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Synthesis, Characterization and in Vitro Degradation of Poly(DL-Lactide)/Poly (DL-Lactide-co-Glycolide) Films

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Abstract: Poly(dl-lactide) (PLA) homopolymers and poly(dl-lactide-coglycolide) (PLGA) copolymers were synthesized from their cyclic dimers, i.e. dllactide and glycolide, by ring-opening polymerization in the presence of catalyst stannous octoate and chain control agent lauryl alcohol. The effects of catalyst and chain control agent concentrations, reaction temperature, and reaction time on the molecular weight and yield of homopolymers were studied. The homopolymers were obtained in the intrinsic viscosity 0.1 to 1.0 dl/g range by changing the polymerization conditions. The copolymers in two different lactide/glycolide ratios, i.e. 90:10 and 70:30 and in 0.60 intrinsic viscosity were synthesized. The