INTISARI

ASYHARI, H.F.,2015, FORMULASI GEL ANTIOKSIDAN DARI EKSTRAK UMBI WORTEL (*Daucus Carota* L.) DENGAN MENGGUNAKAN CARBOPOL® 940, SKRIPSI, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI, SURAKARTA.

Wortel merupakan salah satu tanaman yang telah terbukti memiliki aktivitas antioksidan karena mengandung zat karotenoid dan vitamin C. Penelitian ini bertujuan untuk mengetahui apakah ekstrak umbi wortel bisa dibuat sediaan gel dan memiliki aktivitas antioksidan.

Ekstrak umbi wortel diperoleh dengan metode perasan (juicer) kemudian dikentalkan dengan *rotary evaporator*. Gel dibuat dalam 5 formula dimana formula 1, 2, dan 3 masing-masing mengandung sebanyak 5%, 10%, 15% ekstrak wortel. Formula 4 merupakan kontrol negatif (gel tanpa zat aktif) dan formula 5 merupakan kontrol positif (gel rutin). Aktivitas antioksidannya diuji dengan metode DPPH, serta diamati sifat fisik nya meliputi homogenitas, daya sebar, daya lekat, viskositas, dan pH.

Hasil penelitian menunjukkan bahwa ekstrak umbi wortel dapat dibuat sediaan gel dalam berbagai konsentrasi memiliki homogenitas yang baik. Semakin tinggi konsentrasi ekstrak dalam gel menghasilkan nilai viskositas dan daya sebar yang kecil, tetapi daya lekatnya semakin besar. Nilai IC_{50} ekstrak umbi wortel adalah 506,991 ppm. Hasil uji aktivitas antioksidan ekstrak dalam gel menunjukkan IC_{50} formula 1, 2, dan 3 berturut-turut adalah 749,894 ppm, 714,496 ppm, dan 680,769 ppm. Hasil uji menunjukkan adanya perbedaan aktivitas antioksidan ekstrak umbi wortel sebelum dan sesudah dibuat sediaan gel serta setelah masa penyimpanan selama 21 hari.

Kata kunci : Ekstrak umbi wortel, gel, antioksidan

ABSTRACT

ASYHARI, HF., 2015, ANTIOXIDANT GEL FORMULATION OF CARROT ROOT (*Daucus Carota* L.) EXTRACT USING CARBOPOL® 940, THESIS, FACULTY OF PHARMACY, SETIA BUDI UNIVERSITY, SURAKARTA.

Carrot is one plant that has been proves to have antioxidant activity due to its carotenoids content. This study was aimed to find out whether carrot root extract could be made gel preparation and had antioxidant activity.

Carrot not extract was obtained by juice method, and then condensed with rotary evaporator. The gels were made in 5 formulas where in formula 1, 2, and 3 contained 5%, 10%, and 15% carrot extract respectively. Formula 4 was negative control (without active substance) and formula 5 was positive control (contain rutin). The antioxidant activity was tested by DPPH method, and observed its physical properties including homogeneity, dispersive, adhesiveness. Viscosity, and pH.

The result of the study showed that carrot extract could be made gel preparation in various concentrations and had good homogeneity. The higher the extract concentration in gel, it produced small viscosity and dispersive values, but great adhesiveness. The IC_{50} value of carrot root extract was 506.991 ppm. The formula 1, 2, and 3 were 749.894 ppm, 714.496 ppm, and 680.769 ppm respectively. Those results showed there were differences in antioxidant activity of carrot extract before and after being made gel preparation and after 21 days storage.

Keywords: carrot root extract, gel, antioxidant.