

SYNTHESIS AND APPLICATION OF SOME POLYMERIC CONJUGATES OF THYMOL OR EUGENOL

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Maleic copolymers became more and more important for uses as drugs, drug carriers, supports for enzymes or antibacterial agents. The maleic copolymers have generally a reproducible alternating structure which can be quite easily characterized. By chemical modification of the anhydride ring new polymers with functional groups can be obtained. This method is advantageous due to the fact that it needs mild conditions of synthesis and leads to products with advanced purity.

Until now there are only few papers related to the synthesis and characterization of polymer conjugates with disinfectant molecules. In our study several maleic copolymers were synthesized by radicalic copolymerization of maleic anhydride (MA) with vinyl acetate (VA), styrene (St), N-vinylpyrrolidone (NVP) or methyl methacrylate (MMA). The chemical composition of the copolymers was assessed by conductometric titration and the molecular weight was estimated from viscometric measurements.

The polymeric conjugates of thymol or eugenol were obtained by esterification at low temperature without catalyst. The esters were purified and characterized by elemental analysis, conductometric titration, IR spectra and TG analysis. We have also studied the behavior of the esters in aqueous solution, with or without added salt. Preliminary tests showed that the antibacterial effect of the conjugates was dependent on the nature of the polymeric support.