

材料工程专栏

## Preparation and Characterization of Copolymer Micelles Formed by Poly(ethylene glycol)-Polylactide Block Copolymers as Novel Drug Carriers

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收稿日期 修回日期 网络版发布日期 接受日期

**摘要** Diblock copolymer poly(ethylene glycol) methyl ether-polylactide (MePEG-PLA) micelles were prepared by dialysis against water. Indomethacin (IMC) as a model drug was entrapped into the micelles by dialysis method. The critical micelle concentration (CMC) of the prepared micelles in distilled water investigated by fluorescence spectroscopy was 0.0051 mg/mL which is lower than that of common low molecular weight surfactants. The diameters of MePEG-PLA micelles and IMC loaded MePEG-PLA micelles in number-averaged scale measured by dynamic light scattering were 52.4 and 53.7 nm respectively. Transmission electron microscope and scanning electron microscope observation showed that the appearance of MePEG-PLA micelles was in a spherical shape. The content of IMC incorporated in the core portion of the micelles was 18 wt.%. The effects of the synthesis method of the copolymer on the polydispersity of the micelles and the yield of the micelles formation were discussed.

**关键词** [poly\(ethylene glycol\)](#), [polylactide](#), [block copolymer](#), [polymer micelle](#), [drug carrier](#)

分类号

**DOI:**

对应的英文版文章: [206511](#)

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