Reviewer's report

Title: In vivo measurement of tumor estradiol and Vascular Endothelial Growth Factor in breast cancer patients

Version: 2 Date: 21 September 2007

Reviewer: Paul Span

Reviewer's report:

General
In this manuscript, Garvin and Dabrosin use an exiting technique to sample breast tissues and tumors in vivo to measure estradiol and VEGF. They find an increase in VEGF, but not estradiol, in tumor when compared to normal tissue. Overall, the study is hampered by a lack of power given the small groups.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

- The authors state that as 7 out 10 patients had higher estradiol in the tumor, there is a difference. However, no significant differences in estradiol was found using t-testing between tumor and normal tissue, and the authors should thus refrain from stating the opposite.

- Considering the statistics, the authors use parametric analyses and report values as mean and SEM. The authors should prove a normal distribution of values before doing so, and -if a normal distribution is found- use mean and SD, not SEM. I would prefer to use non-parametric analyses, both for differences and correlations, for such small groups anyway.

- Also, given the small group of patients (n=10) the power of the study is obviously limited. Thus, if no difference or correlation is found, the results can not be well interpreted. In the discussion section, the authors should make this clear when discussing the fact they can not confirm previous data.

- The authors argue on page 10 of the discussion that the lack of tumor estradiol and VEGF might come from non-functional ERs. However, no correlation between VEGF and ER, nor with PR is found. Again, this lack of correlation -although anticipated- might very well come from a lack of power.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

- The authors should give patient characteristics, if only the basics, at the subjects description in the Methods section.

- I find the IHC analysis section of the Results not very informative. As no usefull
results seem to be obtained (again, a lack of correlation means nothing in such a small group), this section might be deleted.
- To better appreciate the significant correlations, I would prefer a figure showing these.

Discretionary Revisions (which the author can choose to ignore)

**What next?:** Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

**Level of interest:** An article of limited interest

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests