

Punica granatum (Pomegranate) of a Libyan Variety Exhibits in vitro Anti-Inflammatory Potential

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Abstract : Background: Punica granatum (pomegranate) was used as a traditional medicine in different parts of the world. It has been used in the treatment of pain and inflammatory conditions such as peptic ulcer. The numerous risks associated with nonsteroidal anti-inflammatory drugs (NSAIDs) for the treatment of pain and inflammation give rise to using medicinal herbs as alternative therapies. This study aimed to evaluate the anti-inflammatory effect of the ethyl acetate pomegranate fraction (EtOAc) by determination of its inhibitory effects on lipopolysaccharide (LPS), stimulated nitric oxide (NO), prostaglandin E2 (PGE-2), interleukin-6 (IL-6) and cyclooxygenase-2 (COX2) release from RAW264.7 cells. Methods: The inhibitory effect of EtOAc was evaluated on (LPS) induced NO production, PGE2, and IL-6 quantified by immunoassay kit and prostaglandin E2 competitive ELISA kit. COX2 production is an in vitro indication of possible anti-inflammatory activity and was estimated by Western blotting. Results: EtOAc potentially inhibited LPS-induced nitric oxide, prostaglandin, and IL-6 production. With these findings, it was evident that the EtOAc could reduce the LPS-induced cyclooxygenase-2 (COX-2) at the protein level in a dose-dependent manner as determined by Western blotting. Conclusion: The results emphasize potential therapeutic applications of Punica granatum in the treatment of inflammation.

Keywords : inflammation, Punica granatum, cytotoxicity, cytokines

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