

Supplementary Information

For

Antimicrobial coatings against biofilm formation: the unexpected balance between antifouling and bactericidal behavior

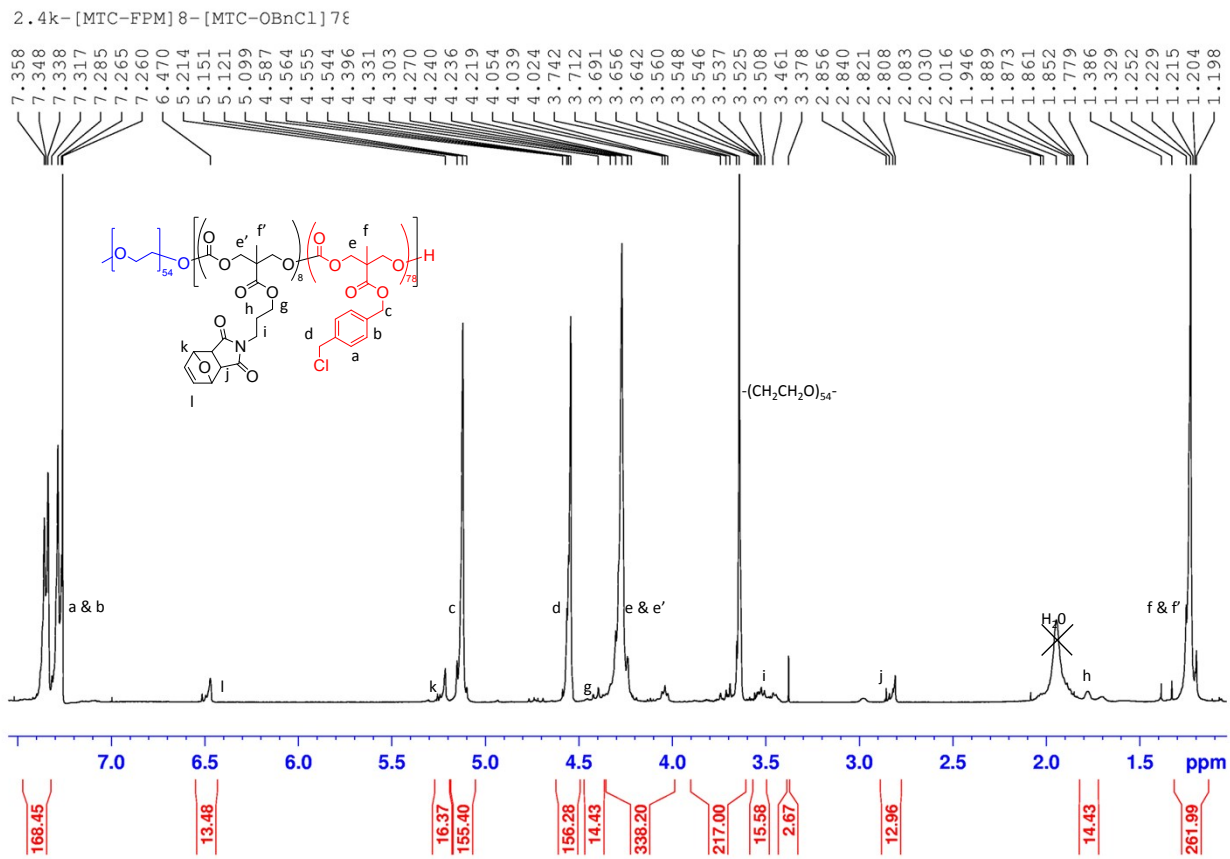
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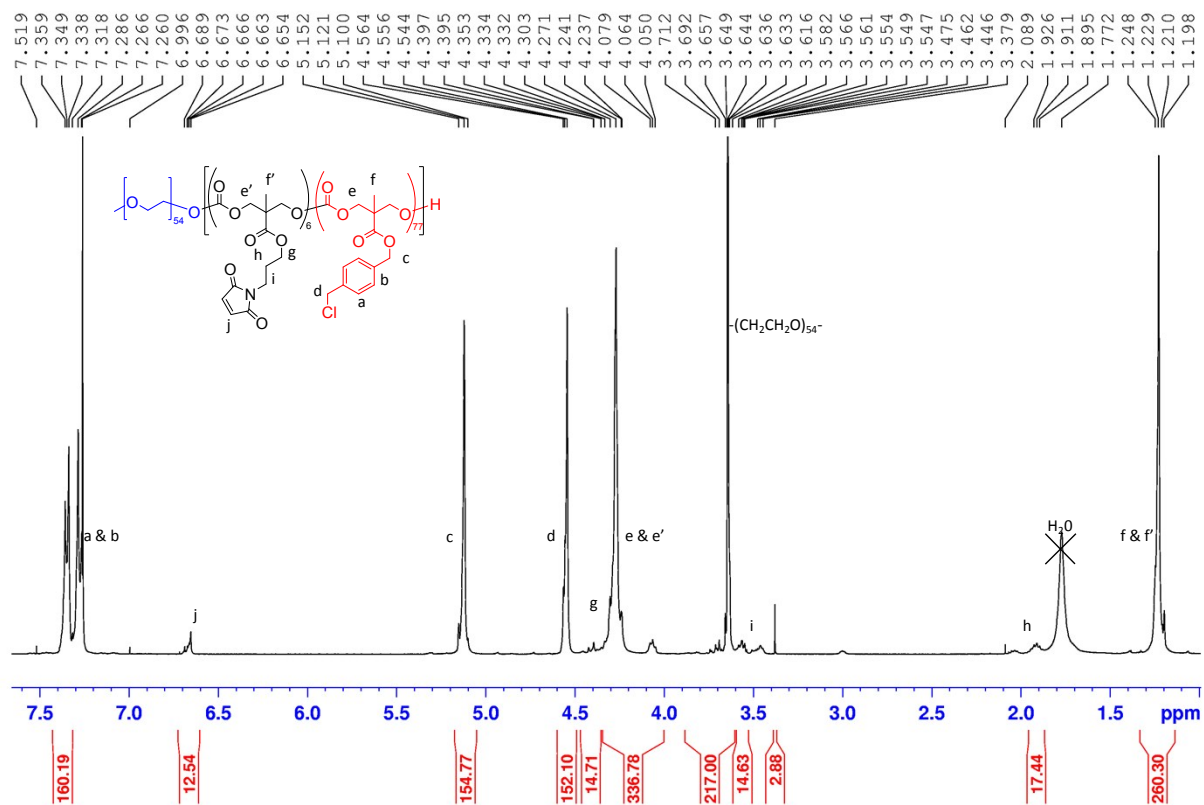
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a



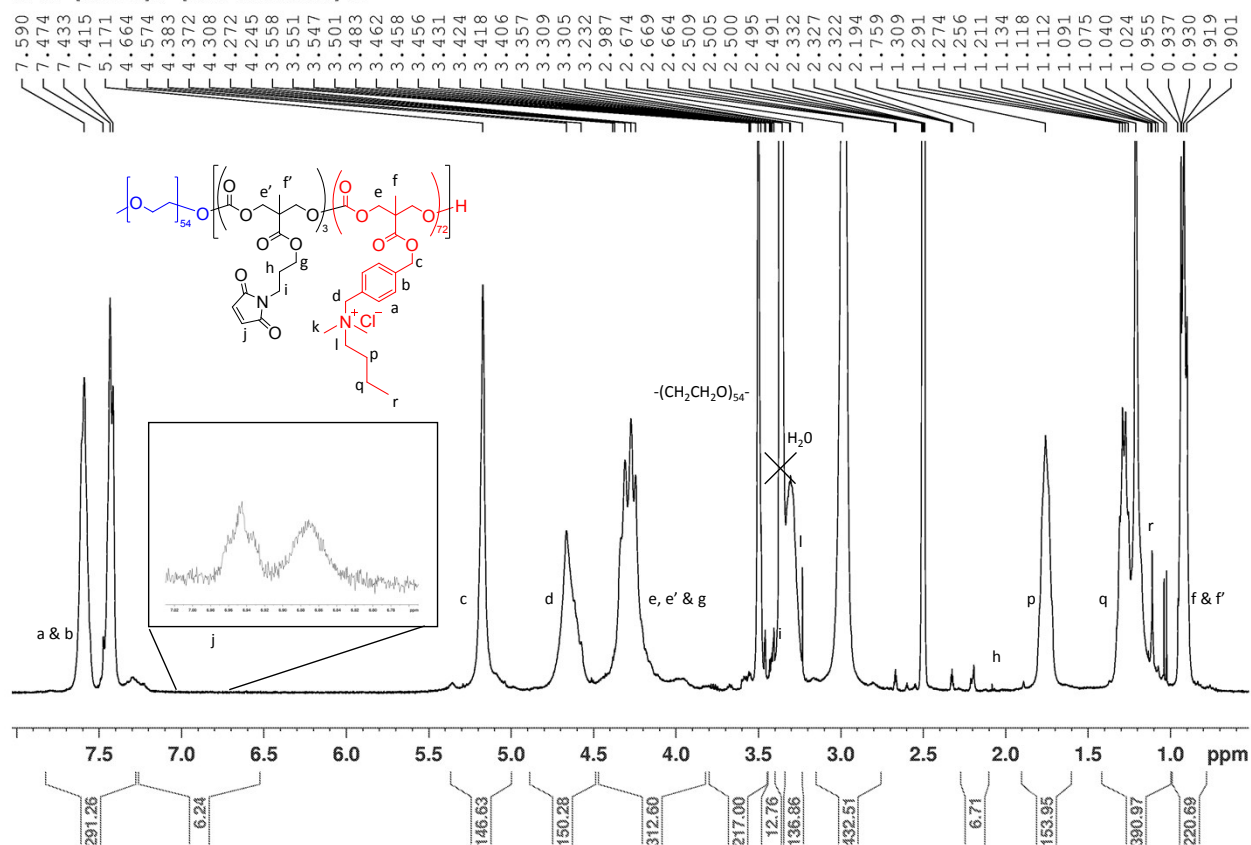
b

2.4k- [MTC-M] 6- [MTC-OBnCl] 77

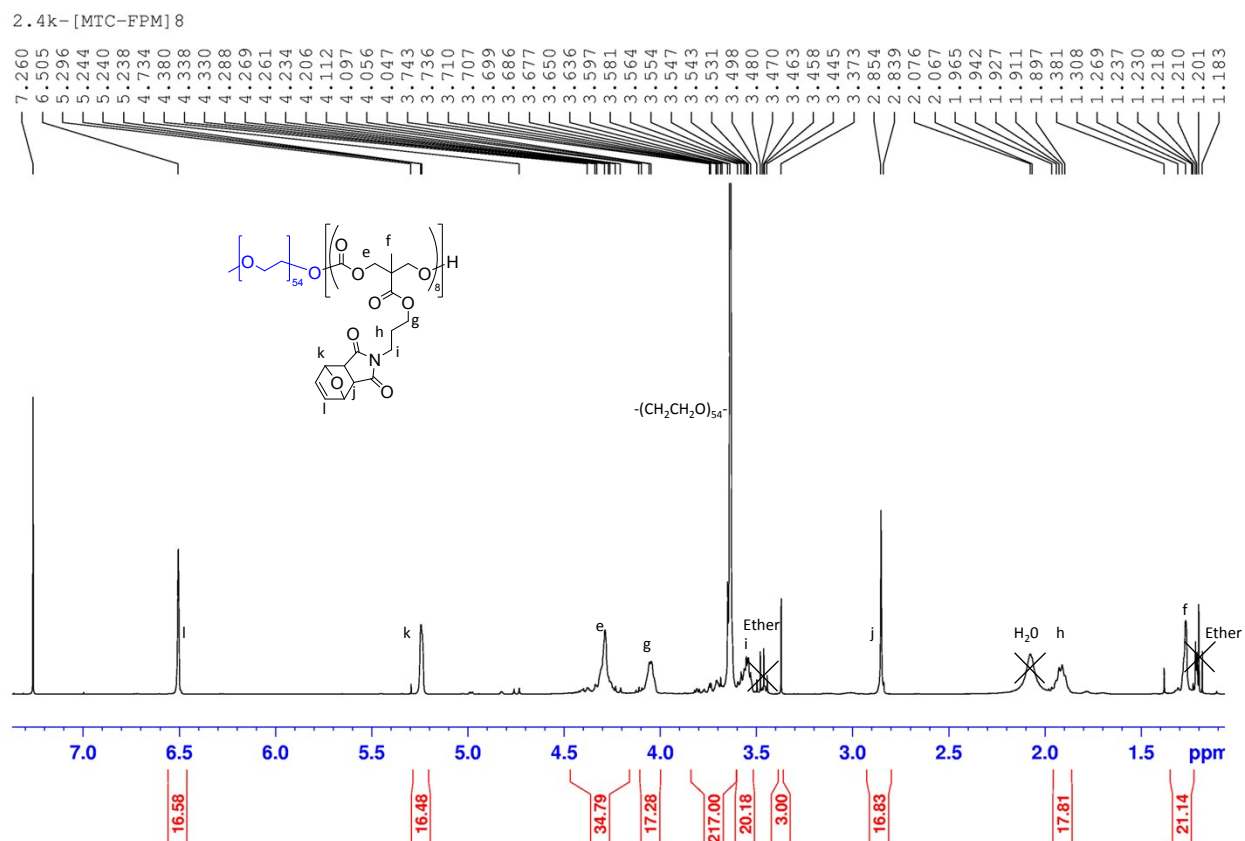


c

2.4k-[MTC-M]3-[MTC-Cationic]72



d



e

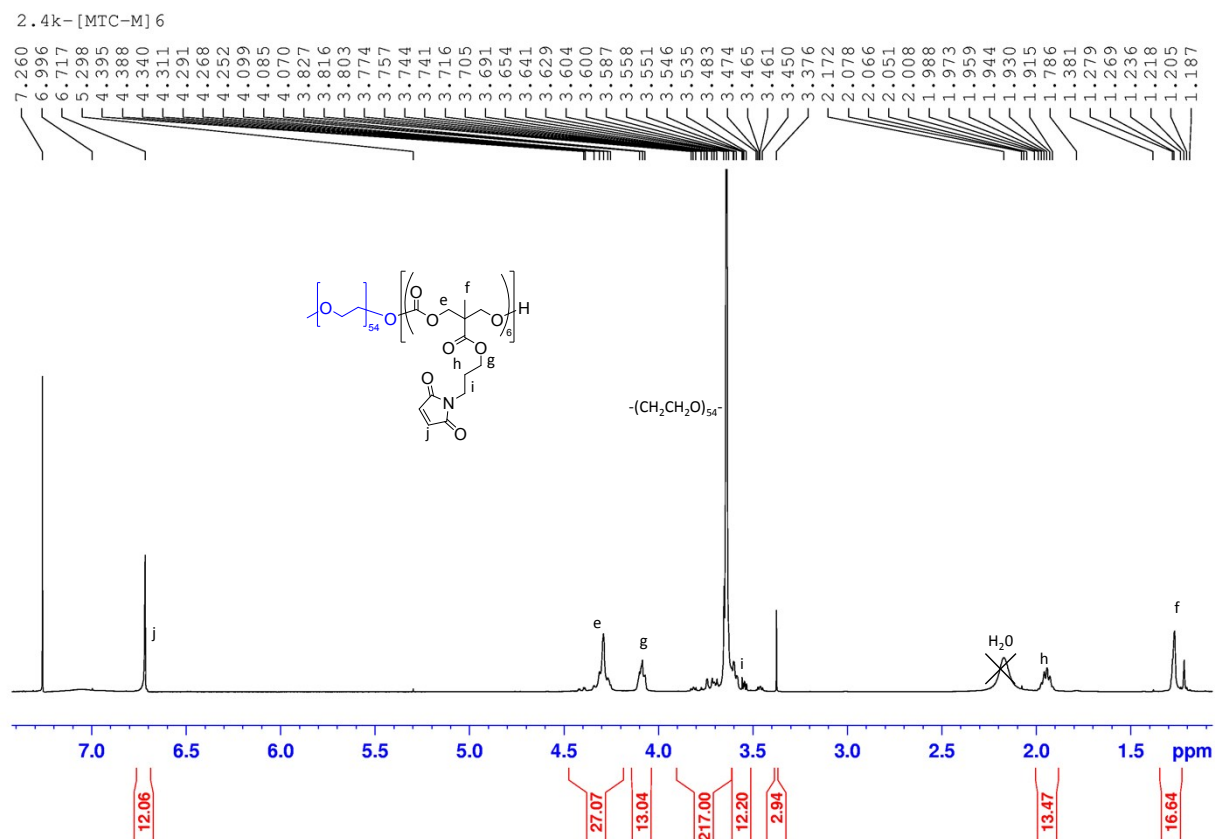


Figure S1. ^1H NMR spectra of polymers 2.4k-MC (protected-a; deprotected-b; quaternized-c) and 2.4k-M (protected-d; deprotected-e).

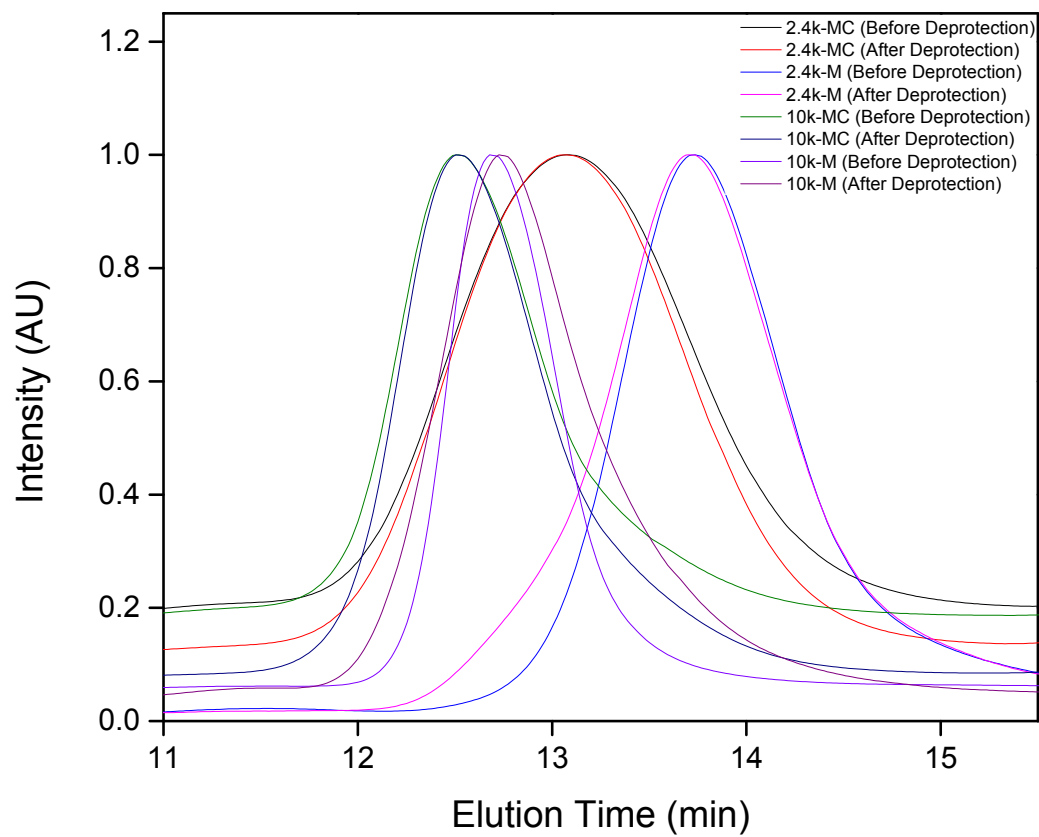


Figure S2. GPC traces of 2.4k-MC, 2.4k-M, 10k-MC and 10k-M before and after deprotection.

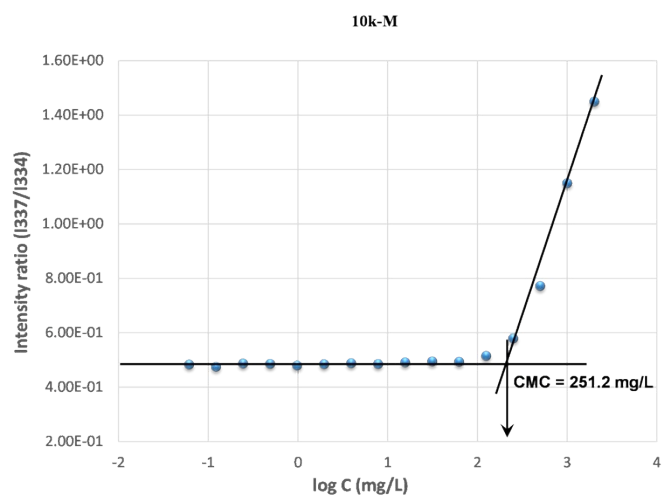
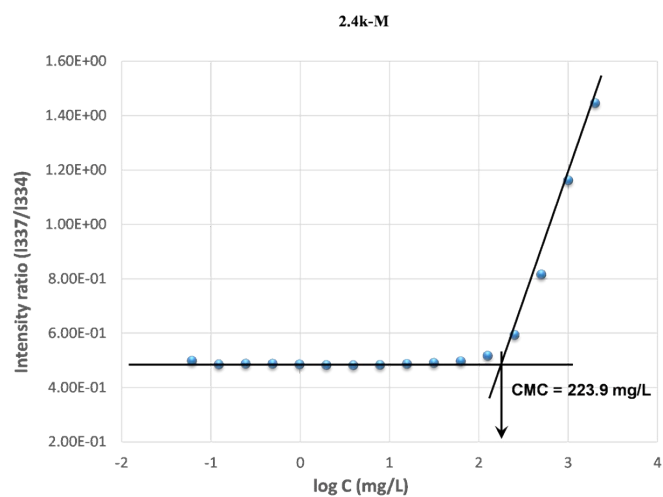
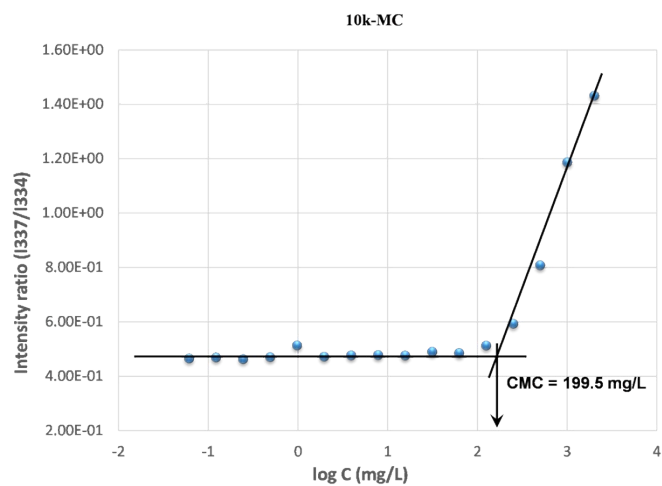
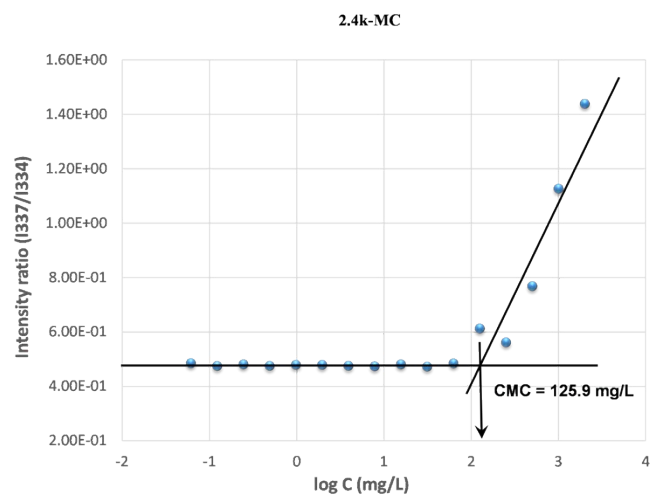
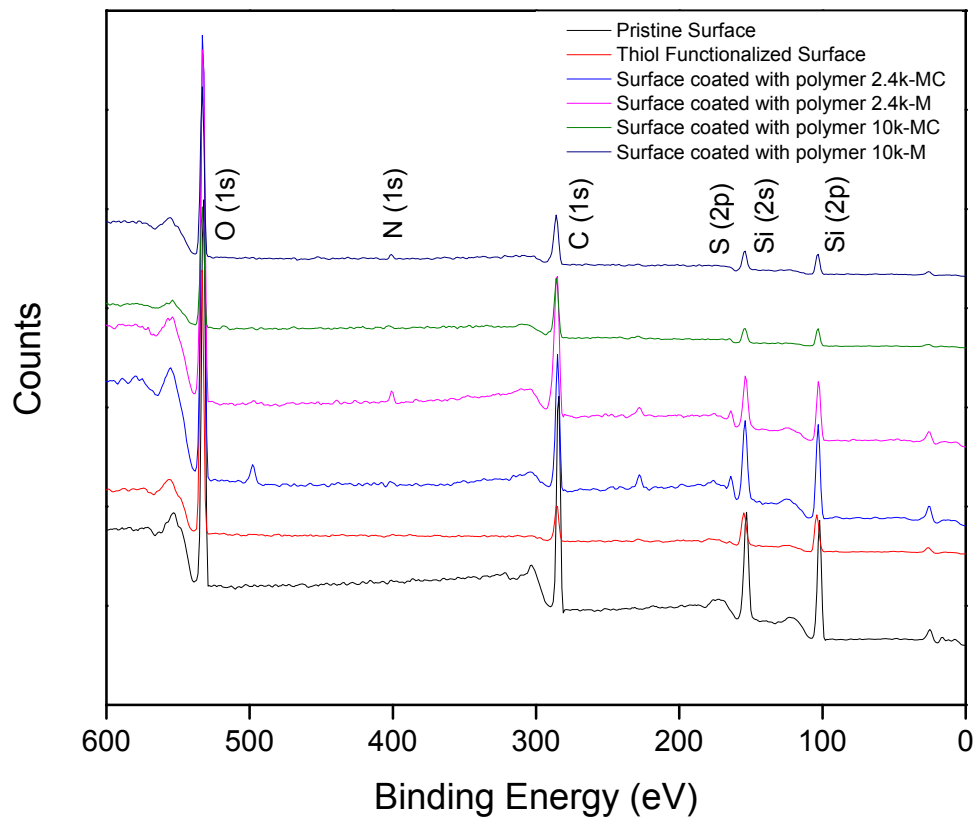


Figure S3. CMC measurements of the various non-cationic and cationic polymers in aqueous solution.

a



b

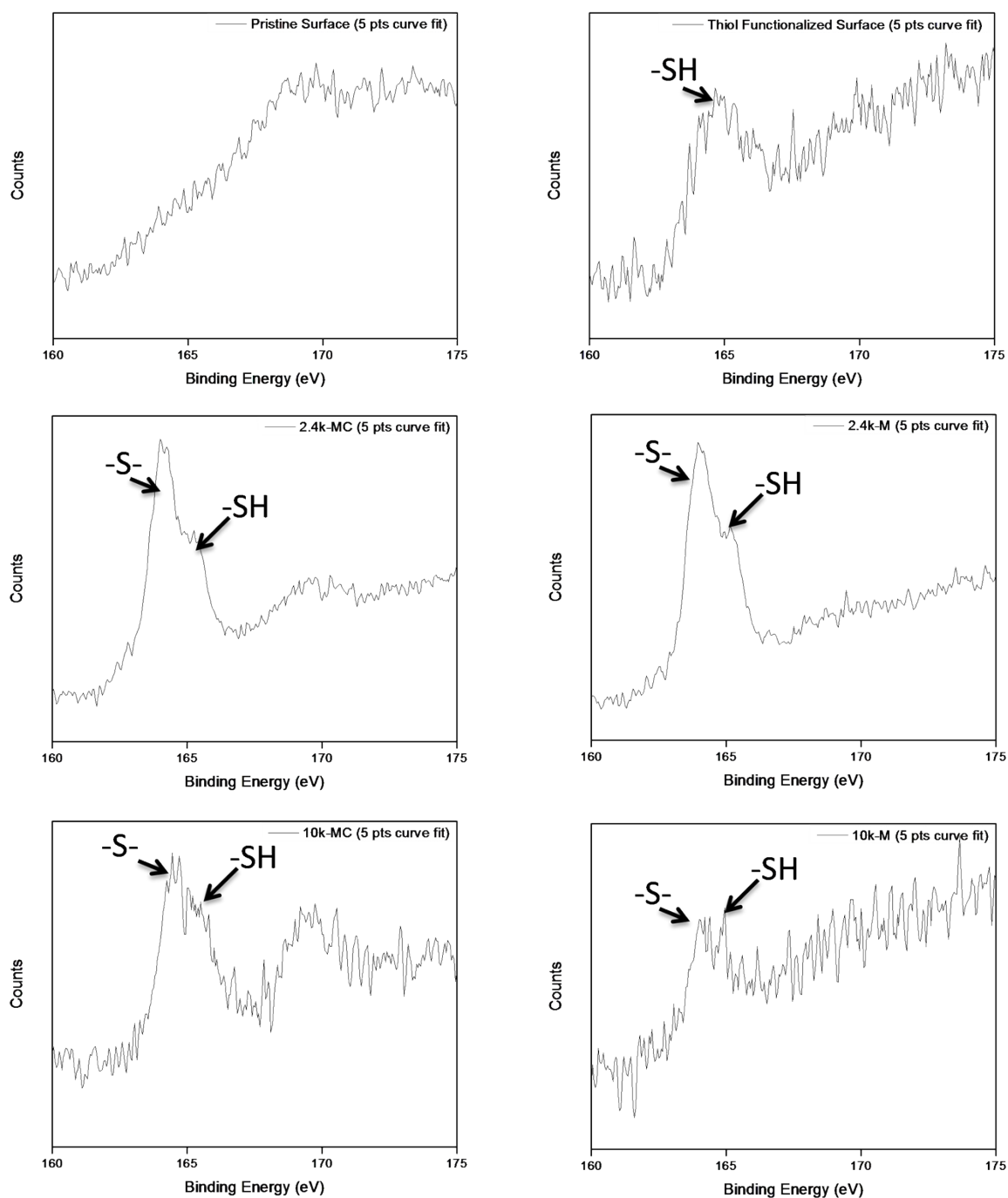


Figure S4. XPS characterization. (a) XPS wide-scan spectra of pristine, thiol-functionalized and polymer-coated silicone rubber surfaces; (b) High-resolution S₂p spectra of pristine, thiol-functionalized and polymer-coated surfaces.

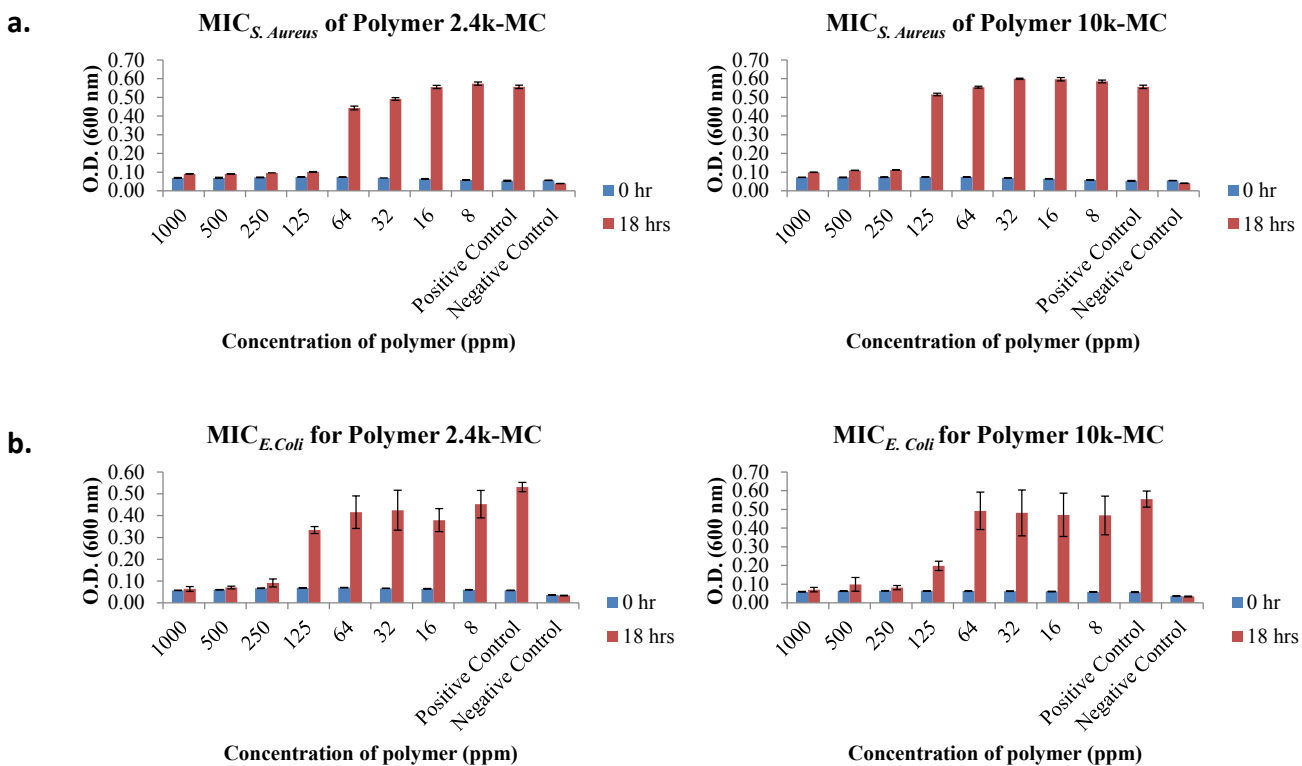


Figure S5. Minimum inhibitory concentration (MIC) measurement of polymers containing a cationic polycarbonate block against *S. aureus* (a) and *E. coli* (b) in solution.

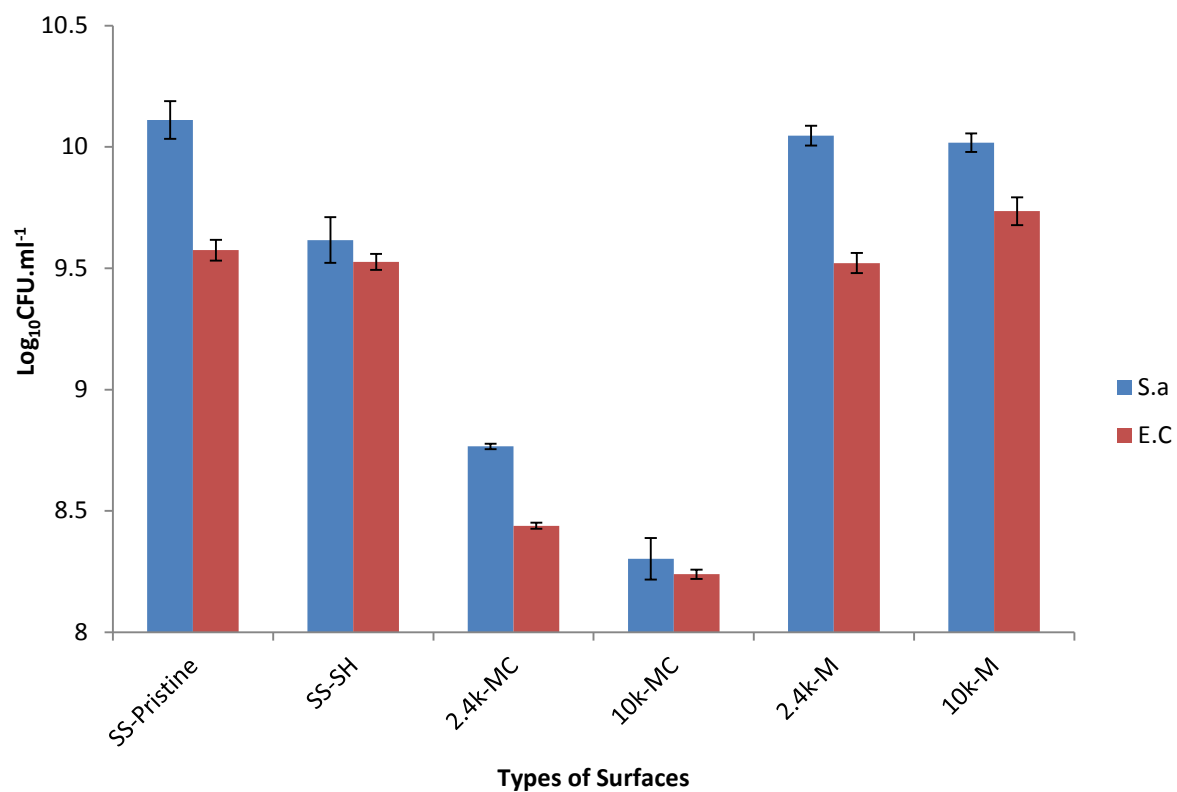


Figure S6. Antibacterial activity of various coatings in solution against *S. aureus* and *E. coli*. Viable colony counts (CFU·ml⁻¹) of *S. aureus* and *E. coli* in solution that was in contact with pristine, thiol-functionalized silicone rubber surface and the surfaces coated with the polymers.

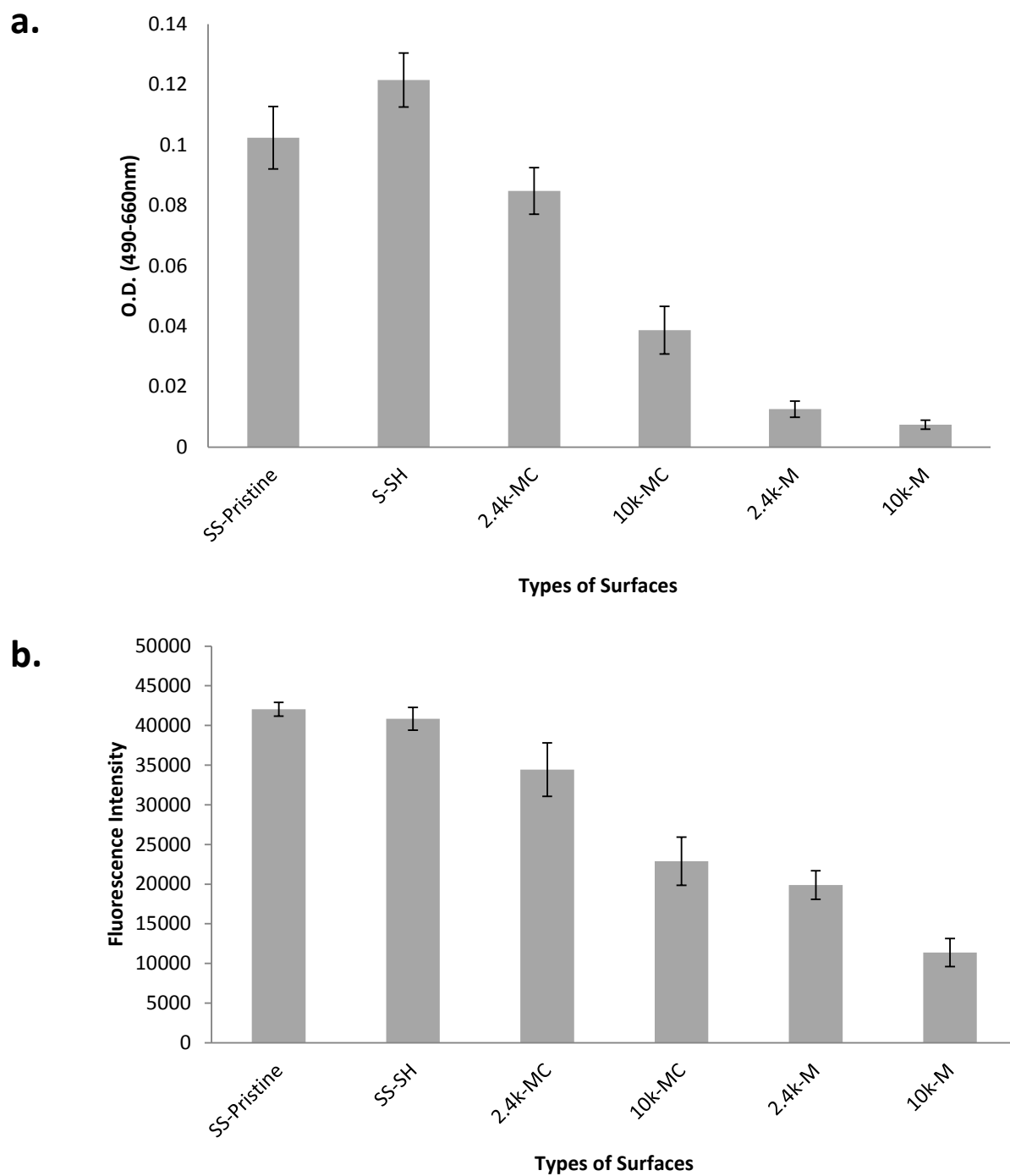


Figure S7. Metabolic activity of *S. aureus* (a) and *E. coli* (b) fouled on the pristine silicone rubber surface and various polymer-coated surfaces after 24 hours of incubation, analyzed by XTT and Cell Titer-Blue® Assay analyses, respectively.

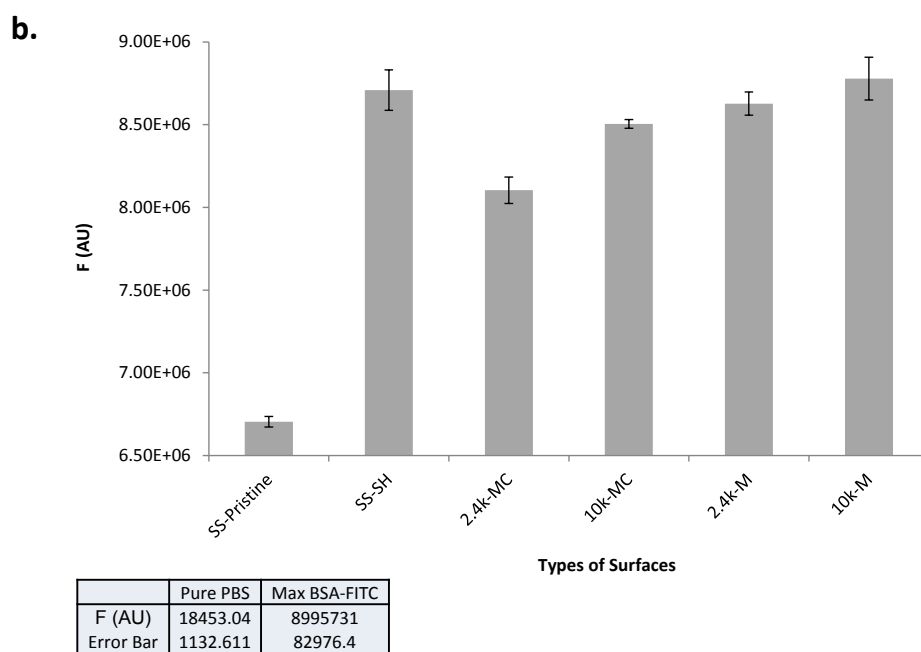
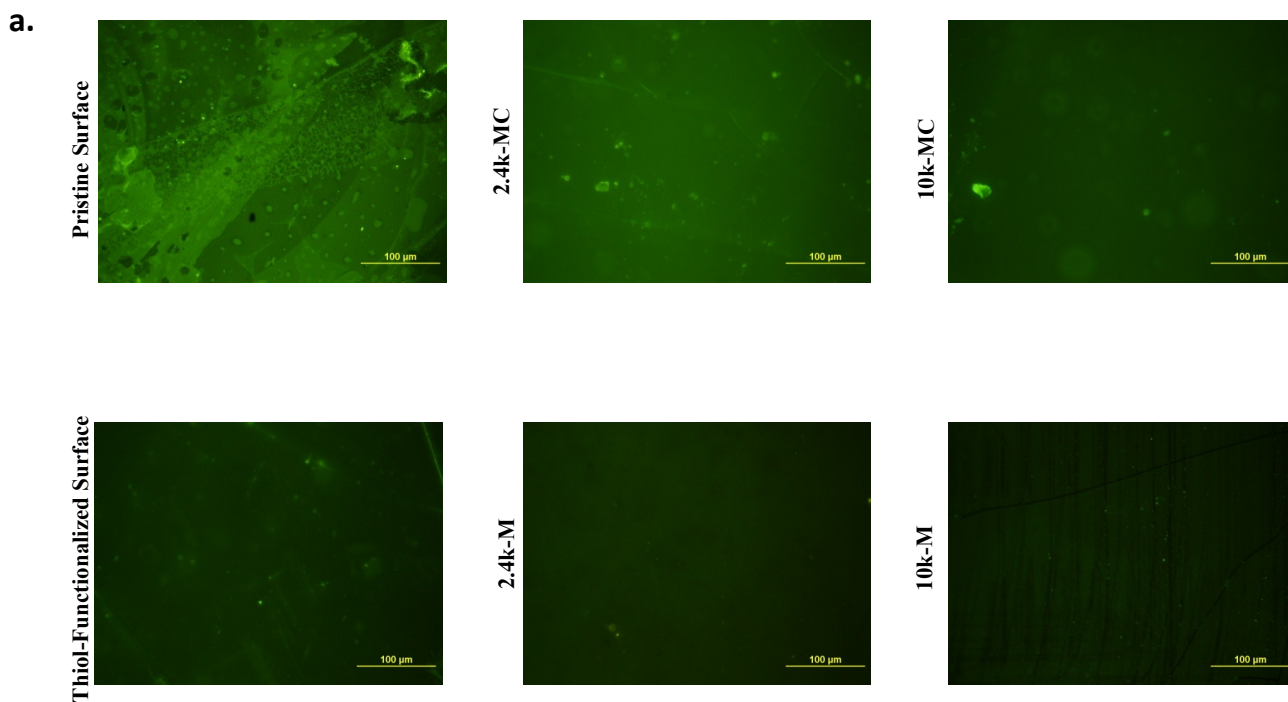


Figure S8. Prevention of protein fouling. Study of protein fouling on uncoated and coated PDMS surfaces *via* observation of BSA-FITC using fluorescence microscopy (**a**) and spectroscopy (**b**).

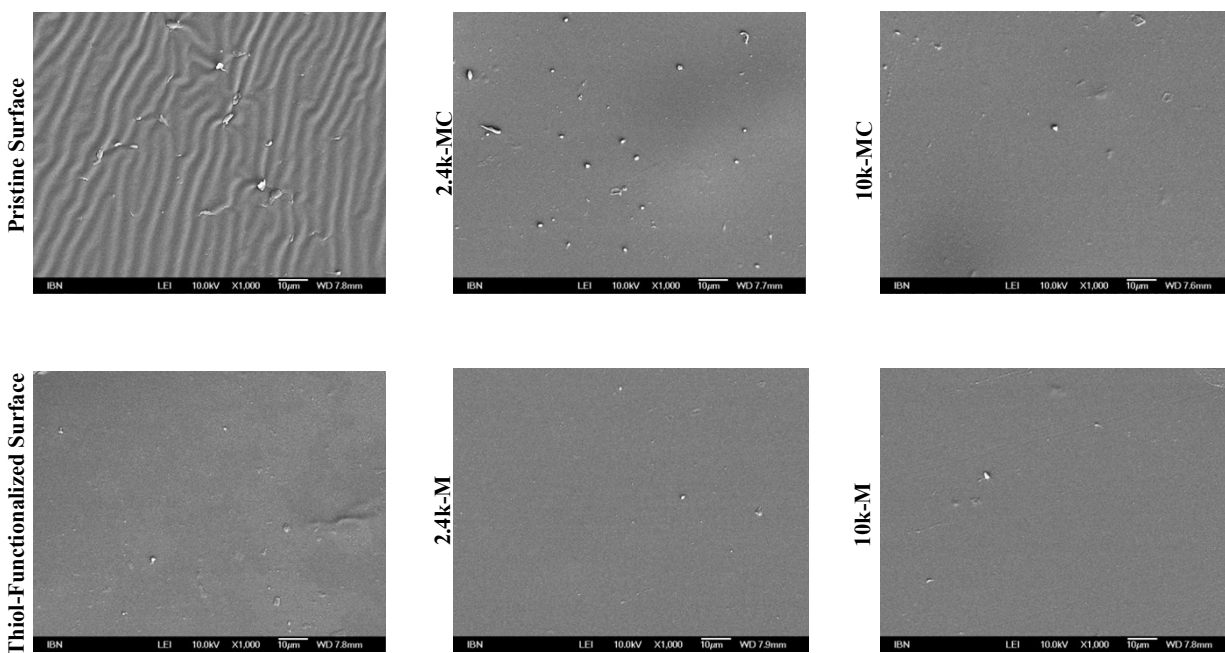


Figure S9. Prevention of platelet adhesion. FE-SEM images of blood platelets on uncoated and polymer-coated PDMS surfaces.

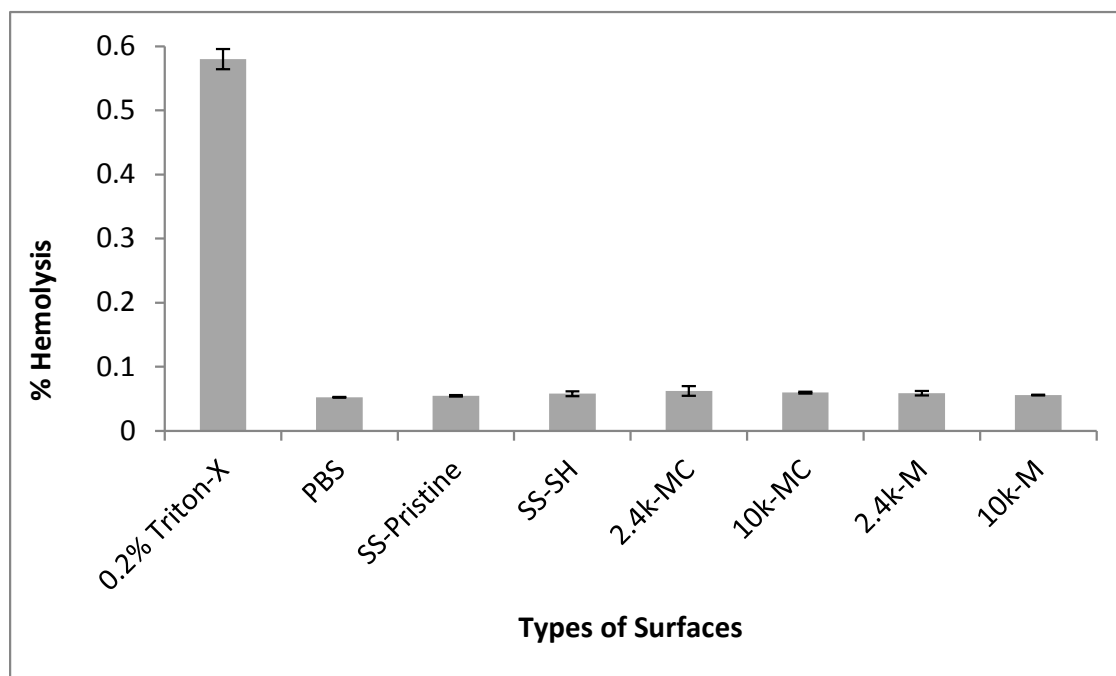


Figure S10. Hemolytic activity of uncoated and polymer-coated surfaces against rat red blood cells.