

pH and temperature sensitive hydrogels of poly(ethylenglycol) and poly(aminoester)

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pH and temperature sensitive hydrogels were synthesized from Polyethylene glycol – poly D, L. Lactide – ϵ -caprolactone (PCLA-PEG-PCLA); or Polyethylene glycol – poly ϵ -caprolactone (PCL-PEG-PCL), N. N' trimethylenedipiperidine, piperazine, and butanediol diacrylate, hexandiol diacrylate to make pentablock β .aminoester-PCLA-PEG-PCLA – β .aminoester or β .aminoester-PCL-PEG-PCL – β .aminoester. The sol-gel transition properties of these block copolymers are influenced by the hydrophobic/hydrophilic balance of the copolymer, block length, hydrophobicity, stereo-regularity of the hydrophobic of the block copolymer¹, and the ionization of the pH function groups in the copolymer depended on the changing of environmental pH. The result of the investigation can be used for drug and protein delivery field.