ANALISIS KANDUNGAN HIDROKUINON PADA KRIM PEMUTIH WAJAH YANG BEREDAR DI *E-COMMERCE* X DENGAN METODE KLT-DENSITOMETRI

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INTISARI

Latar Belakang: Kosmetik merupakan produk perawatan dan kecantikan yang terus berkembang pesat seiring dengan pertumbuhan industri kosmetik di Indonesia. Namun, maraknya peredaran krim pemutih wajah ilegal di *E-commerce* X yang tidak memiliki izin BPOM dan diduga mengandung hidrokuinon. Zat ini dapat menyebabkan iritasi, kemerahan, hingga kulit terbakar. Oleh karena itu, perlu dilakukan analisis terhadap kandungan hidrokuinon tersebut.
Tujuan Penelitian: Mengetahui keberadaan dan kadar hidrokuinon pada sediaan krim pemutih yang beredar di *E-Commerce* X menggunakan metode KLT-Densitometri
Metode Penelitian: Penelitian ini menggunakan sampel krim pemutih wajah tanpa label BPOM dan berlabel BPOM namun tidak ada di halaman *web*, dari berbagai toko di *E-commerce* X. Sampel dianalisis secara kualitatif menggunakan pereaksi $FeCl_3$ dan Kromatografi Lapis Tipis (KLT) dengan fase gerak asam asetat glasial:toluena (4:1). Sampel dan standar ditotolkan pada lempeng KLT, kemudian diamati di bawah sinar UV untuk mendeteksi bercak hidrokuinon. Analisis dilanjutkan secara kuantitatif menggunakan densitometri untuk mengukur kadar hidrokuinon pada sampel**.**
Hasil Penelitian: Hasil analisis kualitatif hidrokuinon menggunakan pereaksi $FeCl_3$ dan KLT menunjukkan bahwa 6 sampel krim pemutih wajah mengandung bahan berbahaya hidrokuinon. Hasil kuantitatif hidrokuinon menggunakan densitometri didapatkan kadar sampel 2,3,4,5,6, dan 7 berturut-turut, yaitu sebesar 2,046 ± 0,33120%b/b; 3,006 ± 0,4288%b/b; 2,846 ± 0,14359%b/b; 3,286 ± 0,10354%b/b; 2,246 ± 0,25519%b/b; dan 0,196 ± 0,02000%b/b. Kadar terendah pada sampel 7 sedangkan kadar tertinggi pada sampel 5.
Kesimpulan: Sampel krim pemutih wajah dengan kode 2, 3, 4, 5, 6, dan 7 yang dijualbelikan di media *E-commerce* X positif mengandung hidrokuinon dengan kadar hidrokuinon.
Kata Kunci: *E-commerce* X, Krim Pemutih Wajah, Hidrokuinon, KLT-Densitometri

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ANALYSIS OF HYDROQUINONE CONTENT IN FACIAL WHITENING CREAMS CIRCULATING ON E-COMMERCE X USING THE TLC-DENSITOMETRIC METHOD

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ABSTRACT

Background: Cosmetics are skincare and beauty products that continue to evolve rapidly along with the growth of the cosmetics industry in Indonesia. However, there is an increase in the circulation of illegal whitening creams on E-commerce X that do not have BPOM permits and are suspected to contain hydroquinone. This substance can cause irritation, redness, and even skin burns. Therefore, an analysis of the hydroquinone content is necessary.

Objective: To determine the presence and concentration of hydroquinone in whitening cream preparations circulating in E-Commerce X using the TLC-Densitometry method.

Method: This study uses samples of facial whitening cream without BPOM labels and with BPOM labels but not listed on the website, from various stores on E-commerce X. The samples were analyzed qualitatively using $FeCl_3$ reagents and Thin Layer Chromatography (TLC) with a mobile phase of glacial acetic acid:toluene (4:1). The samples and standards were spotted on TLC plates, then observed under UV light to detect hydroquinone spots. The analysis continued quantitatively using densitometry to measure the hydroquinone content in the samples.

Result: The results of the qualitative analysis of hydroquinone using $FeCl_3$ reagent and TLC show that 6 samples of facial whitening cream contain the hazardous substance hydroquinone. The quantitative results of hydroquinone using densitometry indicated that the concentrations of samples 2, 3, 4, 5, 6, and 7 were 2.046 ± 0.33120% (w/w); 3.006 ± 0.4288% (w/w); 2.846 ± 0.14359% (w/w); 3.286 ± 0.10354% (w/w); 2.246 ± 0.25519% (w/w); and 0.196 ± 0.02000% (w/w), respectively. The lowest concentration was found in sample 7 while the highest concentration was in sample 5.

Conclusion: Sample face whitening cream with codes 2, 3, 4, 5, 6, and 7 sold on E-commerce platform X positively contains hydroquinone with the level of hydroquinone.

Keyword: *E-commerce* X, Facial Whitening Cream, TLC-Densitometry, Hydroquinone.

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