Reviewer's report

Title: SDF-1alpha concentration dependent modulation of RhoA and Rac1 modifies breast cancer and stromal cells interaction

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Reviewer: Punita Dhawan

Reviewer's report:

An interesting article by Pasquier et al. demonstrating differential regulation of Rho and Rac-GTPases in a SDF-1a-dependent manner as one of the mechanisms mediating bone metastasis of the breast cancer cells. Manuscript is written well and data presentation is superb, however language of the article could further improve by careful editing. Reviewer also applauds this study for well thought-out experimental procedures. The outcome from majority of the studies largely supports the interpretations. However, revision of the manuscript by performing few additional experiments would further improve the quality of the manuscript and the overall message.

1. One of the major limitations of the study is the sole reliance of the positive outcome using MDAMB231 cells. It is strongly recommended that authors use yet another metastatic BCC to demonstrate similar endpoints for at least key determinants, such as Rho and Rac-activation in response to SDF-1a exposure, along with adhesion to the BMHC and migration.

2. Authors argue that the change in integrin expression may help mediate the effect of SDF-1a upon small GTPases. It would be great if authors could use an appropriate integrin blocking antibody to support the inference.

3. The data for Rho and Rac activation is limited to SDF-1a concentration of 100 ng and 200 ng respectively. The complete panel should be provided where effect of all SDF-1a concentrations (50, 100 and 200 ng) upon Rho and Rac GTPase is shown. This is central to the conclusion of this manuscript.

4. Fig. 1a, please provide a negative IgG control.

5. Fig. 2c, quantitation of the data for Cxcr4 expression does not appear to corroborate well with the western blot outcome.

Level of interest: An article of importance in its field

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

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

Declaration of competing interests:
No competing interest