

ANTI INFLAMMATORY ACTIVITY OF *Vitex negundo* ON FORMALDEHYDE INDUCED PAW OEDEMA IN ALBINO RATS

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The ethanolic extracts of *Vitex negundo* at a dose of 100mg/kg was evaluated for anti inflammatory activity on formaldehyde induced paw oedema in rats. The screening of phytochemicals present in the leaves of *Vitex negundo* was carried out both qualitatively and quantitatively. The results are showing the presence of secondary metabolites such as alkaloids, flavonoids and phenolic compounds. The ethanolic extract showed significant anti inflammatory activity may be due to the presence of phenolic constituents.

INTRODUCTION

Inflammation is part of the complex biological response of vascular tissues to harmful stimuli, such as pathogens, damaged cells, or irritants (Ferrero-Miliani *et al.*, 2007). The process of acute inflammation is initiated by cells already present in all tissues, mainly resident macrophages, dendritic cells, histiocytes, kupffer cells and mastocytes. At the onset of an infection, burn or other injuries, these cells undergo activation and release inflammatory mediators responsible for the clinical signs of inflammation. Vasodilation and its resulting increased blood flow causes the redness and increased heat. Increased permeability of the blood vessels results in an exudation (leakage) of plasma proteins and fluid into the tissue (oedema), which manifests itself as swelling (Cotran *et al.*, 1998).

Formaldehyde is most commonly used to produce inflammation in experimental animals, Since it produced a maximal oedematous swelling in 3 hrs. Diluted formaldehyde solution (1%) at a dose of 0.1ml injected subcutaneously causes swelling and pain. The cellular and molecular mechanism of the formaldehyde induced inflammation is well characterized because the models of inflammation are standard models for screening of anti inflammatory compounds. The initial phase of oedema is attributed to the release of histamine and serotonin and the second phase of oedema is due to the release of prostaglandins, protease and lysosomal enzymes. Further it has been

demonstrated that the second phase is sensitive to the most clinically effective anti inflammatory drugs (Kang *et al.*, 2008).

Vitex negundo [Class: Magnoliopsida; Family: Verbenaceae], a large aromatic shrub has been used for various medicinal purposes in Ayurvedic and Unani systems of medicine. Almost all parts are employed, but the leaves and roots are important as anti inflammatory,

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