Reviewer's report

Title: Snake venom toxin from Vipera lebetina turanica induces apoptosis in colon cancer cells via upregulation of ROS- and JNK-mediated death receptor expression

Version: 1 Date: 29 February 2012

Reviewer: Bertrand Liagre

Reviewer's report:

Major Compulsory Revisions

1. In background section, the reference 23 is absent and, consequently, all bibliography is false in the text.

2. In results section "Effect of SVT on the expression of DRs in human colon cancer cells": the authors write that the expression of other DRs such as TNF-R1, TNF-R2, DR3, DR6 and Fas, and DRs ligands such as FasL and TRAIL was not changed after SVT treatment. This is untrue concerning TRAIL for both cell lines, FasL for HCT116 cells and DR6 for HT29 cells (SVT 1 µg/ml).

3. The authors analyzed only bax expression but, analysis of bcl-2 expression is necessary to establish a ratio apoptotic because the increase of bax expression is very significative for HCT116 cells but not for HT29 cells.

4. The authors should be analyzed the expression of cytochrome c in cytosol extracts vs mitochondrial extracts.

5. For both cell lines, the cleavage of caspase-3 is very important after 1 µg/ml SVT treatment on figure 3. However, on figure 4, for the same condition, this cleavage is detected but it is very weak. The reproductiveness of this result is not sufficient.

6. The expressions of p53 and PPAR were presented on figure 5A but none result is analyzed in the result section. The research of expression of these two proteins is not necessary in this work.

7. The authors write in the text that NAC was used at 5 and 10 mM but, on figure 6A, NAC was used at 1 and 10 mM ?

8. Legend of figure 1: the statistical test (*) does not appear on the figure 1A.
Legend of figure 2: expression of cleaved DR4 ? I do not understand !
Legend of figure 4: I do not understand the combined treatment SVT + TRAIL ? This is not true on the appropriate figure !
Legend of figure 5, panel C: only 10 µM SP600125 was used and not 5 µM as indicated in the legend.
9. References section: the reference of Basu et al. is not numbered.

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.