

Supporting Information for

Active Release of Nitric Oxide-Releasing Dendrimers from Electrospun Polyurethane Fibers

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Supporting Information

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Table S1. Characterization and nitric oxide-release properties of G4 dendrimers in PBS (pH 7.4, 37 °C) as measured by a chemiluminescence NO analyzer^a.

	No. Modified End Groups ^a	% Modified	Molec. Weight (Da)	[NO] _{max} ^c (ppb/mg)	t _{max} ^d (min)	t[NO] ^e (μmol/mg)	t _{1/2} ^f (min)	t _d ^g (h)
G4 octyl/NO	47 ± 3	74 ± 5	25987.7	4760 ± 920	2.7 ± 0.4	0.92 ± 0.06	25 ± 6	9 ± 1
G4 octylQA/NO	39 ± 5	61 ± 8	23953.6	1570 ± 150	2.0 ± 0.3	1.03 ± 0.06	115 ± 6	16 ± 1

^aFor all measurements, n ≥ 3 pooled experiments. ^bDetermined by ¹H NMR. ^cMaximum flux of NO release. ^dTime required to reach maximum flux. ^eTotal NO payload released. ^fNO release half-life. ^gDuration of NO release.

Table S2. Inhibitory concentrations at 50% viability (IC₅₀) against L929 mouse fibroblast cells.^a

	2h IC ₅₀ (μg/mL)	24h IC ₅₀ (μg/mL)
G4 octyl	200	60
G4 octyl/NO	360	100
G4 octylQA	300	60
G4 octylQA/NO	280	40

^aFor all measurements, n ≥ 3 pooled experiments

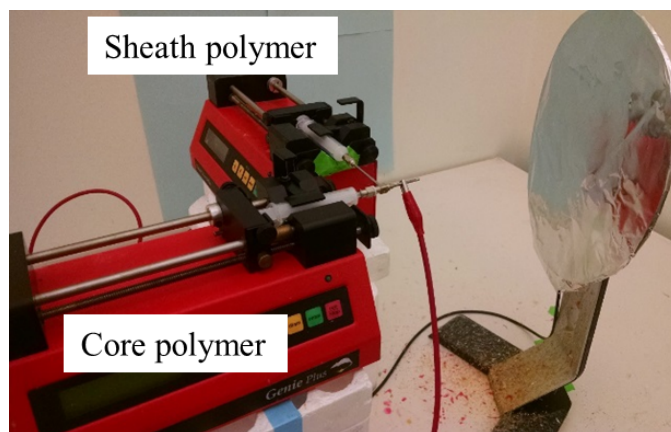


Figure S1. Custom electrospinning apparatus in co-axial configuration

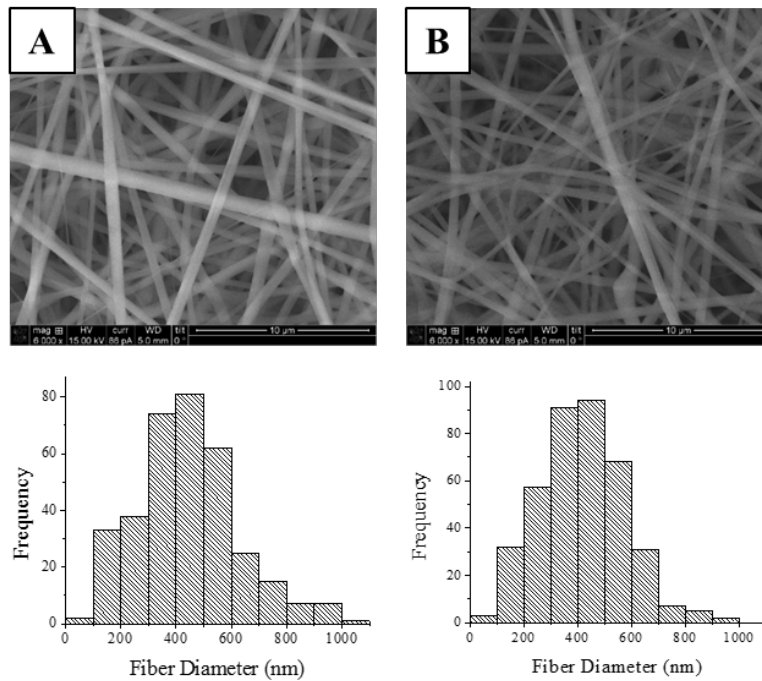


Figure S2. Scanning electron micrographs of (A) TP 470/HP 93A-G4 octylQA and (B) TP 470/HP 93A-G4 octylQA/NO electrospun fibers with corresponding fiber diameter histograms.

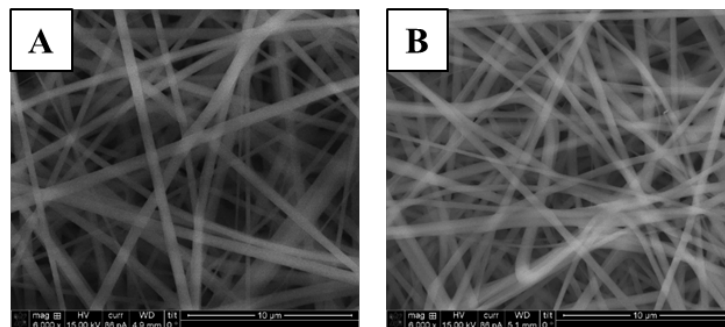


Figure S3. Scanning electron micrographs of (A) TP 470/HP 93A-G4 RITC octyl/NO and (B) TP 470/HP 93A-G4 RITC octylQA/NO electrospun fibers.

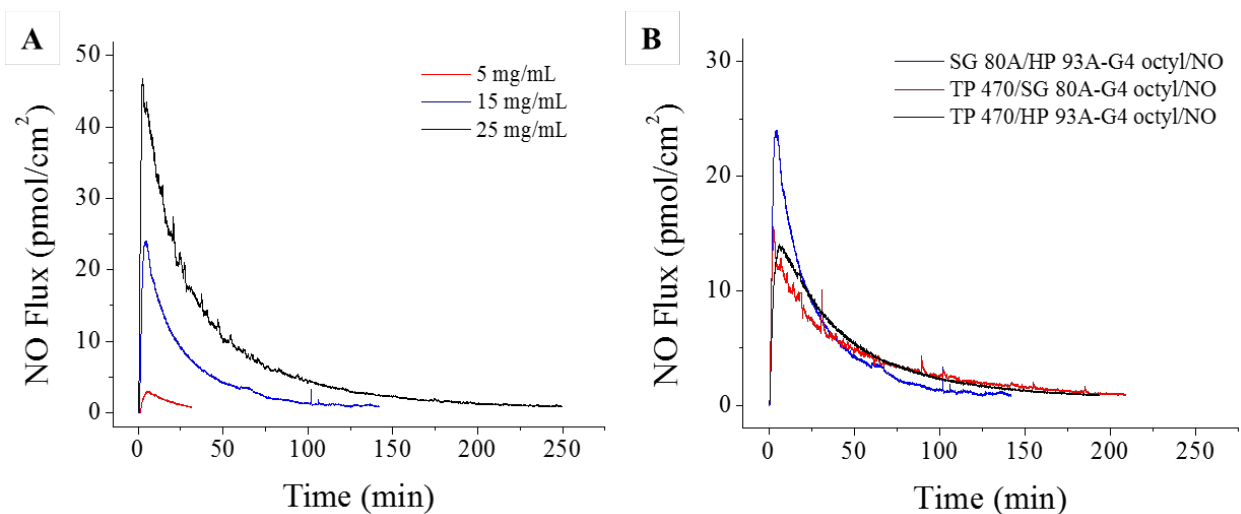


Figure S4. Representative NO-release profiles for (A) SG 80A/HP 93A-G4 octyl/NO fibers at 5 (red), 15 (blue), and 25 (black) mg/mL dendrimer concentrations, and (B) G4 octyl/NO-doped electrospun SG 80A/HP 93A (blue), TP 470/SG 80A (red), TP 470/HP 93A (black) fibers.

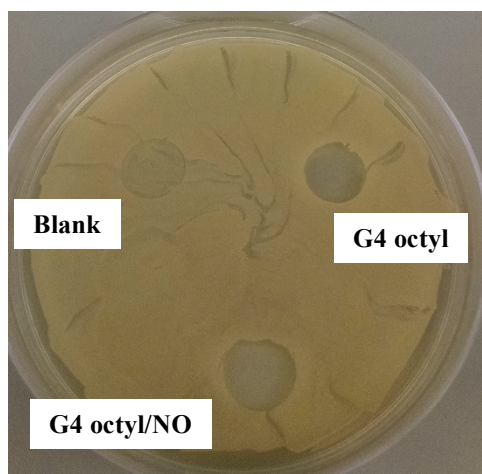


Figure S5. Zone of inhibition images against MRSA showing no bacteria growth under control and NO-releasing TP 470/SG80A-G4 octyl fibers

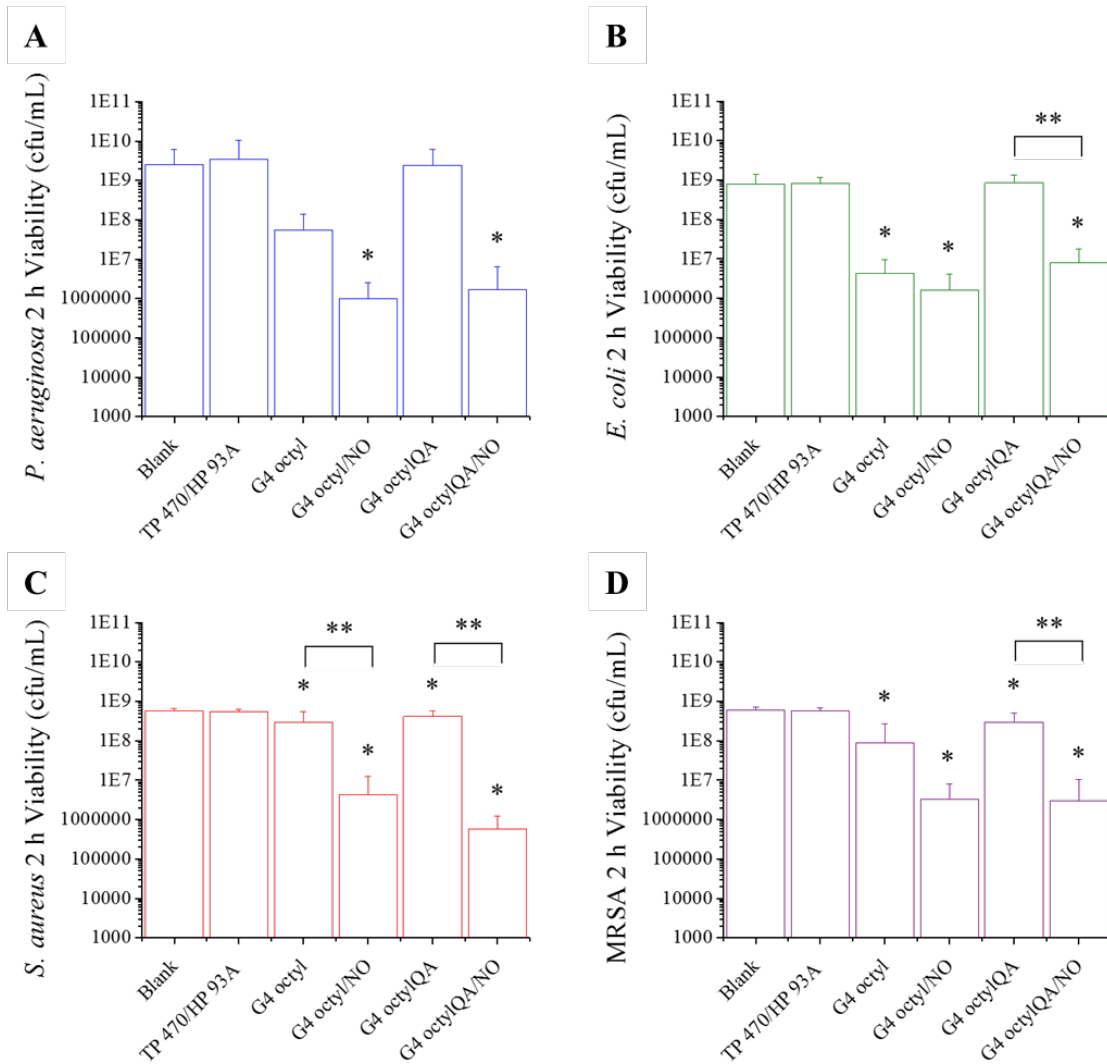


Figure S6. Viability of (A) *P. aeruginosa*, (B) *E. coli*, (C) *S. aureus*, and (D) MRSA after 2 h exposure to blank, control, and NO-releasing co-axial electrospun TP 470/HP 93A fibers. For all measurements, $n \geq 3$ pooled experiments with error bars representing standard deviation of the mean. Asterisk (*) indicates significant differences from blank ($p < 0.05$) and double asterisk (**) indicates significant differences ($p < 0.05$) using two-tailed student's t-test.

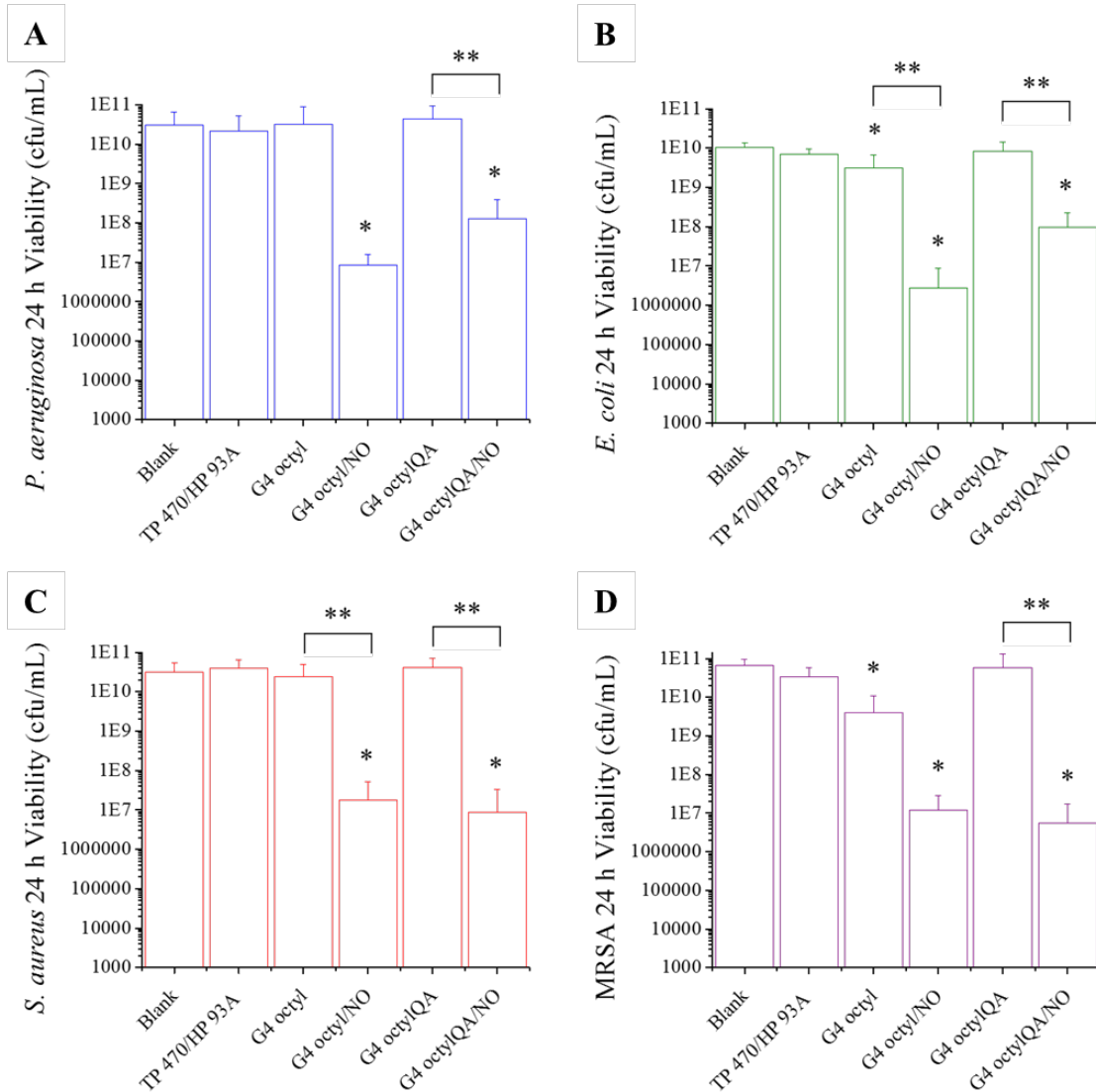


Figure S7. Viability of (A) *P. aeruginosa*, (B) *E. coli*, (C) *S. aureus*, and (D) MRSA after 24 h exposure to blank, control, and NO-releasing co-axial electrospun TP 470/HP 93A fibers. For all measurements, $n \geq 3$ pooled experiments with error bars representing standard deviation of the mean. Asterisk (*) indicates significant differences from blank ($p < 0.05$) and double asterisk (**) indicates significant differences ($p < 0.05$) using two-tailed student's t-test.

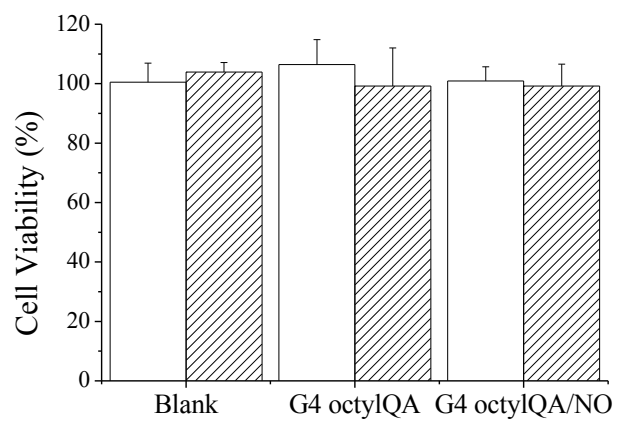


Figure S8. Viability (%) of L929 mouse fibroblast cells following 2 h (solid) or 24 h (diagonal lines) exposure to blank, control, and NO-releasing electrospun TP 470/HP 93A-G4 octylQA fibers. For all measurements, $n \geq 3$ pooled experiments with error bars representing standard deviation of the mean.