

Supporting Information

A stable dual functional superhydrophobic coating to inhibit *Proteus mirabilis* colonization, migration, and encrustation formation for urinary catheter applications

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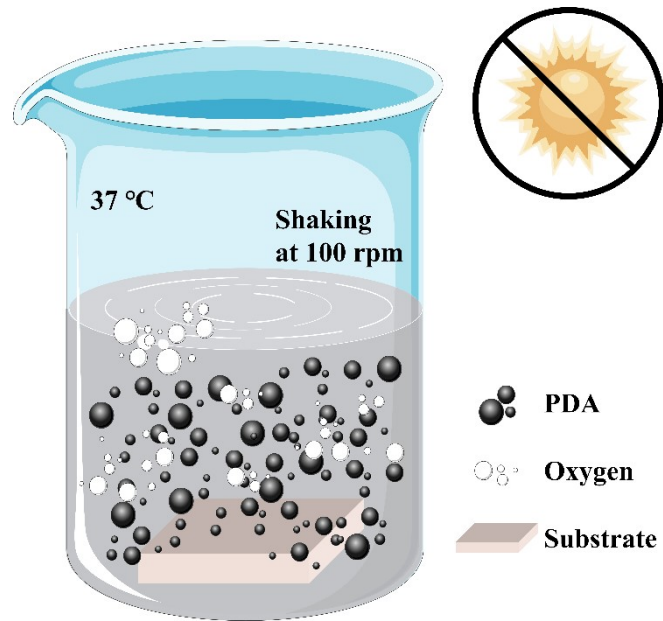


Figure S1. Schematic diagram of preparing polydopamine coating.

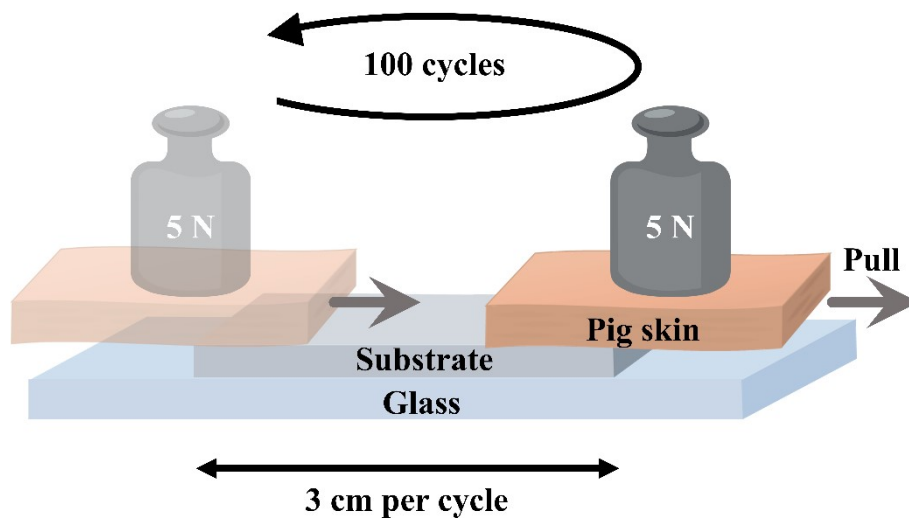


Figure S2. Schematic diagram of the setup for the pigskin friction test.

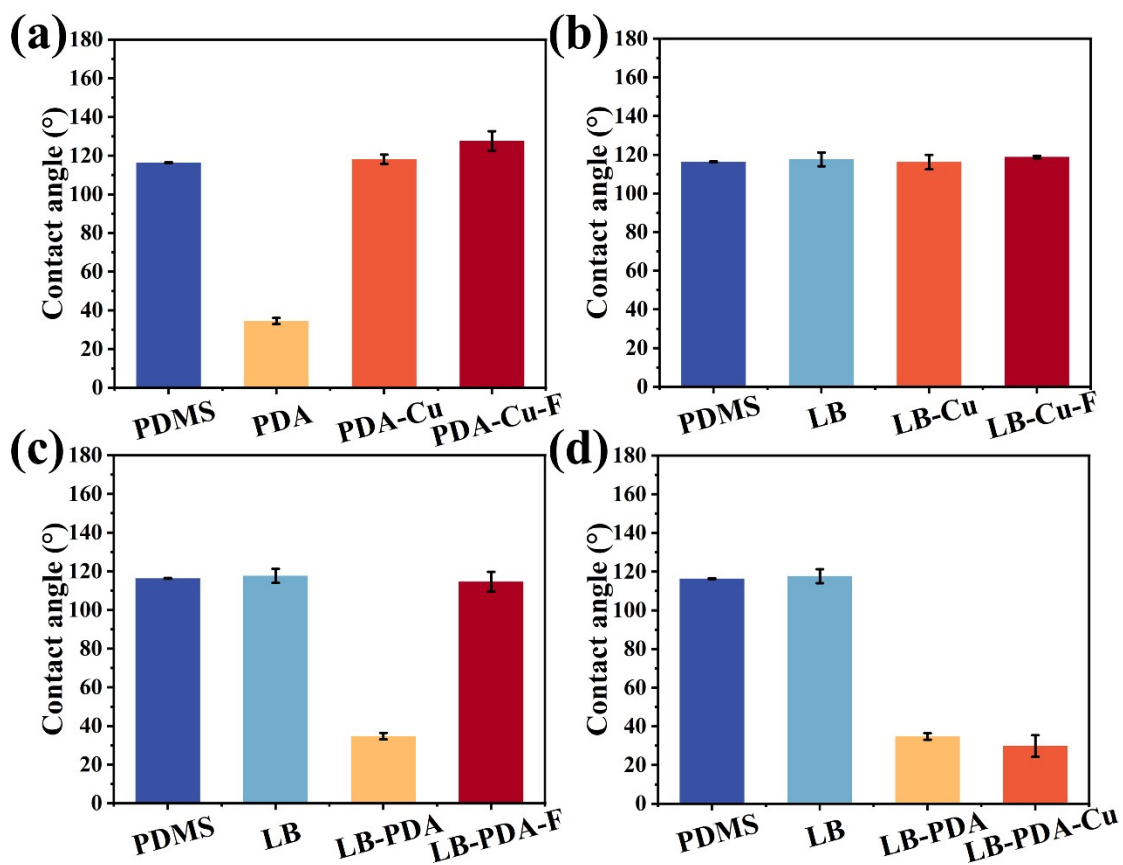


Figure S3. Water contact angles of coated surfaces lacking various coating steps: (a) liquid bandage treatment step, (b) PDA coating step, (c) copper ion coating step, (d) PFDT coating step.

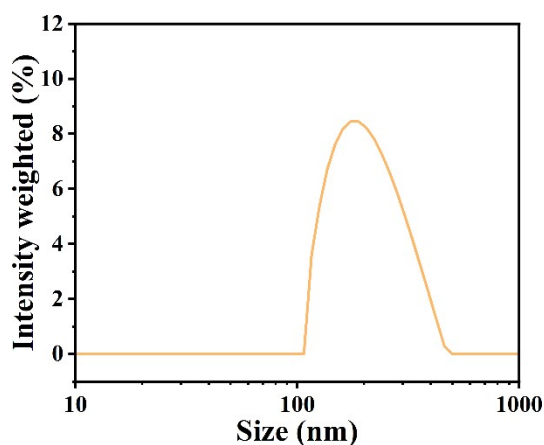


Figure S4. Particle size distribution of PDA determined by DLS.

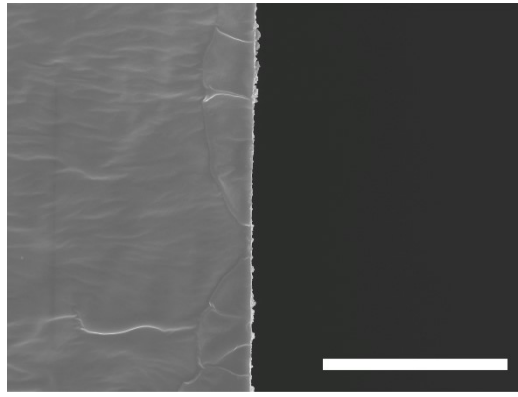


Figure S5. SEM image of cross-section of PDA coating on PDMS. Scale bars represent 30 μm .

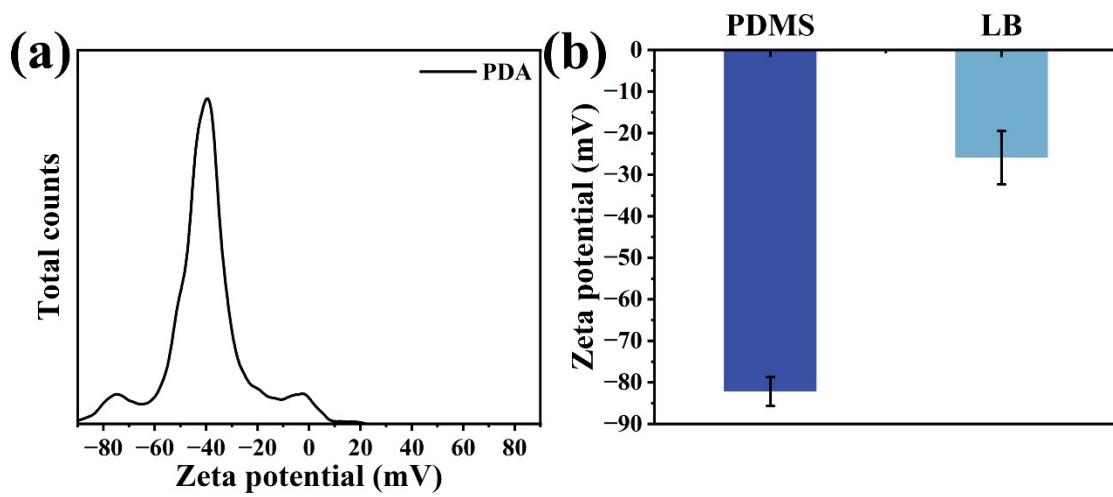


Figure S6. Zeta potential of (a) PDA particles in suspension, and (b) surface zeta potential of PDMS and LB coating at pH 8.5.

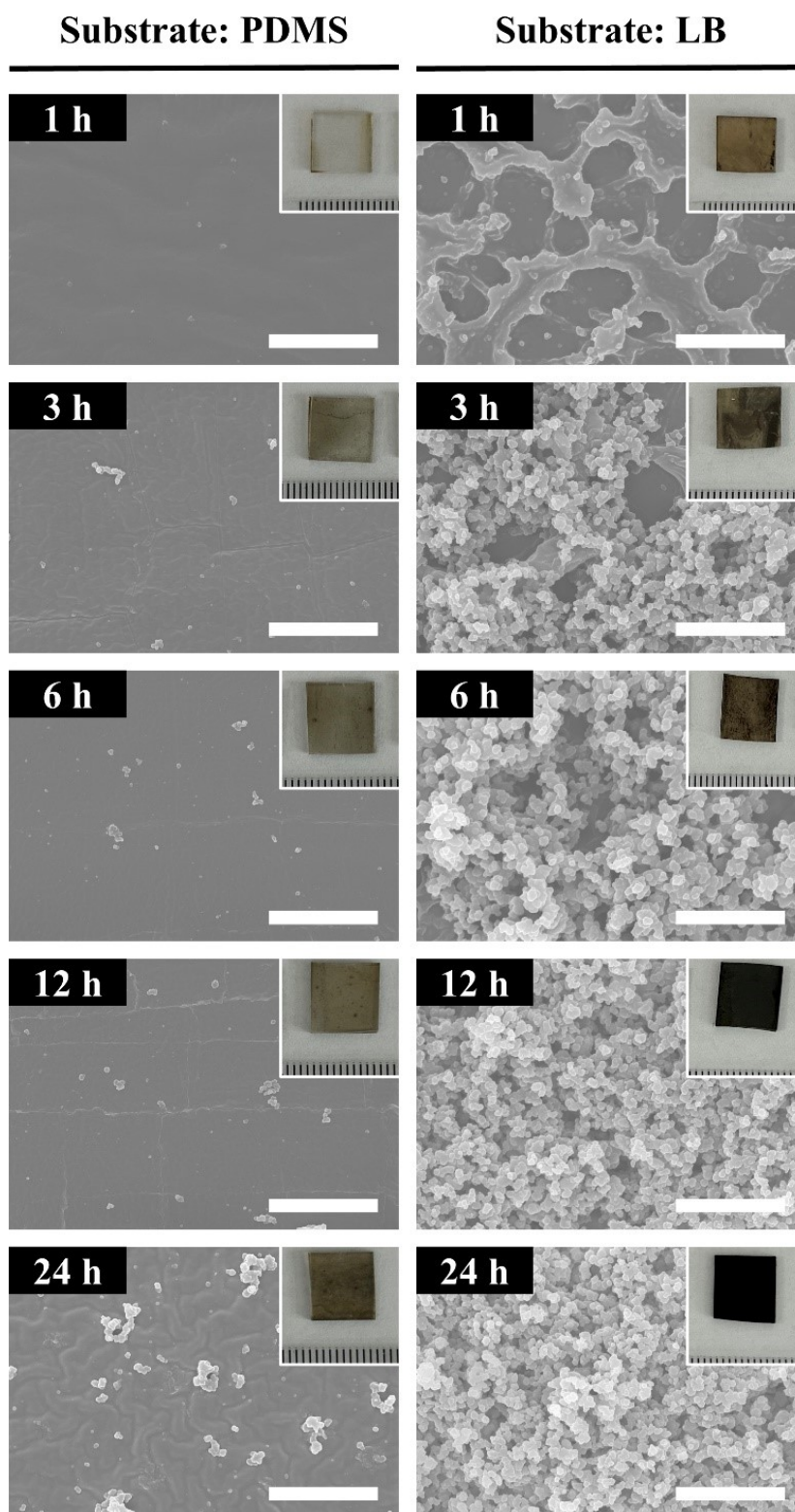


Figure S7. SEM images of the surface topography of the prepared PDA coatings and LB-PDA coatings with different reaction times and the photographs of the corresponding samples in the insets. Scale bars represent 5 μm .

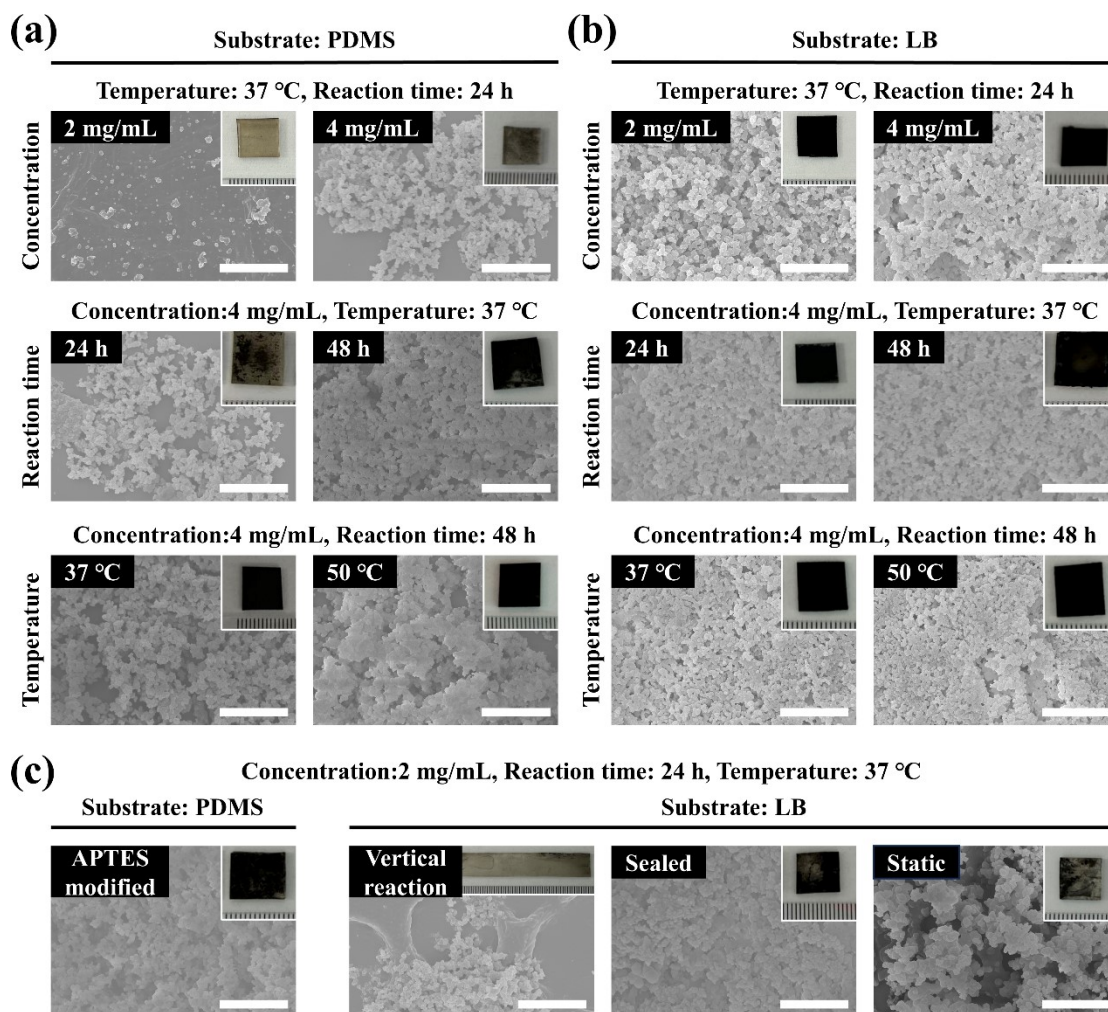


Figure S8. SEM images and photographs of PDA coatings prepared on (a) PDMS substrates and (b) LB substrates using different concentrations of dopamine solution, under different reaction times, and with different reaction temperatures. (c) SEM images and photographs of PDA coatings prepared on PDMS and LB substrates under different reaction conditions. Scale bars represent 5 μm .

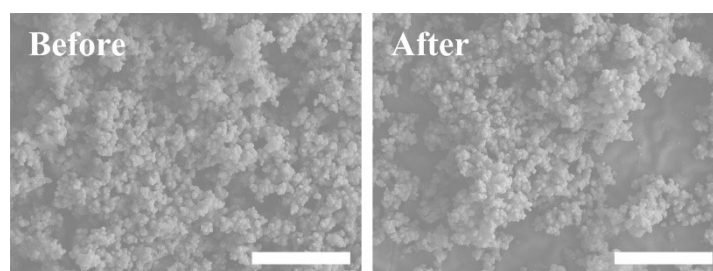


Figure S9. SEM images of surface topography of LB-PDA-Cu-F coating before and after 200 cycles of rubbing with a weight of 5 N. Scale bars represent 5 μm .

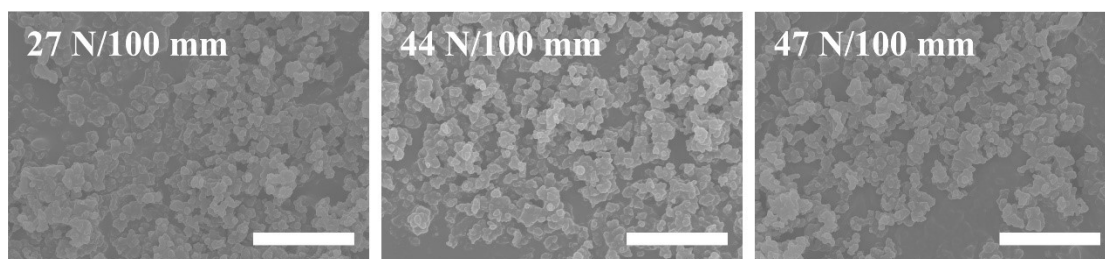


Figure S10. SEM images of surface topography of LB-PDA-Cu-F coating after peeling for 22, 12, and 15 cycles by tapes with 27, 44, and 47 N/mm adhesive forces, respectively. Scale bars represent 5 μm.

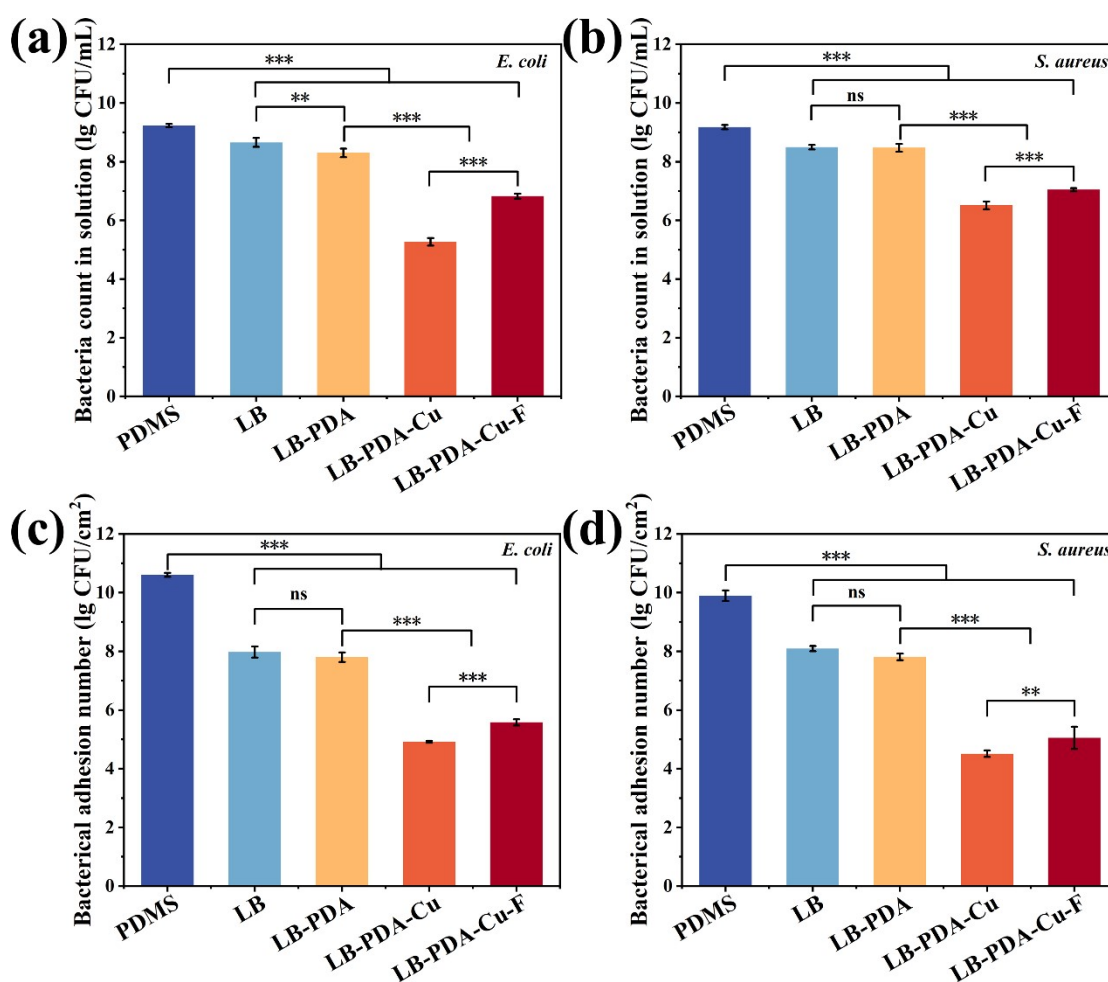


Figure S11. Number of viable (a) *E. coli* and (b) *S. aureus* cells in PBS after incubation with pristine and modified PDMS for 24 h. Number of viable (c) *E. coli* and (d) *S. aureus* cells adhering on PDMS surfaces after incubation in PBS bacterial suspension (10^8 CFU per mL) for 4 h.

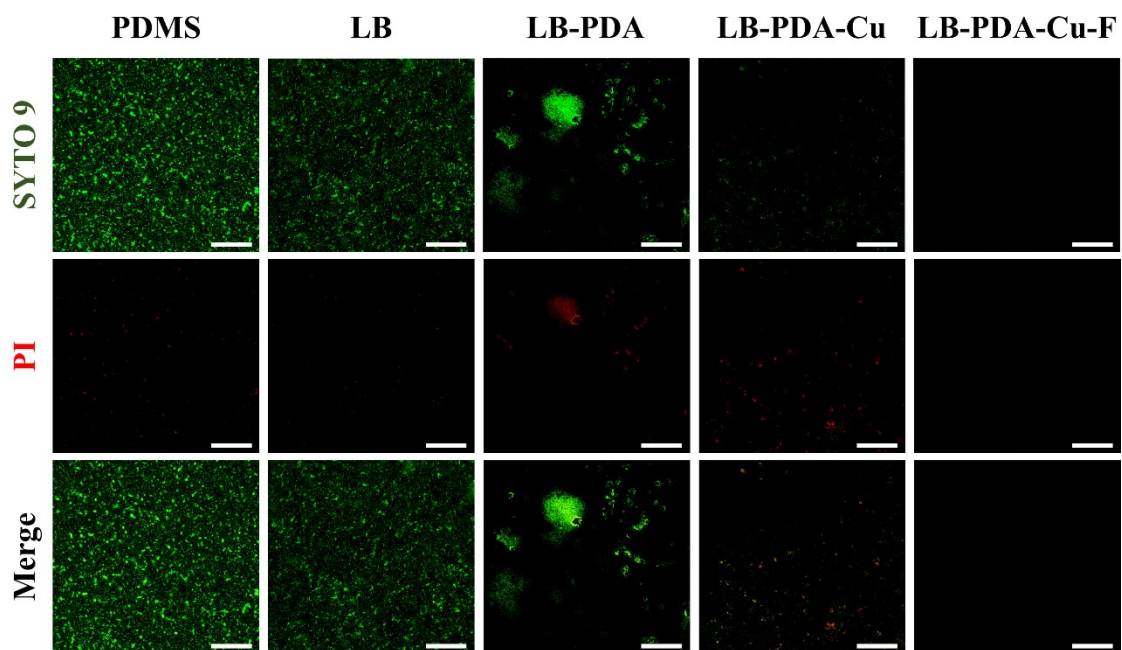


Figure S12. Biofilm formation on pristine and modified PDMS surfaces after 24 h incubation in growth medium containing 10^5 CFU per mL of *P. mirabilis*. Scale bars represent 100 μ m.