Uji aktivitas penghambatan enzim arginase dan penetapan kadar flavonoid total pada ekstrak kulit batang caesalpinia ferrea c. mart = Arginase inhibitory activity and determination of total flavonoid content from caesalpinia ferrea c. mart stem bark extracts

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Abstrak

Flavonoid, senyawa polifenol yang banyak terdapat di alam yang diketahui memiliki aktivitas farmakologi sebagai antifungi, diuretik, antihistamin, antihipertensi, insektisida, bakterisida, antivirus, antioksidan, dan menghambat kerja enzim. Kulit batang Caesalpinia ferrea C. Mart dilaporkan memiliki kandungan flavonoid.

Penelitian bertujuan untuk menganalisis aktivitas penghambatan enzim arginase dan penetapan kadar flavonoid total pada ekstrak kulit batang Caesalpinia ferrea C. Mart dengan metode kalorimetri AlCl3. Simplisia kulit batang Caesalpinia ferrea C. Mart diekstraksi bertingkat dengan metode refluks menggunakan tiga pelarut yang berbeda kepolaran yaitu n-heksana, etil asetat, dan metanol. Tiap ekstrak diuji aktivitas penghambatannya terhadap enzim arginase dan dilakukan penetapan kadar flavonoid pada ekstrak yang memiliki nilai inhibisi tertinggi.

Ekstrak metanol menunjukkan penghambatan terhadap aktivitas enzim arginase 12,81 pada kadar 100 g/mL dan kandungan flavonoid 2 mgQE/g ekstrak. Hasil penapisan fitokimia pada ekstrak etil asetat kulit batang Caesalpinia ferrea mengandung flavonoid, tanin, saponin, steroid, dan terpenoid. Sedangkan ekstrak metanol kulit batang Caesalpinia ferrea mengandung flavonoid, tanin, saponin, dan steroid.
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Flavonoids, polyphenolic compounds that are ubiquitous in nature, has known pharmacology active as antifungal, diuretic, antihistamin, antihypertension, insecticide, bactericide, antiviral, antioxidant, and enzim inhibitor. Previous research showed that Caesalpinia ferrea C. Mart stem bark contain flavonoid compound.

The research aimed to analyze arginase inhibitory activity and determination of total flavonoid content from Caesalpinia ferrea C. Mart stem bark by AlCl3 colorimetric method. Dried Caesalpinia ferrea C. Mart stem barks were successively extracted by reflux method using three solvent with gradient polarity n hexane, ethyl acetate, and methanol. Each extract was tested for determining arginase inhibitory activity and total flavonoid content was conducted on extract with highest arginase inhibition.

Methanolic extract showed arginase inhibitory activity of 12.81 at 100 g mL and flanonoid content 2 mgQE g respectively. Phytochemical screening shows that Caesalpinia ferrea stem bark ethyl acetate extract contains flavonoids, tannins, saponins, steroids, and terpenoids, meanwhile Caesalpinia ferrea stem bark methanolic extract contains flavonoids, tannins, saponins, and steroids.