Reviewer’s report

Title: Translating microarray data into a diagnostic test for childhood leukaemia

Version: 1 Date: 18 April 2006

Reviewer: Wing Chan

Reviewer’s report:

General

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

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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 need to address and clarify a number of technical issues:
1. The authors indicated that they used multiple training and test sets for cross validation and in each of these exercises, different discriminating probe sets would be generated. It is unclear how the authors eventually select the probe sets for their analysis.
2. It is unclear how a case was classified according to the selected probe sets and expression levels.
3. Some transcripts may be represented by multiple probe sets. If several probe sets had concordant expression and were selected by the computational analysis to be a classifier, it does not seem useful to retain all the probe sets representing the same transcripts in the same classifier.
4. The two analysis methods produced overlapping transcript classifiers for the different ALL subgroups. The authors compared the different classifiers originating from the two different analysis programs but did not discuss how well the consensus transcripts will work as classifiers. It is worthwhile doing that analysis.
5. The authors lumped the ALL samples from patients with 21 cell lines for analysis. Since the expression profiles of cell lines are likely to be significantly different from ALL patient samples, it is not legitimate to combine the two groups as a single entity. Data on the two groups should be shown separately.

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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: Acceptable

Statistical review: Yes
Declaration of competing interests:

I have no competing interests.

Re: Statistical Review -- I am not a statistician and it is good to have an expert to check this aspect of the manuscript. Thank you.