

Formulasi niosom gel anti jerawat yang mengandung Minyak Atsiri Daun Sirih (Piper betle L) = formulation of anti acne niosome gels containing betel leaf piper (Piper betle L) essential oil

Elsa Widowati, author

Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20403178&lokasi=lokal>

Abstrak

[Telah dilakukan formulasi, uji aktivitas antibakteri, dan uji stabilitas niosom gel yang mengandung minyak atsiri daun sirih (Piper betle L.) sebagai obat anti jerawat. Pembuatan niosom bertujuan untuk meningkatkan penetrasi secara transfolikular dan meningkatkan stabilitas sediaan. Ekstraksi minyak atsiri daun sirih dilakukan dengan metode destilasi cara kukus dan identifikasi komponen senyawa minyak atsiri digunakan GC-MS. Formulasi niosom dibuat dalam dua macam perbandingan jumlah kolesterol dan surfaktan, yaitu 1:1 (F1) dan 1:2 (F2) (b/b). Suspensi niosom dievaluasi yang meliputi uji efisiensi jerap secara Spektrofotometri UV-Vis, uji ukuran partikel menggunakan Particle Size Analyzer, dan uji morfologi vesikel menggunakan Transmission Electron Microscope. Niosom yang telah diuji, dibuat menjadi sediaan gel menggunakan 0,5% Carbomer 940 sebagai gelling agent. Niosom gel dievaluasi yang meliputi uji organoleptis, pH, viskositas, uji aktivitas antibakteri terhadap *Propionibacterium acnes*, dan uji stabilitas selama 12 minggu pada 3 suhu penyimpanan yang berbeda, yaitu suhu kamar ($28\pm 2^{\circ}\text{C}$), suhu rendah ($4\pm 2^{\circ}\text{C}$), dan suhu tinggi ($40\pm 2^{\circ}\text{C}$). Hasil pengujian menunjukkan, sediaan niosom gel F2 memiliki stabilitas yang lebih baik dibandingkan F1, sedangkan aktivitas antibakteri niosom gel F1 dan F2 tidak berbeda signifikan.;Formulation, antibacterial activity test, and stability test of niosome gels containing essential oil of betel leaf (Piper betle L.) as an anti-acne treatment, has been established. The preparation of niosome aims to increase the transfollicular penetration and also increase the stability of gel. Betel leaf essential oil extraction was done by steam distillation method and essential oil compounds identification used GC-MS. The niosome formulations made in two kinds of cholesterol and surfactant amount ratio, ie 1:1 (F1) and 1:2 (F2) (w/w). The niosomes were evaluated which include the entrapment efficiency test by Spectrophotometry UV-Vis, the particle size test by Particle Size Analyzer, and the vesicle morphology test by Transmission Electron Microscope. The niosomes that had been evaluated, made into gel with 0.5% Carbomer 940 as gelling agent. Niosome gels were evaluated which include organoleptic, pH, viscosity, antibacterial activity against *Propionibacterium acnes*, and stability for 12 weeks in 3 different storage temperatures, ie room temperature ($28\pm 2^{\circ}\text{C}$), low temperature ($4\pm 2^{\circ}\text{C}$), and high temperature ($40\pm 2^{\circ}\text{C}$). The test results showed that the F2 gel niosome has better stability than F1, Formulation, antibacterial activity test, and stability test of niosome gels containing essential oil of betel leaf (Piper betle L.) as an anti-acne treatment, has been established. The preparation of niosome aims to increase the transfollicular penetration and also increase the stability of gel. Betel leaf essential oil extraction was done by steam distillation method and essential oil compounds identification used GC-MS. The niosome formulations made in two kinds of cholesterol and surfactant amount ratio, ie 1:1 (F1) and 1:2 (F2) (w/w). The niosomes were evaluated which include the entrapment efficiency test by Spectrophotometry UV-Vis, the particle size test by Particle Size Analyzer, and the vesicle morphology test by Transmission Electron Microscope. The niosomes that had been evaluated, made into gel with 0.5% Carbomer 940 as gelling agent. Niosome gels were evaluated which include organoleptic, pH, viscosity, antibacterial activity against *Propionibacterium acnes*, and

stability for 12 weeks in 3 different storage temperatures, ie room temperature ($28\pm 2^{\circ}\text{C}$), low temperature ($4\pm 2^{\circ}\text{C}$), and high temperature ($40\pm 2^{\circ}\text{C}$). The test results showed that the F2 gel niosome has better stability than F1]