Reviewer’s report

Title: CAISMOV24, a new human low-grade serous ovarian carcinoma cell line.

Version: 0 Date: 27 Apr 2017

Reviewer: Kylie Louise Gorringe

Reviewer's report:

The authors describe a new cancer cell line derived from a low-grade serous ovarian carcinoma (LGSC). Similar cell lines are only rarely available in the literature, so description of any novel cell line of this subtype are welcome. The authors should state whether the cell line is available to be used by other researchers, as it would be a valuable resource for in vitro studies of LGSC.

However, the description requires some modification:

1. Pathological description. The authors should include an H&E image of the original tumour to show the features that have classified this case as LGSC.

2. Mutations are also important in LGSC, and while an exome analysis would be excellent, at the very least sequencing should be done for KRAS (codons 12/13 and 61) and TP53 (at least exons 4-9), with BRAF (V600E) and NRAS (codon 61) assessed if the case turns out to be KRAS wild-type. TP53 mutation screening is essential to ensure that this case is not high-grade serous. Lack of a CN change over TP53 is not necessarily indicative of lack of mutation.

3. The authors conflate copy number change with mutation - the existence of COSMIC mutated genes in copy number regions is of little relevance as these are distinct processes. It would be better to compare the copy number profiles to other LGSC in the literature. In addition, referring to other "type I" profiles is inappropriate since endometrioid/clear cell/mucinous histotypes have a different etiology to LGSC and this subtype is underrepresented in COSMIC and other databases. Instead, the authors should read and reference recent exome and other molecular analyses of LGSC (Jones et al, J Pathol. 2012 Feb; 226(3): 413-420. Hunter et al., Oncotarget. 2015 Nov 10;6(35):37663-77, Boyd et al., Gynecol Oncol. 2013 Sep;130(3):560-4, Emmanuel et al.,, Clin Cancer Res. 2014 Dec 15;20(24):6618-30., McIntyre et al Histopathology. 2017 Feb;70(3):347-358) for a more appropriate point of comparison. Discuss how the current cell line fits with the molecular profiles (including copy number) of true LGSC.

4. The authors should also put their cell line in context of other LGSC cell lines e.g. Fernandez at al., Am J Cancer Res. 2016 Oct 1;6(10):2235-2251.
5. The authors should report STR profiles of the cell line to ensure it is unique (compare to DSMZ STR profile website database (https://www.dsmz.de/services/services-human-and-animal-cell-lines/online-str-analysis.html))

6. Discuss in more detail why TGF-b1 and CD73 are expressed in the cell line when not in the primary. Why would these get re-expressed in culture? Is this a common event in cell line development?

7. Table 1. Please do not use a decimal point "." to separate thousands from hundreds, either leave a space or put a comma. I interpret 242.771 to be 242 kb, not 242 Mb. Rather than the cytoband start, please include the full cytoband interval, and/or the basepair start and stop points (which would be more accurate).

8. Figure 1C, what are the shaded areas? There are no units shown on the graph. In the results, stating a proliferation index of 3.94 (no units given) is meaningless to me - is this fast? Slow? How does it compare to other cell lines? To other passages?

9. In Figure 2, what are the shaded versus white areas? There are no units given.

10. In Figure 3, remove the methods from the figure legend. The figure is low resolution with text near the arrows unreadable. Recommend replacing these with arrows &/or arrowheads and placing the text for what they are in the legend.

11. More explanation of Figure 3 is needed - what are the black and grey lines? Are either of these representative of LOH? Because I can't see in this figure the regions of copy number neutral LOH listed in table 1 (chr 16, chr2)

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.

Yes
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.

Not relevant to this manuscript

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