Reviewer’s report

Title: Article miRNA expression profiling in normal breast tissues and hereditary breast tumors from BRCA1- and BRCA2-germline mutation carriers in Brazil

Version: 1 Date: 16 Dec 2019

Reviewer: Andre F Vieira

Reviewer's report:

Pessoa-Pereira and colleagues characterized miRNAs in several breast samples (normal, mutation carriers and neoplastic) and correlated them with BRCA1/2/x hereditary breast carcinomas.

They mention that miRNAs could be used as potential diagnostic biomarkers to improve performance of already existing BRCA1/2 mutations tests. The authors should further discuss how this improvement can be done, in accordance with the objective of the work.

The bioinformatics should be extensively explained in Materials and Methods and the description of statistical analysis is short and limited at this stage. A dedicated section should be written for the differential expression (Limma); another section for Hierarchical clustering; another section for the ROC curve. Explain in detail what are the percentages and mean values mentioned in Methods.

The authors mention that the term 'ANOVA' was replaced by 'multiple comparisons', but the manuscript is not in accordance with this.

The author should clarify the limitations of the study (lines 372-375 are not in accordance with this).

A list of all differential expression of miRNA between the several groups analysed should be provided as supplementary data. A Venn Diagram with the number of overlapping genes could improve interpretation.

Hierarchical clustering is a method of clustering. How would the authors envision a classification system implemented in the clinic?

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

No

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.

Unable to assess
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