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Electronic Supplementary Information

Biocompatible and antifouling coating of cell membrane phosphorylcholine and mussel catechol modified multi-arm PEGs

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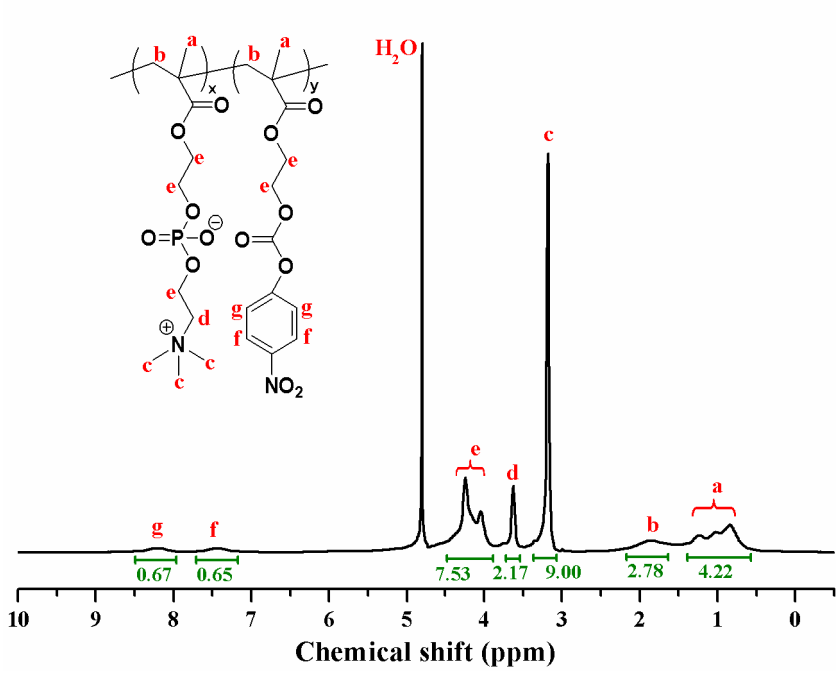

Fig. S1 The ^{1}H NMR spectra of poly(MPC-co-NPCEMA) (PMEN). The molar fraction of MPC units in the PMEN polymer was determined to be 75% by ^{1}H NMR spectroscopy, using the signals at 7.45 and 8.22 ppm attributed to protons on benzene skeleton of the NPCEMA units and 3.28 ppm attributed to the $-N^{+}(CH_3)_3$ protons of the MPC units. The molecular weight measured by GPC was ~6000 g/mol. Based on the ^{1}H NMR and GPC results, we could calculated that the number of PC groups on per mole of PMEN chain was 15.2 mol.

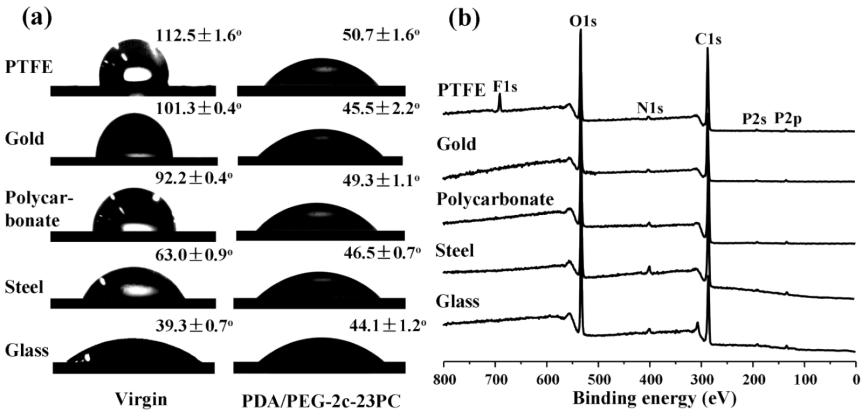

Fig. S2 Characterization of PDA/PEG-2c-23PC coated surfaces on different substrates. (a) Static contact angles of the bare and spin-coated surfaces; (b) XPS survey spectra of the PDA/PEG-2c-23PC coated substrate surfaces. The appearance of P signals on the thoroughly washed surfaces indicated the successful immobilization of the water soluble PEG-2c-23PC polymers on the substrates.

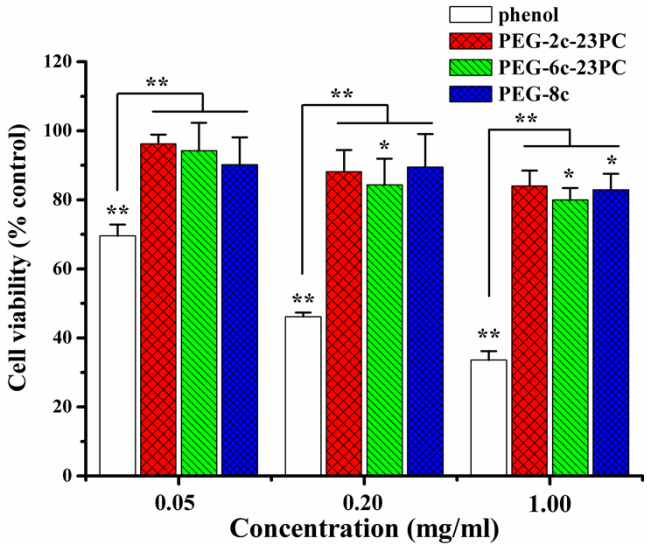

Fig. S3 Relative cell viability of L929 cultured in different concentrations of sample solutions for 48 hours. The cell viability of control group was set as 100%. *p≤0.05 and **p≤0.01 versus that of the control or the phenol group.

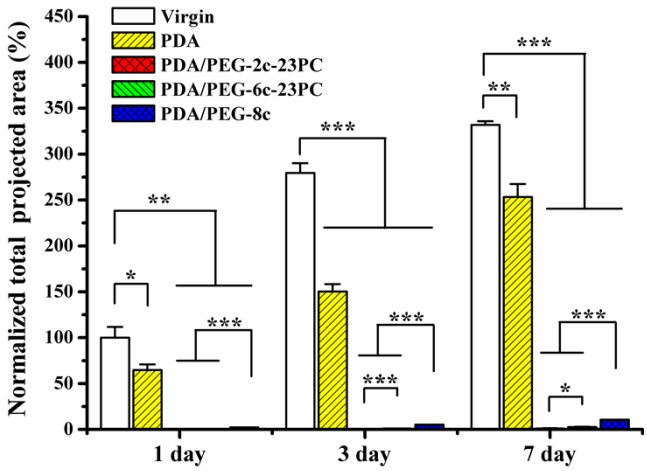

Fig. S4 Quantitative results of attached L929 fibroblast cells on five surface-modified glass substrates obtained from ImageJ analysis. *p≤0.05, **p≤0.01 and **p≤0.005.

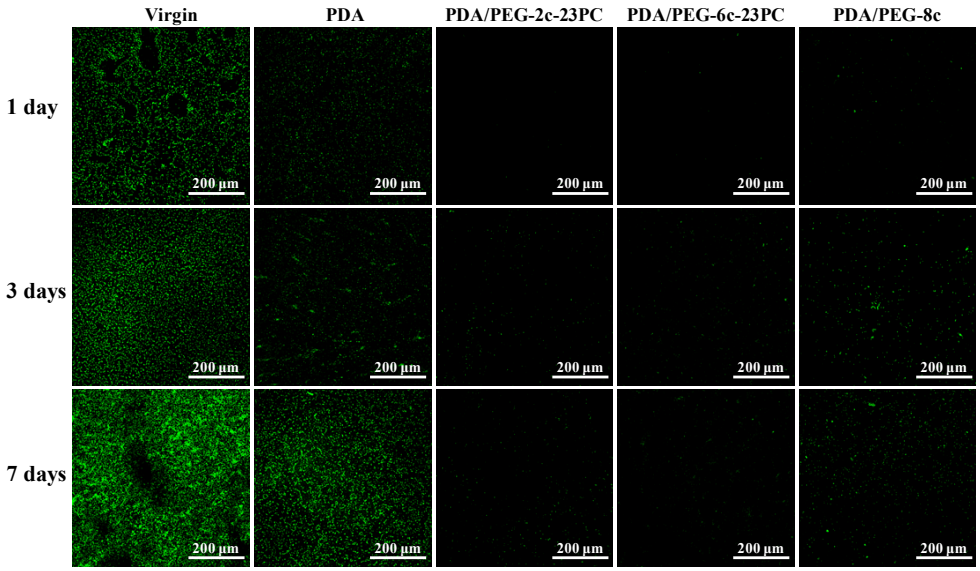

Fig. S5 Fluorescence microscopic images of *E. coli* adhered on five surface-modified glass substrates after 1, 3 and 7 days of contact.

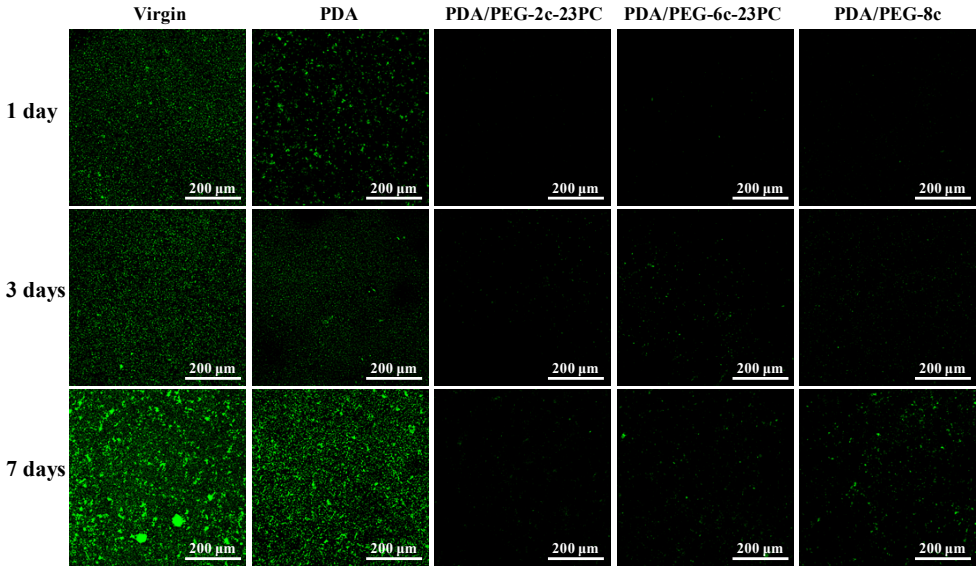

Fig. S6 Fluorescence microscopic images of *P. aeruginosa* adhered on five surface-modified glass substrates after 1, 3 and 7 days of contact.

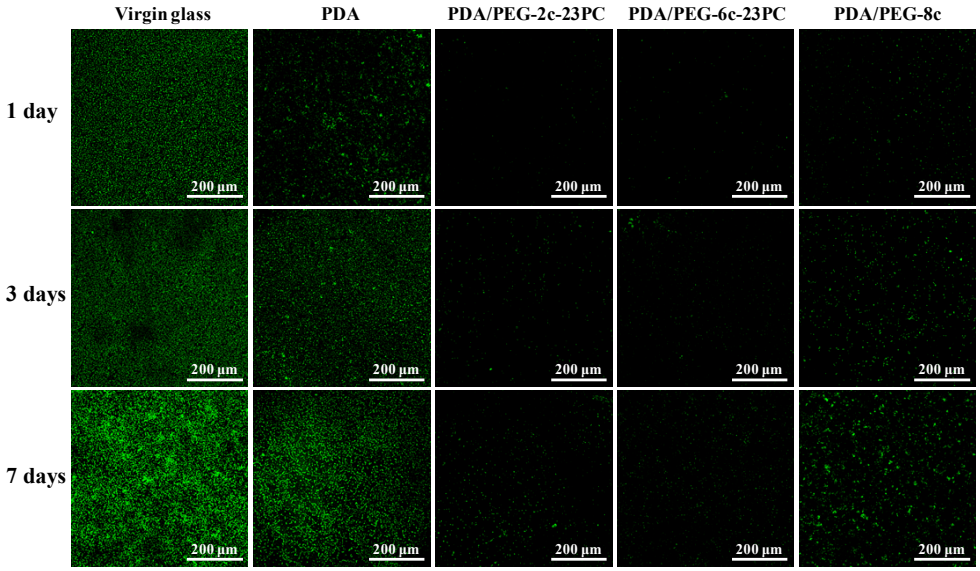

Fig. S7 Fluorescence microscopic images of *S. aureus* adhered on five surface-modified glass substrates after 1, 3 and 7 days of contact.