

Supporting Information

Figure S1. UV-Vis absorbance spectra of polymer **P1–2** upon photolysis at 365 nm (50 $\mu\text{g/mL}$).

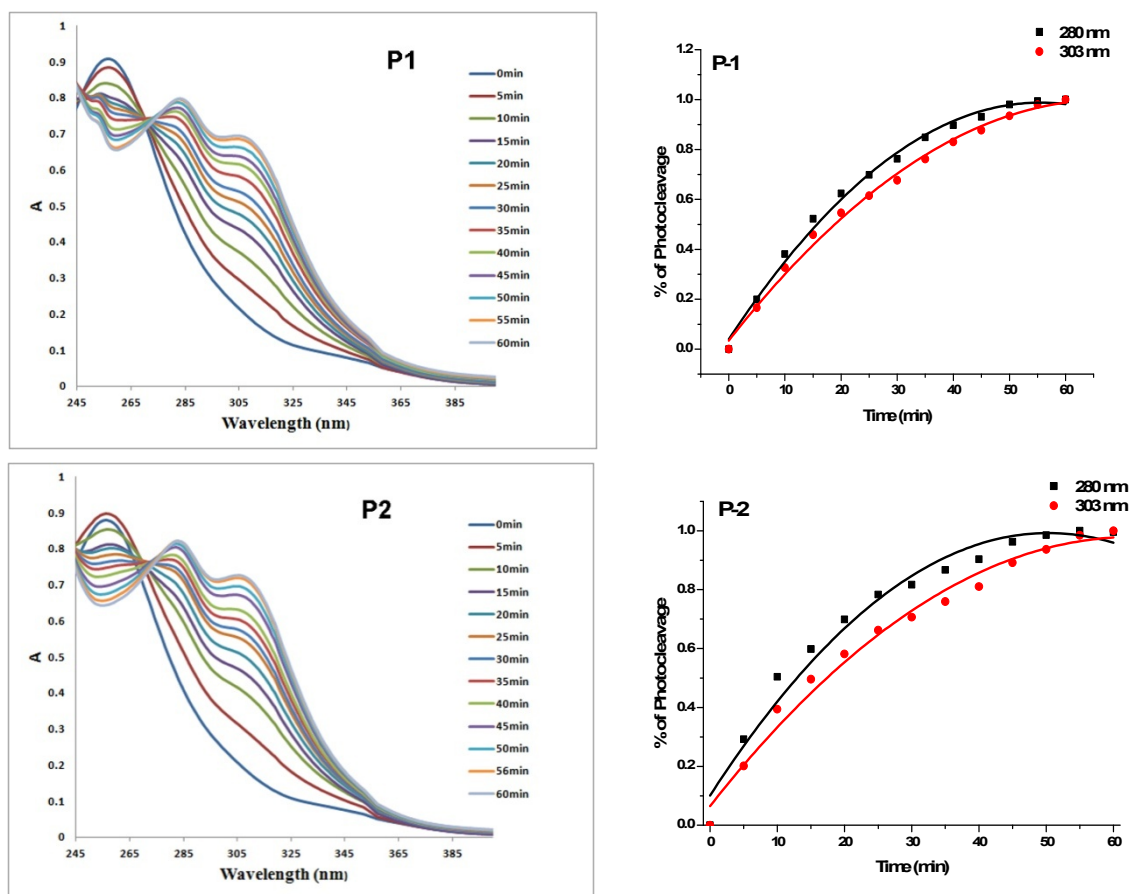


Figure S2. GPC traces of **P1**, **P2** and **P3** before and after 15 min light irradiation.

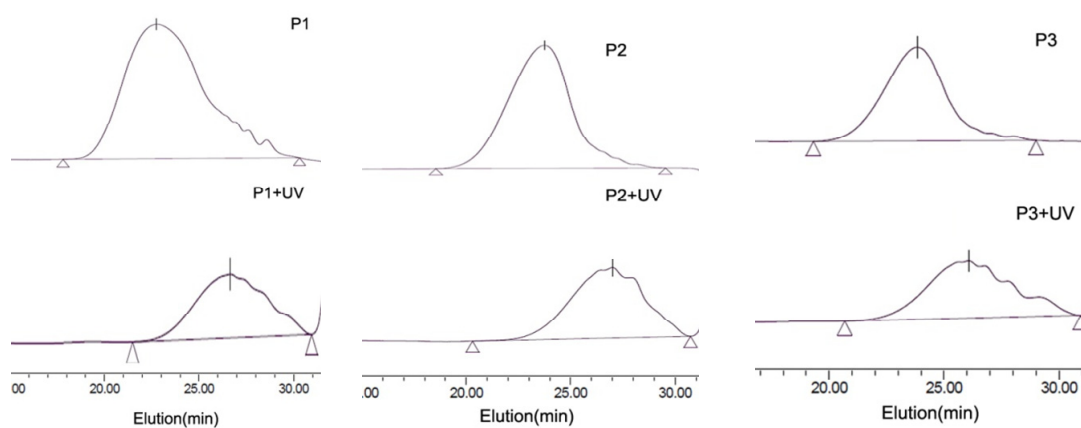


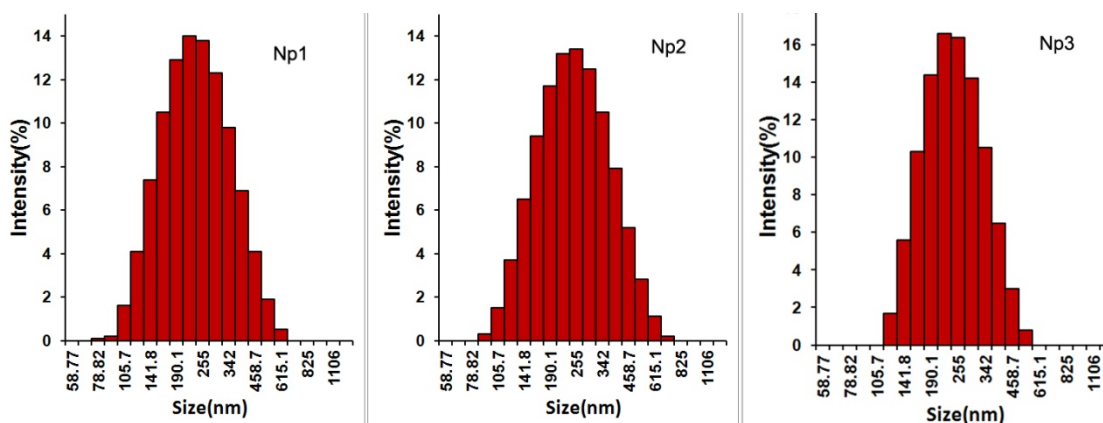
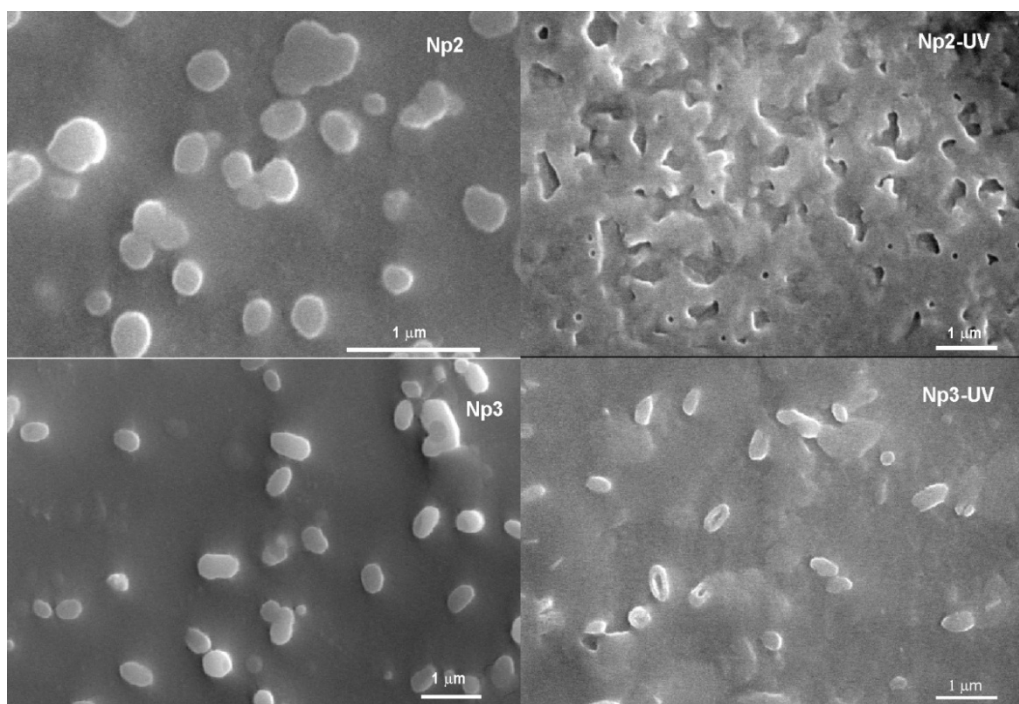
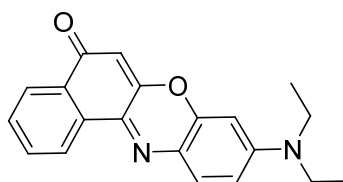
Figure S3. DLS distribution of Np1, Np2, Np3.**Figure S4.** SEM images of Np2 and Np3, left without UV irradiation, right with UV irradiation.**Figure S5.** (A) Stability of Nile red-loaded nanoparticle aqueous solutions (pH = 7) and phototriggered Nile red releasing of particles upon 7 days standing at room temperature based on Nile red fluorescence measurement. (B) Stability of Nile red-loaded nanoparticle aqueous solutions in different buffers (pH = 5 and 9) in 7 days.**Nile red**

Figure S5. Cont.

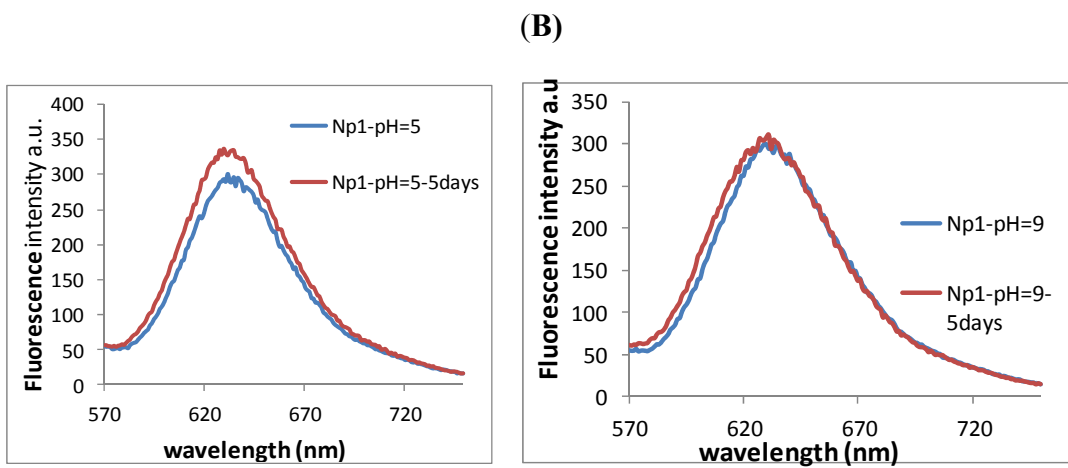
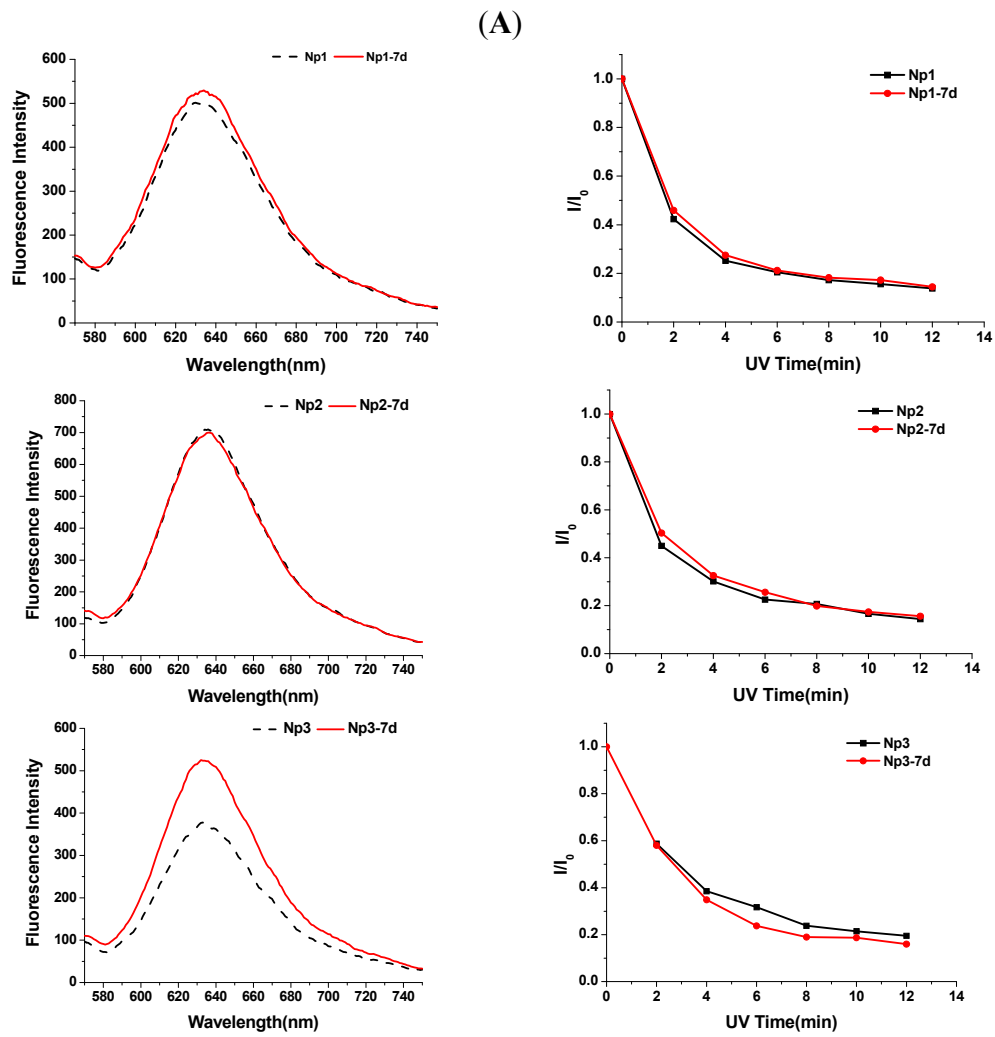


Figure S5. Cont.

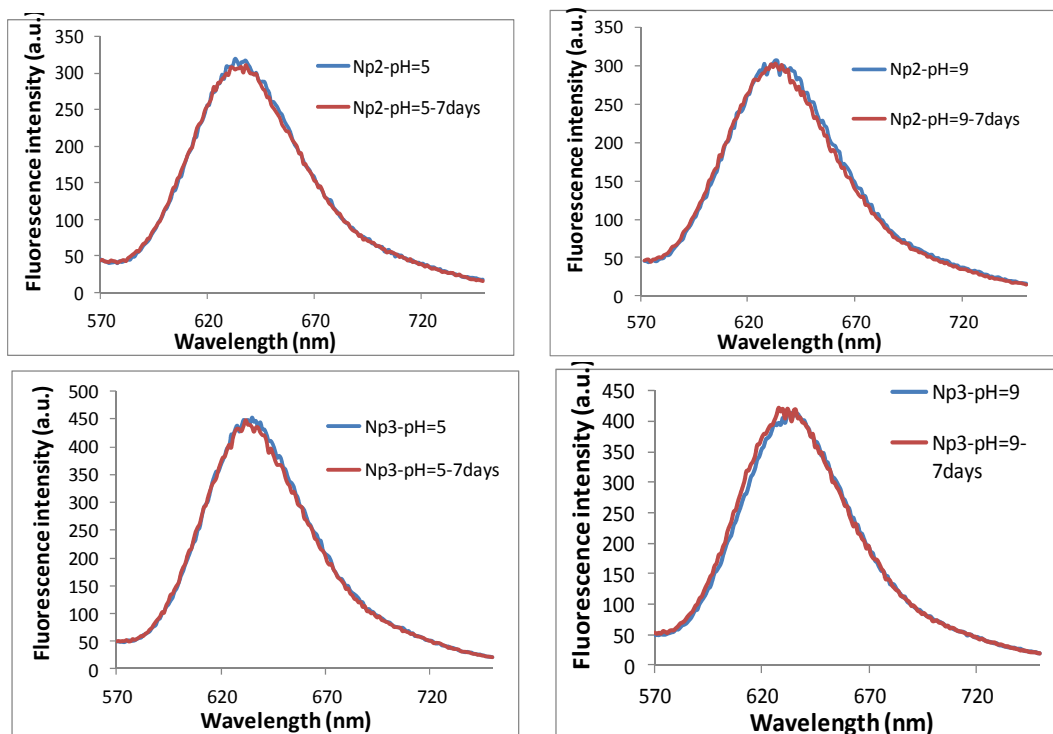


Figure S6. Fluorescence spectra of Nile red loaded nanoparticle **Np2** and **Np3** aqueous solutions upon light irradiation (365 nm, 11 mW/cm²) with the excitation wavelength at 550 nm.

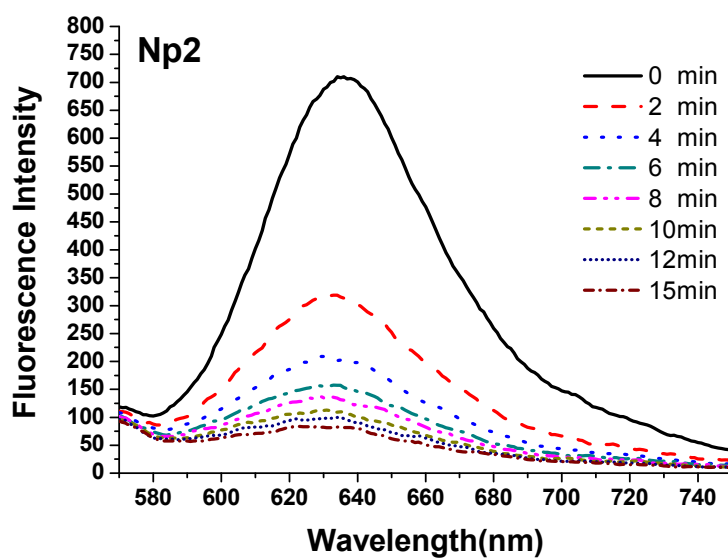


Figure S6. Cont.

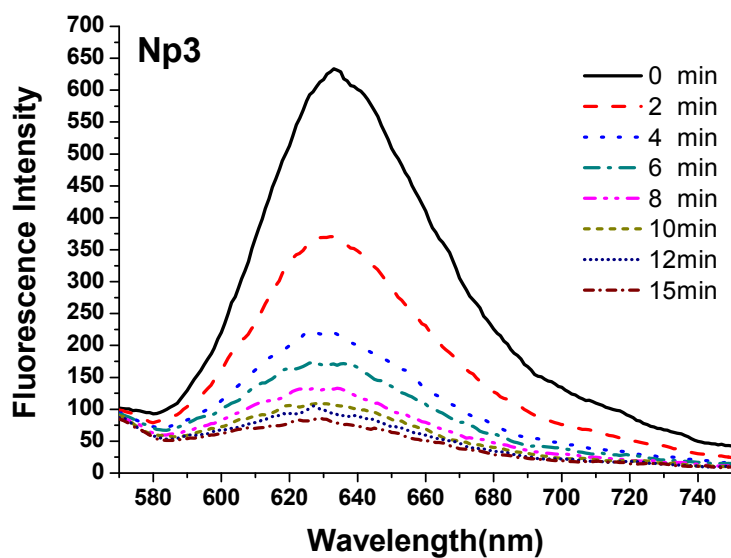


Figure S7. Fluorescence microscopy images of RAW 264.7 cells incubated with (a, b) FDA-loaded Np2 for 4 h, (c, d) FDA-loaded Np2 for 4 h followed by 15 min light irradiation, (e, f) FDA-loaded Np3 for 4 h, and (g, h) FDA-loaded Np3 for 4 h followed by 15 min light irradiation. (scale bar = 100 μ m)

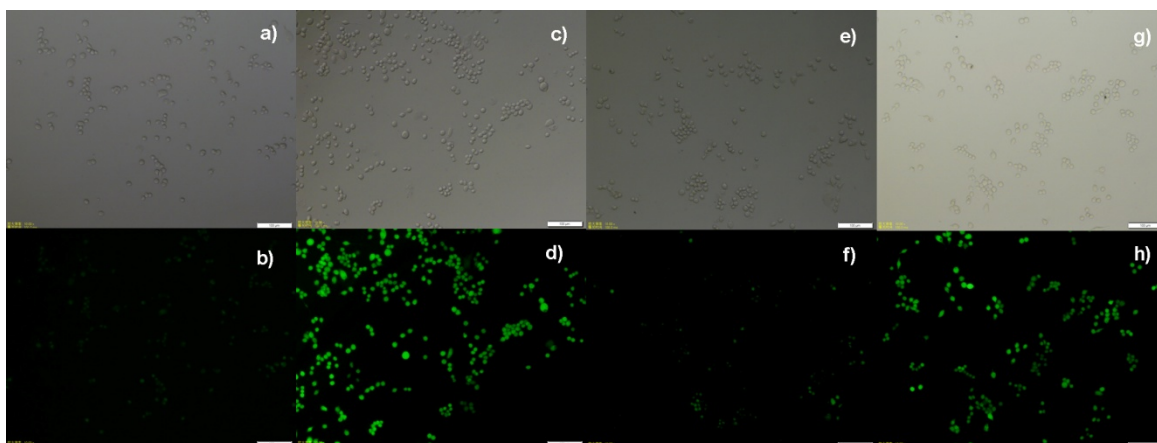


Table S1. Size distribution and zeta-potentials of FDA-Loaded Np1–3.

Nps	Size (nm)	PDI	Z-P
Np-1	191.6	0.10	-17.5
Np-2	204.1	0.25	-19.6
Np-3	198.0	0.13	-14.3

Figure S8. Cell toxicity of Np1–3 measured by incubation with RAW 264.7 cells for 24 h. The viability of cells incubated with nanoparticles and irradiated nanoparticle residues was normalized to cells cultured without nanoparticles.

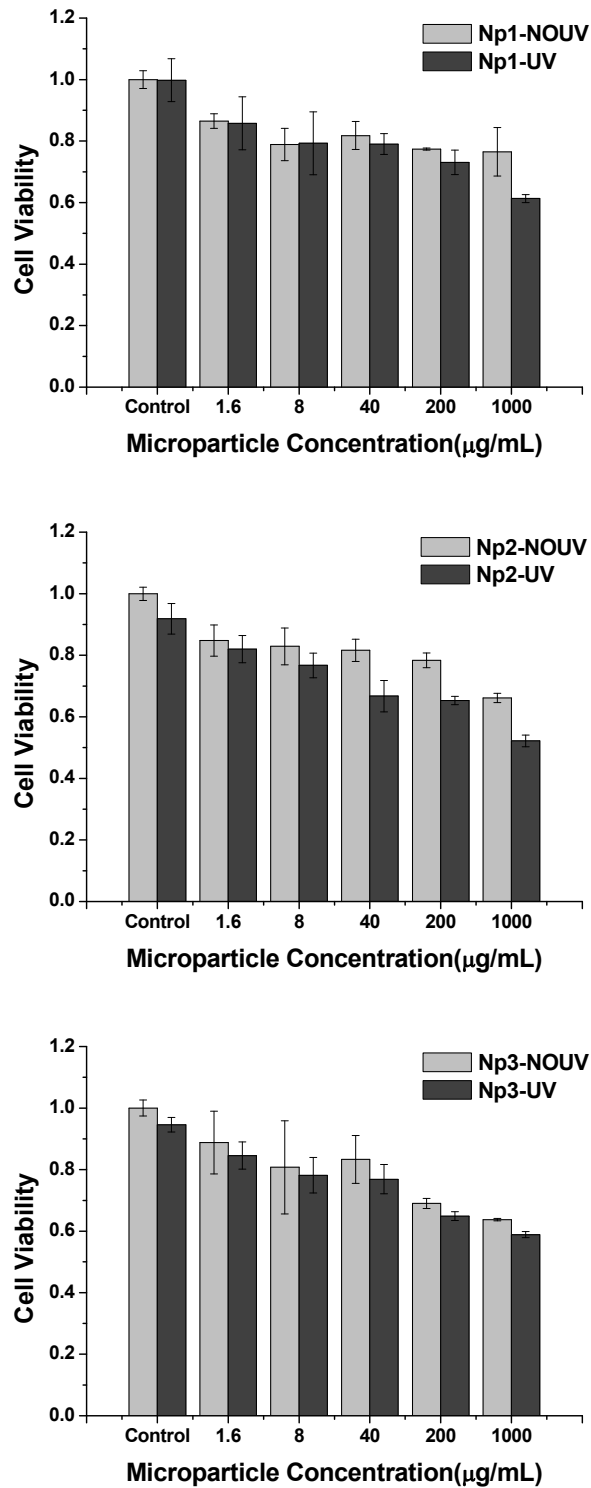


Figure S9. NMR spectra of polymer P1, P2 and P3.

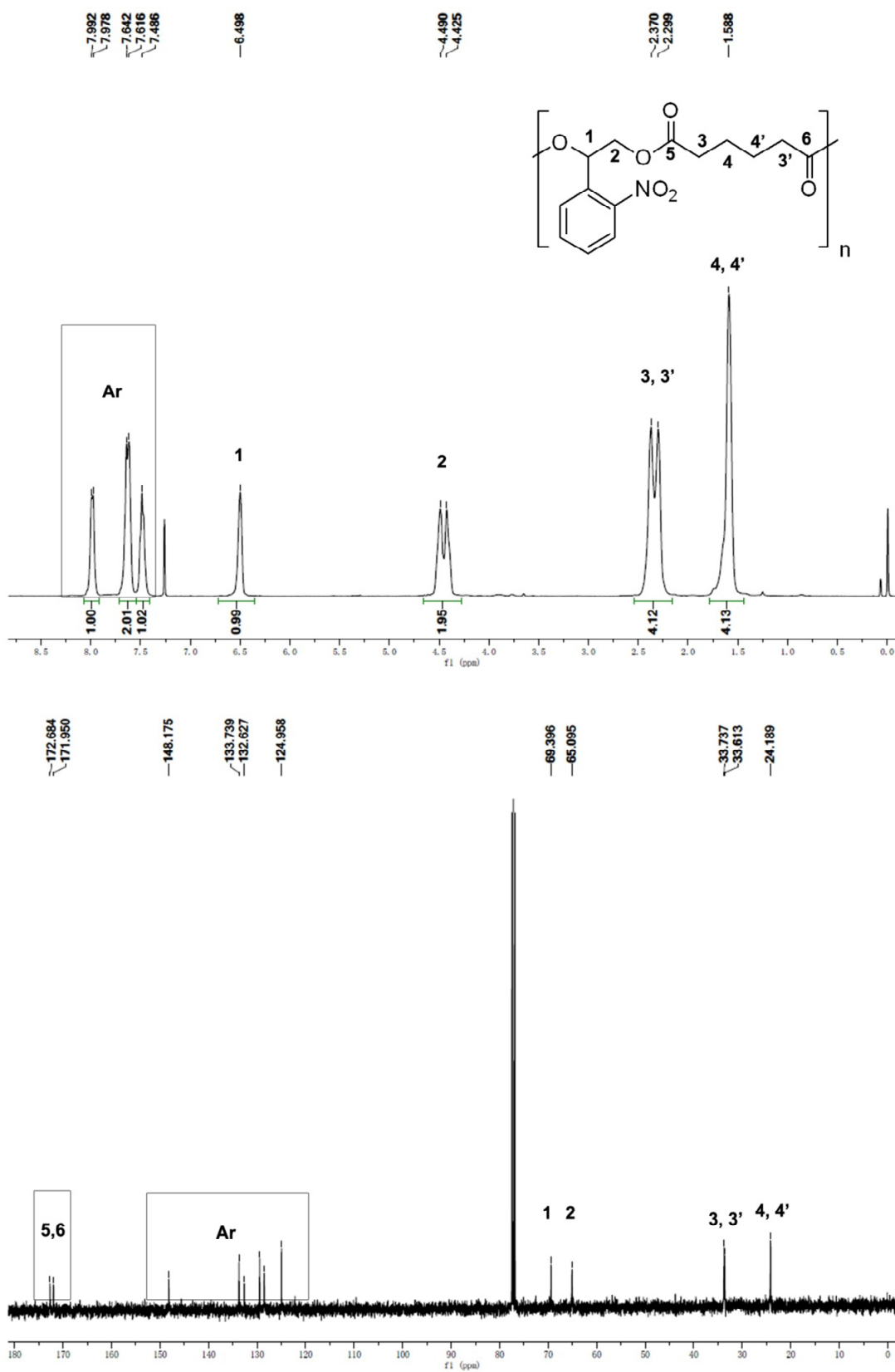


Figure S9. Cont.

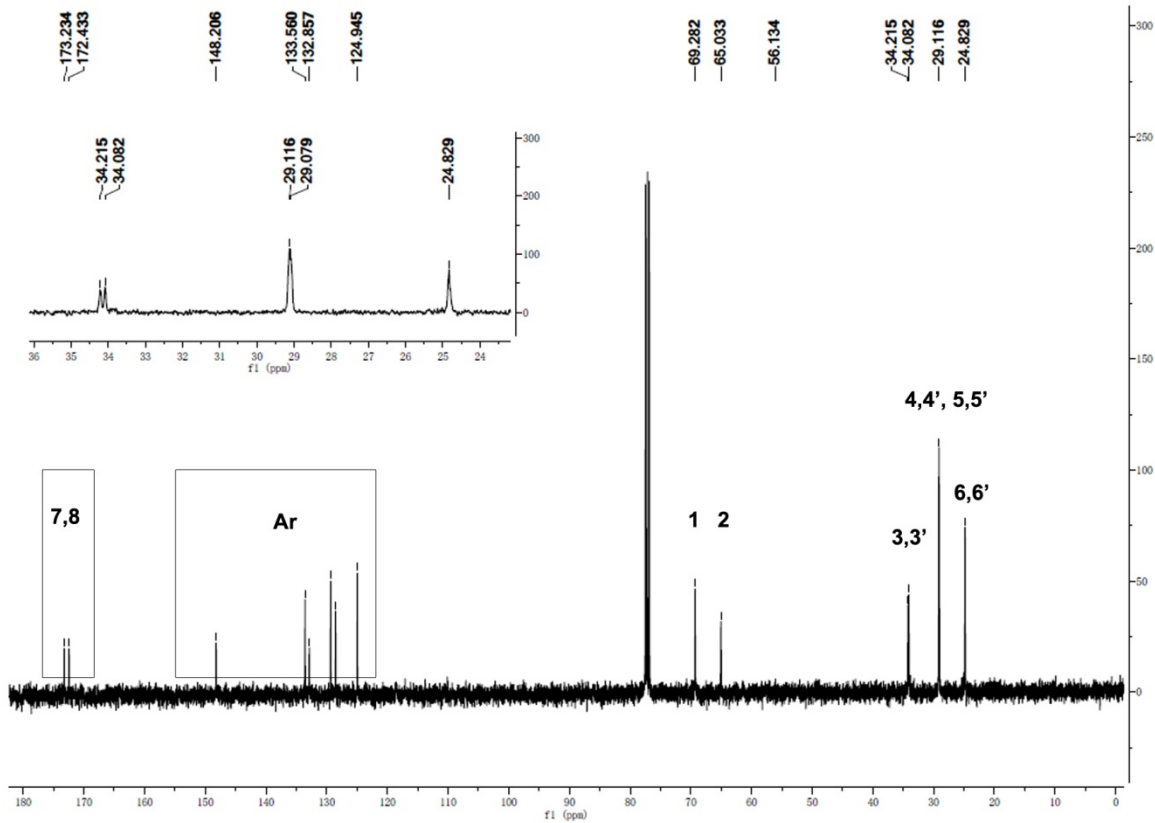
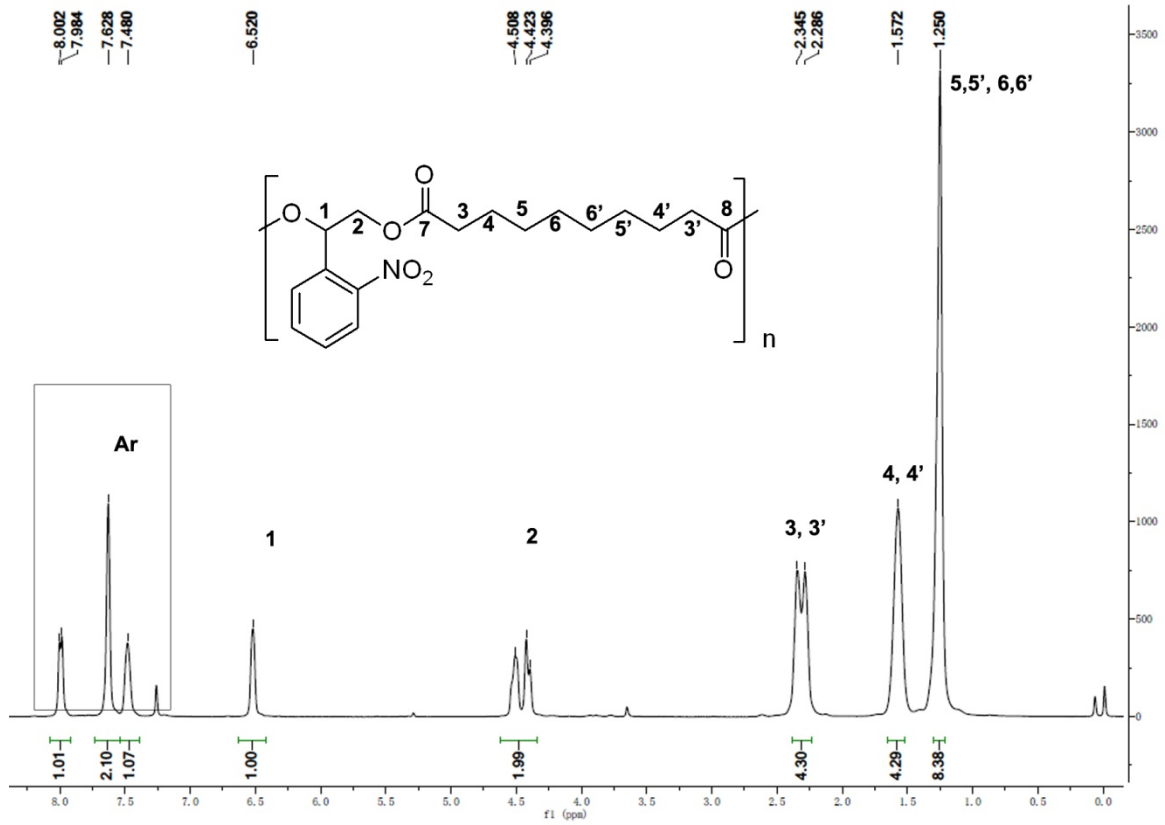


Figure S9. Cont.

