Reviewer’s report

Title: Identification of key pathways and genes in PTEN mutation prostate cancer by bioinformatics analysis

Version: 1 Date: 13 Jun 2019

Reviewer: Kourosh Zarringhalam

Reviewer's report:

The paper presents a summary analysis of prostate cancer RNA-seq data from TCGA using standard bioinformatics downstream analysis tools, such as differential gene expression, GO term enrichment, etc. The work has some merit and can potentially generate biological insight, but in its current form the paper is not mature and not ready for publication. The paper lacks rigor and the performed analysis are not concise with a clear take home message. The authors have performed standard bioinformatics analysis and the observations are simply stated without any in-depth discussions on significance of the findings, relevance to known biology from literature review, or the new insight the analysis brings about.

Moreover, there are many online tools and resources and databases that are summarizing bioinformatics analysis. There should be a reference to these resources. Overall I am not convinced of any bioinformatics novelty or new biological insight that this manuscript has to offer in its current form.

Some minor comments

1) Please improve the use of language and the grammar.
2) Quality of figures and their caption must be significantly improved to make them useful and self containing.
3) For GSEA, the FDR cutoff seems arbitrarily set to 0.25. Why? For other analysis, please use the FDR correct p-value (0.05 or less) throughout.
4) For PPI STRING-DB the score is set to 0.4. Is this a good score? Explain the choice.
5) Figure 3 is a Volcano plot of differentially expressed genes. However, in the text, Figure 3 seems to refer to clinical impact with 3 subplots. Was the wrong figure uploaded? Seems this figure is mixed with figure 4. Please indicate where PTEN is in this plot.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No
Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Not suitable for publication unless extensively edited

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