Reviewer's report

Title: Boron neutron capture therapy induces apoptosis of glioma cells through Bcl-2/Bax

Version: 2 Date: 18 August 2010

Reviewer: Romina Flavia RFA Aromando

Reviewer's report:

As I had stated in my first review, understanding the mechanisms involved in tumor control elicited by BNCT is one of the most important topics in the field of BNCT research. Since the authors have successfully addressed all the changes I have asked for, I have some minor comments that I believe will improve the paper even more.

The English is better, but it may be improved, for example:
Page 2, line 3: "Boron neutron capture therapy (BNCT), might be an alternative treatment modality for patients with glioma. However, the mechanisms underlying this therapy remain undetermined" instead of "BNCT, boron neutron capture therapy, may be a treatment option for patients with glioma, but the mechanism of such therapy remains undetermined."

Page 2, line 6: "human glioma cells" instead of "glioma cells"

Page 2, line 18: western blot analysis

Page 2, line 22: "Nuclear condensation was determined using both a fluorescence technique and electron microscopy in all cell lines treated with BPA-BNCT" instead of "Nuclear condensation was noted using both a fluorescence technique and electron microscopy in all cell types treated with BPA-BNCT"

Page 4, line 4: you state that BNCT has been studied in animal models bearing gliomas, however, BNCT has also been studied in other animal cancer models, such as oral cancer models for example.

Page 4, line 5: you state that BNCT has been clinically used to treat patients with gliomas and other brain tumors. However, there are human trials for human melanomas, liver metastasis of colon adenocarcinoma and head and neck tumors. Please complete this paragraph with references, otherwise you give the impression that BNCT is only being studied for brain tumors. Here are some papers:


Page 10, line 15 "chromatin margination" not "all of cromatin margination"

Page 11, line 20: “an appropriate source of high-flux thermal neutrons is necessary, along with a boron carrier that is able to concentrate in glioma tissues.” instead of “ an appropriate source of high-flux thermal neutrons is necessary, as is a boron carrier that can become concentrated in glioma tissues.”

Page 13, line 4: I think the correct statement is: “Previous studies described that BNCT induced apoptosis in vivo, but the apoptotic rate was relatively low”. Here you refer to the work of Masunaga 2001. I would also add:


Page 15, line 10: "10B" instead of “the material”

Page 16, line 7: “Induction of apoptosis contributes to the main therapeutic efficacy of BNCT to glioma cells in vitro. Moreover, the RBE of BPA-BNCT is higher than that of [609 Co] #-rays and reactor irradiation. Since this study was carried out in vitro, whether this effect exists in vivo or not deserves further exploration. Understanding the mechanisms involved in BNCT will ultimately contribute to the enhancement of the therapeutic effectiveness of this therapeutic modality.” instead of “In general, induction of apoptosis contributes to the main therapeutic efficacy of BNCT to glioma cells and the RBE of BNCT is higher than [609 Co] #-rays and reactor irradiation. Since this study was carried out in vitro,
whether this effect exists in vivo or not deserved further exploration. With the understanding of the mechanisms involved in BNCT, the therapeutic effectiveness of this technique will be enhanced ultimately.”

**Level of interest:** An article of importance in its field

**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.

**Declaration of competing interests:**

I declare that I have no competing interests