Supporting Information

Doxorubicin Carrier Mediated by HCOF Platform for Potent Cancer Therapy†

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Experimental Section

Chemicals and Materials. 1,3,5-Tris(4-aminophenyl)benzene ($C_{24}H_{21}N_3$, 99%, Shanghai Macklin Biochemical Co. Ltd), 1,3,5-Benzenetricarboxaldehyde ($C_9H_6O_3$, 99.76%, Shanghai Macklin Biochemical Co. Ltd), Acetonitrile (C_2H_3N, 99.9%, Shanghai Macklin Biochemical Co. Ltd), Folic Acid ($C_{19}H_{19}N_7O_6$, 97%, Shanghai Macklin Biochemical Co. Ltd), N, N-Dimethylformamide (C_3H_7NO, AR, 99.5%, Shanghai Macklin Biochemical Co. Ltd), Acetic acid ($C_2H_4O_2$, 99.8%, Shanghai Macklin Biochemical Co. Ltd), Ferri nitrate nonahydrate ($FeH_{18}N_3O_{18}$, AR, 98.5%, Shanghai Macklin Biochemical Co. Ltd), Hydrogen peroxide (H_2O_2, 30%, Xilong Scientific).

Characterization. Powder X-ray diffraction (PXRD) patterns were obtained on a Rigaku MiniFlex 600 diffractometer with graphite monochromatized CuKα radiation (λ = 0.15405 nm). The sample was scanned at a scanning rate of 5/min in the 2θ range from 3 to 20° at room temperature. Transmission electron microscopy (TEM) images were obtained using a Talos 200 microscope (ThermoFisher Scientific, USA). A field emission scanning electron microscope (Thermo Fisher, Apero 2S) was used to characterize the morphology of the sample. The UV-Vis adsorption spectral values were collected on a UV-2600 spectrophotometer (Shimadzu). Fourier transform infrared spectroscopy (FT-IR) was measured on a Nicolet iS50 (ThermoFisher Scientific, USA) using the KBr tableting technique. Zeta potential data and dynamic light scattering (DLS) were examined employing a Zeta sizer (NanoZS, Malvern, UK). Dynamic light scattering (DLS) experiment was performed on Malvern Zeta Sizer-Nano ZS instrument at 25°C. MTT experiments were carried out using a microplate reader (Cytation5). The flow cytometry data was obtained by BD FACSymphony A1 Cell Analyzer.

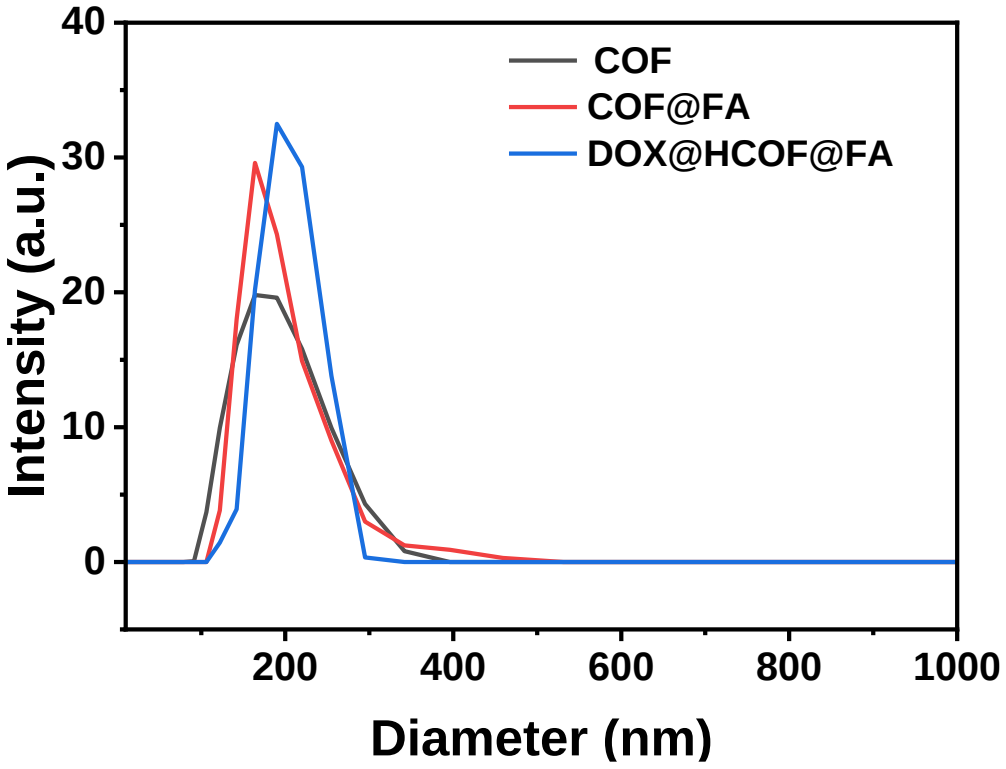

Fig. S1 The DLS measurement results for HCOF, HCOF@FA and DOX@HCOF@FA.

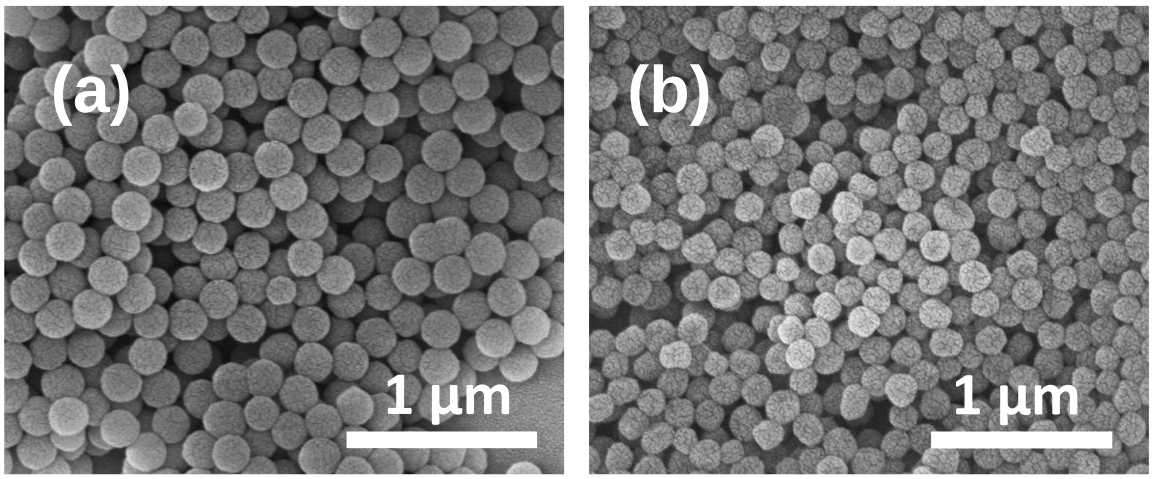

Fig. S2 SEM images of (a) COF and (b) HCOF.

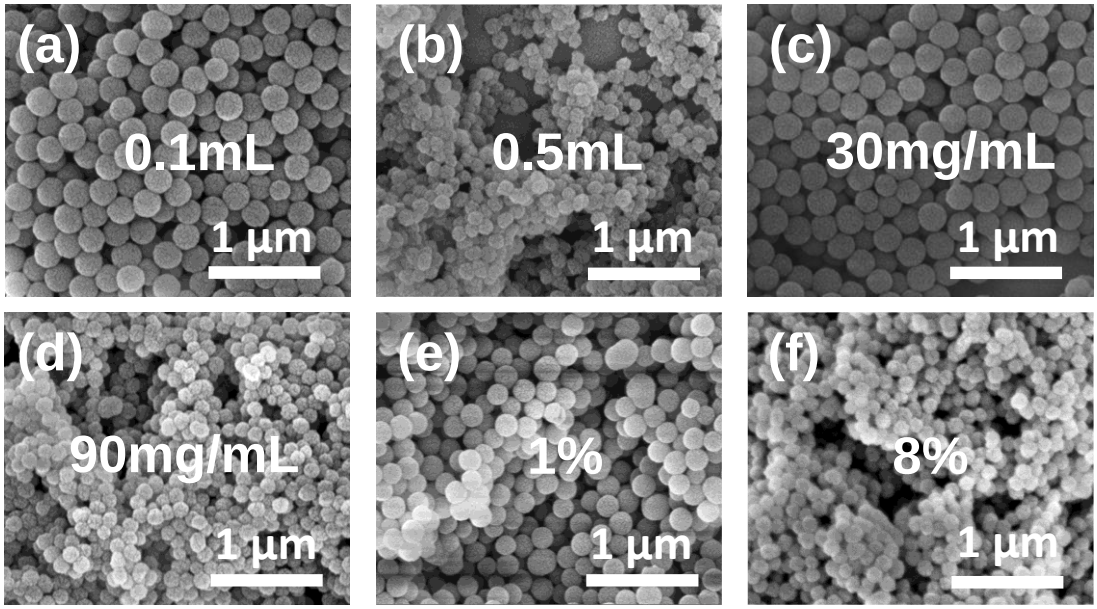

Fig. S3 SEM images of HCOF prepared with different content of (a) (b) acetic acid, (c) (d) ferric nitrate, (e) (f) hydrogen peroxide.

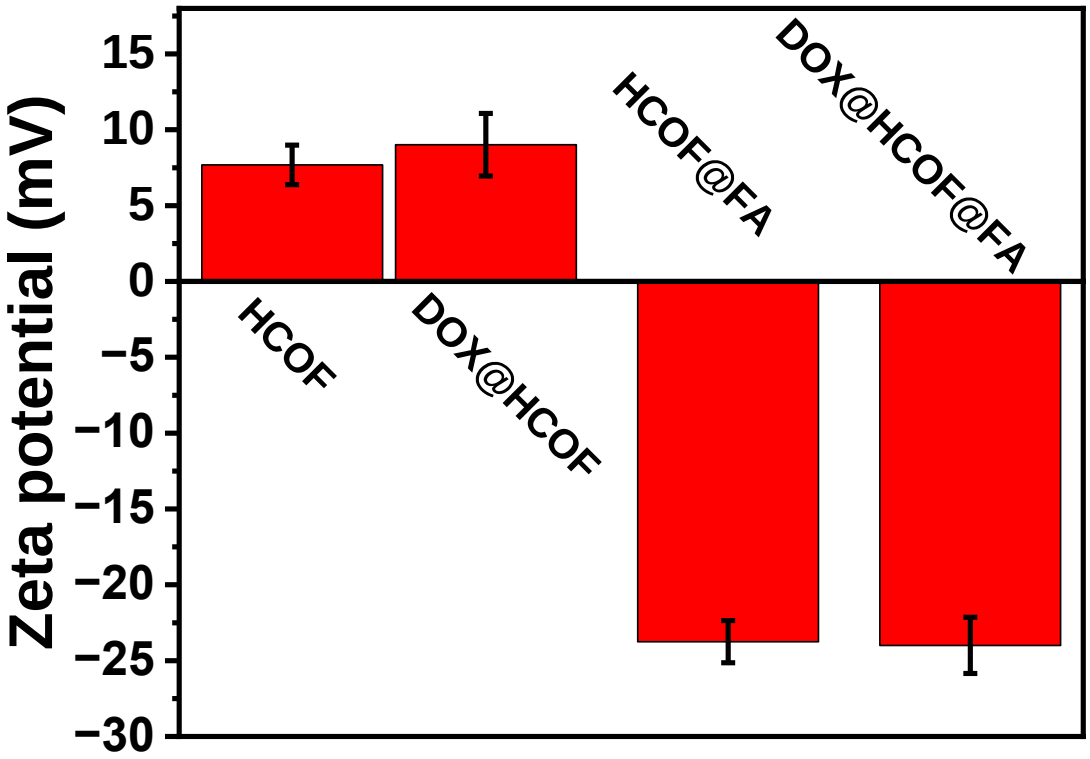

Fig. S4 Zeta potential of HCOF, HCOF@FA, DOX@HCOF and DOX@HCOF@FA.

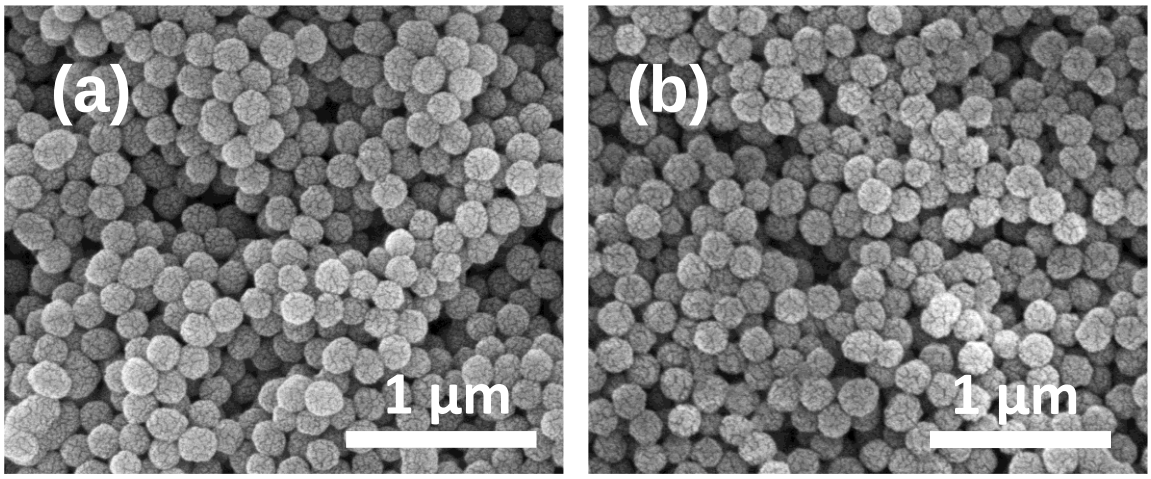

Fig. S5 SEM images of HCOF dispersed in (a) 1640 and (b) DMEM for 24 h, respectively.

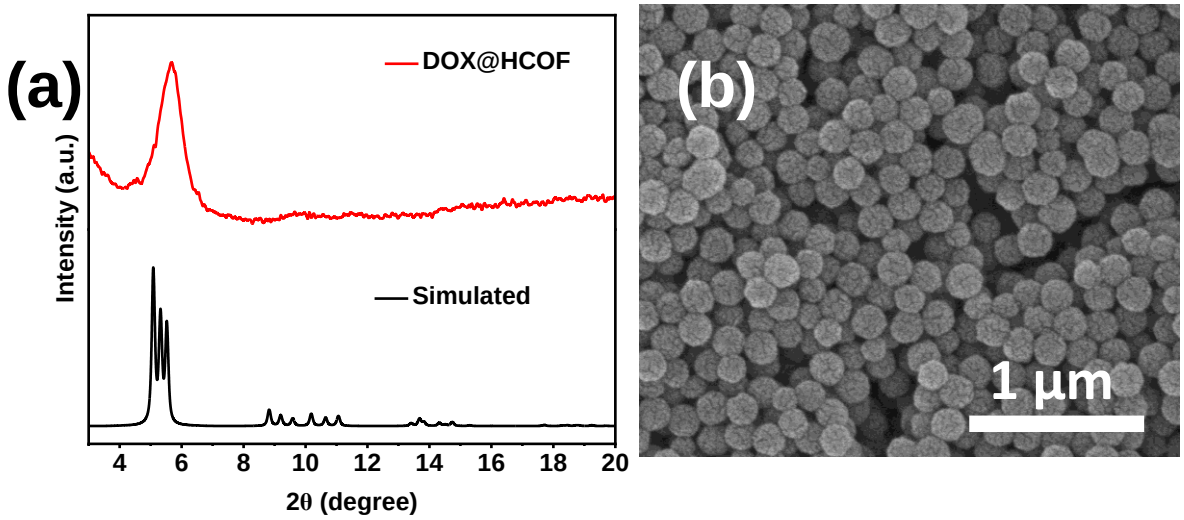

Fig. S6 (a) PXRD patten and (b) SEM image of DOX@HCOF.

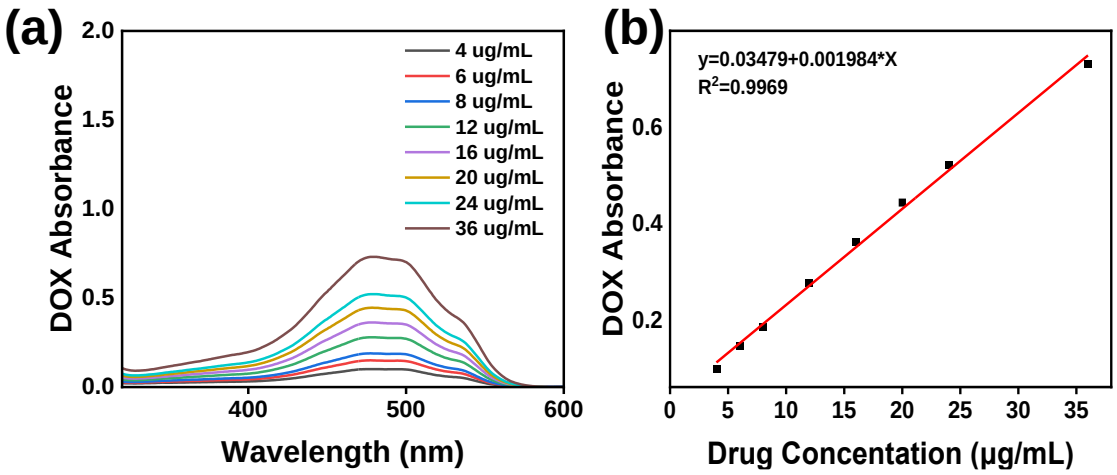

Fig. S7 (a) UV-vis absorption curve of DOX with different concentrations. (b) UV-vis absorbance-concentration standard line of DOX.

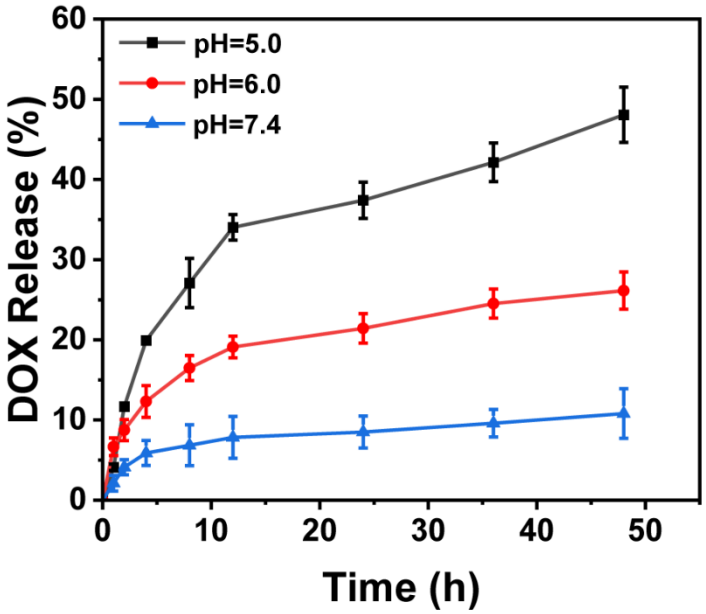

Fig. S8 Drug release profile in PBS solutions at different pH values.

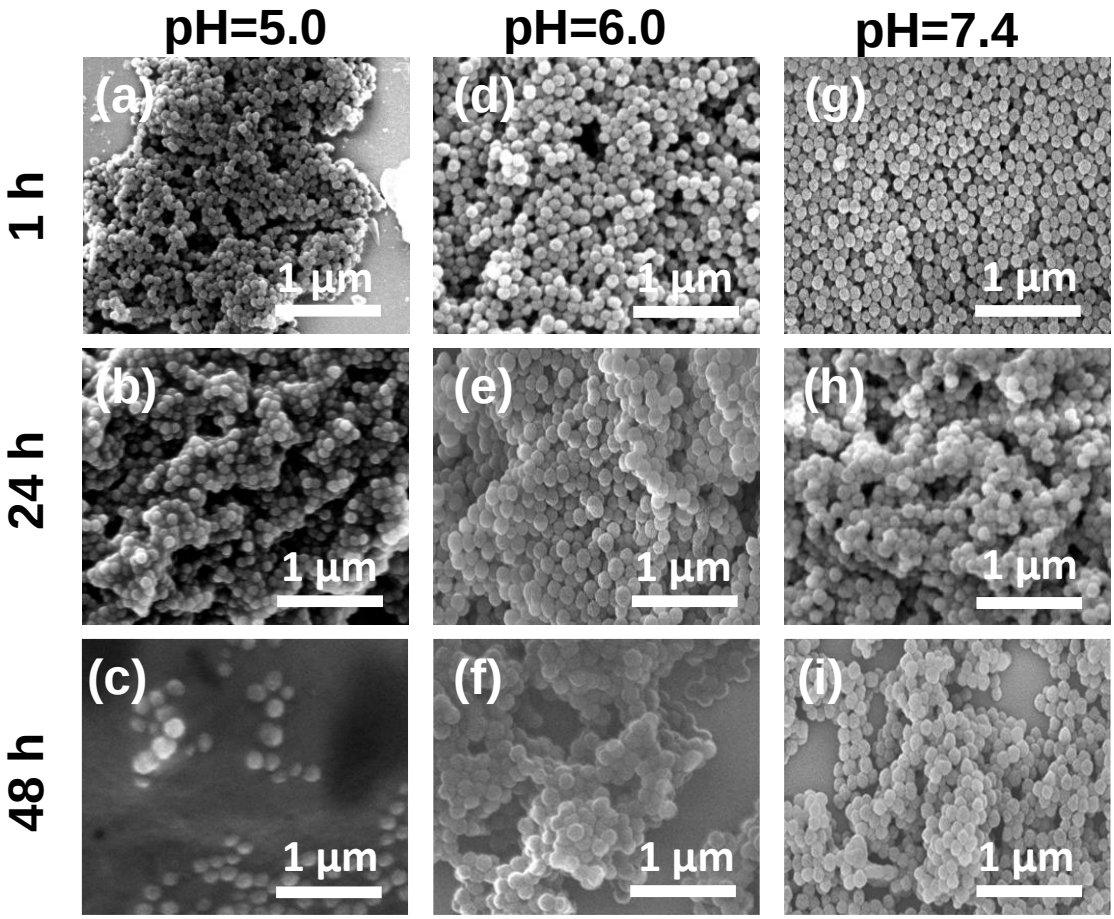

Fig. S9 SEM image of HCOF after incubating with PBS at (a-c) pH=5, (d-f) pH=6.0, (g-i) pH=7.4 for 1, 24 and 48 h, respectively.

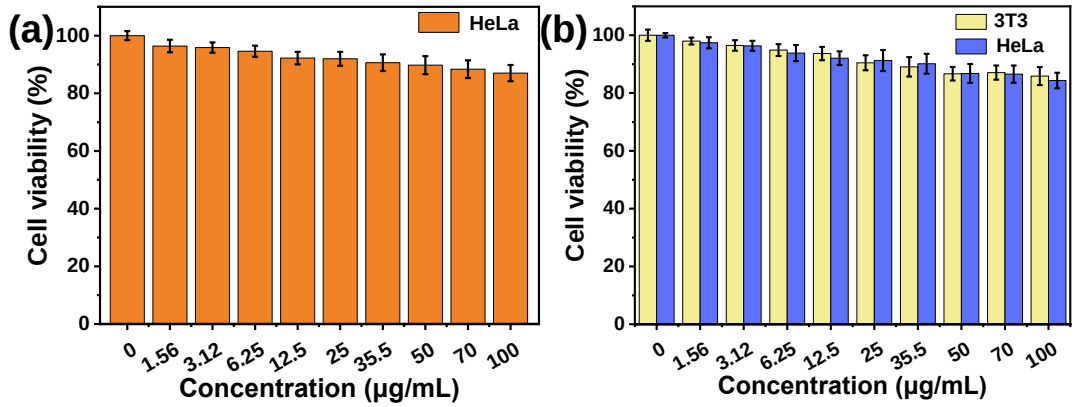

Fig. S10 (a) In vitro cell viability of HCOF@FA against HeLa cells. (b) In vitro cell viability of HCOF against 3T3 cells and HeLa cells.

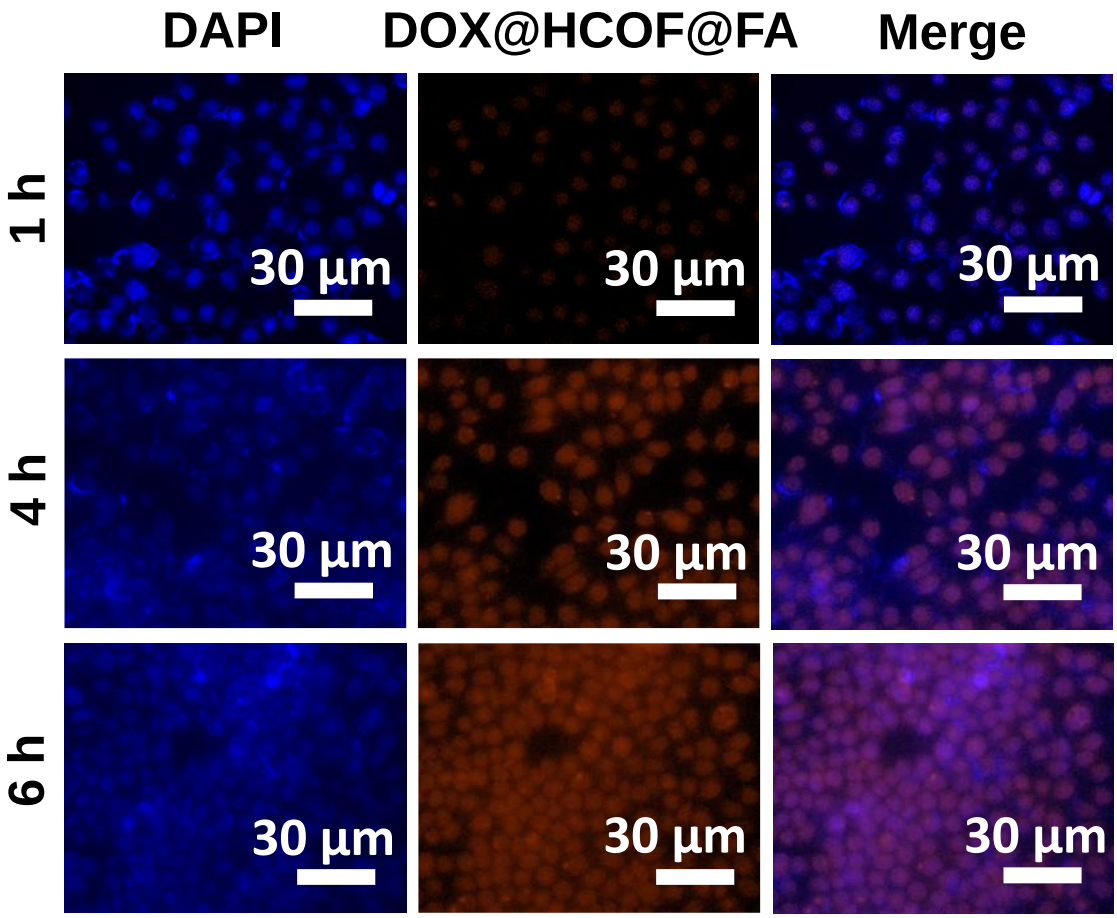

Fig. S11 CLSM images of HeLa cells incubated with DOX@HCOF@FA for different times.

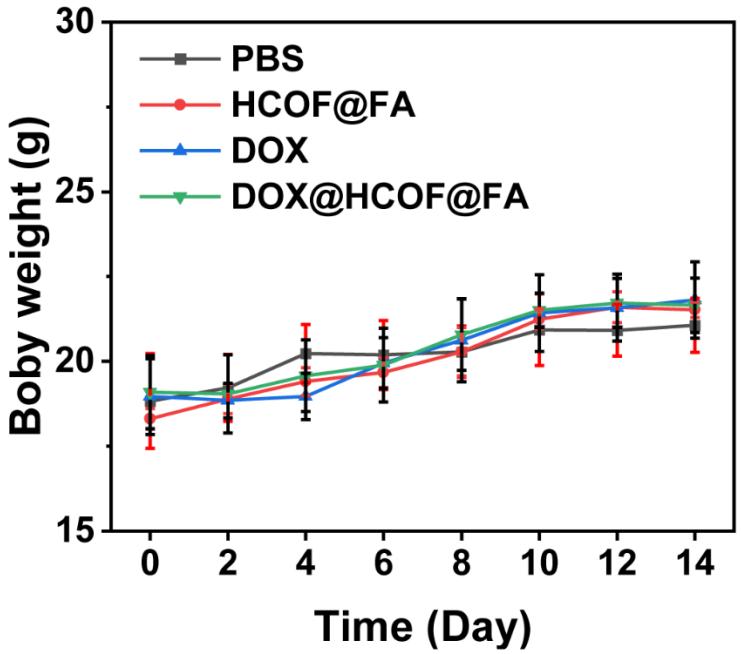

Fig. S12 Body weight changes by different treatments.