

ANALISIS AKTIVITAS ANTIOKSIDAN KRIM *ANTI-AGING* MENGANDUNG VITAMIN C YANG BEREDAR DI *E-COMMERCE* DENGAN METODE DPPH

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INTISARI

Latar Belakang: Penuaan kulit dipengaruhi faktor internal dan eksternal seperti UV, polusi, dan gaya hidup. Radikal bebas mempercepat penuaan, sehingga antioksidan seperti vitamin C sering digunakan dalam produk *anti-aging* untuk menetralkannya. Produk *anti-aging* banyak beredar di *e-commerce* yang tidak memiliki izin edar BPOM, sehingga menimbulkan kekhawatiran terkait efektivitas dan keamanan penggunaannya. Metode DPPH dipilih karena memiliki prosedur yang sederhana, cepat, sensitif, serta dapat diaplikasikan pada berbagai jenis sampel kosmetik tanpa meningkatkan risiko degradasi vitamin C.

Tujuan Penelitian: Menganalisis aktivitas antioksidan pada krim *anti-aging* mengandung vitamin C yang tersedia di *e-commerce* menggunakan metode DPPH untuk mengukur nilai IC₅₀, serta mengklasifikasikan tingkat aktivitas antioksidan tersebut.

Metode Penelitian: Analisis aktivitas antioksidan krim *anti-aging* mengandung vitamin C dilakukan dengan metode DPPH menggunakan spektrofotometri UV-Vis pada panjang gelombang maksimum dengan *operating time* 33 menit dan hasil dinyatakan sebagai nilai IC₅₀.

Hasil Penelitian: Berdasarkan perhitungan nilai IC₅₀ seluruh data yang diperoleh merupakan data ekstrapolasi, dengan nilai IC₅₀ Vitamin C 35,7073 ± 13,2944, sedangkan pada kelima sampel krim *anti-aging* secara berurutan yaitu: Sampel A 5424,138 ± 2473,566, Sampel B 3097,428 ± 306,3048, Sampel C 10144,99 ± 4949,559, Sampel D 9129,161 ± 6284,994, Sampel E 7730,467 ± 1186,126 ppm.

Kesimpulan: Pada seluruh sampel krim *anti-aging* mengandung Vitamin C didapatkan nilai IC₅₀ > 200 ppm, sehingga dapat diklasifikasikan aktivitas antioksidannya sangat lemah.

Kata Kunci: Aktivitas Antioksidan. DPPH, *E-Commerce*, Krim anti penuaan, Vitamin C.

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ANTIOXIDANT ACTIVITY ANALYSIS OF ANTI-AGING CREAM CONTAINING VITAMIN C CIRCULATING IN E-COMMERCE BY DPPH METHOD

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ABSTRACT

Background: Skin aging is influenced by internal and external factors such as UV rays, pollution, and lifestyle. Free radicals accelerate aging, so antioxidants such as Vitamin C are often used in anti-aging products to neutralize them. Many anti-aging products available on e-commerce platforms lack BPOM approval, raising concerns about their effectiveness and safety. The DPPH method was chosen because it has a simple, fast, and sensitive procedure that can be applied to various types of cosmetic samples without increasing the risk of Vitamin C degradation.

Objective: To analyze the antioxidant activity of anti-aging creams containing Vitamin C available in e-commerce using the DPPH method to measure the IC₅₀ value, and classify the level of antioxidant activity.

Method: The antioxidant activity of anti-aging cream containing Vitamin C was analyzed using the DPPH method with UV-Vis spectrophotometry at maximum wavelength with an operating time of 33 minutes, and the results were expressed as IC₅₀ values.

Result: Based on the IC₅₀ value calculations, all the data obtained are extrapolated data, with an IC₅₀ value of Vitamin C $35,7073 \pm 13.2944$, while the five anti-aging cream samples in order being: Sample A $5424,138 \pm 2473,566$, Sample B $3097,428 \pm 306,3048$, Sample C $10144,99 \pm 4949,559$, Sample D $9129,161 \pm 6284,994$, Sample E $7730,467 \pm 1186,126$ ppm.

Conclusion: All anti-aging cream samples containing Vitamin C, exhibited the IC₅₀ value > 200 ppm was obtained, categorizing the sample as demonstrating very weak antioxidant activity.

Keywords: Anti-aging cream, Antioxidant Activity, DPPH Method, E-Commerce, Vitamin C.

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