Reviewer's report

Title: Evaluation of a New High-Dimensional miRNA Profiling Platform

Version: 1 Date: 31 March 2009

Reviewer: Rickard Sandberg

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The study evaluates the performance of Illumina bead arrays for global miRNA profiling. They specifically compare reproducibility of different extractions or varying amounts of starting total RNA. The evaluation is based on standard statistics such as Spearman correlation, standard deviation and MA plots.

Although the authors used several different samples in the analysis, including 4 cell lines and 5 colon cancer tissues, the study does not add significantly to already existing literature (ref 28). The study however confirms ref. 28 and gives some further examples on how normalization affect and the variation in miRNA bead arrays and additional low-level variation in miRNA measurements.

Major Compulsory Revisions:

Overall, authors must clarify what is new in this study with comparison to the existing literature on using Illumina beads and how do the observed reproducibility relate to other published methods, e.g. digital gene expression and qRT-PCR.

The presentation in terms of figures and writing needs further work to enhance clarity, below follows a few examples:

Figure 1, in B there is no clear indication of what the arrows signify given that all starting amounts total RNA amounts are different. Add units to all numbers and avoid unnecessary acronyms, e.g. Pts (guessig it is Patients). Altogether, Figure 1 looks more like a sketch than a figure.

Page 13, the text is broken up into many short sentences indicates a draft rather than finished manuscript. I would also advice that the paragraph, “Please note that Figure 3...”, would be moved earlier in the text where it could help clarify the presentation of figures. In its current place it, the reader would have already had to deduce the figure layout himself/herself.

Minor Essential Revisions:

Figure 4 and 5: the usage of letter notation for denoting different comparisons is confusing/unclear. Authors might prefer to instead label the different comparisons made.

Level of interest: An article whose findings are important to those with closely
related research interests

**Quality of written English:** Acceptable

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