Supplementary Information

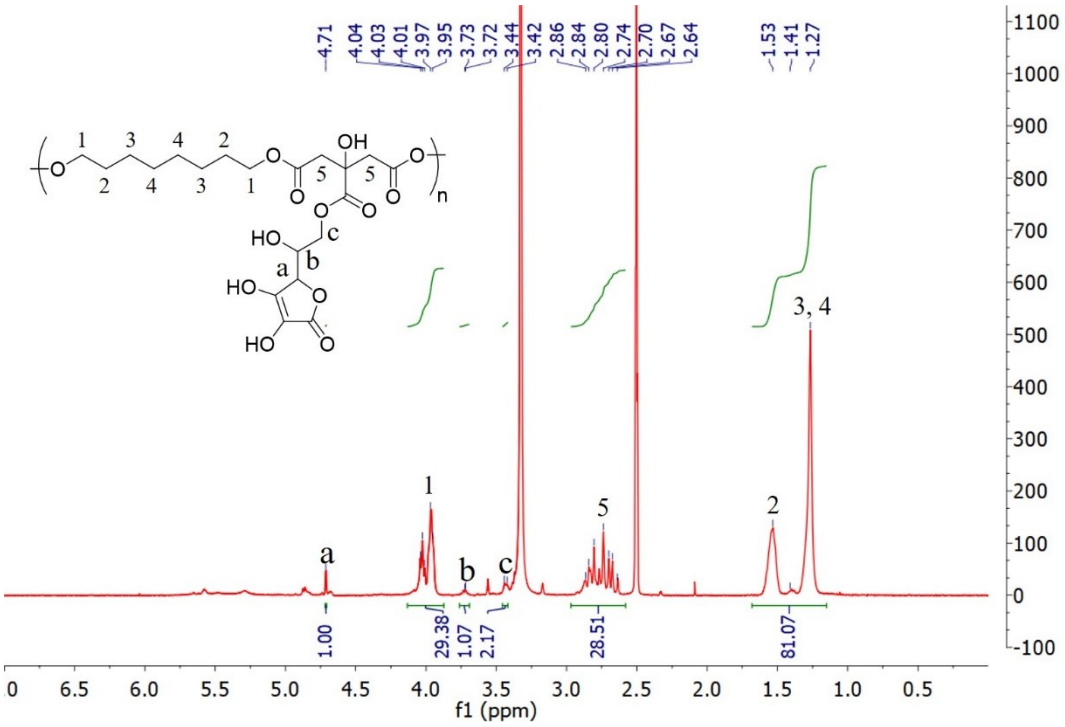

Figure S1. NMR spectra of POCA prepolymer (@20:20:8, [citrate]:[diol]:[ascorbate]).

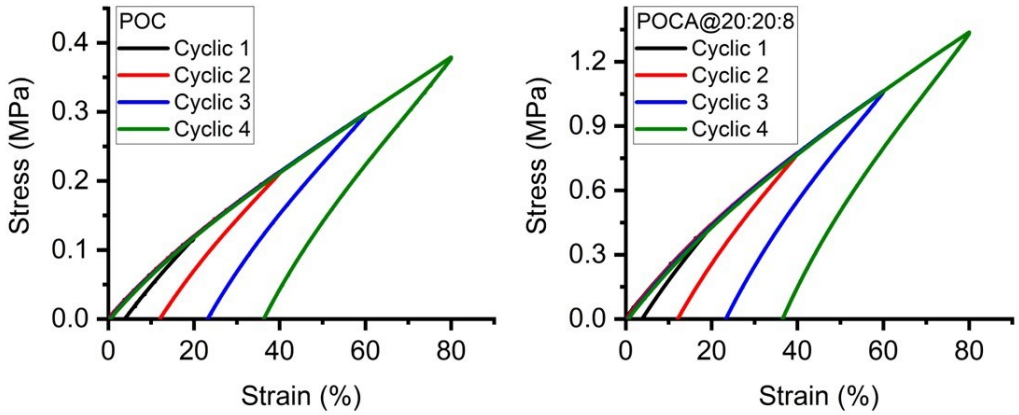

Figure S2. Cyclic tensile tests of dumbbell-shaped POC and POCA (@20:20:8, [citrate]:[diol]:[ascorbate]) (12 mm × 2 mm wide) at different strain conditions (20%, 40%, 60%, and 80%) show expected elastic behavior.

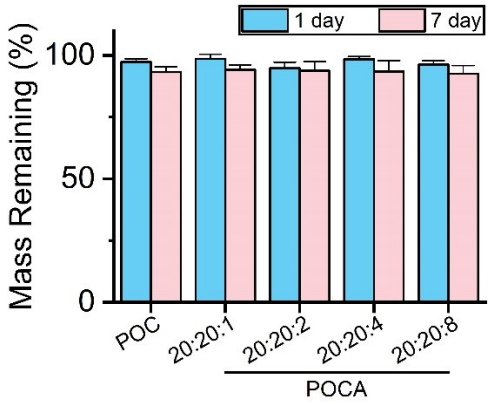

Figure S3. To verify elastomers were cross-linked, POC and POCA elastomers (@20:20:1, 20:20:2, 20:20:4, and 20:20:8) were assessed for mass loss in ethanol for 1 week.

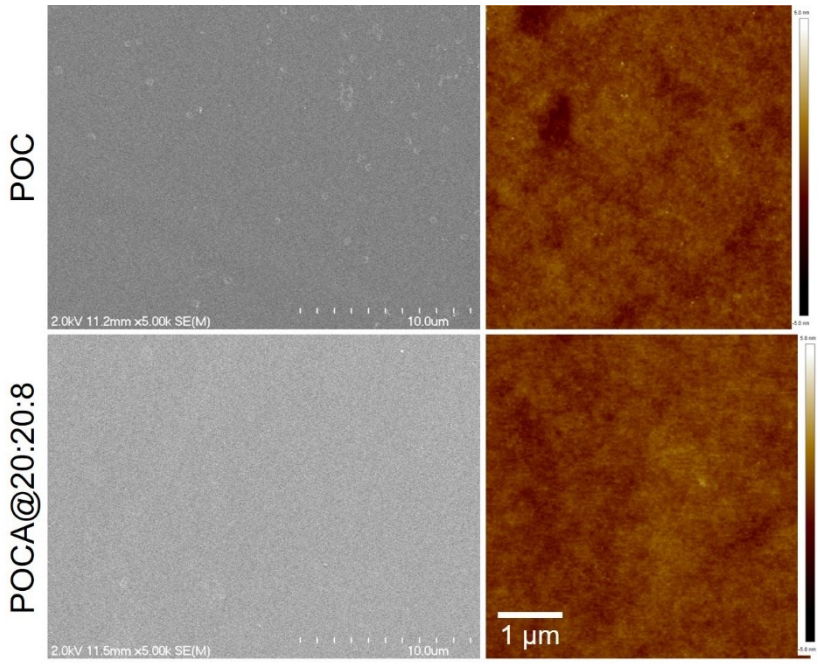

Figure S4. Comparison of POC and POCA elastomer (@20:20:8, [citrate]:[diol]:[ascorbate]) surface micromorphology by SEM and AFM (AFM vertical scale bar is -5 to +5 nm).

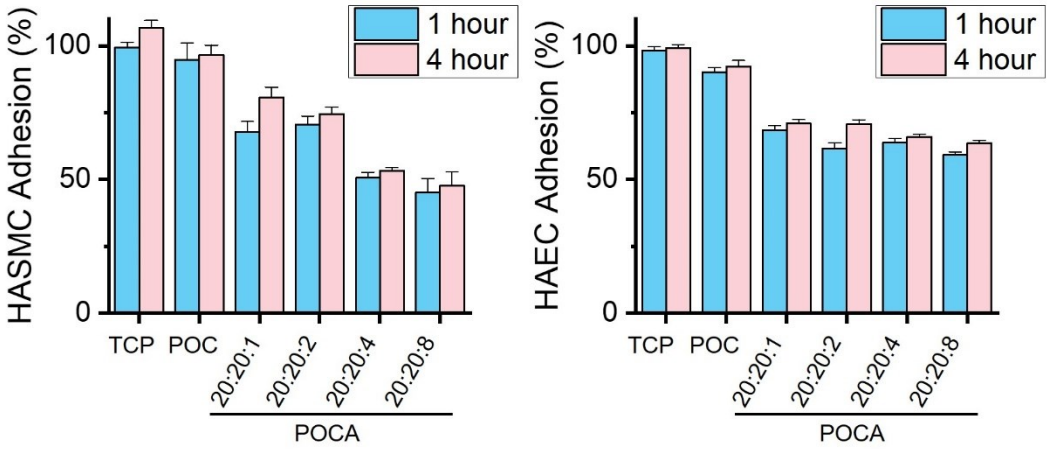

Figure S5. HASMC and HAEC adhesion at 1 and 4 hours on surfaces of different POCA elastomers.

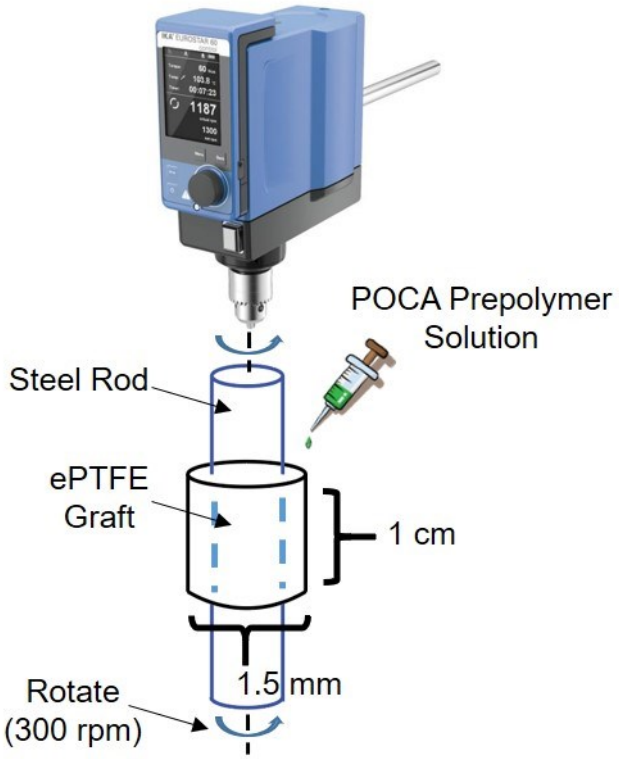

Figure S6. A modified spin-coating method for small-diameter ePTFE grafts.

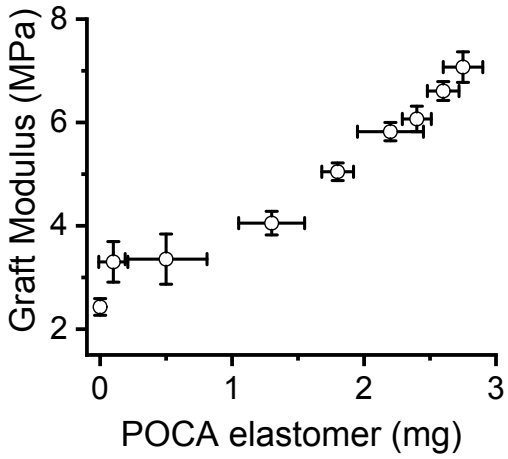

Figure S7. Graft modulus alteration as a function of POCA elastomer (@20:20:8, [citrate]:[diol]:[ascorbate]) mass coated on 2 cm ePTFE graft.

Table S1. Mole-feeding ratio of citrate, diol, and ascorbate influence POCA elastomer.

#	AA Protected?	[Citrate]:[Diol]	Maximum [AA]	Critical point [COOH]:[OH]	Prepolymer Available	Elastomer Available
1	No	20:20	4			Yes
2	Yes	20:16	12	15:19	Yes	No
3	Yes	20:20	8			Yes

Critical Point of [COOH]: [OH] mole ratio was calculated using citrate, diol with ascorbate, or benzyl-protected ascorbate.

Table S2. Dimensions and mechanical properties of implanted uncoated ePTFE, POC-ePTFE, and POCA-ePTFE grafts.

Graft	Outer diameter (mm)	Inner diameter (mm)	Wall thickness (mm)	Young's Modulus (MPa)
Uncoated ePTFE	1.85 ± 0.02	1.53 ± 0.05	0.15 ± 0.03	2.42 ± 0.16
POC-ePTFE	1.89 ± 0.05	1.45 ± 0.06	0.18 ± 0.05	4.11 ± 1.22
POCA-ePTFE	1.91 ± 0.05	1.46 ± 0.05	0.19 ± 0.06	4.15 ± 1.52

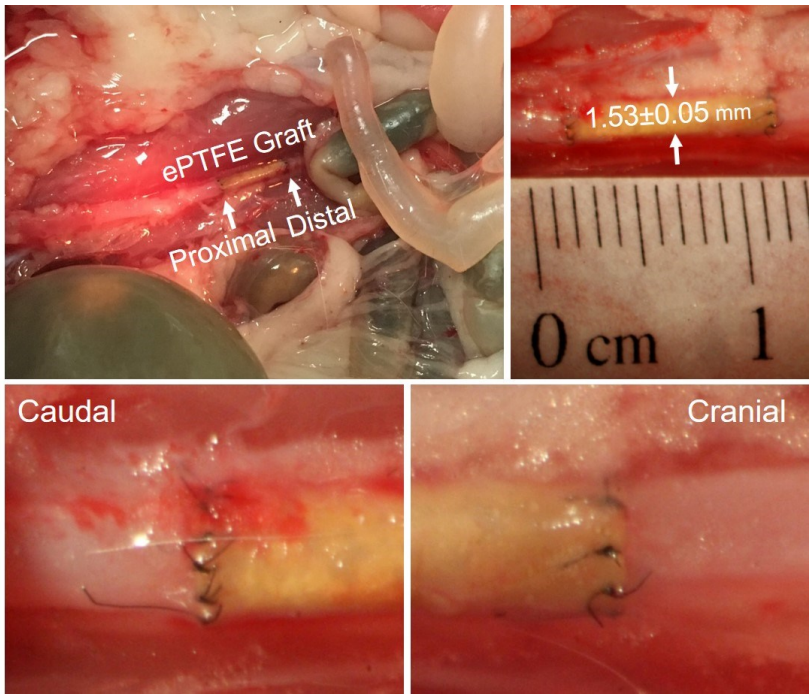

Figure S8. Representative image of a POCA-ePTFE graft implanted in a female guinea pig using an end-to-end anastomotic technique.