Reviewer's report

Title: DNA Microarray Data Integration by Ortholog Gene Analysis Revealed Potential Molecular Mechanisms of Estrogen-Dependent Growth of Human Uterine Fibroids

Version: 1 Date: 16 January 2007

Reviewer: James Segars

Reviewer's report:

General
The manuscript by Wei, et al. describes an in silico analysis with the comparison of DNA microarray results from human fibroid studies and estrogen-regulated genes in the rat. Of the thousands of differentially-regulated genes, the authors have culled the list to 38 genes common to 3 human studies and of the 38, 12 were found to be orthologs of genes responsive to estrogen in the rat uterus (12/38=31%). The authors conclude that this work ‘provides further avenues of study which could influence the future direction of therapeutic intervention for the disease.’ As an in silico analysis, the methods appear justified. There have been comparisons of microarray data of human studies published previously, but no direct comparison with the rat. It is certainly true that medical treatment for fibroid disease warrants new efforts directed to therapeutic intervention.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)
Suggestions:
1. Estrogen, while involved in 12 of the 38, was not apparently involved in 69% of the gene products identified by the author’s approach. It would be very interesting to see the list of genes that were NOT involved in estrogen action. While others have published summary data, the list of this paper would be of interest for comparison.
2. The findings of this in silico analysis provide direction for new direction and may provide hypotheses for testing, but the primary limitation is that experiments will need to be performed to substantiate the importance of the findings. This point should be emphasized more strongly in the discussion.

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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)
There are some incorrect verb tenses and grammatical errors.

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Discretionary Revisions (which the author can choose to ignore)

What next?: Accept after minor essential revisions

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.