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A COMPARATIVE STUDY OF ANTI-INFLAMMATORY ACTIVITY AND CHEMICAL ANALYSIS OF ZIZIPHUS SPINA-CHRISTI LEAVES AND BOSWELLIA SERRATA GUM DRY DISTILLATES

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Statement of the Problem: Inflammation is the succession change occurring in a living tissue when it is injured by physical trauma, noxious chemicals or microbiological agents. Most of the synthetic drugs used for treatment of inflammation cause many side effects and toxic effects. Thus, many researches was undertaken to find the anti-inflammatory activity with less adverse effects. The objective of the present study to investigate and compare the anti-inflammatory potential of *Ziziphus spina-christi* and *Boswellia serrata* dry distillates.

Methodology: The dry distillates were prepared by dry distillation method. Anti-inflammatory activity of the distillates had been tested in rats by Carrageenan-induced paw edema model. Acute inflammation was produced by injecting 1% solution of Carrageenan into the plantar surface of the rat right hind paw at the dose of 0.1mL per 100g body weight. The rats were divided into six groups of five rats each. Group I received normal saline control (P.O) at a dose of 10ml/kg. Group II was treated with the standard drug sodium diclofenac (20 mg/kg, P.O.). Group III and IV were treated with extracts of *Z. spina-christi* 200 and 400 mg/kg P.O doses, respectively. Group V and VI were treated with extracts of *B. serrata* 200 and 400 mg/kg P.O doses, respectively. After 60 minutes, Carrageenan solution was injected to the animals of all groups. The paw size was measured using a digital clipper and compared with control animals which received only the vehicle. GC-MS was used for chemical analysis.

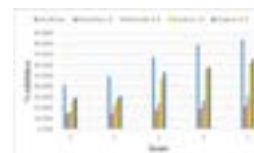
Findings: The results showed significant anti-inflammatory effect with p-values (0.000–0.009) and (0.002–0.45) for *Z. spina-christi* and *B. serrata*, respectively which were found be dose and time dependent. GC/MS analysis revealed the presence of 90 compounds in *Z. spina-christi* distillate and hundred compounds were identified in *B. serrata* with major compounds well known for their anti-inflammatory effect.

Conclusion & Significance: The dry distillate of *Z. spina-christi* and *B. serrata* were found to have anti-inflammatory activity and the activity was found to be higher in *Z. spina-christi*.

Recommendations: Further investigations regarding the pharmacokinetics and pharmacodynamics of active constituents of these plants should be done.

Recent Publications

1. Setorki M (2016) Effect of hydro-alcoholic extract of *Ziziphus spina-christi* against scopolamine-induced anxiety in rats. *Bangladesh Journal of Pharmacology* 11(2):421–427.
2. Boonyarikpunchai W, Sukrong S and Towiwat P (2014) Antinociceptive and anti-inflammatory effects of rosmarinic acid isolated from *Thunbergia laurifolia* Lindl. *Pharmacol Biochem Behav* 124:67–73.
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4. Siddiqui M (2011) *Boswellia serrata*, a potential anti-inflammatory agent: an overview. *Indian Journal of Pharmaceutical Sciences* 73(3):255–261.
5. Aman U and Balu G (2009) Pharmacological activities of *Boswellia serrata* Roxb. –Mini review. *Journal of Ethnobotanical Leaflets* 13:766–74.



Biography

Sara Nadi Joseph Wisa has her expertise in evaluation and passion in research, search and discovery of natural drugs from plant origin. Her open and contextual evaluation model based on responsive constructivists creates new drugs for improving and treating of infectious diseases

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