

OPEN PEER REVIEW REPORT 2

Open peer reviewer: Li Xiao, The Nippon Dental University, Japan.

Comments to authors:

In this paper, the authors investigated the protective effect of sodium butyrate (SB) on radiation-induced cognitive impairment in mice. The data showed that SB could prevent radiation (10 Gy)-induced suppression of neurogenesis in mice hippocampi by increasing the expression of pCREB and BDNF. SB significantly improved radiation-induced memory deficits in object recognition in mice. This is an interesting study. The authors did well on designing and performing the research. The data are reliable. My concerns about this manuscript are as follows:

1. Why did the authors administer SB to the mice at 30 min instead of 24 hr before the radiation? Is there enough time for the blood concentration of SB to reach a therapeutic level?
2. Why the mice were subjected to behavioral testing at 30 days after irradiation? How about 15 days or 60 days?
3. How about SB on the survival rate of the irradiated mice?