Uji Aktivitas Antihialuronidase dan Antioksidan dengan Metode DPPH dari Ekstrak Etanol 70% Bunga Telang (Clitoria ternatea L.) dari Kota Semarang = Antihyaluronidase and Antioxidant Activities with DPPH Method of 70% Ethanol Extract Butterfly Pea Flower (Clitoria ternatea L.) from Semarang City

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Abstrak

Tumbuhan telang (Clitoria ternatea L.) dikenal kaya akan senyawa fenolik dan flavonoid yang bermanfaat bagi kesehatan dan anti-penuaan, termasuk aktivitas antioksidan, antitirosinase, antielastase, dan antikolagenase. Aktivitas antihialuronidase yang kuat telah dilaporkan pada ekstrak daun telang, tetapi belum dilaporkan pada ekstrak bunga telang. Meski telah terbukti memiliki aktivitas antioksidan, belum ada penelitian terhadap bunga telang dari Kecamatan Ngaliyan, Semarang. Penelitian ini bertujuan untuk menguji aktivitas antihialuronidase dan antioksidan dari ekstrak etanol 70% bunga telang, dengan fokus aplikasinya dalam kosmetik anti-penuaan. Aktivitas antihialuronidase diukur untuk menilai potensi ekstrak mencegah degradasi asam hialuronat dalam menjaga kelembapan dan elastisitas kulit. Aktivitas antioksidan dievaluasi dengan metode DPPH untuk menilai kemampuan ekstrak menangkal radikal bebas penyebab kerusakan oksidatif pada sel kulit. Hasil menunjukkan rendemen ekstrak 46,95% dan kadar air 6,88 ± 0,14%. Skrining fitokimia menunjukkan bahwa ekstrak mengandung alkaloid, tanin, flavonoid, fenolik, glikosida, saponin, dan terpenoid. Uji aktivitas antihialuronidase menunjukkan penghambatan kuat dengan IC50 95,6015 ± 0,4377 g/mL dibandingkan standar asam oleanolat 41,3646 ± 0,5183 g/mL yang menunjukkan penghambatan sangat kuat. Uji aktivitas antioksidan dengan DPPH menunjukkan penghambatan sangat kuat dengan IC50 49,8647 ± 0,9502 g/mL dibandingkan standar asam askorbat 3,3063 ± 0,414 g/mL yang menujukkan aktivitas sangat kuat. Berdasarkan hasil penelitian, dapat disimpulkan bahwa ekstrak etanol 70% bunga telang (Clitoria ternatea L.) dari Kecamatan Ngaliyan memiliki potensi besar sebagai bahan aktif dalam produk kosmetik anti-penuaan melalui aktivitas penghambatan hialuronidase dan antioksidan yang kuat.

.....Butterfly pea flower (Clitoria ternatea L.) is known for its richness in phenolic and flavonoid compounds that are beneficial for health and anti-aging, including antioxidant, anti-tyrosinase, anti-elastase, and anti-collagenase activities. Strong anti-hyaluronidase activity has been reported in the leaf extract of butterfly pea, but it has not been reported in the flower extract. Although it has been proven to have antioxidant activity, no research has been conducted on the flower of butterfly pea from Ngaliyan District, Semarang. This study aimed to examine the anti-hyaluronidase and antioxidant activities of 70% ethanol extract of butterfly pea flowers, with a focus on its application in anti-aging cosmetics. The anti-hyaluronidase activity was measured to assess the extract's potential to prevent the degradation of hyaluronic acid, thereby maintaining skin moisture and elasticity. The antioxidant activity was evaluated using the DPPH method to assess the extract's ability to scavenge free radicals that cause oxidative damage to skin cells. The results showed an extract yield of 46.95% and a moisture content of 6.88 ± 0.14%. Phytochemical screening revealed that the extract contained alkaloids, tannins, flavonoids, phenolics, glycosides, saponins, and terpenoids. The anti-hyaluronidase activity test showed strong inhibition with an IC50 of 95.6015 ± 0.4377

g/mL compared to the standard oleanolic acid with an IC50 of 41.3646 ± 0.5183 g/mL, which indicated very strong inhibition. The antioxidant activity test using DPPH showed very strong inhibition with an IC50 of 49.8647 ± 0.9502 g/mL compared to the standard ascorbic acid with an IC50 of 3.3063 ± 0.414 g/mL, which indicated very strong activity. Based on the results, it can be concluded that the 70% ethanol extract of butterfly pea flower (Clitoria ternatea L.) flowers from Ngaliyan District has great potential as an active ingredient in anti-aging cosmetic products due to its strong anti-hyaluronidase and antioxidant activities.