Reviewer's report

Title: Overexpression of human sperm protein 17 increases migration and decreases the chemosensitivity of human epithelial ovarian cancer cells

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Reviewer: Dimcho Bachvarov

Reviewer's report:

This paper confirms to a certain extent the role of hSp17 as a molecule involved in ovarian cancer tumorigenesis/metastasis. The authors have found hSp17 protein expression in 40% of patients with ovarian carcinoma (tumors of 70 patients studied by immunohistochemistry). Based on these data, as well as data from the literature, they have investigated for some functional implications of the hSp17 protein in ovarian cancer tumorigenesis. Their experimental data are indicative for possible role of the hSp17 protein in ovarian tumor invasion/metastasis and in mechanisms of resistance to platinum-derived chemotherapeutics.

Major Compulsory Revisions:

The results concerning the functional implication of the hSp17 in ovarian cancer metastasis and chemoresistance should be considered as rather preliminary since they were generated in vitro, and using only one ovarian cancer cell line (HO8910), which does not express a functional hSp17. These experimental data should be more authentic if they are confirmed by performing the inverse experiment, i.e. suppressing the hSp17 gene expression via siRNA in hSp17-expressing ovarian cancer cell lines and performing similar functional analyses.

Moreover, to get more complete picture of the involvement of hSp17 in ovarian cancer tumorigenesis/metastasis, the authors should strongly consider performing in vivo experiments in nude mice using their hSp17-expressing cell line (HO8910/hSp17) and corresponding control cells (HO8910/EGFP), in order to monitor the effect of hSp17 overexpression on xenograft formation and growth.

Fig. 2A: The authors have shown hSP17 overexpression using fluorescent microscopy which is not quite relevant, since they can easily obtain the same image with the HO8910/EGFP (control) cells. Thus, they have to prove for specific hSp17 overexpression in HO8910/hSp17 cells by immunocytochemistry, using specific anti-hSp17 antibody.

Minor Essential Revisions:

Page 5, IIrd paragraph: It is not clear if the source plasmid (pGEM-T/hSp17) used to reclone the hSp17 gene in the pEGFP-N1 vector was a gift, or purchased!?

Fig. 3. The increased migratory capacity of the HO8910/hSp17 cells versus the
HO8910/EGFP should be also graphically demonstrated (currently, only some numbers are mentioned in the text (page 8, 1st paragraph, last two lines)).
The drug concentrations shown on Fig. 4 should be presented as molar concentrations, instead of µg/ml.
It will be interesting to check if the four serous ovarian adenocarcinoma patients displaying strongest (++++) hSp17 expression (as indicated in Table 1) display higher resistance to chemotherapy compared with those serous patients that do not express, or weakly express (+) the hSp17 protein.
The manuscript needs numerous corrections in style starting with the abstract; there are also several spelling errors. The complete description of the AKAP3 abbreviation should be indicated in the text.

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

**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.