Reviewer’s report

Title: Effect of Hyperplasia and Apoptosis in Neural Stem Cells Treated with Sevoflurane

Version: 2 Date: 14 November 2014

Reviewer: Pisano Pascale

Reviewer’s report:

Minor revisions

1- The Background/Introduction section does not show enough the main interest of this study. The first paragraph of the Discussion section "Sevoflurane anesthesia in infant rats can result in long-term cognitive impairment, possibly by inhibiting neurogenesis[13]. The hippocampus is critical for memory consolidation and is one of only two mammalian brain regions where neural stem cells (NSCs) are renewed continuously throughout life. Thereby, further studies with sevoflurane exposure of NSCs are necessary to confirm whether sevoflurane can influence hyperplasia and apoptosis of neural cells" better shows the aim of the paper and it seems more appropriate, in the reviewer view, to place this at the end of the Introduction. Therefore the first sentence of the discussion should be revised.

2- Material and methods: please justify the concentration of sevoflurane used (1MAC) which is higher than this reported by Pellegrini et al. (Paediatr Anaesth. 2014 Jul;24(7):749-59 (0.5 MAC) in neonate rats.

3- Discussion, line 189: please cite the work of Pellegrini et al. (Paediatr Anaesth. 2014 Jul;24(7):749-59) who showed sevoflurane-induced brain apoptosis in brain of neonate rats.

4- In figure legends please type GABAA receptor with A subscripted

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' below.