

DETERMINING THE EFFECTIVENESS OF ANTI-AGING CREAM FROM AVOCADO (*Persea americana Mill.*) PEEL EXTRACT USING IN-VIVO AND IN-VITRO ANALYSIS

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ABSTRACT

This experiment was called “Determining Effectiveness of Anti-Aging Lotion Cream from Avocado (*Persea americana Mill.*) Peel Extract using in-vitro and in-vivo analysis”. The purposes of this research were to determine the effectiveness of antioxidant activity in several types of avocado peel, to determine the total content of phenol and flavonoid as an antioxidant on avocado skin, and to conduct the in-vivo assay of the effectiveness of cream activity. Three kinds of avocados: Butter, Wina, and Miki were used in this research.

The avocado peel extract was obtained by maceration process and the extract was determined for the antioxidant activity using DPPH assay. The avocado peel extract was also tested by a phytochemical process in which phytochemicals such as alkaloids, tannins, saponins, phenols, flavonoids, and terpenoids were tested using certain reagents and the total content of the phenol and flavonoid were tested too. The final step was the evaluation of cream preparation. The processes were done by qualitative and quantitative analysis.

From this experiment, it could be concluded that wet butter avocado from ethanol 70% has the most effective antioxidant because it has the lowest IC_{50} of 7.36 ± 0.31 ppm which means has the highest antioxidant activity, hence it can be used as an anti-aging lotion cream. The total content of phenol and flavonoid for dry Butter avocado, 5 days with ethanol 96% was 78.50 mg GAE/g and 71.93 mg QE/g, respectively. The total content of phenol and flavonoid for wet Miki avocado 5 days with ethanol 96% was 74.29 mg GAE/g and 34.83 mg QE/g, respectively.

Keywords: *Anti-aging, avocado peel, lotion cream, maceration, phytochemical analysis*

PENENTUAN EFEKTIVITAS KRIM ANTI-AGING DARI EKSTRAK KULIT AVOCADO (*Persea americana Mill.*) MENGGUNAKAN ANALISIS IN-VIVO DAN IN-VITRO

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INTISARI

Telah dilakukan penelitian dengan judul Penentuan Efektivitas Krim Anti-Penuaan (Anti-Aging) dari Ekstrak Kulit Alpukat (*Persea americana Mill.*) dengan Analisis In-Vivo dan In-Vitro. Tujuan penelitian ini adalah untuk menentukan antioksidan yang paling efektif pada senyawa bioaktif dari ekstrak kulit buah alpukat, melakukan uji in-vitro analisis fitokimia dan uji DPPH, menentukan persentase aktivitas penangkap radikal bebas, serta melakukan uji efektivitas aktivitas krim anti penuaan melalui uji in-vivo. Tiga jenis alpukat yang diuji adalah buah alpukat Butter, buah alpukat Wina, dan buah alpukat Miki.

Ekstrak kulit alpukat diekstraksi dengan proses maserasi. Uji DPPH dilakukan secara spektrofotometri UV-Vis untuk mengetahui aktivitas antioksidan ekstrak kulit alpukat. Ekstrak kulit alpukat juga diuji dengan proses fitokimia dimana senyawa fitokimia seperti alkaloid, tanin, saponin, fenol, flavonoid, dan terpenoid diuji menggunakan reagen tertentu. Prosesnya dilakukan dengan analisis kualitatif dan kuantitatif.

Dari percobaan disimpulkan bahwa alpukat mentega basah 5 hari dengan etanol 70% memiliki antioksidan paling efektif karena memiliki IC_{50} terendah yaitu $7,36 \pm 0,31$ ppm yang mempunyai aktivitas antioksidan paling tinggi, sehingga dapat digunakan sebagai krim lotion anti-aging. Kandungan total fenol dan flavonoid pada alpukat mentega kering 5 hari dengan etanol 96% berturut-turut adalah 78,50 mg GAE/g dan 71,93 mg QE/g. Kandungan total fenol dan flavonoid untuk Miki basah alpukat 5 hari dengan etanol 96% masing-masing adalah 74,29 mg GAE/g dan 34,83 mg QE/g.

Kata Kunci : *analisis fitokimia, anti-penuaan, kulit alpukat, krim lotion, maserasi*