

## Supporting Information for

# Uniform Magnesium Silicate Hollow Spheres as High Drug-Loading Nanocarriers for Cancer Therapy with Low Systemic Toxicity

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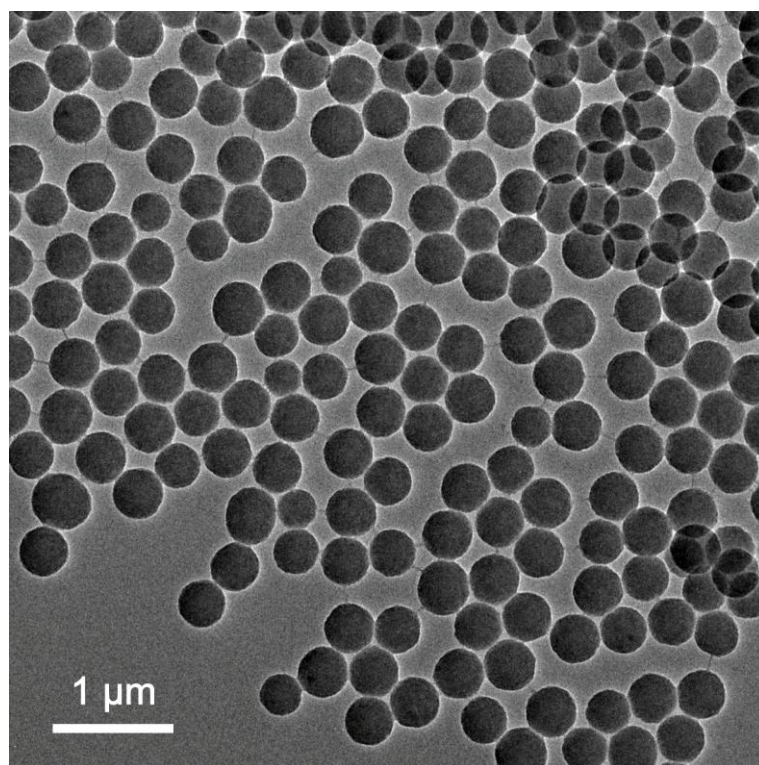
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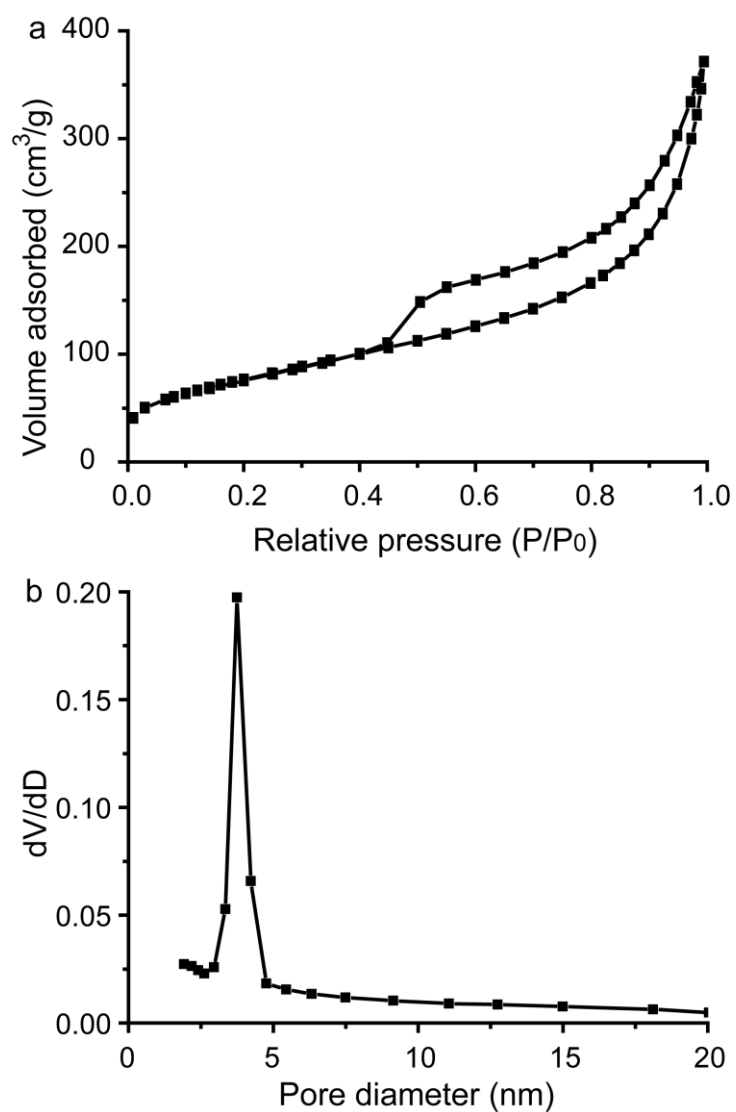
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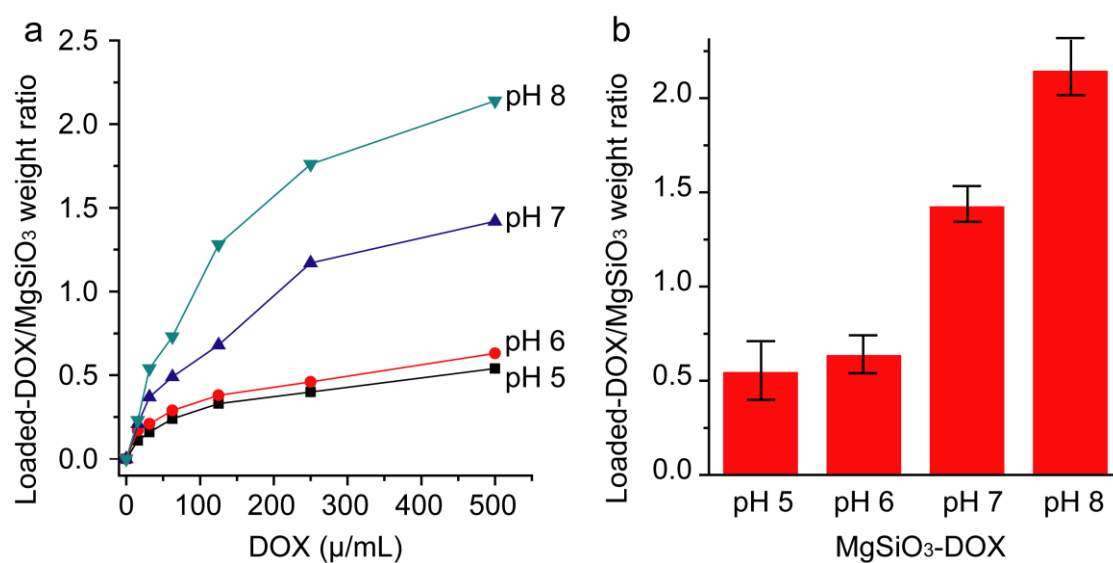
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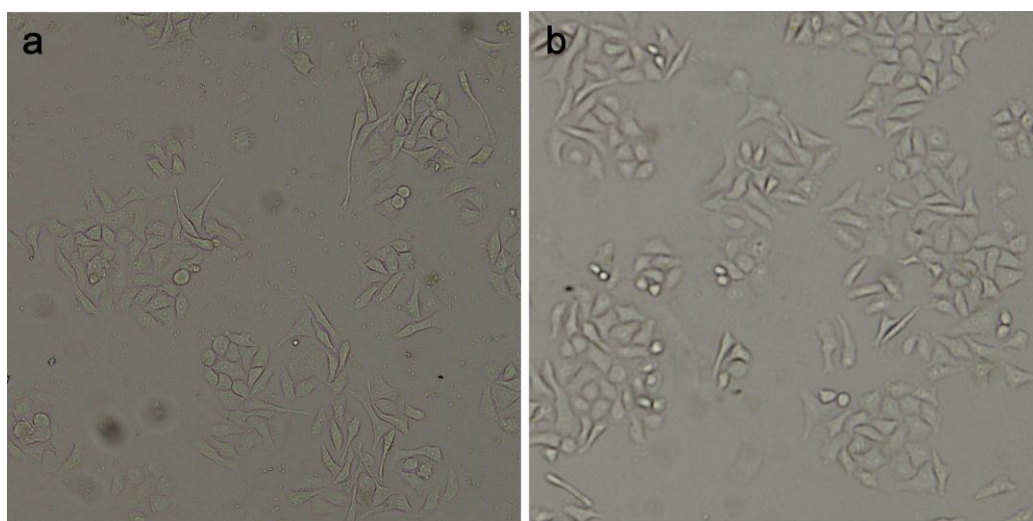
**Figure S1.** TEM image of SiO<sub>2</sub> colloidal spheres.



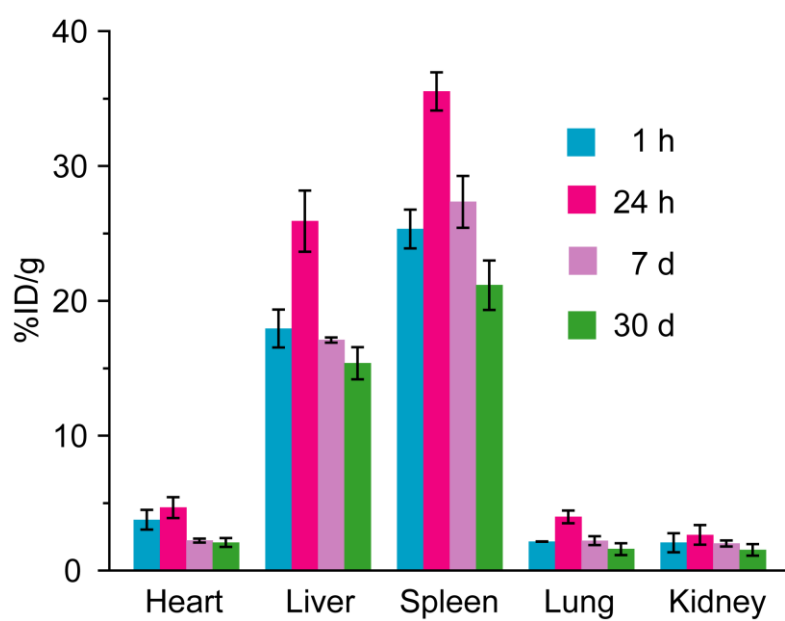
**Figure S2.** Nitrogen adsorption-desorption isotherms of MgSiO<sub>3</sub> hollow spheres (a) and pore size distribution from adsorption branch (b).



**Figure S3.** Quantification of DOX loading at different pH values upon different DOX concentrations (a) and histogram analysis with three independent experiments (b). Higher drug loading was achieved at increased pH.



**Figure S4.** Amplificatory images: without nanoparticles (a) and with nanoparticles (b).



**Figure S5.** Time-dependent biodistribution of MgSiO<sub>3</sub> hollow spheres in mice.

**Table S1.** Exact value of hemolysis percentage upon MgSiO<sub>3</sub> hollow spheres with different concentrations.

Concentrations ( $\mu\text{g MgSiO}_3 \text{ mL}^{-1}$ )	Value of hemolysis (%)
D. I. Water	100
PBS	0
12.5	-0.012
25	0.136
50	0.2593
100	0.509
200	0.781

**Table S2.** Pathological inflammatory responses of various viscera 30 d after intravenous administration of MgSiO<sub>3</sub> hollow spheres.

Samples	Grade of Inflammation	Lymphocytes	Macrophages	Neutrophils	Eosinophils
Heart	Low	+-	+-	+-	+-
Liver	Low	+	+	+	+-
Spleen	Low	+	+	+	+-
Lung	Low	+-	+-	+-	+-
Kidney	Low	+-	+-	+-	+-



**Table S3.** Hematology analysis and blood biochemical assay 30 days after intravenous administration of MgSiO<sub>3</sub> hollow spheres.

Test	Unit	Control group (mean ± sd)	Treatment group (mean ± sd)
blood cell count (WBC)	× 10 <sup>9</sup> /L	9.6 ± 2.1	9.4 ± 1.6
red cell count (RBC)	× 10 <sup>12</sup> /L	9.8 ± 2.7	9.1 ± 2.3
hemoglobin (HGB)	g/L	167.7 ± 21.8	172.1 ± 34.8
mean corpuscular hemoglobin (MCH)	pg	16.3 ± 1.9	16.1 ± 4.2
mean corpuscular hemoglobin concentration (MCHC)	g/L	330 ± 25.4	320 ± 27.9
alanine aminotransferase (ALT)	U/L	49.5 ± 6.5	45.6 ± 8.4
aspartate aminotransferase (AST)	U/L	152.4 ± 26.5	165.3 ± 33.4
blood urea nitrogen (BUN)	× 10 <sup>6</sup> /μL	7.9 ± 1.3	8.7 ± 2.1
plasma creatinine (CRE)	× 10 <sup>3</sup> /μL	20.8 ± 2.8	25.6 ± 3.7