

Supporting Information

Composite Copolymers Hybrid Silver Nanoparticles: Preparation and Characterization of Antibacterial Activity and Cytotoxicity

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Table S1. The physicochemical properties of copolymers (P1-P5).

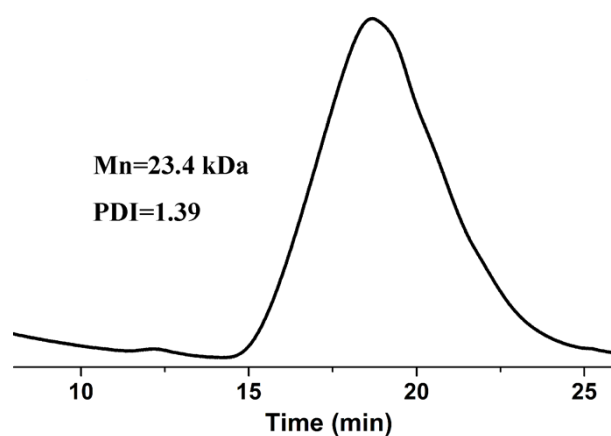
Samples	Molecular Weight (kDa)	PEGMA: DMAEMA	Size (nm)	PDI	Zeta potential (mV)
P1	17.1	0.3:1	271.7±17.6	0.226±0.046	24.3±0.7
P2	16.3	0.38:1	292.2±237.2	0.217±0.186	22.2±1.7
P3	20.8	0.86:1	252.4±56.6	0.195±0.117	18.4±1.4
P4	26.2	2.12:1	273.9±16.1	0.375±0.038	13.2±1.0
P5	22.9	2.8:1	310.6±16.5	0.245±0.036	12.5±0.5

Table S2. The physicochemical properties of AgNPs@(P1~P5)-C2 (1~5).

Samples	1	2	3	4	5
Size (nm)	97.0±4.16	118.3±2.2	121.5±4.7	124.8±0.9	92.5±4.3
PDI	0.273±0.101	0.277±0.041	0.197±0.012	0.214±0.012	0.211±0.053
Zeta potential (mV)	42.3±0.2	39.4±0.4	35.5±0.3	32.1±0.5	33.2±0.8

Table S3. The physicochemical properties of AgNPs@P2-(C2~C12) (a~e).

Samples	a	b	c	d	e
Size (nm) _z	118.3±2.2	99.07±1.8	119.9±1.3	135.4±4.9	123.2±1.5
PDI	0.277±0.041	0.519±0.014	0.181±0.017	0.216±0.018	0.227±0.006
Zeta potential (mV)	39.4±0.4	36.5±1.5	37.6±0.7	34.2±0.2	39.1±0.6

**Fig. S1** GPC profile of p(PGEMA-*co*-DMAEMA). THF as an eluent and polystyrene as a calibration standard.

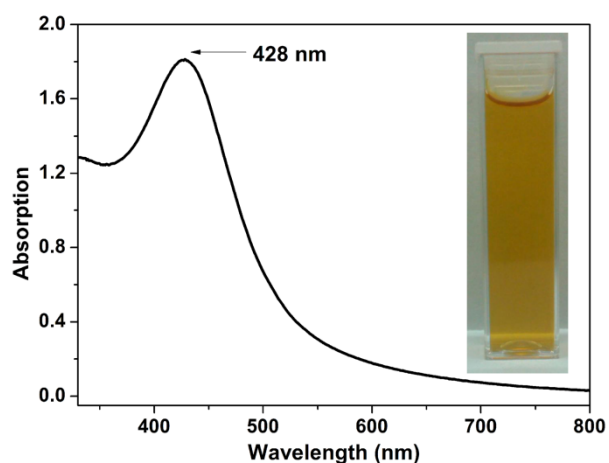


Fig. S2 UV absorption spectrum and digital photo of the AgNPs solution in water.

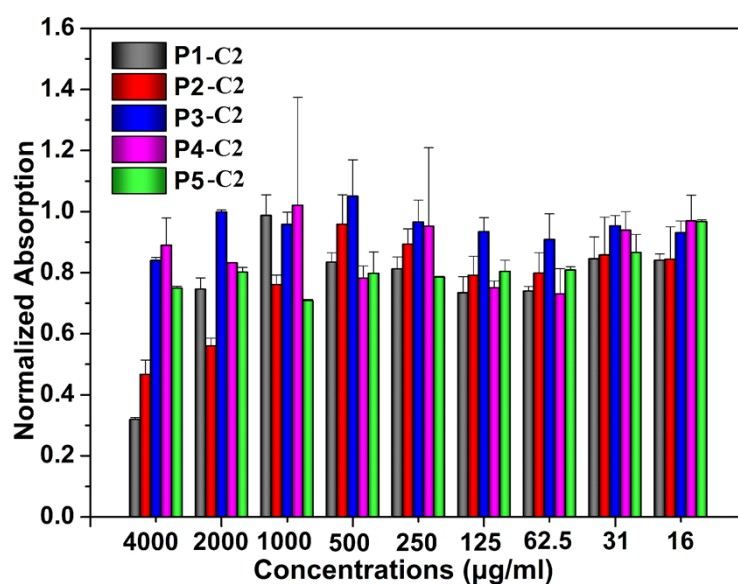


Fig.S3Antibacterial activity of the p(PGEMA-*co*-DMAEMA)-C2 against *S. aureus*.

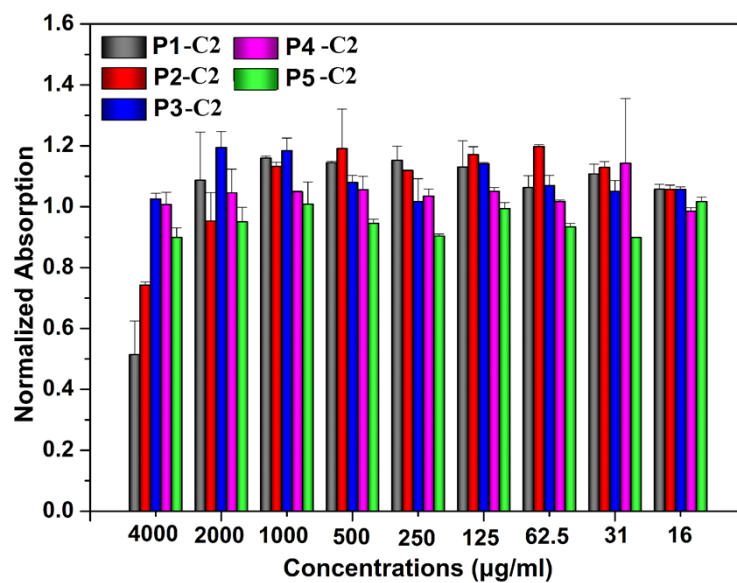


Fig.S4Antibacterial activity of the p(PGEMA-*co*-DMAEMA)-C2 against *P. aeruginosa*.

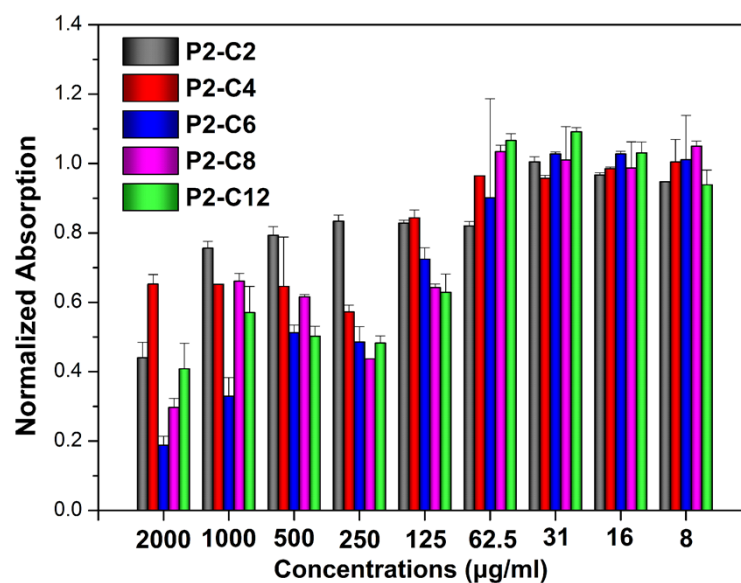


Fig. S5 Antibacterial activity of the P2-(C2~C12) against *S. Aureus*.

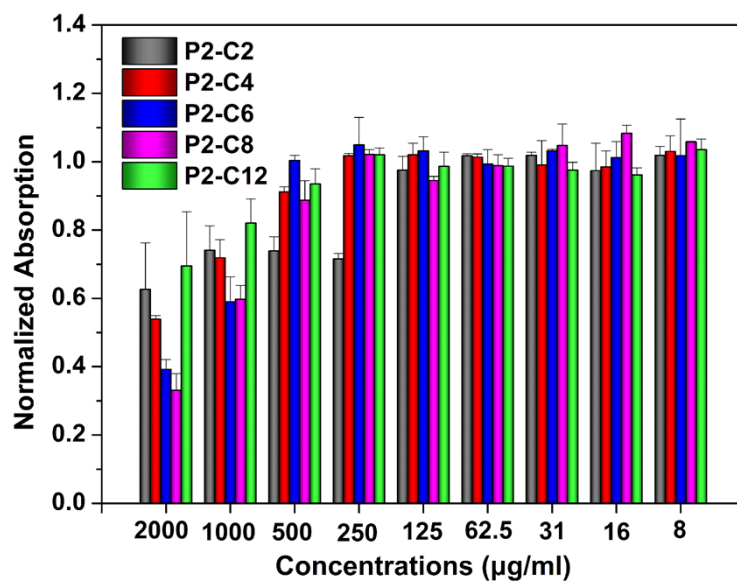


Fig. S6 Antibacterial activity of the P2-(C2~C12) against *P. aeruginosa*.

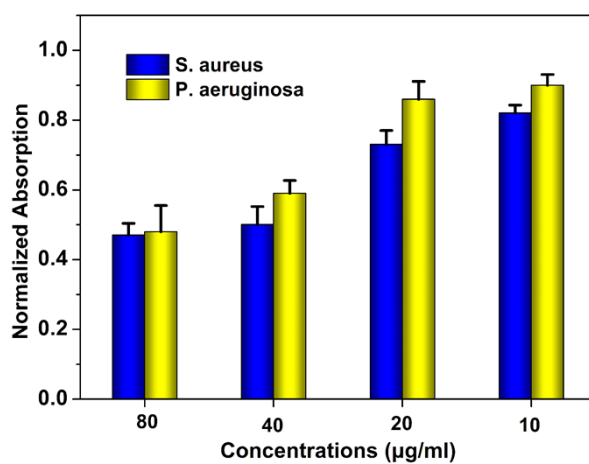


Fig. S7 Antibacterial activity of the unmodified AgNPs against *S. Aureus* and *P. aeruginosa*.

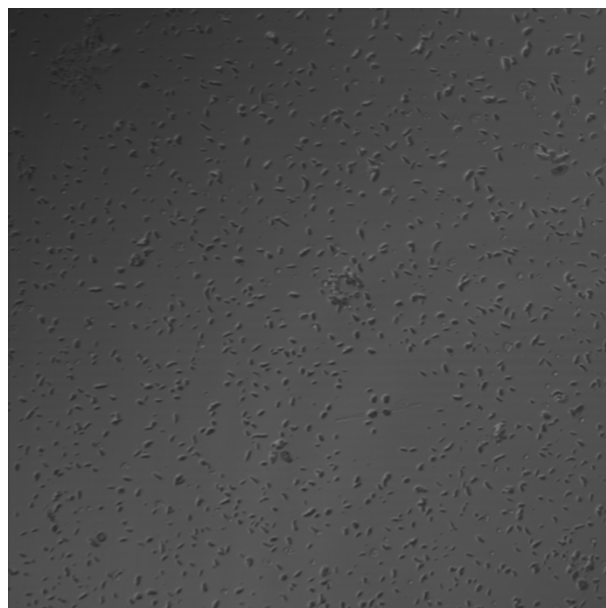


Fig. S8 LSCM image (bright field) of bacteria without the AgNPs.

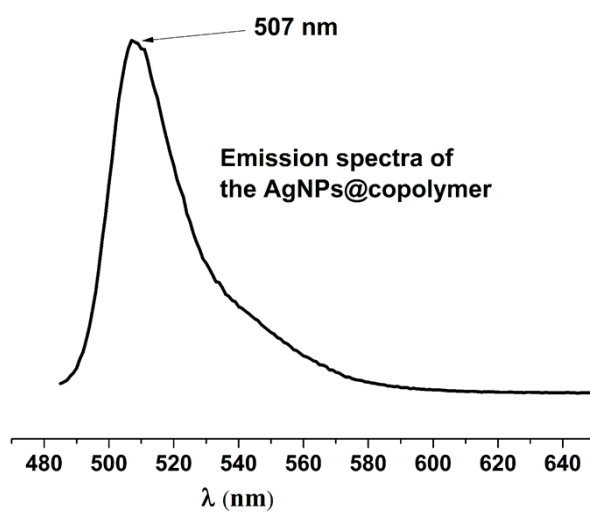


Fig. S9 Emission spectra of the AgNPs@copolymer.

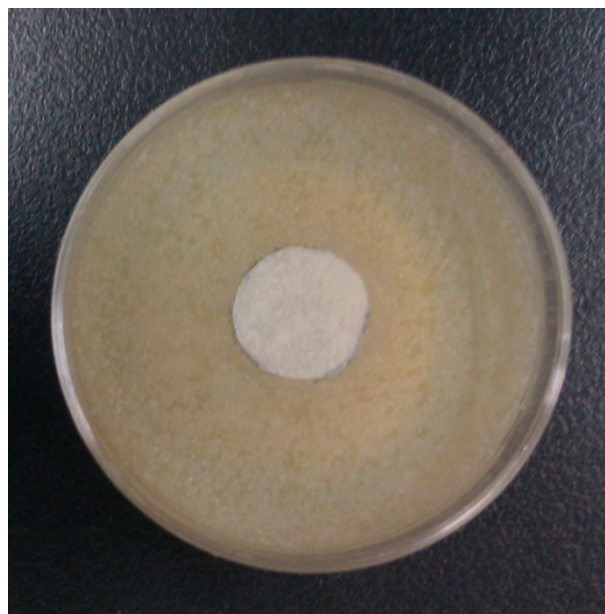


Fig. S10 Inhibition zones of AgNPs against *S. Aureus*.

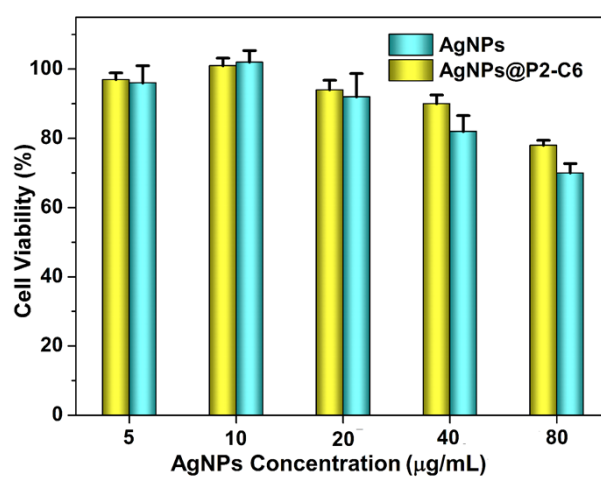


Fig. S11 Cell viability of NIH3T3 cells incubated with AgNPs@P2-C6 and non-polymer associated AgNPs for 4 days.

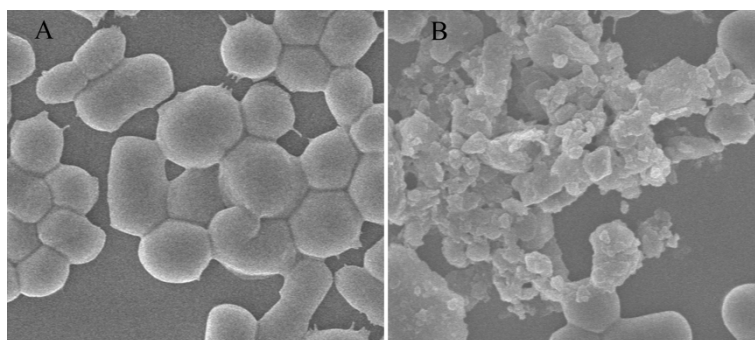


Fig. S12 SEM images of *S. Aureus* before (A) and after (B) being treated with AgNPs@P2-C6 for 60 min.