Supporting Information

Folic acid modified mesoporous silica nanoparticles with pH-responses enhance Amp anti-drug-resistant bacteria by overcoming efflux pump systems

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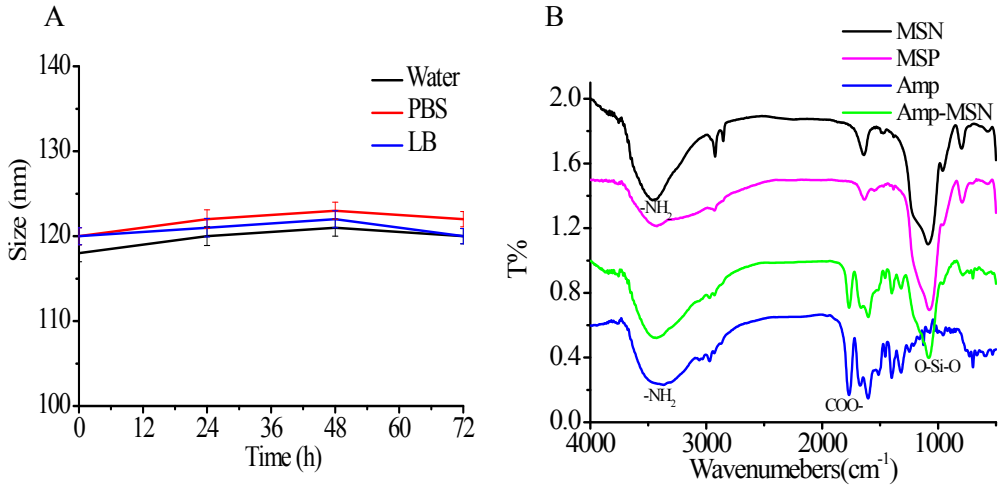

Fig. S1. (A)Stability of Amp-MSN@FA@CaP@FA in deionized water, PBS and LB respectively. (B) FTIR spectra of MSN, MSP, Amp and Amp-MSN.

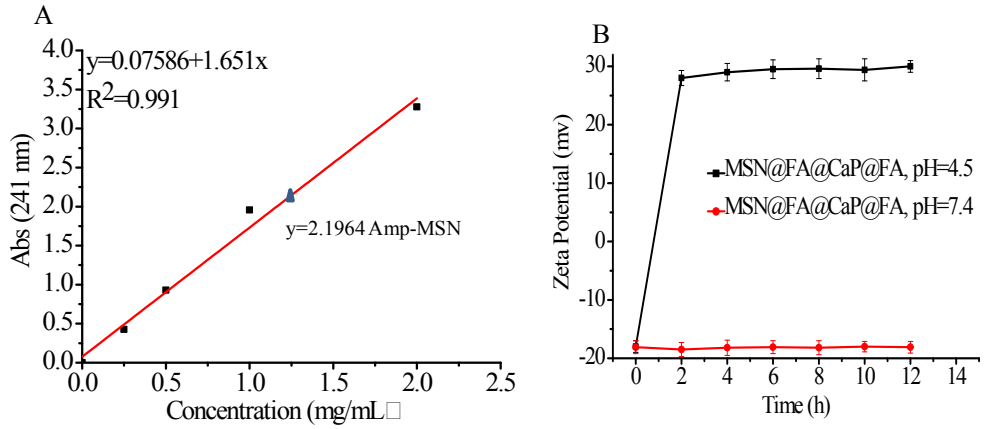

Fig. S2. (A) The standard curve line of different concentration Amp at 241nm by UV-vis spectra and the loading rate of MSN test. (B) Zeta potentials of MSN@FA@CaP@FA with different incubation times at pH=7.4, and 4.5 (means ± SD, n = 3).

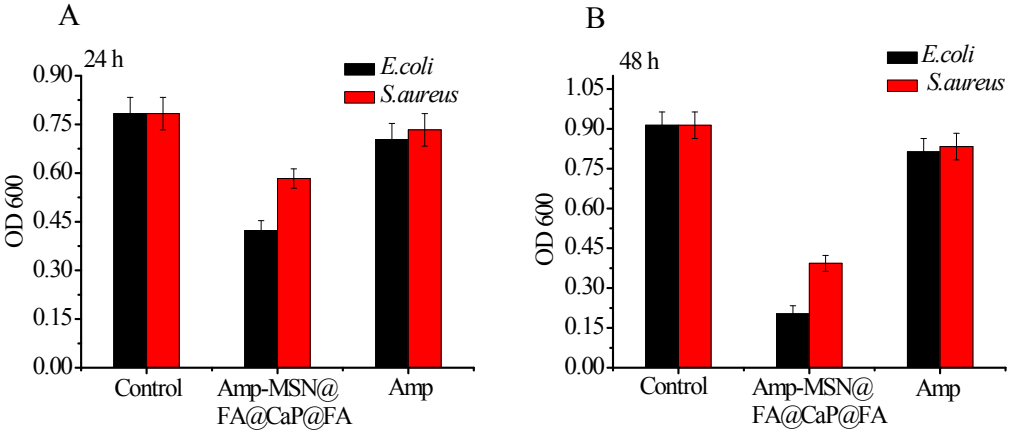

Fig.S3 The OD 600 value of *E. coli* (A) and *S. aureus* (B) after treatments with Amp-MSN@FA@CaP@FA and single Amp composites with 24 h and 48 h respectively (p *=0.05).

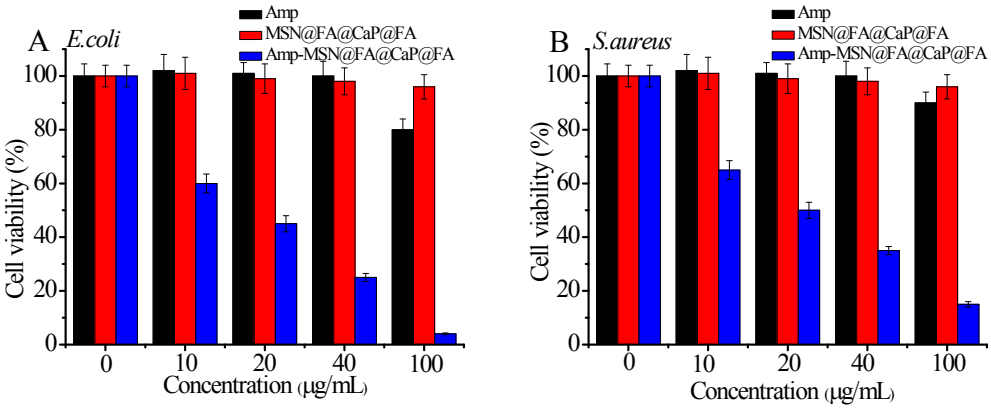

Fig.S4 The Bacterial cell viability of *E. coli* (A) and *S. aureus* (B) after treatments with Amp-MSN@FA@CaP@FA and single Amp composites at variable concentrations (p *=0.05).

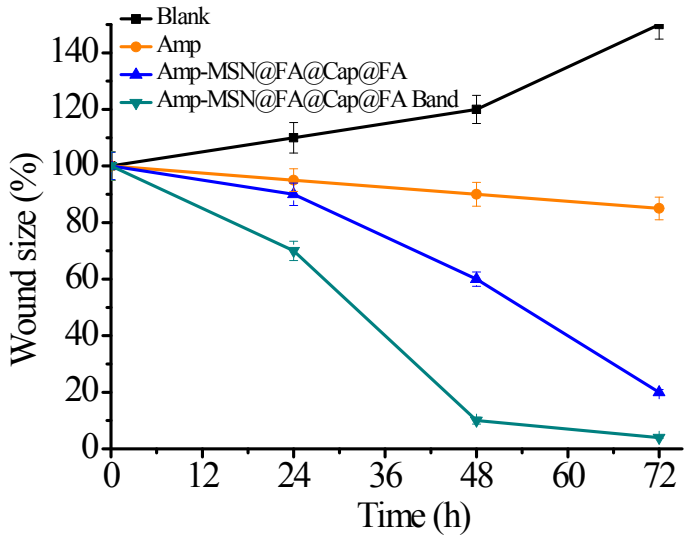

Fig.S5 The *S. aureus* -infected corresponding wound sizes (relative area versus minitial area). Error bars represent the standard deviation of three repeated measurements (p *=0.05).

Table S1 The MIC value of Amp-MSN@FA@CaP@FA and Amp

MIC value (μg/mL)

Bacterial	Amp-MSN@FA@CaP@FA	Amp
E.coli	10	>100
S.aureus	10	>100