Manuscript Title

Baseline Detection of Potential Cancer Biomarkers with Linear Models from Microarray Experiments

Author(s)

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Summary

The manuscript was received on September 14, 2017 and was peer reviewed by two reviewers and an editor.
The initial recommendation of Major Revision was made on October 06, 2017.
The first revision was submitted on December 05, 2017 and was re-evaluated by the editor.
The manuscript was accepted for publication on December 18, 2017.

Peer Review Comments

Peer Reviewer 1:

Theory

How would you rate this article's theoretical soundness?

Good

Methodology

How would you rate this article's methodological rigor in presenting its empirical research?

Adequate

Writing

How would you rate this article's standard of academic writing?

Poor: This paper is full of typographical errors and needs revision.

Relevance

How would you rate this article's relevance to the field of cancer research?

Excellent

Recommendation: Ask for major revisions and allow to again be reviewed if re-submitted.

Specific Comments to Author:

The manuscript entitled, 'Detection of cancer biomarkers with linear models', aims to identify potential biomarkers for detection of cancer in complex and large dataset derived from microarray experiments using linear models and/or assumptions.

However, whilst the study is novel and appreciable, the manuscript lacks the ability to engage or convince the readers of its usefulness/applicability. More illustration on the application of the proposed linear model is highly recommended. Pros and cons (if any) of the proposed model compared to other methods may be highlighted as well.

The authors have highlighted the burdens of using 'statistical, computational and mathematical' nature of tools in most microarray analyses however, it was not discussed how the linear model and/or assumption proposed in the study, which is also a statistics-based analytical tool, is different and how could it ease the initially mentioned 'burden'?

Is there a reason for choosing this particular dataset (i.e., cervical and colon cancer) for proving the concept/model? The references for these studies need to be cited in the manuscript as well.

The study had concluded that 23 and 15 potential biomarkers for cervical and colon cancer were respectively identified using the linear model. But, how different (or similar) were these findings compared to the original works. This should be discussed as well.

Aside from this,

- The style of presentation of the results needs to be improved. The figures and tables needs to be appropriately cited within the text. Figure legends should support the figures entirely, without the readers going back to the text again to understand the results/observation of the study.
- Equations; were the formulations illustrated in the manuscript derived from the current study? This is not clear.
- Abbreviations; for the first reference to a term in the text, the term should be used in full with the abbreviation included in brackets. For the remainder of the text the abbreviation should be used.
- Use of parentheses; it was not clear whether parentheses were either used for citing references or numbering the equations.
- The references are outdated and the style of referencing needs to follow a proper format. Those references that are cited within the text should also follow a specified, if not a standard format.
- The manuscript should be thoroughly edited for typo-grammatical errors.

Peer Reviewer 2:

Theory

How would you rate this article's theoretical soundness?

Good

Methodology

How would you rate this article's methodological rigor in presenting its empirical research?

Good

Writing

How would you rate this article's standard of academic writing?

Poor

Relevance

How would you rate this article's relevance to the field of cancer research?

Adequate

Recommendation: Ask for revisions and continue with a second review.

General Comments to Author:

The paper is pertinent and important in the field, being written in an acceptable English and easy to follow.

Specific Comments to Author:

The major concern is that the paper is not conform to the guidelines to authors of the concerned journal: is difficult to distinguish the material and methods from results section; a discussion section is completely missing; a more detailed comparison between this work and previous ones is important and necessary to validate the pertinence of the proposed methodologies; references aren't in the required format.