Reviewer's report

Title: Expression of tumor-specific antigen MAGE, GAGE and BAGE in ovarian cancer tissues and cell lines

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Reviewer: Mai-Britt Zocca

Reviewer's report:

Comments to the authors:
This study by Zhang et al. addresses a very important issue in ovarian cancer biology. First, to which level (mRNA) is Cancer Testis Antigen (CTA) expressed in ovarian tumor tissues, and second, CTAs role as diagnostic and/or prognostic marker or as part of immunotherapy treatment.

The authors show positive expression of CTA mRNA in cell lines (3 lines established from tumor tissue) and ovarian tumor tissue. The authors have collected 47 tumor samples over a period of three years (2005 – 2008). All samples are tested for expression of four CTAs and the CTA expression is listed in tables (2-4) both according to mRNA levels and further categorized according to pathological type, clinical stage. Additional also CTA expression is compared to lymph node metastasis and the presence of ascites. Not surprisingly CTA mRNA especially MAGFE-1 was increased in ovarian tumor tissue more than 50%. Similar results have been reported for other cancer types, i.e. Non Small Cell Lung Cancer and Colorectal Cancer.

Overall the PCR work is nicely done however the study would have improved if the mRNA level had been confirmed by antibody staining of tumor tissues in selected samples. The grouping of samples in table 4 bring relevant information of CTA expression and pathological features which might add important knowledge to the field in general. The discussion and conclusion of the work is straightforward and as initially assumed in the study CTA is increased during tumor differentiation and positively correlates to the clinical stage of ovarian cancer.

In summary, although the paper is limited in scope and corrections are needed it is nicely done and adds some important information to the field.

Minor essential comments/corrections:
The three positive cell lines established and analyzed in figure 1-3 do not express BAGE however tissue sample in figure 4 do – what is the explanation for the lack of BAGE expression in the three cell lines?

Table 2 needs to be corrected:
Normal Ovary: Text (Abstract, Material and methods) reads 14 cases of normal ovarian tissue however table list 10 samples of ovarian tissue.
Ovarian cancer: Table list 24 (51.1%) MAGE 1 however text list 25 (51.1%)

**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'