

## INTISARI

**CHOIRUNNISA, F., 2018, PENGARUH VARIASI KONSENTRASI *GELLING AGENT* HPMC K100M TERHADAP SIFAT FISIK DAN AKTIVITAS GEL ANTIOKSIDAN EKSTRAK KAYU SECANG (*Caesalpinia sappan* L.) DENGAN METODE DPPH (*1,1-Diphenyl-2-Picrylhydrazyl*), SKRIPSI, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI, SURAKARTA**

Ekstrak kayu secang (*Caesalpinia sappan* L.) memiliki aktivitas antioksidan yang sangat kuat karena senyawa flavonoid yang tinggi. Antioksidan topikal dapat mencegah terjadinya kerusakan kulit oleh radikal bebas. Gel merupakan sediaan semipadat yang digunakan secara topikal. Faktor yang mempengaruhi sifat fisik gel salah satunya adalah *gelling agent*. Tujuan penelitian adalah untuk mengetahui pengaruh variasi kadar *gelling agent* HPMC K100M terhadap sifat fisik dan aktivitas gel antioksidan.

Gel diformulasikan menjadi empat formula dengan variasi kadar HPMC K100M 1%; 1,25%; 1,50%, dan 1,75%. Formula 1 hingga 4 mengandung 0,2% ekstrak secang, formula 5 (kontrol negatif), dan formula 6 mengandung rutin (kontrol positif). Uji sifat fisik meliputi organoleptis, homogenitas, daya sebar, daya lekat, pH, viskositas, dan uji iritasi terhadap responden. Aktivitas antioksidan diuji dengan DPPH (*1,1-Diphenyl-2-Picrylhydrazyl*), menggunakan Spektrofotometer UV-Vis pada panjang gelombang 516 nm. Data absorbansi digunakan untuk mengukur IC<sub>50</sub>. Hasil data dianalisis menggunakan *one-way* ANOVA dengan taraf kepercayaan 95%.

Hasil penelitian menunjukkan bahwa peningkatan kadar HPMC K100M menyebabkan viskositas, daya lekat meningkat, dan penurunan daya sebar, namun tidak mempengaruhi homogenitas dan pH gel, serta aman. Pengujian antioksidan menunjukkan peningkatan kadar HPMC K100M menghasilkan IC<sub>50</sub> pada formula 1 hingga formula 4 berturut-turut yakni 11,594; 17,055; 21,669; 27,191 ppm.

---

Kata kunci : *Caesalpinia sappan* L., antioksidan, DPPH, HPMC

## ABSTRACT

**CHOIRUNNISA, F., 2018, INFLUENCE OF GELLING AGENTS CONCENTRATION HPMC K100M VARIATION ON PHYSICAL PROPERTIES AND ANTIOXIDANT ACTIVITIES OF SAPPAN WOOD EXTRACTS (*Caesalpinia sappan L.*) GEL USING DPPH (1,1-Diphenyl-2-Picrylhydrazyl) METHODS, SKRIPSI, FACULTY OF PHARMACY, SETIA BUDI UNIVERSITY, SURAKARTA**

Sappan wood extract (*Caesalpinia sappan L.*) has very strong antioxidant activity cause its high flavonoid contains. Topical antioxidants prevent skin damage caused by free radicals. Gel is semi solid pharmaceutical dosage forms that used topically. One of the factors that influence physical properties of gel are gelling agent. The purpose of this study was to determine influence of gelling agent concentration HPMC K100M variation on physical properties and antioxidant gel activity.

Gel was formulated into four formulas with variation of HPMC K100M 1%; 1.25%; 1.50%, and 1.75%. Formula 1 to 4 contains 0,2% of sappan wood extract, formula 5 (negative control), and formula 6 contains rutin (positive control). Tests of physical properties include organoleptic, homogeneity, dispersion, adhesion, pH, viscosity, and irritation test on respondents. Antioxidant activity was tested with DPPH (1,1-Diphenyl-2-Picrylhydrazyl), using UV-Vis spectrophotometer in 516 nm wavelength. The absorbance data used to measure IC<sub>50</sub>. The results of the data were analyzed using one-way ANOVA with 95% confidence level.

The results showed increasing concentration of HPMC K100M caused increasing of viscosity and adhesion, decreased dispersion, but did not affect in homogeneity and pH gel. Irritation test to respondent showed that formula was safe for skin. Antioxidant test showed increasing concentration of HPMC K100M give IC<sub>50</sub> in formula 1 to formula 4 have activity 11,594; 17,055; 21,669; and 27,191 ppm.

---

Keywords: *Caesalpinia sappan L.*, antioxidant, DPPH, HPMC