Reviewer’s report

Title: Development of a computational promoter with highly efficient expression in tumors

Version: 1 Date: 22 Dec 2017

Reviewer: WEI WEI

Reviewer's report:

Review

In this manuscript, Ho et al investigated potential tumor-specific transcription factor responsive elements through analyzing the transcriptional profiles of several types of solid tumors and their normal counterparts. Despite superficial, the bioinformatics analyses yielded constructive conclusion based on which the authors developed the D5-promoter reporter system. The authors further demonstrated that D5-promoter was associated with more specific expression in tumor tissues than normal tissues. Besides, the activity of D5-promoter was also proportional to the tumor size in a xenograft model. Overall, acceptance of this manuscript can be considered upon the clearance of the following concern.

- The hypothesis of this study lies in that transcription factors (TF) when expressed in higher level will result in higher activity of related transcriptional activity. Under such assumption, the activities of each TF pathways could be compared through interrogating the transcriptional profile data for the levels of key TFs. While this hypothesis is generally true, it should be noted post-translational regulations of plays crucial roles in regulating the activities of TF. In fact, the three identified TF pathways, HIF-1α, NF-κB and CREB are all subjected to tight post-translational regulations. Such concern was also reflected in the authors' own data (Fig. 4A-4B), which indicated the three TFs may not be primarily regulated at the transcriptional level (which can be identified through the authors' approach by comparing the microarray data) but post-translational events (which cannot be directly inferred from the microarray data). Therefore, the above limitation of this study should be thoroughly discussed. Otherwise, more sophisticated bioinformatics approaches should be performed, including gene set enrichment analysis or network analysis.
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

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:

Acceptable

Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?
If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal