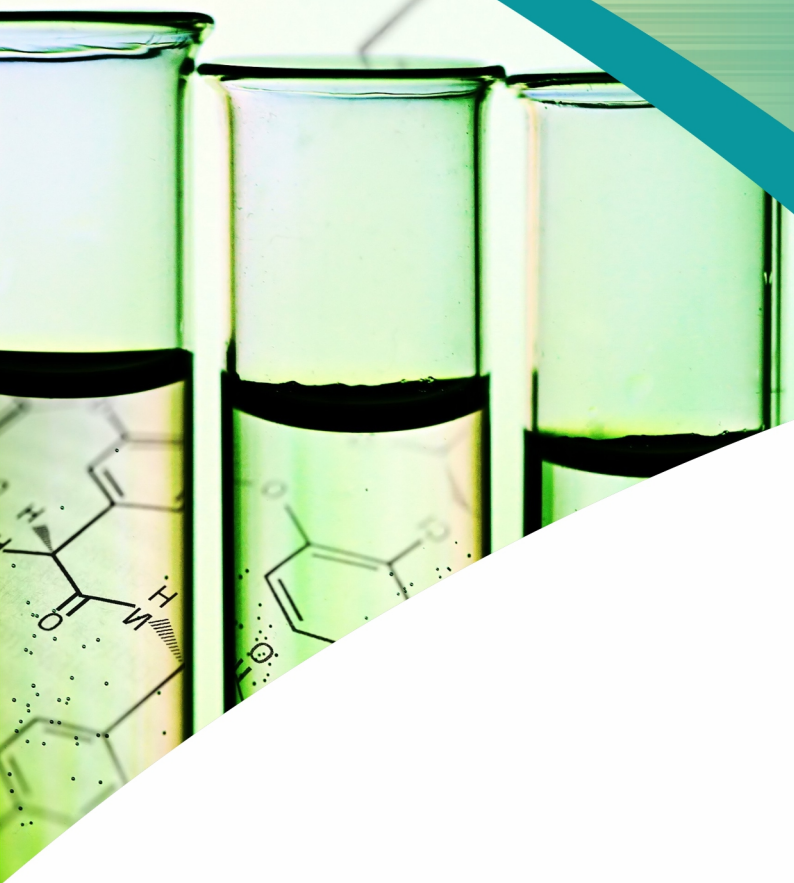


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Anti-Inflammatory and Antioxidant Evaluation of Polyherbal Formulation of *Nigella sativa* (Seeds), *Ocimum sanctum* L. (Leaves) and *Piper longum* Linn. (Fruits)

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ABSTRACT

Objective: In current scenario, one of the most important health problems in the world is inflammation. Most of anti-inflammatory drugs have a number of adverse effects hence there is a need to develop safe and new anti-inflammatory drug/formulation with minimum side effects. This study is aimed to evaluate anti-inflammatory and antioxidant effects of polyherbal formulations prepared by the combination of *Nigella sativa* (seeds), *Ocimum sanctum* L. (leaves) and *Piper longum* Linn. (fruits) extracts.

Methods: Anti-inflammatory evaluation was performed on carrageenan-induced rat paw edema model along with evaluation of antioxidant activity (DPPH radical scavenging) and acute toxicity test of polyherbal formulations of hexane and ethanol extracts.

Results: Oral administration of both polyherbal formulation prepared by hexane and ethanol extracts at the highest dose of 3000 mg/Kg resulted in no mortalities and no evidence of significant behavioural changes. DPPH radical scavenging activity results showed that polyherbal formulation of ethanol extract (IC₅₀: 47.74 µg/ml) has lower antioxidant activity than standard ascorbic acid (IC₅₀: 13.725 µg/ml) but exhibited higher antioxidant activity than polyherbal formulation of hexane extract (IC₅₀: 74.27 µg/ml). Further, results showed that both polyherbal formulations of hexane and ethanol extracts were exhibited appreciable inhibition of edema size from 1, 3 and 5 hrs of study as compare to the standard drug indomethacin (10 mg/kg b.w). Polyherbal formulation of ethanol extract emerged as the most promising formulation in doses of 250 and 500 mg/kg that also displayed excellent protection against inflammation with percent protection of 43.24% and 56.20%, respectively. Whereas, polyherbal formulation of hexane extract showed considerable inhibition of the edema size in both doses of 250 and 500 mg/kg, also exhibited protection against inflammation with percent protection of 25.6% and 36.0%, respectively. However, the standard drug indomethacin showed highest inhibition of edema size and showed remarkable protection against inflammation with percent protection of 81.40%.

Conclusion: It can be inferred that the polyherbal formulation of ethanol extract displayed good antioxidant as well as anti-inflammatory activity compared to polyherbal formulation of hexane extract. Antioxidant and anti-inflammatory potentials of polyherbal formulation of ethanol extract may be attributed to polyphenols and phytosterols present in it.



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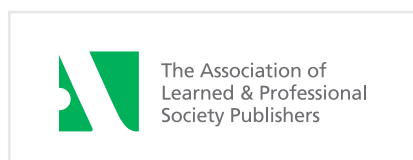
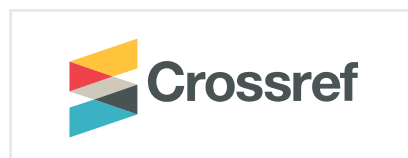
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