

研究简报

二氧化碳/环氧丙烷/ γ -丁内酯三元共聚物微球降解性的研究

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摘要

关键词 [脂肪族聚碳酸酯](#) [微球](#) [降解性](#) [药物释放](#)

分类号

STUDY ON DEGRADABILITY OF MICROSPHERES MADE OF CARBON DIOXIDE/PROPYLENE OXIDE/ γ -BUTYROLACTONE COPOLYMER

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Abstract Some methods have been developed to use CO₂ as the raw material to produce degradable polymeric materials. The terpolymer of carbonate (PPGC) synthesized with the terpolymerization of CO₂, propylene oxide and γ -butyrolactone (GBL). GBL offered an ester structural unit making the copolymer easier to hydrolyze. Hence, PPGC should be of good degradability. In order to study its degradability, the polymer PPGC was used as materials for drug loading. The drug-loaded microspheres were obtained by the W/O/W type emulsions method. The microspheres were spherical in shape with smooth surfaces and good dispersion. The drug loading and encapsulation efficiency were 36.7% and 78.6%, respectively. The degradative behavior was studied by SEM, XRD and drug release curves in different degradation medium were obtained. It was found that these microspheres could be degraded at faster speed in the basic media, while could not be degraded in the acidic media. The higher pH value of the medium was, the faster the initial degradative speed was.

Key words [Aliphatic polycarbonate](#) [Microspheres](#) [Degradability](#) [Drug release](#)

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