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Anti-arthritic Effect of Boswellia Serrata Resin Extract in Freund's Complete Adjuvant (Fca)-induced Arthritis in Rats

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Background & Aim: Rheumatoid arthritis is a chronic inflammatory disorder characterized by joint inflammation, oxidative stress, and tissue damage. *Boswellia serrata* resin, a traditional herbal remedy, is known for its anti-inflammatory and antioxidant properties. This study aimed to evaluate the anti-arthritic potential of *B. serrata* resin extract in FCA-induced arthritic rats by assessing its effects on clinical, biochemical, and histopathological parameters, comparing its efficacy with a standard anti-arthritic drug, and exploring its mechanisms in reducing inflammation and oxidative stress.

Methods: Arthritis was induced in Wistar rats by subplantar injection of FCA into the left hind paw. Rats were divided into control, standard, and treatment groups receiving different doses of *B. serrata* resin extract orally for 28 days. Progression of arthritis was assessed through paw volume, body weight, arthritis scoring, hematological parameters, serum biomarkers (TNF-α, IL-1β, CRP, RF), and histopathological evaluation of joint tissues.

Results: Treatment with *B. serrata* resin extract significantly reduced paw edema, arthritis scores, and inflammatory cytokine levels in a dose-dependent manner ($p < 0.05$). Hematological and biochemical parameters were restored toward normal values, and histopathology revealed preservation of joint architecture.

Conclusion: *Boswellia serrata* resin extract demonstrates significant anti-arthritic activity in FCA-induced arthritic rats, likely through anti-inflammatory and antioxidant mechanisms, supporting its potential as a natural therapeutic agent for rheumatoid arthritis.

Keywords: *Boswellia serrata*, arthritis, Freund's Complete Adjuvant, anti-inflammatory, cytokines, rheumatoid arthritis, herbal extract

Biography1: **Ms. Lotti Chandrika**, under the guidance of Ms. N. Rajeswari, M.Pharm (Pharmacology), Professor, is a postgraduate student in Pharmacology with a strong interest in herbal medicine and experimental pharmacology. She has actively participated in academic projects and laboratory research, focusing on phytochemicals and their therapeutic potential. With a commitment to scientific learning and innovation, she aims to Anti-arthritic Effect of Boswellia Serrata Resin Extract in Freund's Complete Adjuvant (Fca)-induced Arthritis in Rats.

Biography2: Ms. N. Rajeswari, M.Pharm (Pharmacology), is an Assistant Professor at Sri Venkateswara College of Pharmacy with over 6 years of academic and research experience.

Her interests include experimental pharmacology, toxicology and herbal drug research, with a focus on integrating traditional medicine with modern therapeutics.

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