OPTIMASI SEDIAAN KRIM DARI EKSTRAK ETANOL DAUN BUAH JERUK BALI (*Citrus maxima* (Burm.) Merr) SEBAGAI ANTIINFLAMASI

KARINAH

201FF03041

Program Studi S1 Farmasi, Fakultas Farmasi

Universitas Bhakti Kencana

ABSTRAK

Tanaman buah jeruk bali memiliki banyak manfaat di setiap bagian tumbuhannya, yang meliputi manfaat yang ada pada kulit, buah dan daun jeruknya. Ekstrak dari setiap bagian tumbuhan menunjukkan banyak sifat farmakologi salah satunya seperti anti-inflamasi. Pada bagian daun jeruk diketahui memiliki kandungan senyawa metabolit sekunder seperti alkaloid, flavonoid, saponin dan steroid/triterpenoid. Tujuan dari penelitian ini yaitu untuk mengetahui kestabilan sediaan krim ekstrak etanol daun jeruk bali, dan untuk untuk mengetahui aktivitas anti-inflamasi pada ekstrak etanol daun jeruk bali(*Citrus maxima* (Burm.) Merr) yang telah dijadikan sediaan topikal. Untuk memastikan keberadaan senyawa flavonoid dilakukan salah satu parameter mutu ekstrak yaitu dengan pemantauan ekstrak menggunakan kromatografi lapis tipis. Untuk melihat kestabilan krim yang mengandung ekstrak daun jeruk bali menggunakan metode *freeze-thaw* 6 siklus, kemudian dilakukan uji aktivitas antiinflamasi menggunakan metode HRBC (*Human Red Blood Cell*) yang diukur menggunakan spektrofotometri Uv-Vis. Stabilitas krim dengan zat aktif ekstrak etanol daun jeruk bali pada F1 3%, didapat hasil rata-rata IC50 sebesar 192,839 µg/mL dengan standar deviasi sebesar 0,570. kemudian pada F2 dengan konsentrasi ekstrak daun jeruk bali 1%, didapat rata-rata nilai IC50 sebesar 819,271 µg/mL dengan standar deviasi 1,03. Sedangkan hasil rata-rata IC50 pembanding sebesar 45,665 dengan standar deviasi 0,052. Berdasarkan hasil penelitian yang dilakukan dapat disimpulkan bahwan Ekstrak etanol daun jeruk bali masih mengandung senyawa flavonoid dalam waktu penyimpanan. Stabilitas sediaan krim ekstrak etanol daun jeruk bali dalam metode *freeze-Thaw* hasil secara statistik dari ketiga parameter (pH, Daya Sebar, dan Viskositas) tidak ada perbedaan secara signifikan baik dari sampel 1 maupun sampel 2. Kestabilan sampel 1 sediaan krim ekstrak etanol daun jeruk bali pada konsentrasi 3% lebih efektif pada metode HRBC daripada krim ekstrak etanol daun jeruk bali dengan konsentrasi 1%.

Kata Kunci : Stabilitas Krim Ekstrak Etanol Daun Jeruk Bali, Anti-inflamasi, HRBC (*Human Red Blood Cell*), IC50

OPTIMIZATION OF CREAM PREPARATION FROM ETHANOL EXTRACT OF POMELO LEAVES (Citrus maxima (Burm.) Merr) AS AN ANTI-INFLAMMATORY

KARINAH

201FF03041

Bachelor of Pharmacy Study Program, Faculty of Pharmacy

Bhakti Kencana University

ABSTRACT

The pomelo plant has many benefits in every part of the plant, which includes the benefits that exist on the skin, fruit and leaves of the pomelo. Extracts from each part of the plant exhibit many pharmacological properties, one of which is anti-inflammatory. Orange leaves are known to contain secondary metabolite compounds such as alkaloids, flavonoids, saponins and steroids/triterpenoids. The purpose of this study is to determine the flavonoid content in ethanol extract during storage, to determine the stability of pomelo leaf ethanol extract in cream preparations, and to determine the anti-inflammatory activity in grapefruit leaf ethanol extract (Citrus maxima (Burm.) Merr) which has been used as a topical preparation. To ensure the presence of flavonoid compounds, one of the quality parameters of the extract is carried out by monitoring the extract using thin layer chromatography. To see the stability of the cream containing pomelo leaf extract with the freeze-thaw method for 6 cycles, an anti-inflammatory activity test was carried out using the HRBC (Human Red Blood Cell) method which was measured using Uv-Vis spectrophotometry. The stability of the cream with the active substance of pomelo leaf ethanol extract at F1 3%, obtained an average IC50 result of 192.839 µg/mL with a standard deviation of 0.570. then in F2 with a concentration of 1% pomelo leaf extract, an average IC50 value of 819.271 µg/mL was obtained with a standard deviation of 1.03. Meanwhile, the average result of the comparative IC50 was 45.665 with a standard deviation of 0.052. *Based on the results of the research conducted, it can be concluded that pomelo leaf ethanol extract still contains flavonoid compounds during storage. The stability of the pomelo leaf ethanol extract cream preparation on the freeze-Thaw method showed that there was no significant difference between the three parameters (pH, Dispersion, and Viscosity) from sample 1 and sample 2. The stability of sample 1 preparation of pomelo leaf ethanol extract cream at a concentration of 3% was more effective in the HRBC method than that of pomelo leaf ethanol extract cream with a concentration of 1%.*

Keywords: *Stability of Ethanol Extract Cream of pomelo Leaves, Anti-inflammatory, HRBC (Human Red Blood Cell), IC50*