Reviewer's report

Title: Medicinal potential of Vellozia flavicans Mart. ex Schult.: an inhibitor of the neuromuscular blockade-induced by Bothrops jararacussu venom

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Reviewer: Maria Alice Cruz-Hofling

Reviewer's report:

Major compulsory revisions:

Firstly, looking at the literature one sees that Bothrops jararacussu has a direct myotoxic action which induces a very fast onset of myonecrosis. The effects at the snakebite site involve muscle fiber membrane disruption and subsequent profound fiber alteration in conjunction with local microcirculation failure. Along with this, there is migration of neutrophils and macrophages to the site of venom presence and inflammation. Despite the peripheral nerve fibers inside the muscle show morphological abnormality (seen experimentally), clinically, there is no report on neuromuscular paralysis in victims of B. jararacussu accident (Milani et al., 1997). In line with literature, in the second sentence of the Abstract and the second sentence of the second paragraph (page 3) of the Introduction, the authors did not include neurotoxicity or neuromuscular paralysis among the envenomation manifestations exhibited by human victims of accidents. A clear hypothesis and objective of the work is needed.

Secondly, based on this, the title of the manuscript also seems inappropriate since it implies a potential medicinal use of Vellozia flavicans extract against neuromuscular blockade induced by B. jararacussu venom, which apparently does not occur in human victims. Authors need to choose another more adequate title.

An important point, is that the V. flavicans leaves extract needs to be pre-incubated with B. jararacussu venom to abolish the neuromuscular blockade. It is important to incubate the preparation with B. jararacussu venom until partial neuromuscular blockade then wash the preparation and then incubate it with V. flavicans extract? If the partial blockade induced by venom was reverted the protection promoted by the extract will be confirmed.

Also, it is important to clarify why to choose the venom of B. jararacussu which is myotoxic instead of the venom of a species with neurotoxic venom.

In this sense, I suggest that the authors emphasize the contributions of this study by showing any possible practical application of the knowledge provided by the current findings.

In the minor comments, I have pointed out some mistakes in the text.
Minor essential revisions:

1. Since possible correspondences will be sent to Brazil, I believe that the name of the institutions, affiliations and Zip Code should be written in Portuguese.

2. In the Results of the Abstract is written “...the irreversible neuromuscular blockade induced by B. jararacussu.” The snake causes neuromuscular blockade?

3. Also in the Results of the Abstract is written “...in a model simulating the accident the extract was totally....”. This is an in vitro model of phrenic nerve diaphragm preparation and this reviewer does not see how this model simulates an accident with B. jararacussu.

4. In the Conclusion of the Abstract is written “V. flavicans extract possess anti-snakebite potential...” Does the extract prevent the snakebite? Or would be against the effects of snakebite? (the correct use of the verb is “V. flavicans possesses...”)

5. There are non-venomous snakes, and then I suggest adding the adjective. For example,

   “Envenoming subsequent from venomous snake attacks....”

6. Unconventional use of the English should be avoided. For example, in the Author’s Contribution, the word execution is unconventional (“execution” is more used to indicate the act of killing someone especially as a legal punishment; also the word “redaction” should be replaced by “writing”).

   In conclusion, the authors should re-direct their objective, such as simply investigate if the extract of V. flavicans leaves abolish the neuromuscular blockade produced in vitro in a murine nerve-muscle preparation. Eventually, they could end the manuscript with a conclusion on the possible application of their findings.

   I believe that the authors could make a fully revision to the paper and, then, resubmit it for new appreciation

Discretionary revision

Since V. flavicans leaves allegedly have anti-inflammatory effect why not to test the extract of V. flavicans leaves against the inflammatory response induced by the venom?

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.

Declaration of competing interests:
I declare that I have no competing interest.