Reviewer's report

Title: Salinomycin increases chemosensitivity to the effects of doxorubicin in soft tissue sarcomas

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Reviewer: Jinhui Wu

Reviewer's report:

The authors reported Salinomycin could increase chemosensitivity of doxorubicin in soft carcinoma. They evaluated the combinatory effects of salinomyin and doxorubicin on cell viability, caspase 3/7 and 9, NF-kB activity; p53, p21 and PUMA transcription levels and the effects of CD133 transformations. It was not novel actually since the MDR reversion of salinomycin had already been reported (Br J Pharmacol. 2011 Feb;162(3):773-84. d). However, there are still some interesting results in the manuscript. Before the paper could be published anywhere, the following points should be concerned.

Major Compulsory Revisions:

1. In figure 1, it is weird that the author used different concentration of DOX (fig 1B, ng/nM, 1C ng/ul, 1C, ng/ml). If it were true, the author should clarify this, since the concentration was totally different.

2. In figure 1C and D, 1uM salinomycin had already caused about 40% cell death, why author did not use a lower concentration? In addition, figure 1c, the author showed that salinomycin caused 40% cell death and 30ng/ml dox caused 30% cell death. Why the combination only caused 40% cell death?

3. The CD133 assay was totally confused. P11, line26 the author claimed that “These findings indicate that the combination of 1µM salinomycin sensitized the CD133+ cell fraction for doxorubicin mediated apoptosis.” How did author conclude the conclusion? We even could not find how author calculated the fraction CD133 negative cells. how did author define the control cells? How did they calculate the CD133 positive fraction? It is difficult to get any conclusion from the current data. Also, the author should explain more about the relationship between CD133 and apoptosis.

Minor Essential Revisions:

1. “IC50” # 50 should be subscript

2. Line 17, can author redefine “synergistic effects”? the formula is not clear.

3. Figure 2ABC, can author use a larger marker? It is difficult to differentiate different groups.

4. Line32, “in the presence of salinomycin doxorubicin”, missed “,”

5. Page 21, figure1C , DOX concentration

6. Page 21, figure1A, A205 should be A204
7. Should uniform the unit, such that all uM should be ng/ml

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

Quality of written English: Acceptable

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

Declaration of competing interests:
I declare that I have no competing interests