Reviewer's report

Title: Concerted down-regulation of immune-system related genes predicts metastasis in colorectal carcinoma

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Reviewer: Feng Feng

Reviewer's report:

In this manuscript, the authors developed a classifier/predictor for the prognosis of CRC based on the gene microarray expression. The analysis also identified the 14 signature genes to be associated with the immune responses. The findings presented could potentially impact the work in the related fields, and can be extended to other diseases. There, however, are some issues.

Major:

1) The generation of classifier might have an issue. It could be that the description is a little ambiguous. If I understand it correctly, the classifier depends upon large number of samples. It has to compare the specific sample signature gene with the median of many other sample signature genes. This limits the application of this method. In order to use this method, large number of microarray samples must be available so as to come up with an accurate median value for the gene. Or the authors have to propose a standard “median” value for each signature genes.

2) There is no validation of the method/classifier. It might be better to apply the proposed method on a new set of samples to validate the method. Or if there is no other samples available, authors could consider using the bootstrapping/resampling approach.

Minor:

1) It is better to present the qPCR results and also compare them with the microarray data. For example, are qPCR results showing the comparable difference/decrease between recurrent and non-recurrent samples as seen in the microarray data?

2) What does the result look like for the principal component analysis on the identified signature genes between recurrent and non-recurrent samples? Can the PCA clearly separate the samples from different patients?

3) In figure 2B, simply summing the normalized values of 14 genes doesn’t seem meaningful. The authors should consider removing this or find meaningful explanation.

4) The discussion is a little too long. Be concise and make it shorter.

Level of interest: An article of importance in its field
Quality of written English: Acceptable

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

Declaration of competing interests:
I declare that I have no competing interests.