Evaluation of *In Vitro* Antibacterial Activity and Anti-inflammatory Activity of *Artocarpus nobilis* Thw. (Bedi del/Wal del)

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Rising antimicrobial resistance and the serious side effects of anti-inflammatory agents have led to increased concern about natural alternative remedies. Medicinal plants stand out as potent, yet safer, options for these challenges. *Artocarpus nobilis* Thw. is an endemic tree used to treat infections and inflammation in Sri Lankan folk and Ayurvedic medicine. This laboratory-based experimental study was conducted to evaluate the *in vitro* antibacterial and anti-inflammatory activities of A. *nobilis* Thw. leaves and bark in aqueous, methanol, dichloromethane, and hexane extracts obtained by the decoction method. Antibacterial activity was determined against *Escherichia coli* (ATCC 25922) and *Staphylococcus aureus* (ATCC 25923) using the agar well diffusion method and zones of inhibition were measured. The highest antibacterial activity *against E. coli* was exhibited by aqueous bark extract (zone diameter 13.66±0.33 mm, half maximal effective concentration (EC50) 4.286 mg/ml) and for *S. aureus* it was exhibited by methanol bark extract (zone diameter 25.66±0.33 mm, EC50 4.427 mg/ml). *In vitro* anti-inflammatory activity was determined using the heat-induced protein denaturation method. The concentration series of the extracts and the reference drug, diclofenac sodium were used to determine percentage inhibition of protein denaturation. The results revealed that the highest anti-inflammatory activity was shown by methanolic bark extract (half maximal inhibitory concentration (IC50) 249.8 µg/mL) when compared to the reference drug (IC50 243.4 µg/mL). These novel findings indicated the potential of developing a drug for bacterial infections and inflammation based on the leaves and bark of *A. nobilis* Thw. Therefore, further investigations are needed to confirm these results.

Keywords: *Artocarpus nobilis Thw., antibacterial activity, anti-inflammation*