Natureza do trabalho: Resumo

TÍTULO

ANTI-ALLODYNIC AND ANTIDEPRESSIVE ACTIONS OF (R)-(+)-LIMONENE AND A-PHELLANDRENE IN THE SPARED NERVE INJURY MODEL OF NEUROPATHIC PAIN

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RESUMO

Introduction: Peripheral nerve injury can result in many changes, including associated cognitive and emotional comorbidities like depression, motor dysfunction, plus mechanical, cold and thermic hypernociception.The potential of oral treatment of (R)-(+)-limoneneand ⍰-phellandreneto alleviate mechanical hypernociception, cold hypernociception and behavioral alterations induced in rats by SNI are analyzed in this work. **Objectives:** The present work has investigated the anti-allodynic and antidepressant activities of the (R)-(+)-limonene, and alpha-phellandrene in rats. **Methods:** Essential oil or control vehicle was administered orally to the animals, after the sciatic nerve injury (SNI). The groups were: the control group treated with vehicle; the SNI group that received phellandrene (10 mg/kg) and the SNI group that received limonene (10 mg/kg).Mechanical and cold sensitivities as well as forced swim behavior were analyzed at the 10th and 15th days after SNI proceduresin all animals. **Results:** Oral administration for up to 15 days of (R)-(+)-limonene (10 mg/kg), and ⍰-phellandrene (10 mg/kg) significantly inhibited SNI-induced mechanical allodynia and increased immobility in the forced swim test. On the 15th day of oral treatment, phellandrene, but not limonene, prevented the SNI-induced increase in sensitivity to a cold stimulus. **Conclusion:** Together, the results of the present work show that (R)-(+)-limonene (10 mg/kg) and alpha-phellandrene, exhibit antiallodynic effects against mechanical and cold stimuli and are anti-depressive in SNI rats. The present results may have clinical relevance and may open new possibilities for the development of new anti-allodynic and/or antidepressive drugs.