Reviewer's report

Title: Circulating miR-30a, miR-126 and let-7b as biomarker for ischemic stroke in humans

Version: 1 Date: 15 September 2013

Reviewer: Jing Ai

Reviewer's report:

Re: Circulating miR-30a, miR-126 and let-7b as biomarker for ischemic stroke in humans' Guangwen Long, Feng Wang, Yan Lou, Yan Wang, Chen Chen, and Dao Wen Wang

It has been reported that plasma miRNAs can be biomarkers for various diseases. The manuscript by Long et al. presents some new exploration for ischemic stroke which is a leading cause of death and long-term disability in developed countries, they detected that plasma concentrations of miR-30a, miR-126 and let-7b can be changed in humans with ischemic stroke. So they assessed the hypothesis that the three mi-RNAs might be useful for identifying and evaluating ischemic stroke in humans, then used qRT-PCR and statistics methods to testify it. This idea has a strong practical significance. However, there are still some major questions need to consider:

Major Compulsory Revisions:

1. Abstract (Methods): Second paragraph: It had provided too much detail information of blood samples, while a little information about statistical methods in this manuscript.

2. Introduction: Second paragraph: It mentioned that "However, only a few studies have indicated the implications of miRNAs in neuronal death, degeneration or ischemic stroke." I am a little doubt that whether there are only a few number of studies in this respect, please explanation.

3. Introduction: Second paragraph: Three mi-RNA involved into ischemic stroke are listed in this paper, but in fact there are still many miRNAs related with this disease. So please explain the reason you choose the mi-RNA.

4. Methods and Materials (Blood samples): It is not introduced about the instruments used in the collection and preservation of blood and other materials. Besides, the statistical methods and the primers used in qRT-PCR are also need to be described in detail.

5. Methods and Materials (Statistical analysis): Second paragraph: the meaning of "a composite score" is unclear#please explain its meaning and origin.

6. Methods and Materials (Statistical analysis): First paragraph: Since the data of mi-RNA displayed by fold changes, it is very difficult to get a normal distribution
data displayed by mean±SD is not appropriate. Data showed by Scatter is more suitable.

7. Discussion: The content of the discussion is not deep-going without any information of the mechanism between three kinds of mi-RNA and ischemic stroke, or something related. I think the author need to add some contents.

8. Discussion: Second paragraph: I am confused with the sentence “To avoid possible bias from patients’ selection, subjects with similar age, gender, total cholesterol, HDL, LDL, triglyceride, systolic and diastolic blood pressures, diabetes and smoking status were involved to the present study. Statistical analyses implied that miR-30a, miR-126 and let-7b levels in plasma did not influence the results.”, Please check the correctness of the writing or expressed in other ways.

9. Table 1: The author list several body functions of samples to eliminate the interference, After listing a large number of basic data, however, they have not done further dispose to examine whether the groups have significant difference by using statistical processing, on the contrary, the author directly come to the conclusion that "no obvious difference", which was understandable but not logical. You should carry out data results by using "independent samples T test" processing.

10. Table-1: I’m curious about very flat data of the physical indicators of patients in the chart.

11. Figure 1-3: the changes of 3 mi-RNA are expressed in fold, Please provide the original data to enhance the credibility of the results.

12. Figure 1-3: Patients in the trials who have been in the onset of symptoms between 1 day and half a year can be treated anyway, So in order to increase the accuracy of test, the author should provide the disease degree of patients when they blood.

13. Among the expression of the mi-RNAs, the Let-7b displayed a certain difference, even not being the same in the four types of stoke. In that way, how can you decide that Let-7b is the biomarker for stroke or something can distinguish the different types of stroke. Please explanation.

14. The English is needed to be well rewrite carefully

Minor Essential Revisions
- Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

1. Figure 1-3: there is not SD in the control group, which makes statistical analysis can not work.

2. Figure 3: The chart does not state the meaning of ordinate.

Level of interest: An article whose findings are important to those with closely related research interests
Quality of written English: Not suitable for publication unless extensively edited

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

no