

ANALISIS ASAM RETINOAT DAN HIDROKUINON PADA KRIM PEMUTIH WAJAH YANG DIJUAL MELALUI *ONLINE SHOP* K DENGAN METODE KLT DAN SPEKTROFOTOMETRI UV-VIS

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INTISARI

Latar Belakang: Pada zaman modern ini masyarakat dapat membeli produk krim pemutih wajah melalui *online shop*, masyarakat cukup menggunakan ponsel pintarnya untuk melakukan transaksi tanpa perlu keluar rumah. Namun, tidak sedikit produsen curang menambahkan bahan-bahan berbahaya ke dalam produk mereka. Berdasarkan hal tersebut perlu dilakukan analisis produk krim pemutih wajah yang berpotensi mengandung bahan berbahaya seperti asam retinoat dan hidrokuinon.

Tujuan Penelitian: Mengetahui apakah terdapat kandungan asam retinoat dan hidrokuinon pada krim pemutih wajah yang dijual melalui *online shop* K serta berapa kadarnya.

Metode Penelitian: Analisis kandungan asam retinoat dan hidrokuinon pada 5 sampel krim pemutih wajah dengan kode sampel A, B, C, D dan E dilakukan secara kualitatif dan kuantitatif. Analisis kualitatif asam retinoat dan hidrokuinon dilakukan menggunakan metode KLT dan *scanning* panjang gelombang dengan spektrofotometri UV-Vis serta terdapat uji tabung pada analisis hidrokuinon. Analisis kuantitatif asam retinoat dan hidrokuinon dilakukan menggunakan spektrofotometri UV-Vis.

Hasil Penelitian: Hasil analisis kualitatif asam retinoat menunjukkan sampel B dan E positif mengandung asam retinoat. Hasil analisis kuantitatif asam retinoat terhadap sampel B dan E didapatkan kadar sebesar $0,001346\% \pm 6,66667 \times 10^{-07}$ dan $0,001399\% \pm 1,1547 \times 10^{-06}$. Hasil analisis kualitatif hidrokuinon menunjukkan sampel A dan E positif mengandung hidrokuinon. Hasil analisis kuantitatif hidrokuinon terhadap sampel positif yaitu A dan E didapatkan kadar sebesar $2,36\% \pm 0,01201$ dan $2,57\% \pm 0,00577$.

Kesimpulan: Berdasarkan hasil analisis kualitatif dan kuantitatif sampel A, B dan E tidak memenuhi persyaratan dari BPOM karena positif mengandung bahan berbahaya yaitu asam retinoat dan hidrokuinon.

Kata kunci: Asam retinoat, hidrokuinon, krim pemutih wajah, kromatografi lapis tipis, *online shop*, spektrofotometri UV-Vis.

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ANALYSIS OF RETINOIC ACID AND HYDROQUINONE IN FACIAL WHITENING CREAM SOLD THROUGH ONLINE SHOP K WITH TLC AND UV-VIS SPECTROPHOTOMETRY METHODS

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ABSTRACT

Background: In this modern era, people can purchase facial whitening cream products through online shops, they simply use their smartphones to make transactions without leaving their homes. However, there are unscrupulous manufacturers who add harmful ingredients to their products. Based on this, it is necessary to analyze facial whitening cream products that potentially contain hazardous ingredients such as retinoic acid and hydroquinone.

Objective: Knowing whether there is retinoic acid and hydroquinone content in face whitening creams sold through online shop K and to know its extent.

Method: Analysis of retinoic acid and hydroquinone content in 5 face whitening cream samples with sample codes A, B, C, D and E are carried out qualitatively and quantitatively. The qualitative analysis of retinoic acid and hydroquinone was performed using the TLC method and wavelength scanning with UV-Vis spectrophotometry and there was a tube test on hydroquinone analysis. The quantitative analysis of retinoic acid and hydroquinone was performed using UV-Vis spectrophotometry.

Result: The results of qualitative analysis of retinoic acid showed that samples B and E were positive for retinoic acid. The results of quantitative analysis of retinoic acid on samples B and E, obtained levels of $0.001346\% \pm 6.66667 \times 10^{-07}$ and $0.001399\% \pm 1.1547 \times 10^{-06}$. The results of qualitative analysis of hydroquinone showed that samples A and E were positive for hydroquinone. The results of quantitative analysis of hydroquinone on samples A and E obtained levels of $2.36\% \pm 0.01201$ and $2.57\% \pm 0.00577$.

Conclusion: Based on the results of qualitative and quantitative analysis, samples A, B and E they didn't meet the requirements of National Agency of Drug and Food Control because they are positive for harmful ingredients, namely retinoic acid and hydroquinone.

Keywords: Face whitening cream, hydroquinone, online shop, retinoic acid, thin layer chromatography, UV-Vis spectrophotometry.

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