Reviewer’s report

Title: Investigation of the anti-cataractogenic mechanisms of curcumin through in vivo and in vitro studies

Version: 1 Date: 25 Aug 2017

Reviewer: Moonsun Jung

Reviewer's report:

Dear Authors

Thank you for your response.

This paper became more reasonable and easy to read, through a revision. I appreciate for your efforts trying to accept my recommendations. But there are still weak points in the paper to accept. I recommend you few additional modifications.

1. There are many in vivo and vitro experiments demonstrated that curcumin has anti-oxidative effect and suppresses apoptosis, which conduces toward reducing the development of cataract. It is difficult to what is special this research to compare other researches about the mechanism of curcumin only through these experiments. You replied me you did in vivo and in vitro experiments, and add other experiment about superoxide anion. I think it is better than before but not sufficient to differentiate the meaning of the paper. Please add your special interpretation of experiment to the discussion. It is not enough to say that the mechanism of cataract prevention by curcumin.

2. Methods

In cell proliferation analysis

What did you use cell line? After that paragraph, in cell apoptosis, you used HLEBs cells. Of course I can suppose you used HLEBs cells in proliferation analysis, but you'd better describe it first.

3. There is no reference in intracellular O2- concentration detection. Is that your own experiment? If not, please add reference.
4. Results

Figure 1, in these photos, it is difficult to observe the degree of the cataract. Although you explained that you have enlarged the photo and modified it in the box, I couldn't see it in the revision. It was not changed. If you want to explain the degree of the cataract with photo, you'd better show the enlarged photo of the lens, or you'd better get rid of it.

5. You'd better unify the terminology.

Cell proliferation in methods and results vs cell viability in figure 3B. What is more suitable word? For reader's understanding, please unify the word.

6. Figure 4

There is no explanation for bcl-2 in figure 4, please add it. C-met & slug was increased but not significant. How should I interpret this? Why did you do test for m-RNA of the caspase 3, bax, bcl-s, cox-3, c-met and slug? Some of these changed and some of these didn't change. For reader's understanding, please add the interpretation of these results in discussion. I think it is important for the anti-cataract effect of curcumin.

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.
I am able to assess the statistics
Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

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 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