## Reviewer's report

**Title:** Spironolactone ameliorates endothelial dysfunction through inhibition of the AGE/RAGE axis in a chronic renal failure mouse modelRunning title: Mineralocorticoid receptor antagonist, advanced glycation end products, chronic renal failure

Version: 0 Date: 31 May 2019

Reviewer: Sirirat Anutrakulchai

### **Reviewer's report:**

The authors studied the effect of spironolactone on reduction of endothelial dysfunction in Sprague-Dawley rats which developed CKD with 5/6 nephrectomy model. Results demonstrated the benefit of treatment with possible mechanisms. The authors have performed the intensive study and I just have some minor comments.

- 1. Sprague-Dawley are rats, not mice, therefore the title of mouse model is not quite true.
- 2. In "Statistical analysis", comparison between before and after treatments in the same group should use Paired T test.
- 3. The line 18 of page 17, "is aer" should be corrected.

# Please confirm that you have included your review in the 'Comments to Author' box?

As a minimum standard, please include a few sentences that outline what you think are the authors' hypothesis/objectives, their main results, and the conclusions drawn. Your report should constructively instruct authors on how they can strengthen their paper to the point where it may be acceptable for publication, or provide detailed reasons as to why the manuscript does not fulfill our criteria for consideration. Please supply appropriate evidence using examples from the manuscript to substantiate your comments. Please break your comments into two bulleted or numbered sections: major and minor comments.

Please note that we may not be able to use your review if no comments are provided.

Please only upload as attachments annotated versions of manuscripts, graphs, supporting materials or other aspects of your report which cannot be included as text in the 'Comments to Author' box.

Yes

# Are the methods appropriate and well described to allow independent reproduction of experiments?

Please state in the 'Comments to Authors' box below what you think are the strengths and weaknesses of the methods (study design, data collection, and data analysis), and what is required, if anything, to improve the quality of reporting

Yes

#### Does the work include the necessary controls?

If not, please explain in the 'Comments to Author' box below.

Yes

#### Are you able to assess the statistics?

- Are the statistical test(s) used in this study appropriate and well described?
- Is the exact sample size (n) reported for each experimental group/condition (as a number, not a range)?
- Are the description of any error bars and probability values appropriate?
- Are all error bars defined in the corresponding figure legends?
- Has a sample size calculation been included, or a description and rationale about how sample sizes were chosen?

Please can you confirm which of the following statements apply to your statistical assessment of the manuscript (Please include details of what the authors need to address in the 'Comments to Author' box):

This question is not applicable to this manuscript

#### Are the conclusions drawn adequately supported by the data shown?

If not, please explain in the 'Comments to Author' box below.

Yes

#### **Quality of written English**

Please indicate the quality of language in the manuscript:

Acceptable

#### Should the manuscript be highlighted for promotional activity?

Articles that are deemed of interest to a broad audience can be promoted in a variety of ways. This could be through email updates, postings on the BioMed Central homepage, social media,

blogs and/or press releases. Please indicate in the text box below whether you think this manuscript should be considered for promotional activity, indicating your reasons why (e.g. what is the most newsworthy aspect of the research).

Yes: This paper creates the new knowledge of spironolactone mechanism for amelioration of endothelial dysfunction.

#### **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