Reviewer’s report

Title: Sexual Dimorphism in the Incidence of Human Cancers

Version: 1 Date: 11 Feb 2019

Reviewer: Reviewer 2

Reviewer's report:

PEER REVIEWER ASSESSMENTS:

OBJECTIVE - Full research articles: is there a clear objective that addresses a testable research question(s) (brief or other article types: is there a clear objective)?

Yes - there is a clear objective

DESIGN - Is the current approach (including controls and analysis protocols) appropriate for the objective?

Yes - the approach is appropriate

EXECUTION - Are the experiments and analyses performed with technical rigor to allow confidence in the results?

Yes - experiments and analyses were performed appropriately

Statistics - Is the use of statistics in the manuscript appropriate?

Yes - appropriate statistical analyses have been used in the study

INTERPRETATION - Is the current interpretation/discussion of the results reasonable and not overstated?

No - there are major issues
OVERALL MANUSCRIPT POTENTIAL - Is the current version of this work technically sound? If not, can revisions be made to make the work technically sound?

Maybe - with major revisions

PEER REVIEWER COMMENTS:

GENERAL COMMENTS: This manuscript leveraged three population-based datasets to gain a different perspective on the so-called 'sexual dimorphism' phenomenon of cancer incidence. The yearly incidence ratios of men to women curves for different cancer types were well demonstrated in various figures. However, the significance and gold standard definition of 'sexual dimorphism' were not well defined. For example, how many fold difference in terms of the ratio will inevitably mean a dimorphism?

REQUESTED REVISIONS:

In the Abstract, the authors pointed out that sex differences are critical for the development of precision medicine. This part should be elaborated in the Discussion to complete the whole story.

The definition of sex dimorphism should be clearly explained and well referenced in the first paragraph in the Background section.

The discussion only sees efforts focusing on sex hormone receptors as the underlying mechanistic explanation for cancer susceptibility is dangerous.

Sexual dimorphism also exists in energy balance/homeostasis. Moreover, some studies also discover numerous cases of somatic sex-biased miRNA expression. A more extensive literature review is required for a good discussion.

Note: This reviewer report can be downloaded - see attached pdf file.
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

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