Supplementary Information for:

Folic acid-functionalized AIE Pdots based on amphiphilic PCL-b-PCL for targeted cell imaging

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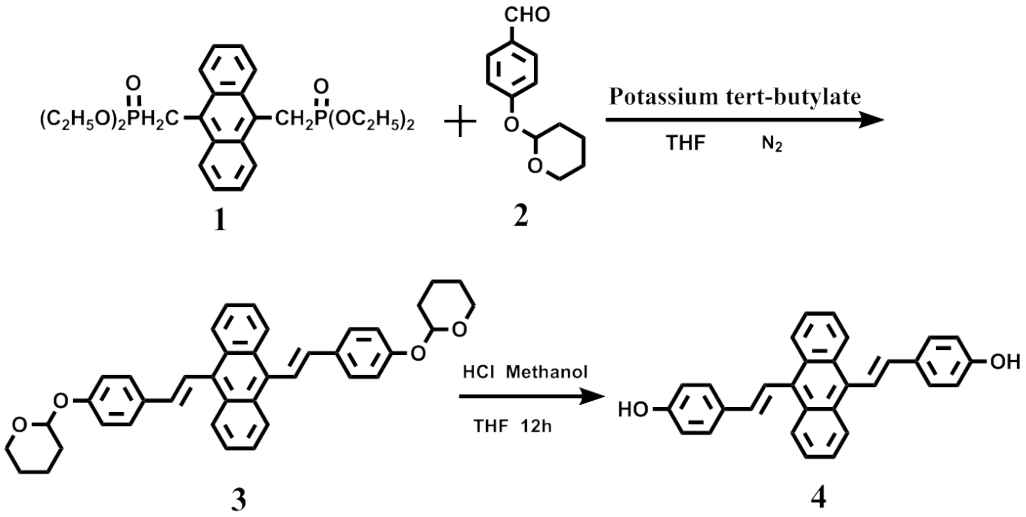
1. Synthesis method of 4

Synthesis of 9,10-bis(4-(tetrahydro-2H-pyran-2-yloxy)styryl) anthracene: 2.40 g of compound 1 (5.0 mmol) and 1.68 g of potassium tert-butoxide (15.0 mmol) were dissolved in 100 mL of anhydrous THF. A solution of 2.47 g of compound 2 (12.0 mmol) in 20 mL of anhydrous THF was added dropwisely over a 20 min period at 0 ^{o}C. The resultant mixture was allowed to warm to room temperature and then stirred overnight. After solvent evaporation, the residue was redissolved into 5 mL of CH_2Cl_2 and reprecipitated into 200 mL of methanol to afford a yellow solid (2.18 g, 75% yield). ^{1}H NMR (CDCl3, 500 MHz), d (TMS, ppm): 8.37-8.39 (m, 4H), 7.78 (d, 2H), 7.60 (d, 4H), 7.43-7.46 (m, 4H), 7.13 (d, 4H), 6.86 (d, 2H), 5.50 (t, 2H), 3.91-3.97 (m, 2H), 3.61-3.66 (m, 2H), 1.89-2.05 (m, 4H), 1.55-1.71 (m, 8H); ^{13}C NMR (DMSO-d_6, 100 MHz), d (TMS, ppm): 156.97, 136.86, 132.74, 130.98, 129.58, 127.66, 126.49, 125.06, 123.15, 116.78, 96.30, 61.99, 30.30, 25.20, 18.71; HRMS (APCIt): $C_{40}H_{39}O_4$ (MtH), calcd. 583.2848; found 583.2839.

Synthesis of 9,10-bis(4-hydroxystyryl)anthracene : 1.75 g of compound 3 (3.0 mmol) was dissolved into 100 mL of THF and 5 mL of methanol, and then 10 mL of 2 N HCl aqueous solution was added into the solution. The reaction mixture was stirred at room temperature for 12 h. After the solvent was removed under reduced pressure, the residue was washed with methanol. The solid was redissolved into 5 mL of CH_2Cl_2 and reprecipitated into 200 mL of methanol to give a yellow solid (1.10 g, 88% yield). 1H NMR (DMSO-d_6, 500 MHz), d (TMS, ppm): 9.67 (s, 2H), 8.32-8.34 (m, 4H), 7.83 (d, 2H), 7.60 (d, 4H), 7.48-7.51 (m, 4H), 6.82 (d, 4H), 6.77 (s, 2H); ^{13}C NMR (DMSO-d6, 100 MHz), d (TMS, ppm): 157.61, 137.03, 132.36, 128.98, 128.09, 128.06, 126.22, 125.31, 121.11, 115.55; HRMS (APCIt): C30H23O2 (MtH), calcd. 415.1698; found 415.1699.



Scheme S1. Synthetic route of 4.

2. GPC results of P3

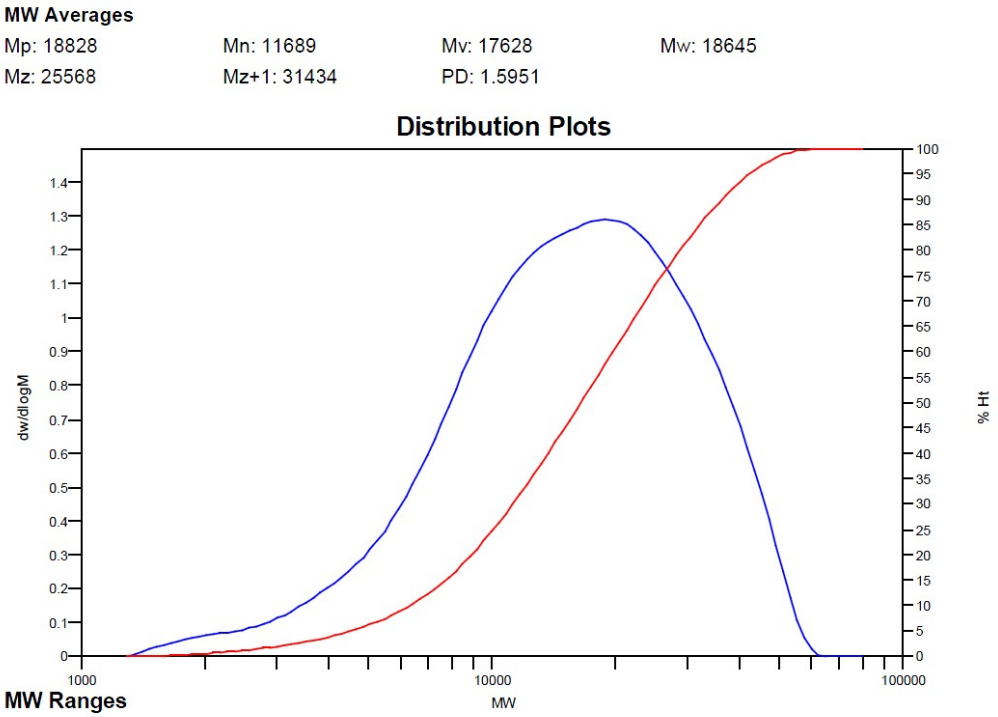


Fig.S1 P3 GPC results

3. IR spectra of P3 and P4

As show in Fig.S2, P3 and P4 show -CH3,-CH2 strong stretching vibration at 2956(and 2928,2867) and carbonyl of ester(Carboxyl) stretching vibration at 1726 (and 1724). Meanwhile, the strong peak at 3437 Transferred to 3327, because the amide of P3 reacted with FA-ester and formed acidamide; a new strong peak at 1610 and a new weak peak at 1645 are associated with the carbonyl of acidamide Stretching vibration of P4, while there's no peak at these Wavenumbers of P3.

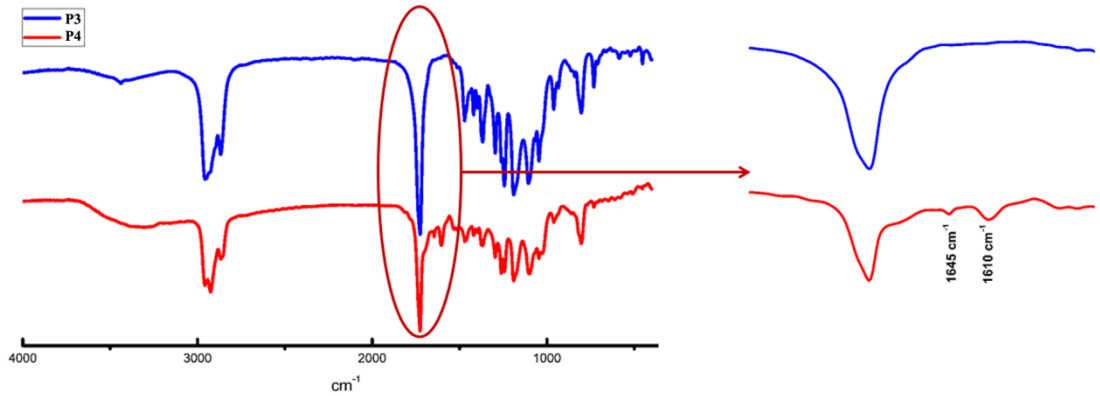


Fig. S2 IR spectra of P3 (the blue line) and P4 (the red line) .

4. Flourescence intensity of dialysis solution.

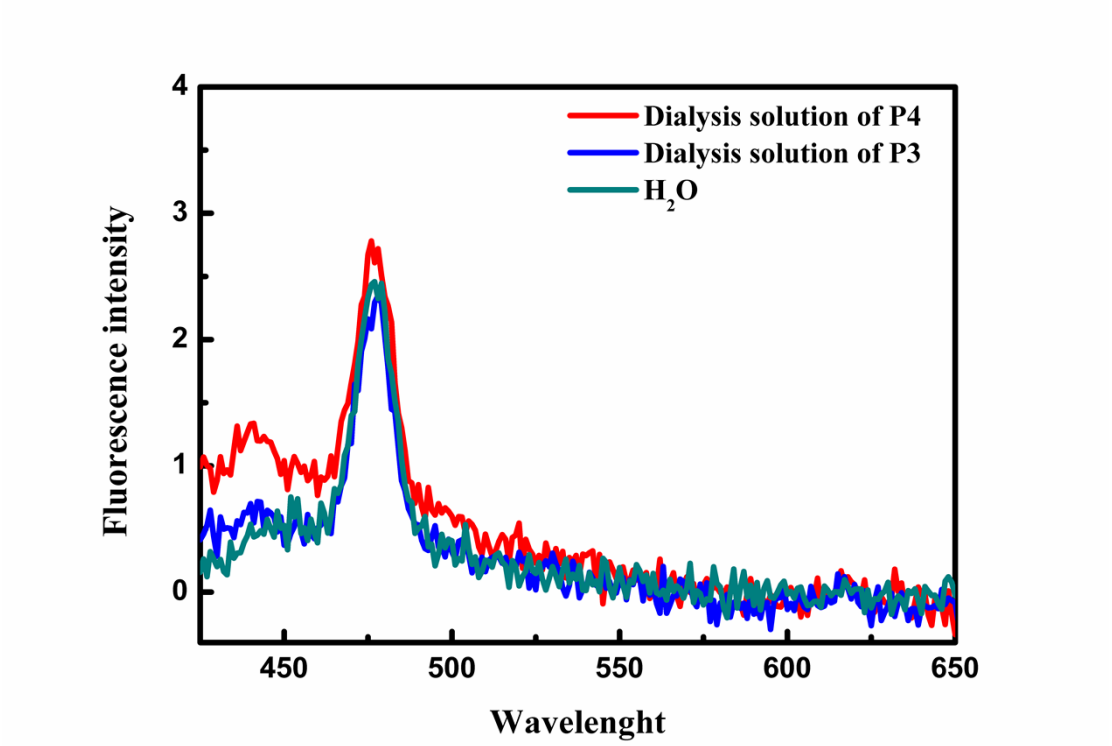


Fig. S3 Flourescence intensity of dialysis solution. Dialysis for 10 days. Excitation wavelength = 410 nm

5. Fluorescence quantum yield

	THF (quinine sulfate as reference)	THF/H_2O=1:9 (quinine sulfate as reference)	Solid of Nanoparticles
P3	3.7%	15.8%	18.0%
P4	9.3%	17.0%	27.0%

Table.S1 Relative fluorescence quantum yield of P3 and P4 in THF, H2O (have been formed Nanoparticles) and solid of Nanoparticles.