Author's response to reviews

Title: Global Gene Expression Analysis in Time Series Following N-Acetyl L-Cysteine Induced Epithelial Differentiation of Human Normal and Cancer Cells In Vitro

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Author's response to reviews: see over
Dear Editor,

Please find enclosed the revision of the revised manuscript “Global gene expression analysis in time series following N-Acetyl L-Cysteine induced epithelial differentiation of human normal and cancer cells” by Anna Gustafsson et al. that we wish to re-submit for publication in BMC Cancer.

Below is our response to the remaining comments from the reviewer (John Mariadason). We hope that the reviewer find the improvements adequate.

Best Regards

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Reviewer 1: John Mariadason

1. We have as the reviewer suggested include a summary table of the most significantly expressed genes in addition to the already existing supplementary material.

2. We have made an additional footnote in tables 6 and 7, regarding the GO analysis as requested by the reviewer. Briefly, using the example reviewer refers to: the actual number of mitotic cell cycle genes is constant (over 200 genes). However, out of the genelists we created (significantly up or down-regulated) there are only 49 probes and 11 probes in NHEK and CaCo-2 cell lines, respectively. This means that a significantly larger proportion of genes involved in mitotic cell cycle are down regulated in NHEK vs
CaCo-2. So, out of 278 mitotic cell cycle genes, only 11 are involved in CaCo-2 (with little statistical significance) while 49 are involved in NHEK (with high statistical significance). The combined list affy probes corresponds to a redundant set of genes, which is why the number of genes up or down regulated (the first 2 lists) does not seem to add up.

3. We have now included some new SEM images of the NHEK and CaCo-2 cells with and without NAC treatment to give some supportive phenotypic data. The manuscript has been slightly expanded to describe the new image.