ABSTRAK

KARAKTERISASI SENYAWA, UJI AKTIVITAS ANTIOKSIDAN, DAN ANTIKOLESTEROL EKSTRAK ETANOL DAN ETIL ASETAT DAUN RAMBUSA (*Passiflora foetida* L.) SECARA IN VITRO

Oleh

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Latar Belakang: Hiperkolesterolemia merupakan faktor risiko utama penyakit kardiovaskular. Penanganan hiperkolesterolemia perlu dilakukan. Namun, obat hiperkolesterolemia seperti simvastatin dapat menimbulkan efek samping, sehingga diperlukan alternatif pengobatan, salah satunya daun rambusa (*Passiflora foetida* L.).
Tujuan: Mengetahui karakteristik senyawa metabolit sekunder, aktivitas antioksidan, dan aktivitas antikolesterol dari ekstrak etanol 96% dan ekstrak etil asetat daun rambusa (*Passiflora foetida* L.) secara *in vitro*.
Metode: Daun rambusa (*Passiflora foetida* L.) diekstraksi dengan metode *Ultrasound-Assisted Extraction* menggunakan pelarut etanol 96% dan etil asetat. Kemudian, dilakukan penapisan fitokimia, analisis GC-MS, uji fenolik total *Folin-Ciocalteu*, uji flavonoid total kolorimetri aluminium klorida, uji aktivitas antioksidan DPPH, dan uji antikolesterol *Zak*.
Hasil: Ekstrak etanol 96% dan etil asetat daun rambusa (*Passiflora foetida* L.) mengandung alkaloid, saponin, tanin, fenolik, flavonoid, dan terpenoid. Berdasarkan analisis GC-MS, senyawa yang paling dominan pada ekstrak etanol 96% antara lain patchouli alcohol, seychellene, azulene, alpha-guaiene, dan alpha-patchoulene, sedangkan ekstrak etil asetat antara lain patchouli alcohol, phytol, seychellene, octadecanal, dan cis-11-Hexadecenal. Ekstrak etil asetat memiliki kandungan fenolik dan flavonoid lebih tinggi. Namun, aktivitas antioksidan dan antikolesterol lebih baik ditunjukkan oleh ekstrak etanol (IC_{50} = 257,53 ppm; EC_{50} = 288,18 ppm) dibandingkan ekstrak etil asetat (IC_{50} = 1306,68 ppm; EC_{50} = 553,23 ppm).
Simpulan: Terdapat perbedaan aktivitas antikolesterol pada ekstrak etanol 96% dan ekstrak etil asetat daun rambusa (*Passiflora foetida* L.).

Kata Kunci: antikolesterol, antioksidan, ekstrak, karakterisasi senyawa, *Passiflora foetida*.

ABSTRACT

KARAKTERISASI SENYAWA, UJI AKTIVITAS ANTIOKSIDAN, DAN ANTIKOLESTEROL EKSTRAK ETANOL DAN ETIL ASETAT DAUN RAMBUSA (*Passiflora foetida* L.) SECARA IN VITRO

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Background: Hypercholesterolemia is a major risk factor for cardiovascular diseases. Management of hypercholesterolemia is essential; however, cholesterol-lowering drugs such as simvastatin may cause side effects. Therefore, alternative treatments derived from natural sources are needed, one of which is rambusa leaves (*Passiflora foetida* L.).
Objective: To determine the characteristics of secondary metabolites and to evaluate the anticholesterol and antioxidant activities of 96% ethanol and ethyl acetate extracts of rambusa leaves (*Passiflora foetida* L.) in vitro.
Methods: Rambusa leaves were extracted using the Ultrasound-Assisted Extraction method with 96% ethanol and ethyl acetate as solvents. Subsequently, phytochemical screening, GC-MS analysis, Folin-Ciocalteu total phenolic content assay, aluminum chloride colorimetric total flavonoid content assay, DPPH antioxidant activity assay, and Zak anti-cholesterol activity assay were conducted.
Results: Both extracts contained alkaloids, saponins, tannins, phenolics, flavonoids, and terpenoids. GC-MS analysis revealed that the predominant compounds in the ethanol extract were patchouli alcohol, seychellene, azulene, alpha-guaiene, and alpha-patchoulene. In the ethyl acetate extract, dominant compounds included patchouli alcohol, phytol, seychellene, octadecanal, and cis-11-hexadecenal. The ethyl acetate extract exhibited higher total phenolic and flavonoid content. However, the ethanol extract demonstrated superior antioxidant and anti-cholesterol activities (IC_{50} = 257.53 ppm; EC_{50} = 288.18 ppm) compared to the ethyl acetate extract (IC_{50} = 1306.68 ppm; EC_{50} = 553.23 ppm).
Conclusion: There is a difference in anticholesterol activity between the 96% ethanol and ethyl acetate extracts of rambusa leaves (*Passiflora foetida* L.).

Keywords: anticholesterol, antioxidant, extract, compounds characterization, *Passiflora foetida*.