Reviewer's report

Title: Exploiting high-throughput cell line drug screening studies to identify candidate therapeutic agents in head and neck cancer

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Reviewer: Nabil Saba

Reviewer's report:

In this report Nichols et al examine mutational and copy number data from SCCHN cell lines and using high-throughput screening identified candidate drugs for clinical use in SCCHN. Even though the rationale is justifiable in a disease such as SCCHN, the findings do not add much to the current body of literature focusing on therapeutic targets in HPV positive or negative SCCHN. Despite this, the type of research that is carried needs to be encouraged and applied on a larger scale perhaps with the use of actual samples collected from patients with SCCHN with prospective analysis and correlation with clinical parameters and outcome.

The authors need to clearly elaborate on the limitations of their analysis as far as applications of their findings to drug development and patient care.

The authors need to give a brief overview of the current targeted agents under investigation in SCCHN in the introduction as well as allude to this in the discussion.

The authors need to refer to recent information from ASCO 2014 reporting NGS data in actual patient samples with SCCHN. These reports identified NOTCH among other as a commonly found aberration in SCCHN samples both HPV positive and negative. The authors need to reconcile this with the findings from these recent reports in the discussion section.

The method section needs to be much more detailed. The authors need to detail the methodology of their analysis.

In the discussion section there is practically no discussion of the limitations of such an analysis. The authors need to elaborate to a greater extent on the limitations of cell line analysis versus other types of analysis such as NGS of actual patient tumors as well as animal models such as PDX, as well as how they foresee the future of this research.

1. Is the question posed by the authors well defined?
   Yes

2. Are the methods appropriate and well described?
3. Are the data sound?
Yes however methodology including statistical section needs to be detailed

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?

yes

5. Are the discussion and conclusions well balanced and adequately supported by the data?
need improvement

6. Are limitations of the work clearly stated?

No

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished?

Yes

8. Do the title and abstract accurately convey what has been found?

Yes

9. Is the writing acceptable?

Yes

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

No Conflict to report