Collagenase-cleavable peptide amphiphile micelles as a novel theranostic strategy in atherosclerosis

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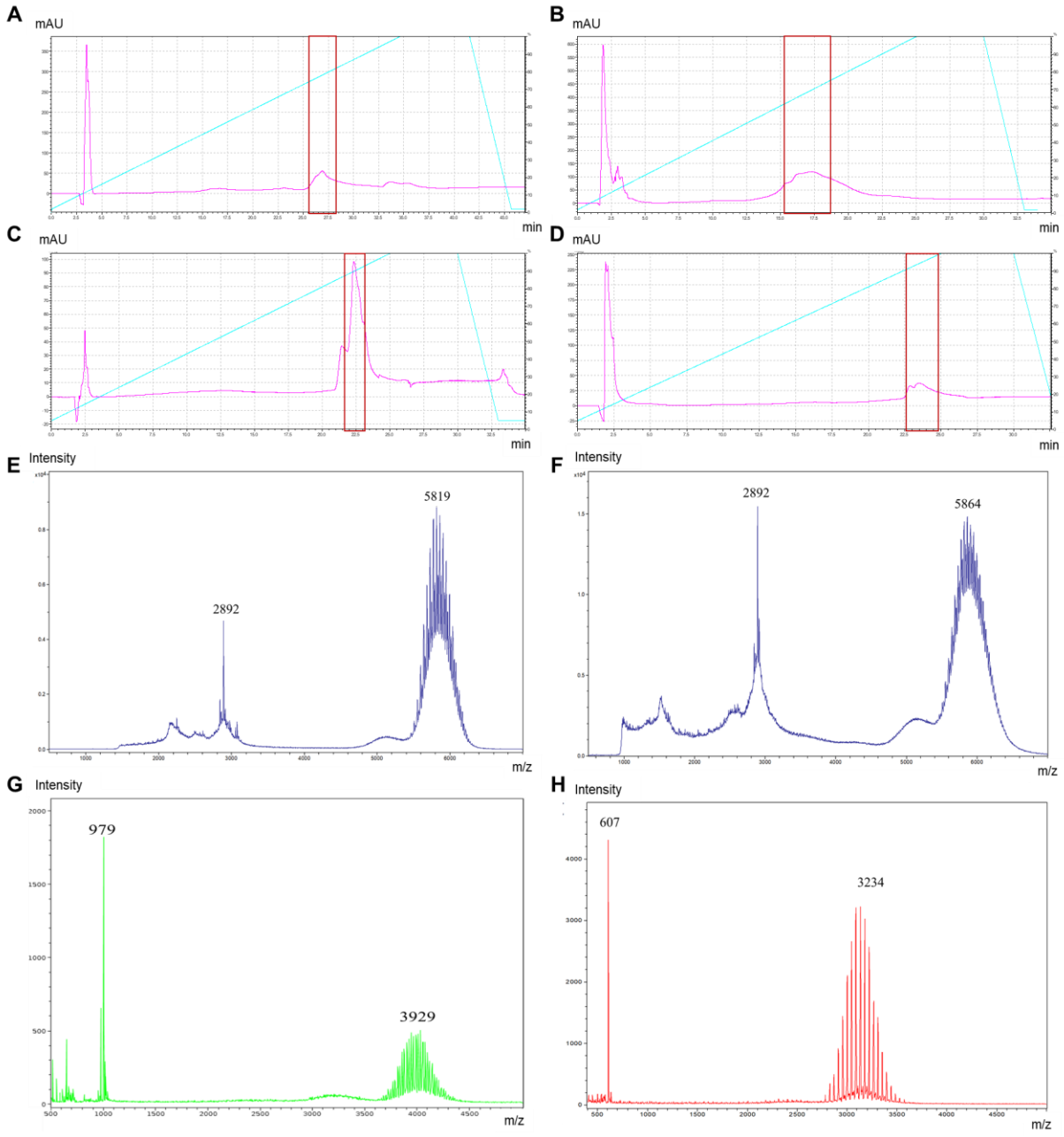

Figure S1 HPLC chromatograms and MALDI-TOF spectrum of A, E) MCP-1 PA with m/z 5819 and B, F) scrambled MCP-1 PA with m/z 5864 (expected:5830 m/z), C, G) Col-1 PA with m/z 3929 (expected:3920 m/z) and D, H) DSPE-PEG-DTPA(Gd) with m/z 3234 (expected:3322 m/z). Red boxes indicate elution times.

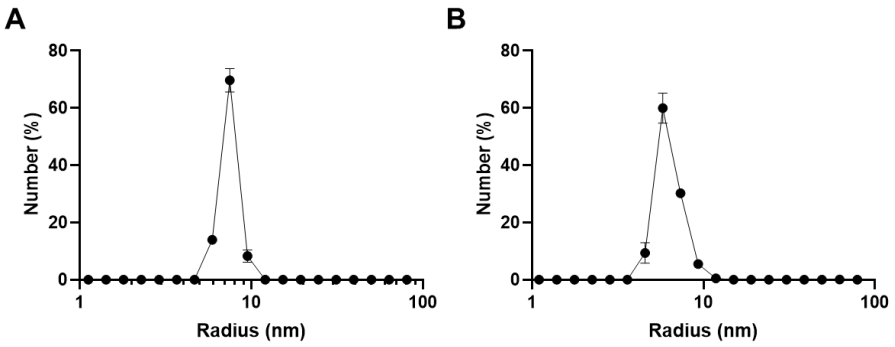

Figure S2 Dynamic light scattering of A) MCG PAMs indicate particle diameter to be approximately 14.8 ± 0.6 nm and B) SCG PAMs to be 13.2 ± 2.2 nm (N=6).

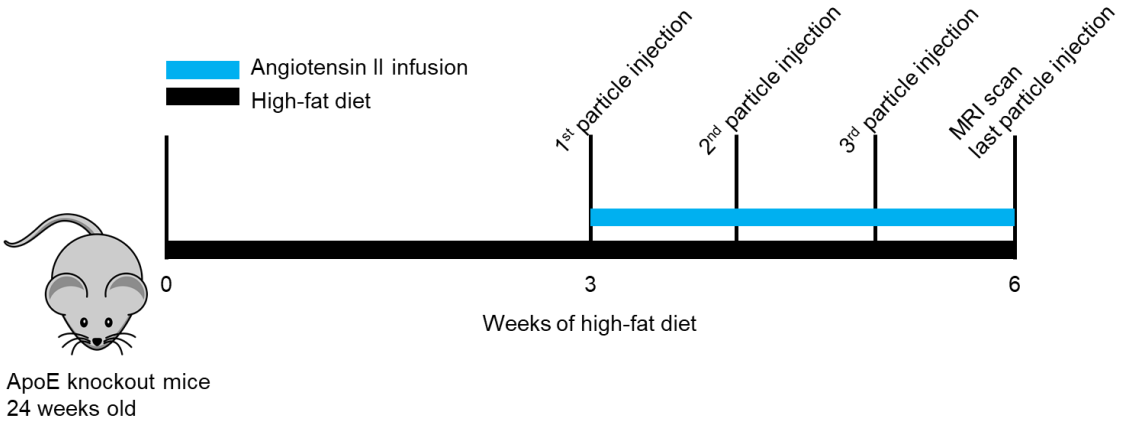

Figure S3 Timeline of animal studies. ApoE$^{-/-}$ mice 24 weeks of age were given an atherogenic diet for a total of six weeks. After three weeks of atherogenic diet, mice were given angiotensin II infusions for three weeks while continuing the diet, and subsequently given their first particle injection via IV tail vein. Mice were given one injection per week for a total of four injections of MCG PAM, SCG PAM, or PBS.

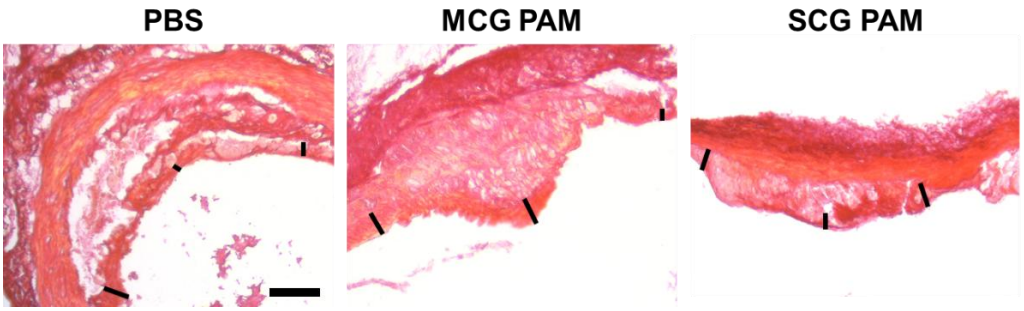

Figure S4 Example of a fibrous cap measurement. Black lines indicate thickness measurements at two shoulders or the center of the plaque. Three measurements for each cap were taken per plaque and averaged. Scale bar 100 µm.

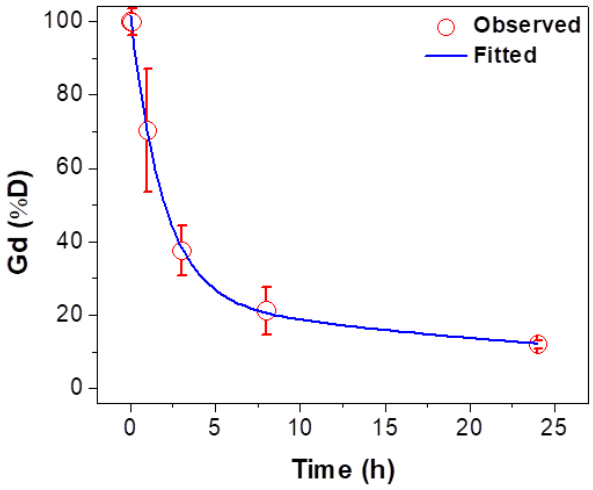

Figure S5 Half-life of MCG PAMs were determined to be 1.3 ± 0.1 and 23.9 ± 1.8 h for $t_{1/2\alpha}$ and $t_{1/2\beta}$ (N=3).

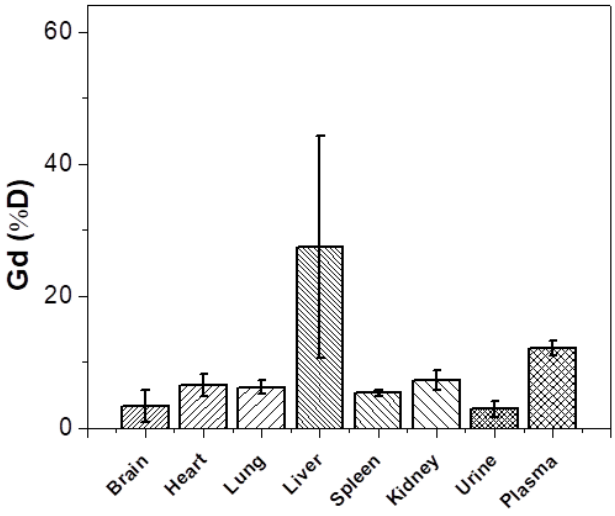

Figure S6 Biodistribution of MCG PAMs show particle accumulation in the liver, which is similar to other nanoparticles. Gd signal is also enhanced in plasma (N=3).