Reviewer's report

Title: Systems biology of interstitial lung diseases: integration of mRNA and microRNA changes

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Reviewer: Karin D Rodland

Reviewer's report:

This is a comprehensive, informative and well-written report that presents a nicely balanced summary of a very extensive molecular analysis of lung tissue representing interstitial pulmonary diseases. In general, the visualizations used to present the data are effective in organizing the very large data sets in a way that maximizes the information content. Although the analysis failed to uncover any dramatically new insights into the development of interstitial lung diseases, the very concrete and quantitative data obtained provide a valuable integration of observations that have been made isolation, using more traditional biochemical approaches. As such the work is a very useful contribution to the field.

Two minor (thus discretionary) comments: 1) the MDCK cell line is not well-justified as a global model system for epithelial to mesenchymal transitions. The discussion of this experiment would benefit from inclusion of a few caveats, regarding the distinct possibility of unique pathways or gene products that may distinguish between EMT in renal epithelium versus EMT in pulmonary epithelium.

2) the authors frequently refer to 'maintenance of chronicity' as an important mechanism in interstitial lung diseases, without either referencing this concept, or describing how they arrived at that conclusion. A somewhat more extensive discussion of this concept would also strengthen the report.

Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I have no financial conflicts of interest.

However, I do have a collegial relationship with the senior authors of this report (Gelinas, Wang, Marsh and Galas) in somewhat related work involving proteomic analysis of mouse models of chronic obstructive pulmonary disease. Joint publications related to the COPD project are in preparation, and it is likely that I
will be a co-author with the named individuals on the COPD publications.