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Evaluation of protective efficacy of *Secoisolariciresinol Diglucoside:* A potential immunomodulatory phytoestrogen

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Abstract

Objective: The present study was carried out to probe the anti-inflammatory potential of SDG in immunomodulating and anti-inflammatory effect and the immune system's response to an inflammatory substance.

Material: Adult male Wistar rats weighting 120 – 170 g were used throughout the study.

Treatment: The animals were orally treated with 20, 40 and 80 mg/kg b.w of SDG.

Methods: The thickness of the rat paw was measured using plethysmometer at 0-24 h. The tissue extracts and serums of animals were used for the analysis of NO, PGE2 and NGF using specific kits. One-way ANOVA followed by Student's t-test were used to test the significance levels.

Results: SDG at 80 mg/kg b.w. for one day period before the carrageenan injections significantly reduced ($p < 0.05$) paw swelling (45.18 %) and associated with decrease in NO levels in paw tissue and serum by 72.4 and 53.6%. other parameters like level of PGE2 was diminished by 39.21 and 32.56% and NGF levels by 43.1 and 46.1% respectively when compared with the control.

Significance: SDG may be useful to improve localized and systemic inflammatory responses in a variety of human conditions and might provide useful phytomedical treatment against a variety of immunomodulatory effects and inflammatory disorders.

Abbreviations:

SDG- Secoisolariciresinol diglucoside, NO- Nitric Oxide, PGE2- Prostaglandin E2, NGF- Nerve Growth Factor.