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Supporting information

Efficient Near-Infrared anionic conjugated polyelectrolyte for Photothermal Therapy

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Scheme S1 The synthetic route of polymer PCP-SO₃K



Fig. S1 The (a) ¹H NMR spectrum and (b) ATR-FTIR spectra of PCP-SO₃K



Fig. S2 The Zeta potential of PCP-SO₃K in water.



Fig. S3 a) UV-vis absorption spectra of PCP-SO₃K in DMF and H_2O ; b) UV-vis absorption spectra of PCP-SO₃K aqueous solution with various concentration.



Fig. S4 Photoluminescence spectra of PCP-SO₃K aqueous solution under excitation wavelength of 837 nm.



Fig.S5 (a) Photo-oxidation of ABDA by singlet oxygen generated upon white light irradiation (400–780 nm, 50 mW cm⁻²) from PCP-SO₃K aqueous solution. (b) Normalized degradation percentages of ABDA in the presence of PCP-SO₃K aqueous media [PCP-SO₃K] = 50 μ g ml⁻¹; [ABDA] = 50 μ M.



Fig.S6 (a) The curve of NIR light irradiation time and solution temperature for PCP-SO₃K with concentration of 60 μ g mL⁻¹. (b) Photothermal images of PCP-SO₃K (60 μ g mL⁻¹) under 808 nm laser irradiation (2.0 W cm⁻²). (c) Plot of linear fitting extinction versus wavelength for the PCP-SO₃K aqueous solution at 808 nm.



Fig.S7 Cell viabilities of PCP-SO3K aqueous solution against Hela cells and 4T1 cells line after

24 h and 48 h of incubation.



Fig.S8 Calcein AM (green) and propidium iodide (red) co-staining fluorescence imaging of HeLa (a) and 4T1(b) cells under laser. NIR light irradiation (808 nm, 2.0 W cm⁻², 5 min) alone was conducted on cells without treating PCP-SO₃K. Scale bar: 20 μm;



Fig.S9 H&E staining for heart, liver, spleen, lungs, and kidney on day 22 after different treatments applied. Scale bars: 100 μm.