Supporting Information

One Approach for Two: Toward the Creation of Near-infrared Imaging Agents and Rapid Screening of Lanthanide(III) Ions Sensitizers Using Polystyrene Nanobeads

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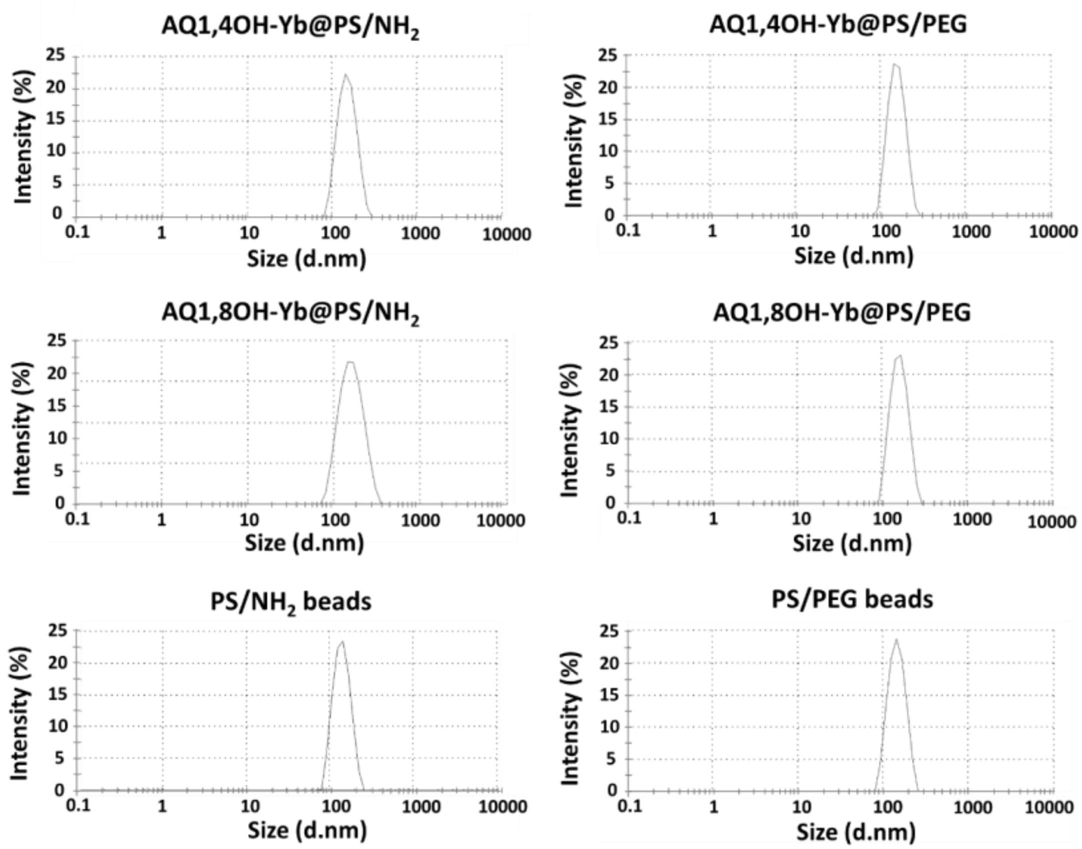


Figure S 1. Results of dynamic light scattering experiments performed on aqueous suspensions of AQ1,nOH-Yb@PS/NH_2 and AQ1,nOH-Yb@PS/PEG (n=4, 8) beads as well as for the control PS/NH_2 and PS/PEG beads that do not contain the chromophores and the Ln^{3+}.

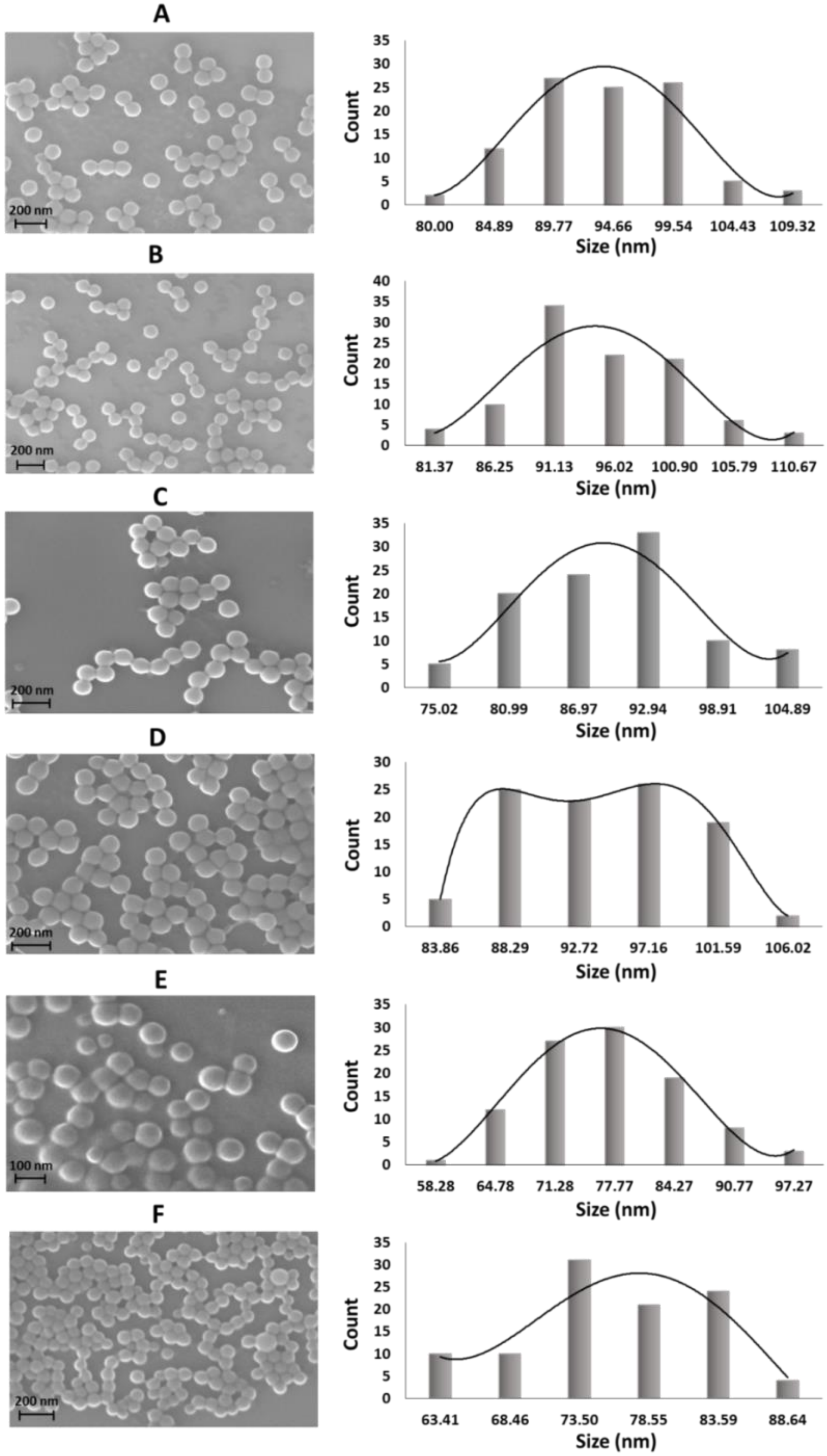


Figure S 2. Scanning electron microscopy images and results of corresponding size distribution analyses for: (A) AQ1,4OH-Yb@PS/NH_2, (B) AQ1,4OH-Yb@PS/PEG, (C) AQ1,8OH-Yb@PS/NH_2, (D) AQ1,8OH-Yb@PS/PEG, (E) PS/NH_2 beads and (F) PS/PEG beads.

Table S 1. Yb^{3+} content (mg/L) determined by ICP-OES analysis in supernatants after the encapsulation step and after a long-term (>6 months) storage.

NPs	Initial	Supernatant	
		After encapsulation	After long-term storage
AQ1,4OH-Yb@PS/PEG	123.57	6.53	3.15
AQ1,8OH-Yb@PS/PEG	123.57	6.14	9.40

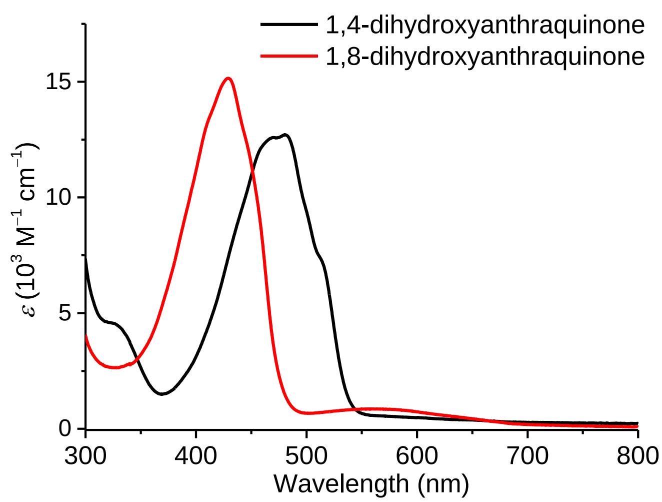


Figure S 3. Absorption spectra of 1,4- and 1,8-dihydroxyanthraquinones (DMF, 100 µM, room temperature).

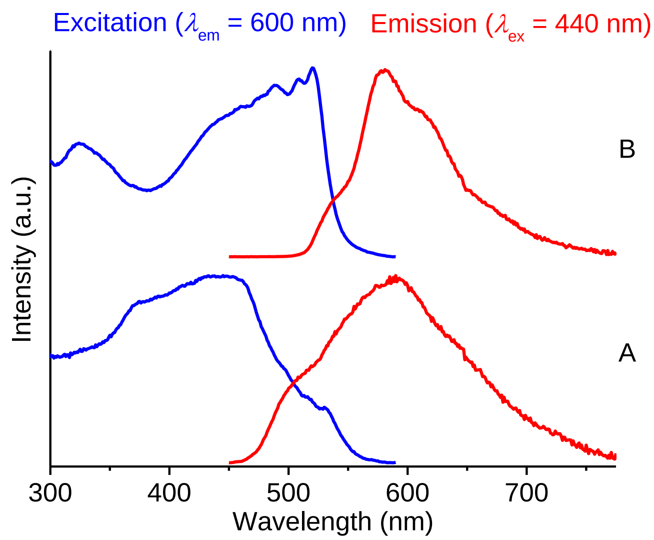


Figure S 4. Corrected and normalized (left) excitation spectra upon monitoring the emission signal at 600 nm (blue traces) and (right) emission spectra upon excitation at 440 nm (red traces) of (A) 1,8- and (B) 1,4-dihydroxyanthraquinones in solution (DMF, 100 µM, room temperature).

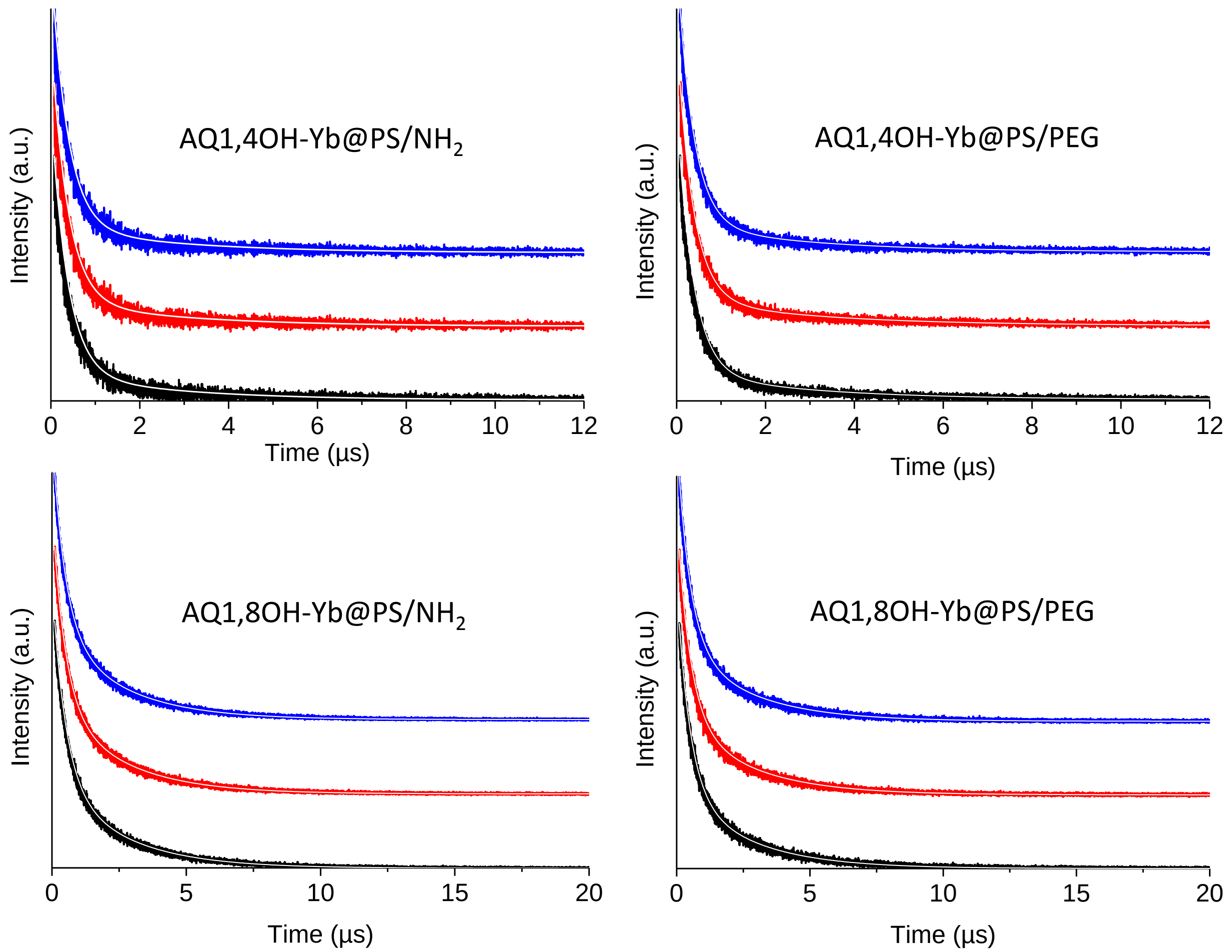


Figure S 5. Experimental luminescence decay curves of 10 mg/mL aqueous suspensions of AQ1,nOH-Yb@PS/NH_2(PEG) (n = 4, 8) under excitation at 355 nm and monitoring the Yb^{3+} emission signal at 980 nm at room temperature (colored traces) and their corresponding fittings (white traces).

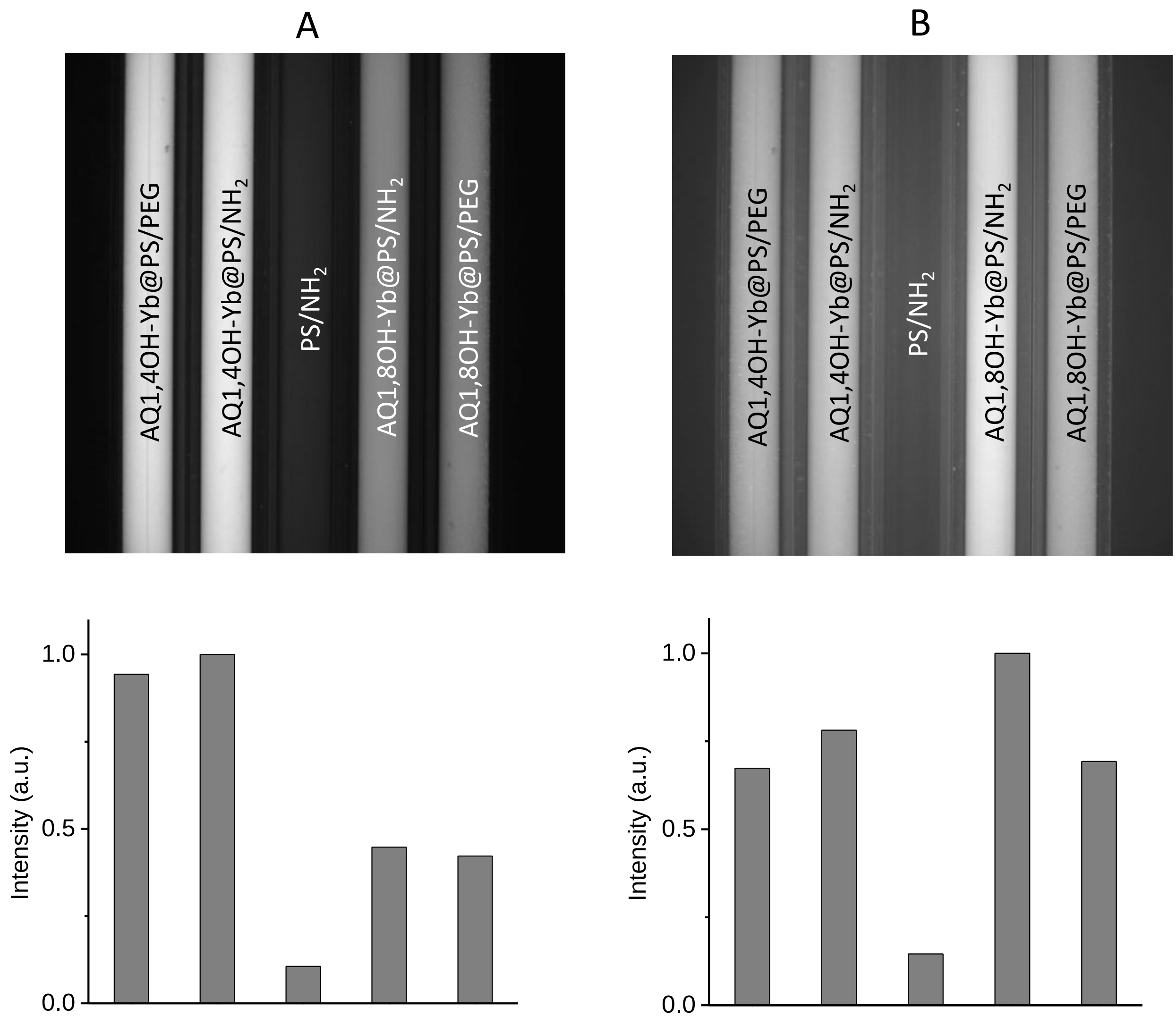


Figure S 6. (Top) Images of capillaries filled with 10 mg/mL aqueous suspensions of AQ1,nOH-Yb@PS/NH_2(PEG) (n = 4, 8) or PS/NH_2 for control under excitation with light selected by a 447 nm band pass 60 nm filter. Emission was monitored (A) in the visible range using 593 band bass 40 nm filter (exposure time: 50 ms) or (B) in the near-infrared range using a 785 nm long pass filter (exposure time: 15 s). (Bottom) Corresponding normalized emission intensity distribution.

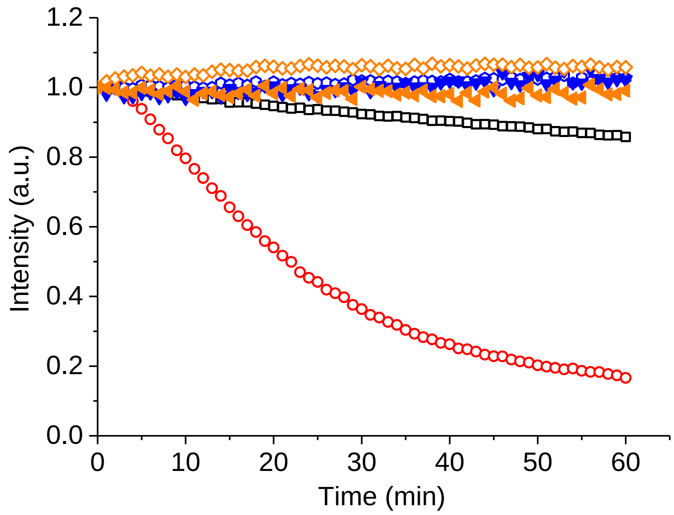


Figure S 7. Changes in emission intensities for solutions of AQ1,nOH (100 µM, DMF) and suspensions of AQ1,nOH-Yb@PS/NH_2 (10 mg/mL, H_2O) upon continuous illumination at 480 or 430 nm while emission was monitored at 580 or 590 nm, respectively, for n = 4 and n = 8. Black: AQ1,4OH; red: AQ1,8OH; blue: AQ1,4OH-Yb@PS/NH_2; orange: AQ1,8OH-Yb@PS/NH_2. For beads, the Yb^{3+} emission signal at 980 nm was also monitored (filled triangles).

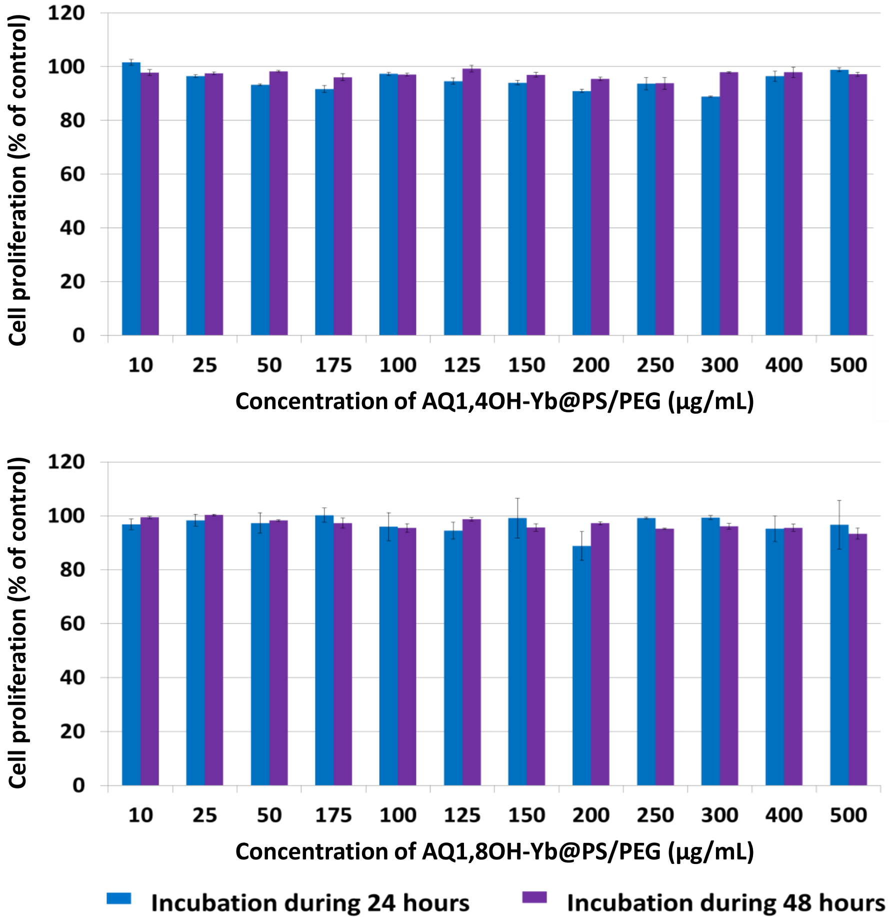
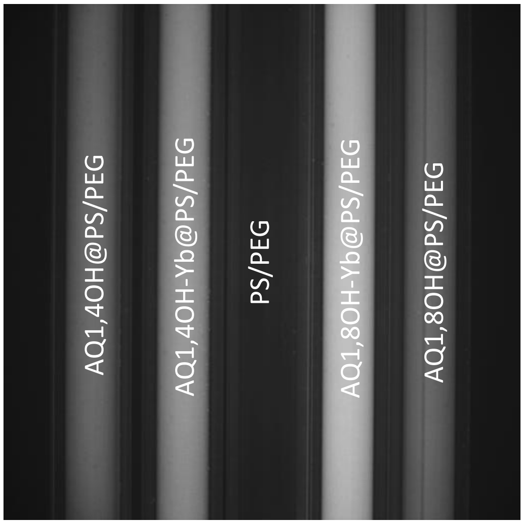


Figure S 8. Results of the cytotoxicity tests performed with the alamarBlue assay on HeLa cells incubated with different concentrations of AQ1,nOH-Yb@PS/PEG (n=4, 8) during 24 and 48 h.



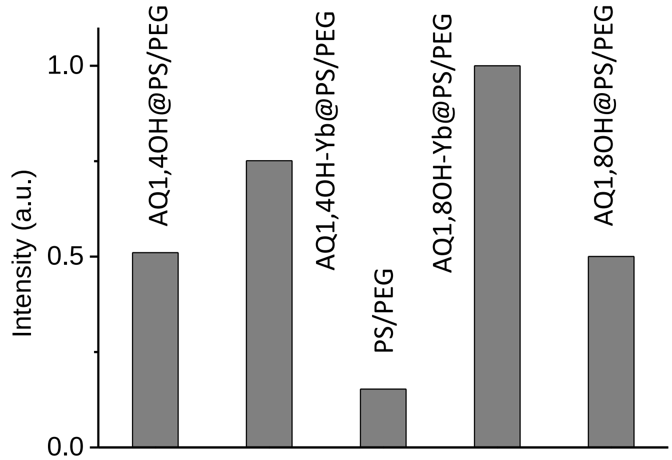


Figure S 9. (Left) Images of capillaries filled with 10 mg/mL aqueous suspensions of AQ1,nOH@PS/PEG and AQ1,nOH-Yb@PS/PEG (n = 4, 8) or PS/PEG under excitation with light selected by a 447 nm band pass 60 nm filter, emission was monitored in the near-infrared range using a 785 nm long pass filter (exposure time: 15 s). (Right) Corresponding normalized emission intensity distribution.