Reviewer's report

Title: Genome-wide expression patterns associated with oncogenesis and sarcomatous transdifferentiation of cholangiocarcinoma

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Reviewer: Naohiko Seki

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This manuscript described expression signatures about cholangiocarcinoma using clinical specimens and cell lines. The authors revealed the differentially expressed genes in expression analyses and confirmed the protein expression by using immunohistochemical staining. The manuscript submitted though is too bulky and either could be divided into two separate manuscripts or edited into a more manageable one manuscript. Perhaps the 5-aza treatment assays could be pulled out of this manuscript or the immunohistochemistry results of hamster could be removed or the number of Figures could be reduced as the entire “package of results” is interesting. If authors are aimed for “identification of genes related to cholangiocarcinoma oncogenesis and sarcomatous transdifferentiation”, further functional analysis is necessary about provided genes.

As for the analysis data of the microarray, registration is necessary for Gene Expression Omnibus (GEO) database.

A mention of Table 1 does not accord with a mention of the cell names which showed in Fig.1.

A mention is vague about normal biliary epithelial cells in Fig.1.

The notation of a clinical specimen mentioned in Fig.1 does not accord with Table 2.

What is the standard that authors selected immunohistochemical analyses genes from microarray studies in Fig.3 and Fig.4?

The confirmation study at the mRNA level is required about microarray data.

The reviewer wants to know whether these protein expression status correlate with clinicopathological features in the CC tissues.

The analysis that increased clinical specimens is necessary.

Mention of the cells which author used in Fig.5 is insufficient.

Authors already published the microarray study using these cell lines, Experimental Molecular Medicine 41, 102-115, 2009. What is the difference with the previous article?
Level of interest: An article of limited interest

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

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:
'I declare that I have no competing interests.