Reviewer's report

Title: Meta analysis of papillary thyroid carcinoma microarray data and independent validation: New insights from old data

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Reviewer: Radha Krishna Murthy Karuturi

Reviewer's report:

The authors presented an meta-analysis of the microarray datasets from various PTC studies. They have shown SERPINA1 as a good marker for distinguishing PTC from the other tissues. The meta-analysis of the datasets is important to find consistent and robust markers especially when the individual studies are small in size. However, the paper suffers from major drawbacks as outlined below:

Major concerns:

1. Main finding/focus of the paper is not clear other than providing some support for DWD.
2. The meta-analysis is not something new for the authors to keep claiming "our approach"
3. As noted by the authors, SERPINA1 has already been shown to be a good marker even for PTC. I haven't understood the importance of their experiments on SERPINA1.
4. Why was the GSEA analysis limited to top 20 at adj.pval<5e-25 which is way too stringent?
5. How would the GSEA result be different if it were done on the signatures obtained from the individual datasets?
6. What other methods had been tried as alternative to DWD and how worse is their performance?
7. Why DAD1 was chosen as normalizing gene?

Minor Concerns:

1. Too many grammatical spelling errors such as "was takes" --> "was taken" and "Maschine" --> "Machine"
2. Table1, it is good to provide details on the number of probes and genes represented on each array platform used.
3. You do not need "," before "that" e.g. "Note, that..." --> "Note that...". This mistake is common throughout the manuscript.

Level of interest: An article of insufficient interest to warrant publication in a scientific/medical journal
Quality of written English: Needs some language corrections before being published

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

Declaration of competing interests:

I declare that I have no competing interests.