

**Original Article**

**Allium sativum alters the cyto-architecture of the medial prefrontal cortex and neurobehaviour of adult wistar rats**

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**ABSTRACT**

Consumption of vegetables and fruits has been reported to protect humans against oxidative damage by inhibiting free radicals and reactive oxygen species. Allium sativum is a plant whose beneficial effects have been attributed to its role in oxidation. This study therefore investigated the effects of Allium sativum extract on the medial prefrontal cortex and neurobehaviour of male albino Wistar rats. Twenty-four adult male albino rats were divided into 4 groups of 6 rats each. The control received 1 ml of distilled water orally, while test groups received oral doses of 78 mg/kg (low dose), 156 mg/kg (medium dose) and 312 mg/kg (high dose) body weight of the Allium sativum extract respectively for 2 weeks. Thereafter, spontaneous alternation behavioural test was carried out, and immediately the rats were anaesthetized with 50 mg/kg of ketamine hydrochloride (i.p.), and perfusion-fixed with 10% buffered formalin. The whole brains were removed and the medial prefrontal cortex excised and processed for histological studies using haematoxylin and eosin and Cresyl fast violet stains. Neurobehavioral test revealed higher spontaneous alternation from the medium dose group compared with the other groups. The prefrontal cortical sections showed hypertrophy, hyperplasia, loss of brain cellular membranes and Nissl substance. In conclusion, Allium sativum modulates spontaneous alterations, and cause alterations in cellular integrity in the medial prefrontal cortex.

Keywords: Allium sativum, Prefrontal cortex, Neurobehaviour, Histology, Wistar rat

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