Reviewer's report

Title: Characterization of human malignant mesothelioma cell lines orthotopically implanted in the pleural cavity of immunodeficient mice for their ability to grow and form metastasis

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Reviewer: Amir Onn

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The manuscript presents an orthotopic model of mesothelioma to study the biology of mesothelioma and effect of novel therapeutics. In this model tumor cells interact with the specific microenvironment thus it is considered more accurate than sc models.

1. Relevance: 50-60% of mesothelioma cases are diagnosed with epithelial tumors. The paper presents data only on a subset of histology, ie biphasic tumors. Furthermore, pleural effusion is a characteristic of this disease and the tumors in this study do not present this phenomenon.
2. This is a technical paper on a new technique, yet the authors do not present all relevant technical data. For example, how did they confirm the location of the tip of the needle in the chest of the mouse?
3. The authors propose to use their model for study of novel therapeutics, yet in contrast to sc tumor, lesions in the chest were not bulky and it may be difficult to assess the effect of drugs. They do not suggest any technique to measure effect of drug and do not present its' reproducibility. In this regard the recent paper from Sone's group in Japan presented an orthotopic model in scid mice and it's usage for the study of novel therapeutics.
4. The authors presented some data on molecular markers of the tumors. They did not present the rationale for their specific studies not in the section of introduction nor in the discussion, and did not provide references to support their decision to choose these specific markers but not others (for example, TTF-1 and mesothelin are used by many to differentiate between mesothelioma and adenocarcinoma). In this regard the recent Cancer Research paper from Fox Chase is more relevant for the study of the biology of this disease and should be mentioned in this manuscript.
5. The manuscript was revised for language. However, there are multiple corrections to be made. For example, in the last sentence of ‘authors’ contribution’ it is suggested that "all the authors RED and approved"...

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Discretionary Revisions (which the author can choose to ignore)

What next?: Reject because too small an advance to publish

Level of interest: An article of insufficient interest to warrant publication in a scientific/medical journal

Quality of written English: Needs some language corrections before being published
Statistical review: No

Declaration of competing interests:

'I declare that I have no competing interests'