Reviewer’s report

Title: The novel histone deacetylase inhibitor, N-hydroxy-7-(2-naphthylthio) hepatonomide, exhibits potent antitumor activity due to cytochrome-c-release mediated apoptosis in renal cell carcinoma cells

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Reviewer: Toshiyuki Sakai

Reviewer’s report:

Park et al. showed that a novel HDAC inhibitor, HNHA, exhibited an antitumor activity in renal cell carcinoma in vitro and in vivo. However, there are still several points that the authors should revise before the acceptance for “BMC Cancer”.

1) The authors performed the comparison experiments among the HDAC inhibitors, HNHA, SAHA and TSA, in Figure 2. However, they did not show any statistical significance among them. Therefore, the authors should perform statistical analysis for the data of Figure 2 and indicate the statistical significance in the manuscript and Figure 2.

2) The authors mentioned that HNHA had a lower IC50 in all RCC cell lines compared with those of SAHA and TSA. However, they did not show the comparison of the inhibitory-activity towards the HDAC enzymes of each HDAC inhibitor. Therefore, the authors should show the HDAC inhibitory-activity of each HDAC inhibitor and discuss the relationship between the IC50 of HDAC and the IC50 of cell proliferation of each HDAC inhibitor.

3) The authors performed the in vivo analysis among the HDAC inhibitors in Figure 6 and mentioned that HNHA exhibited greater suppression than that of SAHA and TSA. However, they did not mention how the authors choose the doses of each HDAC inhibitor for this in vivo experiment. Therefore, the authors should describe the basis for determining the doses of each HDAC inhibitor in this comparison experiment.

4) The authors mentioned that no evidence of systemic toxicity or treatment death was found in any groups in Figure 6. However, the authors only indicated the number of live animals. The authors should indicate the changes of body weight of the animals during the study.

Level of interest: An article of limited interest

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.