

研究简报

端氨基聚乙二醇-聚己内酯二嵌段共聚物的合成及其微球表面氨基和形态的调控

于国强, 石旭东, 甘志华

中国科学院化学研究所工程塑料实验室; 中国科学院化学研究所工程塑料实验室 北京; 中国科学院研究生院北京

收稿日期 2006-3-6 修回日期 2006-4-16 网络版发布日期 接受日期

摘要

关键词 [生物降解高分子](#) [端氨基](#) [微载体](#) [表面性质](#)

分类号

SYNTHESIS OF POLY(ϵ -CAPROLACTONE)/POLY(ETHYLENE GLYCOL) BLOCK COPOLYMERS AND SURFACE PROPERTY CONTROL OF THEIR MICROSPHERES

YU Guoqiang^{1,2}, SHI Xudong¹, GAN Zhihua¹

1 CAS Key Laboratory of Engineering Plastics; Institute of Chemistry; Chinese Academy of Sciences; Beijing 100080; 2 Graduate School of Chinese Academy of Sciences; Beijing 100039

Abstract A method was developed to synthesize amphiphilic poly(ϵ -caprolactone)-*b*-poly(ethylene glycol)(PCL-*b*-PEO) block copolymers with well-defined structure and with functional amino end-group connected to the PEO block. The molecular weight, composition and chain structure of the resultant copolymers were characterized by GPC and ¹H-NMR. The microspheres of the copolymers were prepared by W / O / W double emulsion solvent evaporation method. The analysis results by confocal laser scanning microscopy indicate that the amino groups are distributed dominantly on the surface of microspheres due to the hydrophilic property of amino groups and the formation process of microspheres in aqueous phase. The surface morphology of microspheres could be regulated by changing the composition of block copolymers. The results of this work indicate that the surface properties of the microspheres can be controlled by polymer chain structure, and that the microspheres with amino group located on the surface can be further conjugated with peptide such as RGD. Therefore, these microspheres are promising materials as microcarriers for promoting cell growth.

Key words [Biodegradable polymers](#) [Functional amino end-group](#) [Microspheres](#) [Surface properties](#)

DOI:

通讯作者 甘志华

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