

Electronic Supporting information

Small-sized and large-pore dendritic mesoporous silica nanoparticles enhance antimicrobial enzyme delivery

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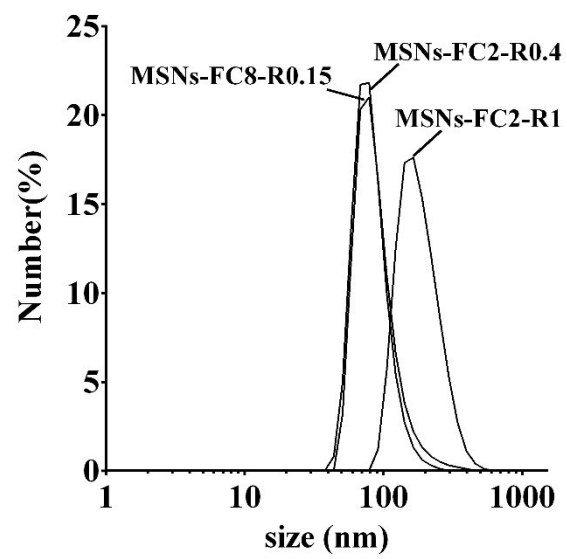


Figure S1 Particle size distribution curves measured by DLS

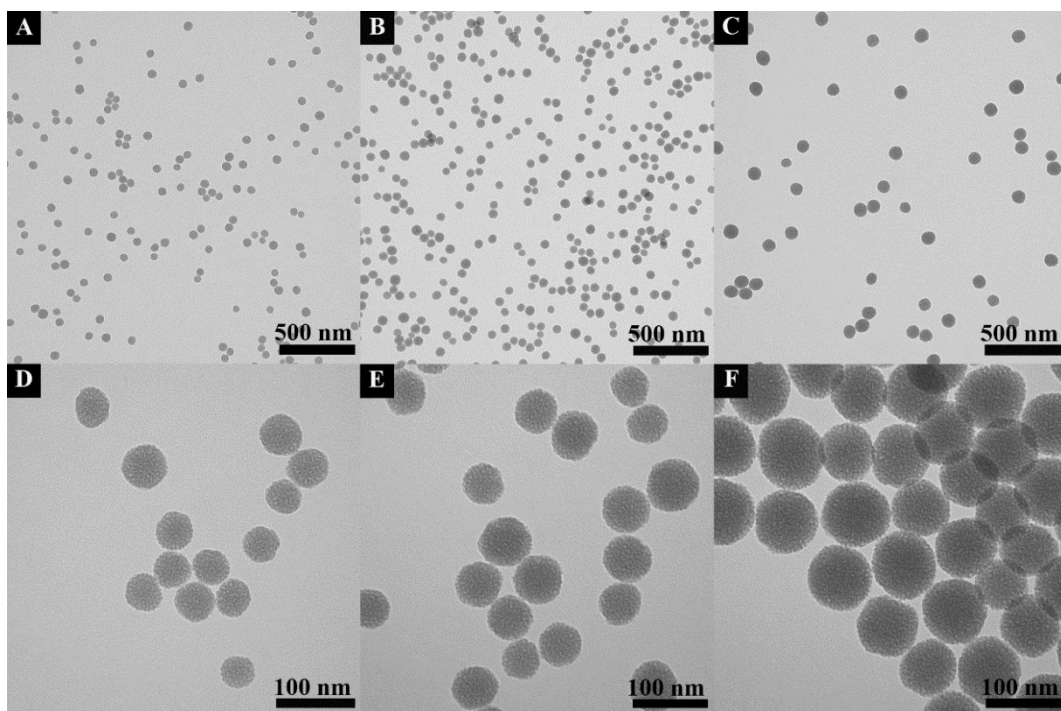


Figure S2. TEM images of MSNs-FC2. (A), (D) MSNs-R0; (B), (E) MSNs-FC2-R0.2; (C), (F) MSNs-FC2-R0.4.

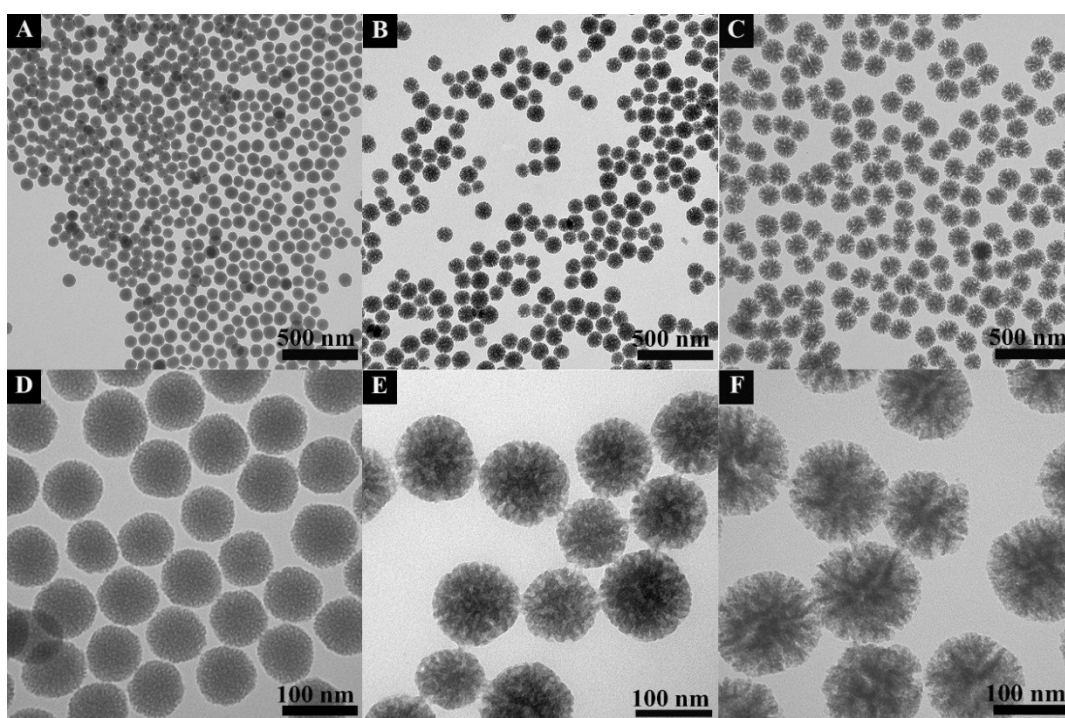


Figure S3. TEM images of MSNs-FC2. (A), (D) MSNs-FC2-R0.5; (B), (E) MSNs-FC2-R0.75; (C), (F) MSNs-FC2-R1.

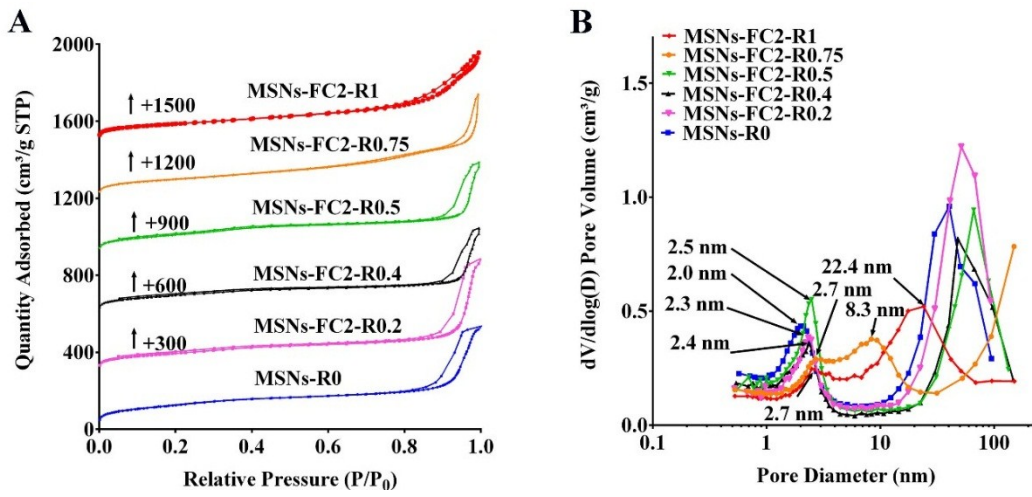


Figure S4. N₂ sorption isotherm (A) and pore size distribution (B) of the MSNs-FC2

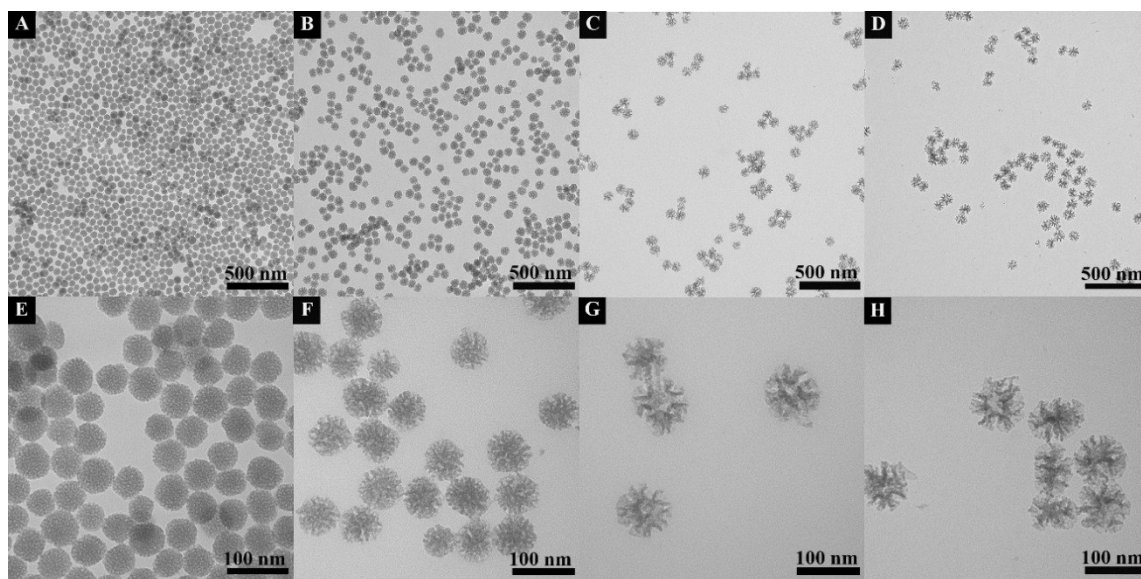


Figure S5. TEM images of MSNs-FC8. (A), (E) MSNs-FC8-R0.05; (B), (F) MSNs-FC8-R0.1; (C), (G) MSNs-FC8-R0.15; (D),(H) MSNs-FC8-R0.2

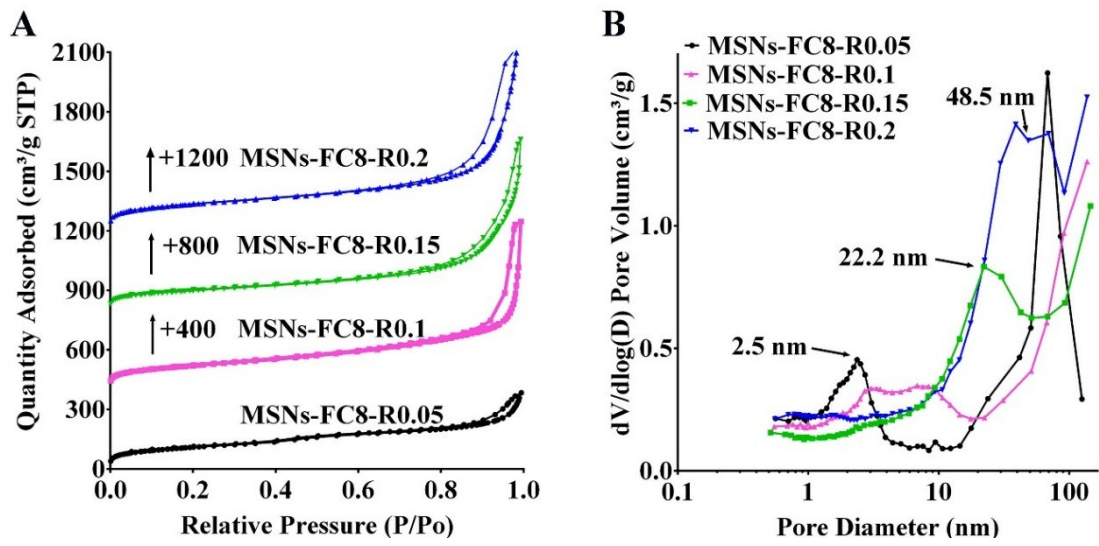


Figure S6. N₂ sorption isotherm (A) and pore size distribution (B) of the MSNs-FC8

Table S1. Physical properties of MSNs-FC2

Sample name	D (nm)	d (nm)	S (m ² g ⁻¹)	V (cm ³ g ⁻¹)
MSNs-R0	44	2.0	452	0.79
MSNs-FC2-R0.2	62	2.3	561	0.64
MSNs-FC2-R0.4	86	2.4	344	0.84
MSNs-FC2-R0.5	90	2.5	396	0.76
MSNs-FC2-R0.75	108	2.7, 8.3	350	0.84
MSNs-FC2-R1	160	2.7, 22.4	340	0.82

Table S2. Physical properties of MSNs-FC8

Sample name	D (nm)	d (nm)	S (m ² g ⁻¹)	V (cm ³ g ⁻¹)
MSNs-FC8-R0.05	57	2.5	457	1.05
MSNs-FC8-R0.1	68	3.3-8.4	427	1.32
MSNs-FC8-R0.15	79	22.2	349	1.33
MSNs-FC8-R0.2	87	48.5	468	1.93

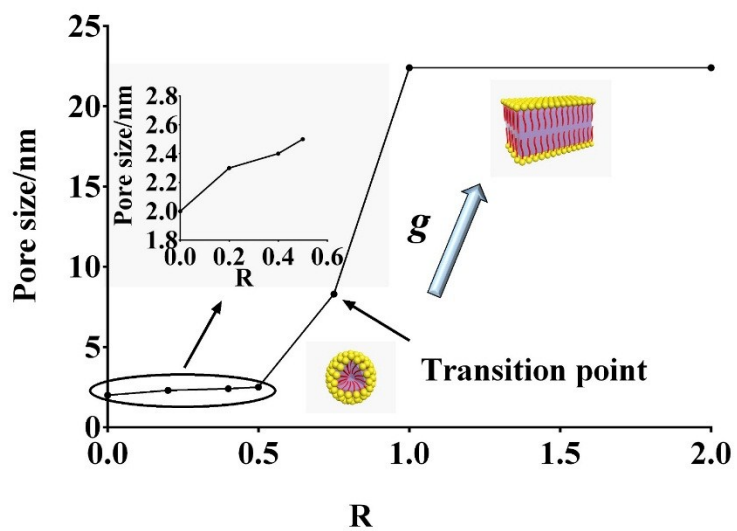


Figure S7. Correlation of pore size and R for MSNs-FC2

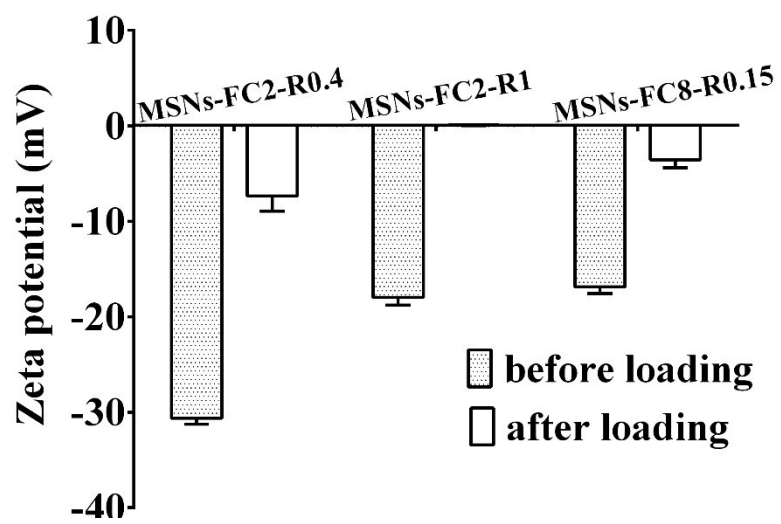


Figure S8. Zeta potential change before and after loading lysozyme in MSNs

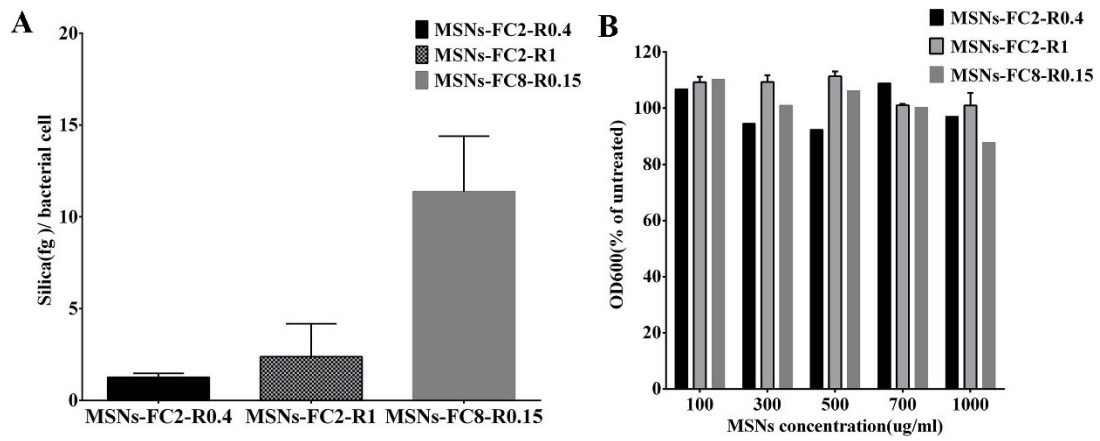


Figure S9. (a) Silica content adhered on the bacterial surface from ICP test. (b) Dose dependent toxicity of MSNs towards *E. coli*.