

ABSTRAK

Latar Belakang. Daun nangka mempunyai khasiat antioksidan. Berdasarkan penelitian sebelumnya ekstrak daun nangka memiliki nilai IC_{50} 12,65 ppm (sangat kuat). Hal ini menunjukkan bahwa daun nangka memiliki potensi yang tinggi dalam memberikan efek antioksidan. Penelitian ini bertujuan untuk optimasi formula dan uji aktivitas antioksidan serum ekstrak daun nangka.

Metode. Metode yang digunakan pada penelitian ini adalah metode *Simplex Lattice Design* untuk menentukan konsentrasi karbopol dan trietanolamin. Evaluasi serum ekstrak daun nangka meliputi organoleptis, homogenitas, daya sebar, daya lekat, pH dan viskositas. Hasil percobaan formula optimum (respon aktual) diverifikasi dengan hasil prediksi software menggunakan analisis one sample *T-test* dengan taraf kepercayaan 95%.

Hasil. Hasil optimasi serum ekstrak daun nangka memberikan proporsi karbopol dan trietanolamin dengan perbandingan (0,588:0,412). Evaluasi sediaan serum menunjukkan nilai viskositas sebesar 4276 Cp ; pH 4,37 ; daya sebar 6,30 cm ; dan daya lekat 35,25 detik. Uji antioksidan serum ekstrak daun nangka dengan IC_{50} sebesar 60,56 ppm yang dapat dikategorikan kuat.

Kesimpulan. Konsentrasi karbopol untuk mendapatkan formula optimum yaitu sebesar 0,588%, sedangkan konsentrasi trietanolamin sebesar 0,412%. Nilai IC_{50} serum ekstrak daun nangka sebesar 60,56 ppm yang dikategorikan kuat.

Kata Kunci : *Artocarpus heterophyllus L*, Serum, Antioksidan, Karbopol, Trietanolamin

Abstract

Background. Jackfruit leaves have antioxidant properties. Based on previous research, jackfruit leaf extract has an IC₅₀ value of 12.65 ppm (very strong). This shows that jackfruit leaves have a high potential in providing antioxidant effects. This study aims to optimize the formula and test the antioxidant activity of jackfruit leaf extract serum antioxidants.

Method. The method used in this study is the Simplex Lattice Design method to determine the concentration of carbopol and triethanolamine. Evaluation of jackfruit leaf extract serum includes organoleptics, homogeneity, dispersibility, adhesion, pH and viscosity. The results of the optimum formula experiment (actual response) were verified by software prediction results using one sample T-test analysis with a confidence level of 95%.

Result. The results of serum optimization of jackfruit leaf extract provided a ratio of carbopol and triethanolamine (0.588:0.412). Evaluation of serum preparations showed a viscosity value of 4276 Cp; pH 4.37 ; spread capacity 6.30 cm; and adhesion of 35.25 seconds. Serum antioxidant test of jackfruit leaf extract with an IC₅₀ of 60.56 ppm which can be categorized as strong.

Conclusion. The concentration of carbopol to obtain the optimum formula was 0.588%, while the concentration of triethanolamine was 0.412%. The IC₅₀ value of jackfruit leaf extract serum was 60.56 ppm which was categorized as strong.

Keywords: *Artocarpus heterophyllus L, Serum, Antioxidants, Carbopol, Triethanolamine*