International Journal of PharmTech Research
CODEN (USA): IJPRIF, ISSN: 0974-4304, ISSN(Online): 2455-9563
Vol.9, No.6, pp 380-387, 2016

Design and optimization of self-nanoemulsifying drug delivery systems (SNEDDS) of ethyl acetate fraction from mangosteen peel (Garcinia mangostana, L.)

Liza Pratiwi[1]*, Achmad Fudholi[2], Ronny Martien[2], Suwidjiyo Pramono[3]

[1]Pharmacy and Pharmaceutical Technology Departement, Faculty of Medical, University of Tanjungpura, Pontianak, Indonesia
[2]Pharmacy and Pharmaceutical Technology Departement, Faculty of Pharmacy, University of Gadjah Mada, Yogyakarta, Indonesia
[3]Pharmaceutical Biology Departement, Faculty of of Pharmacy, University of Gadjah Mada, Yogyakarta, Indonesia

Abstract : Self-nano emulsifying drug delivery system of ethyl acetate fraction from mangosteen peel (EAF-MP) was developed under quality by design approach for improvement of diffusion and precut absorption. Preliminary screening was performed to select proper components combination. Simplex Lattice Design was employed as the statistical tool to optimize the formulation variables. X1 (Tween 80), X2 (PEG 400) and X3 (Virgin Coconut Oil). The system was assessed for transmittance, emulsification time, PH, and drug loading. Following optimization, the value of formulation components (X1, X2, and X3) were 4,61%. 1% and 1,38% respectively (150 mg of EAF-MP). The optimized formulation of EAF-MP had a mean nanoemulsion droplet diameters of 11,6 nm. The stability of the optimized formulation was retained after storage at 25 C for three months.

Liza Pratiwi *et al* /International Journal of PharmTech Research**,** 2016,9(6),pp 380-387.

*****