

## Novel amphiphilic poly(amino acid) derivatives for intracellular pH-sensitive drug carrier

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Recently, amino acid-based polymers have become one of the most important biomaterials for drug delivery systems due to biocompatible and biodegradable properties. Polymers that respond to a small change in pH have a wide range of applications. In particular, much attention has been paid to pH-sensitive drug delivery systems such as intracellular endosomal drug release and tumor targeting delivery. 1-(3-Aminopropyl)imidazole has imidazole ring like histidine and primary amine to react with succinimide group of polysuccinimide(PSI). So, we prepared new pH-sensitively modified poly(amino acid) derivatives for pH-sensitive intracellular drug delivery carrier by introducing 1-(3-aminopropyl)imidazole and hydrophilic PEG-NH<sub>2</sub> to PSI, and characterized their pH-sensitive properties. The polymers showed sharp pH-responsive abilities according to small pH change (pH 7 → 6.8). They formed nano-aggregates in aqueous solution above pH 7 by hydrophobic imidazole interaction, but dissociated below pH 7 by ionization of imidazole rings. They also had high buffering properties at endosomal pH range.