INTISARI

KURNIAWAN, YD. 2017. FORMULASI DAN KARAKTERISASI *SELF-NANOEMULSIFYING DRUG DELIVERY SYSTEM* MELOKSIKAM DENGAN VARIASI MINYAK ZAITUN DAN VCO. SKRIPSI. FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI, SURAKARTA.

Meloksikam merupakan salah satu golongan anti inflamasi non steroid (NSAID) derivat asam enolat yang bertindak sebagai inhibitor biosintesis prostaglandin, yaitu enzim *cyclooxygenase 2* (COX-2). Karakteristik meloksikam termasuk dalam golongan obat *biopharmaceutical class system* (BCS) II yaitu obat memiliki kelarutan yang rendah dan permeabilitasnya tinggi. Salah satu strategi dalam mengatasi permasalahan kelarutan yang rendah yaitu *self-nanoemulsifying drug delivery system* (SNEDDS). SNEDDS merupakan suatu penghantaran obat yang terdiri atas campuran isotropik antara obat, minyak, dan surfaktan serta bila diperlukan satu atau lebih kosurfaktan.

Penelitian ini bertujuan untuk mengetahui jenis minyak yang dapat memberikan *drug loading* yang paling baik serta formula optimum dari fase minyak, surfaktan dan kosurfaktan dengan uji karakterisasi meliputi: *emulsification time, drug loading*, dan persen trasnsmitan. Penentuan formula optimum SNEDDS meloksikam dilihat menggunakan metode *Simplex Lattice Design* dengan *Design Expert 7.5.1*.

Hasil penelitian menunjukkan bahwa VCO lebih mudah melarutkan meloksikam dibanding minyak zaitun. Hasil optimasi diperoleh formula optimum VCO yaitu sebesar 2,67 mL, Tween 80 sebesar 5,67 mL, dan PEG 400 sebesar 1,67 mL dengan karakterisasinya *emulsification time* sebesar 14,60±0,111 detik, *drug loading* sebesar 1,60±1,378 ppm, dan persen transmitan 29,10±0,361%.

Kata kunci : meloksikam, SNEDDS, VCO, Tween 80, PEG 400.

ABSTRACT

KURNIAWAN, YD. 2017. FORMULATION AND CHARACTERIZATION *SELF-NANOEMULSIFYING DRUG DELIVERY SYSTEM* MELOXICAM VARIATION WITH OLIVE OIL AND VCO. THESIS. FACULTY OF PHARMACY, UNIVERSITY OF SETIA BUDI, SURAKARTA.

Meloxicam is one of non-steroidal anti-inflammatory (NSAID) enolate acid derivative which acts as an inhibitor of the biosynthesis of prostaglandins, the enzyme *cyclooxygenase 2* (COX-2). Characteristics of meloxicam is included indrug classification *class biopharmaceuticalsystem* (BCS) II is the drug has a low solubility and high permeability. One strategy to overcome the problems of low solubility that is *self-nanoemulsifying drug delivery system* (SNEDDS). SNEDDS is a drug consisting of a mixture of isotropic between drugs, oils and surfactants and if required one or more cosurfactants.

This study aims to determine the type of oil that can provide the best *drug loading* and the optimum formula of the oil phase, surfactant and cosurfactant with characterization tests include: *emulsification time, drug loading* and percent trasnsmittance. The determination of the optimum formula SNEDDS meloxicam viewed using *Simplex Lattice Design* method with *Design Expert 7.5.1*.

The results showed that the VCO is easier to dissolve meloxicam than olive oil. Optimization results obtained optimum formula VCO is equal to 2.67 mL, Tween 80 of 5.67 mL and 1.67 mL of PEG 400 with its characterization *emulsification time* of 14,60±0,111 seconds, *a drug loading* of 1,60±1,378 ppm, and the percent transmittance 29,10±0,361%.

Keywords: meloxicam, SNEDDS, VCO, Tween 80, PEG 400.