Reviewer’s report

Title: microRNA-141 inhibits cell proliferation and invasion and promote apoptosis by targeting hepatocyte nuclear factor-3beta in hepatocellular carcinoma cells.

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Reviewer: Gang Chen

Reviewer’s report:

The manuscript by Lin and colleagues reports the roles of miR-141 in hepatocellular carcinoma cell proliferation, invasion and apoptosis. The authors claim that miR-141 could act as a tumor suppressor in HCC cells through the inhibition of HNF-3# translation.

However, a number of issues still need to be addressed.

Major Compulsory Revisions
1. I believe that Liu, et al. from the same hospital (Nanfang Hospital, Southern Medical University, Guangzhou) has reported the role of miR-141 in HCC. Please check the following publication: Liu, et al. MiR-141 suppresses the migration and invasion of HCC cells by targeting Tiam1. PLoS One. 2014 Feb 13;9(2):e88393. This must be included in the references and please explain that the data in the current study has never been reported elsewhere, including the publication of Liu, et al.

2. Only 8 pairs of HCC tissues were included in the current study. It is extremely a small number and the result is not convincing enough. The sample size needs to be expanded to confirm the founding.

3. Xu L, et al is the first one to report the upregulation of HNF-3# in HCC. The following reference is missing.

4. Please explain why miR-141 inhibitor was not transfected in the in vitro experiment? Otherwise please add these experiments.

5. Please explain why only HepG2 cell line was used? Can one HCC cell line represent the general features of HCC population? It is better to repeat the experiments with other cell lines to provide sounder data.

6. Liu, et al reported that MiR-141 suppresses the migration and invasion of HCC cells by targeting Tiam1. Some other targeting genes of miR-141 were also mentioned in the text: HDGF, MAP4K4 and GNA13. Here, Lin, et al. demonstrated that MiR-141 suppresses the viability and invasion of HCC cells by targeting HNF-3#. It is better to include the possible targets in the current study,
especially Tiam1.

7. The methods are appropriate and well described. However, if more assays could be performed for the functional tests (proliferation, invasion and apoptosis), the data will be stronger.

Minor Essential Revisions

8. Since miR-141 has been already reported to function as a tumor suppressor and inhibit the migration and invasion of HCC cells. The authors need to point out and emphasize the highlight of their own work, especially in the last paragraph of the paper.

9. Too many errors were found in the English writing.

For example:

Line 1: promote # promotes
Line 43,44: This is not a complete sentence because the verb is missing.
Line 58,59: Therefore, studying the molecular basis of HCC is vital for exploring new therapeutic agents# Better to be changed into: Therefore, it is vital to study the ……..
Line 68: Baroukh [8, 9] found: Baroukh is not the first author of reference 9, so the writing should be corrected. When there are more than one author in the references, please add “et al”.
Line 75,76: Recent studies demonstrate that#Recent studies have demonstrated that…
Line 82: Zhao’s team#Zhao, et al.
Line 228: hepatic cells#HCC cells
Line 230: miR-141-suppressed cell proliferation and invasion and miR-141-promoted apoptosis, # miR-141 suppressed cell proliferation and invasion and miR-141 promoted apoptosis,
Line 254: 37# Should be corrected.
Line 294: each well was transfected#cells in each well were transfected

10. It is better to use “hepatocellular carcinoma” than “hepatic carcinoma”.

11. The authors need to explain more in detail why HNF-3# were upregulated in some clinic samples and downregulate in the same samples.

12. What is the difference between “proliferation” and “viability”? Can a “Cell viability assay” (Line 328) detect cell proliferation (Line 1 in the title)?

Level of interest: An article of limited interest

Quality of written English: Needs some language corrections before being published
**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’