Electronic Supplementary Information

Photostable AIE probes for wash-free, ultrafast, and high-quality plasma membrane staining

Sayed Mir Sayed,[†,a] Hao-Ran Jia,[†,a] Yao-Wen Jiang,[a] Ya-Xuan Zhu,[a] Liang Ma,[a] Feifei Yin,[a] Imtiaz Hussain,[a] Arshad Khan,[a] Qian Ma,[b] Fu-Gen Wu,*[,a] and Xiaolin Lu*[,a]

[a]*State Key Laboratory of Bioelectronics, School of Biological Science and Medical Engineering, Southeast University, 2 Sipailou Road, Nanjing 210096, P. R. China*

[b]*Jiangsu Key Laboratory of Oral Diseases, Nanjing Medical University; Department of General Dentistry, Affiliated Hospital of Stomatology, Nanjing Medical University, Nanjing 210029, Jiangsu Province, China*

Corresponding authors

*(X.L.) E-mail: lxl@seu.edu.cn

*(F.G.W.) E-mail: wufg@seu.edu.cn

Author contributions

[†]S.M.S. and H.R.J. contributed equally to this work.

Cell culture

MCF-7, A549, and AT II cells were cultured in Dulbecco's modified Eagle's medium (DMEM) supplemented with 10% FBS and 100 IU/mL penicillin−streptomycin at 37℃ in a humid atmosphere (5% CO_2). 4T1 cells were cultured in Roswell Park Memorial Institute (RPMI) 1640 medium supplemented with 10% FBS and 100 IU/mL penicillin−streptomycin at 37℃ in a humid atmosphere (5% CO_2).

Cytotoxicity evaluation

MCF-7 cells were seeded into 96-well plates at a density of 5×10^3 cells per well and incubated for 24 h. Then, MCF-7 cells were treated with different concentrations (0, 1, 2.5, 5, 10, 25, 50, and 100 μg/mL) of TPE-NIM and TPE-NIM^+, respectively, followed by another incubation for 24 h. The cell viability was determined by CCK-8 assays: 10 μL of CCK-8 solution was added to each well and incubated at 37℃ for 2 h. Next, the optical density (OD) at 450 nm was measured by a microplate reader (Multiskan FC, Thermo-Scientific, USA) and the cell viability was calculated as follows:

$$\text{Cell viability (\%)} = (OD_{Sample} - OD_{Blank}) / (OD_{Control} - OD_{Blank}) \times 100\%$$

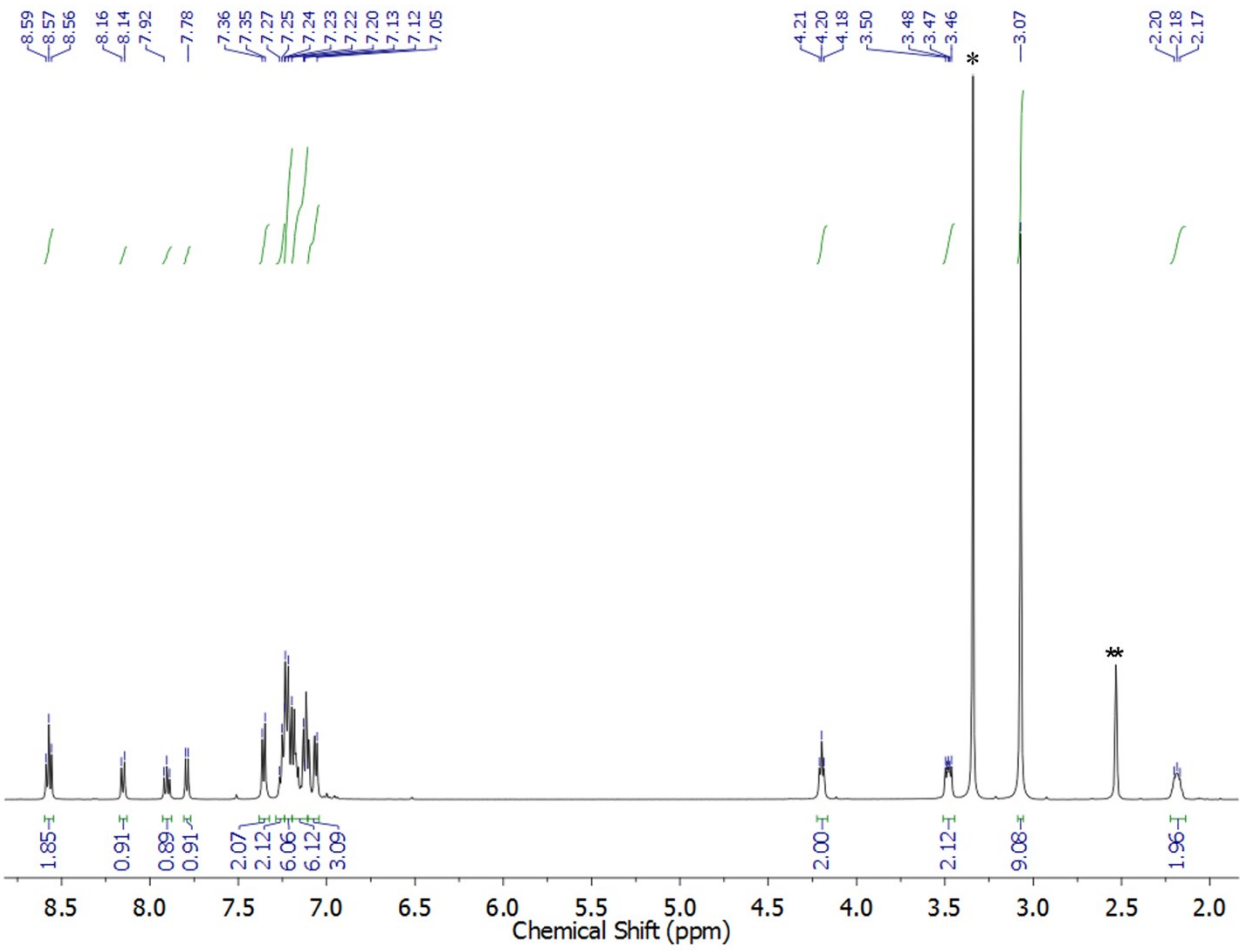

Fig. S1. ^{1}H-NMR spectrum of TPE-NIM^{+}. The solvent peaks are marked with asterisks (DMSO-d_6** and water*).[1]

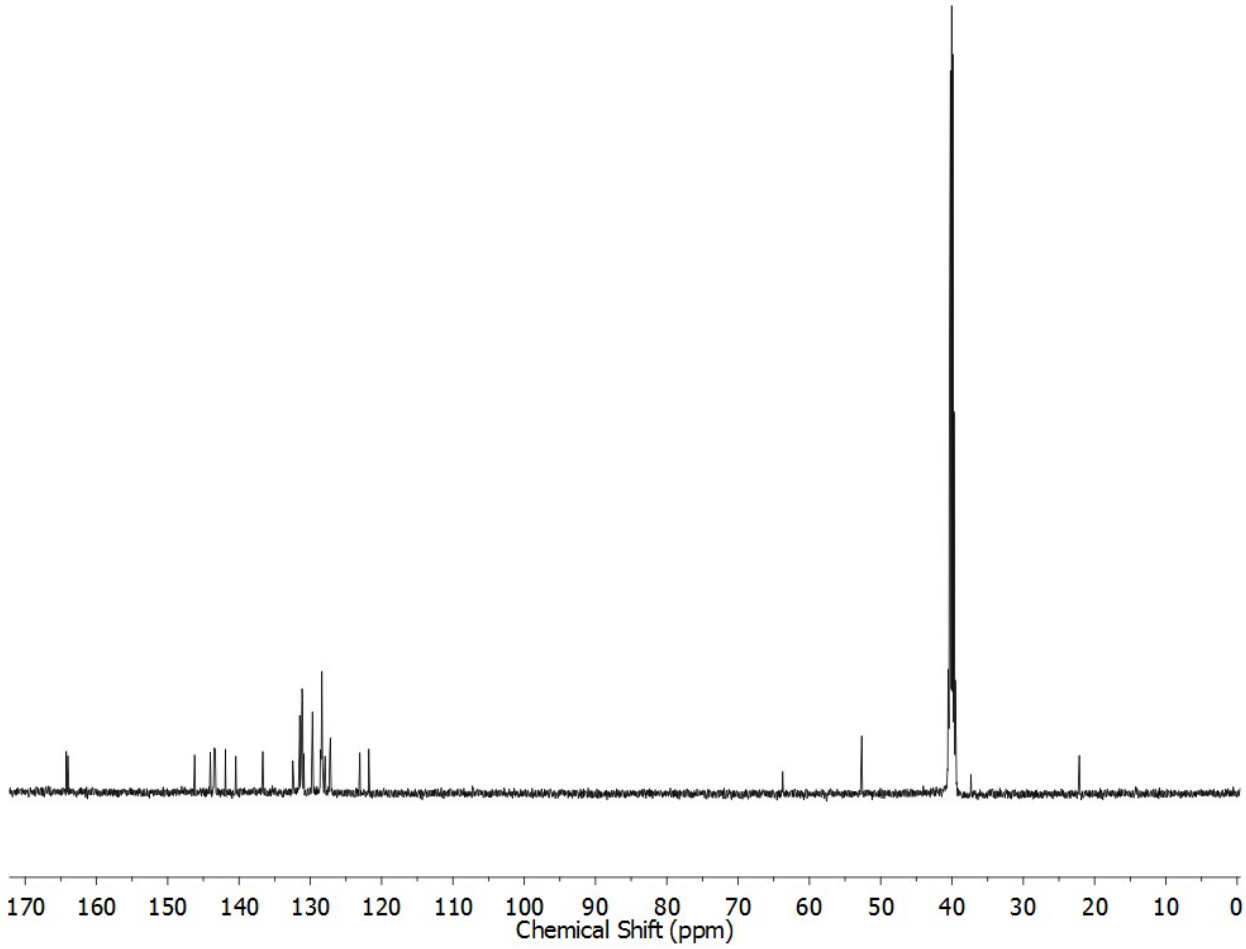

Fig. S2. ^{13}C-NMR spectrum of TPE-NIM^{+}.

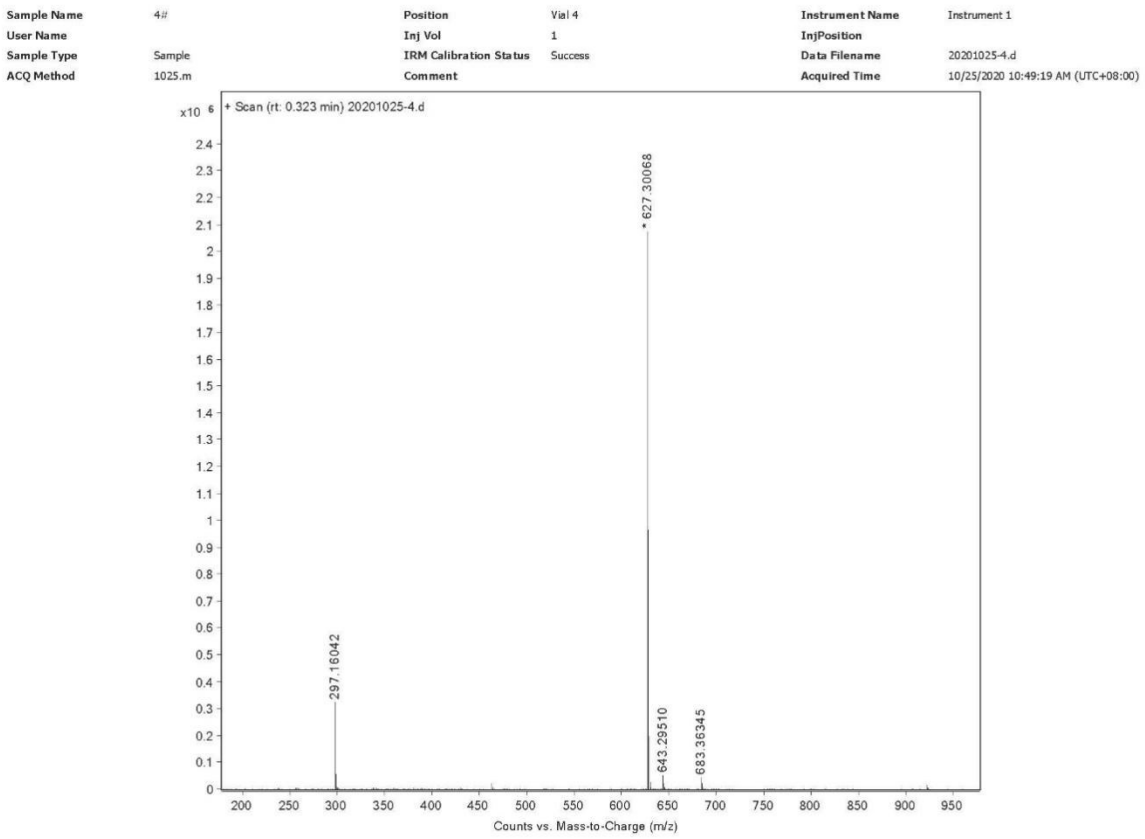

Fig. S3. HRMS spectrum of TPE-NIM^{+}.

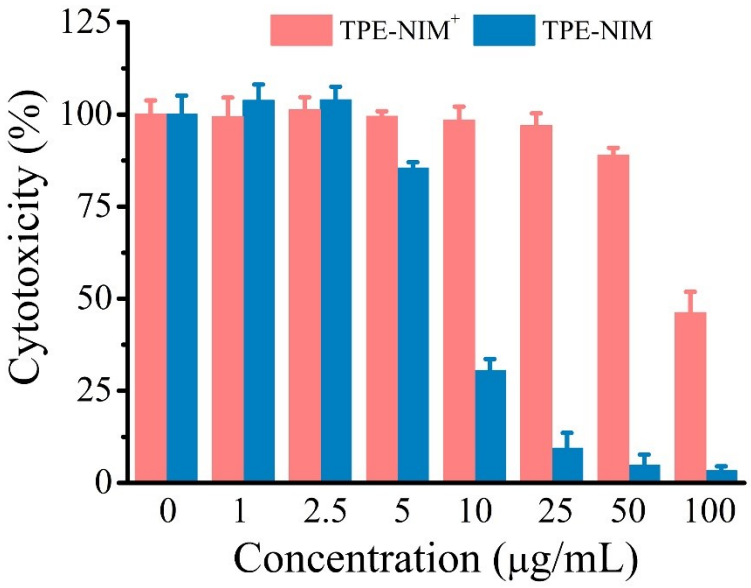

Fig. S4. Relative viabilities of MCF-7 cells incubated with different concentrations of TPE-NIM^+ and TPE-NIM for 24 h.

Reference

1. G. R. Fulmer, A. J. M. Miller, N. H. Sherden, H. E. Gottlieb, A. Nudelman, B. M. Stoltz, J. E. Bercaw and K. I. Goldberg, *Organometallics*, 2010, **29**, 2176–2179.