

## INTISARI

**ISTICHAROH, S., 2020, PENGARUH VARIASI KONSENTRASI CARBOPOL 940 TERHADAP MUTU FISIK *NANOSTRUCTURED LIPID CARRIERS* (NLC) RESVERATROL BERBASIS GEL DAN STUDI DESKRIPTIF TERHADAP PELEPASAN OBAT SERTA AKTIVITAS ANTIOKSIDAN SEDIAAN TOPIKAL, SKRIPSI, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI, SURAKARTA.**

Antioksidan adalah senyawa yang dapat memberikan perlindungan endogen dan tekanan oksidatif eksogen dengan menangkap radikal bebas. Salah satu senyawa yang memiliki aktivitas antioksidan adalah resveratrol. Resveratrol merupakan salah satu obat BCS kelas II yang memiliki kelarutan rendah. Cara meningkatkan kelarutan dan pengaplikasian dari resveratrol yaitu dibuat dalam sistem NLC resveratrol berbasis gel. Penelitian ini bertujuan untuk mengetahui pengaruh variasi konsentrasi carbopol 940 terhadap mutu fisik NLC resveratrol dan mengetahui pengaruh konsentrasi carbopol 940 terhadap pelepasan obat dan aktivitas antioksidan berdasarkan studi deskriptif.

Sediaan NLC resveratrol berbasis gel dibuat dalam 4 formula dengan variasi konsentrasi carbopol secara berturut-turut yaitu 1%, 2%, 3%, dan 4%. NLC resveratrol dilakukan pengujian ukuran partikel, indeks polidispersitas, zeta potensial, dan efisiensi penjerapan. NLC resveratrol berbasis gel dilakukan pengujian terhadap mutu fisik.

Pengujian mutu fisik NLC resveratrol berbasis gel didapatkan hasil bahwa semakin meningkat konsentrasi carbopol 940 yang digunakan maka viskositas dan daya lekat juga semakin meningkat, tetapi daya sebar semakin menurun. Pelepasan obat dan aktivitas antioksidan meningkat seiring dengan menurunnya konsentrasi carbopol 940.

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Kata kunci : antioksidan, carbopol 940, NLC, resveratrol.

## ABSTRACT

**ISTICHAROH, S., 2020, THE EFFECTS OF VARIATIONS IN THE CONCENTRATION OF CARBOPOL 940 ON PHYSICAL QUALITY OF *NANOSTRUCTURED LIPID CARRIERS* (NLC) RESVERATROL BASED GEL AND DESCRIPTIVE STUDIES ON DRUG RELEASE AND ANTIOXIDANT ACTIVITY OF TOPICAL PREPARATIONS, SKRIPSI, FACULTY OF PHARMACY, UNIVERSITAS SETIABUDI, SURAKARTA.**

Antioxidant is compounds that can provide endogenous protection and exogenous oxidative stress by capturing free radicals. One compound that has antioxidant activity is resveratrol. Resveratrol is a BCS class II drug that has low solubility. How to increase the solubility and application of resveratrol is made in a NLC resveratrol based gel. This study aims determined the effect of variations in the concentration of carbopol 940 on the physical quality of resveratrol NLC and determine the effect of the carbopol 940 concentration on drug release and antioxidant activity based on descriptive studies.

NLC resveratrol based gel preparations were made in 4 formulas with varying carbopol 940 concentration of 1%, 2%, 3%, and 4%. NLC resveratrol was tested for particle size, polydispersity index, zeta potential, and adsorption efficiency. NLC resveratrol based gel was tested for physical quality.

The physical quality testing of NLC resveratrol based gel showed that higher the concentration of carbopol 940 used, viscosity and adhesiveness test also increased, but the spreading test decreased. Drug release and antioxidant activity increase with decreasing the concentration of carbopol 940.

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Keywords : antioxidant, carbopol 940, NLC, resveratrol.