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## ***In vitro* PRO-INFLAMMATORY ENZYME INHIBITORY ACTIVITIES OF *Artocarpus heterophyllus***

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### **ABSTRACT**

Pro-inflammatory enzymes including arachidonate 5-lipoxygenase (A5-LOX), xanthine oxidase (XO) and hyaluronidase (HYL) produce inflammatory mediators and free radicals, which can provoke several inflammatory diseases including bronchial asthma, allergic rhinitis, cardiovascular diseases, rheumatoid arthritis and cancer. The inhibitors of these enzymes have therefore gained a high therapeutic potential in the treatment of inflammatory mediated diseases. Medicinal plants still remain as potent sources of new enzyme inhibitors. *Artocarpus heterophyllus* (Moraceae) has been used in traditional folk medicine against many diseases including inflammation and malarial fever. Hence the present study was aimed to evaluate A5-LOX, XO and HYL inhibitory activities of ethanol extract of *A. heterophyllus* barks and leaves. Ethanol extracts of air-dried powdered bark, leaves and fruits of *A. heterophyllus* were evaluated for A5-LOX, XO and HYL inhibitory activities following standard protocols. Ethanol extract of *A. heterophyllus* bark showed good A5-LOX inhibitory activity with IC<sub>50</sub> value of 97.15±6.17µg/mL with compare to leaf extract (118.19±1.66 µg/mL). However the activity was less than the positive control baicalein (IC<sub>50</sub> 1.76 ± 0.15 µg/mL). *Artocarpus heterophyllus* bark (11.38±0.96%) and leaves extracts (6.80±0.81%) exhibited low XO inhibitory activity 500 µg/mL compared to the positive control allopurinol (99.87±1.44% at 500 µg/mL). Bark extracts exhibited good HYL inhibitory activity having 52.68% inhibition at 500 µg/mL compared to tanic acid (90.25% at 500 µg/mL). Thus the present study provides impetus to search for novel anti-inflammatory compounds from *A. heterophyllus* which deserves further investigations and supports the traditional claims of *A. heterophyllus*.

**Keywords:** Arachidonate 5-lipoxygenase, Xanthine oxidase, hyaluronidase, anti-inflammatory, *Artocarpus heterophyllus*