Supporting Information

Dual Acid-Responsive Supramolecular Nanoparticles as New Anticancer Drug Delivery

Chunran Wang, a Xiaofei Chen, a Xuemei Yao, a Li Chen, *a and Xuesi Chenb

¹Department of Chemistry, Northeast Normal University, Changchun 130024, P. R.

China

E-mail: chenl686@nenu.edu.cn

²Key Laboratory of Polymer Ecomaterials, Changchun Institute of Applied Chemistry, Changchun 130022, P. R. China



Scheme S1 Synthetic route for Dex-BA/PIC



Scheme S2 Synthetic route for Dex-BA/PC



Fig. S1 FT-IR spectra of Dex-TMBA, Dex-BA, PIC and PC.



Fig. S2 ¹H NMR spectrum of Dex-BA in DMSO.







Fig. S4 The hydrodynamic radii (R_h) of Dex-BA/PIC at pH 7.4 (A) and pH 5.3

(B).



Fig. S5 The hydrodynamic radii (R_h) of Dex-TMBA/PC at pH 7.4 (A) and pH 5.3 (B).



Fig. S6 The hydrodynamic radii (*R*_h) of Dex-TMBA/PIC in PBS at pH 7.4 for different time intervals.



Fig. S7 ¹H NMR spectra of Dex-TMBA in D_2O (A), D_2O + DCl (B, pH 6.8) and D_2O + DCl (C, pH 5.3).



Fig. S8 ¹H NMR spectra of PIC in D_2O (A) and D_2O + DCl (B, pH 6.8).



Fig. S9 *In vitro* DOX release profiles for DOX-loaded Dex-BA/PIC in PBS at 37°C.



Fig. S10 Cytotoxicity of Dex-TMBA/PIC (a), Dex-BA/PIC (b), Dex-BA/PC (c) and PEI (d) toward HeLa (A) and HepG2 (B) cells after incubation for 72 h.



Fig. S11 Cytotoxicities of free DOX and DOX-loaded supramolecular nanoparticles toward HepG-2 cells after incubation for 24 h, 48 h and 72 h at neutral culture medium.



Fig. S12 Cytotoxicities of DOX-loaded supramolecular nanopaticles and free DOX toward HeLa cells after incubation for 24 h, 48 h and 72 h at pH 6.8.



Fig. S13 Cytotoxicities of DOX-loaded supramolecular nanoparticles and free DOX toward HepG-2 after incubation for 24 h, 48 h and 72 h at pH 6.8.



Fig. S14 Representative CLSM images of HeLa cells incubated with DOX-loaded Dex-BA/PC (A), DOX-loaded Dex-BA/PIC (B), DOX-loaded Dex-TMBA/PIC (C) at pH 6.8. For each panel, the image from left to right show DOX fluorescence in cells (red), cell nuclei stained by DAPI (blue), and overlays of the images.



Fig. S15 Flow cytometric profiles of HeLa cells incubated with PBS at pH 6.8 (Control), DOX-loaded Dex-BA/PC (a), DOX-loaded Dex-BA/PIC (b), DOX-loaded Dex-TMBA/PIC (c) at pH 6.8 at 37 [□]C.