

### Design and characterization of imidazole-grafted poly(amino acid) nano-aggregates

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pH-sensitive amphiphilic poly(asparagine)s grafted with octadecyl(C18) chains & 1-(3-aminopropyl imidazole) groups were prepared for application of intracellular drug delivery. The structure of polymers was confirmed by <sup>1</sup>H NMR and FT-IR spectroscopy. The polymers had sharp pH-responsive abilities according to small pH change (pH 7→5) and aggregated and formed nanoparticles in aqueous solution by hydrophobic interaction. It was confirmed that the prepared polymers had pH-dependent soluble-insoluble transition and high buffering capacity at endosomal pH. In case of C10I50, it formed stable nano-sized aggregates at pH range(7.0~9.0) and its mean particle size measured by dynamic light scattering was 142nm. We think that prepared imidazole&C18-grafted poly(asparagines) is worth initial basis for design of drug delivery carrier which required triggered system at small pH change, such as intracellular drug delivery and tumor targeting delivery.