Supporting Information

Non-conjugated polyethylenimine copolymer-based unorthodox nanoprobe for bioimaging and related mechanisms exploration

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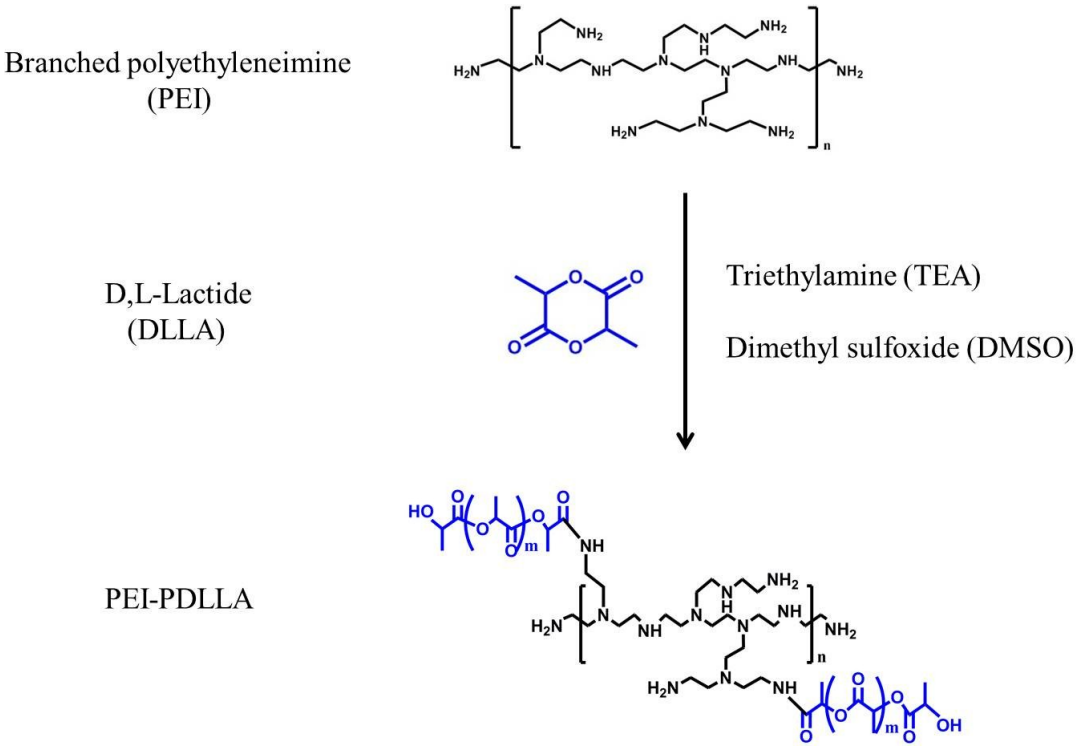
Table S1 Parameters for the bonds and angles in CGMD

			θ (degrees)	Ka (kJ/mol)
amide	tertiary amine	amide	120	10
amine	amide	amine	160	35

#All bond constants K^b and bond length of PEI-PDLLA molecule are 2000 kJ/(mol • nm^2) and 0.5 Å .



Scheme S1.Synthesis of the PEI-PDLLA polymer by a one-step ring-opening polymerization method.

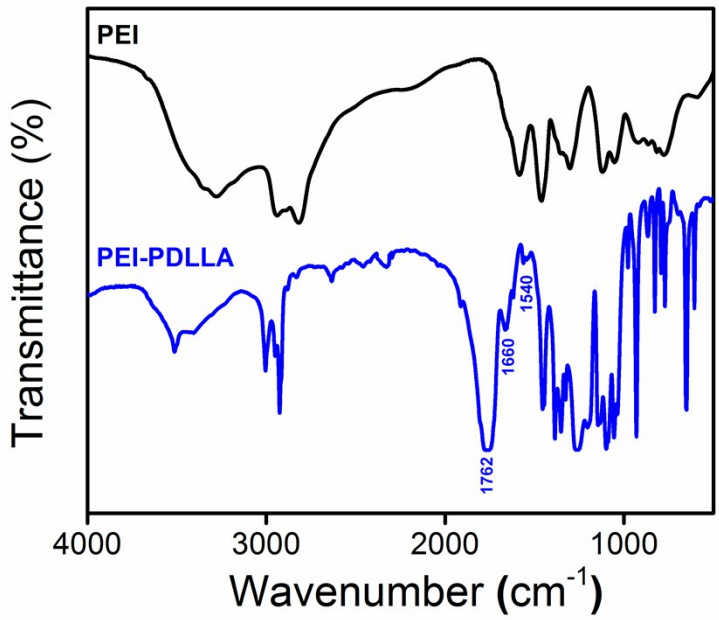


Figure S1. FT-IR spectra of PEI and PEI-PDLLA polymer.

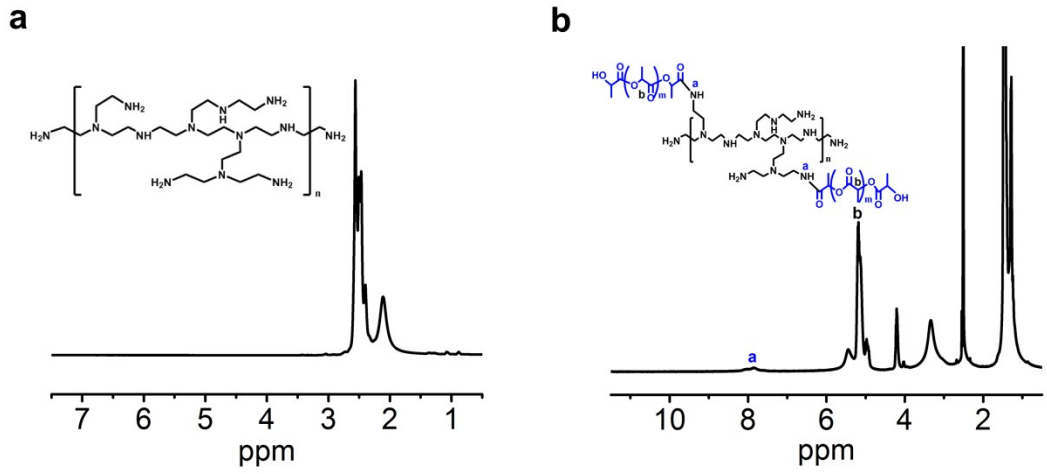


Figure S2. ^{1}H NMR spectra of a) PEI and b) PEI-PDLLA polymer.

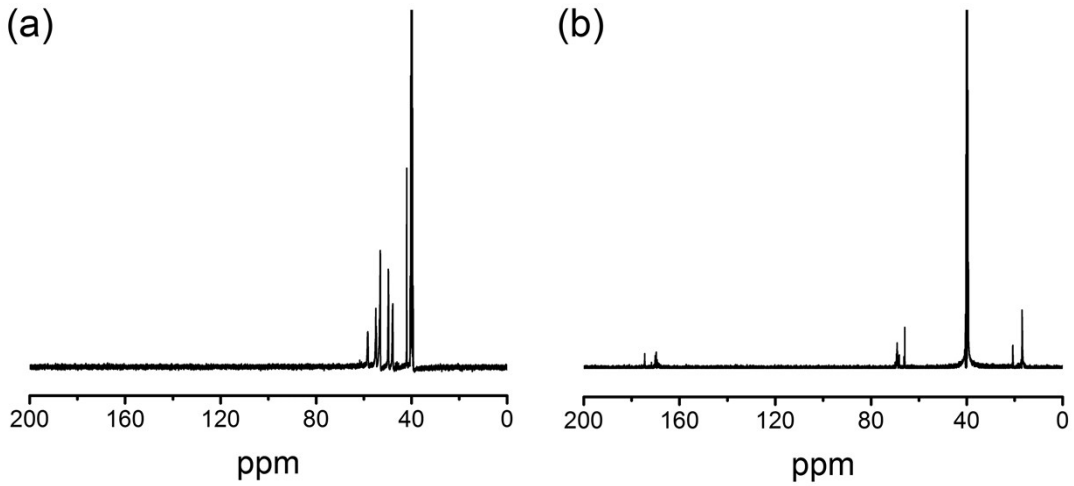


Figure S3. ^{13}C NMR spectra of PEI a) and PEI-PDLLA b).

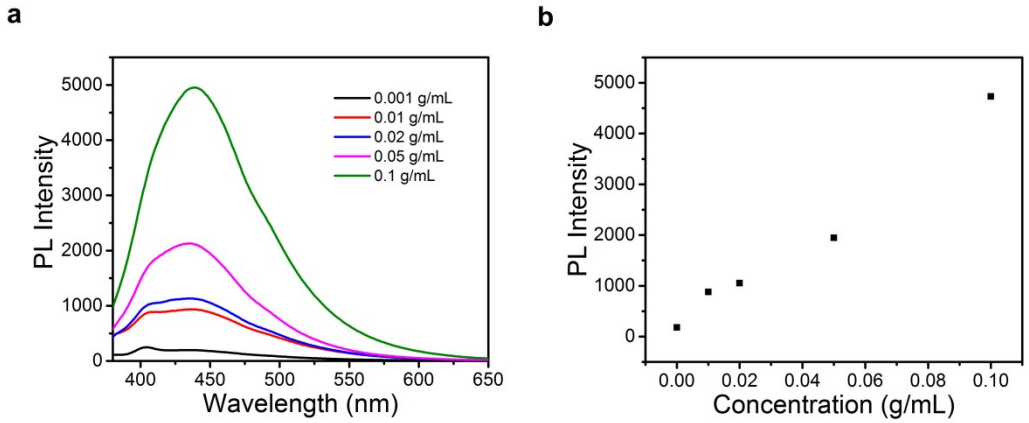


Figure S4. a) Fluorescence emission of PEI with different concentrations in DMSO solutions (excitation wavelength = 360 nm). b) Fluorescence emission at 450 nm of PEI with different concentrations in DMSO solutions (excitation wavelength = 360 nm).

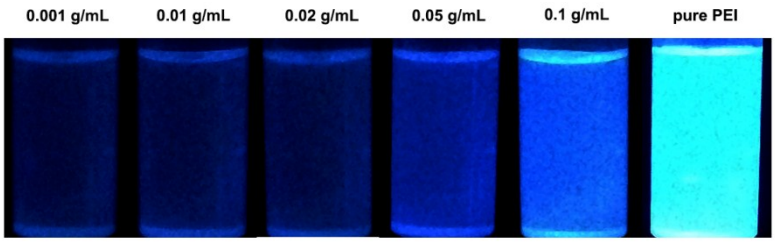


Figure S5. Photographs of PEI with different concentrations in DMSO solutions taken under 365 nm UV light.

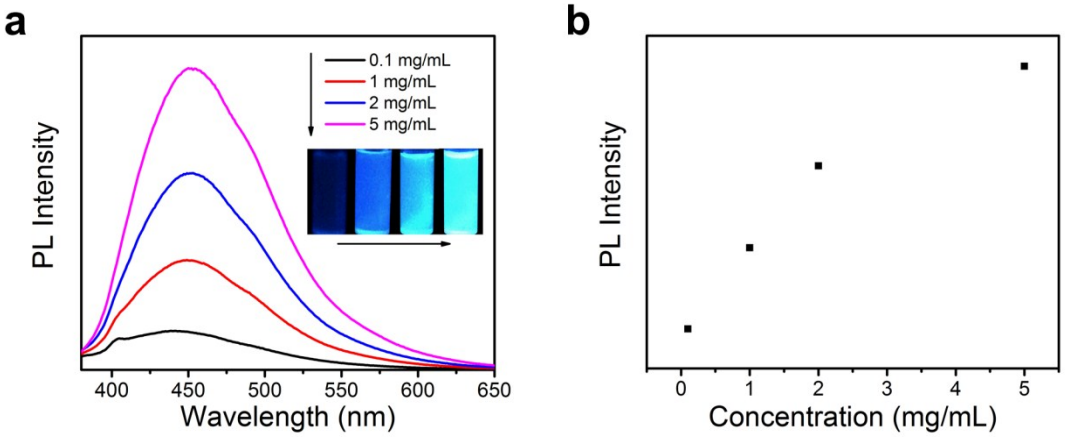


Figure S6. a) Photoluminescence (PL) spectra of PEI-PDLLA polymer solution with different concentrations (excitation wavelength: 360 nm). The inset photographs were obtained under 365 nm UV light. b) Fluorescence emission at 450 nm of PEI-PDLLA with different concentrations in DMSO solutions (excitation wavelength = 360 nm).

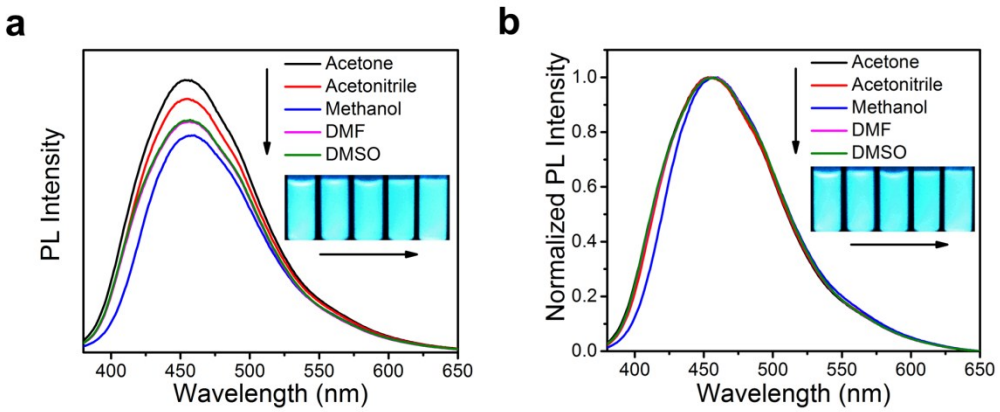


Figure S7. a) PL spectra of the PEI-PDLLA polymer in different organic solvents. The inset photographs were obtained under 365 nm UV light. b) Normalized PL spectra of the PEI-PDLLA polymer in different organic solvents. The inset photographs were obtained under 365 nm UV light.

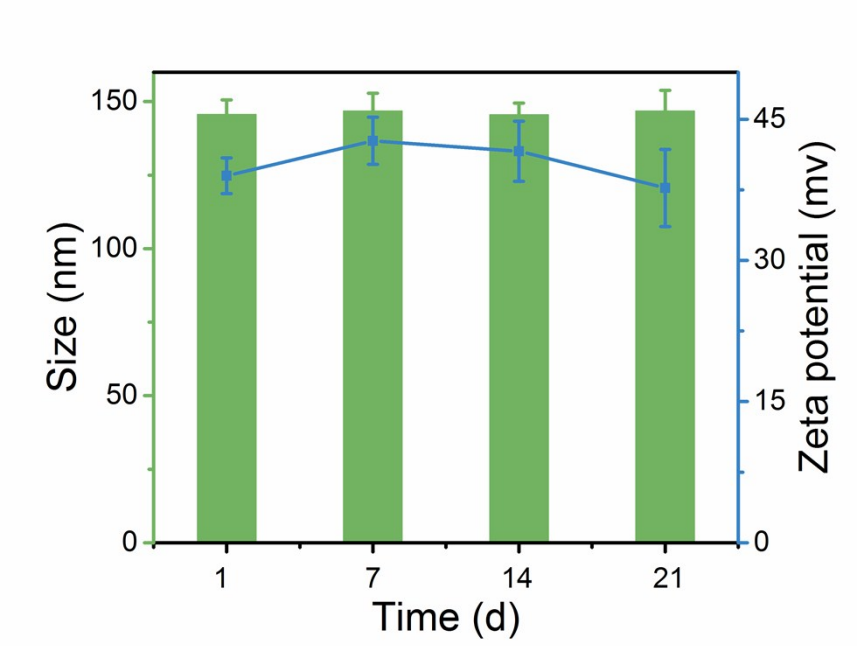


Figure S8. The stability of the PEI-PDLLA NPs upon storage with 3 weeks.

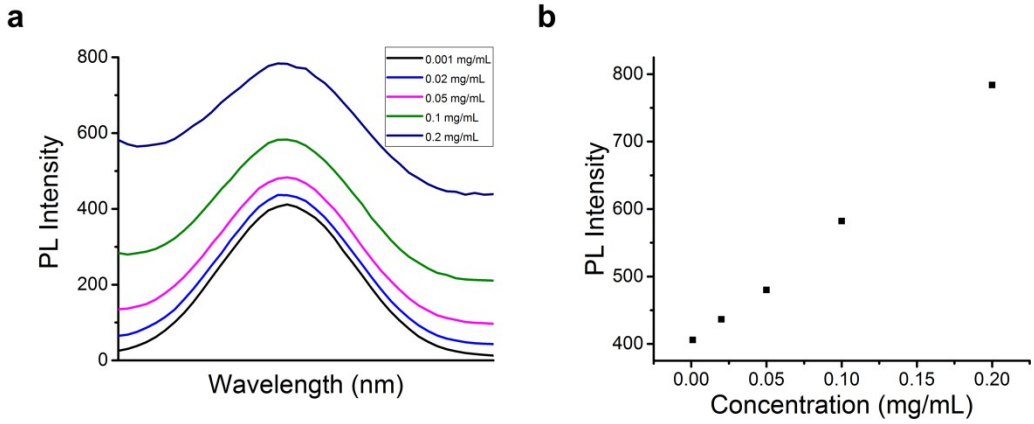


Figure S9. a) Fluorescence emission of the PEI-PDLLA NPs with different concentrations in aqueous solution. (excitation wavelength = 360 nm). b) Fluorescence emission at 410 nm of the PEI-PDLLA NPs with different concentrations in aqueous solution (excitation wavelength = 360 nm).

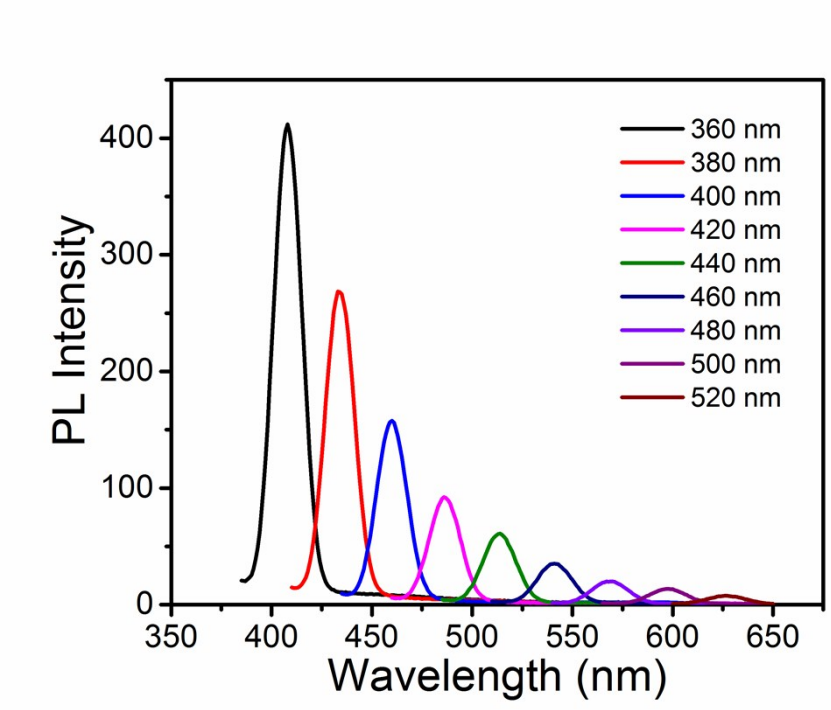


Figure S10. Fluorescence emission spectra of the PEI-PDLLA NPs with different excitation wavelength in in aqueous solution.

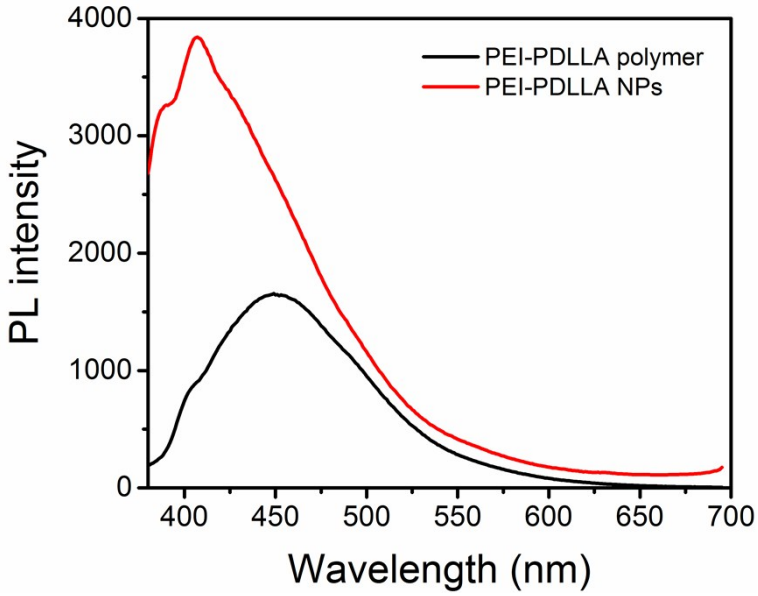


Figure S11. Fluorescence intensity of PEI-PDLLA polymer and PEI-PDLLA NPs at the same concentration.