Archives of Pharmacy Practice
Abstract Conference Proceedings
2nd Asia Pacific Pharmacy Education (PharmED) Workshop
ISSN 2045-080X Vol. 3, Issue 1, 2012

BO-009

TWEEN 80 10% AND SPAN 80 1% AS OPTIMUM COMPOSITION EMULGATOR IN CREAM OF GREEN TEA (*Camellia sinensis*, L) EXTRACT

Nining Sugihartini[1,2], Achmad Fudholi[3], Suwidjiyo Pramono[3] and Sismindari[3]
[1] Pascasarjana Program, Faculty of Pharmacy, Gadjah Mada University, Yogyakarta, Indonesia 55281
[2] Faculty of Pharmacy, Ahmad Dahlan University, Yogyakarta, Indonesia 55164
[3]Faculty of Pharmacy, Gadjah Mada University, Yogyakarta, Indonesia 55281
Email:niningsugihartini@yahoo.com

ABSTRACT

The green tea extract contains epigalocatechin gallate (EGCG), a chemopreventive agent on skin cancer. The aim of this study was to develop EGCG cream formulation. The studied factor in this case was the optimum composition of emulgator, combining Tween 80 (hydrophilic emulgator) and Span 80 (liphophilic emulgator) determined based on the *Factorial Design* method using *Design Expert* software. Formulas examined were: 1% Tween 80: 1% Span 80; 1% Tween 80: 10% Span 80; 10% Tween 80: 1% Span 80 and 10% Tween 80: 10% Span 80. The measured responses were the viscosity, chemical stability, and physical stability. The viscosity of cream was determined using the Stormer viscosimeter. The chemical stability was examined based on t_{90} value in the accelerated stability method. The physical stability was estimated based on the volume of oil phase, separated after centrifugation. The results showed that the combination of 10% Tween 80 and 1% Span 80 was the optimum emulgators in green tea extract cream. This composition provided the highest desirability value in Design Expert Software. The prediction number of viscosity, t90 and oil phase separation volume were 43,93 poise, 2,55 hours and 0,04 mm^3, respectively. The difference between prediction number and observed value was considered to be not statistically significant in viscosity and t_{90} ($p>0.05$) but statistically significant in oil phase separation volume ($p<0.05$).