

ABSTRAK

PENENTUAN PARAMETER EFEKTIVITAS TABIR SURYA DAN UJI IRITASI GEL LYOTROPIK EKSTRAK METANOL DAUN BINJAI (*Mangifera caesia* Jack. ex. Wall) (Oleh Haryati; Pembimbing Hafiz Ramadhan dan Dyera Forestryana; 2022; 160 halaman)

Pada pengembangan sediaan gel dari sistem lyotropik ekstrak metanol daun Binjai didapatkan formula optimum yang berpotensi sebagai tabir surya. Sistem lyotropik ekstrak metanol daun Binjai (*Mangifera caesia* Jack. ex. Wall) telah diketahui memiliki aktivitas antioksidan kuat dengan nilai IC_{50} 6,1109 $\mu\text{g/ml}$. Penelitian ini bertujuan untuk menentukan efektivitas tabir surya dari sistem lyotropik dan formula optimum gel lyotropik ekstrak metanol daun Binjai menggunakan metode Spektrofotometri UV-Vis dengan parameter nilai *Sun Protector Factor* (SPF), Persentase Transmisi Eritema (%Te) dan Persentase Transmisi Pigmentasi (%Tp) serta melakukan uji keamanan sediaan melalui uji iritasi secara *in vivo*. Hasil penelitian menunjukkan bahwa pada sistem lyotropik ekstrak konsentrasi 250 ppm memiliki nilai SPF yang lebih tinggi dibanding ekstrak yaitu 30,06 yang termasuk kategori Proteksi Ultra, sedangkan nilai %Te 0,4854, dan %Tp 0,5740 yang masuk ke dalam kategori *Sunblock*. Pada gel lyotropik ekstrak mengalami penurunan nilai SPF yaitu 8,741 yang masuk ke dalam kategori Proteksi Maksimal, sedangkan pada %Te 13,80 masuk ke dalam kategori *Fast Tanning* dan %Tp 19,81 masuk ke dalam kategori *Sunblock*. Hasil uji iritasi menunjukkan bahwa sistem lyotropik dan gel lyotropik ekstrak tidak mengiritasi secara *in vivo* pada hewan uji. Kesimpulan dari penelitian ini yaitu gel lyotropik dari ekstrak efektif sebagai tabir surya.

Kata Kunci : Daun Binjai, Sistem Lyotropik, Gel, Tabir Surya, Uji Iritasi.

ABSTRACT

DETERMINATION OF SUNSCREEN EFFECTIVENESS PARAMETERS AND IRRITATION TEST OF LYOTROPIC GEL METHANOL EXTRACT OF BINJAI LEAF (*Mangifera caesia* Jack. ex. Wall) (By Haryati; Supervisor Hafiz Ramadhan and Dyera Forestryana; 2022; 160 page)

In the development of gel preparations from the lyotropic system of Binjai leaf methanol extract, the optimum formula was obtained which has the potential as a sunscreen. The lyotropic system of the methanol extract of Binjai leaves (*Mangifera caesia* Jack. ex. Wall) has been known to have strong antioxidant activity with an IC value of 6.1109 g/ml. This study aims to determine the effectiveness of sunscreen from the lyotropic system and the optimum formula for the lyotropic gel of Binjai leaf methanol extract using the UV-Vis Spectrophotometry method with parameters such as Sun Protector Factor (SPF), Erythema Transmission Percentage (%Te) and Pigmentation Transmission Percentage (%Tp).) as well as conducting a safety test of the preparation through an in vivo irritation test. The results showed that in the lyotropic system the extract with a concentration of 250 ppm had a higher SPF value than the extract, namely 30.06 which was included in the Ultra Protection category, while the %Te value was 0.4854, and %Tp 0.5740 which was included in the Sunblock category. In the lyotropic gel the extract experienced a decrease in the SPF value, namely 8.741 which was included in the Maximum Protection category, while for %Te 13.80 it was in the Fast Tanning category and %Tp 19.81 was in the Sunblock category. The results of the irritation test showed that the lyotropic system and the extract's lyotropic gel did not irritate the test animals in vivo. The conclusion of this study is that the lyotropic gel from the extract is effective as a sunscreen.

Keywords : Binjai Leave, Lyotropic system, Gel, Sunscreen, Irritation test.