



NDD.06. Effects of a sulfated agar from red seaweed *Gracilaria cornea* in 6-OHDA hemi-parkinsonian rats

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Introduction: Animal models of PD induced by the neurotoxin 6-hydroxydopamine (6-OHDA) show locomotion and behavioral alterations mostly caused by the oxidative and inflammatory process induced by this neurotoxin. Sulfated agar is a polysaccharide with sulfate groups found in the red seaweed *Gracilaria cornea* (SA). Recently, a study with SA showed anti-inflammatory effects and absence of toxic effects *in vivo*. The aim of this work was to evaluate the neuroprotective effects of SA after behavioral and locomotion alterations-induced by 6-OHDA intrastratial injection in rats and to evaluate the safety of the intraestriatal administration of this polysaccharide *in vivo*. **Methods:** The seaweed was collected from Flecheiras beach, Brazil. SA was obtained as previously described by Coura et al (2012). Male Wistar rats (220-300 g) were randomly divided in eight groups (n=10 animals per group). Rats were anesthetized and treated with AS (15, 30 or 60 µg) alone or after 6-OHDA (20 µg) injection; 6-OHDA (20 µg) alone; or saline (sham group). All treatments were realized through stereotaxic injection into the right striatum and solutions were prepared diluted in saline (0.9%; with 0.01% ascorbic acid). Animals were maintained under *ad libitum* feeding conditions. This study was approved by the Ethics Committee for Animal Research of the Federal University of Ceará - CEPA (nº 45/13). The rats weight were measured daily for ponderal curve analysis. On the 14th day, rats were subjected to behavioral evaluation by the open-field test and the rotational test after apomorphine (3 mg/Kg). **Results:** The open-field test showed an increase (p<0.01) in the locomotor activity of the 6-OHDA+SA (30 and 60 µg) groups in 63.1±5.7 and 74.9±5.8 (numbers lines crossing), respectively, in relation to 6-OHDA group (47.4±3.7). 6-OHDA+SA (15, 30 or 60 µg) groups had the rotation number reduced (p<0.001) in 80, 83 and 91%, respectively, in comparison to 6-OHDA group. Additionally, rats submitted to intraestriatal SA injection (15, 30 or 60 µg) alone did not show statistical differences compared to the sham group in the overall tests utilized. **Conclusions:** SA from seaweed *G. cornea* show neuroprotective effects against locomotion disturbances induced by 6-OHDA injection into the striatum. SA did not show behavioral and ponderal changes in comparison to the sham group, suggesting safety.

Keywords: Agar sulfated, 6-hydroxydopamine, Safety

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