ANALISIS ASAM RETINOAT PADA BEBERAPA MERK KRIM PEMUTIH WAJAH BELUM TEREGISTRASI BPOM YANG DIJUAL DI SHOPEE DENGAN METODE KLT DAN KCKT

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Asam retinoat atau tretinoin merupakan bentuk asam dan bentuk aktif dari vitamin A (retinol). Asam retinoat dapat menyebabkan kulit kering, rasa terbakar, dan teratogenik (cacat pada janin). Penelitian ini bertujuan untuk mengetahui apakah krim pemutih wajah mengandung asam retinoat dan untuk mengetahui kadar yang terkandung pada krim pemutih tersebut serta melakukan validasi metode analisis tersebut. Uji kualitatif dilakukan dengan metode Kromatografi Lapis Tipis menggunakan larutan pengembang Sistem A (campuran n-heksan - asam asetat glasial 0,33% dalam etanol absolut (9:1)), Sistem B (campuran n-heksan – aseton (6:4)), dan Sistem C (Campuran sikloheksan – eter – aseton – asam asetat glasial (54:40:4:2)). Hasil uji kuantatif yaitu antara lain dengan ketiga sistem larutan pengembang adalah diperoleh pada 7 sampel antara lain sampel 3, sampel 4, sampel 13, sampel 14, sampe 15, sampel 16, dan sampel 17. Uji kuantitatif dilakukan dengan metode Kromatografi Cair Kinerja Tinggi (KCKT) dengan teknik isokratik pada kolom fase terbalik, kolom C8 (150 mm x 4,6 mm) 5 µm, fase gerak metanol-air-asam asetat glasial (85:15:0,5) dengan kecepatan alir 1,0 ml/menit, dan dideteksi pada panjang gelombang 353 nm. Validasi metode analisis yang digunakan menghasilkan nilai koefisien korelasi (r) = 0,9985 pada kisaran konsentrasi 0,5-32 ppm, batas deteksi (LoD) sebesar 0,1513 ppm, batas kuantifikasi (LoQ) sebesar 0,5045 ppm, dengan rata-rata nilai perolehan kembali sebesar 98,54±1,1049 % nilai RSD luas area 6 kali pengujianadalah 0,6870. Hasil uji kuantatif yaitu antara lain sebesar 0,6870 %. pada sampel 3 sebanyak 0,0064 mg/g; sampel 4 sebanyak 0,0042 mg/g; sampel 13 sebanyak 0,8557 mg/g; sampel 14 sebanyak 0,0130 mg/g; sampel 15 sebanyak 0,0073 mg/g; sampel 16 sebanyak 0,3184 mg/g; dan sampel 17 sebanyak 0,8075 mg/g.

Kata kunci: Krim pemutih wajah, asam retinoat, kromatografi lapis tipis, kromatografi cair kinerja tinggi

ANALYSIS OF RETINOIC ACID ON SOME BRANDS OF FACE WHITENING CREAM NOT REGISTERED BY BPOM SOLD IN SHOPEE USING TLC AND HPLC METHODS

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Retinoic acid or tretinoin is the acid form and the active form of vitamin A (retinol). Retinoic acid can cause dry skin, burning sensation, and is teratogenic (defects in the fetus). This study aims to determined whether facial whitening cream contained retinoic acid and to determined the levels contained in the whitening cream and validate the analytical method. Qualitative tests were carried out using Thin Layer Chromatography method used developer solution System A (mixed of n-hexane - glacial acetic acid 0.33% in absolute ethanol (9:1)), System B (mixed of n-hexane - acetone (6:4)), and System C (mixed cyclohexane – ether – acetone – glacial acetic acid (54:40:4:2)). The resulted of the quantitative test, among others, with the three developer solution systems, were obtained on 7 samples included sample 3, sample 4, sample 13, sample 14, sample 15, sample 16, and sample 17. The quantitative test was carried out used the High Liquid Chromatography (HPLC) method with the isocratic technique on the reverse phase, column C8 (150 mm x 4.6 mm) 5 µm, mobile phase methanol-water-glacial acetic acid (85:15:0.5) with a flow rate of 1.0 ml/min, and detected at a wavelength of 353 nm. Validation of the analytical method used to resulted the correlation coefficient value (r) = 0,9985 in the concentration range of 0,5-32 ppm, detection of limit (LoD) were 0,1513 ppm, quantification of limit (LoQ) were 0,5045 ppm, with an average of recovery value were 98,54%, the value of the RSD area with 6 times replication was 0,6870. The resulted of the quantitative test are 0.6870% in sample 3 were 0.0064 mg/g; sample 4 were 0.0042 mg/g; sample 13 wre 0.8557 mg/g; sample 14 were 0.0130 mg/g; sample 15 were 0.0073 mg/g; sample 16 were 0.3184 mg/g; and sample 17 were 0.8075 mg/g.

***Keywords**: Face whitening cream, retinoic acid, thin layer chromatography, high performance liquid chromatography*