Supporting Information

The drug release kinetics of all samples was calculated by following equation:

$$\frac{M_t}{M_\infty} = kt^n \quad (1)$$

Where M_t and M_∞ are the amount of drug released at time t and the amount of drug released at infinite time, k is the release constant; and exponent n describes the type of diffusion.

The constant k and n are showed in Table S1. The value of n indicated the mechanism of drug release, where a value of 0.43 or below 0.43 for sphere suggests diffusion controlled release (Fickian diffusion or quasi-Fickian diffusion), while a value of between 0.43 and 0.89 for sphere suggests anomalous diffusion or non-Fickian diffusion. As a value of 0.89 for sphere suggests relaxation controlled release. The fitting line of Eq (1) to release data indicated that the *in vitro* release was described by quasi-Fickian or Fickian release.

Table S1 Release Parameters of CHC and CHCA6 at different pH from 4.5 to 7.5. (n/k (r^2))

Sample No.	CHC	CHCA1	CHCA3	CHCA6
pH 4.5	0.19/23.62 (0.97)	0.37/4.63 (0.95)	0.43/3.22 (0.95)	0.44/2.53 (0.95)
pH 6.5	0.18/10.43 (0.93)	0.28/7.75 (0.96)	0.3/5.78 (0.98)	0.3/6.1 (0.98)
pH 7.5	0.2/7.97 (0.96)	0.28/ 7.65 (0.74)	0.38/6.58 (0.99)	0.36/7.6 (0.99)

As shown in Figure S1, CHC-PAA hybrid macromolecules formed sphere-like nanoparticles by self-assembly. The diameter of CHC-PAA hybrid nanoparticles were 100~110 nm in TEM image. The sample was prepared by dissolving 1 mg CHC-PAA into 1 ml deionized water and controlling the pH value at 4.5.

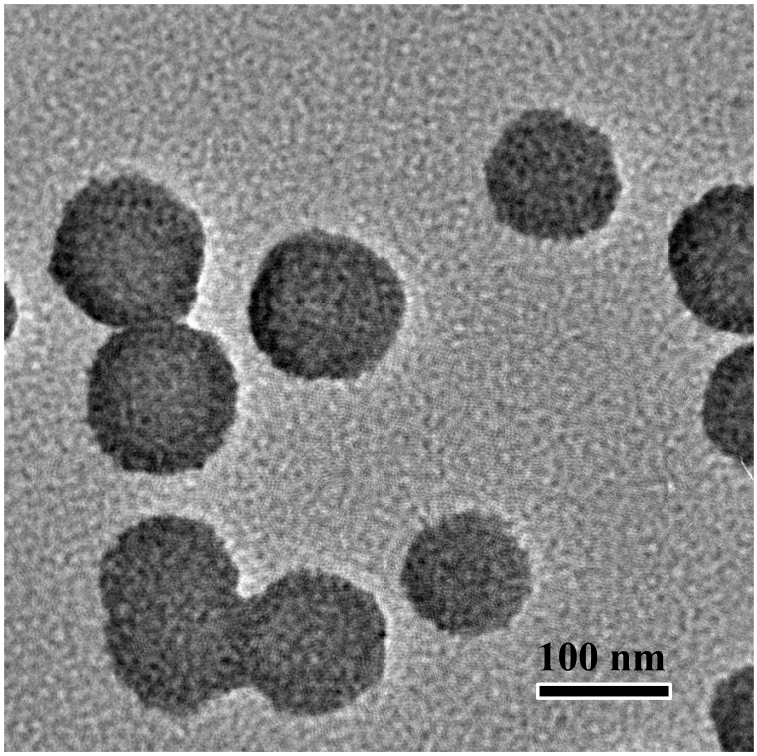

Figure S1 TEM image of CHC-PAA hybrid nanoparticles (CHCA6).