INTISARI

Tetrahidroheksagamavunon-5 (THHGV-5) merupakan salah satu senyawa analog kurkumin yang memiliki aktivitas antioksidan. THHGV-5 memiliki log P 4,49, sehingga bersifat nonpolar. Emulgel terdiri dari sistem emulsi yang didispersikan ke dalam matriks gel. Tujuan penilitian ini adalah mengoptimasi kombinasi emulgator dalam emulsi, mengevaluasi sifat fisik dan stabilitas fisik dipercepat dan aktivitas antioksidan emulgel THHGV-5.

Optimasi formula dilakukan dengan metode *Simplex lattice design* dengan 2 variabel bebas yaitu tween 80 dan span 80. Respon yang diukur adalah ukuran partikel dan rasio pemisahan emulsi. Data dianalisis menggunakan *One Sample t-Test.* Karakteistik sediaan emulgel yang diukur pH, viskositas, daya lekat dan daya sebar dan stabilitas dipercepat. Aktivitas antioksidan ditentukan dengan menggunakan spektofotometer metode DPPH. Hasil uji statistik sediaan emulgel dianalisis menggunkan *oneway* ANOVA dengan taraf kepercayaan 95%.

Hasil optimasi formula emulsi THHGV-5 terdiri dari kombinasi 1,5% tween 80 dan 0,0% span 80 dengan rasio pemisahan 1 dan ukuran partikel 0,99 µm. Emulgel memiliki pH sebesar 6,55± 0,09, viskositas 179,33±2,18 dPa.s, daya sebar 12,26±0,81 cm^2 dan daya lekat 12,98±0,98 detik. Emulgel yang dihasilkan stabil dalam uji stabilitas dipercepat dan memiliki aktivitas antioksidan dengan IC_{50} 115,44 mg/mL.

Kata kunci: Tetrahidroheksagamavunon-5, Emulgel, Tween 80, Span 80, Antioksidan.

ABSTRACT

Tetrahydrohexagamavunon-5 is one of the curcumin analog which has antioxidant activity. THHGV-5 has a log P 4.49, so it is nonpolar. Emulgel is an emulsion mixed with a gelling agent. The purpose of this study is to optimize the combination of tween 80 and span 80 emulgators in the emulsion, evaluate physical properties, accelerated physical stability and antioxidant activity of THHGV-5 emulgel.

Optimization of emulsion formula was done by using Simplex lattice design method, with two independent variables: tween 80 and span 80. The measured responses are the separation ratio and particle size of the emulsion. The data analyzed by One Sample t-Test. Emulgel characteristics that has been measured are pH, viscosity, spreadability, adhesiveness and accelarated physical stability. Antioxidant activity method was dertermined by spectrophotometry with DPPH radical scavenging activity. The data were analyzed by one-way ANOVA with 95% confidence level.

The optimised formula of THHGV-5 emulsion consists of 1.5% of tween 80 dan 0.0% of span 80 combinations. The optimum emulsion has separation ratio value one and particle size value 0.99 μm. Emulgel has pH value 6.55±0.09, viscosity value 179.33±2.18 dPa.s, spreadability value 12.26±0.81 cm^2 and adhesiveness value 12.98±0.98 sec.The optimum formula of emulgel stable in accelerated stability test and has antioxidant activity IC_{50} at 115.44 mg/mL of concentration.

Keywords: Tetrahydroheksagamavunon-5, Emulgel, Tween 80, Span 80, Antioxidants.