

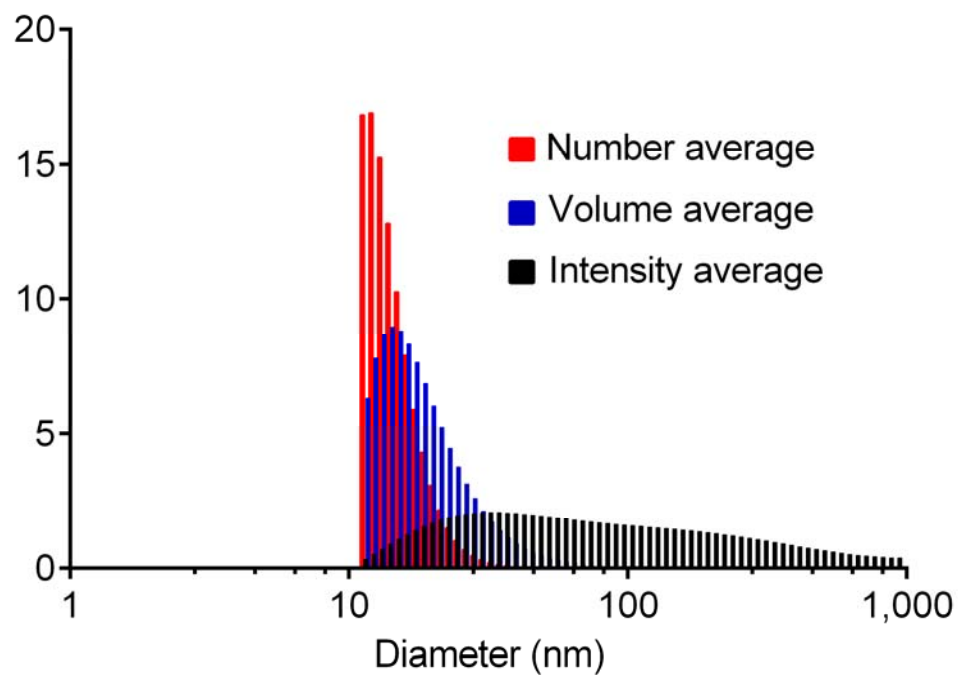
Synthesis of poly(ethylene glycol) α -bromide methacrylate (α -Br-PEGMA)

5 kDa Poly(ethylene glycol) mono-boc-protected amino-ether (Intezyne) (425 mg) was deprotected in a 10% trifluoroacetic acid:dichloromethane solution overnight. After drying under vacuum 389 mg of the deprotected polymer was dissolved in 3 mL of dichloromethane. 40.0 mg of 2,5-dioxopyrrolidin-1-yl 2-bromoacetate was added to the solution followed by the addition of 1 mL of triethylamine. After stirring the reaction mixture overnight at room temperature, the solution was precipitated twice in diethyl ether to produce a white powder (yield 210 mg, 54%).

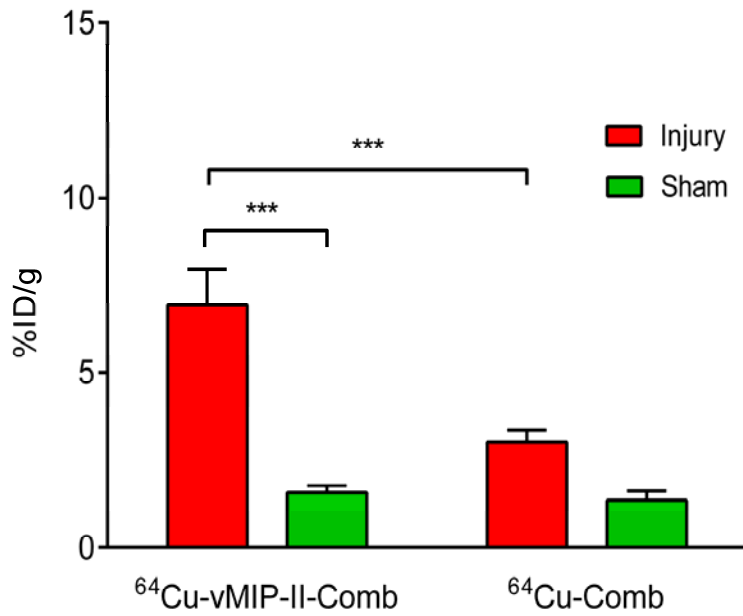
The white powder (165 mg) was dissolved in 5 mL DCM and 1 mL triethylamine and then cooled to 0 °C. Methacryloyl chloride (0.50 mL) was added to the reaction dropwise and then the mixture was warmed to room temperature and stirred overnight. The reaction was washed three times with a 10% NaHSO₄ solution, dried with MgSO₄, concentrated on a rotary evaporator and precipitated into diethyl ether to achieve a white powder (yield 103 mg, 62%).

Synthesis of DOTA- α -bromide-Comb

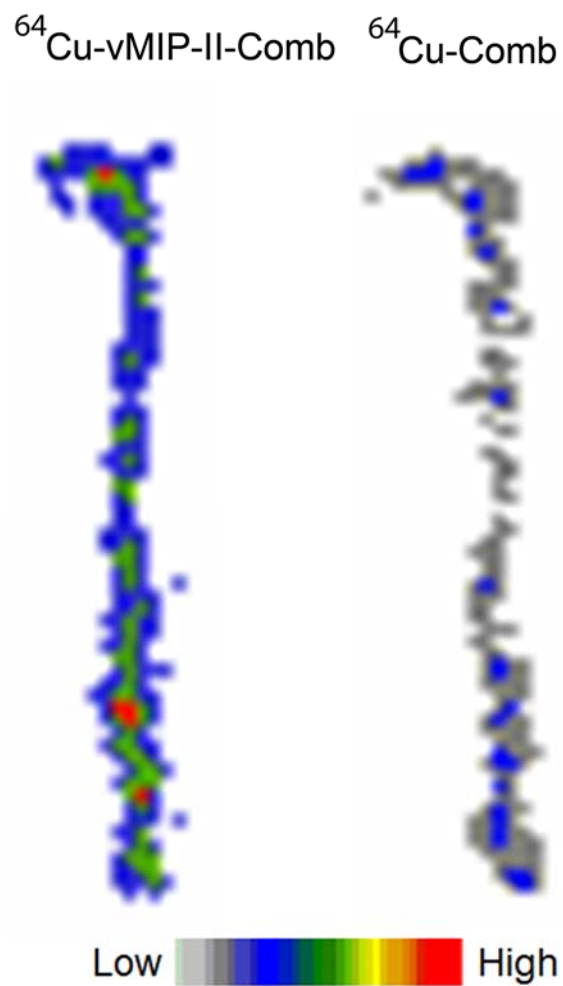
The synthesis of comb polymers was adapted from a previous report (26) with the exception of poly(ethylene glycol) α -bromide methacrylate being incorporated into the polymerization mixture. To illustrate, PEGMA 5.0 kDa (192.3 mg, 0.039 mmol), α -Br-PEGMA (10 mg, 0.0019 mmol), methyl methacrylate (MMA) (50.0 mg, 0.57 mmol), azobisisobutyronitrile (AIBN) (0.0284 mg, 0.00018 mmol), DOTA-MA (17.6 mg, 0.025 mmol), and RAFT agent (0.26 mg, 0.00089 mmol) were dissolved in DMF (0.52 g). AIBN, DOTA-MA, and RAFT agent were added as DMF stock solutions. The solution was transferred to a 5 mL Schlenk flask and three freeze–pump–thaw cycles performed before being heated at 70 °C for 120 h. Following the polymerization, the solution was diluted with DMF, transferred to four 15 mL centricon tubes (YM-50), and extensively washed with DMF until the removal of all monomers was confirmed by GPC. The copolymer was then washed with Milli-Q water (5x) and freeze–dried to give the desired graft copolymer as a white powder.



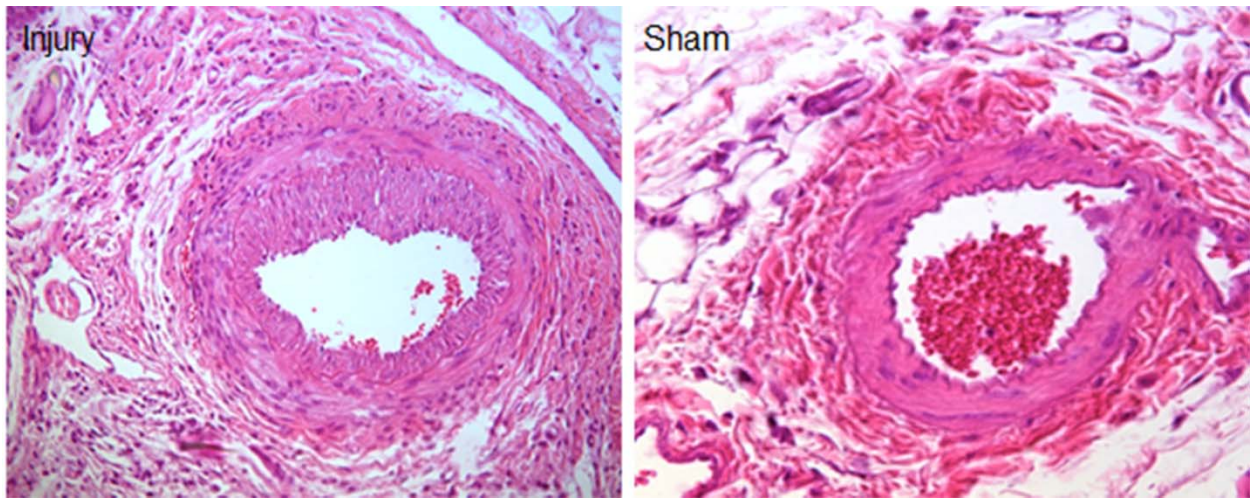
SUPPLEMENTAL FIGURE 1. Dynamic light scattering histogram of vMIP-II-Comb.



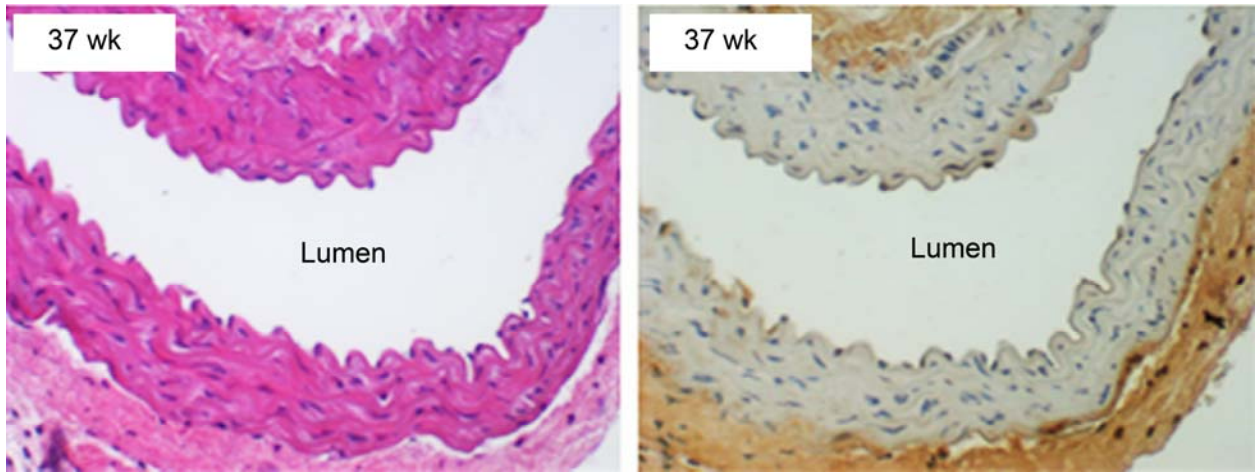
SUPPLEMENTAL FIGURE 2. Uptake analysis of $^{64}\text{Cu-vMIP-II-Comb}$ and $^{64}\text{Cu-Comb}$ in $\text{ApoE}^{-/-}$ mice at 4 weeks post injury.



SUPPLEMENTAL FIGURE 3. Autoradiography of ^{64}Cu -vMIP-II-Comb and ^{64}Cu -Comb at 48 h post injection.



SUPPLEMENTAL FIGURE 4. H&E staining of injured and sham-operated femoral arteries of ApoE^{-/-} mouse at 2 weeks post injury.



SUPPLEMENTAL FIGURE 5. H&E staining and F4/80 immunohistochemistry of aorta from WT mouse at 37 weeks post normal diet.