Supplementary materials

Macrophage membrane functionalized biomimetic nanoparticles for targeted anti-atherosclerosis applications

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Table S1. Loading and encapsulation efficiency of RAPNPs.

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<th>μg/mg</th>
<th>Drug Loading Efficiency (%)</th>
<th>Drug Encapsulating Efficiency (%)</th>
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<tr>
<td>RAPNPs</td>
<td>68.4 ± 0.07</td>
<td>6.87</td>
<td>76.3</td>
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**Figure S1.** Representative fluorescence images of MM coated nanoparticles, the MM was stained by DiO and the PLGA NPs labeled by DiD (Scale bars, 2 μm).
Figure S2. The size change tendency of MM/RAPNPs in water and medium containing 10% FBS at room temperature ($n = 3$, mean ± SD).
Figure S3. The protein profiles of the MM, MM/RAPNPs and RAPNPs determined by SDS-PAGE electrophoresis assay.
Figure S4. Quantification of the relative glycoprotein content ($n = 3$, mean ± SD).
Figure S5. Fluorescence images of DiDNPs and MM/DiDNPs internalized by RAW264.7 cells after 4 h of incubation. Lysosomes were stained with LysoTracker (green), while nuclei were stained with DAPI (blue). Scale bars, 25 μm (left) and 5 μm (right).
Figure S6. Fluorescence images of MM/DiDNPs internalized by activated HUVECs or VCAM-1 antibodies blocked activated HUVECs (scale bar =20 μm).
Figure S7. Typical inflammatory cytokines TNF-α (A) and IL-6 (B) secreted by RAW264.7 macrophages after different treatments for 24 h (n=3, mean ± SD). ***p < 0.001.
Figure S8. The anti-proliferation activities of RAP and RAP loaded NPs in RAW 264.7 cells (A) and SMCs (B) (n=5, mean ± SD). ***p < 0.001. ns, no significance.
Figure S9. (A) *Ex vivo* fluorescence images of the heart, spleen, lung, liver, kidney at 24 h post-injection. (B) Quantitative analysis of fluorescent signals from main organs at 24 h post-injection (*n* = 3, mean ± SD). (**p < 0.01 and ***p < 0.001, ns, no significance).
Figure S10. Images of ORO-stained en face aortic preparations in different treatment groups.
Figure S11. Immunohistochemistry analysis on the sections of aortic roots from ApoE$^{-/-}$ mice post different treatments. Representative photographs of immunohistochemistry staining with antibodies to CD31 (scale bar = 500 μm).
Figure S12. Blood cell counts of immune-associated cells including lymphocyte, monocyte and neutrophil after one month treatment (n=5).
Figure S13. Results of blood lipid test (A-D). HDL, high density lipoprotein cholesterol; LDL, low density lipoprotein cholesterol; TC, the serum total cholesterol; TG, triglyceride; \( n = 5 \), mean ± SD.