Uji Aktivitas Antioksidan Metode 2,2-Difenil-1-Pikrilhidrazil (DPPH) dan Antihialuronidase Ekstrak Etanol 70% Daun Belimbing Wuluh (Averrhoa bilimbi L.) = Antioxidant Activity Test 2,2-Diphenyl-1-Picrylhydrazyl (DPPH) Method and Antihyaluronidase Extract Ethanol 70% of Starfruit Leaves (Averrhoa bilimbi L.)

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Abstrak

Penuaan dini pada kulit sering terjadi akibat ketidakseimbangan radikal bebas dan agen antioksidan, menyebabkan hilangnya kelembapan kulit. Daun belimbing wuluh (Averrhoa bilimbi L.) berpotensi sebagai agen antioksidan dan antipenuaan, namun belum diteliti sebagai inhibitor enzim hialuronidase. Penelitian ini bertujuan mengukur rendemen, mengidentifikasi metabolit sekunder, menentukan kadar total fenol, mengevaluasi aktivitas antioksidan, dan aktivitas inhibisi enzim hialuronidase dari ekstrak etanol 70% daun belimbing wuluh yang diekstraksi dengan metode maserasi. Skrining fitokimia dilakukan dengan metode uji warna, kadar total fenol dengan reagen Folin-Ciocalteu, aktivitas antioksidan dengan metode DPPH, dan inhibisi enzim hialuronidase dari testis sapi dengan metode turbidimetri. Rendemen ekstraksi maserasi daun belimbing wuluh dengan etanol 70% adalah 21,353%. Ekstrak positif mengandung fenol, flavonoid, alkaloid, tanin, steroid, glikosida, dan saponin. Kadar fenol total adalah 85,929 ± 0,232 mgEAG/g ekstrak. Nilai IC50 antioksidan metode DPPH adalah 46,391 ± 0,104 g/mL, menunjukkan antioksidan sangat kuat. Nilai IC50 antihialuronidase adalah 170,008 ± 3,086 g/mL, menunjukkan inhibitor lemah. Ekstrak etanol 70% daun belimbing wuluh memiliki potensi sebagai agen antioksidan kuat, namun kurang berpotensi sebagai inhibitor enzim hialuronidase.

.....Premature aging of the skin is a common problem today, caused by an imbalance of free radicals and antioxidants in the body, leading to moisture loss in the skin. Wuluh starfruit leaf (Averrhoa bilimbi L.) shows potential as an antioxidant and anti-aging agent for the skin, though it has not been specifically studied for hyaluronidase enzyme inhibition. This study aimed to assess yield, identify secondary metabolites, determine total phenol content, evaluate antioxidant activity, and assess hyaluronidase enzyme inhibition in a 70% ethanol extract of wuluh starfruit leaves using maceration. Phytochemical screening was conducted via color test, total phenol content with Folin-Ciocalteu reagent, antioxidant activity with the DPPH method, and hyaluronidase inhibition using a turbidimetric method on bovine testes. The extraction yield of wuluh starfruit leaves with 70% ethanol was 21.353%. The extract tested positive for phenols, flavonoids, alkaloids, tannins, steroids, glycosides, and saponins. Total phenol content was 85.929 ± 0.232 mgGAE/g extract. The IC50 value from the DPPH antioxidant test was 46.391 ± 0.104 g/mL, indicating very strong antioxidant activity. The IC50 value from the antihyaluronidase test was 170.008 ± 3.086 g/mL, indicating weak inhibition. Thus, the 70% ethanol extract of wuluh starfruit leaves is a strong antioxidant but a weak hyaluronidase inhibitor.