ABSTRAK

Perak diketahui memiliki kemampuan sebagai agen antimikroba. *Crosslink* kitosan tripolifosfat merupakan modifikasi kitosan yang dapat meningkatkan aktivitas antimikroba lebih baik dari kitosan. Pada penelitian ini dilakukan sintesis *crosslink* kitosan tripolifosfat yang ditambahkan $AgNO_3$ dengan variasi konsentrasi $NaBH_4$, sehingga dihasilkan komposit perak *crosslink* kitosan tripolifosfat. Komposit perak *crosslink* kitosan tripolifosfat dikarakterisasi menggunakan UV-Vis, FTIR, SEM-EDX, dan PSA serta diuji aktivitasnya dengan metode difusi cakram. Variasi komposit perak *crosslink* kitosan tripolifosfat terbukti memiliki aktivitas sebagai agen antimikroba. Uji aktivitas antimikroba dilakukan terhadap *E. coli, S. aureus, dan C. albicans*. Zona hambat terbesar yang diperoleh pada sampel komposit perak *crosslink* kitosan tripolifosfat dengan 0,1 M $NaBH_4$ pengamatan jam ke-12.

Kata kunci **:** Perak *crosslink* kitosan tripolifosfat, aktivitas antimikroba, difusi cakram

ABSTRACT

Silver is known to have the ability as an antimicrobial agent. Crosslink chitosan tripolyphosphate is a modification of chitosan which can increase antimicrobial activity better than chitosan. In this researched was carried out by synthesizing the crosslink chitosan tripolyphosphate added $AgNO_3$ with variations in the concentration of NaBH4, so the silver crosslink chitosan tripolyphosphate composite was produced. Silver crosslink chitosan tripolyphosphate composite was characterized using UV-Vis, FTIR, SEM-EDX, and PSA and their antimicrobial activity was tested using the disc diffusion method. The variation of the silver crosslink chitosan tripolyphosphate composite has been shown to have activity as an antimicrobial agent. An Antimicrobial activity test was performed on E. coli, S. aureus, and C. albicans. The largest zone of inhibition was obtained in the silver crosslink composite sample of chitosan tripolyphosphate with 0,1 M NaBH4 at the 12^{th}-hour observation.

Keywords ***:*** *Silver crosslink chitosan trypolyphosphate, antimicrobial activity, disc diffusion*