

## ABSTRAK

Dialisis kreatinin dan urea berhasil dilakukan dengan membran kitosan tertaut silang tripolifosfat (TPP) dengan paduan kasein (Ca) dengan perbandingan monomer pada TPP (1:75, 1:50 dan 1:25) serta perbandingan massa (1:0,2) pada Ca. Inversi fasa digunakan untuk membuat membran. Persentase transpor dialisis dihitung dengan membandingkan nilai persen transpor dari membran Cs, Cs/Ca dan Cs/TPP/Ca. SEM dan FTIR, serta uji fisikokimia berhasil mengkarakterisasi gugus fungsi, struktur, dan morfologi membran. Hasil FTIR menunjukkan gugus P=O dan gugus C=C pada membran Cs/TPP3/Ca. Struktur dan morfologi dengan SEM terbaik pada membran Cs/TPP3/Ca. membran modifikasi meningkatkan sifat fisikokimia namun penambahan tripolifosfat menurunkan nilai tegangan pada uji kuat tarik. Membran Cs/TPP3/Ca, memiliki kemampuan dialisis terbaik dilihat dari karakterisasi fisik dan hasil persentase transpor yang dihasilkan yaitu transpor kreatinin meningkat 29,75% dan transpor urea meningkat sebesar 31,27% dari membran kitosan murni.

Kata kunci: membran, kitosan, tripolifosfat, kasein, dialisis

## **ABSTRACT**

*Creatinine and urea dialysis were successfully performed with chitosan membrane crosslinked tripolyphosphate (TPP) with casein (Ca) alloy with monomer ratio in TPP (1:75, 1:50 and 1:25) and mass ratio (1:0.2) in Ca. Phase inversion was used to make the membrane. The percentage of dialysis transport was calculated by comparing the percent transport values of Cs, Cs/Ca and Cs/TPP/Ca membranes. SEM and FTIR, as well as physicochemical tests successfully characterized the functional groups, structure, and morphology of the membranes. FTIR results showed P=O group and C=C group in Cs/TPP3/Ca membrane. Structure and morphology with the best SEM on the Cs/TPP3/Ca membrane. Modified membranes improve physicochemical properties but the addition of tripolyphosphate reduces the stress value in the tensile strength test. Cs/TPP3/Ca membrane, has the best dialysis ability seen from the physical characterization and the resulting percentage of transport results, namely creatinine transport increased by 29.75% and urea transport increased by 31.27% from pure chitosan membrane.*

*Keywords: membrane, chitosan, tripolyphosphate, casein, dialysis*