Optimasi Formula Self-Nanoemulsifying Drug Delivery System (SNEDDS) Etil-p-metoksisinamat (EPMS)

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Abstract	Penelitian ini bertujuan untuk menentukan formula Self-Nanoemulsifying Drug Delivery System (SNEDDS) menggunakan zat aktif etil-p-metoksisinamat (EPMS). Formula SNEDDS terdiri dari cremophor RH 40 sebagai surfaktan, propilen glikol sebagai ko-surfaktan, Virgin Coconut Oil (VCO) sebagai fase minyak dan EPMS sebagai zat aktif. Penentuan perbandingan surfaktan dan ko-surfaktan menggunakan metode Simplex Lattice Design (SLD) dengan software Design-Expert versi 13.0. Formula optimum SNEDDS EPMS memiliki komposisi EPMS 100 mg/mL, cremophor RH 40 53,6%, propilen glikol 26,4% dan VCO 20% sesuai dengan rekomendasi dari SLD menghasilkan SNEDDS dengan transmitan 95,43%, waktu emulsifikasi dalam aquadest 8,33 menit, ukuran partikel 30,16 nm, zeta potensial -61,03 mV dan indeks polidispersitas 0,160. Penelitian ini menunjukkan bahwa dengan formula SNEDDS 53,6% cremophor RH 40; 26,4% propilen glikol dan EPMS dapat meningkatkan nilai transmitan dan waktu emulsifikasi.Formula Optimization of the Self-Nanoemulsifying Drug Delivery System (SNEDDS) of Ethyl-p-methoxycinnamate (EPMC). This research aimed to optimize the Self-Nanoemulsifying Drug Delivery System (SNEDDS) formula of the ethyl-p-methoxycinnamate (EPMS). The SNEDDS formula was prepared using cremophor RH 40 as a surfactant, propylene glycol as a co-surfactant, VCO as an oil phase, and EPMS as an active ingredient. Proportion surfactant and co-surfactant were determined using the simplex lattice design (SLD) method using the Design-Expert software version 13.0. The optimum formula of EPMC SNEDDS are EPMC cremophor RH 40, propylene glycol, VCO and EPMS was 100 mg/ml, 53.6%, 26.4%, and 20% based on SLD data. The formulation was a transmittance of 95.43%, an emulsification time of 8.33 minutes, a particle size of 30.16 nm, a zeta potential of -61.03 mV, and polydispersity index of 0.160. The result showed that the proportion of cremophor RH 40; 26,4% propylene glycol, and EPMC were able to increase the value of transmittance and emulsification time.
Publisher Name	UNIVERSITAS SEBELAS MARET (UNS)
Publish Date	2022-09-24
Publish Year	2022
Doi	DOI: 10.20961/alchemy.18.2.56847.205-213
Citation	
Source	ALCHEMY Jurnal Penelitian Kimia
Source Issue	Vol 18, No 2 (2022): September
Source Page	205-213
Url	https://jurnal.uns.ac.id/alchemy/article/view/56847/pdf
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