Reviewer’s report

Title: Three new chondrosarcoma cell lines: one grade III conventional central chondrosarcoma and two dedifferentiated chondrosarcomas of bone

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Reviewer: Karl-Ludwig Schaefer

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Discretionary Revisions
In the manuscript „Three new chondrosarcoma cell lines: one grade III conventional central chondrosarcoma and two dedifferentiated chondrosarcomas of bone” Oosterwijk et al. describe the development and characterization of three chondrosarcoma cell lines derived from primary or recurrent chondrosarcoma.

Chondrosarcoma represent the second most common primary sarcoma of bone with a high mortality, but established cell lines to study the biology of these tumor cells are quite rare.

In this project, the authors first supply basic clinical, radiological, and histological data to confirm the diagnosis of chondrosarcoma of the original tumors. The cell lines derived from these tumors were characterized regarding expression of characteristic cartilaginous genes, tumor cell migration and proliferation capacity, mutation status of key cell cycle regulatory genes and genetic abnormalities by COBRA-fish and array-CGH. Finally, the cell lines were tested for their tumorigenicity in mice.

In general, the paper is well written and the data provide convincing evidence that the three cell lines are derived from chondrosarcoma and may be useful as a stable model to study this tumor entity.

Just two minor points should be mentioned:
- In the discussion the authors comment on the mutation status of the IDH1 gene of the fibrosarcoma cell line HT-1080 speculating that this cell line may be a falsely classified chondrosarcoma rather than a fibrosarcoma. Without any additional evidence for a misclassification such speculations should be omitted.
- A correlation between p16 (CDKN2A) and p53 mutation and expression status and the genomic data obtained for chromosome 9p21 and 17p13.1 by COBRA-fish and aCGH should be provided.

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

Quality of written English: Acceptable
Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests