



401/D

The mature leaf concentrate of Sri Lankan wild type *Carica papaya* L attenuates carrageenan induced acute inflammation via inhibiting prostaglandin E2

C D Jayasinghe, W D Ratnasooriya and Preethi V Udagama *

*Department of Zoology & Environment Sciences, Faculty of Science, University of Colombo,
Colombo 03*

Chronic inflammation plays a critical role in the development of major non communicable diseases such as cancer, diabetes, cardiovascular diseases and neurodegenerative diseases. These diseases are either treated with steroidal or non-steroidal anti-inflammatory drugs, the long term usage of which is limited due to adverse side effects. Alternatively, medicinal plants offer a safe, effective and readily available source of anti-inflammatory remedies. Previously, the anti-inflammatory potential of mature leaf concentrate of *Carica papaya* (red lady cultivar) was validated using carrageenan induced paw edema, membrane stability and acetic acid induced vascular permeability in murine models. The present study aimed at investigating the effect of the mature leaf concentrate of *Carica papaya* of the Sri Lankan wild type cultivar (MLCC) on carrageenan induced peritonitis and synthesis of prostaglandin E2 in mice. ICR mice (N=6/group) were orally treated with the MLCC at three doses; 0.18, 0.36 and 0.72 mL^{-100g} body weight (BW), distilled water as the control and Indomethacin (40 mg kg⁻¹) as the positive drug. One hour post drug administration, 1 ml of 0.3% w/v carrageenan in sterile saline was intraperitoneally injected. Four hours later peritoneal exudate was collected and evaluated for total and differential leukocyte counts and prostaglandin E2 (using Sandwich ELISA). A significant influx of total leukocytes including large proportion of neutrophils was observed in mice after 4 hrs post injection of carrageenan ($p<0.05$). Oral gavage of 0.36 and 0.72 ml^{-100g} BW and positive drug Indomethacin profoundly reduced the total leukocyte and neutrophil influx to the peritoneal cavity ($p<0.05$). In parallel, prostaglandin E2 levels of cell free peritoneal aspiration was significantly increased by carrageenan injection compared with the normal mice ($p<0.05$) and this level was significantly reduced by the oral administration of 0.36 and 0.72 ml^{-100g} BW of the MLCC ($p<0.05$). A significant correlation was observed between the inhibition of leukocyte migration and inhibition of synthesis of PGE2. *In toto*, the present study established that the MLCC attenuates carrageenan induced acute peritonitis of mice via inhibiting prostaglandin E2. Further, studies are warranted to investigate the selective inhibition of COX 1 or 2 pathways by the MLCC.

Acknowledgment: Financial assistance by the Collaborative Research Grant (AP/3/2012/CG/29) of the University of Colombo.