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Anti-oxidative effects of safranal on immobilization-induced oxidative damage in rat brain

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Highlights:

- Safranal reduces in the immobility time in the stressed rats.
- Safranal improves the number of crossing in the restraint stress.
- Safranal increases antioxidant enzymes in the restraint stress.
- Safranal is effective against depressant-like effects induced by chronic stress.
- Safranal acts through modulating brain oxidative response.

Abstract

Safranal, a major constituent of saffron, possesses antioxidant and anti-apoptotic properties showing considerable neuroprotective effects. The present study was designed to investigate the effects of safranal against restraint stress induced oxidative damage in the rat brain. For inducing the chronic restraint stress, rats were kept in the restrainers for 1 h every day, for 21 consecutive days, then, the animals received systemic administrations of vehicle (0.1% DMSO) acted as the control group or safranal daily for 21 days. Results indicated that the rats submitted to restraint stress showed an increase in the immobility time versus the non-stress rats. In addition, stress decreased number of crossing in the rats submitted to restraint stress versus the non-stress animals. Treatment with safranal (0.75 mg/kg) showed a significant reduction in the immobility time compared to the non-treated stress group, while, the

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