

## Novel injectable pH- and temperature-sensitive hydrogels based on multiblock poly(ester amino urethane)s

김민상, He chaolian, Kasala dayananda, 김봉섭, 이두성\*  
성균관대학교  
(dslee@skku.edu\*)

Intelligent polymers and hydrogels responding to multiple stimuli, especially to both temperature and pH, have attracted increasing interest. In recent years, hydrogels bearing cationic groups have received considerable attention for drug delivery systems because of their diversity in terms of chemical structures, molecular weights and ability to bind biomacromolecules through electrostatic interactions. Natural cationic polysaccharides such as chitosan and synthetic cationic polymers such as poly(amido amines), poly(ethylene imine) and polylysine, have been used for delivery of protein, gene and drug molecules. Synthetic polymers bearing piperazine groups, such as poly(N-acryloyl-,N'-alkyl piperazine-co-methyl methacrylate) and poly( $\beta$ -amino ester), respond to a narrow pH change in the region of pH 6 - 7.4 and therefore have potential in biomedical applications.