

Effects of mitragynine from *Mitragyna speciosa* Korth leaves on working memory.

ABSTRACT

Aim of the study: *Mitragyna speciosa* Korth from Rubiaceae family is a tropical plant indigenous to Southeast Asia particularly in Thailand, Peninsular of Malaysia and Indonesia. The leaves have been used by natives for their opium-like effect and cocaine-like stimulant ability to combat fatigue and enhance tolerance to hard work. However there is no scientific information about the effect of mitragynine on the cognitive performances. This study is designed to examine the working memory effects of mitragynine which is extracted from *Mitragyna speciosa* mature leaves. Materials and methods: The cognitive effect was studied using object location task and the motor activity in open-field test. Mitragynine 5, 10 and 15. mg/kg and were administered by intraperitoneal (IP) for 28 consecutive days and evaluated on day 28 after the last dose treatment. Scopolamine was used as the control positive drug. Results: In this study there is prominent effects on horizontal locomotor activity was observed. Mitragynine significantly reduced locomotor activity in open-field test compared with vehicle. In object location task mitragynine (5, 10 and 15. mg/kg) did not showed any significances discrimination between the object that had changed position than the object that had remain in a constant position. Conclusion: Our results suggest that chronic administration of mitragynine can altered the cognitive behavioral function in mice

Keyword: *Mitragyna speciosa*; Mitragynine; Object location task; Psychostimulant plants; Working memory.