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**Protective effect of thymoquinone on the MDMA induced serotonin depletion in the brain of rats**

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3,4-methylenedioxymethamphetamine (MDMA) is an illicit drug grouped under the Amphetamine-Type Stimulants (ATS). The long-term effects of MDMA include depletion of extracellular serotonin or 5-hydroxytryptamine (5-HT). Hence, the aim of this study was to investigate the protective effect of Thymoquinone (TQ) in preventing the 5-HT depletion induced by a single MDMA exposure. This study was conducted by dividing the rats randomly into four groups i.e. (1) Control group, receiving 0.1 ml/kg saline, (2) MDMA group, receiving a single administration of 20 mg/kg MDMA, (3) MDMA-TQ group, receiving a single administration of 20 mg/kg MDMA and treated with 40 mg/kg TQ for one week and (4) TQ group, receiving 40 mg/kg TQ for one week. All compounds were administered to the rats through oral gavage. Percentage of weight gain was measured and at the end of the experiment, cerebrospinal fluid was collected from the cisterna magna of the rats for evaluation of the 5-HT neurotransmitter level. Our results demonstrated a significant increased in 5-HT level from the CSF of the MDMA-TQ group as compared to the MDMA group. MDMA-TQ group also showed a higher percentage of weight gain as compared to the MDMA group. Our study suggests that the subsequent long-term 5-HT depletion induced by MDMA can be prevented by thymoquinone.

**Biography**

Nasir Mohamad has completed his Master of Medicine degree and PhD from Universiti Sains Malaysia. He is the Director of Centrena, the centre for research in addiction, in a community public University of Sultan Zainal Abidin, Malaysia. His interest is in researches related to application of traditional herbs in the treatment of drugs and substances addiction. He is currently working on integrating bio-psychosocio and spiritual components to empower the primary prevention with the secondary and tertiary management of addiction in the community for a better therapy. He has published more than 100 papers and books.

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