

### Supporting Information

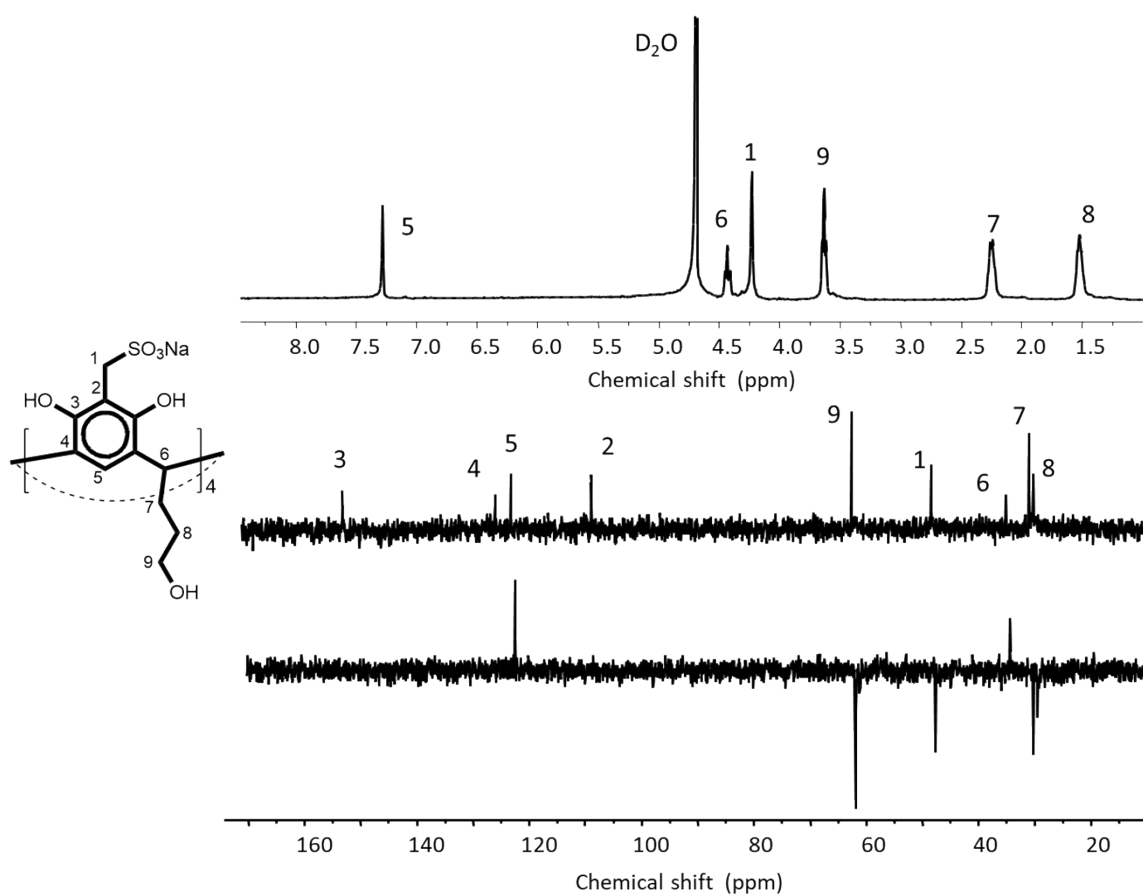
Supramolecular assembly of calix[4]resorcinarenes and chitosan for design of drug nanocontainers with selective effects on diseased cells

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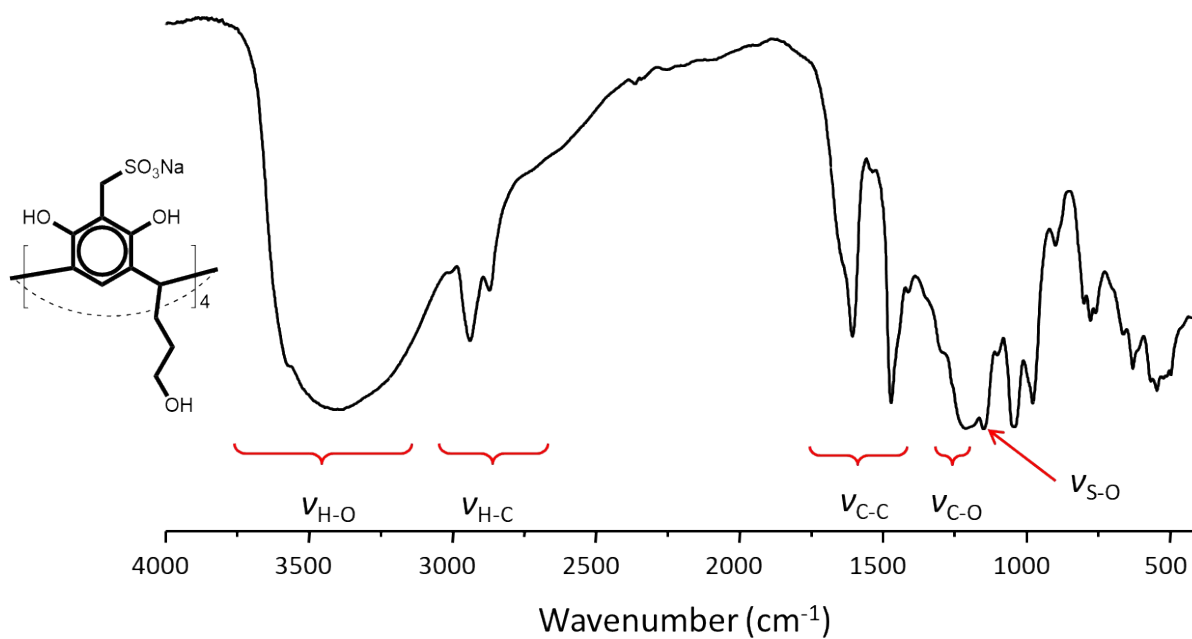
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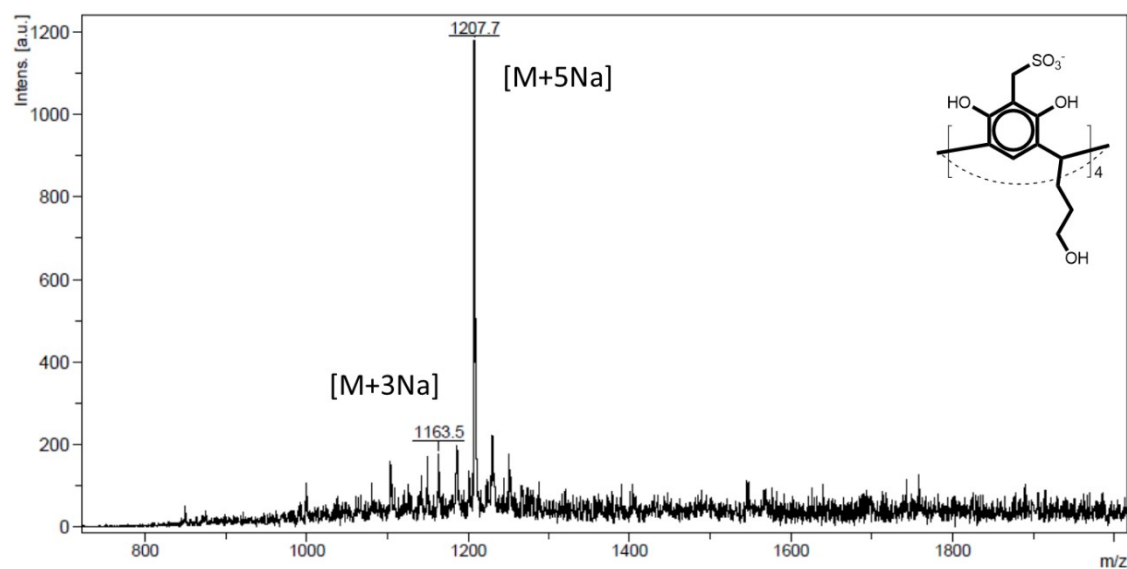
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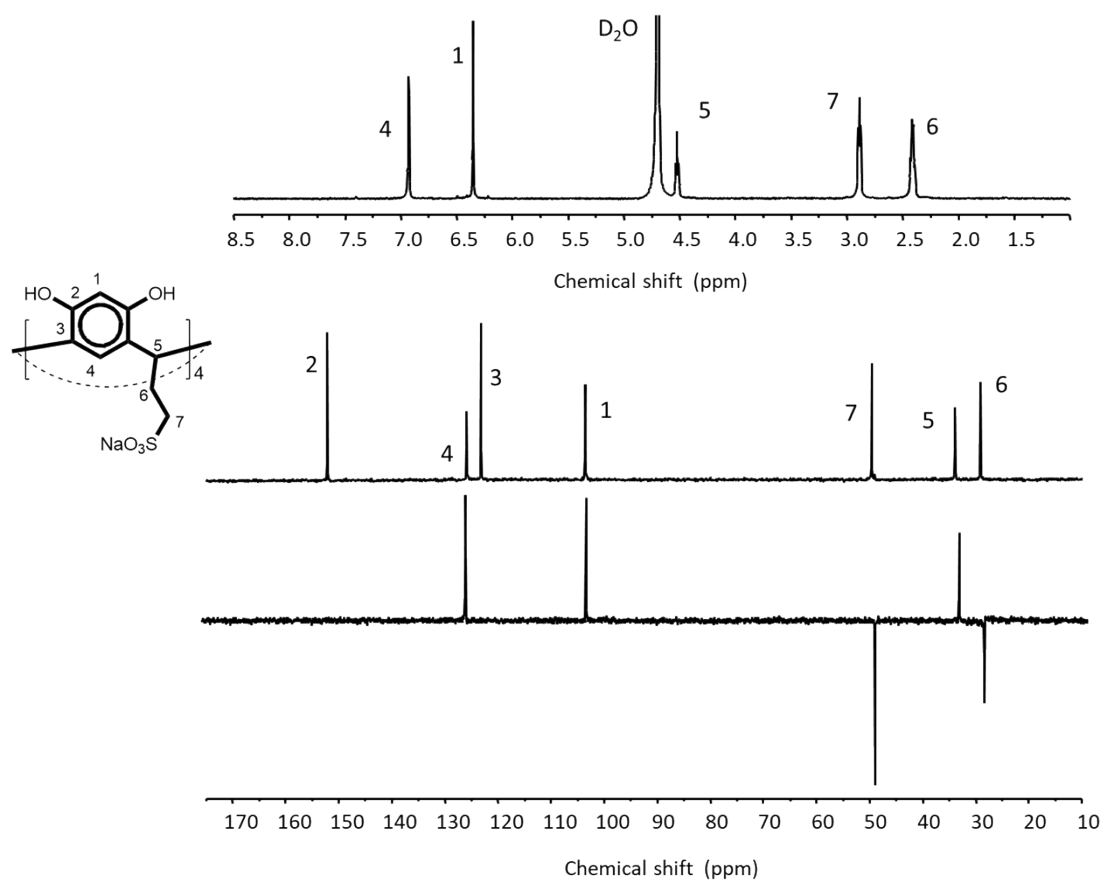
**Figure S1.**  $^1\text{H}$  and  $^{13}\text{C}$  NMR spectra of USR in  $\text{D}_2\text{O}$ ,  $25^\circ\text{C}$ .



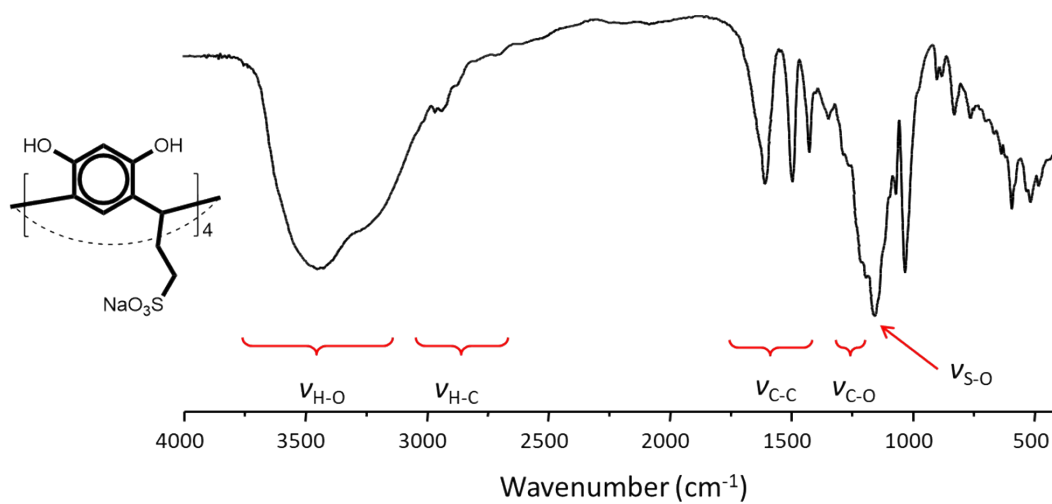
**Figure S2.** IR spectrum of USR,  $25^\circ\text{C}$ .



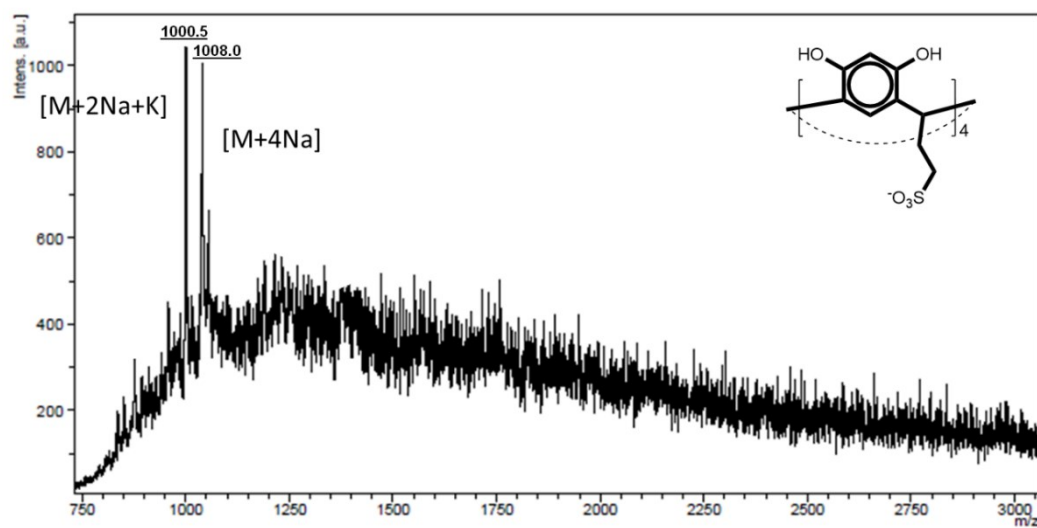
**Figure S3.** MALDI-TOF mass-spectrum of USR in water.



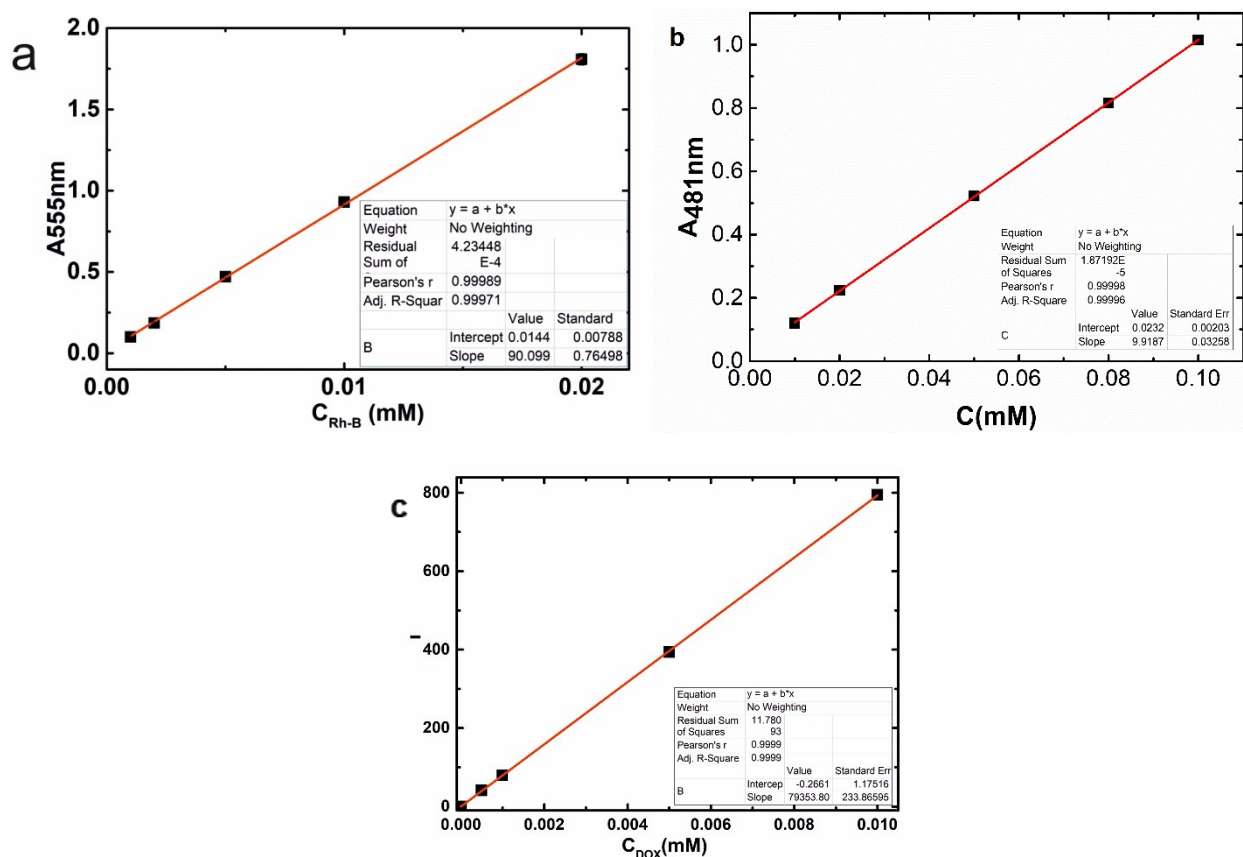
**Figure S4.**  $^1\text{H}$  and  $^{13}\text{C}$  NMR spectra of LSR in  $\text{D}_2\text{O}$ , 25 °C.



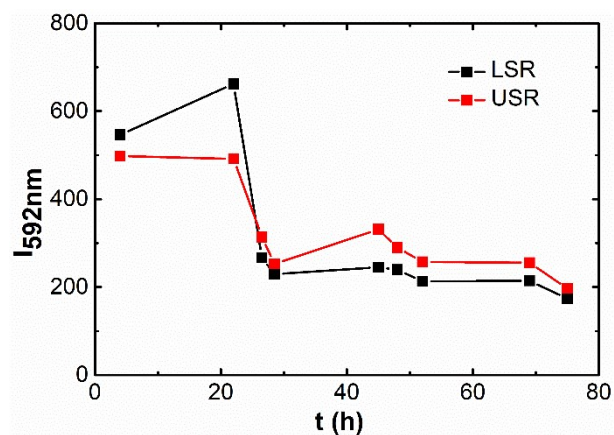
**Figure S5.** IR spectrum of LSR, 25 °C.



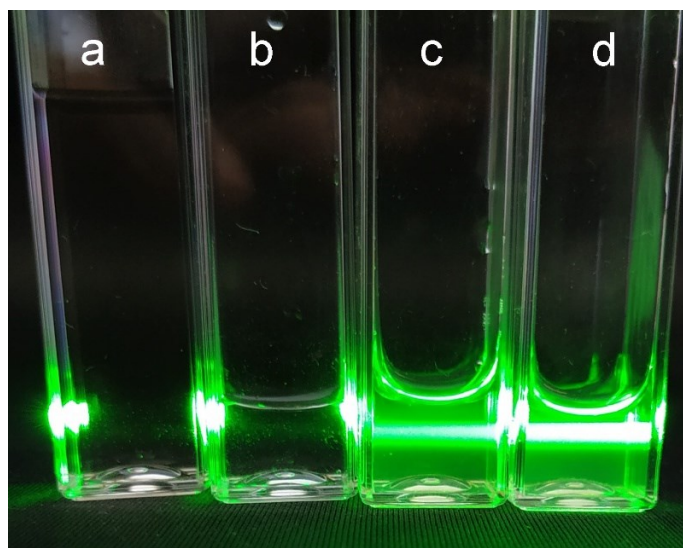
**Figure S6.** MALDI-TOF mass-spectrum of LSR in water.



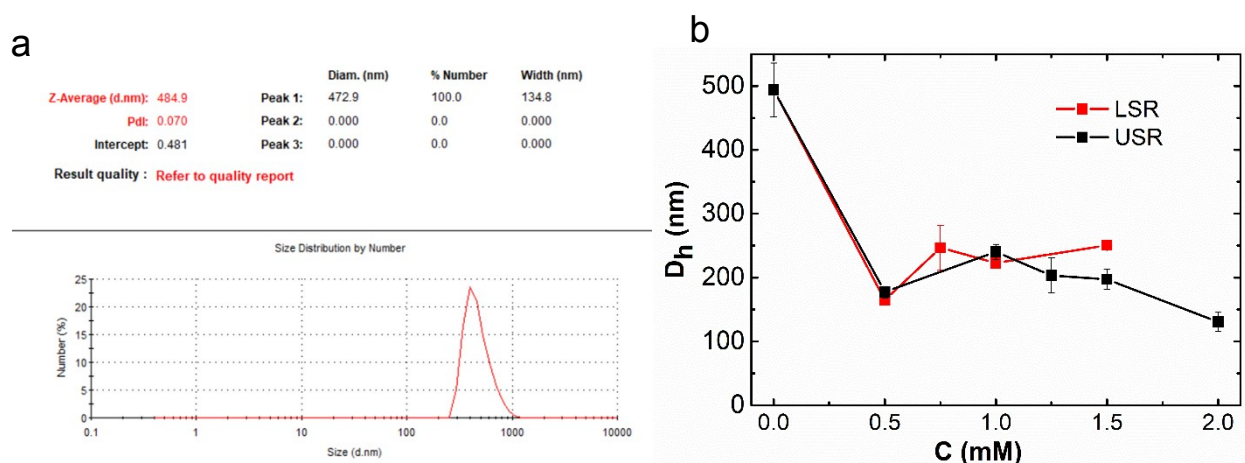
**Figure S7.** Concentration dependence of absorbance of rhodamine B at 555 nm (a), absorbance of DOX in acetic medium (pH=5.5) at 481 nm (b) and fluorescence intensity of DOX (c) in water.



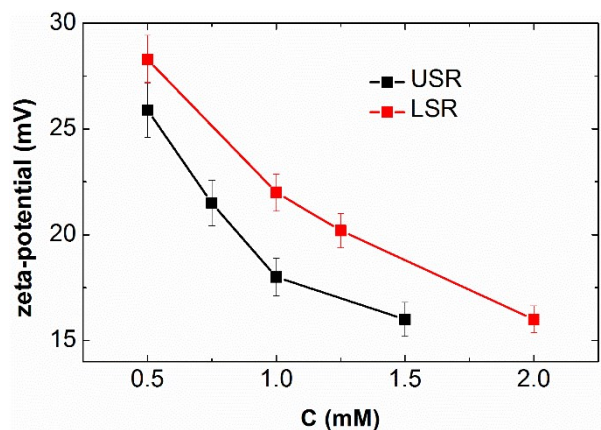
**Figure S8.** Dependence of fluorescence intensity of DOX released from macrocycle-QC aggregates on the time of dialysis.



**Figure S9.** Tyndall effect of free USR (a), free QC (b), mixed USR–QC (c) and LSR–QC (d) compositions.

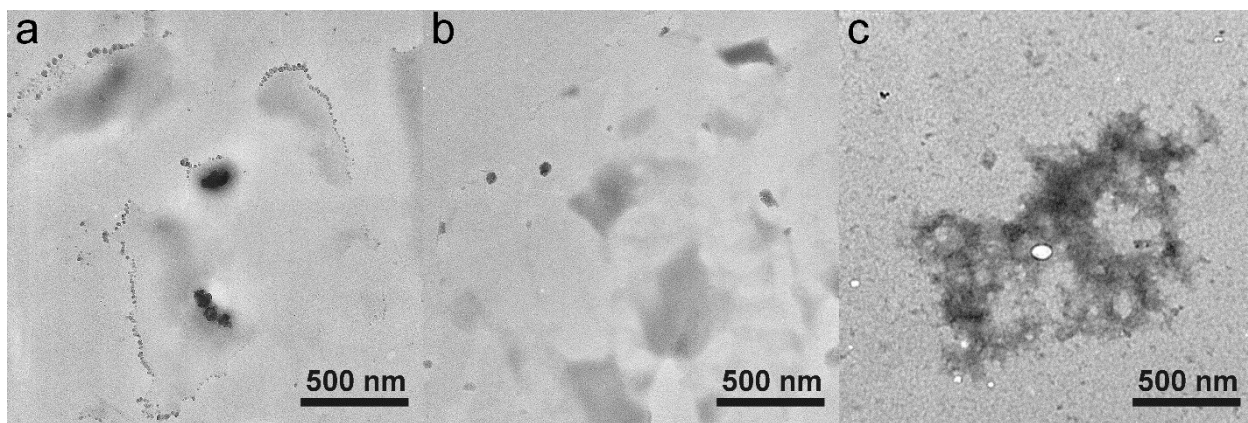


**Figure S10.** (a) Particle size distributions for 1 mg/ml chitosan solution, 25°C, (b) Dependence of the hydrodynamic diameter of aggregates on the concentration of calix[4]resorcinarenes in solution with a fixed chitosan concentration of 1 mg/ml, acetate buffer pH 5.5.

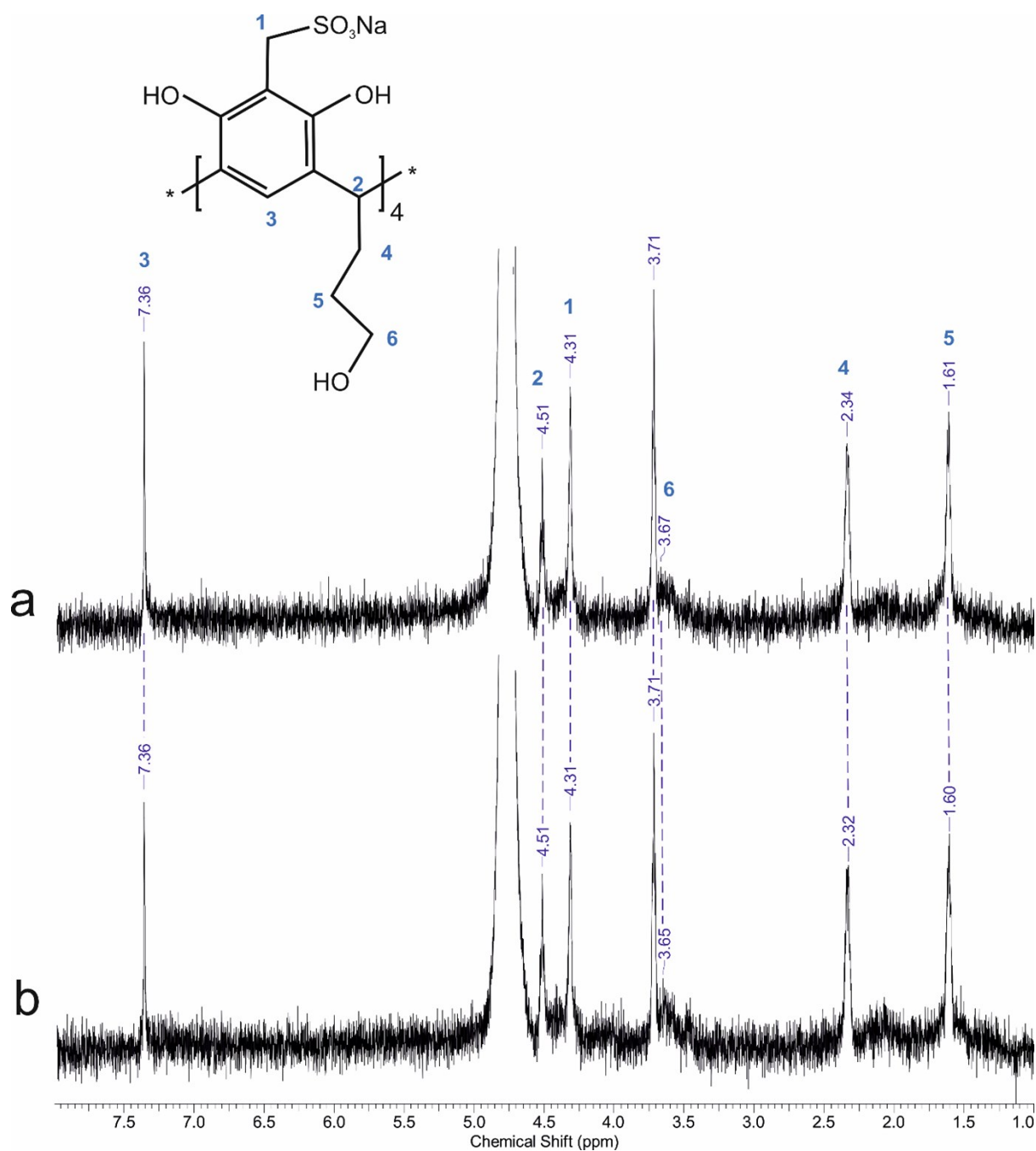


**Figure S11.** Dependence of the zeta potential on the concentration of calix[4]resorcinarenes in solution with a fixed QC concentration of 1 mg/ml, acetate buffer pH 5.5.

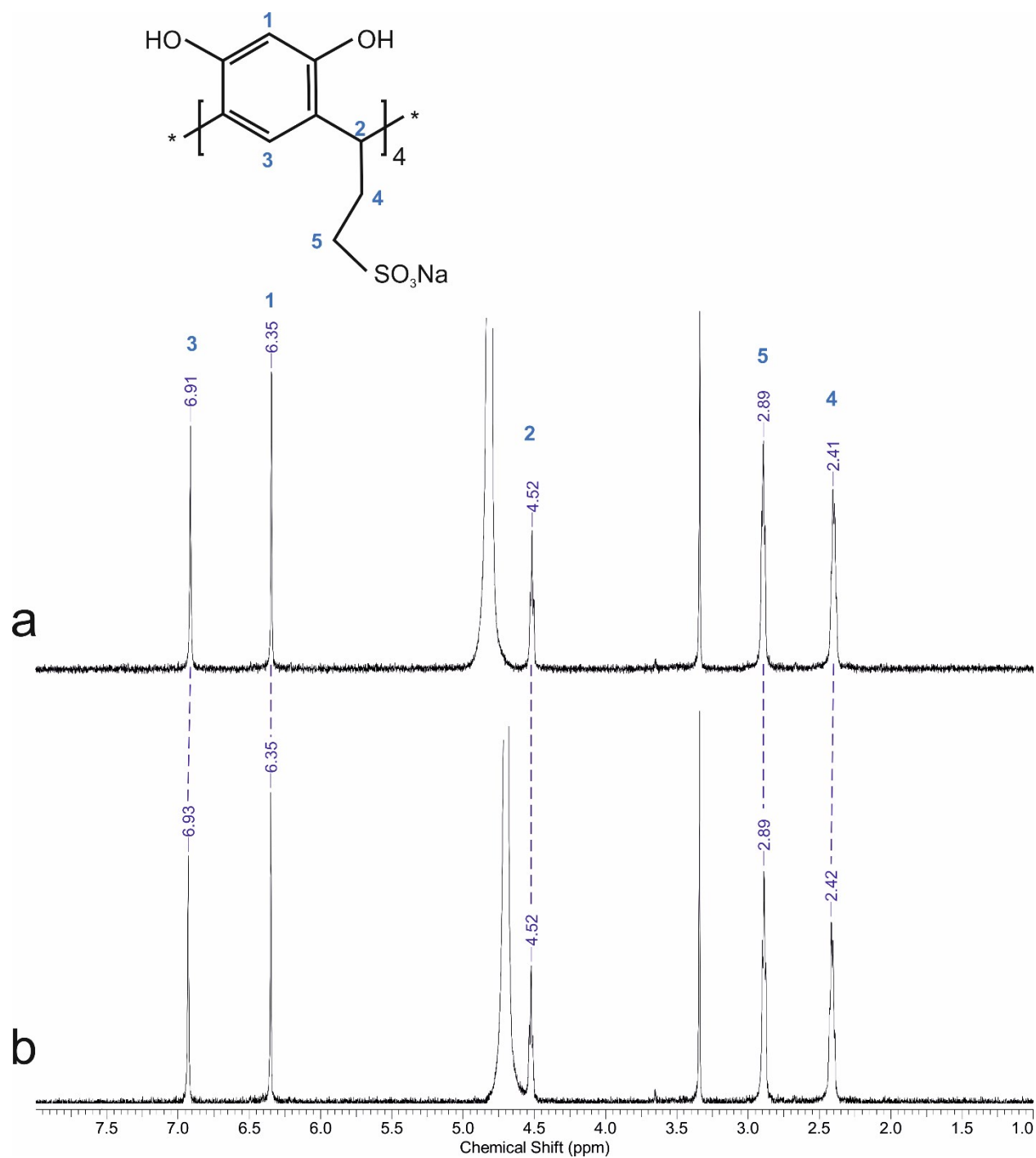




**Figure S12.** TEM images of pure USR (a), LSR (b) and chitosan (c) aqueous solutions.

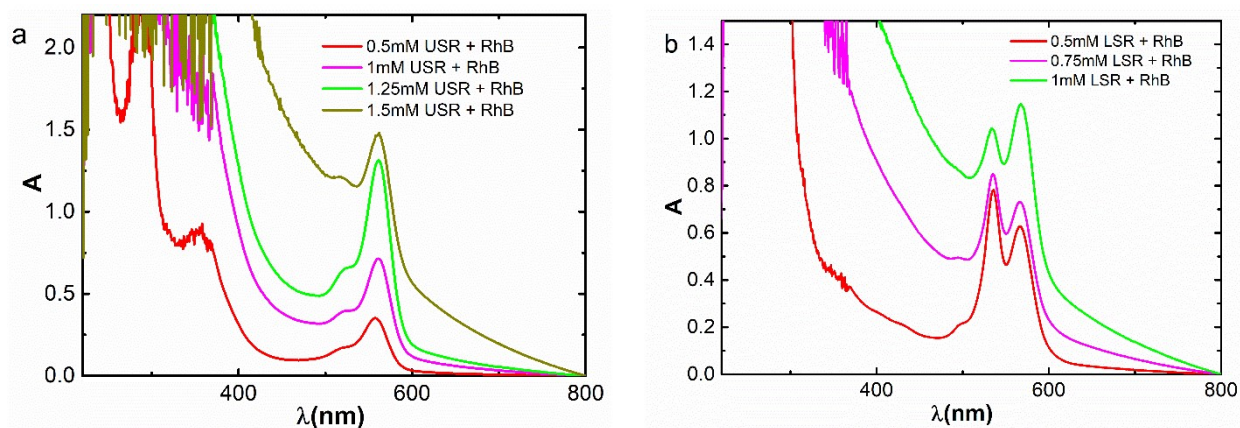


**Figure S13.**  $^1\text{H}$  NMR spectra of USR (a) and USR-QC (b),  $\text{D}_2\text{O}$ , pH 3.3.

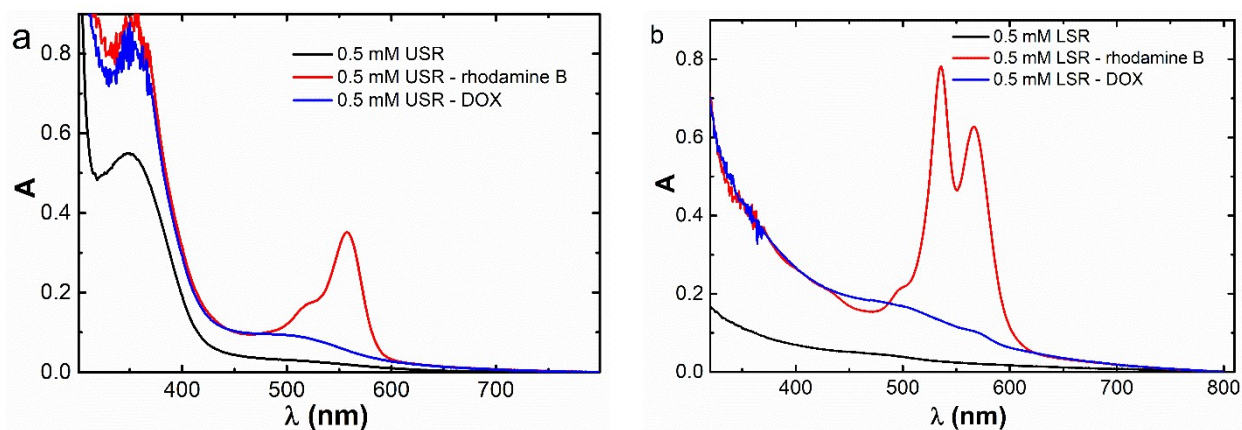


**Figure S14.** <sup>1</sup>H NMR spectra of LSR (a) and LSR-QC (b), D<sub>2</sub>O, pH 3.3.

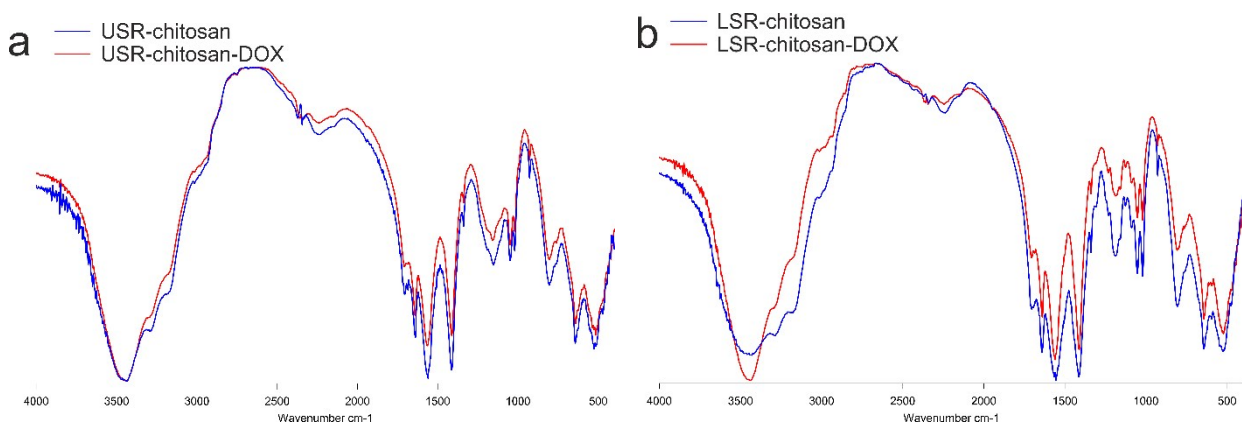




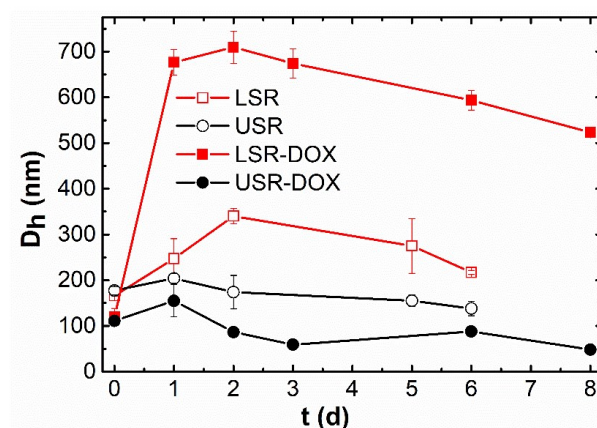
**Figure S15.** UV spectra of USR-1 mg/ml QC (a) and LSR-1 mg/ml QC (b) in the presence of rhodamine B in water (1-cm optical path length).



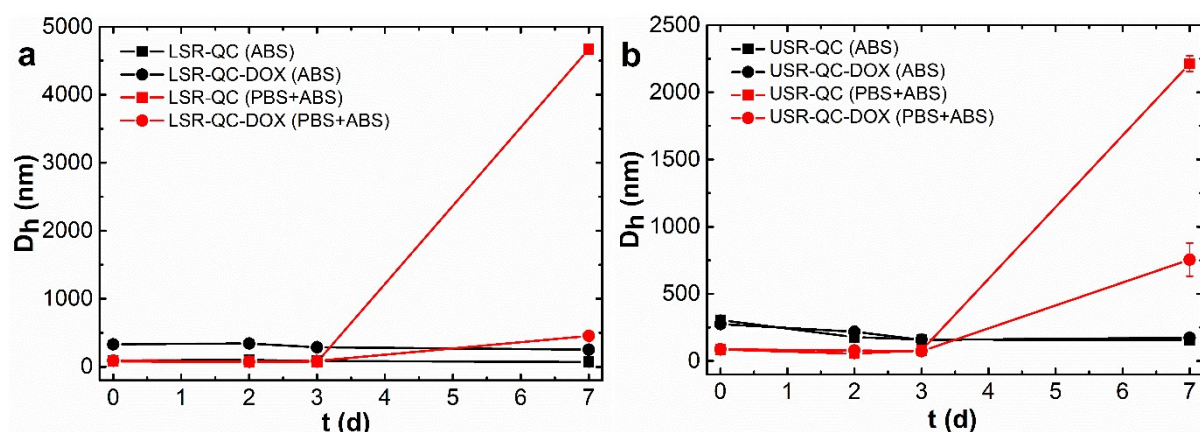
**Figure S16.** UV spectra of 0.5 mM USR-1 mg/ml QC (a) and 0.5 mM LSR-1 mg/ml QC (b) in the absence and presence of rhodamine B and DOX in water (1-cm optical path length).



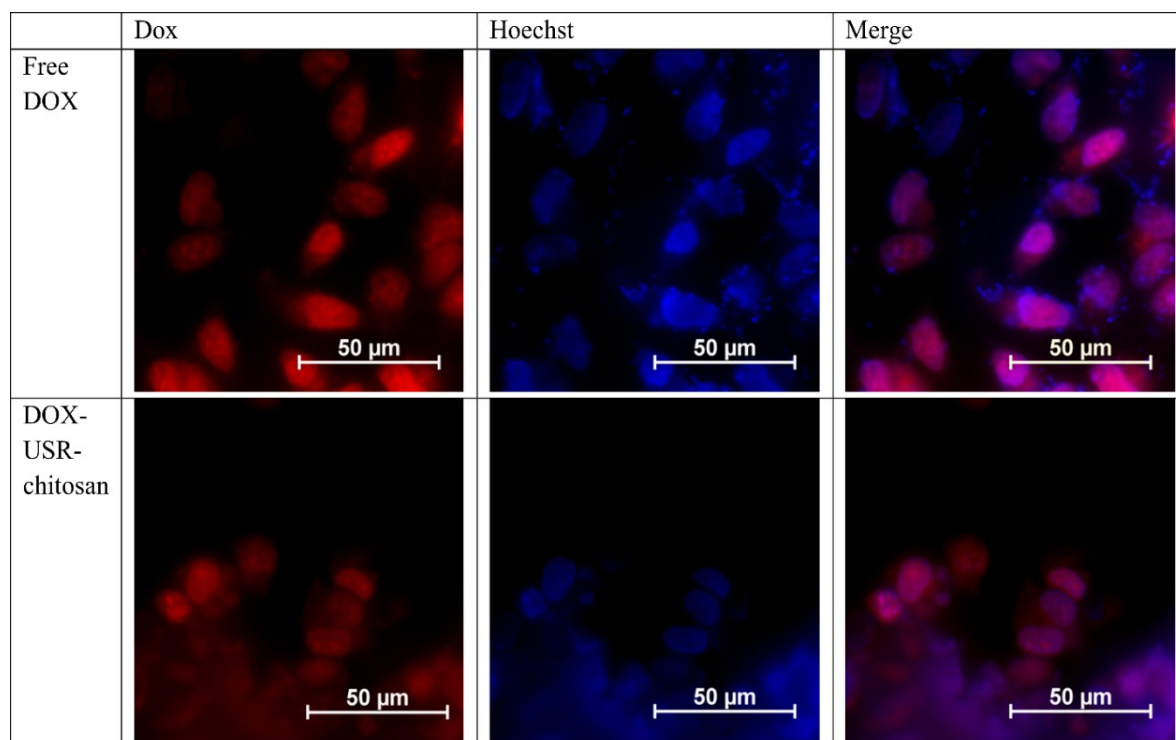
**Figure S17.** FTIR spectra of USR-QC (a) and LSR-QC (b) in the absence and presence of DOX.



**Figure S18.** Dependence of hydrodynamic diameter of particles (0.5 mM calix[4]resorcinarene–1 mg/ml QC) loaded with DOX on time.



**Figure S19.** Dependence of hydrodynamic diameter of particles in 0.25 mM LSR–0.5 mg/ml QC (a) and 25 mM USR–0.5 mg/ml QC (b) loaded with DOX on time in acetate buffer solution (ABS) and 50% v/v PBS/ABS.



**Figure S20.** Qualitative analysis of DOX distribution in Chang liver cells treated with free DOX and DOX-loaded USR–QC aggregates.