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Anti-inflammatory effects of *M. pudica* (L.) constituents is mediated through inhibition of pro-inflammatory mediators in macrophages

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In the continuous search for newer anti-inflammatory leads from natural products, many plant extracts have been tested for their inhibitory effects towards pro-inflammatory cytokines. Among them, ethyl acetate fraction (MPE) of *M. pudica* whole plant have demonstrated the significant inhibition of NO, TNF-α and IL-1β production in RAW 264.7 cells with an IC_{50} of 34.4, 31.7 and 47.2 μg/mL respectively. Phytochemical investigation of the active ethyl acetate (MPE) fraction of *M. pudica*(L.) leaves yielded fourteen compounds. Among them, L-mimosine (IC_{50}=19.23 to 21.15 μM), crocetin (IC_{50}=23.45 to 25.57 μM) and its ester crocin (IC_{50}=27.16 to 31.53 μM) and jasmonic acid (IC_{50}=29.42 to 21.32 μM) were discovered as potent NO inhibitor when tested on the both cells. Towards TNF-α and IL-1β inhibition, ethyl gallate, crocetin, crocin, gallic acid, L-mimosine, jasmonic acid and caffeic acid were found to be more active with half maximal concentration, 17.32 to 62.32 μM whereas the other compounds depicted moderate and mild effects (IC50= 59.32 to 95.01 μM). Results suggested that these compounds imparting greatly to anti-inflammatory effects of *M. pudica in vitro* through reduction of LPS-induced pro-inflammatory mediators which affirm the ethno-pharmacological use of this plant for prevention of inflammatory-related disorders.

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