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Enhanced antimicrobial activity and reduced water absorption of chitosan films graft copolymerized with poly(acryloyloxy)ethyltrimethylammonium chloride

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ABSTRACT

Chitosan shows selective antimicrobial activity as a bioactive polymer. In this work, a quaternary ammonium derivative of chitosan was synthesized by graft-copolymerization of chitosan with poly[2-(acryloyloxy)ethyltrimethylammonium chloride] or pATC by the redox polymerization method to enhance chitosan's antimicrobial activity. The structural characterizations of the quaternized chitosan were confirmed by Fourier transform infrared spectroscopy, and also by ^{1}H and ^{13}C nuclear magnetic resonance spectroscopy. The produced chitosan was converted into films by solution casting. The physicomechanical properties of the modified chitosan were

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