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## Effect of *Tanacetum parthenium* methanolic Extract (TPME) on serum arylesterase activity in rats treated with CCl<sub>4</sub>

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### Abstract

Paraoxonase1 (PON1) is an enzyme that associated with high density lipoprotein (HDL), and demonstrating esterase and lactonase activity. The PON1 has a role in a variety of inflammatory conditions, metabolism of oxidized lipids and detoxifying of organophosphorus insecticide substrate. The aim of this study was to investigate the effects of *Tanacetum parthenium* methanolic extract (TPME) on arylesterase activities in CCl<sub>4</sub> injected rats. Experiments were conducted in five groups of normal, CCl<sub>4</sub> and different dose of TPME (TPME40, 80 and 120mg/kg) rats. Two weeks after receiving the different dosages of TPME, CCl<sub>4</sub> were administered intraperitoneally on the 16th day. after 48h blood samples were taken from animals and HDL level, arylesterase activity of PON1 enzyme and standardized activities of arylesterase (ARE/HDL) were measured in rats. Relative changes in serum HDL and arylesterase activities were compared between the groups. Administration of TPME significantly increased serum arylesterase activities and HDL level in CCl<sub>4</sub> treated groups compared to untreated ones. These essential effects may be due to the presence of natural antioxidants such as phenolic compounds in the TPME. Methanolic extract of *T.parthenium* may be useful in decreasing the symptoms of diseases resulting from the low activity of ARE.

**Key words:** Arylesterase, CCl<sub>4</sub>, oxidative stress, paraoxonase, *Tanacetum parthenium*