

**PENGEMBANGAN FORMULA DAN KARAKTERISASI
NANOSTRUCTURED LIPID CARRIERS (NLC) KURKUMIN
MENGUNAKAN PEG-8 BEESWAX, CAPRIC TRIGLYCERIDE DAN
POLYGLYCEROL-3 METHYLGLUCOSE DISTEARAT**

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ABSTRAK

Pendahuluan : Kurkumin merupakan bahan yang memiliki khasiat sebagai antimikroba dan anti inflamasi. Kurkumin memiliki sifat kelarutan yang sangat sukar larut dalam air dan berpotensi terdegradasi. Tujuan : Untuk meningkatkan kelarutan kurkumin dalam Memformulasikan dan Mengkarakterisasi NLC Kurkumin dengan basis Lipid Padat untuk mengenkapsulasi bahan aktif yang diharapkan bisa berpenetrasi dengan baik kedalam kulit. Metode : Metode yang digunakan yaitu metode homogenisasi panas yang diikuti dengan proses ultrasonikasi. Formula yang digunakan yaitu Lipid Padat PEG-8 Beeswax (Apifil®), Lipid Cair Capric Triglyceride (Myritol®) Dan Surfaktan Poliglisiril-3 Methylglucose Distearat (Tego®Care 450). Selanjutnya dilakukan proses karakterisasi diantaranya Karakterisasi Ukuran Partikel, Indeks Polidispersitas, Zeta Potensial, Efisiensi Penjerapan dan Morfologi. Hasil : Ukuran partikel <1000nm, Nilai PDI <0,5, Zeta Potensial ±30mV dan %EE >80%. Kesimpulan : kurkumin dapat diformulasikan menjadi NLC dan menghasilkan karakterisasi yang baik.

Kata Kunci : Kurkumin, NLC, Homogenisasi, Karakterisasi

**FORMULA DESIGN AND CHARACTERIZATION OF NANOSTRUCTURED
LIPID CARRIERS (NLC) FOR CURCUMIN USING PEG-8 BEESWAX, CAPRIC
TRIGLYCERIDE AND POLYGLYCERYL-3 METHYLGLUCOSE DISTEARATE**

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ABSTRACT

Introduction: Curcumin is a substance that has properties as an antimicrobial and anti-inflammatory. Curcumin has a solubility property that is very difficult to dissolve in water and has the potential to degrade. Objective: To increase the solubility of curcumin in Formulating and Characterizing NLC Curcumin with a Solid Lipid base to encapsulate active ingredients that are expected to penetrate well into the skin. Method: The method used is the heat homogenization method followed by the ultrasonication process. The formulas used are PEG-8 Beeswax Solid Lipid (Apifil®), Capric Triglyceride Liquid Lipid (Myritol®) and Polyglyceryl-3 Methylglucose Distearate Surfactant (Tego®Care 450). Furthermore, the characterization process is carried out including Particle Size Characterization, Polydispersity Index, Zeta Potential, Adsorption Efficiency and Morphology. Results: Particle size <1000nm, PdI value <0.5, Zeta Potential $\pm 30\text{mV}$ and %EE >80%. Conclusion: curcumin can be formulated into NLC and produces good characterization.

Keywords: Curcumin, NLC, Homogenization, Characterization