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Electronic Supplementary Information

Medical Fluorophore 1 (MF1), a benzoquinolizinium-based fluorescent dye, as an inflammation imaging agent

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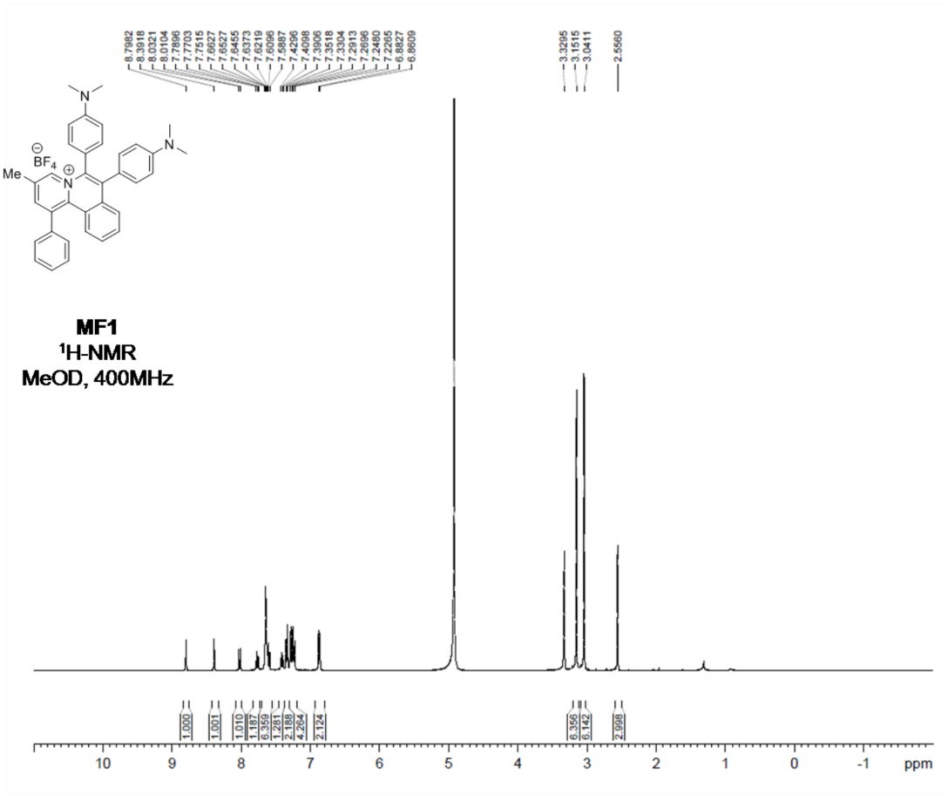

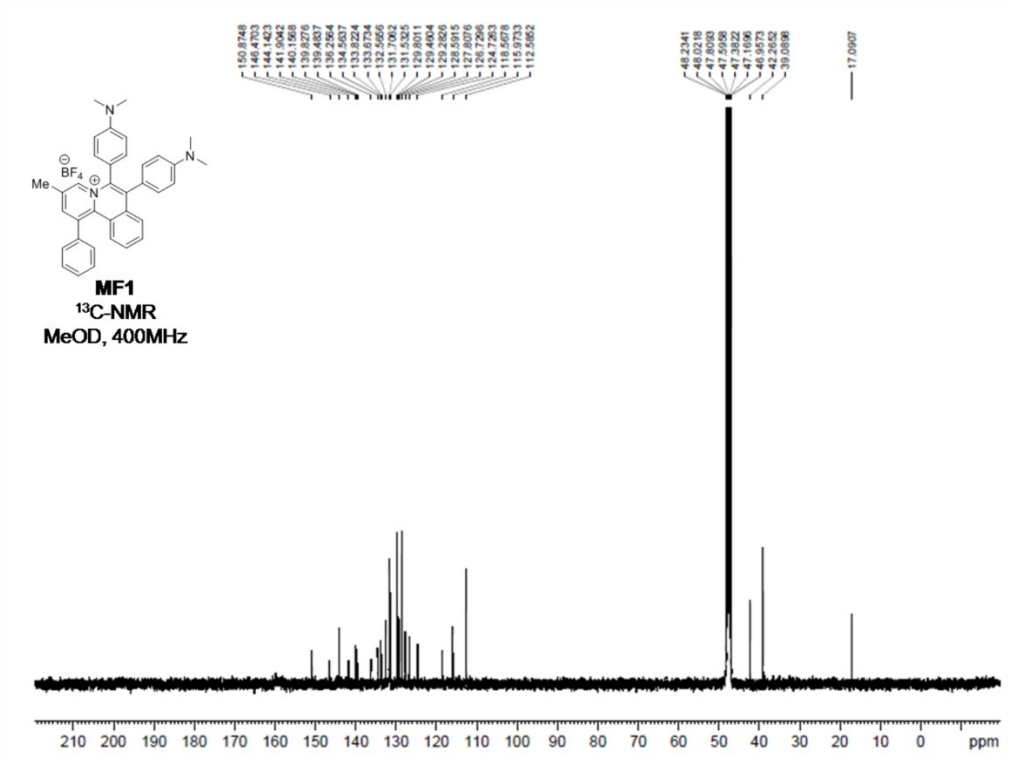

Fig. S1. ^{1}H and ^{13}C NMR spectra of MF1.

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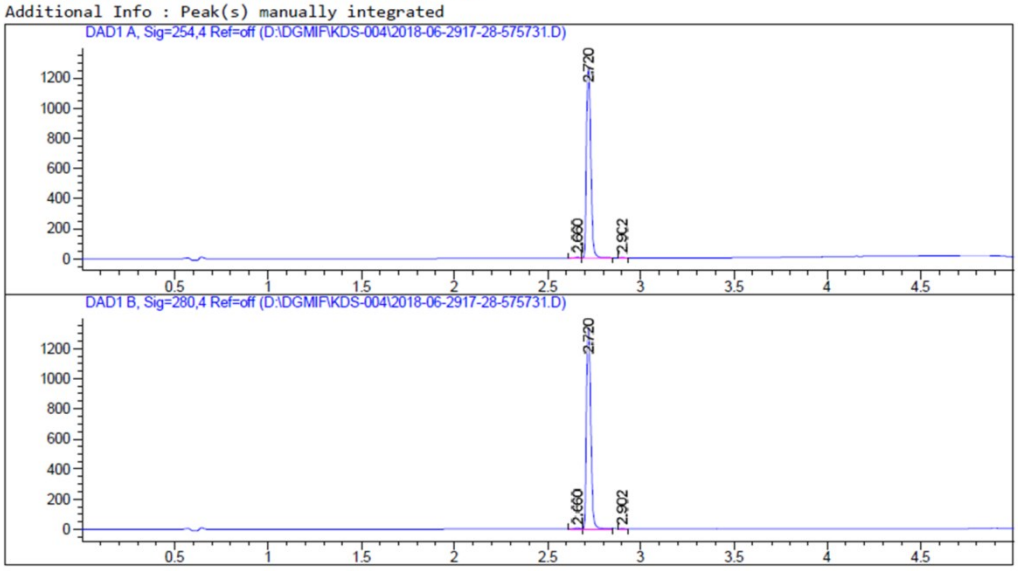


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Use Multiplier & Dilution Factor with ISTDs


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Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [mAU*s]     [mAU]       %
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   1   2.660 BV    0.0283   12.76570    6.67008   0.6310
   2   2.720 VV    0.0242 2003.41260 1283.48877  99.0232
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Fig. S2. HPLC spectrum of MF1.

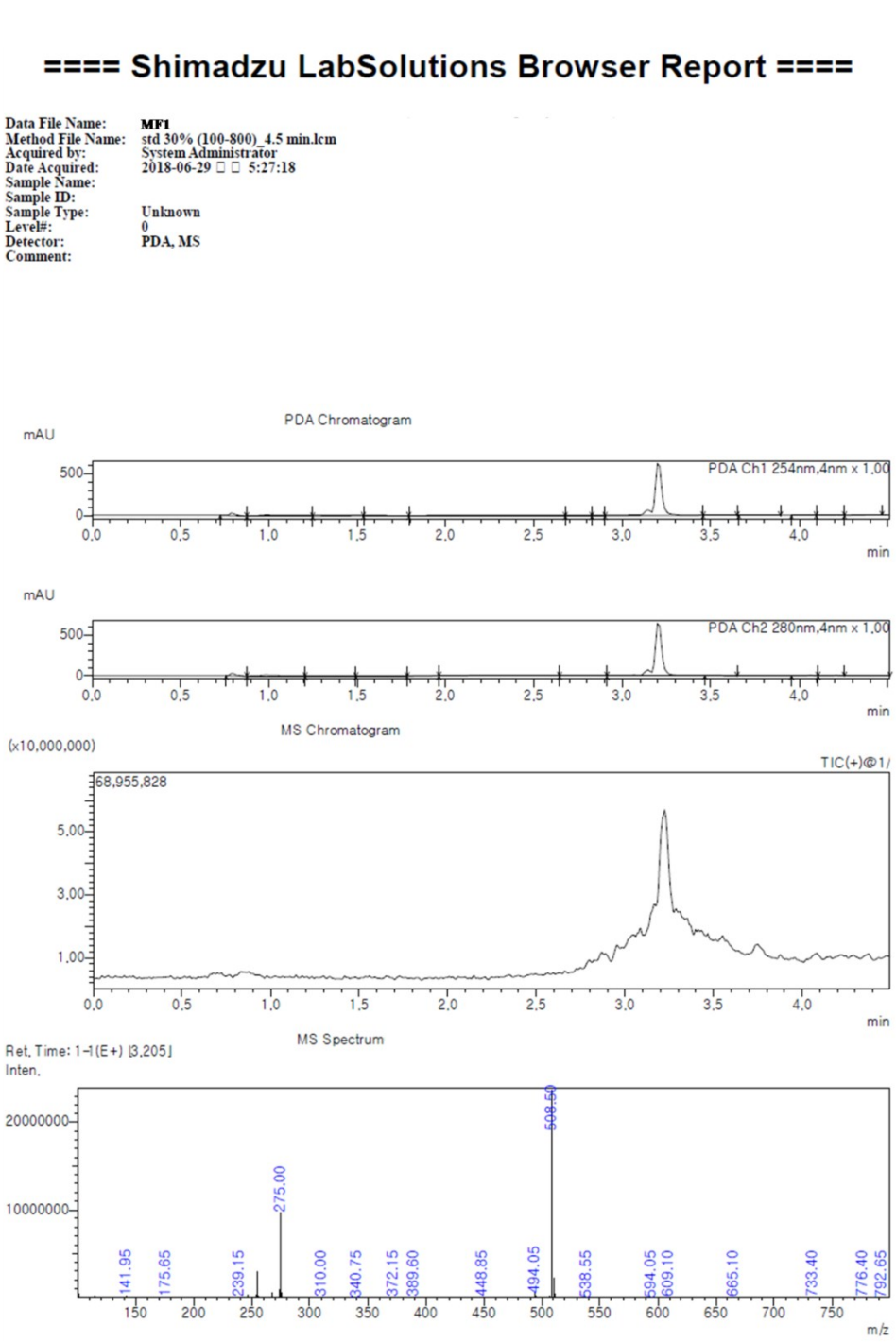

Fig. S3. LC mass spectrum of MF1.

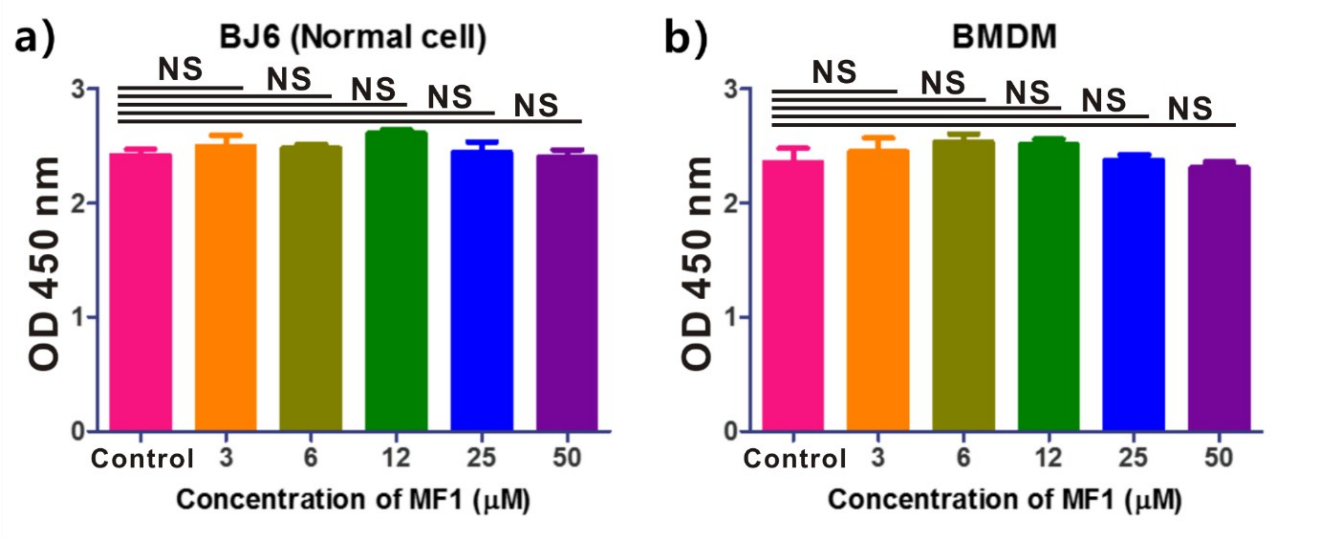

Fig. S4. Effect of MF1 on cell viability. (a, b) Cell proliferation in BJ6 cells (a) and BMDMs (b) with or without MF1 addition.

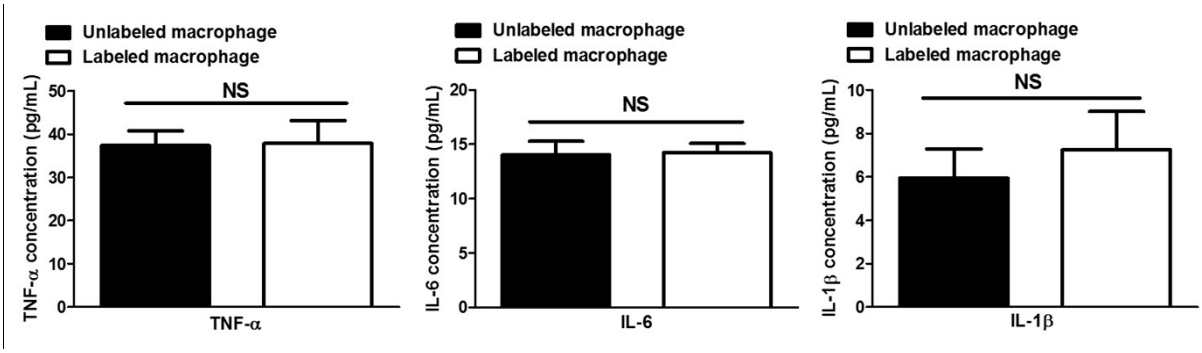

Fig. S5. TNFα, IL-6, and IL-1β levels in unlabeled and labeled BMDMs.

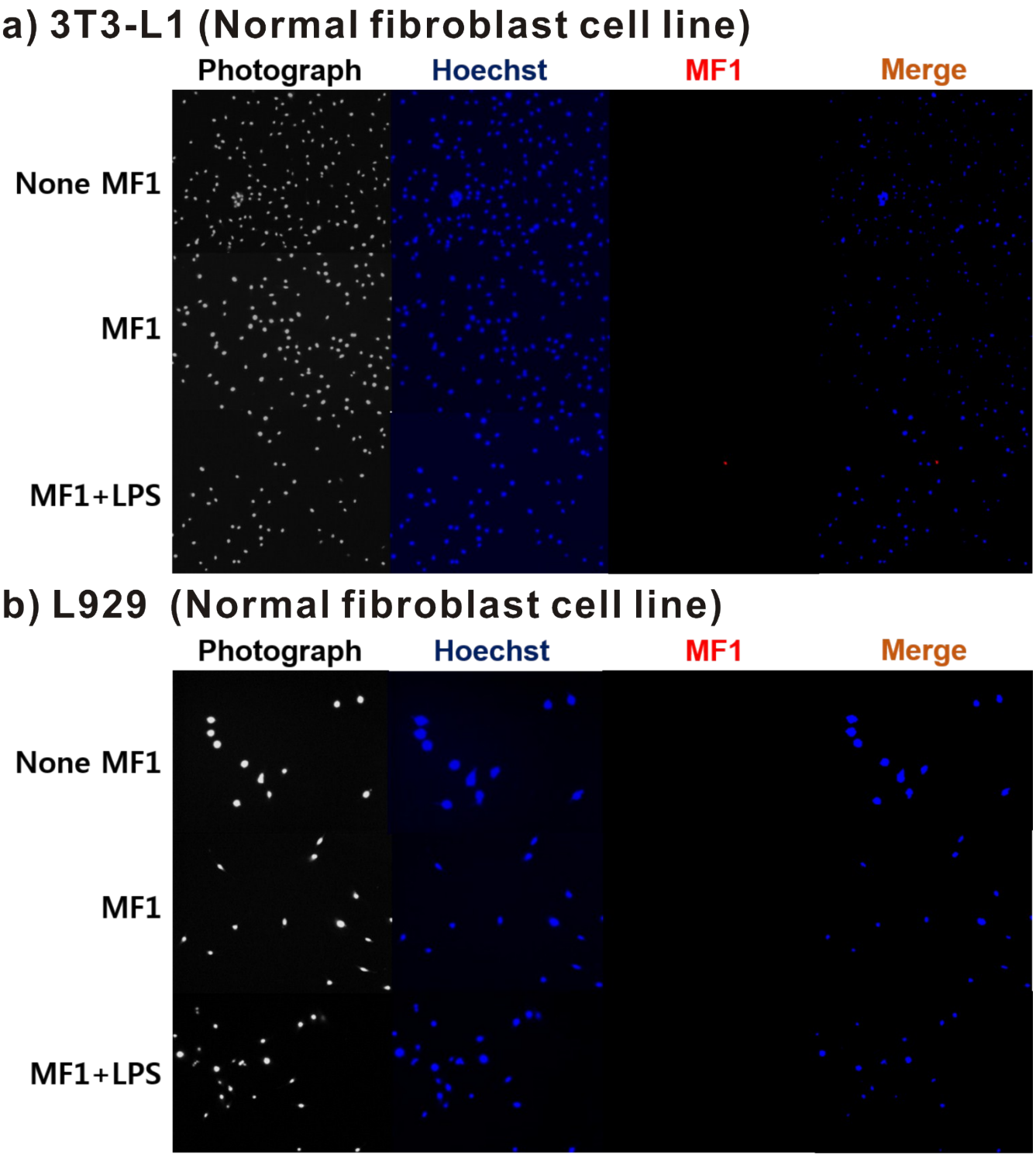

Fig. S6. Uptake of MF1 by a) 3T3-L1 and b) L929 cells. Intact and LPS-induced cells were incubated with MF1 at 37 °C for 1 h. Fluorescent microscopy was performed to determine cellular uptake level of MF1.

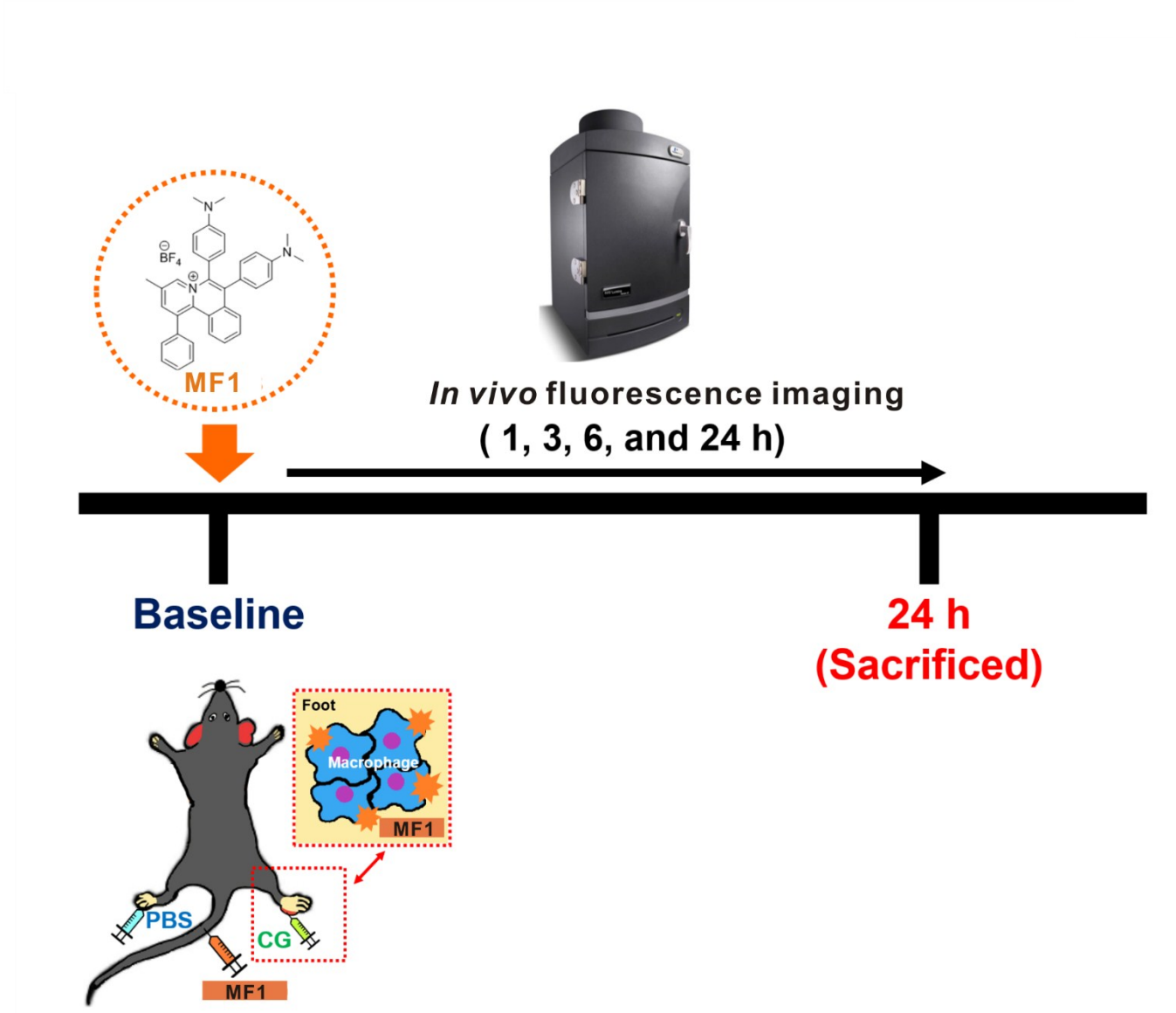

Fig. S7. Scheme for *in vivo* imaging of acute inflammation using MF1. PBS or CG solution were injected into the left and right foot pads, respectively, of immunocompetent mice. The mice were then intravenously injected with MF1, and dye uptake in inflammatory lesions was visualized by *in vivo* FLI at indicated times.

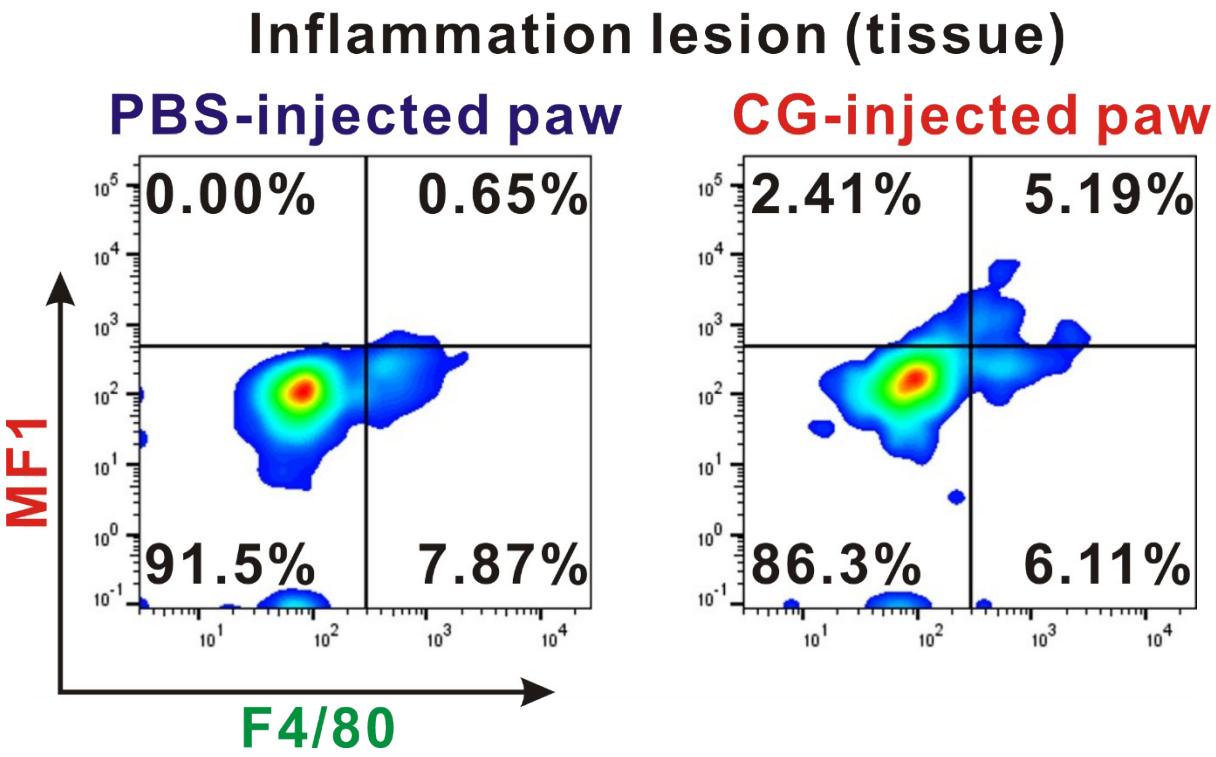

Fig.S8. FACS analysis revealing levels of F4/80+ and MF1+ cells in PBS-injected paw and CG-injected-paw at 6h post-injection MF1-injection.

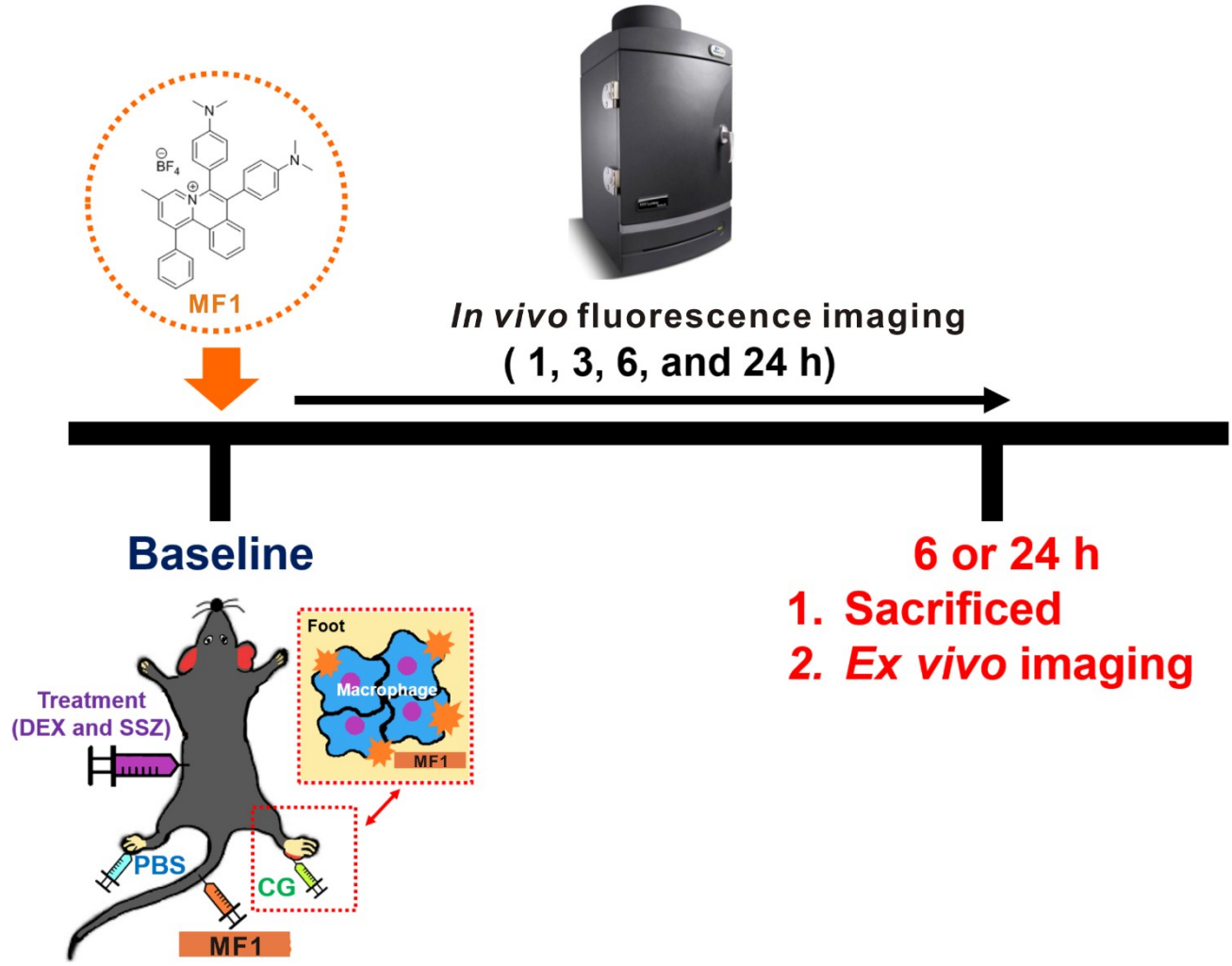

Fig. S9. Scheme for evaluating physiological response to anti-inflammatory drugs using MF1. Mice were divided into three vehicle, DEX, and SSZ groups (n = 6 mice each). Acute inflammation was induced with 1% CG; immediately afterward, the mice were injected with a single dose of 10 mg/kg DEX, SSZ, or vehicle. *In vivo* FLI was performed at indicated times to visualize MF1 uptake. Mice were then sacrificed and organs were removed for *ex vivo* imaging.

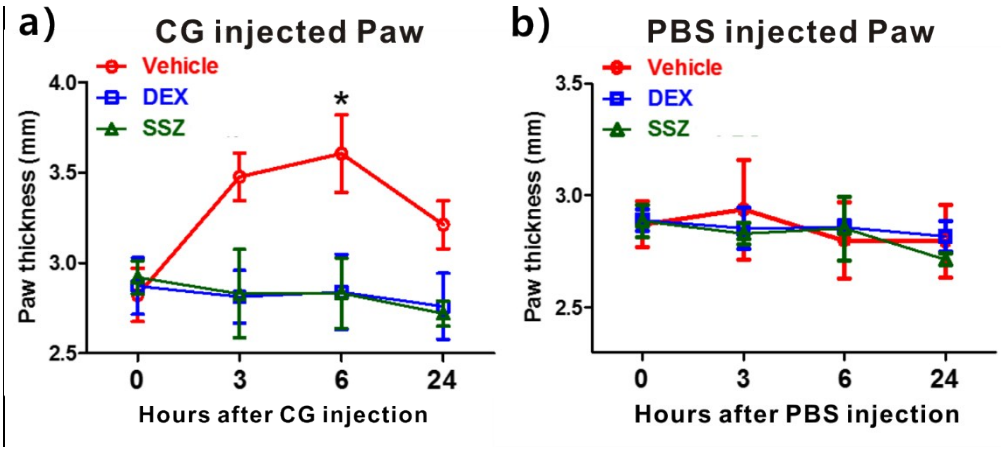

Fig. S10. Measurement of paw thickness after PBS or CG injection with or without DEX or SSZ treatment. Changes in hind paw thickness were measured.

Table. S1. Full optical characterization data of MF1

Molecular weight	595.4926 g/mol
Extinction coefficient	18,977 $M^{-1}Cm^{-1}$
Absorbance maximum	470 nm
Emission maximum	688 nm
Stokes shift	218 nm
Quantum yield[a]	0.1%

[a]Relative quantum yield.