Reviewer's report

Title: Membrane testosterone binding sites in prostate carcinoma as a potential new marker and therapeutic target: Study in paraffin tissue sections

Version: 3  Date: 11 August 2005

Reviewer: Elmer Villanueva

Reviewer's report:

The Authors describe an immunohistological technique that targets specific testosterone receptors. They describe results that suggest that the expression of these receptors is more common in poorly-differentiated prostatic neoplasms compared to benign disease.

My comments relate to the statistical aspects of the manuscript.

1. The "Methods" section does not state the statistical procedures used. These procedures are enumerated in the "Results" section.
2. The Authors fail to specify the hypotheses under consideration.
3. The Authors are selective in their reporting of results, preferring to focus on statistically significant findings.
4. The Authors' use of certain statistical tests are unclear or inappropriate, even in the context of a lack of description of the statistical procedures used (see 1, above).

I think that the problems are not insurmountable and are commonly seen in laboratory research. My recommendations are as follows:

1. The Authors should seek the advice of a professional statistician in preparing their manuscript.
2. The Authors must describe all hypotheses under consideration as well as all statistical tests and assumptions used. Conventional statements about the level of significance should be added.
3. The Authors should report all results arising from their analyses, especially those results relating to their stated hypotheses. If the Authors feel that these results do not support the flow of the manuscript, they may be included in an "Additional File".
4. The Authors should avoid common statistical pitfalls prevalent in the basic and laboratory sciences -- multiple application of significance tests (eg., reporting that higher Gleason sums are related to receptor expression in page 11), post-hoc determination of cut-off scores (Gleason sum of 6 in page 11) -- and use more appropriate methods to examine the data such as non-parametric procedures to examine correlations among ordinal or continuous variables, analysis of variance, etc. A professional statistician should be able to provide appropriate advice.

I will not comment on the issues raised by one of the Reviewers about the Gleason score. However, I support his view that an adequate description of the samples (age, stage, etc) should be stated.

Generally, the level of English is appropriate and requires minimal changes.

I believe that the manuscript requires additional work and that the Authors should be allowed to publish a suitably-manuscript once all the issues arising from the peer-review process are met.