transporters, SLC4A2, SLC4A3, and SLC26A6 are expressed in human and bovine RPE. Their results suggest that DPOFA could increase fluid reabsorption from the subretinal space.

- Major Compulsory Revisions

Data analysis: No statistical analysis was used in this study. No information was given on the number of independent experiments performed for Figure 3 in Results section.

- Minor Essential Revisions

1. Abstract: Methods and results for RT-PCR and amino acid comparison analysis should be included in the Abstract section.

2. Materials and Methods:

(1) Second paragraph: “DPOFA’s stock solution (40 mM) was prepared in 4.2% NaHCO3, pH 6.3 as described previously.” Need to change “4.2%.” to “4.2%”.

(2) Second paragraph: HEPES was used prior to being spelled out.

(3) Fifth paragraph: How PCR primers were designed? Were PCR primers designed by authors or based on published papers? If based on published papers, references should be cited.

3. Results:

“…followed by decrease of drug activity at higher micromolar concentrations [19.24].”

Need to change “[19.24]” to “[19,24].”

4. Discussion:

“After defining transporters expressed in the PRE, …”
Need to change “PRE” to “RPE”.

5. Sub-headings: Some sub-headings are followed by periods. Need to delete the “.” for each sub-heading according to BMC Ophthalmology template.

6. References: References 22-30 in the text are placed after references 31 & 32. Please re-number the references according to the order they appear. It is unclear why references 18 and 19 are in dark blue in the References section.

- Discretionary Revisions

1. In the Introduction it is stated that DPOFA is an abandoned fluorenone drug that has been systemically administered to humans in clinical trials for trauma-induced brain damage. Could the authors comment on why DPOFA is an abandoned drug?

2. The authors provide evidence that transcripts for SLC4A2, SLC4A3, and SLC26A6 are expressed in human and bovine RPE. The data would be stronger if the expression of SLC4A2, SLC4A3, and SLC26A6 at protein levels is also demonstrated.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

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.