

ABSTRAK

Nama : Putri Andaresta
Program Studi : Farmasi S-1
Judul : Pengaruh Variasi Konsentrasi Retinol Dalam Sediaan Gel
Anti Aging Terhadap Aktivitas Antioksidan dan Potensi
Iritasi Kulit

Penuaan adalah perubahan alami yang tak bisa dihindari yang dipengaruhi oleh usia dan genetik serta faktor-faktor ekstrinsik seperti merokok, polusi, dan paparan sinar matahari, terutama UVA yang dapat mempercepat penuaan kulit. Retinol, salah satu turunan vitamin A dengan efek antioksidan, dikenal efektif dalam perawatan *anti aging* karena mampu melawan radikal bebas dan merangsang produksi kolagen. Penelitian ini bertujuan untuk membuat dan menentukan efektivitas serta keamanan gel *anti aging* yang mengandung retinol 0,30%, 0,40%, dan 0,50% dengan basis carbopol 940. Sediaan gel retinol dibuat dan dievaluasi mutu fisika dan kimia, uji stabilitas *cycling test*, uji aktivitas antioksidan menggunakan metode DPPH dan uji potensi iritasi kulit menggunakan metode *human patch test*. Hasil penelitian ini menunjukkan bahwa semua formula memiliki mutu fisika dan kimia yang memenuhi syarat dan stabil selama 12 hari. Hasil aktivitas antioksidan gel retinol 0,30% (101,938 ppm), 0,40% (78,271 ppm), dan 0,50% (62,715 ppm). Hasil uji iritasi metode *human patch test* jumlah retinol 0,30% dan 0,40% aman sedangkan, 0,50% menimbulkan iritasi berupa gatal dan sensasi panas ringan.

Kata kunci : Retinol, Antioksidan, *Human patch test*

ABSTRACT

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Study Program : Bachelor of Pharmacy
Title : The Effect of Retinol Concentration Variation in Anti-Aging Gel Formulations on Antioxidant Activity and Skin Irritation Potential

Aging is an unavoidable natural process influenced by age and genetics, as well as extrinsic factors such as smoking, pollution, and sun exposure, particularly UVA rays, which can accelerate skin aging. Retinol, a derivative of vitamin A with antioxidant effects, is known to be effective in anti-aging treatments due to its ability to combat free radicals and stimulate collagen production. This study aimed to develop and evaluate the effectiveness and safety of anti-aging gels containing 0.30%, 0.40%, and 0.50% retinol with a carbopol 940 base. Retinol gel formulations were prepared and evaluated for their physical and chemical properties, cycling test stability, antioxidant activity using the DPPH method, and skin irritation potential using the human patch test method. The results showed that all formulas met the required physical and chemical standards and were stable for 12 days. Antioxidant activity results of the retinol gels were as follows: 0.30% (101.938 ppm), 0.40% (78.271 ppm), and 0.50% (62.715 ppm). The human patch test irritation results indicated that retinol concentrations of 0.30% and 0.40% were safe, while the 0.50% concentration caused mild irritation in the form of itching and a slight burning sensation.

Keywords: Retinol, Antioxidant, Human patch test