

Biodegradable Molecularly Imprinted Polymers Based on Poly(lactic acid)

장현경, 김범수*
충북대학교 화학공학과
(bskim@chungbuk.ac.kr*)

Biodegradable molecularly imprinted polymers (MIPs) based on poly(lactic acid) (PLA) were prepared and characterized. A biodegradable crosslinker, diacrylated triblock copolymer of PLA-poly(ethylene glycol) (PEG)-PLA was synthesized by ring opening polymerization of D,L-lactide using hydrophilic PEG as a macroinitiator, followed by diacrylation of the end groups for the introduction of polymerizable vinyl groups. The synthesis of acrylate end-capped macromers was confirmed using FT-IR and ¹H-NMR spectroscopic techniques. These macromers were used to prepare biodegradable crosslinked networks by photopolymerization with functional monomer (methacrylic acid) and a model template (theophylline). MIP showed higher rebinding capacity to theophylline than its corresponding non-imprinted polymer (NIP).