

Abstract

Paracetamol and diclofenac are two of the most popular analgesics and anti-inflammatory medications. Despite of their several therapeutic benefits, their over consumption led to subsequent cellular damage. Their cytotoxicity is attributed to reactive radical generation. Betanin has antioxidant and anti-inflammatory properties. The protective effects of betanin against paracetamol or diclofenac induced neurotoxicity or endocrine disruption has not been investigated before. Therefore, this study aims to explore the protective potential of betanin against paracetamol or diclofenac neurotoxicity and endocrine disruption in a rat model. In brain, paracetamol (400 mg/ kg) and diclofenac (10mg/kg) enhanced DNA fragmentation and lipid peroxidation. Betanin (100 mg/kg) significantly reduced the levels of DNA fragmentation and lipid peroxidation. Betanin (100 mg/kg) also significantly reduced the levels of oxidative stress markers (MDA, NO, and ROS) and inflammatory markers (TNF- α , IL-1 β , and IL-6) in brain. Betanin (100 mg/kg) also significantly reduced the levels of endocrine markers (T3, T4, and TSH) in brain. Betanin (100 mg/kg) also significantly reduced the levels of oxidative stress markers (MDA, NO, and ROS) and inflammatory markers (TNF- α , IL-1 β , and IL-6) in brain. Betanin (100 mg/kg) also significantly reduced the levels of endocrine markers (T3, T4, and TSH) in brain.

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