INTISARI

SUMULE, A., 2015, OPTIMASI PROPORSI KOMBINASI CARBOPOL 940 DAN GLISERIN DALAM FORMULA GEL LENDIR BEKICOT (*Achatina fulica* Ferr) SEBAGAI ANTIBAKTERI *Staphylococcus aureus* ATCC 25923 DENGAN METODE *SIMPLEX LATTICE DESIGN*, SKRIPSI, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI, SURAKARTA.

Lendir bekicot (*Achatina fulica* Ferr) mengandung protein achasin yang memiliki aktivitas antibakteri dalam penyembuhan luka. Kandungan peptida antibakteri bekicot yang dapat menghambat *Staphylococcus aureus* ATCC 25923 adalah mytimacin-AF. Lendir bekicot kurang praktis jika digunakan secara langsung sehingga dibentuk sediaan gel. Penelitian ini bertujuan mengetahui proporsi optimum campuran Carbopol 940-gliserin dan aktivitas antibakteri formula optimum yang diuji terhadap *Staphylococcus aureus* ATCC 25923.

Gel lendir bekicot dibuat tiga formula dengan komposisi Carbopol 940 1%, 1,5%, 2% dan gliserin 15%, 14,5%, 14%. Setiap formula diuji sifat fisiknya selama 4 minggu meliputi organoleptis, homogenitas, viskositas, daya sebar, daya lekat, dan pergeseran viskositas. Hasil tersebut dioptimasi dengan metode *simplex lattice design* menggunakan program *Design Expert* 8.0.6.1 untuk mendapat formula optimum. Formula optimum dibuat dan diuji sifat fisiknya selama 4 minggu. Hasil prediksi dan percobaan dianalisis dengan uji-t satu sampel. Pengujian antibakteri formula optimum dilakukan dengan metode difusi sumuran dan dianalisis anova satu jalan.

Hasil penelitian formula optimum gel lendir bekicot diperoleh pada proporsi campuran Carbopol 940 1,123 % dan gliserin 14,877 %. Respon fisik formula optimum dari hasil prediksi dan percobaan menunjukkan tidak ada perbedaan signifikan. Gel formula optimum mempunyai aktivitas antibakteri dengan diameter hambat sebesar 1,73 cm.

Kata kunci: lendir bekicot (*Achatina fulica* Ferr), *simplex lattice design*, gel, Carbopol 940, gliserin.

ABSTRACT

SUMULE, A. 2015, THE OPTIMIZATION PROPORTION OF CARBOPOL 940 AND GLYCERIN IN GEL FORMULA OF ESCARGOT (*Achatina fulica* Ferr) MUCUS AS ANTIBACTERIA *Staphylococcus aureus* ATCC 25923 USING BY *SIMPLEX LATTICE DESIGN* METHOD, THESIS, PHARMACY FACULTY, SETIA BUDI UNIVERSITY, SURAKARTA.

Escargot mucus (*Achatina fulica ferr*) containing protein achasin that has antibacterial activity in healing wounds. The content of escargot antibacterial peptide could inhibit *Staphylococcus aureus* ATCC 25923 is mytimacin-AF. The escargot mucus is less practical if using directly, so that a gel preparation is made. This research aimed to get the optimum proportion of Carbopol 940-glycerin and antibacterial activity of optimum formula that tested against *Staphylococcus aureus* ATCC 25923.

The escargot mucus gel made three formulas with the composition of Carbopol 940 1%, 1,5%, 2% and glycerin 15%, 14,5%, 14%. Each formula is tested during 4 weeks for its physical properties include organoleptic, homogeneity, viscosity, spreadability, adhesion, and viscosity shift. The result are optimized by the *simplex lattice design* using *Design Expert* 8.0.6.1 to obtain the optimum formula. The optimum formula is made and tested its physical properties for 4 weeks. Prediction and experimental results were analyzed by one sample t-test. The antibacterial testing of optimum formula using diffusion wells and were analyzed by one way anova.

The result of research on the optimum formulation of escargot mucus gel was obtained in Carbopol 940 1,123% and glycerin 14,877%. Physical response of the optimum formula prediction and experimental results showed no significant difference. The optimum formula has antibacterial activity with inhibition diameter 1.73 cm.

Keywords: Escargot (*Achatina fulica* Ferr) mucus, *simplex lattice design*, gel, Carbopol 940, glycerin