

Determination of collagen content and antioxidant activity in sesbania grandiflora (L.) extracts

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Abstrak

ABSTRACT

This study investigated the phytochemical screening and biological activity of *Sesbania grandiflora* (L.), locally named as "Khae ban", bark extractions, which were soft and hard barks. The phytochemical screening was carried out on the extraction of each particular bark with 95% Hexane, 95% Ethyl acetate, and 95% Ethanol for Alkaloids, Steroids, Tannins, Flavonoids, and Terpenoids. The anti-inflammatory activity was also evaluated for scavenging of nitric oxide free radicals (NO), and the collagen extent was determined by Hydroxyproline assay. The results from phytochemical screening indicated that the 95% of ethanol extraction of hard bark provided a more positive result than those of others. The hard bark's extraction showed IC₅₀ value ranging from 45.83 ± 14.95 to 254.86 ± 7.58 microgram per milliliter, which was a significantly statistical difference ($P < 0.05$) from scavenging of nitric oxide free radicals (NO), and higher activity than that of soft bark. However, the highest activity of soft bark's extraction was found in 95% of Ethyl acetate with IC₅₀ value of 470.24 ± 3.63 microgram per milliliter. In hard bark's extractions, the 95% ethanol extraction not only showed the highest activity (IC₅₀ value of 45.85 ± 47.78 microgram per milliliter), but at the low concentration of extraction had collagen content of 49.89 microgram per milliliter, which was higher than that in other solvents. This research indicated the Khae ban's hard bark extraction in 95% of ethanol and potentially able to be developed as a cosmeceutical product or mouth sore product treating mouth ulcer.