Reviewer's report

Title: MicroRNA Expression Signature in Human Abdominal Aortic Aneurysms

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Reviewer: Koichi Yoshimura

Reviewer's report:

This study by Pahl et al. provides important information to understand the molecular mechanisms of AAA. All the experiments were designed and performed well. The manuscript was written very well, and the data were presented clearly. Overall, this is a very interesting manuscript. I have the following concerns and suggestions.

Minor Essential Revisions:
Line 2 of the second paragraph in the Results and Discussion. The phrase “twelve AAA” may be wrong and should be replaced with “36 AAA.”
The third paragraph in the Results and Discussion. It is not possible to discuss AAA and thoracic aortic dissection in the same framework. The description of thoracic aortic dissection can be deleted.
Line 1 of the tenth paragraph in the Results and Discussion. There is the phrase “Response to organic stimulus”, while the phrase “Response to organic substance” is used in Figure 4. Is this okay?
Figure 1. There is the name of miRNA “miR-181#”, while the name “miR-181a#” is used in Line 6 of the first paragraph in the Results and Discussion. Is this okay?

Discretionary Revisions:
The seventh paragraph in the Results and Discussion. The description “we are looking at later stages of the human aneurysmal disease” is very significant. Unfortunately, this study lacks the data supporting this explanation. It is already known that histopathology of human AAA walls can be categorized in three pathological stages: inflammatory, active and amorphous (J Clin Invest 1998; 102: 1900-10, Atherosclerosis 2011; 218: 285-6). If the authors could provide information regarding which of these stages was used in this study, the results of this study would be much more informative.

Level of interest: An article of outstanding merit and interest in its field

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.