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Poster Presentation

Endocannabinoid System Mediate the Effects of Crocin on Development of Neuropathic Pain in a Rat Model of Chronic Constriction Injury

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Abstract

Neuropathic pain involves injury or alteration of the normal sensory and modulatory nervous systems to produce a set of symptoms that are often difficult to treat. Previous study indicates that saffron has anti-inflammatory properties that may be mediate by neurotransmitter system. In this study we determine the role of cannabinoids receptors in peripheral and central effects of Crocin on behavior neuropathic pain responses in Chronic Constriction Injury (CCI) model in Rat. In this experimental study we used of adult male Wistar rats (220 to 250 g). CCI was induced by setting four loose ligatures around the siatic nerve. In part 1, after nerve lesion, injections of vehicle, Crocin (60 mg/kg) or Win21212 (0.1 mg/kg) as an agonist and AM251(0.1 mg/kg) as an antagonist of endocannabinoid receptors, were injected intraperitoneally in separate groups and continued every day for 2 weeks. In part 2, two weeks after of nerve lesion, injections of vehicle (0.5µl), Crocin (6 µg/0.5µl), Win21212 (0.1 µg/0.5µl), AM251(0.1 µg/0.5µl) were done in intracerebroventricular (ICV) in separate groups. Pain behavioral responses including mechanical allodynia (von Frey filament testing) and thermal hyperalgesia were measured at day 14. Data analyzed by Two-way ANOVA and tukey test. Results indicated that central or peripheral injection of Crocin decreased thermal hyperalgesia and mechanical allodynia. Also central or peripheral Co-administration of Win21212 or AM251 modulate of analgesic effect of Crocin significantly ($P<0.05$). Findings shown that Crocin have analgesic effects that probably mediated by endocannabinoid mechanism.

Keywords: Crocin, Endocannabinoids Receptors, CCI, Allodynia, Hyperalgesia, Rat

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