Reviewer’s report

Title: Calcitriol restores antiestrogen responsiveness in estrogen receptor negative breast cancer cells: A potential new therapeutic approach

Version: 1 Date: 16 October 2013

Reviewer: Diego Sisci

Reviewer’s report:

In this manuscript, the authors demonstrate that Calcitriol restores the antiestrogen responsiveness of estrogen receptor negative breast cancer cells. They demonstrate that Calcitriol induces the expression of a functional ER in ER negative breast cancer cells and that it is mediated by vitamin D receptor. Functionally, ER expression reduces cell proliferation in response to antiestrogens treatment by decreasing CCND1 and EAG1 expression.

Major comments

1) The results are convincing and confirm the hypothesis however, the involvement of VDR is only demonstrated by using an antagonist of the receptor, that is not sufficient, experiments overexpressing and/or silencing the receptor are required.

2) The regulation of PRL, CCND1 and EAG1 expression have been used as cell response to ER expression and function, this is not correct since both protein are regulated by ER through a not canonic mechanism. It would be better to use PS2 or Cathepsin D that respond to ER through an ERE.

Minor comments

1) In fig.4B both E2 and ICI/E2 samples are reported significantly different from untreated, but considering the SD reported it seems to be a mistake.

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

Quality of written English: Not suitable for publication unless extensively edited

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