

ABSTRAK

Bajakah kalalawit (*Uncaria gambir* (W. Hunter) Roxb.) diketahui memiliki kandungan senyawa fenolik seperti flavonoid dan tanin. Senyawa fenolik secara umum berperan sebagai antioksidan dan mampu menyerap radiasi ultraviolet (UV), sehingga berpotensi dimanfaatkan dalam formulasi tabir surya berbasis bahan alam. Penelitian ini bertujuan mengetahui pengaruh rasio simplisia : pelarut dan waktu maserasi terhadap kadar fenolik total dan nilai *Sun Protection Factor* (SPF) ekstrak batang bajakah kalalawit. Ekstraksi dilakukan dengan metode maserasi menggunakan etanol 70% dengan variasi rasio serbuk simplisia : pelarut meliputi 1:10, 1:20, dan 1:30 (b/v) serta waktu maserasi 24, 48, dan 72 jam. Identifikasi senyawa fenolik dilakukan menggunakan Kromatografi Lapis Tipis (KLT) melalui pengamatan bercak di bawah sinar UV 254 nm, UV 365 nm, dan sinar tampak setelah penyemprotan pereaksi FeCl_3 . Kadar fenolik total dianalisis menggunakan metode *Folin-Ciocalteu* dengan asam galat sebagai standar, sedangkan nilai SPF ditentukan melalui spektrofotometri UV-Vis pada panjang gelombang 290–320 nm dan dihitung menggunakan rumus Mansur. Hasil penelitian menunjukkan kadar fenolik total tertinggi diperoleh pada perlakuan rasio serbuk simplisia : pelarut 1:30 (b/v) dengan waktu maserasi 72 jam sebesar $17,83 \pm 0,79$ mg GAE/g, sedangkan nilai SPF tertinggi diperoleh pada perlakuan rasio 1:30 (b/v) dengan waktu maserasi 72 jam pada konsentrasi 150 ppm sebesar $4,67 \pm 0,05$. Analisis statistik menunjukkan rasio serbuk simplisia : pelarut dan waktu maserasi berpengaruh signifikan terhadap kadar fenolik total, sedangkan terhadap nilai SPF hanya waktu maserasi yang memberikan pengaruh signifikan ($p < 0,05$).

Kata kunci: bajakah kalalawit (*Uncaria gambir* (W. Hunter) Roxb.), fenolik total, *Sun Protection Factor* (SPF), ekstrak etanol

ABSTRACT

Bajakah kalalawit (*Uncaria gambir* (W. Hunter) Roxb.) is known to contain phenolic compounds, including flavonoids and tannins. Phenolic compounds generally exhibit antioxidant activity and are capable of absorbing ultraviolet (UV) radiation, making them potential natural ingredients for sunscreen formulations. This study aimed to evaluate the effect of the simplicial to solvent ratio and maceration time on the total phenolic content and Sun Protection Factor (SPF) value of bajakah kalalawit stem extract. Extraction was carried out using the maceration method with 70% ethanol at simplicial to solvent ratios of 1:10, 1:20, and 1:30 (w/v), and maceration times of 24, 48, and 72 hours. Phenolic compounds were identified using Thin-Layer Chromatography (TLC) by observing the chromatographic spots under UV light at 254 nm, UV light at 365 nm, and visible light after spraying with FeCl_3 reagent. Total phenolic content was determined using the Folin–Ciocalteu method with gallic acid as the reference standard, while the SPF value was measured by UV–Visible spectrophotometry at wavelengths of 290–320 nm and calculated using the Mansur equation. The results showed that the highest total phenolic content was obtained at a simplicial to solvent ratio of 1:30 (w/v) with a maceration time of 72 hours, reaching 17.83 ± 0.79 mg GAE/g, whereas the highest SPF value was obtained under the same extraction conditions at a concentration of 150 ppm, with a value of 4.67 ± 0.05 . Statistical analysis indicated that both the simplicial to solvent ratio and maceration time had a significant effect on the total phenolic content, whereas only maceration time had a significant effect on the SPF value ($p < 0.05$).

Keywords: Bajakah Kalalawit (*Uncaria gambir* (W. Hunter) Roxb.), total phenolic content, Sun Protection Factor (SPF), ethanol extract