Supplementary Materials

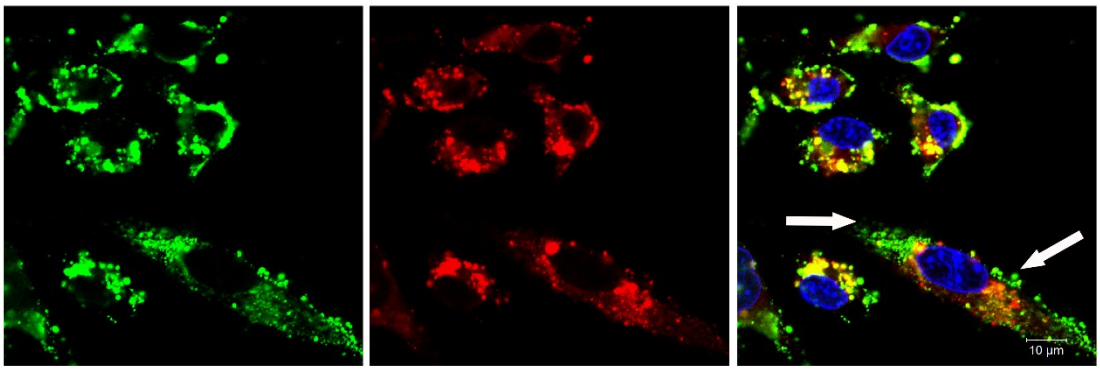

Fig. S1. BMDCs were incubated with OVA-FITC (green) and OVA-FITC NPs for 3 h, lysosomes were labelled by LysoTracker (red). The PPO nanoparticle in BMDC caused the lysosome escape, and the white arrows indicate that some OVA and lysosomes are not colocalized

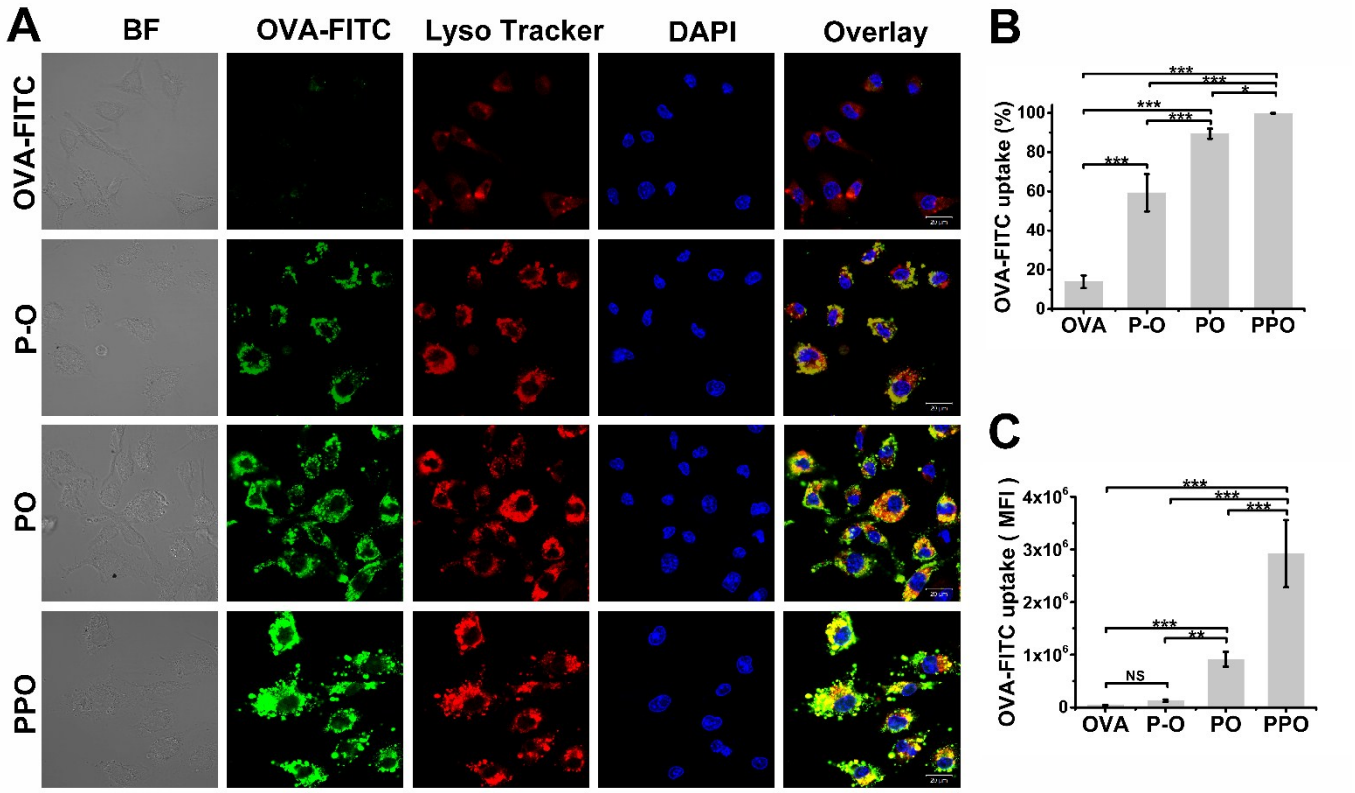

Fig. S2 Cellular uptake of nanoparticles by BMDCs. (A) BMDCs were incubated with OVA-FITC (green) and OVA-FITC NPs for 3 h, lysosomes were labelled by LysoTracker (red) and nucleus was labelled by DAPI (blue). The uptake of NPs was observed by confocal microscopy. (B, C) BMDCs were cocultured with OVA-FITC and OVA-FITC NPs for 3 h, the percentage of OVA uptake and mean fluorescence intensity (MFI) were detected by flow cytometry. Bars shown were mean ± SD (n=3). The statistical significance in difference was analyzed using a student's T-Test: *P < 0.05, **P < 0.01 and ***P < 0.001.

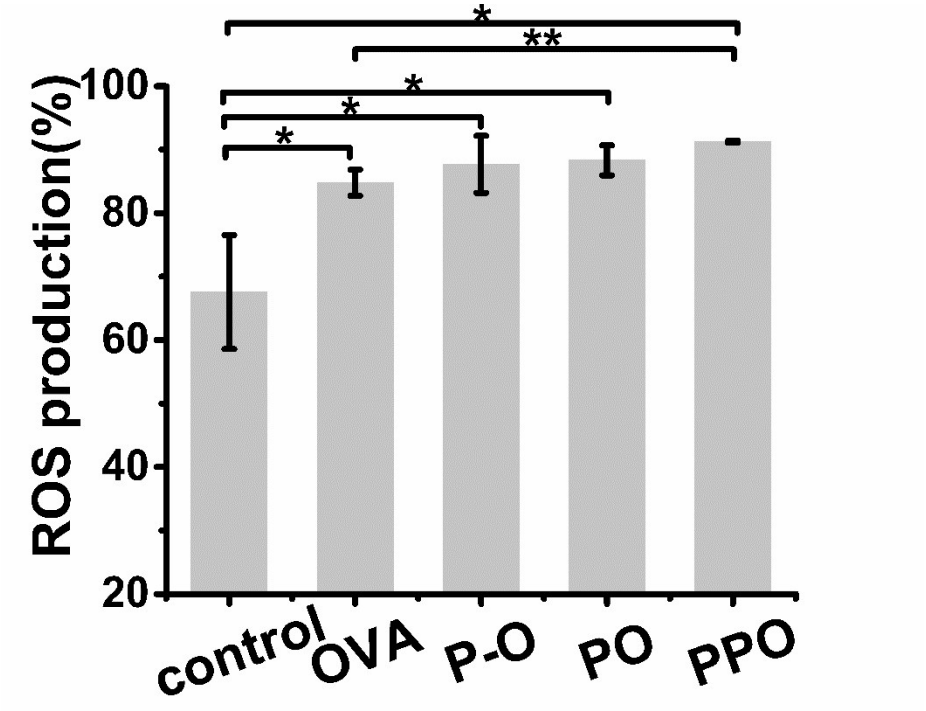

Fig. S3. The effect of different nanoparticles on ROS production in DCs

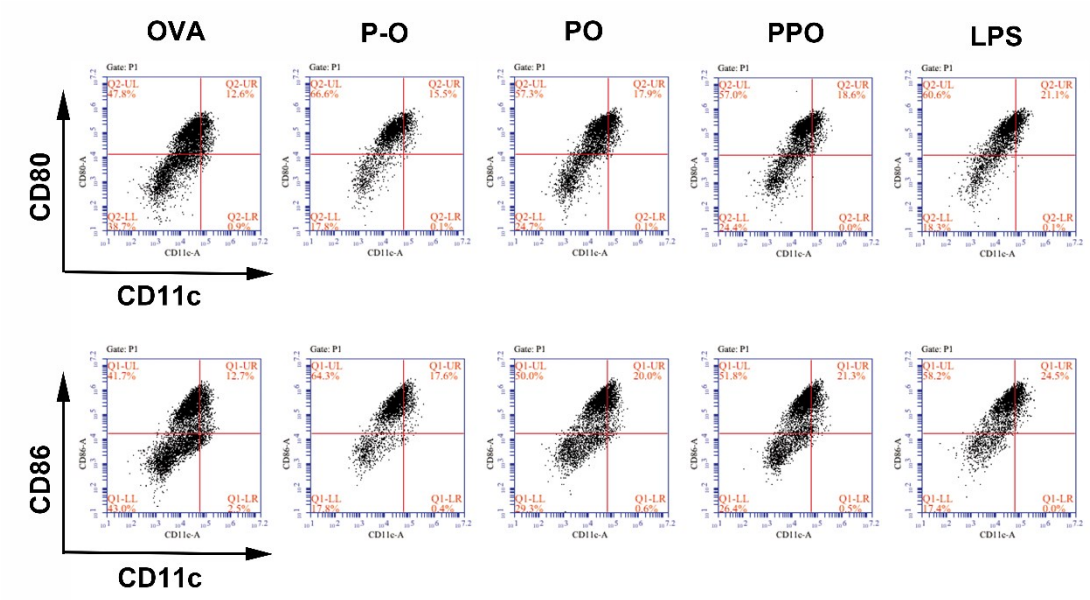

Fig. S4 The expression of CD80 and CD86 on BMDCs was determined and original scattered plots generated using flow cytometry.

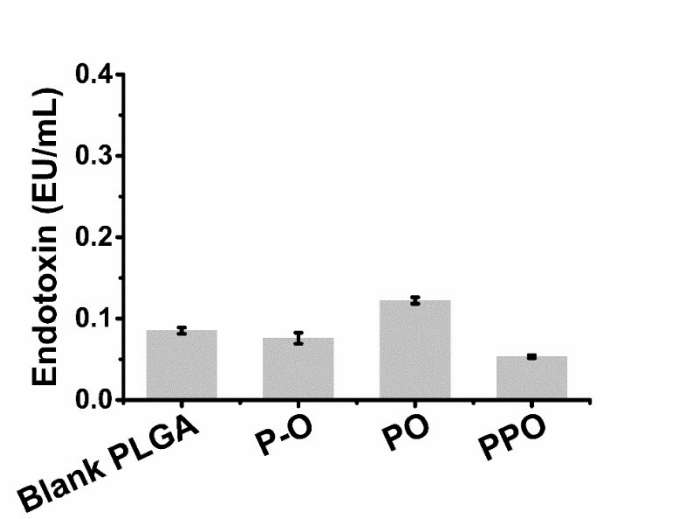

Fig. S5. Endotoxin level in different nanoparticle.

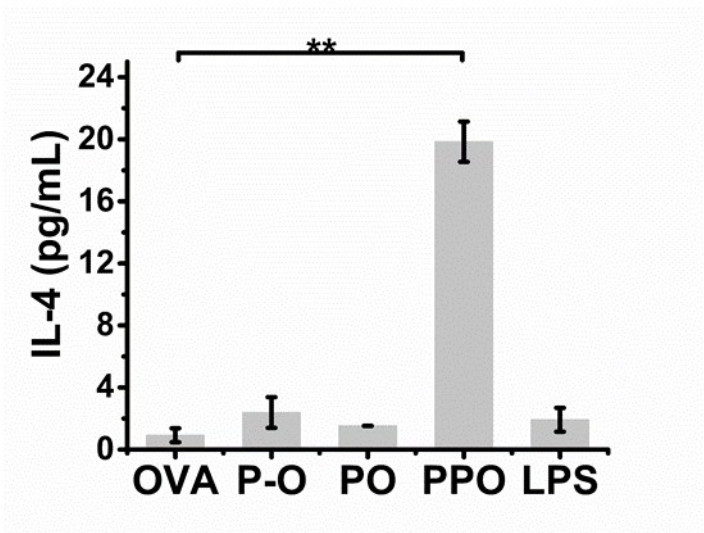

Fig. S6 The production of IL-4 in culture supernatants of BMDCs was tested by ELISA assay. Bars shown were mean ± SD（n=3）.The statistical significance in difference was analyzed using student's T-Test: *P < 0.05, **P < 0.01 and ***P < 0.001

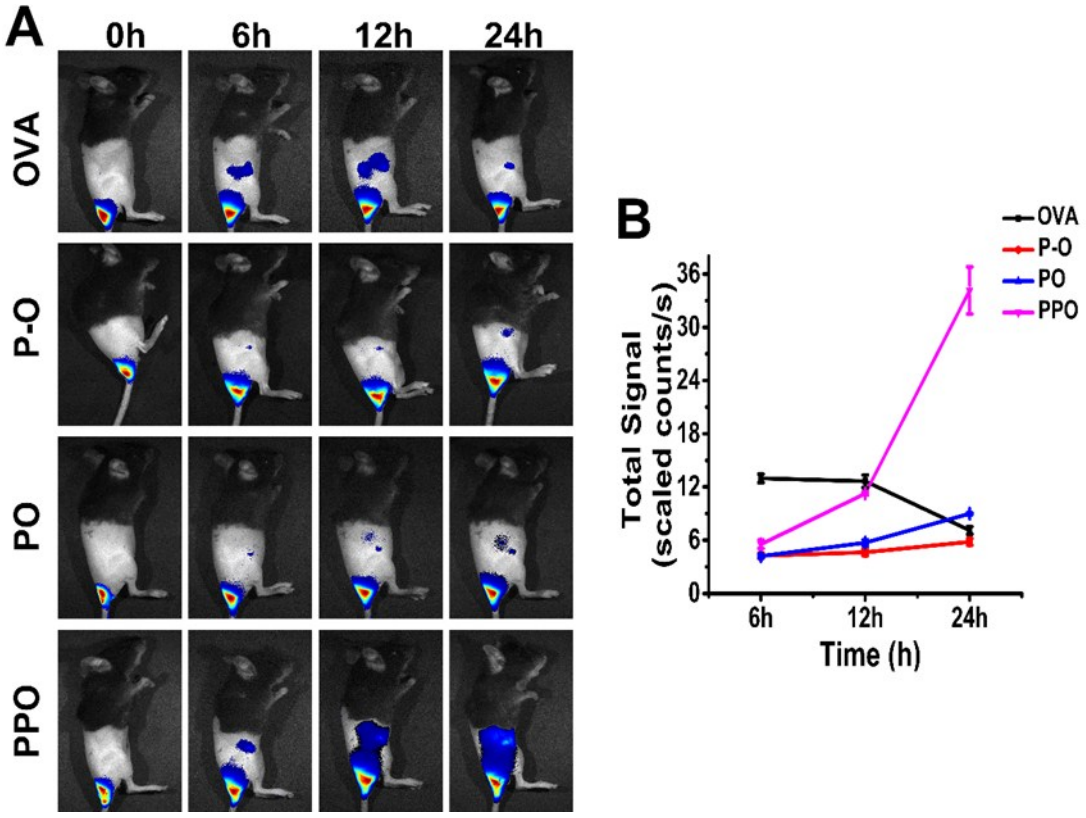

Fig. S7 In vivo tracking of OVA-Cy7 and OVA-Cy7 NPs at the injection site and draining inguinal lymph nodes. (A) Antigen persistence at injection sites and transport into the inguinal draining lymph node. (B) The quantitative fluorescence intensity of Cy7 in the draining lymph node was calculated.

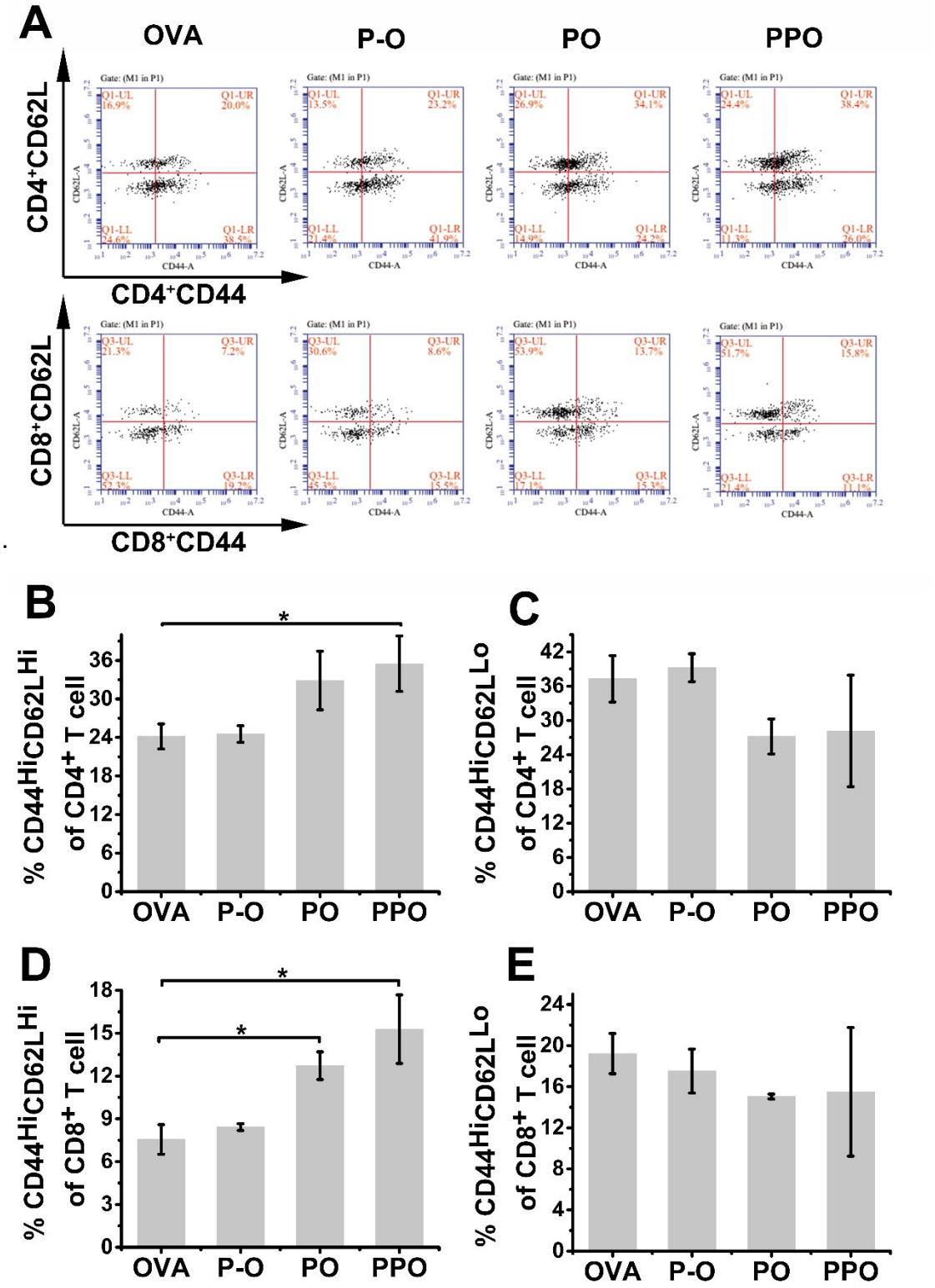

Fig. S8 The quantity of effector memory T cells ($CD44^{Hi}CD62L^{Lo}$) for rapid effector function and central memory T cells ($CD44^{Hi}CD62L^{Hi}$) for potent proliferation and lymph node homing properties. Six-week old female C57BL/6J mice were immunized with OVA or OVA-loaded nanoparticles (20 μg OVA/mouse) by subcutaneous injection for three times. Splenocytes were isolated 7days after last immunization. (A) Representative scattered plots generated by flow cytometry. (B-E) The proportions of the $CD44^{Hi}$ $CD62L^{Hi}$ of $CD4^+$ T cells, $CD44^{Hi}CD62L^{Lo}$ of$CD4^+$ T cells, $CD44^{Hi}$ $CD62L^{Hi}$ of $CD8^+$ T cells and $CD44^{Hi}CD62L^{Lo}$ of CD8+ T cells were determined by flow cytometry. Bars shown were mean ± SD （n=3） .The statistical significance in difference was analyzed using student's T-Test: *P < 0.05, **P < 0.01 and ***P < 0.001.