Supplementary Materials

Figure S1. Representative photomicrographs of atherosclerotic lesions of type I, type III, and type VI stained with H&E or APT<sub>FN-EDB</sub> (for FN-EDB), or for FN. (A) Left: Low-magnification images of H&E-stained sections. Scale bar = 1 mm. Right: Magnified views corresponding to the black rectangles in adjacent H&E images. Scale bars = 100 μm. (B) Left: Low-magnification images of APT<sub>FN-EDB</sub> staining results. Scale bar = 100 μm. Right: Magnified views corresponding to the black rectangles in adjacent image labeled with an “x”. Scale bar = 50 μm. Arrows, FN-EDB–positive areas. (C) FN staining results. Scale bar = 100 μm. TH, thrombus.
Figure S2. FN-EDB–positive areas stained with APT_{FN,EDB} were compared with the corresponding areas stained with APT_{SCR} (negative control). Left: Low-power image. Scale bar = 100 μm. Right: Magnified images of black rectangles labeled ‘y’ in adjacent images. Scale bar = 50 μm.
Figure S3. Representative images of atherosclerotic lesions from type I–VI lesions analyzed for FN-EDB were stained for CD68, vWF, or HIF1α. Scale bar = 100 μm.
**Figure S4.** (A-C) Quantitative assessment of areas positive for CD68, vWF, or HIF1α in different types of human atherosclerotic lesions. (Type I and II, n = 71; type III, n = 30; type IV, n = 9; type V, n = 32; type VI, n = 5). Data are for individual tissue sections; means are shown as horizontal lines.
Figure S5. APT\textsubscript{FN-EDB}-NPs and APT\textsubscript{SCR}-NPs with different densities of APT\textsubscript{FN-EDB} and APT\textsubscript{SCR}, respectively, were prepared and their hydrodynamic sizes measured by DLS.
Figure S6. Atherosclerotic lesion detection efficiencies by NPs (red) and comparison with normal arteries. Confocal microscopic images show that human atherosclerotic lesions are effectively detected by APTFN-EDB-NPs (1% or 2.5% molar ratios of APTFN-EDB-DSPE-PEG2000). In contrast, binding of APTFN-EDB-NPs (5% molar ratio of APTFN-EDB-DSPE-PEG2000) and APTSCR-NPs (1% or 2.5% molar ratio of APTSCR-DSPE-PEG2000) with atherosclerotic lesions and binding of NPs with normal arteries are negligible. Scale bar = 60 μm.
Figure S7. *In vivo* MRI of $\text{APT}_{\text{FN-EDB}}$-[Gd]NPs in hypercholesterolemic apoE-KO mice and in WT mice (C57BL/6J) on a normal chow diet. CNRWL values of apoE-KO mice on a 16-wk WD treated with $\text{APT}_{\text{FN-EDB}}$-[Gd]NPs ($n = 15$) were compared with those of WT mice treated with $\text{APT}_{\text{FN-EDB}}$-[Gd]NPs ($n = 6$).
Figure S8. FN-EDB mediated plaque accumulation of APT$_{\text{FN-EDB}}$-NPs. Immunofluorescent staining of endothelial cells (CD31), FN-EDB, and macrophages (Mac2) in the atherosclerotic plaques of apoE-KO mice (n=4) injected with APT$_{\text{FN-EDB}}$-NPs revealed that plaque accumulation of the NPs was mainly co-localized with FN-EDB expression (arrows) rather than with endothelial cell or macrophage expression. Left: 6x magnification of aortic root. Visualization of nuclei (upper image) and APT$_{\text{FN-EDB}}$-NPs (lower image). Right: 20x magnification of aortic roots show immunofluorescent staining of CD31, FN-EDB, and Mac2 (green, upper images), or merged images with APT$_{\text{FN-EDB}}$-NPs (red) and nuclei (blue) (lower images). Scale bar = 80 µm.
Figure S9. *In vivo* biodistribution of APT_{FN-EDB}+[Gd]NPs and APT_{SCR}+[Gd]NPs. Confocal microscopic images of DAPI-stained lung, liver, kidney, and spleen sections showing NPs (red) and nuclei (blue) in apoE-KO mice consumed a WD for (A) 8 wk or (B) 16 wk. (C-D) Comparison of corresponding organs from apoE-KO mice (consumed a WD for 16 wk) pre-injected with free APT_{FN-EDB} prior to APT_{FN-EDB}+[Gd]NPs injection and WT mice injected with APT_{FN-EDB}+[Gd]NPs. Scale bar = 60 µm.