Reviewer’s report

Title: Fibroblast growth factor 19 expression correlates with tumor progression and poorer prognosis of hepatocellular carcinoma

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Reviewer: John Chiang

Reviewer’s report:

This study explored the association of the expression of FGF19 with human HCCs. The data and designed experiments are carefully preformed. However, the novelty of this study is limited. The previous publications have already addressed the role of FGF19 in liver and other cancers (in vivo and in vitro, Cancer Cell 19, 2011, 347–358 and J Clinical Investigation, 2011, 121, 3220-3232). In this study authors analyzed FGF19 and FGFR4 mRNA and protein expression levels in 40 HCC specimens and found a correlation of increased FGF19 mRNA expression to severity of HCC in patients. Authors also used ten hepatoma cells to study the effect of FGF19 protein and siRNA on proliferation, invasion and apoptosis. Data are consistent with the known effect of FGF19 on increasing proliferation and inhibition of apoptosis. Specific comments:

1. The number of human HCC samples may not be sufficient for identifying the association between the FGF19/FGFR4 system and the development of HCC in human.

2. Han Kiat Ho et al. (Journal of Hepatology 50 (2009) 118–127) reported that FGFR4 expression is elevated in HCC patients, which is opposite of the authors’ results. Please cite this paper and explain.

3. Figures 1 D and 3E, what is the evidence that FGFR4 is expression in the membrane from this histoimmuno staining?

4. Flg 2, missing label of "survival rates"

5. Flg 6D legend should state "flow cytometry analysis"; Figure 6C, in the legends, stated FGFR4 gene silencing by siRNA, but text (page 14, last two lines), and figures labeled "FGF19/GAPDH’ and FGF19 siRNA? Please clarify it.

6. Cancer cell migration should be tested to show FGF19 function in tumor development.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a
statistician.

Declaration of competing interests:

no interest