

# ANALISIS KADAR HIDROKUINON PADA KRIM PEMUTIH WAJAH YANG BEREDAR DI *E-COMMERCE* DENGAN METODE SPEKTROFOTOMETRI UV-VIS

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## INTISARI

**Latar Belakang:** Permintaan krim pemutih wajah semakin meningkat seiring tren kulit cerah, namun banyak produk yang dijual bebas tanpa izin BPOM dan berisiko mengandung bahan berbahaya seperti hidrokuinon. Hidrokuinon efektif memutihkan kulit, tetapi berbahaya dalam kadar tinggi. Penelitian ini bertujuan menganalisis kandungan hidrokuinon pada krim pemutih tanpa label BPOM yang dijual di *e-commerce*, menggunakan metode Spektrofotometri UV-Vis untuk menilai keamanannya.

**Tujuan penelitian:** Mengetahui kadar hidrokuinon dalam krim pemutih wajah secara kualitatif dengan reagen  $\text{FeCl}_3$  dan spektrofotometri UV-Vis, serta secara kuantitatif dengan pengukuran menggunakan spektrofotometri UV-Vis.

**Metode Penelitian:** Penelitian menggunakan kualitatif dan kuantitatif. Uji kualitatif dengan  $\text{FeCl}_3$  dan scanning UV-Vis dengan rentang  $\lambda$  maks 250-350 untuk mendeteksi keberadaan hidrokuinon. Uji kuantitatif dilakukan pada  $\lambda$  maks dengan Spektrofotometri UV-Vis berdasarkan kurva baku.

**Hasil Penelitian:** Berdasarkan hasil analisis dari tujuh sampel krim pemutih wajah yang diteliti, enam sampel (kode B, C, D, E, F, dan G) terbukti positif mengandung hidrokuinon dengan kadar masing-masing sampel, yaitu sampel B =  $1,221 \%b/b \pm 0,040$ ; C =  $1,579 \%b/b \pm 0,015$ ; D =  $1,400 \%b/b \pm 0,026$ ; E =  $1,741 \%b/b \pm 0,034$ ; F =  $1,322 \%b/b \pm 0,034$ ; dan G =  $0,101 \%b/b \pm 0,003$ . Seluruh kadar tersebut secara signifikan melebihi batas maksimal yang diizinkan oleh BPOM, yaitu tidak diperbolehkan dalam sediaan krim pemutih wajah.

**Kesimpulan:** Berdasarkan hasil analisis kualitatif dan kuantitatif Enam dari tujuh sampel (B, C, D, E, F, dan G) krim pemutih yang dijual di *e-commerce* TikTok mengandung hidrokuinon dan tidak memenuhi standar keamanan BPOM.

**Kata Kunci:** *E-commerce* TikTok, Krim Pemutih Wajah, Hidrokuinon, Spektrofotometri UV-Vis

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**ANALYSIS OF HYDROQUINONE LEVELS IN WHITENING  
CREAMS FACES CIRCULATING IN E-COMMERCE WITH  
SPECTROPHOTOMETRY UV-VIS METHOD**

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***ABSTRACT***

**Background:** The demand for face whitening creams is increasing in line with the trend of fair skin, but many products are sold over-the-counter without BPOM permission and are at risk of containing harmful ingredients such as hydroquinone. Hydroquinone is effective in whitening the skin, but it is harmful in high levels. This study aims to analyze the hydroquinone content in bleaching creams without BPOM labels sold in e-commerce, using the UV-Vis Spectrophotometry method to assess its safety.

**Objectives:** To determine the level of hydroquinone in face whitening creams qualitatively with FeCl<sub>3</sub> reagents and UV-Vis spectrophotometry, as well as quantitatively with measurements using UV-Vis spectrophotometry. Research

**Methods:** Research uses qualitative and quantitative methods. Qualitative tests with FeCl<sub>3</sub> and UV-Vis scanning with a max  $\lambda$  range of 250-350 to detect the presence of hydroquinone. Quantitative tests were performed at  $\lambda$  max with UV-Vis spectrophotometry based on the standard curve.

**Results:** Based on the results of the analysis of seven samples of face whitening creams studied, six samples (codes B, C, D, E, F, and G) were proven to be positive for hydroquinone with the level of each sample, namely sample B = 1.221 %b/b  $\pm$  0.040; C = 1.579 %b/b  $\pm$  0.015; D = 1.400 %b/b  $\pm$  0.026; E = 1.741 %b/b  $\pm$  0.034; F = 1.322 %b/b  $\pm$  0.034; dan G = 0.101 %b/b  $\pm$  0.003. All of these levels significantly exceed the maximum limit allowed by BPOM, which is not allowed in the preparation of face whitening creams.

**Conclusion:** Based on the results of qualitative and quantitative analysis, six out of seven samples (B, C, D, E, F, and G) of whitening creams sold on TikTok e-commerce contained hydroquinone and did not meet BPOM safety standards.

**Keywords:** TikTok *E-commerce*, Face Whitening Cream, Hydroquinone, UV-Vis Spectrophotometry

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