

## Morphology controls of self-assembled nanoparticles by the secondary structures of poly(amino acid)s

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PHEA containing amine group in the side chain was synthesized by aminolysis of PSI with 2-aminoethanol and 1,6-hexanediamine. PHEA-g-oligo(L-lysine) was successfully synthesized using living polymerization of  $\alpha$ -amino acid-N-carboxyanhydrides. Self-assembled nanoparticles of PHEA-g-oligo(L-lysine) in an aqueous solution was fabricated. The morphology changes of self-assembled nanoparticles were induced by the pH or temperature-responsive conformational transition of specific poly (amino acid) group. The conformational transition of secondary structure of poly (amino acid) group was confirmed by CD (circular dichroism). The morphology of self-assembled nanoparticles are studied by TEM and DLS.

The surface plasmon resonance (SPR) biosensor has been widely used to investigate binding event occurring on biological surfaces by the detection of a refractive index change on a gold surface without the need to label molecules. We also, through the SPR study, verify physicochemical properties of conformational transition of poly (amino acid).