Reviewer’s report

Title: Gonadotropin-Releasing Hormone Receptor Activates GTPase RhoA and Inhibit Cell Invasion in the Breast Cancer Cell Line MDA-MB-231

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Reviewer: Simon Langdon

Reviewer’s report:

This study describes interesting new data that is relevant to breast cancer. Evidence is provided to suggest that the GnRH receptor activates GTPase Rho and inhibits cell invasion in the MDA-MB-231 breast cancer model (after modification). An informative series of GnRHR and GAP Rho transfectants have been used to support the proposed mechanistic connections. As indicated by the authors, previous studies using prostate cancer cell lines have explored some of this biology before but in a different context (also GnRH-I and GnRH-II were used rather than buserelin).

Although these engineered cell lines provide a consistent story, it is still unclear how readily non-engineered (ie non-GnRHR transfected) models with lower levels of GnRHR receptor might be modulated by this GnRHR activation. It could be argued though that this model might reflect those breast cancers with the highest levels of GnRHR expression.

Minor Essential Revisions

Methods: Page 8: Constructions: Reference 60? The authors state “As previously shown [60], the GnRHR-DesK191 is expressed at higher levels compared to the WT receptor.” Could the authors please correct this reference (there is no reference 60) and provide within this manuscript some data to indicate the relative levels of receptor.

The source of buserelin should be indicated.

“inhibits” rather than “inhibit” in the title

Page 18. Line 1 “finding “ should be “a finding”


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