Reviewer's report

Title: Effects of camptothecin derivatives and topoisomerase dual inhibitors on Trypanosoma cruzi growth and ultrastructure

Version: 2  Date: 31 March 2014

Reviewer: Solange L. De Castro

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Major Compulsory Revisions
1. IC50 value of becalein: Examining fig 1a, at 72 h the inhibition proliferation by 200 and 300 uM is clearly less than 50%, how the IC50 could be 94 uM. Please recalculate this parameter.

2. Electron microcopy of becalein-treated parasites: Also it is very difficult to understand the rational for an ultrastructural analysis performed at a concentration 3 times higher than the IC50 value. It would be expected severe damage to the parasites at 300 uM, unless the value of IC50 is higher than 94 uM

3. Line 152: I did not understand this sentence “Cell viability decayed in about 40% when protozoa were cultivated with 200 or 300 µM for 24 h and prolonged treatment revealed a dose dependent effect of topotecan (Fig. 1b).” The prolonged treatment revealed a reduction in the “cell viability decay” from 40% to about 20-30 at 48 h and to 20-25 at 72 h!!!!

Minor Essential Revisions
1. Line 167: Please include the time of treatment with baicalein that led to IC50 of 62.83 µM.

2. Line 476: Table 1: Please include the time of treatment for each IC50 value, it was always 72 h?

Discretionary Revisions
1. Line 148: delete the sentence “For this reason, the tests were performed using higher drug concentrations”, in mat & met is already stated that the concentration range used was 1-300 µM. As, so re-write the other two sentences between lines 146-151, Suggestion: “Regarding topoisomerase I inhibitors, cell proliferation was not significantly affected by topotecan after treatment with 50 µM for 72 h, while up to 300 µM reduced cell proliferation by approximately 3 fold in relation to the control cells (Fig. 1a), resulting in IC50 value of 94.02 µM.”

2. Line 151: I did not understand this sentence “It is interesting to point out that such concentrations induced cell growth arrest after 48 h of treatment.” After 72 h, the inhibition of proliferation at 100 uM is very small, how 24 h before (48 h) there is a “cell growth arrest”???
3. It is not mentioned or discussed the difference between the results obtained through the analysis of cell proliferation (Newbauer) and of cell viability (MTS/PMS). Which is the need of the two types of analysis.

4. I can imagine this manuscript as a short communication with only the proliferation curves and the microographies

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.