Reviewer’s report

Title: Sox2 suppresses the invasiveness of breast cancer cells via a mechanism that is dependent on Twist1 and the status of Sox2 transcription activity

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Reviewer: Qun Zhou

Reviewer’s report:

The manuscript by Wu et al reported that Sox2 suppressed the invasiveness of breast cancer. The authors demonstrate that downregulation of Sox2 transcription factor expression significantly increased the invasiveness of MCF7 cells. The general experiment design is reasonable. There are some issues that need to be addressed that will improve the manuscript from its current form.

1: The conclusion of this article is depended on a single cell line (estrogen receptor (ER) positive MCF7). More different ER positive breast cancer cells are necessary to confirm their conclusions.

2: Sox2 is a key regulator for cell proliferation and maintenance of stem cell self-renewal. Published studies have demonstrated that Sox2 are expressed in ER positive and ER negative breast cancer cells. It is not clear why the authors only focus on ER positive breast cancer cells.

3: “When the invasiveness of Sox2-active cells, Sox2-inactive cell and the unsorted Sox2R cells was compared, no significant difference was observed among these three cell population (Fig. 2A)”. It is not clear how to understand Sox2-active cells and Sox2-inactive cells. The reviewer was confused by “Sox2 activity” and “Sox2-inactive” in this manuscript. The authors need to provide clear explanations for their experiments.

4: Published studies already showed that Sox2 overexpression can enhance invasiveness in breast cancer. It is not clear why invasiveness remains no change in Sox2 overexpression cells in their model system.

Level of interest: An article of limited interest

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

no competing interests