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Evaluation of Anti-Inflammatory and Antibacterial Activity of *Horsfieldia iryaghedhi* (RUK) of Sri Lanka

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The development of anti-inflammatory and antibacterial drugs is mainly dependent on the discovery of novel compounds from natural sources. This study aims to assess the in vitro anti-inflammatory and antibacterial activity of methanol and aqueous extracts of leaf, bark and combination (leaf and bark) extracts of the plant *Horsfieldia iryaghedhi* (RUK). RUK is a plant with variety of therapeutic uses and is mainly used to treat stomach ulcers and indigestion. Both extracts were tested for in vitro anti-inflammatory activity by the heat-induced egg albumin denaturation method using Diclofenac Sodium as the positive control. The methanol bark, leaf and combination extracts of *Horsfieldia iryaghedhi* exhibited the highest percentage inhibition in its highest concentration (1000µg/ml) as 97.0±5.67%, 79.1±1.64% and 81.4±3.30% respectively while the percentage inhibition of Diclofenac Sodium was 85.0±3.37%. The aqueous bark, leaf and combination extracts of RUK also exhibited the highest percentage inhibition in its highest concentration (1000µg/ml) as 67.6±5.53%, 80.4±2.55% and 77.0±2.49% respectively. All extracts were tested for antibacterial activity against gram-negative bacteria *Escherichia coli* (ATCC®25922) and gram-positive bacteria *Staphylococcus aureus* (ATCC®25923) by agar well diffusion method using Gentamicin as the positive control. None of the extracts were found to possess antibacterial activity against *E.coli*, but methanol leaf and combination extracts at the highest concentration (100µg/ml) were observed antibacterial activity against *S.aureus* with the zone of inhibition 19.6mm and 13.25mm respectively. This study concludes that the *H.iryaghedhi* extracts have significant anti-inflammatory activity. Furthermore, methanol bark extract demonstrated potent anti-inflammatory activity compared to other extracts.

***Keywords**: anti-inflammatory, antibacterial, protein denaturation assay*