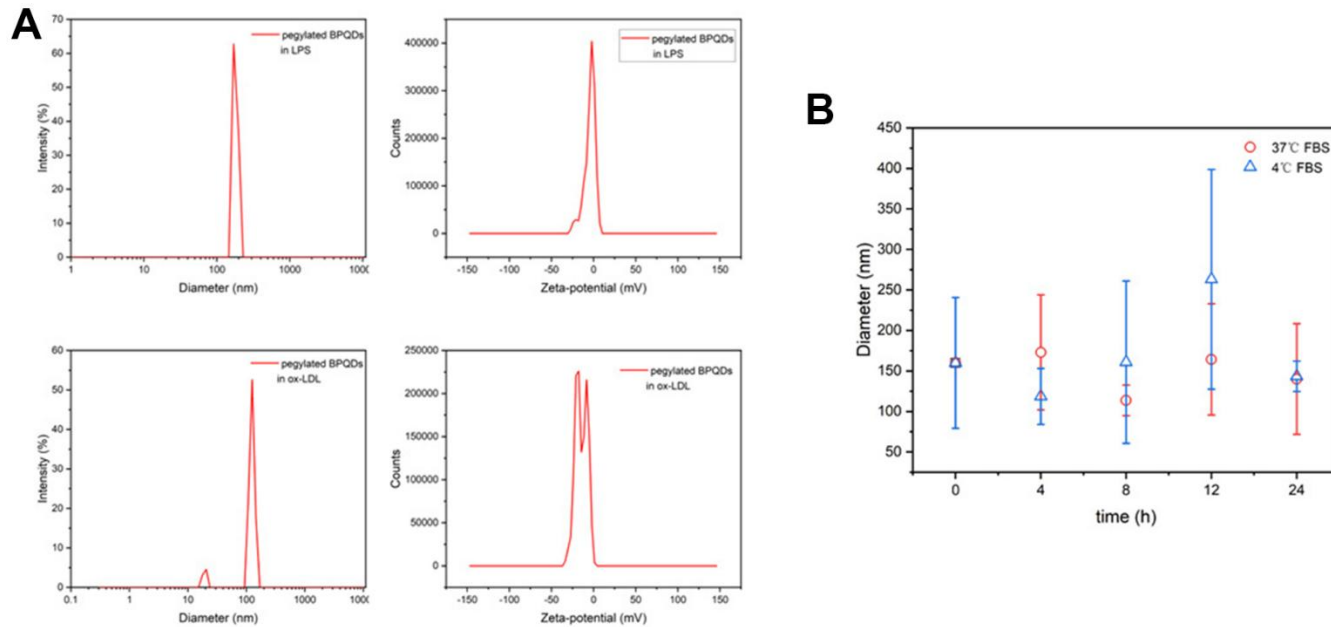
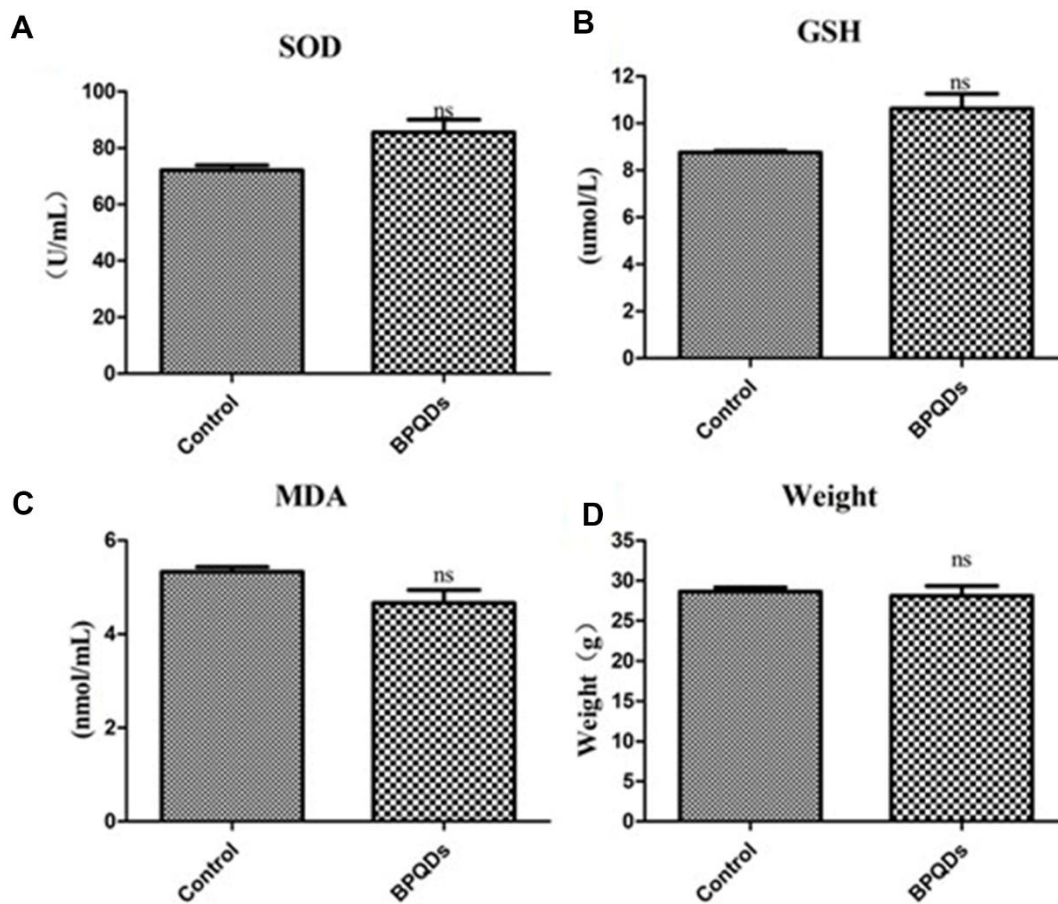


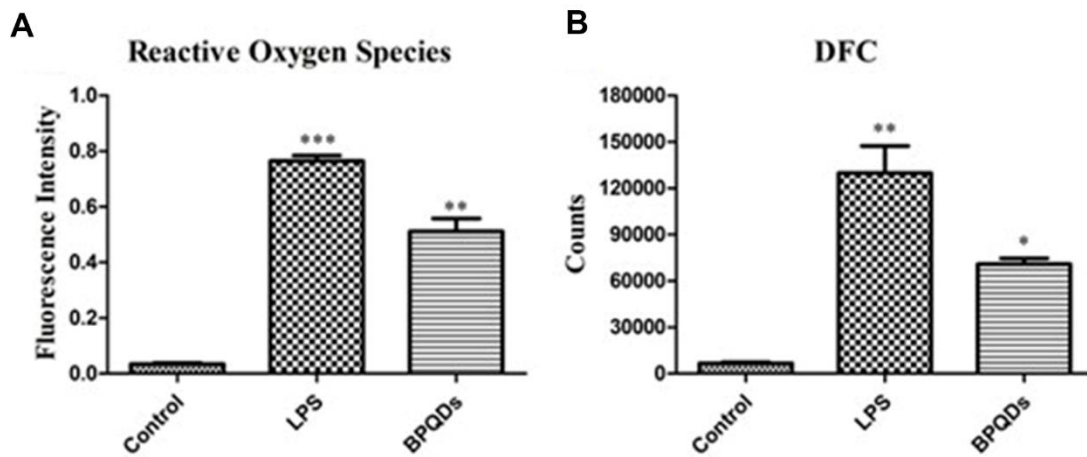
## SUPPLEMENTARY FIGURES



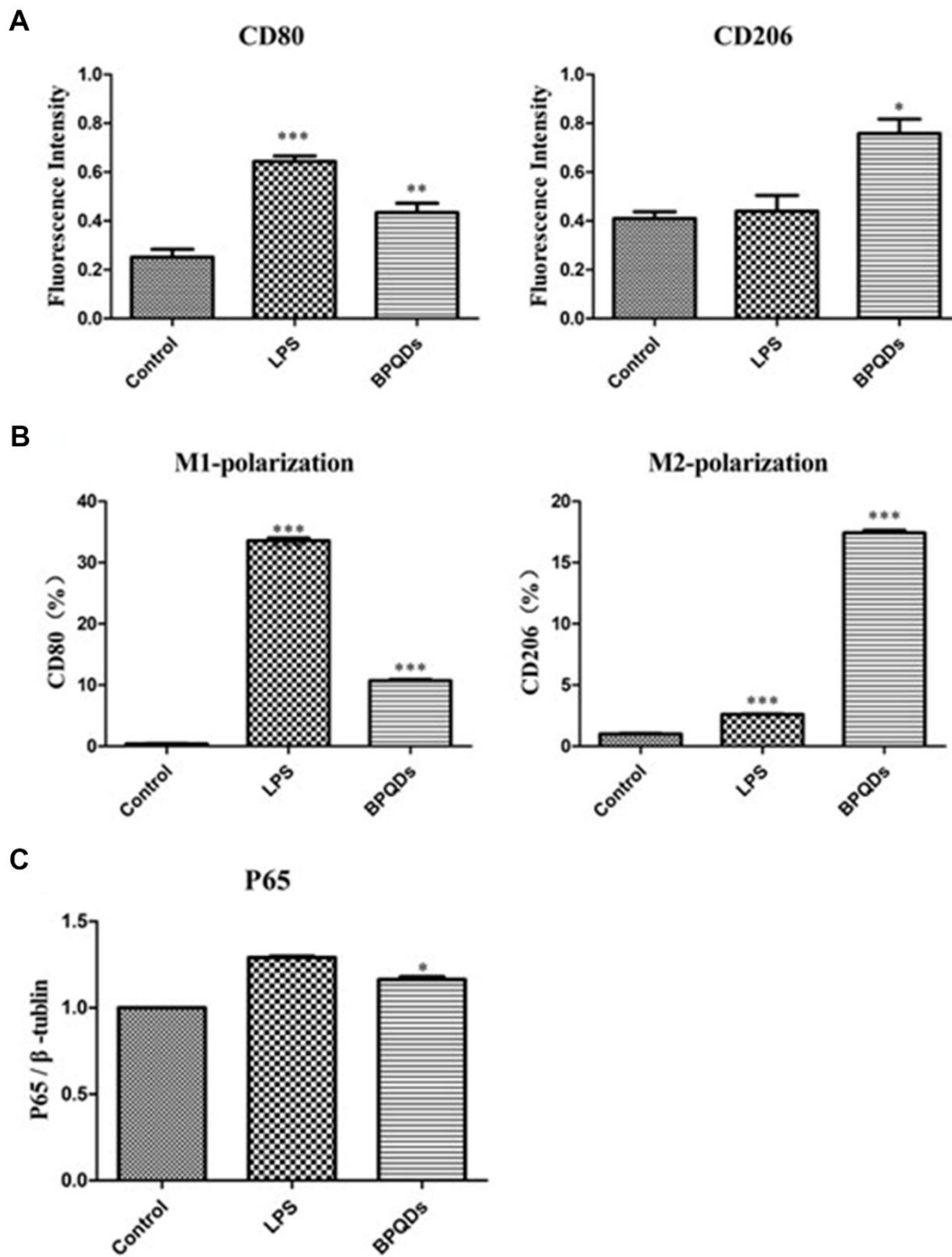
**Supplementary Figure 1.** (A) Particle size and potential of pegylated BPQDs in LPS and ox-LDL solutions. (B) Colloidal stability of pegylated BPQDs at different temperatures.



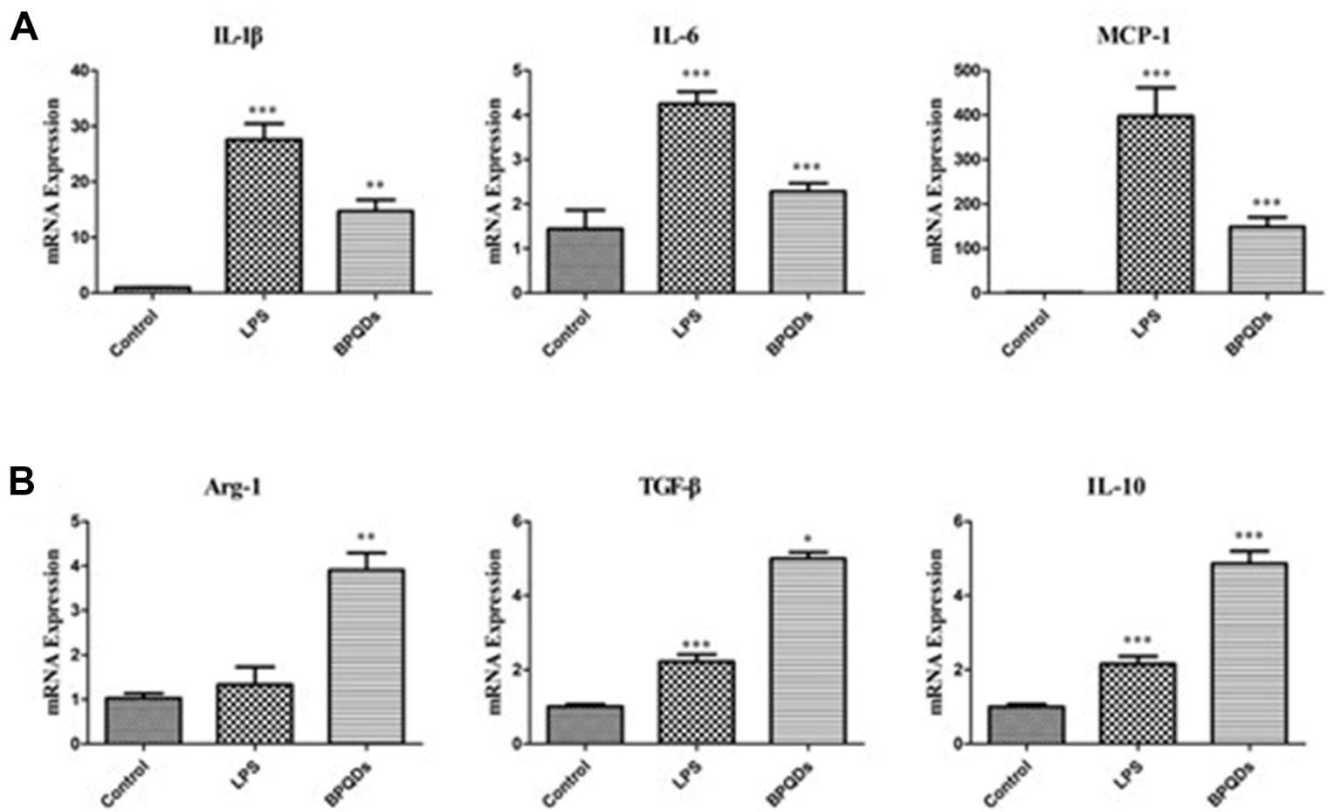
**Supplementary Figure 2.** (A–C) Serum oxidation factor levels in mice after 3 weeks of administration. (D) Body weight in mice after 3 weeks of administration. (SOD: Superoxide dismutase, GSH: Glutathione, MDA: Malondialdehyde) (ns: No significant difference compared to the control group.)



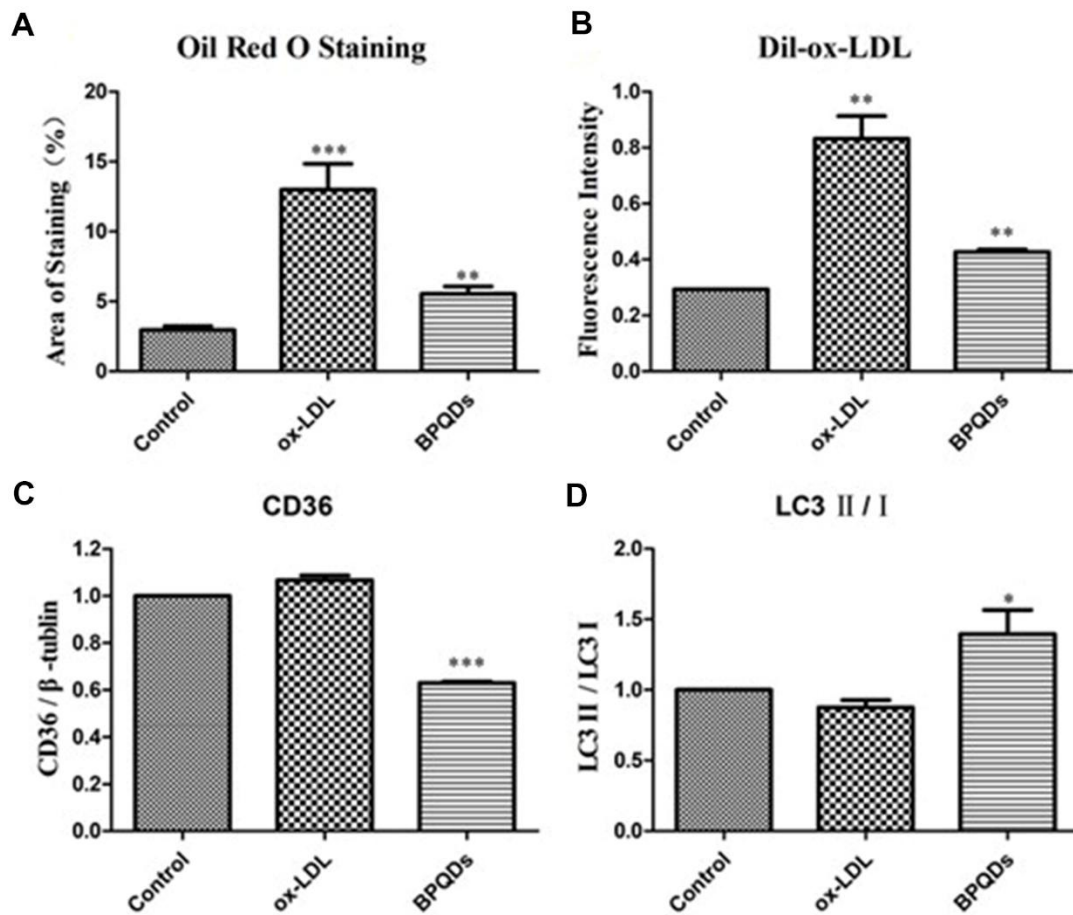
**Supplementary Figure 3.** (A) Statistical analysis of Figure 4A. (B) Statistical analysis of Figure 4B. (\*:  $P < 0.05$ , \*\*:  $P < 0.01$ , \*\*\*:  $P < 0.001$  represent significant difference. LPS group compared to the control group, BPQDs group compared to the LPS group.)



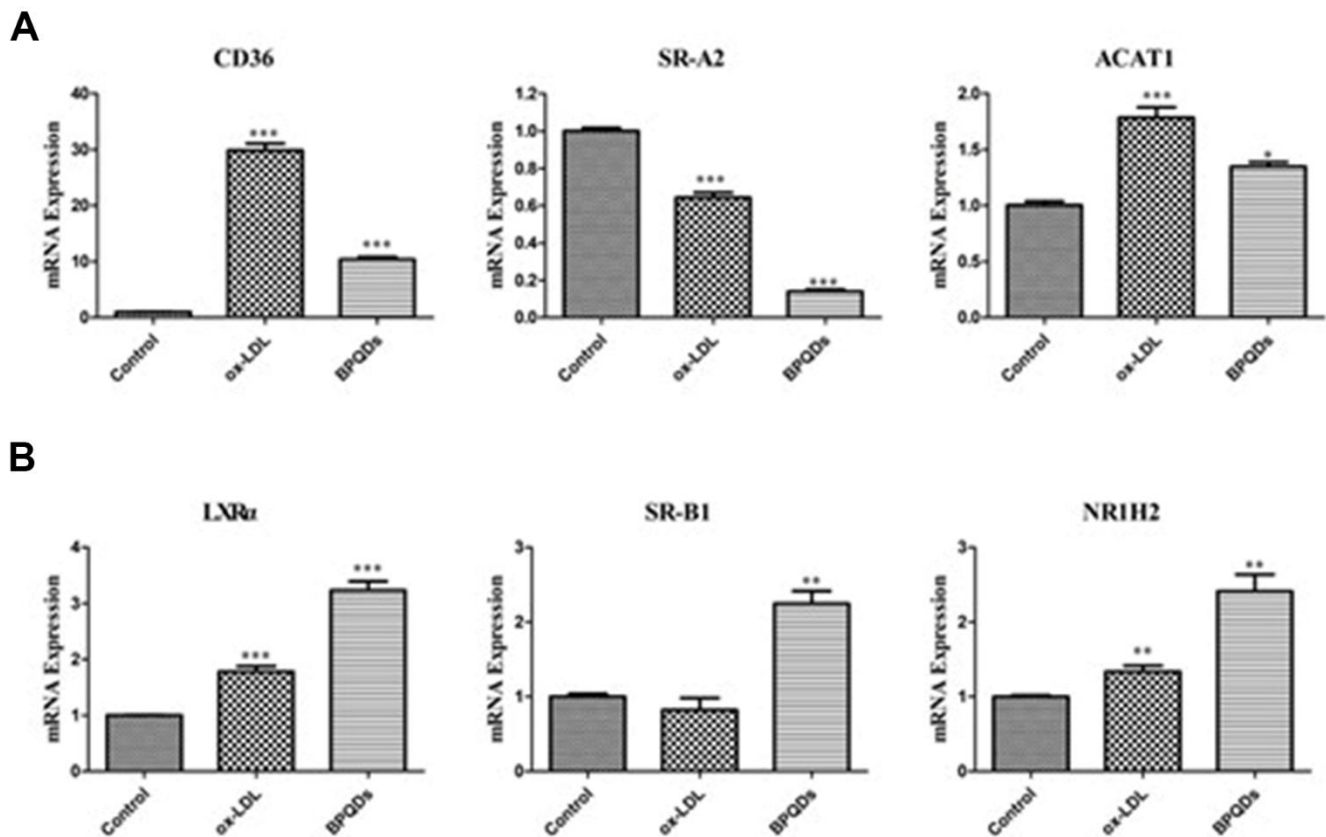
**Supplementary Figure 4.** (A) Statistical analysis of Figure 5A. (B) Statistical analysis of Figure 5B. (C) Statistical analysis of Figure 5C. (\*:  $P < 0.05$ , \*\*:  $P < 0.01$ , \*\*\*:  $P < 0.001$  represent significant difference. LPS group compared to the control group, BPQDs group compared to the LPS group).



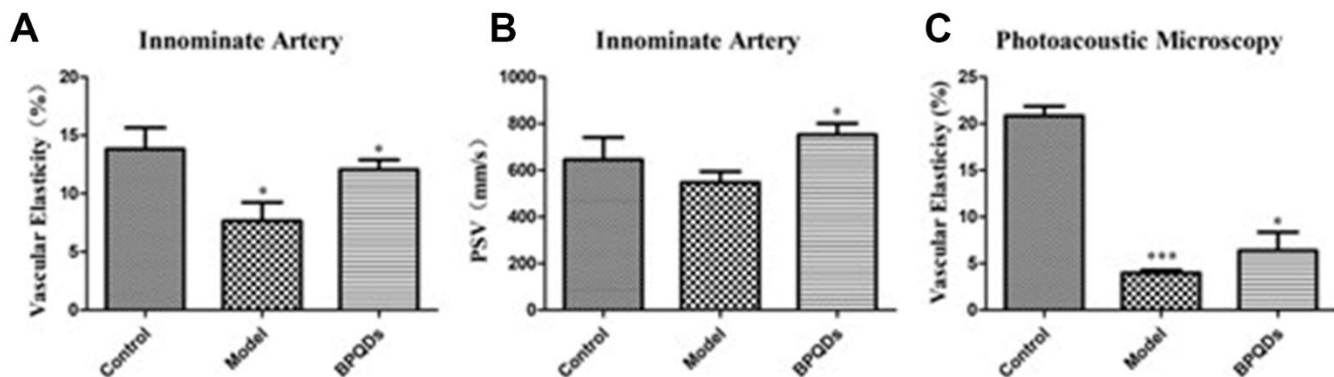
**Supplementary Figure 5.** (A) Gene expression levels of pro-inflammatory cytokines and chemokines. (B) Gene expression levels of inhibitory cytokines. (\*:  $P < 0.05$ , \*\*:  $P < 0.01$ , \*\*\*:  $P < 0.001$  represent significant difference. LPS group compared to the control group, BPQDs group compared to the LPS group).



**Supplementary Figure 6.** (A) Statistical analysis of Figure 6A. (B) Statistical analysis of Figure 6B. (C, D) Statistical analysis of Figure 6C. (\*:  $P < 0.05$ , \*\*:  $P < 0.01$ , \*\*\*:  $P < 0.001$  represent significant difference. Ox-LDL group compared to the control group, BPQDs group compared to ox-LDL group.)

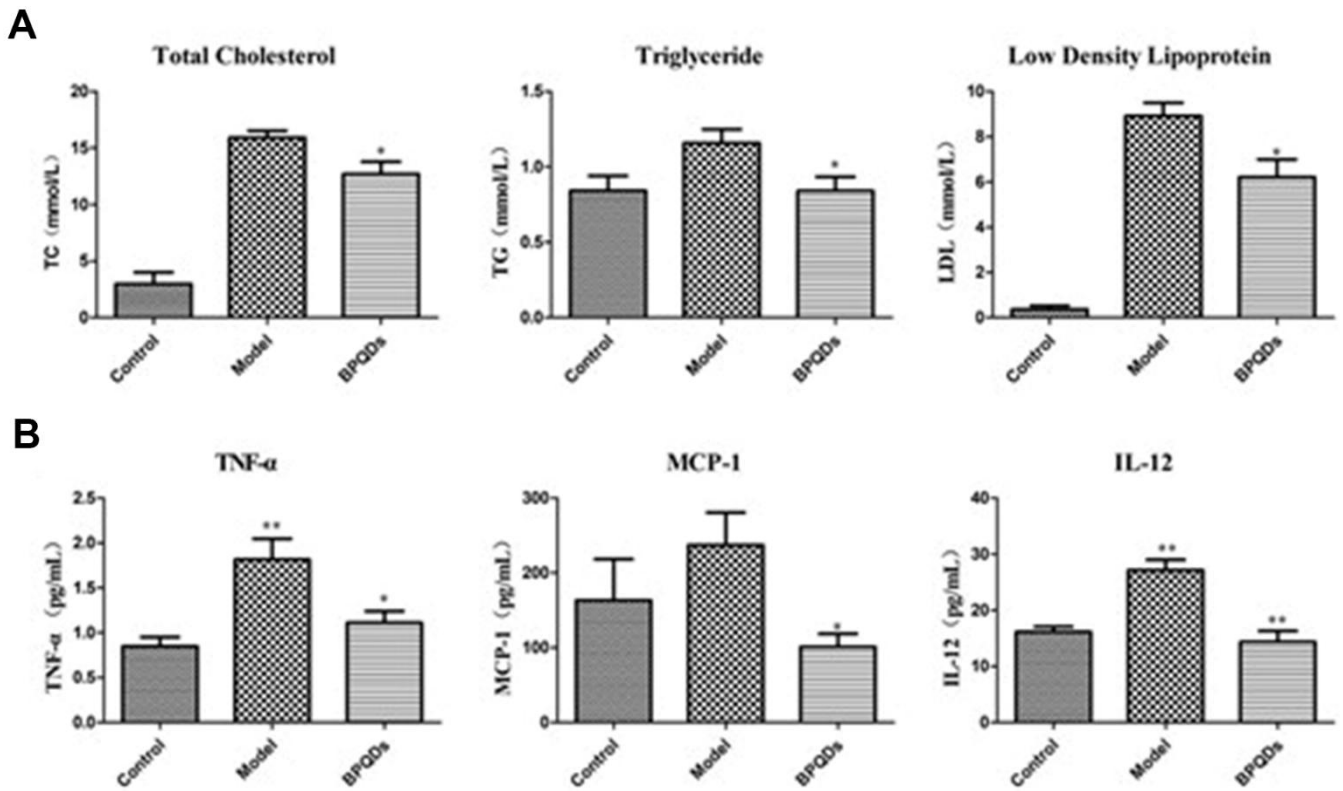


**Supplementary Figure 7.** (A) Gene expression levels of factors that promote the entry of lipids into macrophages or inhibit the lipid metabolism of macrophages. (B) Factors that inhibit the entry of lipids into macrophages or promote the lipid metabolism of macrophages. (\*:  $P < 0.05$ , \*\*:  $P < 0.01$ , \*\*\*:  $P < 0.001$  represent significant difference. Ox-LDL group compared to the control group, BPQDs group compared to the ox-LDL group.)

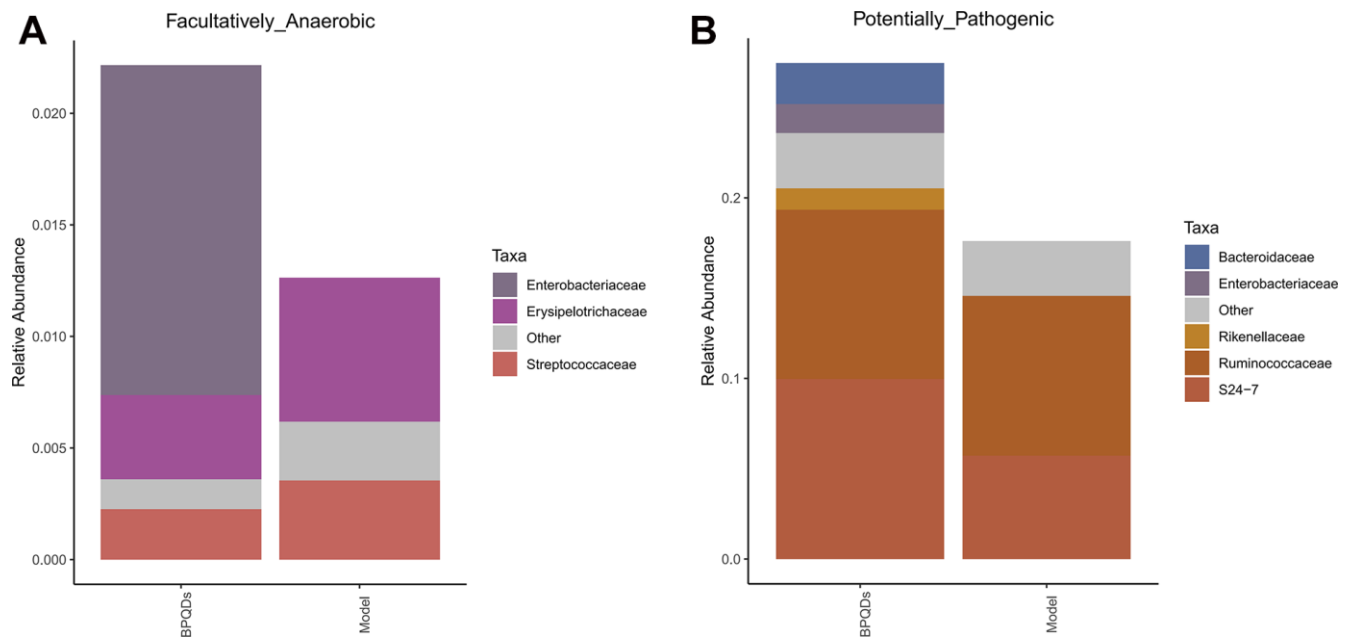


**Supplementary Figure 8.** (A) Vascular elasticity of the innominate artery. (B) Peak systolic velocity of the innominate artery. (C) Vascular elasticity of the abdominal artery under photoacoustic microscopy. (\*:  $P < 0.05$ , \*\*:  $P < 0.01$ , \*\*\*:  $P < 0.001$  represent significant difference. Model group compared to the control group, BPQDs group compared to the model group.)





**Supplementary Figure 9.** (A) Levels of blood lipids. (B) Levels of serum inflammatory cytokines. (TNF- $\alpha$ : tumor necrosis factor- $\alpha$ , MCP-1: monocyte chemoattractant protein-1, IL-12: interleukin 12) (\*:  $P < 0.05$ , \*\*:  $P < 0.01$  represent significant difference. Model group compared to the control group, BPQDs group compared to the model group.)



**Supplementary Figure 10.** (A, B) Changes of intestinal flora in mice. Enterobacteriaceae and Bacteroidaceae disappeared in the model group, and reappeared after BPQDs treatment.