

# Formulasi dan uji stabilitas fisik sediaan lotion fitosom yang mengandung fraksi etil asetat daun mangkokan *Nothopanax scutellarium* Merr = Formulation and physical stability test of phytosome lotion containing ethyl acetate fraction of *Nothopanax scutellarium* leaves

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## Abstrak

Daun mangkokan (*Nothopanax scutellarium* Merr.) secara empiris memiliki kandungan flavonoid yang dapat memberikan aktivitas pada pertumbuhan rambut. Fitosom adalah suatu sistem pembawa obat dimana komponen ekstrak tanaman herbal berikatan dengan fosfolipid yang dapat meningkatkan absorpsi obat. Penelitian ini bertujuan untuk membuat fitosom fraksi etil asetat daun mangkokan serta memperoleh karakteristik fitosom yang dibentuk dengan metode hidrasi lapis tipis. Selanjutnya fitosom diformulasikan ke dalam sediaan lotion untuk mengetahui stabilitas secara fisik. Uji kestabilan fisik dilakukan dengan pengamatan lotion fitosom yang disimpan pada tiga suhu yang berbeda, yaitu suhu rendah ( $40\pm 2^{\circ}\text{C}$ ), suhu kamar ( $25\pm 2^{\circ}\text{C}$ ), dan suhu tinggi ( $40\pm 2^{\circ}\text{C}$ ); cycling test; dan uji sentrifugasi. Pembuatan fitosom dengan perbandingan antara fraksi etil asetat dan fosfatidilkolin sebesar 1 : 2 menunjukkan nilai efisiensi penjerapan sebesar 74,36%, nilai distribusi ukuran partikel sebesar 335,4 nm, nilai polidispersitas sebesar 0,252, dan nilai zeta potensial sebesar -3,5 mV. Sediaan lotion fitosom fraksi etil asetat daun mangkokan 1%, 0,5%, dan 0,25% mengalami peningkatan ukuran partikel setelah fitosom ditambahkan ke dalam sediaan lotion tetapi secara fisik terbukti stabil dalam berbagai suhu penyimpanan, cycling test, dan uji sentrifugasi.

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*Nothopanax scutellarium* leaves contain flavonoid compounds which have hair growth activity. Phytosome is a drug carrier system which herbal plant extracts bind with phospholipid that can enhance the absorption of the drug. The aims of this research are to formulate ethyl acetate fraction phytosome of *Nothopanax scutellarium* leaves and to obtain phytosome characteristic which formed by thin layer hydration method. Subsequently, the phytosome was formulated into lotion dosage form to know the physical stability. The physical stability test was conducted at low temperature ( $40\pm 2^{\circ}\text{C}$ ), room temperature ( $25\pm 2^{\circ}\text{C}$ ), and high temperature ( $40\pm 2^{\circ}\text{C}$ ) storage; cycling test; and centrifugation test. Phytosome formulation with a ratio of ethyl acetate fraction and phosphatidylcholine was 1 : 2 indicated the entrapment efficiency value was 74,36%, the particle size distribution value was 335,4 nm, polidispersity index was 0,252, and zeta potential value was -3,5 mV. Phytosome lotion containing ethyl acetate fraction of *Nothopanax scutellarium* leaves 1%, 0,5%, and 0,25% increased the particle size after phytosome was added to the lotion but phytosome lotion was physically proved that stable in a wide range of temperature storage, cycling test, dan centrifugation test.