

Sedative, cognitive impairment and anxiolytic effects of acute *Mitragyna speciosa* in rodents

ABSTRACT

Mitragyna speciosa, a plant from Rubiaceae family, was reported to have an opium-like effect and their coca-like stimulative ability to combat fatigue and enhance tolerance to hard work. There are lack of information regarding to the effect of *Mitragyna speciosa* on cognitive and behavioural performances. Therefore the project was conducted to observe the effect of *Mitragyna speciosa* on cognitive behavior of rats and mice. *Mitragyna speciosa* in methanol extract form and aqueous extract form with same dosage distributions were used; 10 mg/kg, 30 mg/kg, and 100 mg/kg. Four tests were conducted to observe the behavioural changes of the animal namely locomotor, cognitive performances, anxiety and rotarod performance. Results showed that all dosage of treatment reduced locomotor and impaired cognitive performance significantly. Study showed that *Mitragyna speciosa* induce sedative effect in dose dependant manner. Interestingly, *Mitragyna speciosa* increased the time spent in open arm of plus maze indicating low anxiety level of the rodent. As conclusion, *Mitragyna speciosa* caused sedative effect, impairment in working memory, and possess anxiolytic properties.

Keyword: *Mitragyna speciosa*; Mitragynine; Locomotor activity; Novel-object discrimination test; Anxiety