

## Supporting information

# Chemical and Colloidal Stability of Polymer-Coated NaYF<sub>4</sub>:Yb,Er Nanoparticles in Aqueous Media and Viability of Cells: The Effect of a Protective Coating

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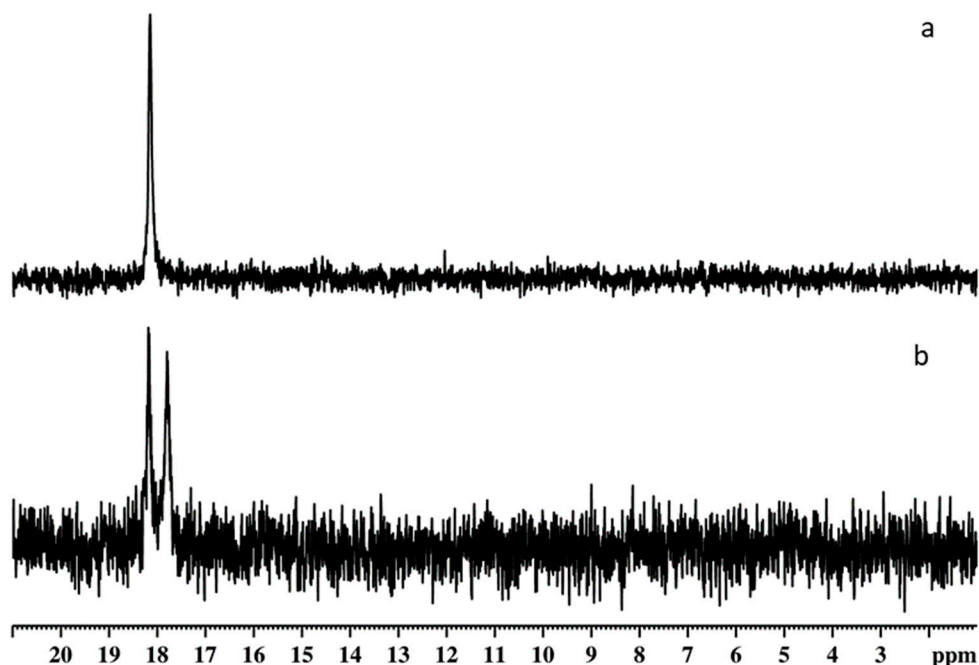
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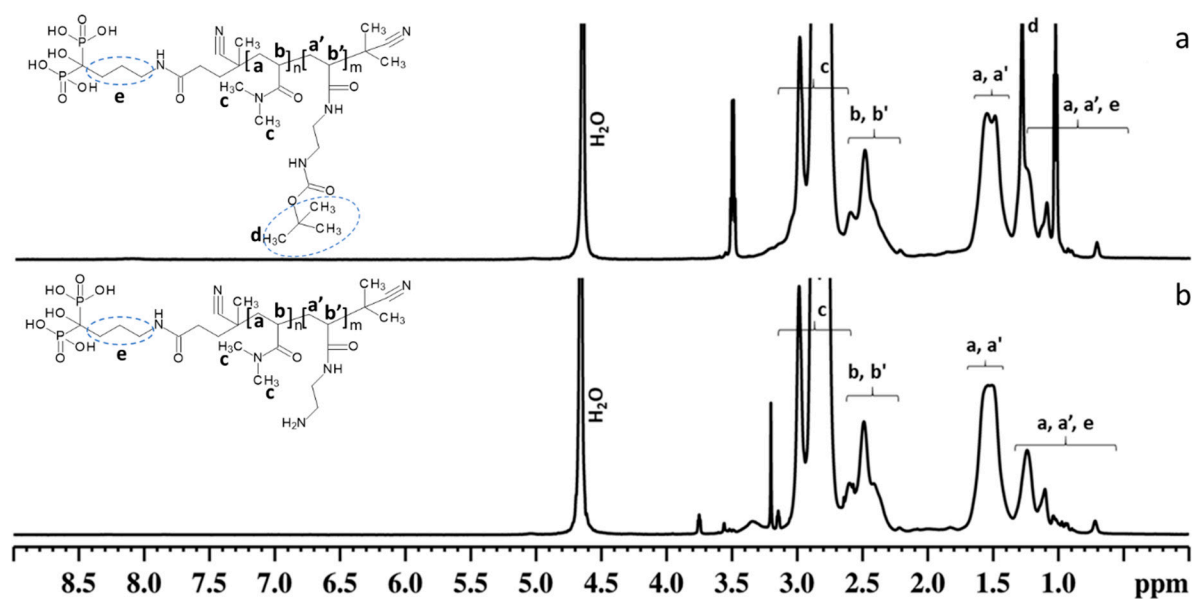
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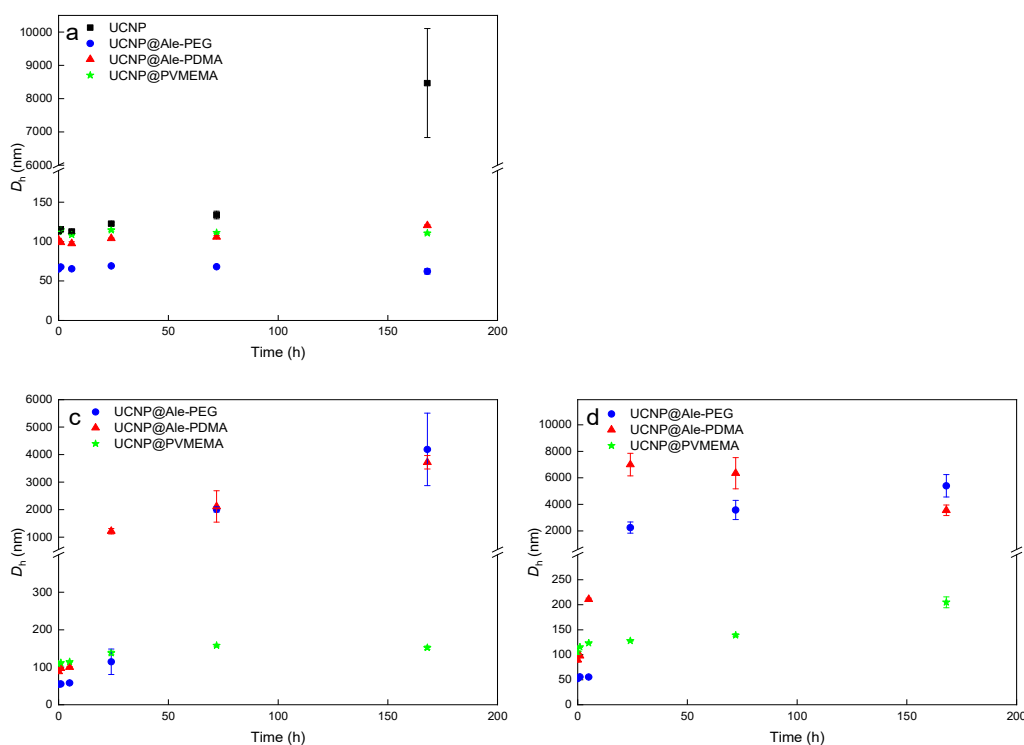
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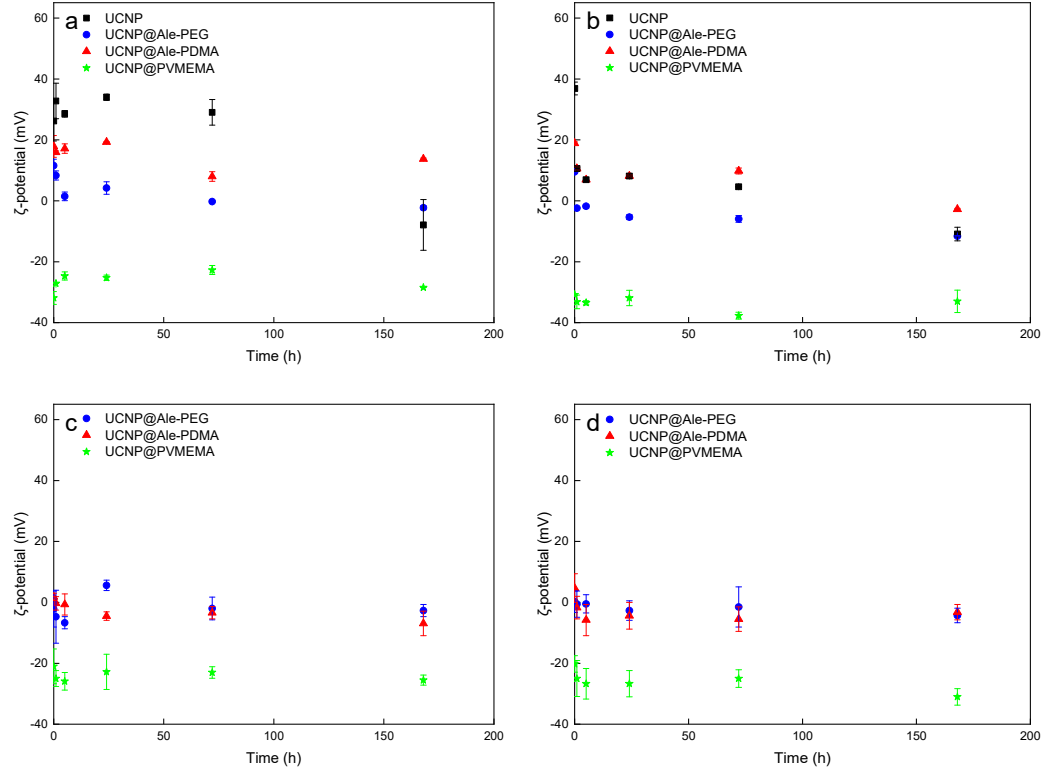
**Figure S1.** <sup>31</sup>P NMR spectra of (a) P(DMA-AEC-Boc)-Ale and (b) P(DMA-AEA)-Ale copolymers.



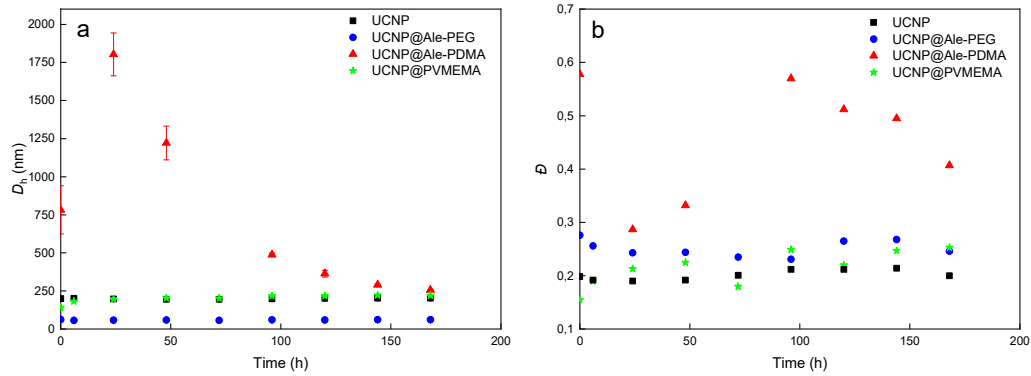
**Figure S2.**  $^1\text{H}$  NMR spectra of (a) P(DMA-AEC-Boc) and (b) P(DMA-AEA)-Ale copolymers.



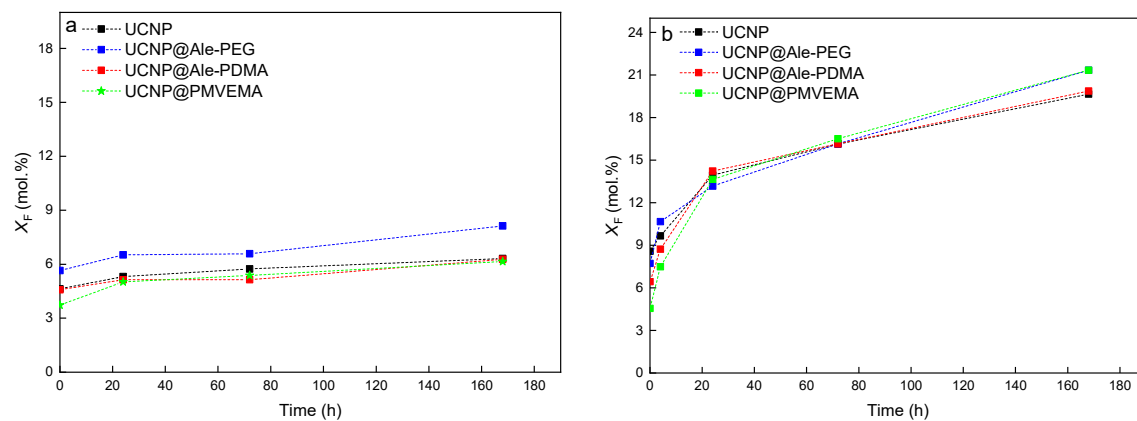
**Figure S3.** Time dependence of hydrodynamic diameter ( $D_h$ ) of differently coated UCNPs in (a, b) water and (c, d) PBS (pH 7.4) at (a, c) 25 and (b, d) 37 °C.



**Figure S4.** Time dependence of  $\zeta$ -potential of differently coated UCNPs in (a, b) water and (c, d) PBS (pH 7.4) at (a, c) 25 and (b, d) 37 °C.



**Figure S5.** Time dependence of (a) hydrodynamic diameter  $D_h$  and (b) dispersity  $D$  of differently coated UCNPs in Dulbecco's modified Eagle's medium at 37 °C.



**Figure S6.** Time dependence of  $F^-$  molar fraction ( $X_F$ ) of differently coated UCNPs in (a) Dulbecco's modified Eagle's medium and (b) artificial lysosomal fluid at 37 °C.