Reviewer's report

Title: Immunohistochemical profiling of benign, low malignant potential and low grade serous epithelial ovarian tumors

Version: 1 Date: 10 September 2008

Reviewer: ieming shih

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- Major Compulsory Revisions

This manuscript submitted by Mes-Masson et al. described the immunohistochemical profiles of benign tumors, borderline tumors and invasive carcinomas of serous type using tissue microarrays. The results show specific expression of several candidate genes that are differentially expressed in different types of serous tumors. The p21 expression in SBT and cystadenoma is interesting and may have clinical application as suggested. The data from the current report may interest many investigators in ovarian cancer research field as well as pathologists. There are several minor but essential comments that the authors may need to address in order to better present their study.

1. The terminology of “low-grade” and “G1 tumor” should be further defined. In the title, “low-grade” is used but in the text, “G1” is widely used. If they are the same, please just use “low-grade” through out this manuscript to avoid the confusion.

2. In the Abstract, under Background, the statement “The molecular relationship between tumors of …remains unclear” should be modified. In fact, the relationship among borderline tumors, low-grade and high-grade serous tumors has been well characterized by several research groups including clinicopathological characterization, molecular genetic studies, gene expression arrays, SNP arrays, array CGH, SAGE… etc. It may be appropriate to modify the sentence as “Although the relationship…. has been well delineated, the expression of specific markers on those tumors has yet to be demonstrated”. The same is true for the first paragraph in the Discussion section.

3. In the Abstract, under Conclusion, “comprehensive” should be better deleted as this study in not totally comprehensive.

4. In the Background, first paragraph, tubal origin of pelvic serous carcinoma should be discussed in addition of OSE and inclusion cysts as there is ample evidence to support that. Dr. Crum’s papers should be cited.
5. In the Background, Does “invasive (TOV)” indicate low-grade or high-grade tumor? The statement “LMP tumors account for 20% of malignant tumors…” should be modified as the data to support the argument are not updated. Also in the Background, the classification of TOV into well-, moderately- and poorly-differentiated tumors should be modified. There are several publications to support the two-tiered classification (LG vs. HG). Drs. Malpica’s and Shih’s papers can be considered to be included.

6. The potential use of Trail immunoreactivity in distinguishing non-invasive vs. invasive implants should be discussed as this is the difficult area in diagnostic pathology.

7. The potential edge artifact of immunohistochemistry in cyst epithelium should be discussed. This artifact is common in cyst epithelium in TMA.

- Minor Essential Revisions
  none

- Discretionary Revisions
  none

**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.