Reviewer's report

Title: Antinociceptive effect of ethanolic extract of Selaginella convoluta in mice

Version: 1 Date: 10 February 2012

Reviewer: Damião P De Sousa

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General comment:
The study of this manuscript represents a contribution to the research of medicinal plants in the region of Brazil known as caatinga. The data obtained are relevant to prove the therapeutic potential of plant Selaginella convoluta and relate it to the popular use.

Major revisions:
The authors used conventional animal models to evaluate the pharmacological activity. However, there is no proposed of mechanism of action based on specific experimental methods such as tests using agonist and/or antagonist receptors related to pain, for example naxolone, an opioid antagonist. This test is commonly used in the preliminary evaluation of antinociceptive activity in extracts and compounds. If possible, I suggest the authors to perform this test or another experimental model at the molecular level to establish a mechanistic proposal for the plant extract.
The plant extract is a very complex mixture of compounds. The isolation of bioactive constituents that participate on antinociceptive activity is a significant contribution in the research of analgesic drugs isolated from nature. In this manuscript, the authors decided to limit the chemical study of Selaginella convoluta to carry out a phytochemical screening in its extract. Based on the literature of the genus Selaginella, please discuss in manuscript the contribution of the classes of secondary metabolites of this plant in the antinociceptive activity of the extract. This discussion improves the scientific quality of the manuscript and provides the chemical-pharmacological understanding of the genus Selaginella.

Minor revisions:
1) Abstract: Please add the results of phytochemical screening from Selaginella convoluta in Abstract of manuscript;
2) Abstract: in methods, replace “The ethanolic extract of the entire plant (Sc-EtOH)” by “The ethanolic extract of the Selaginella convoluta (Sc-EtOH)”;

3) The authors wrote that “Sc-EtOH did not show effect in the hot plate test”. However, the Sc-EtOH was effective at doses of 200 and 400 mg/kg. Therefore, the antinociceptive activity was shown in the test of the hot plate. Please correct this sentence;

4) In Background replace “activity as anti-inflammatory [9], antispasmodic [10], cytotoxic, immunostimulant” by “activity such as anti-inflammatory [9], antispasmodic [10], cytotoxic, immunostimulant”;

5) In Background replace “S. convoluta is a medicinal plant found in Northeastern” by “Selaginella. convoluta is a medicinal plant found in Northeastern”;

6) In Methods the description of preparation of plant extract needs to be improved. Which was the drying method of plant? In which machine there was concentration of the extractor liquid? Was extraction performed at 72 hours or each extraction time was 72 hours? Please improve this description;

7) In Animals the authors wrote that “They were used in groups of six animals each”. However, in Acute toxicity have used groups of ten animals. Please correct the text;

8) In the manuscript the authors used the terms "ethanolic extract” and "ethanol extract." Please standardize this term;

9) Add a reference to method Acute toxicity;

10) In Acetic acid-induced writhing test, replace “Analgesia was calculated” by “antinociceptive activity was calculated”. Analgesia is not an acceptable word for animal models of nociception;

11) Antinociceptive activity was shown in 60 minutes in Formalin and Hot Plate tests. Why in Acetic acid-induced writhing test evaluation was performed 30 minutes after administration of the extract? Please justify these differences in manuscript;

12) In Formalin test, add a reference from creator of this test, Hunskaar & Hole, 1987;

13) In Hot Plat test, replace “extract” by “Se-EtOH”; Please it
wrote o “n” of this test;
14) In Discuss, replace “in the semi-arid region” by “in the semi-arid region from Brazil”;
15) In Conclusion, replace “Our results indicate antinociceptive properties of Sc-EtOH, which supports previous claims of its traditional use” by “Our results support previous claims of its traditional use”;
16) References: There are several references that should be standardized.

**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.