



RESEARCH ARTICLE

ESTIMATION OF ANTIPYRETIC, PALLIATIVE AND ANTI-INFLAMMATORY POTENTIAL OF METHANOLIC EXTRACT OF *TERMINALIA CATAPPA*

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In present study, anti-inflammatory, palliative and antipyretic activities of methanolic extract of *Terminalia catappa* leaves were evaluated in standard experimental models. The results showed that the positive control (Indomethacin) significantly ($p < 0.05$; $p < 0.01$) decreased the paw edema at 1 h to 4 h after carrageenan injection compared to saline with 56.31% to 59.85% inhibition rate. A maximum oedema of paw volume 1.42 ± 0.03 mm was observed in the control rats, 4 h after the carrageenan injection. Also tail flick and hot plate models revealed that methanolic extract significantly ($p < 0.05$; $p < 0.01$) reduced the painful stimulus. This confirmed the involvement of central and peripheral effects of the extract. The extract also possessed antipyretic potential evidenced by significant ($p < 0.05$; $p < 0.01$) induction of pyresis by yeast cell within 3 h. Thus, methanolic extract was found to have wide variety of pharmacological effect in the form of anti-inflammatory, palliative and antipyretic effect which proves the utility of *Terminalia catappa* in experimental pharmacology of cytokines and prostaglandins (PGs).

Key words: *Terminalia catappa*, Anti-inflammatory, Palliative, Antipyretic.

INTRODUCTION

Inflammation is the response of living tissues to injury which involves a complex array of enzyme activation, mediator release, extravasations of fluid, cell migration, tissue breakdown and repair (Vane and Botting, 1995; Perianayagam *et al* 2006). Non-steroidal anti-inflammatory drugs (NSAID) are among the most commonly prescribed drugs due to their consistent effectiveness in the treatment of pain, fever, inflammation and rheumatic disorders (Rang *et al* 2005). However, their use is associated with adverse effects at the level of digestive tract, ranging from dyspeptic symptoms, gastrointestinal erosions and peptic ulcers to more serious complications, such as over bleeding or perforation. Therefore to overcome the toxicity of NSAID, the development of new anti-

inflammatory drugs is still necessary and the natural product such as medicinal plants could lead in discovering new anti-inflammatory drugs with less undesirable effects. Medicinal plants have biological properties and now-a-days attention is being focused on the investigation of the efficacy of plant based drugs used in the traditional medicine because they are economical and relatively safe (Madaan *et al* 2011; Jain *et al* 2011; Srividya *et al* 2012; Dey *et al* 2012; Jain and Argal, 2013; Deb *et al* 2013). According to WHO, about 80% of the world population still rely mainly on herbal remedies (Muthu *et al* 2006).

Terminalia catappa is a flowering plant of the Combretaceae family. It is also known as badam widely grown in tropical regions of the world as an ornamental tree. The leaves, bark and fruits of