

ABSTRACT

CHARACTERIZATION OF *p*-METHOXYCINNAMIC ACID-LOADED SOLID LIPID NANOPARTICLES (SLN) - CETYL ALCOHOL WITH INCREASING TWEEN 80 CONCENTRATION

DELLA VICKRIA ARIF

The study was designed to observe the characteristic of *p*-methoxycinnamic acid-loaded cetyl alcohol SLN which was formulated by increasing tween 80 concentration (8%, 10%, and 12%). SLN was prepared using high shear homogenization method at 25000 rpm for 8 minutes. The formula at previous experiment conducted by Misra, *et al*, 2004 was used as a reference formula with some modifications. The characteristic of SLN was observed using Transmission Electron Microscope (TEM), including morphology and particle size. Percent drug entrapment (PDE) was determined by dialysis method using dialysis bag MWCO 12000-14000. PDE and particle size were evaluated using one way ANOVA statistical test continued with HSD test. The TEM results showed formula with tween 80 10% and 12% had a spherical and smooth surface particle, while tween 80 8% had rougher surface particles. While the ANOVA and HSD test results showed the increasing concentration of tween 80 had no significant different on percent drug entrapment. The smallest particle size of APMS-loaded SLN had produced at 10% tween 80 concentration.

Keyword (s): *p*-Methoxycinnamic acid, Solid lipid nanoparticles, Cetyl alcohol, High shear homogenization, Transmission Electron Microscope, Dialysis.