

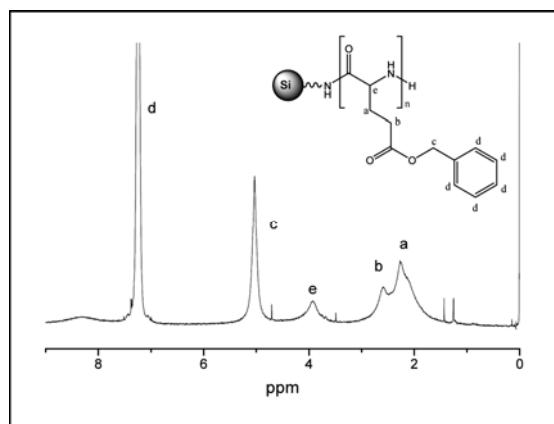
## Supporting Information

### Polypeptide Core-Shell Silica Nanoparticles with High Grafting Density by N-Carboxyanhydride (NCA) Ring Opening Polymerization as Responsive Materials and for Bioconjugation

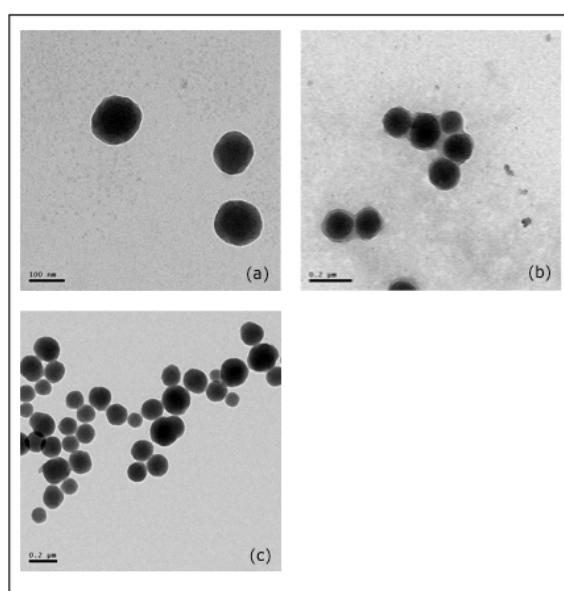
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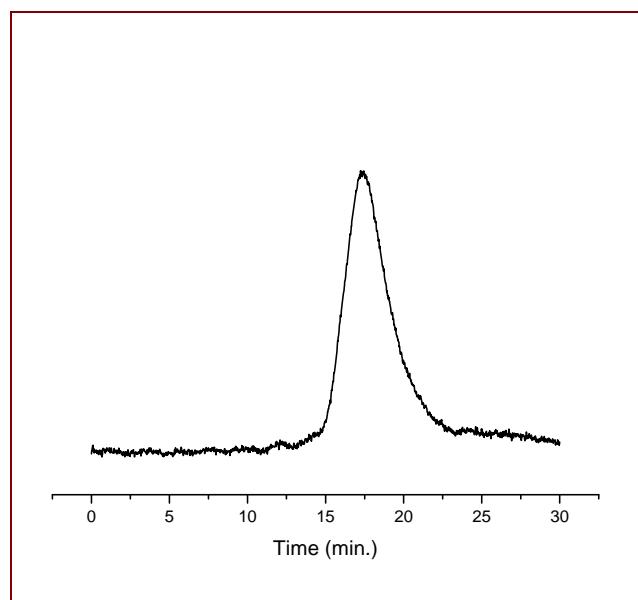
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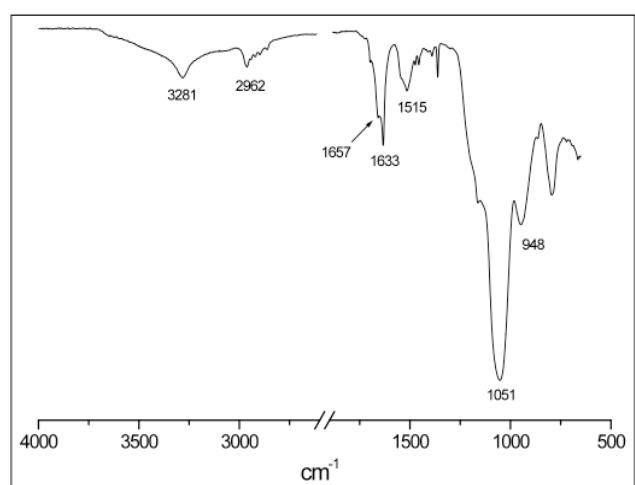
**Figure 1.** <sup>1</sup>H NMR spectrum of Si NP-g-PBLG in CDCl<sub>3</sub>.



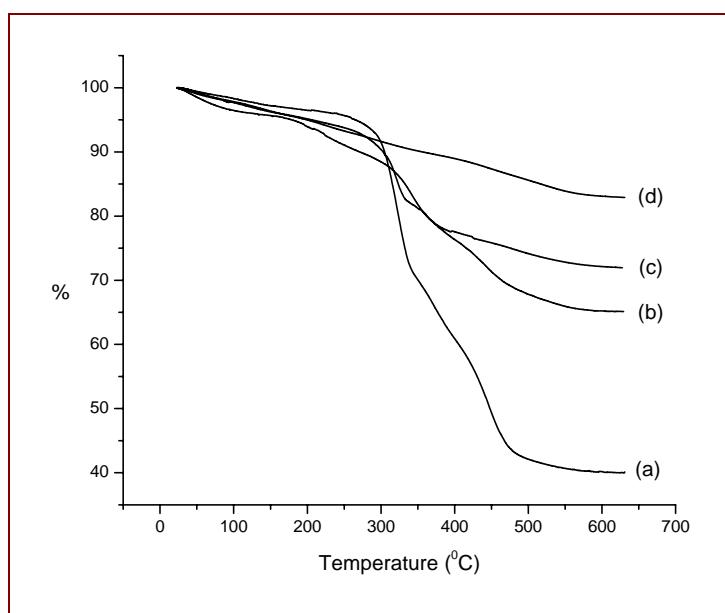
**Figure 2:** TEM images of (a) NP-OH (b) NP-g-PLG (NP-g-PBLG deprotected with HBr/AcOH) (c) NP-NH<sub>2</sub> + free PBLG after washing with CHCl<sub>3</sub>.



**Figure 3:** GPC trace of PBLG degrafted from the silica nanoparticles by HF treatment ( $M_n$  18100 Da, PDI 1.4.).



**Figure 4:** ATR-IR spectrum of silica NP-*g*-PtBLC.



**Figure 5:** Thermogravimetric analysis (TGA) of (a) Si NP-*g*-PZLL before THF wash, (b) Si NP-*g*-PZLL after THF wash (c) Si NP-*g*-PLL (d) Si NP-NH<sub>2</sub>. Comparison of (a) and (b) allows to determine the amount of unbound polymer.