

Supporting Information

High resolution tracking macrophage cells in deep organs and lymphatics using fluorescent polymer dots

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Scheme S1. Structure and synthesis of the polymer dots.

Table S1. Fluorescence QY of polymer dots.

Figure S1. The Z-average sizes versus pH change of the four MEH-PPV polymer dots.

Figure S2. Fluorescence imaging of the major organs, lymph nodes, iBAT, muscle and bone.

Figure S3. Fluorescence imaging of Ana-1 incubated with four typical polymer dots.

Figure S4. Phagocytosis percentage of four typical polymer dots in Ana-1 cells.

Figure S5. *Ex vivo* IVIS imaging of organs and lymph nodes.

Figure S6. *Ex vivo* fluorescence imaging of the organs.

Movie S1. pCLE video of lungs in living BALB/c mice 20 min after i.v. injection of Ana-1 cells labeled by FA-MEH-PPV-NH₂.

Movie S2. pCLE video of lungs in living BALB/c mice 2 h after i.v. injection of Ana-1 cells labeled by FA-MEH-PPV-NH₂.

Polymer dots	MEH-PPV emission	NIR775 emission
FA-MEH-PPV-COOH	0.148	0.012
MEH-PPV-COOH	0.130	0.011
FA-MEH-PPV-NH ₂	0.134	0.011
MEH-PPV-NH ₂	0.122	0.011

Table S1. Fluorescence QY of polymer dots.

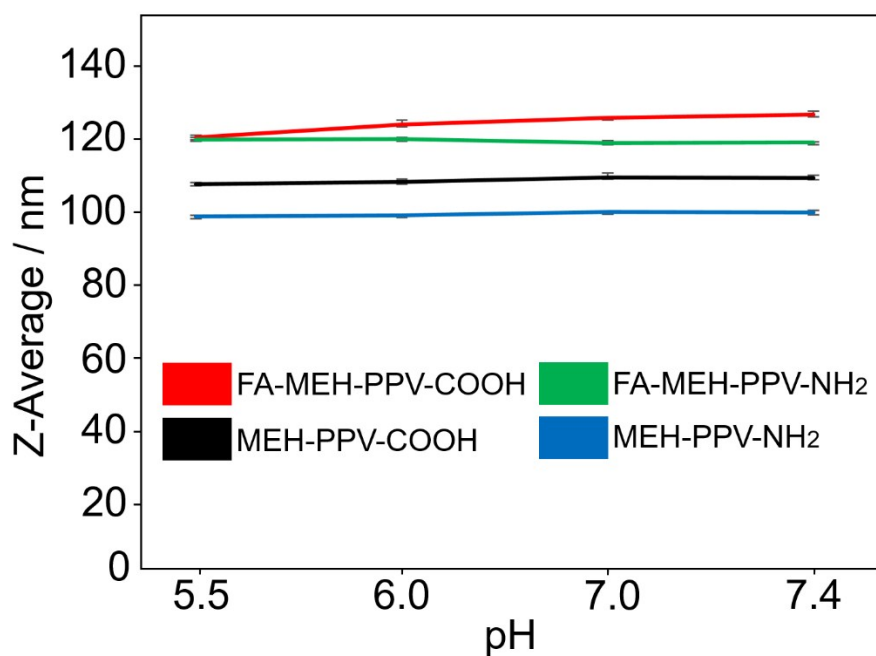


Figure S1. The Z-average sizes versus pH change of the four MEH-PPV polymer dots.

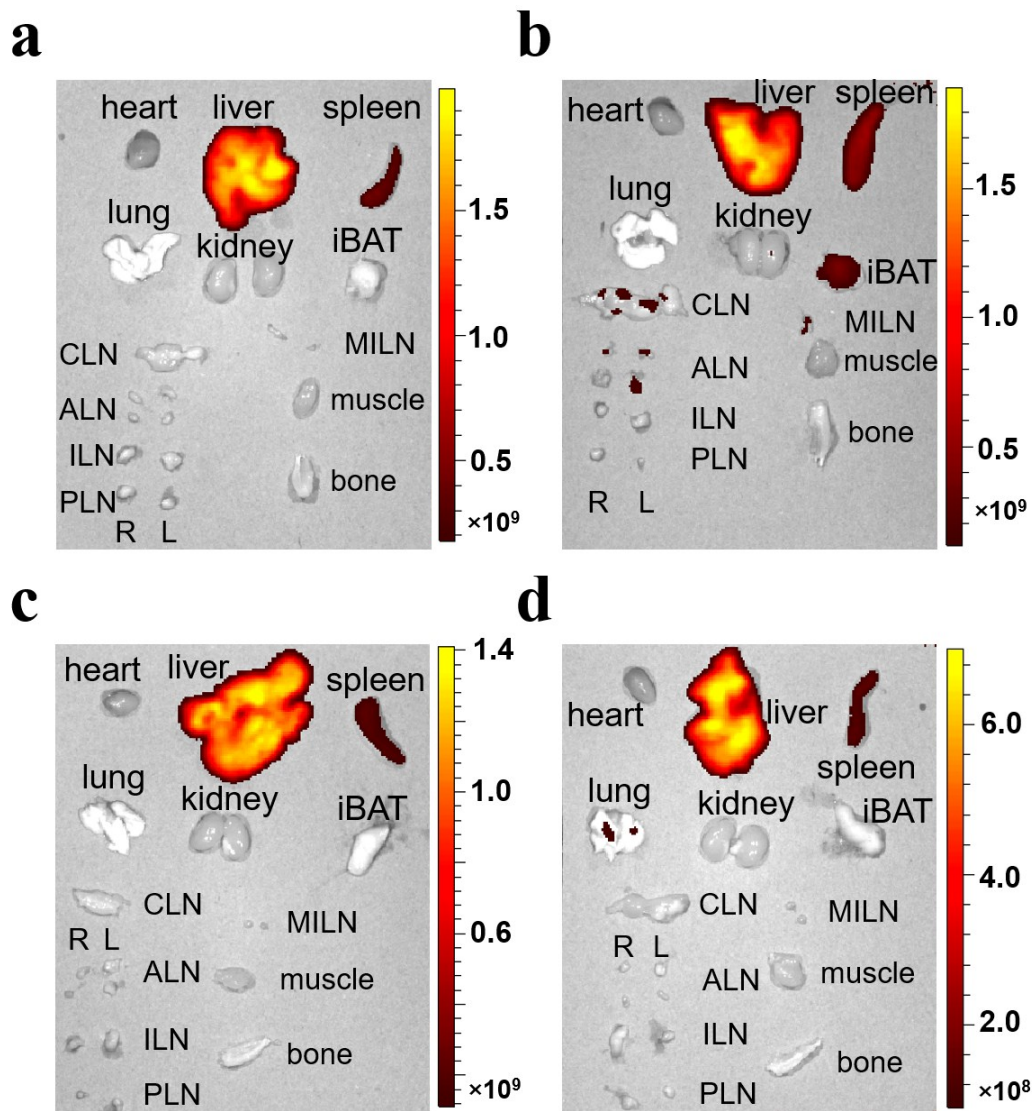


Figure S2. Fluorescence imaging of the major organs (heart, liver, spleen, lungs, and kidneys), lymph nodes (cervical, axillary, inguinal, popliteal, and medial iliac lymph nodes), interscapular brown adipose tissue (iBAT), muscle and bone from the hind limb (R: right; L:left) 2 d after intravenously injected by four typical MEH-PPV polymer dots. (a) FA-MEH-PPV-COOH polymer dots (n=3); (b) MEH-PPV-COOH polymer dots (n=3); (c) FA-MEH-PPV-NH₂ polymer dots (n=3); (d) MEH-PPV-NH₂ polymer dots (n=3);

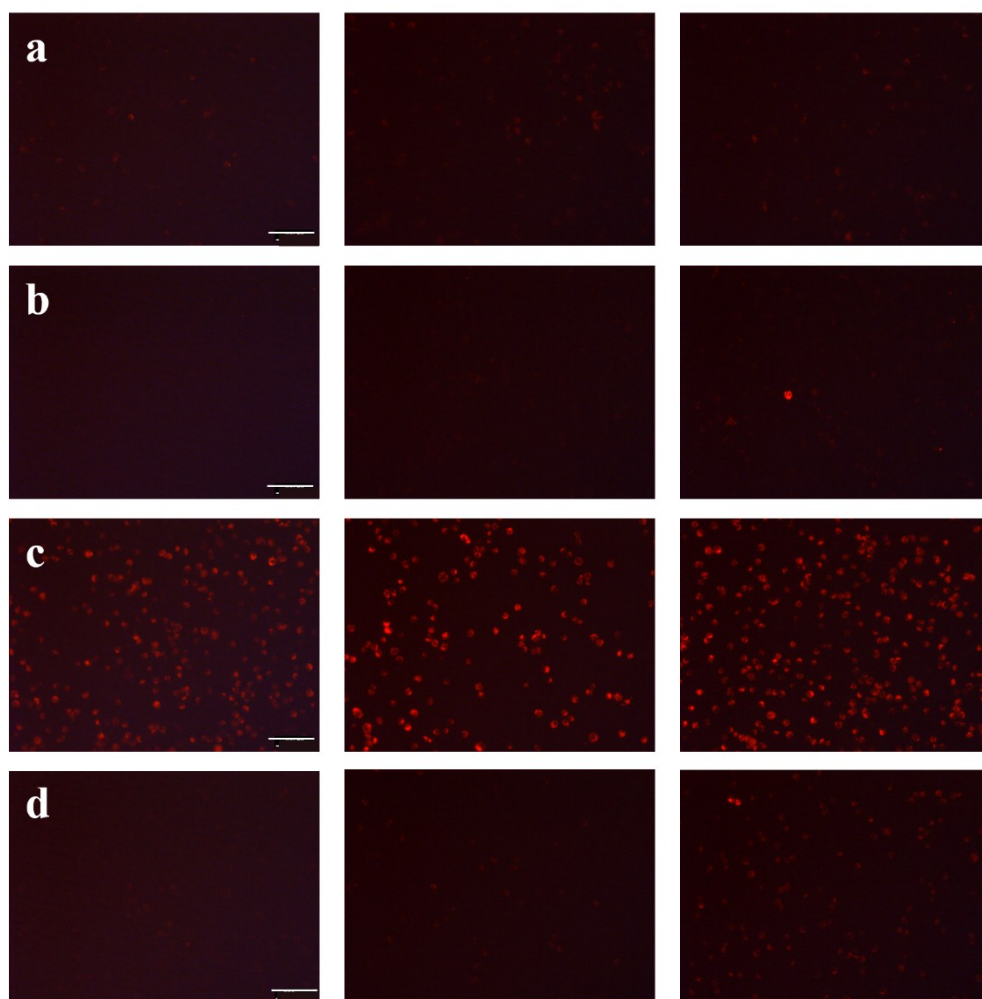


Figure S3. Fluorescence imaging of Ana-1 incubated with four indicated MEH-PPV polymer dots (~20 μg) for 2, 6, 10 h. (a) FA-MEH-PPV-COOH; (b) MEH-PPV-COOH; (c) FA-MEH-PPV-NH₂; (d) MEH-PPV-NH₂. Image columns from left to right: (i) 2 h after incubated, (ii) 6 h after incubated, (iii) 10 h after incubated. (Scale bar: 50 μm)

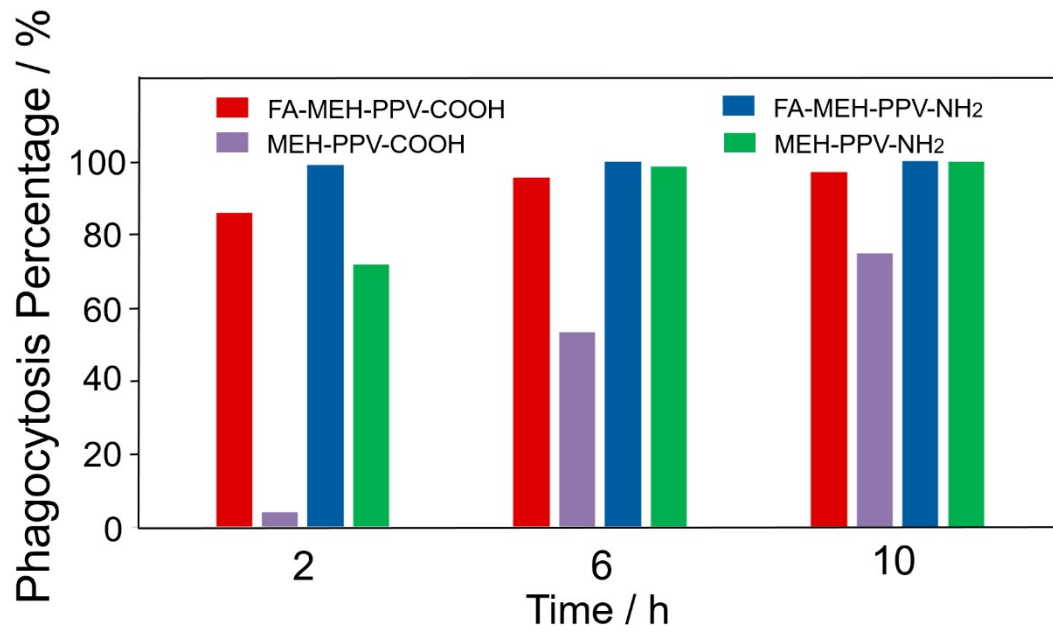


Figure S4. Phagocytosis percentage of four typical MEH-PPV polymer dots (~20 μ g) in Ana-1 cells for 2, 6, 10 h under serum-containing medium.

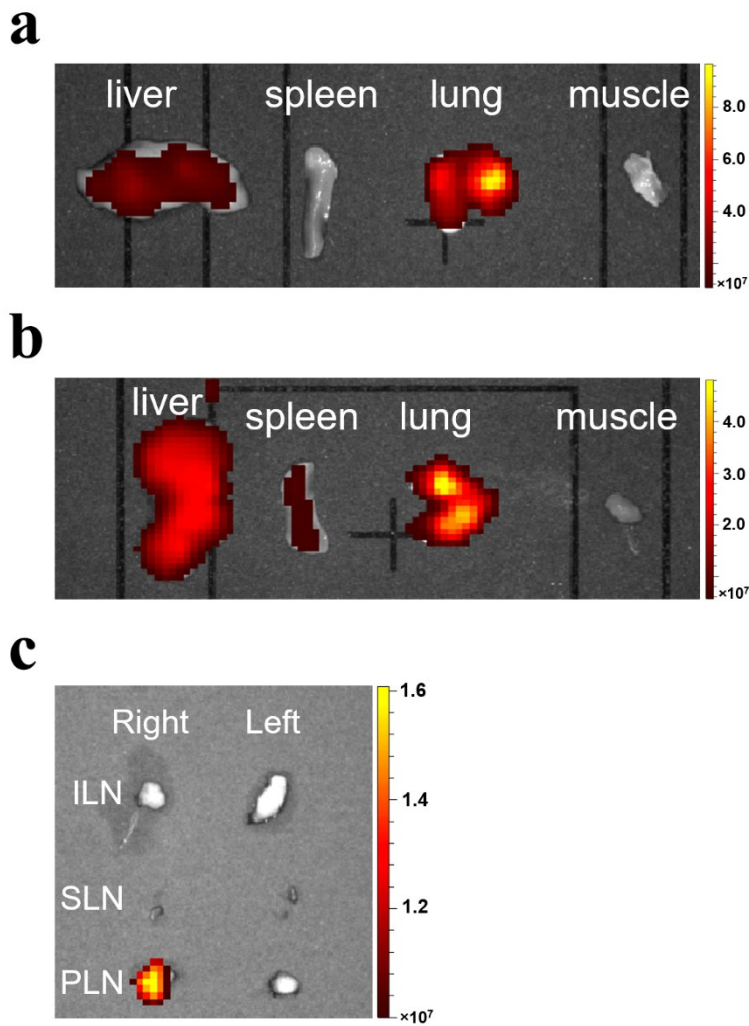


Figure S5. *Ex vivo* fluorescence imaging of organs and lymph nodes. (a) Fluorescence imaging of organs (liver, spleen, lung, and muscle) for 20 min after caudal vein injection of Ana-1 cells labeled by FA-MEH-PPV-NH₂ polymer dots; (b) Fluorescence imaging of organs for 2 h after caudal vein injection of Ana-1 cells; (c) Fluorescence imaging of lymph nodes (ILN: inguinal lymph node; SLN: sciatic lymph node; PLN: popliteal lymph node) for 2 d after footpad injection (right) of Ana-1 cells labeled by FA-MEH-PPV-NH₂ polymer dots. (Excitation filter, 520 ± 15 nm; emission filter, 790 ± 10 nm, n=3).

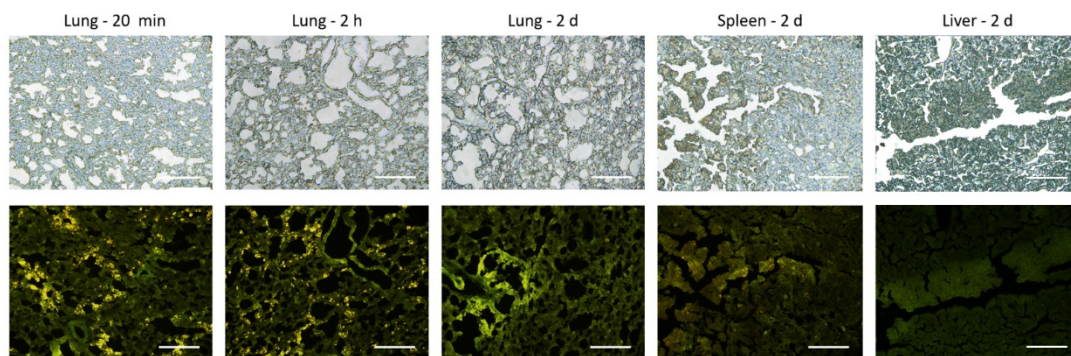


Figure S6. *Ex vivo* fluorescence imaging of the organs of blank mice 20 min, 2 h and 2 d after caudal vein injection of Ana-1 cells labeled by FA-MEH-PPV-NH₂ polymer dots. (bar: 200 μ m)