Reviewer's report

Title: Increased MiR-221 Expression in Hepatocellular Carcinoma Tissues and Its Role in Enhancing Cell Growth and Inhibiting Apoptosis in vitro

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Reviewer: Amar Deep Sharma

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In the current manuscript, authors investigated the level of miR-221 in formalin-fixed paraffin-embedded tissues from HCC. Authors also examined the effect of miR-221 on proliferation and apoptosis in vitro in different hepatoma cell lines.

This manuscript provides further evidence that miR-221 acts as an oncogenic miRNA. Their results, confirm previous reports describing that overexpression of miR-221 enhances proliferation and prevents apoptosis while its inhibition suppresses proliferation and enhances apoptosis.

In general, experiments are well controlled and all methods seem fine. However I have specific comments written below:

Major:

1. Authors should provide data for transfection efficiency.
2. Further, to confirm successful transfections, authors should show altered protein levels of one of the established miR-221 targets such as p27.
3. Authors demonstrate that miR-221 mimic increases proliferation while inhibition of miR-221 decreases proliferation. Authors should cite previous published reports, which also show the role of miR-221 in hepatocyte proliferation during liver regeneration.
4. Similarly, previous reports of role of miR-221 in FAS-induced apoptosis and TNF alpha-induced apoptosis should be cited.
5. In Figure 8, authors show that miR-221 mimic mediated protection against apoptosis is significant in HepB3 cells but not in HepG2 and SNU449 cells. A potential explanation is differential expression of endogenous miR-221 expression among different cell lines. Furthermore, previous reports have also shown that miR-221 mimic protects against apoptosis. Therefore, authors should transfect miR-221 mimic at higher concentrations and analyze its effect on apoptosis in HepG2 and SNU449 cells.

Level of interest: An article of importance 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