Electronic Supplementary Material (ESI) for Polymer Chemistry.

Supporting information

Nitrilotriacetic Acid-End-Functionalized Polycaprolactone as a Template for Polymer-Protein Nanocarrier

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Characterization of materials

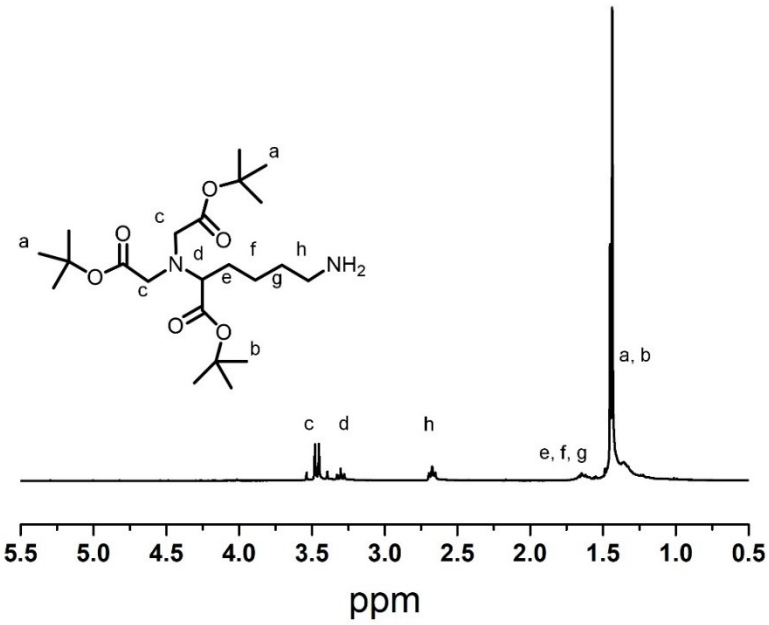

Figure S1. ^{1}H NMR spectra of NTA-amine.

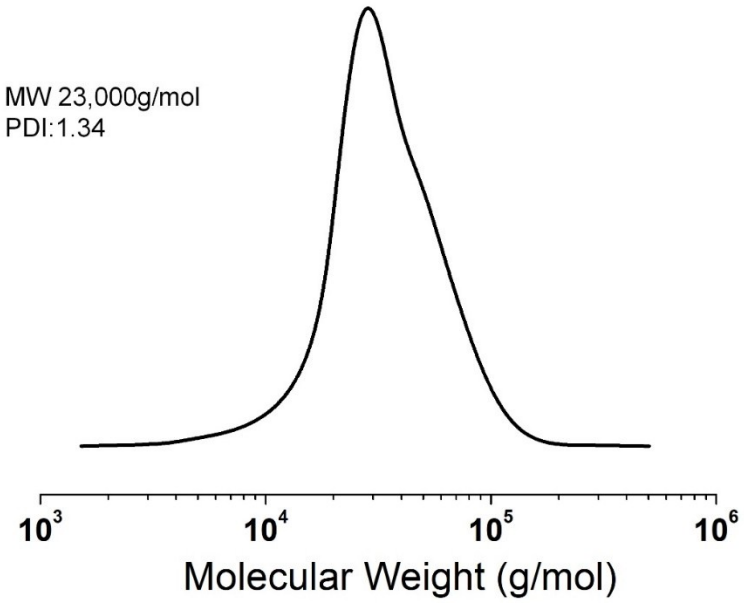

Figure S2. Size exclusion chromatogram of *p*NTA-PCL.

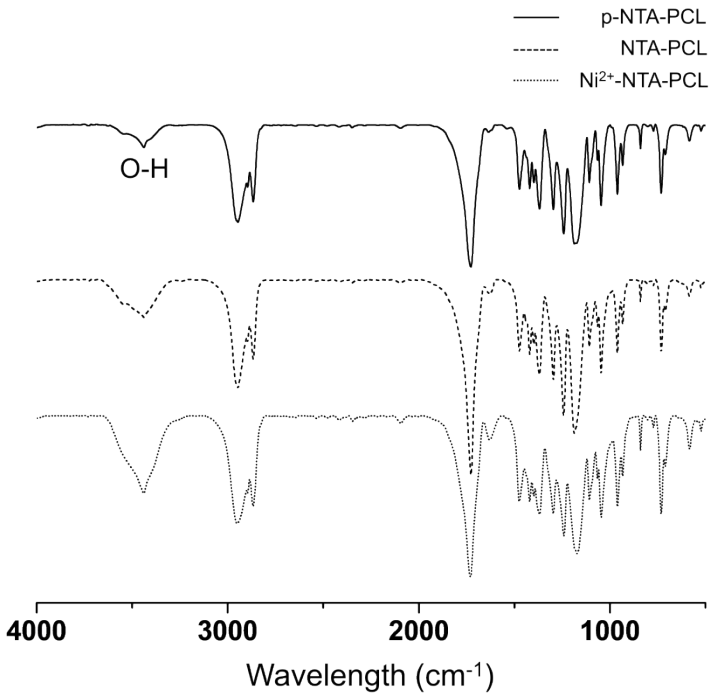

Figure S3. IR spectra of polymers in each step of synthesis.

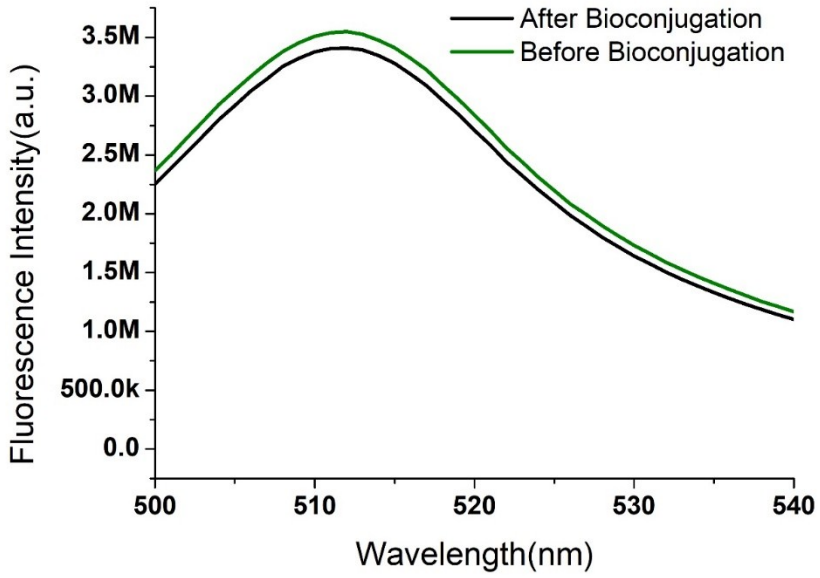

Figure S4. Fluorescence of GFP after bioconjugation showed the fluorescent property of GFP was hardly affected by conjugation.

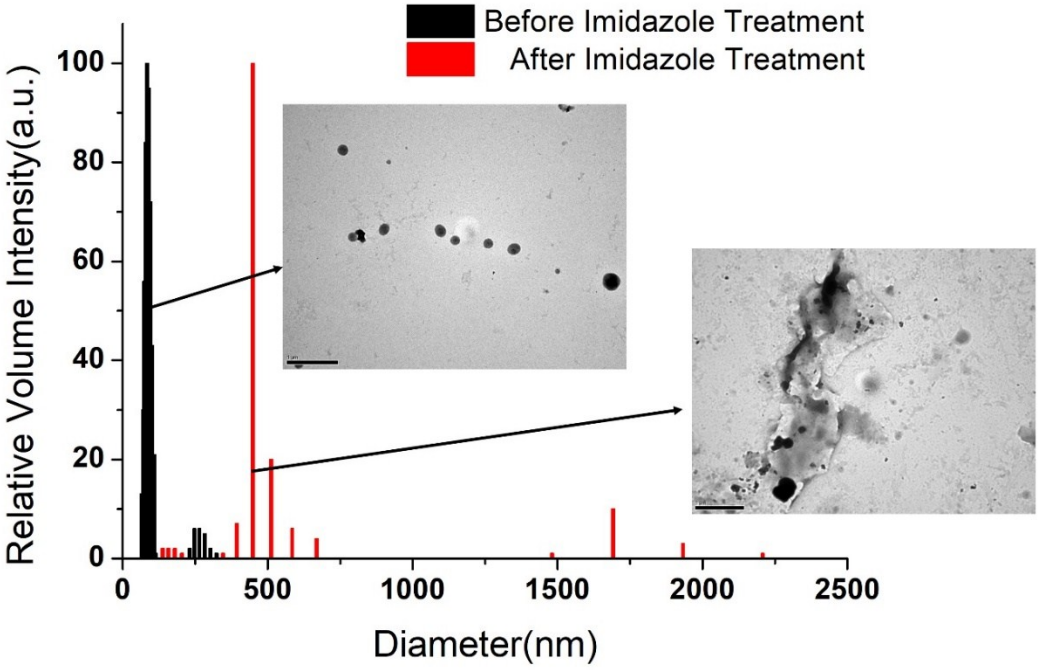

Figure S5. Size distribution of GFP/PCL nano-carriers before and after Imidazole treatment. In inset TEM images of GFP/PCL under corresponding imidazole conditions are shown.

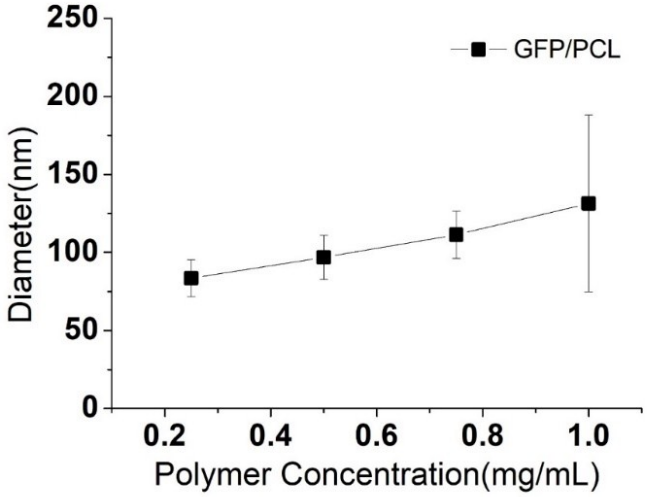

Figure S6. Size controllability of GFP/PCL nano-carriers with polymer concentration.

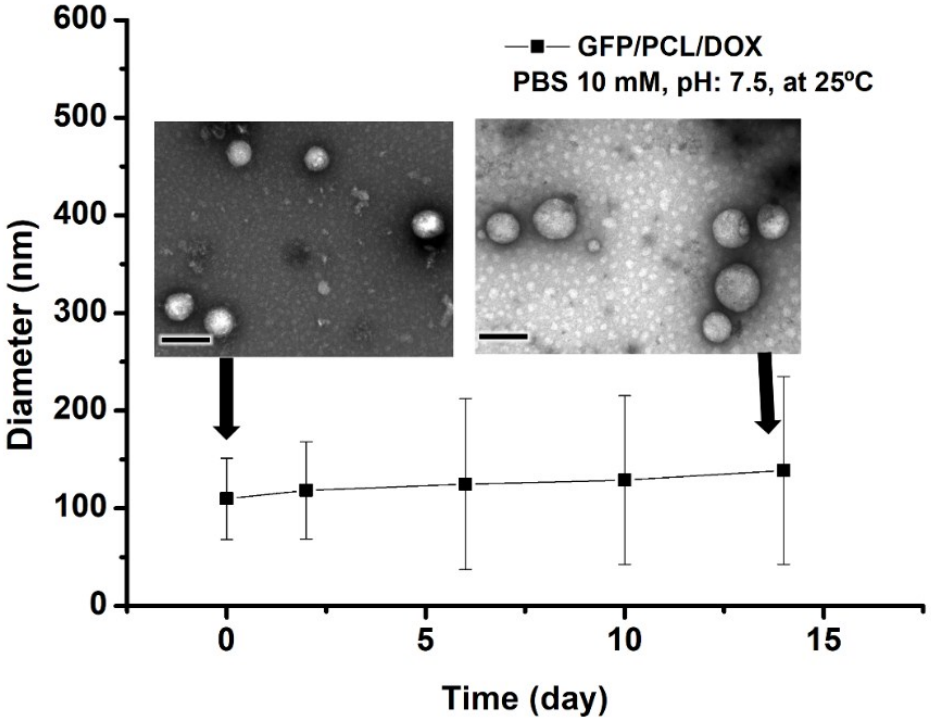

Figure S7. Stability study of GFP/PCL/DOX nanoparticles in PBS (pH 7.5, at 25 °C). Inset TEM image taken in the day 0 and day 14. Scale: 200 nm.

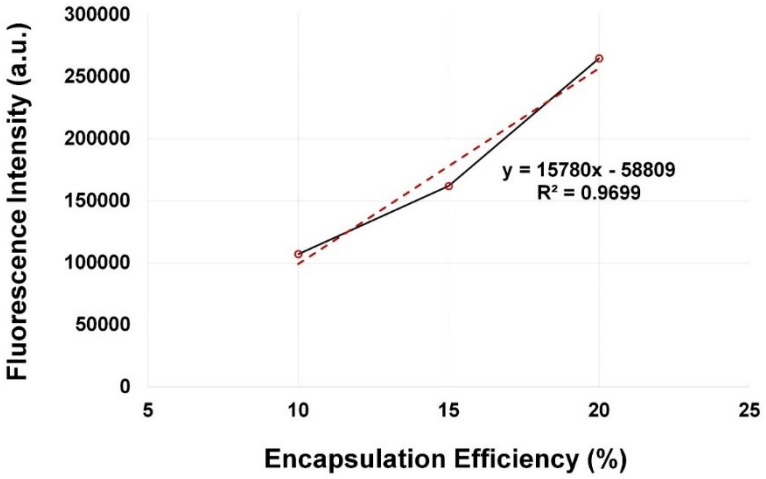

Figure S8. Standard curve plotted with emission intensity of DOX solution containing PCL and GFP. Excitation: 480nm, Emission: 590nm.

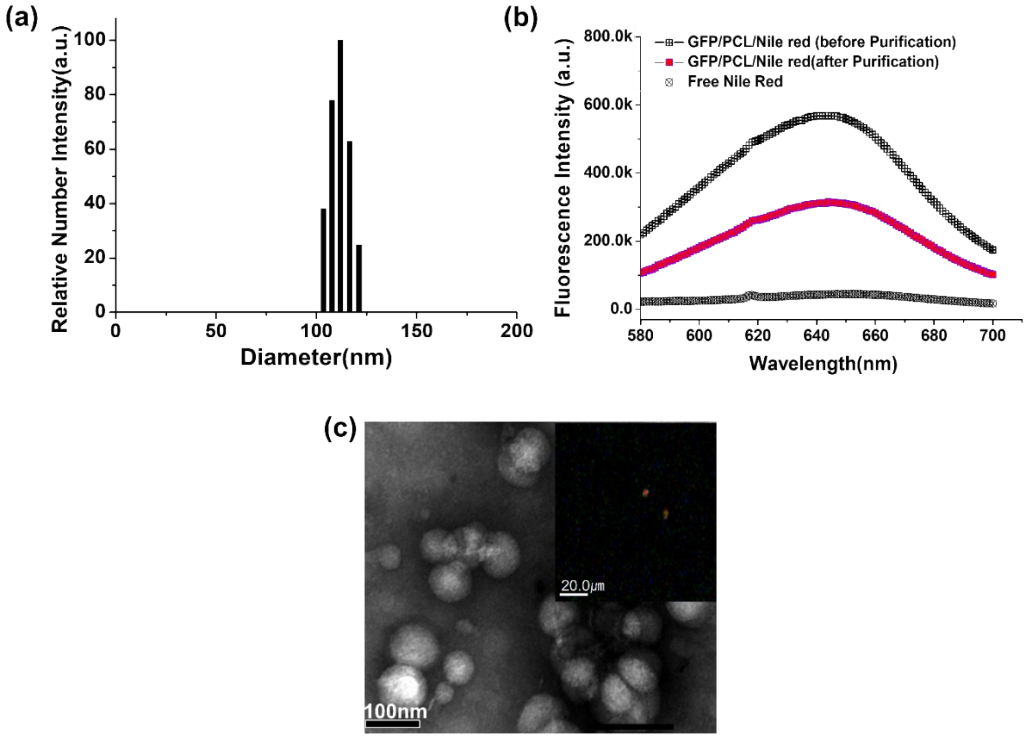

Figure S9. Characterization of GFP/PCL/Nile red nanoparticles (a) DLS, (b) PL

spectroscopy data of GFP/PCL/Nile red. From the graph, the encapsulation efficiency is calculated to be 44.8 %. (c) TEM data (inset: fluorescence micrograph of GFP/PCL/Nile red)

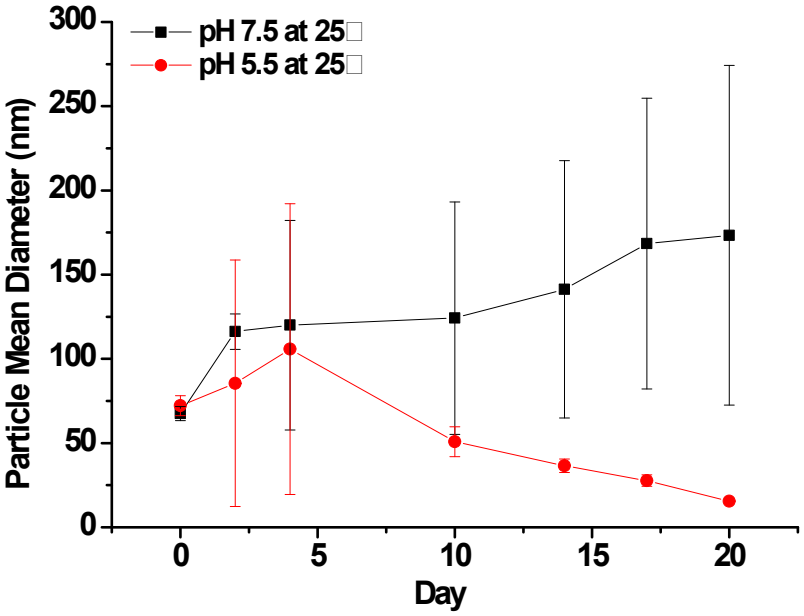

Figure S10. DLS study of GFP/PCL/DOX at different PH environment

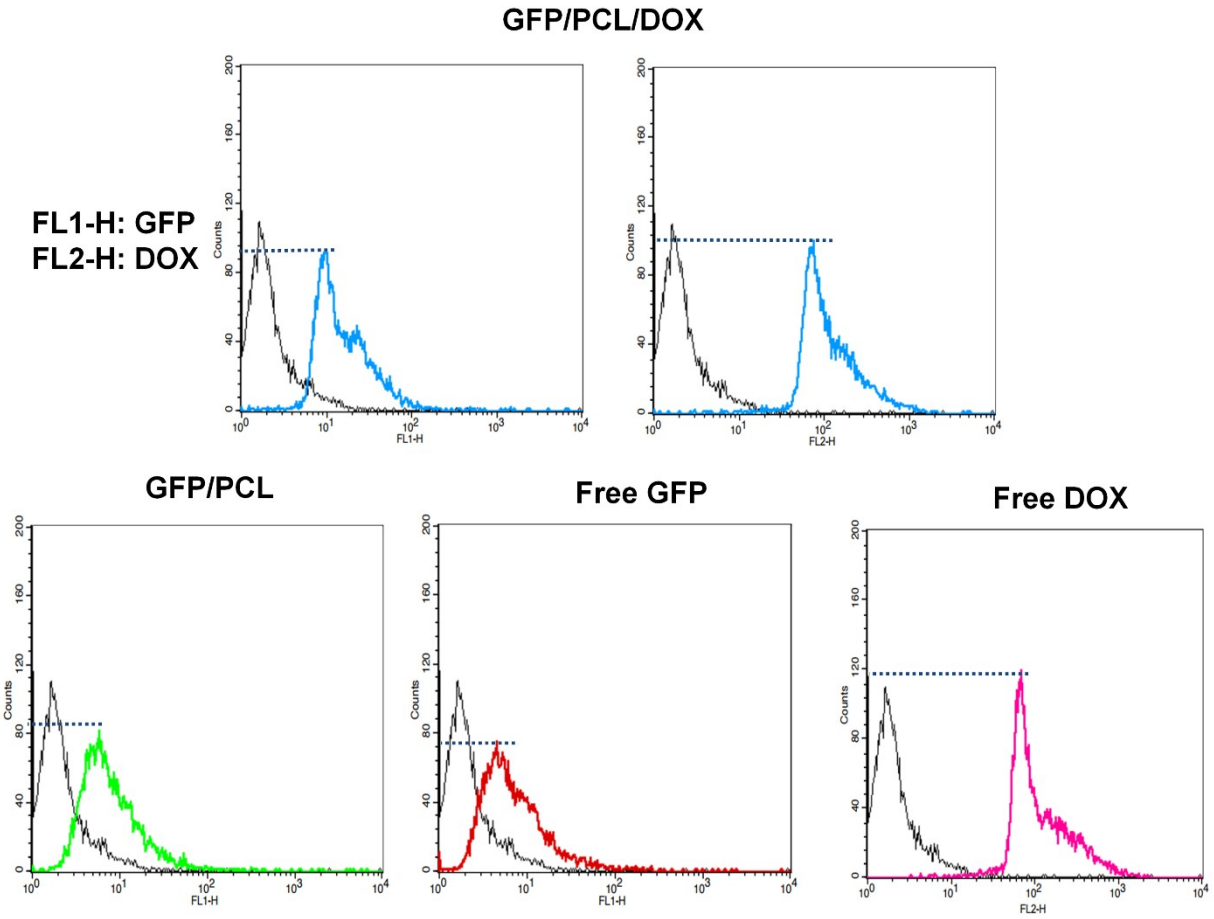

Figure S11. Fluorescent intensity of control (black), GFP/PCL/DOX (blue), GFP/PCL (green), free GFP (red) and free DOX (pink) in SH-SY5Y cells evaluated by FACS (Fluorescence Activated Cell Sorting) analysis.