

ABSTRAK

Sintesis membran kitosan tertaut silang asam suksinat dengan paduan kolagen dengan perbandingan mol SA (1:5, 1:8,3, 1:25) serta perbandingan massa kolagen (1:0,5) telah dilakukan untuk digunakan sebagai membran dialisis kreatinin. Persen transpor dialisis dilakukan dengan membandingkan nilai persen transpor dari membran CS, CS/Col, CS/SA, dan CS/SA/Col. Pembuatan membran dilakukan dengan metode blending dan karakterisasi fisikokimia membran yang dihasilkan meliputi uji: gugus fungsi menggunakan FTIR (*Fourier-Transform Infrared*), morfologi permukaan membran dengan SEM (*Scanning Electron Microscope*), uji berat dan ketebalan, porositas (*porosity*), derajat pengembangan (*swelling degree*), serap air (*water uptake*), sudut kontak, fluks, serta aplikasi membran terhadap dialisis kreatinin. Berdasarkan penelitian yang telah dilakukan menunjukkan bahwa modifikasi membran kitosan dengan asam suksinat dan kolagen menghasilkan peningkatan porositas, derajat pengembangan, dan daya serap air. Membran termodifikasi kitosan tertautsilang asam suksinat dengan paduan kolagen menunjukkan efektivitas transpor kreatinin selama 5 jam sebesar 24,69% dengan variasi SA 1:25.

Kata kunci: Membran, kitosan, asam suksinat, kolagen, kitosan-asam suksinat-kolagen, dialisis kreatinin.

ABSTRACT

The synthesis of succinic acid cross-linked chitosan membranes blended with collagen at SA molar ratios (1:5, 1:8.3, 1:25) and collagen mass ratio (1:0.5) has been carried out for use as a creatinine dialysis membrane. Dialysis transport percentage was determined by comparing the transport percentage values of CS, CS/Col, CS/SA, and CS/SA/Col membranes. Membrane preparation was performed using the blending method, and the physicochemical characterization of the resulting membranes included tests for: functional groups using FTIR (Fourier Transform Infrared), membrane surface morphology with SEM (Scanning Electron Microscope), weight and thickness, porosity, swelling degree, water uptake, contact angle, flux, and the application of the membrane for creatinine dialysis. Based on the research conducted, it was found that the modification of chitosan membranes with succinic acid and collagen resulted in an increase in porosity, swelling degree, and water absorption capacity. The modified succinic acid crosslinked collagen blended chitosan membrane showed a creatinine transport effectiveness of 24.69% over 5 hours with an SA variation of 1:25.

Keywords: Membran, chitosan, succinic acid, collagen, chitosan-succinic acid-collagen, creatinine dialysis