

Potential of Natural Products to Modulate Microglial Phenotypes in 3, 4 Methylenedioxymethamphetamine (MDMA) Neurotoxicity

ABSTRACT

MDMA is a psychostimulant drug and widely abused illicit amphetamine derivative. It is currently being tested in clinical studies as a potential therapy for post-traumatic stress disorder (PTSD), anxiety, and other psychological distress related to life-threatening illnesses [1, 2]. Unfortunately, evidence indicates that MDMA has effects on brain functioning and can result in increased disease susceptibility. Besides the overproduction of neurotransmitters, exposure to MDMA also causes the neuronal immune cells, such as microglial cells in the brain, to be activated in response to the danger-associated signals from the endangered neurons. Microglial cells' response as a first-line defense has been implicated in MDMA toxicity in the sense that their activation is thought to contribute to neurotoxicity.