Reviewer's report

Title: Beta-sitosterol induces G1 arrest and causes depolarization of mitochondrial membrane potential in breast carcinoma MDA-MB-231 cells

Version: 1 Date: 29 June 2013

Reviewer: Dhyan Chandra

Reviewer's report:

The findings of this manuscript are interesting and have significance in cancer prevention and therapy, especially in breast cancer. Authors have clearly defined the growth inhibitory effect of beta-sitosterol (ST) in breast cancer cells. However, there are some weaknesses in the manuscript, which need to be addressed to further improve this manuscript.

Major Compulsory Revisions: None

Minor essential revisions:

In the abstract, authors start the sentence saying that they evaluated efficacy of ST on different cancer cell lines. I suggest authors to provide a short background on why this study needs to be performed prior to first sentence.

In the Introduction, the information provided in the first paragraph may not be required with so much detail. Couple of sentences should be sufficient.

Discretionary Revisions:

In Figure 1G, it is not clear why the levels of cell death was decreased at 72 hour time period.

Since there was no significant differences in cell cycle progression upon treatment with ST, Figure 2, could be provided as supplemental figure and supplemental figure could be last figure to the overall mechanism of ST on breast cancer cells.

Although only moderate effect on cell cycle progression was observed in Figure 2, whereas in Figure 3, the levels of cell cycle related proteins were modulated, suggesting that these protein may have alternative role in addition to regulating cell cycle. Author may discuss these in the text.

Figure 5A and B may not be required because it does not provide new information.

Level of interest: An article of importance in its field

Quality of written English: Acceptable
**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

NO conflict