

INVESTIGATING SPREADING DEPRESSION WITH LECTIN HISTOCHEMISTRY

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Spreading depression (SD) is a propagation of neuronal activity suppression from a focal point throughout different cortical regions that is involved in events such as epilepsy, trauma and brain function and protection. This work used lectin histochemistry to evaluate the cerebral cortex from adult rats submitted to SD and treated or not with shrimp carotenoid. In non-treated group Con A displayed a homogeneous and membranous staining in layers II-III while pyramidal cells showed a perinuclear and homogeneous staining in layer II. LTA showed a strong, homogeneous and granular-cytoplasmic staining pattern of neurons in layers III-VI and pyramidal cells presented a weak staining. PNA showed a weak cytoplasmic staining in superficial layers, which became moderate, granular-cytoplasmic at deeper ones. Neurons in layers III-VI were weakly recognized by WGA. In treated group, Con A, LTA and PNA showed a decrease of staining compared to the treated group while WGA presented the same pattern. In control group, Con A showed a heterogeneous, moderate and membranous staining in layer III. LTA, PNA and WGA maintained the staining pattern observed in the treated group. Results indicated that SD induces alterations in carbohydrate profile in cortex cells and that shrimp carotenoids decreased such feature related to the expression and/or accessibility of saccharide moieties in glycoconjugates of cerebral cortex.

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