Reviewer's report

Title: Expression profiling identifies genes involved in neoplastic transformation of serous ovarian cancer

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Reviewer: Barbara Vanderhyden

Reviewer's report:

The authors have addressed most of the concerns of Reviewer 3 and made satisfactory revisions, but they have chosen not to revise the manuscript to address one of the major compulsory revisions suggested.

Major Compulsory Revision

The stated goal of this work was "to identify genes associated with neoplastic progression in the serous type of ovarian tumors". The value of this type of work (i.e. microarrays) is not simply to show that there are differentially expressed genes (that has been done before), but to demonstrate that the candidate genes identified have some relevance. The authors do not propose to be identifying biomarkers of clinical outcome; i.e. there is no association made between expression of these genes and clinical outcome. The value of these candidate genes then is assumed to be their functional role in tumor progression. As it is presented here, the authors have identified and validated five candidate genes, and performed an analysis with only one of those genes in one cell line to investigate its function. While very promising, it is a superficial analysis and any subset of the experiments proposed by Reviewer 3 would have been helpful. Even without additional experimentation, this section could be strengthened by a re-evaluation of the microarray data for the expression of other wnt factors and members of the WNT pathway to differentiate between the potentially unique role of WNT7A vs. a more global alteration in WNT pathway activity. While I agree with the authors that a full investigation of WNT7A is beyond the scope of this manuscript, the investigation of the one gene whose function they did chose to validate should be done more convincingly.

Minor compulsory revision

The authors have stated in the Abstract that the expression profiling was done on the surface epithelium of four normal ovaries, but the Methods indicate that the whole ovaries were used. The Abstract needs to be revised if the Methods are correct.

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.