

INTISARI

WIJAYANTI, L. M., 2020, PENGARUH VARIASI KONSENTRASI HPMC K4M 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.

Resveratrol merupakan senyawa antioksidan polifenol alami turunan stilben yang memiliki daya antioksidan serta memiliki potensi yang kuat sebagai radikal bebas. Resveratrol dapat dibuat dalam sistem *Nano Lipid Carriers* (NLC) dikarenakan resveratrol mempunyai kelarutan dalam air rendah sehingga dapat mempengaruhi bioavailabilitasnya. Penelitian ini bertujuan untuk mengetahui pengaruh variasi konsentrasi HPMC K4M terhadap mutu fisik NLC resveratrol berbasis gel dan pengaruhnya terhadap pelepasan obat serta aktivitas antioksidan sediaan topikal berdasarkan studi deskriptif.

Formula NLC resveratrol dengan variasi konsentrasi HPMC K4M yaitu 4%, 6%, 8%, dan 10% dipakai untuk mengetahui sifat mutu fisik sediaan yang bagus. NLC resveratrol dikarakterisasi dengan parameter ukuran partikel, zeta potensial, indeks polidispers, dan efisiensi penjerapan, serta NLC resveratrol berbasis gel dilakukan uji mutu fisik meliputi organoleptis, homogenitas, pH, viskositas, daya lekat, daya sebar, serta dilakukan studi deskriptif pelepasan obat, dan aktivitas antioksidan.

Hasil penelitian menunjukkan variasi konsentrasi HPMC berpengaruh terhadap mutu fisik sediaan gel, dimana semakin tinggi konsentrasi HPMC yang digunakan maka viskositasnya semakin tinggi mengakibatkan daya sebar semakin rendah maka daya lekat semakin kuat dan menyebabkan zat aktif tertahan sehingga terjadi penurunan pelepasan obat. Aktivitas antioksidan menjadi rendah adanya peningkatan konsentrasi HPMC.

Kata kunci: NLC resveratrol, HPMC K4M, gel

ABSTRACT

WIJAYANTI, L. M., 2020, THE EFFECTS OF VARIATIONS IN THE CONCENTRATION OF HPMC K4M 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.

Resveratrol is a natural polyphenol antioxidant compound derived from stilbene which has antioxidant power and has strong potential as a free radical. Resveratrol can be made in the Nano Lipid Carriers (NLC) system because resveratrol has low water solubility so that it can affect its bioavailability. This study aims to determine the effect of variations in the concentration of HPMC K4M on the physical quality of gel-based resveratrol NLC and its effect on the release of drugs and antioxidants of topical preparations based on descriptive studies.

Resveratrol NLC formula with various concentrations of HPMC K4M, namely 4%, 6%, 8%, and 10% were used to determine the good physical qualities of the preparation. Resveratrol NLC was characterized by parameters of particle size, zeta potential, polydispersity index, and absorption efficiency, and gel-based resveratrol NLC was subjected to physical quality tests including organoleptic, homogeneity, pH, viscosity, adhesion, dispersibility, and a descriptive study of drug release, and antioxidant activity.

The results showed variations in the concentration of HPMC affect the physical quality of gel preparations, where the higher the concentration of HPMC used, the higher the viscosity resulting in the lower power spread, the sticking power is stronger and causes active substances to be retained so that there is a decrease in drug release. Antioxidant activity is low due to an increase in HPMC concentration.

Keywords: NLC resveratrol, HPMC K4M, gel