Evaluation of antinociceptive effect of *Aristolochia trilobata* essential oil and its major component

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Aristolochia species are used in traditional medicine in many regions of the world. *Aristolochia trilobata* (AT) is a Central American plant and its extracts (leaves and barks) showed topical anti-inflammatory and anti-bacterial activity (1,2). Our aim is to evaluate the antinociceptive activity of the essential oil from AT and its major component (sulcatyl acetate, AS). AT was collected in October/2011 at Estância, Sergipe/Brazil. A voucher specimen was deposited at the herbarium of the Federal University of Sergipe (# ASE 23,161). The essential oil was obtained through steam distillation. Female Swiss *Webster* mice (22-25 g, n=4-6) were pre-treated orally with AT or AS (1, 10 or 100 mg kg^{-1}) or vehicle 1h before 20 µL formalin injection (2.5 %) into the hind-paw. Formalin-induced licking time was evaluated 0-5 min and 15-30 min (3). In the hot plate model, animals were placed on a hot plate (Insight Equipment, Brazil) set at 55 ± 1 °C. At successive intervals of 30 min after oral administration of AT or AS (same doses as above), vehicle or morphine (2.5 mg kg^{-1}), the reaction time was observed when the animals licked their fore and hind-paws and jumped. The antinociceptive effect was quantified as area under the curve (AUC) of responses measured between 30 and 180 min (3). The results are mean ± SD. The AUC was calculated by the Software 5.0 (GraphPad Software, La Jolla, CA, USA). Statistical analysis was performed by ANOVA and Bonferroni's post-test (*$p<0.05$). Protocols for animal use a received number of #DFBCICB015-04/16. Two doses of AT and three doses of AS showed effect in the 1st phase (nociceptive) of formalin-induced licking, but only the higher doses inhibited the 2nd phase (inflammatory). 1st phase: AT: 1 mg kg^{-1}= 36.9 ± 6.3 s; 10 mg kg^{-1}= 28.4 ± 8.7* s; 100 mg kg^{-1}= 14.3 ± 6.4*s and AS: 1 mg kg^{-1}= 27.5 ± 4.8* s; 10 mg kg^{-1}= 19.1 ± 12.1* s; 100 mg kg^{-1}= 19.1 ± 8.4* s when compared with vehicle= 45.2 ± 6.8 s. In the 2nd phase: AT: 100 mg kg^{-1}= 142.5 ± 23.3*s and AS: 100 mg kg^{-1}= 120.8 ± 33.8* s, when compared with vehicle= 213.0 ± 33.2 s. In the hot plate test, the pre-treatment of mice with 1, 10 and 10 µL kg^{-1} of AT and AS were able to increase the AUC when compared with the vehicle group (AUC: vehicle= 1,833.5 ± 1,479.7; morphine= 13,054.2 ± 2,530.9; AT: 1 mg kg^{-1}= 8,378.2 ± 1,521.2*; 10 mg kg^{-1}= 6,313.5 ± 1,699.7*; 100 mg kg^{-1}= 6,544.8 ± 2,126.5* and AS: 1 mg kg^{-1}= 11,554.2 ± 2,852.5*; 10 mg kg^{-1}= 9,872.5 ± 2,092.8*; 100 mg kg^{-1}= 15,803.3 ± 3,226.7*. Our results suggest that the essential oil from *Aristolochia trilobata* and it major component, sulcatyl acetate, showed significant peripheral and central antinociceptive activities.

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