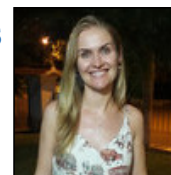


Stephalagine, a derived aporphine alkaloid, induces antinociceptive effects by TRPA1 and TRPV1 channels modulation in mice

Cassia R Silva

Federal University, Russia

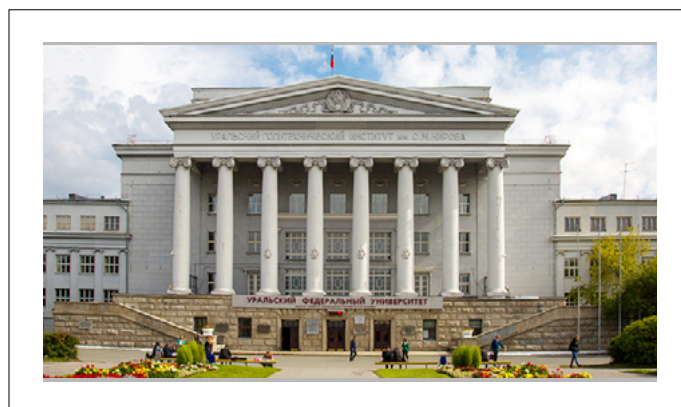


Abstract

Pain relief represents a critical unresolved medical need. Consequently, the search for new analgesic agents is intensively studied. Plant-derived alkaloids have previously demonstrated antinociceptive effects with suggested modulation of transient receptor potential (TRP) channels. This study aimed to investigate the antinociceptive properties of stephalagine, a Brazilian Savanna aporphine alkaloid from *Annona crassiflora* Mart. fruit peel. Stephalagine was administered by oral and intraplantar routes in male C57BL/6/J mice, and the animals were submitted to cinnamaldehyde-, capsaicin- and formalin-induced nociception tests to assess nociceptive behavior, and to the open-field and rotarod tests for motor performance analyses. Moreover, the stephalagine' effect was tested on capsaicin- and cinnamaldehyde-induced Ca^{2+} influx in spinal cord synaptosomes. In addition, *in silico* assessments of the absorption, distribution, metabolism and central nervous system permeability of stephalagine were carried out. When administered by oral route (1 mg/kg), stephalagine reduced the spontaneous nociception and paw edema induced by TRPV1 agonist, capsaicin, and by TRPA1 agonists, cinnamaldehyde- and formalin, without altering the animals' locomotor activity. The prediction of *in silico* pharmacokinetic properties of stephalagine suggests its capacity to cross the blood-brain barrier. Furthermore, this alkaloid reduces the capsaicin- and cinnamaldehyde-mediated Ca^{2+} influx, indicating a possible modulation of TRPV1 and TRPA1 channels, respectively. Together, our results support the antinociceptive and anti-edematogenic effects of the aporphine alkaloid stephalagine, and suggest that these effects are triggered, at least in part, by TRPV1 and TRPA1 modulation.

Biography

Cassia R Silva from Federal University, Russia.



[2nd International Conference on Biochemistry and Enzymology](#) | December 14-15, 2020

Citation: Cassia R Silva, Stephalagine, a derived aporphine alkaloid, induces antinociceptive effects by TRPA1 and TRPV1 channels modulation in mice, *World Biochem 2020*, 2nd International Conference on Biochemistry and Enzymology, December 14-15, 2020, 02