Reviewer's report

Title: Human Sulfatase 2 inhibits in vivo tumor growth of MDA-MB-231 in human breast cancer xenografts

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Reviewer: Yasuhiro Miki

Reviewer's report:

In this study, the authors demonstrated the role of hSuls on breast tumor growth. This is a valuable data especially of developmental biology of genital tracts as well as clinical importance but the authors should expand modify the manuscript as follows before this manuscript will be considered for publication.

The great majority of breast carcinomas arising in postmenopausal women are estrogen dependent or positive for estrogen receptor in carcinoma cells. In this study, the authors employed estrogen-independent breast cancer cell line. MDA-MB-231 is an estrogen receptor negative highly invasive human breast cancer cell line and has been used as a relevant model system to evaluate drugs with chemopreventive potential against highly invasive breast cancer phenotypes. The authors should describe the reason to focus on ER negative breast carcinoma. It was also reported that MCF-7 (ER positive) and MDA-MB-231 differ in their responsiveness to FGF-2. Therefore, It is necessary to discuss the relation between estrogen and your findings.

It was reported that ER negative MDA-MB-468 breast carcinoma transfected with hSulf-1 leads to reduced proliferation in vitro and reduced tumor burden in athymic nude mice in vivo. In this study, the authors established both hSulf-1 and hSulf-2-expression MDA-MB-231. The authors should clarify the difference between the previous report and your findings. The invasive capacity of MDA-MB-231 has been established. Do the authors have any data on metastasis and hSulfs expression in MDA-MB-231 athymic mice in vivo?

In histological analysis, I could not understand this section. The authors described “increased connective tissue and collagen” in xenograft tumor tissues. Can this be evaluated accurately? Staining of Masson’s trichrome should be clearer. The authors also described higher cellular density and mitosis in control tumor. The mitosis can be counted (mitosis index). The authors can give more accurate/complete information from the results described above.

Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.