

Supplementary Figures

Figure S1. Continuous flow culture system allows a constant flow of fresh medium to pass through 2- channels (left) or 8-channels (right) flow culture systems.

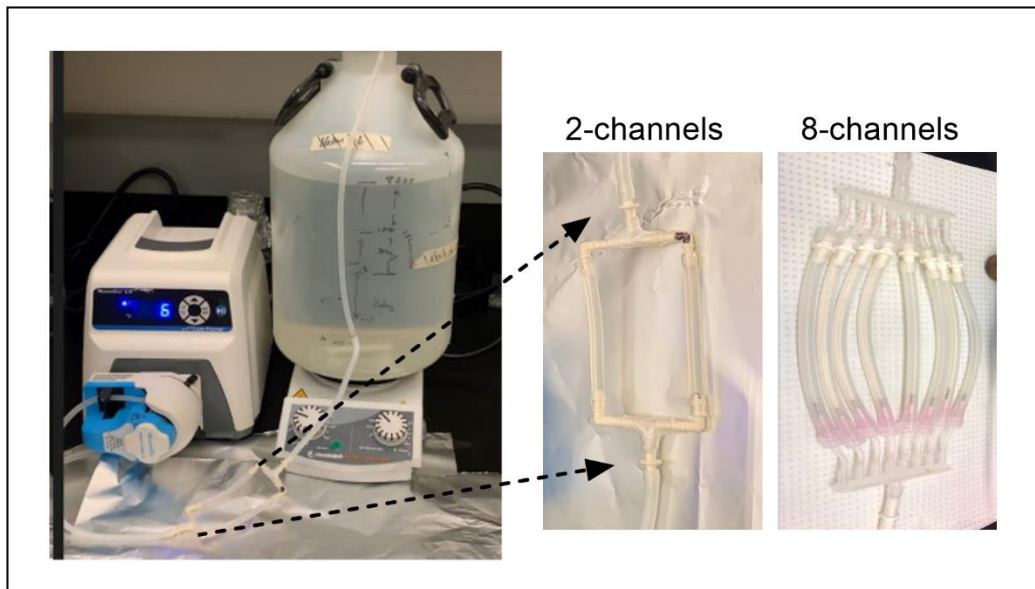


Figure S2. Effect of atmospheric plasma exposure time on the surface hydrophilicity of PE sheets. (A) Water contact angle (WCA) of water droplets on the surface of PE sheets after treatment with atmospheric plasma for different intervals. (B) ATF-FTIR of PE sheet after 5 min exposure.

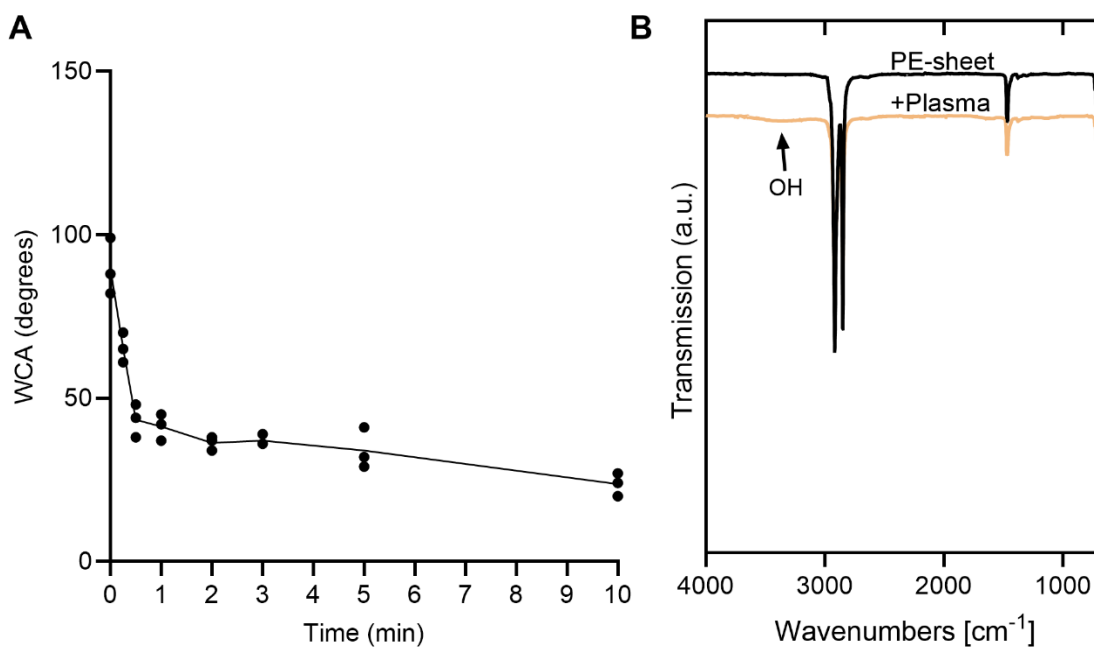


Figure S3. Generation of a uniform, high density PslG_h coating along the lumen surface of a long (10 cm) PE-100 catheter. (A) Photos of actual level (top) and the relative displacement (bottom) of water inside 4 tubing segments (S1-S4) of PE-100 catheter after PslG_h immobilization. (B) ATR-FTIR spectra of the of 4 tubing segments.

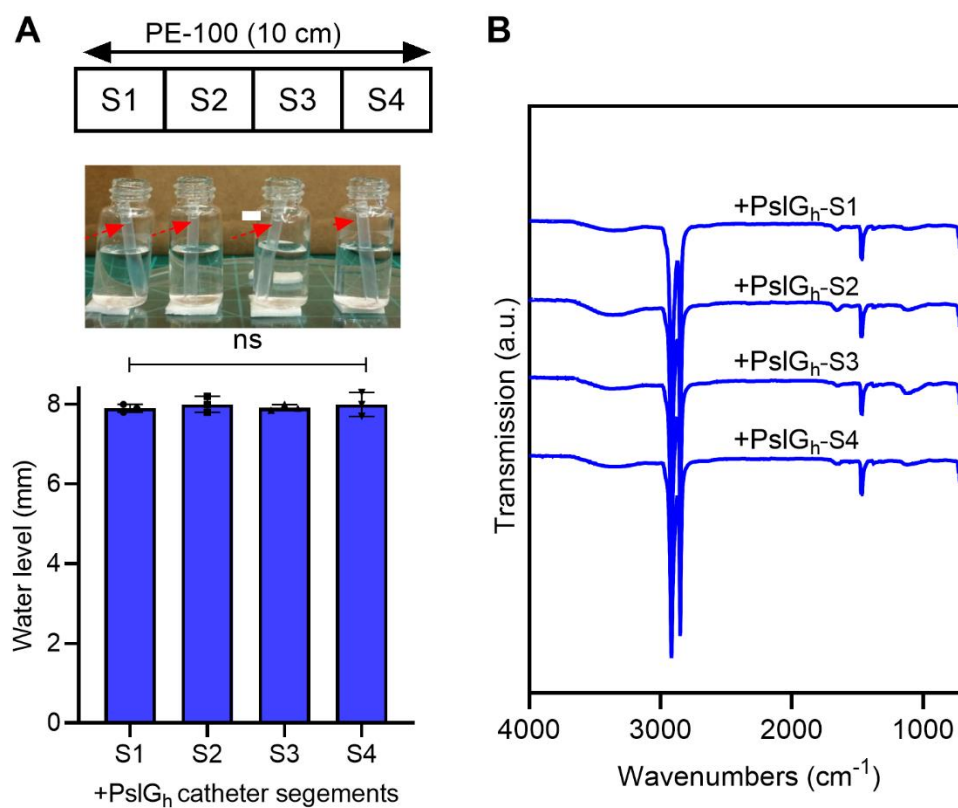


Figure S4: Inhibition of biofilm formation of *P. aeruginosa* clinical strain (ATCC 27853) by PslG_h. (A) Dose-response curves to examine the prevention of biofilm biomass in the presence of PslG_h in solution. (B) Anti-biofilm activity of the PE-100 catheter lumen with bound PslG_h, relative to untreated control surface. (C) Image analysis of corresponding fluorescence images in (B). All measurements were acquired after incubation for 24 h in bacterial culture. Biofilms were stained with crystal violet (A) or SYTOX Green (B) (scale bar, 50 μm). Each data point in (A) represents the mean from three independent experiments of n = 3 crystal violet microtiter plate wells. EC₅₀ of inhibition = 0.8267 nM. ****P ≤ 0.001.

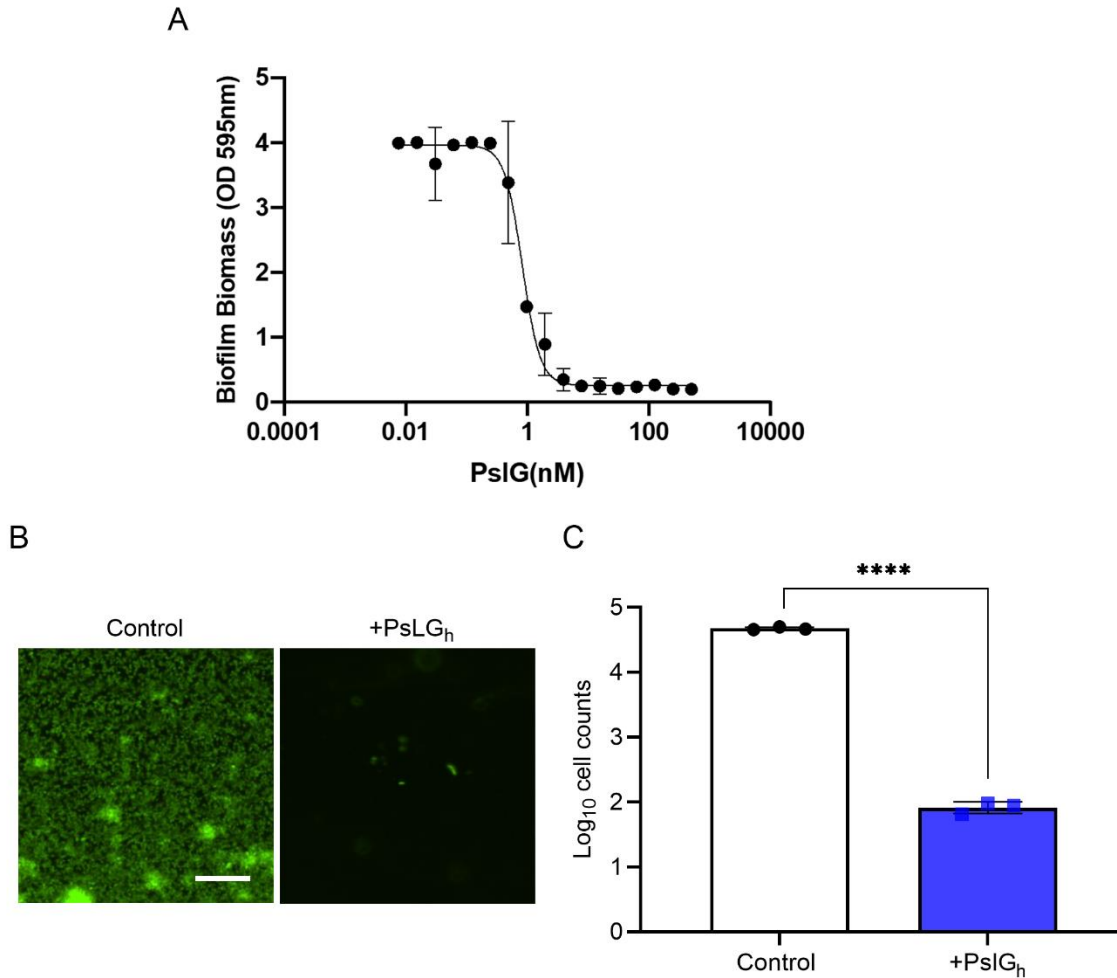


Figure S5. Bound PslG_h prevents *P. aeruginosa* biofilm formation on PE-100 catheter lumen surfaces in the presence of serum. (A) representative photos of CV-stained catheters, fluorescence images, and (C) colony forming units per cm² (CFU). Images showing the anti-biofilm activity of bound PslG_h on PE-100 catheter lumen surfaces, but not for a control (untreated) PE-100 catheter. All measurements were acquired after incubation for 1 day in bacterial culture. Biofilms were stained with CV in (A) and with SYTOX Green in (B). Scale bar, 50 μm. ****P ≤ 0.001.

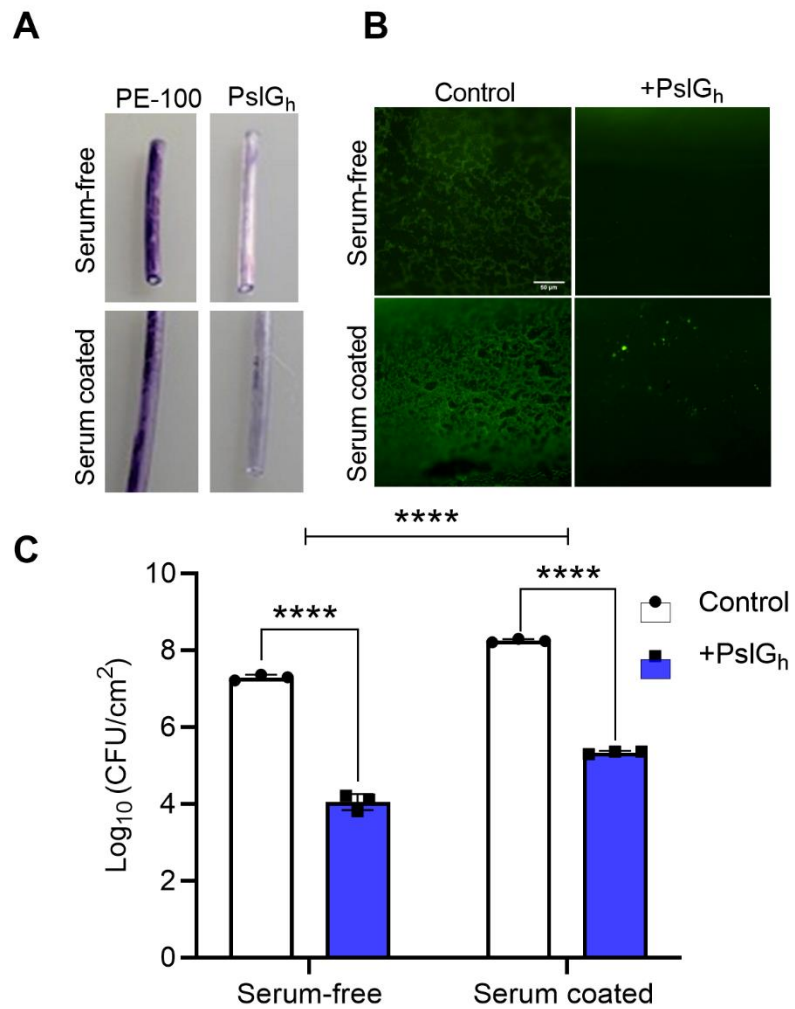


Figure S6: Storage stability of PslG_h-coated catheter lumen at 4 °C for one month. (A) Florescence images showing the inhibition of biofilm formation by bound PslG_h on the lumen of PE-100 catheter after storing at 4°C for 1 month under dry and wet conditions, but not for untreated (control) catheter lumen (scale bar, 50 μm). (B) Corresponding cell counts (per cm²) calculated from the image analysis of surfaces in (A). ****P ≤ 0.0001.

