Reviewer’s report

Title: Treatment of capsaicin induces cell cycle arrest and apoptosis in human KB cancer cells

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Reviewer: Chia Jui Yen

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Lee et al. studied the capsaicin anti-tumor effect and induces KB cancer cell cycle arrest and apoptosis. The author confirmed the treatment effect of capsaicin testing KB cancer cell proliferation ability and cell cycle analysis. This study is well designed and interested, however, there are some concern about description and figure.

Points of concern

1. Figure 1, Capsaicin in different concentration were added to culture medium of KB cell line and test the cell viability and cell death in different time exposure. The author should also test the cell proliferation ability and then they could conclude the capsaicin just influence the cell apoptosis not inhibit the cell proliferation. Also the capsaicin induce cell death in 72 hours is need to show.

2. Figure 3, Capsaicin induce the G2/M cell cycle arrest by using flow cytometry analysis, the author need to clarify and check the cell cycle regulatory protein such as cyclin D, cyclin E, p21 influenced by the capsaicin before their conclusion.

3. Figure 5, the capsaicin down expression of caspase 3 and caspase 8 and induced casapase 9 and PARP cleaved, the author need to check the upstream of apoptosis protein such as the truncated BID or BAK or BAX link in the mitochondrial membrane protein than they could conclude the capsaicin-induced apoptosis in KB cell associated with the intrinsic mitochondrial pathway.

4. The author should re-written the Result and merge the figure into their result paragraph not separated.

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

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.