

## Electronic Supplementary Information (ESI)

# Synthesis of Multifunctional Lipid-Polymer Conjugates: Application to the Elaboration of Bright Far-Red Fluorescent Lipid Probes

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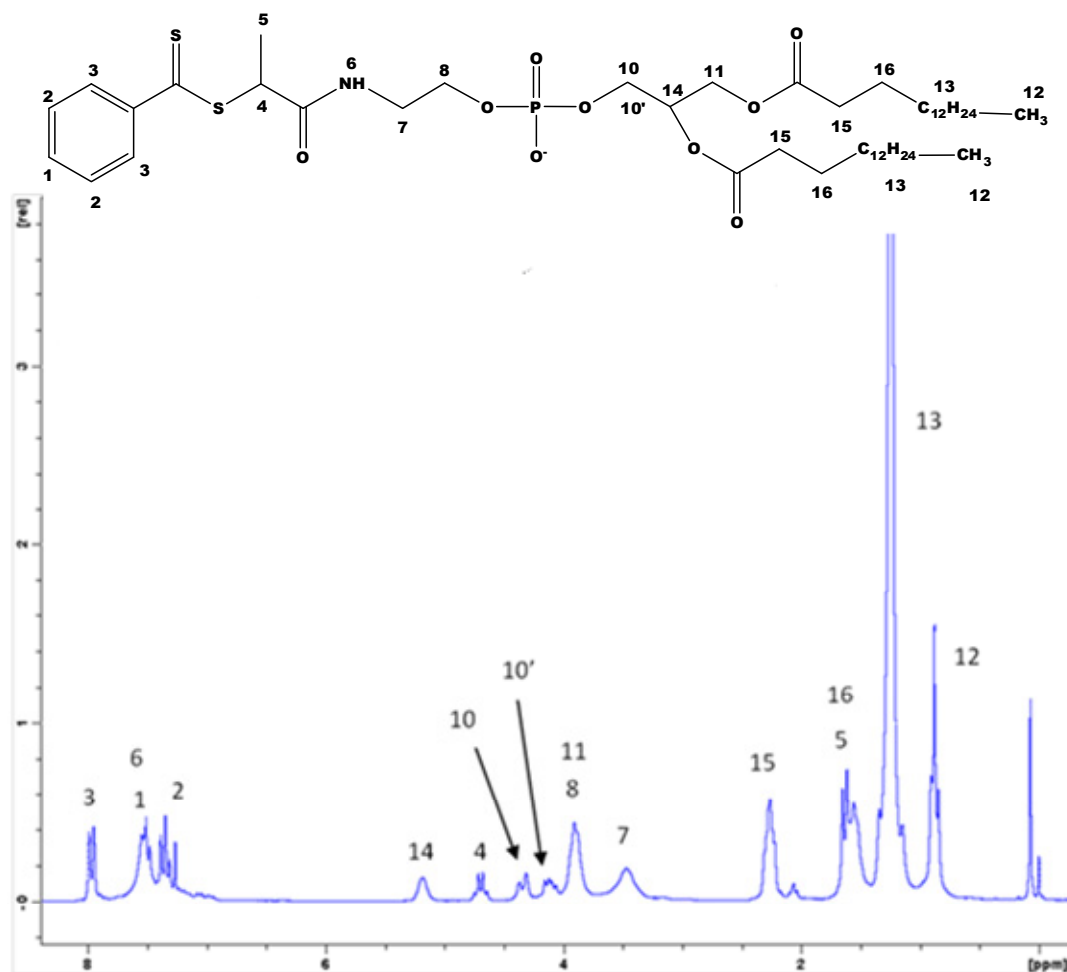


Fig. S1  $^1\text{H}$  NMR (200 MHz) spectrum of Lipid-CTA **B** in  $\text{CDCl}_3$ .

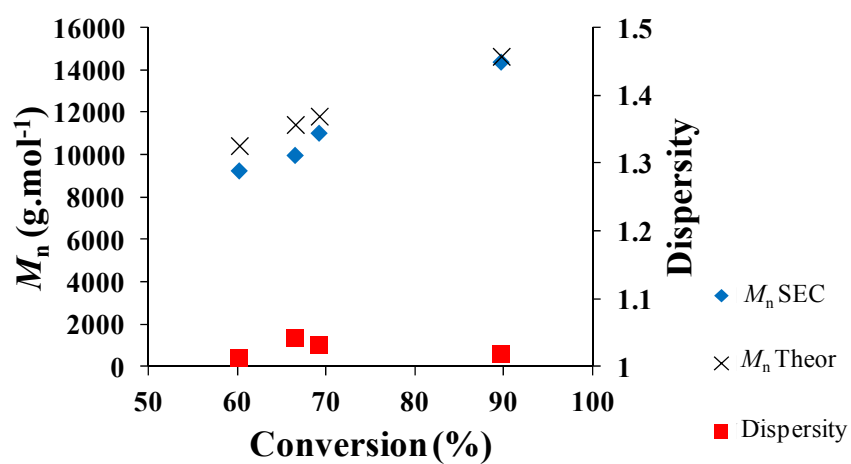
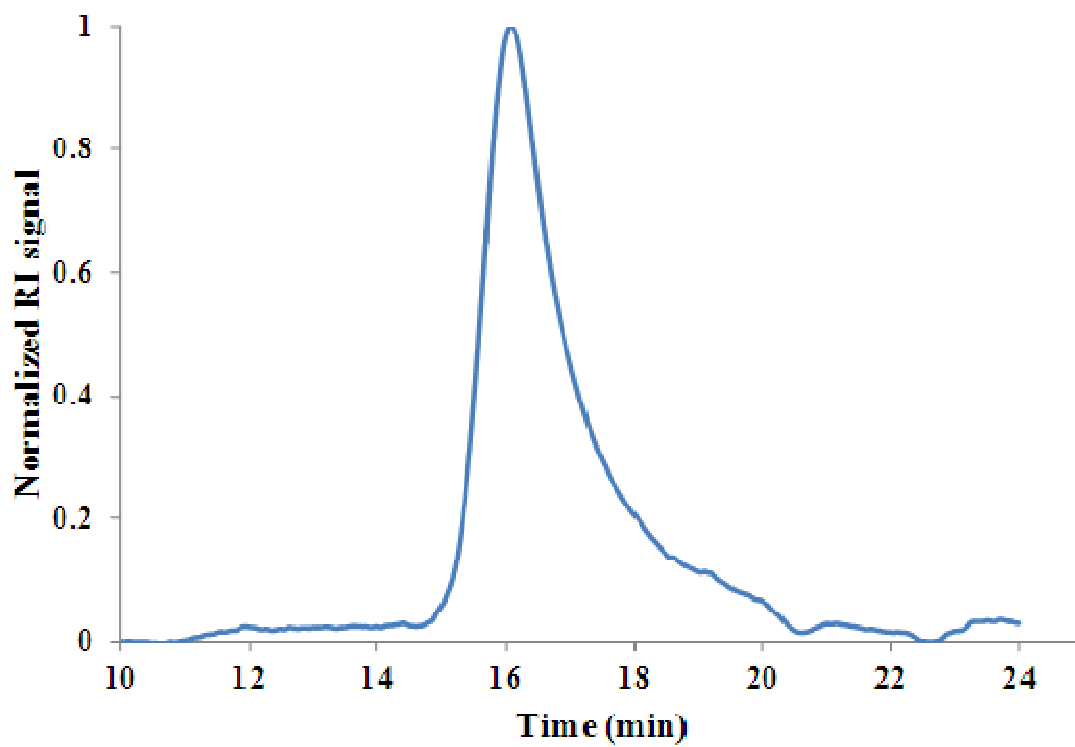
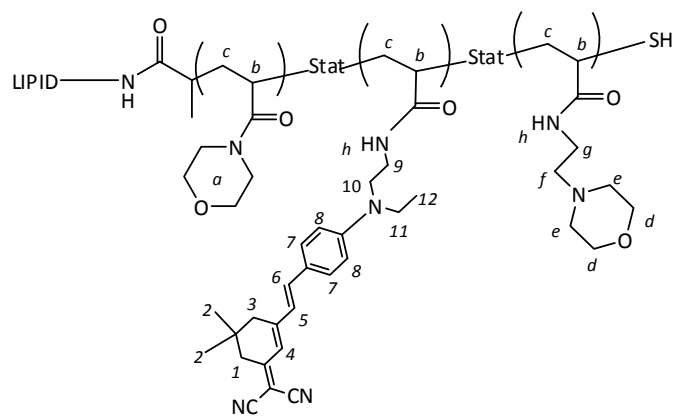
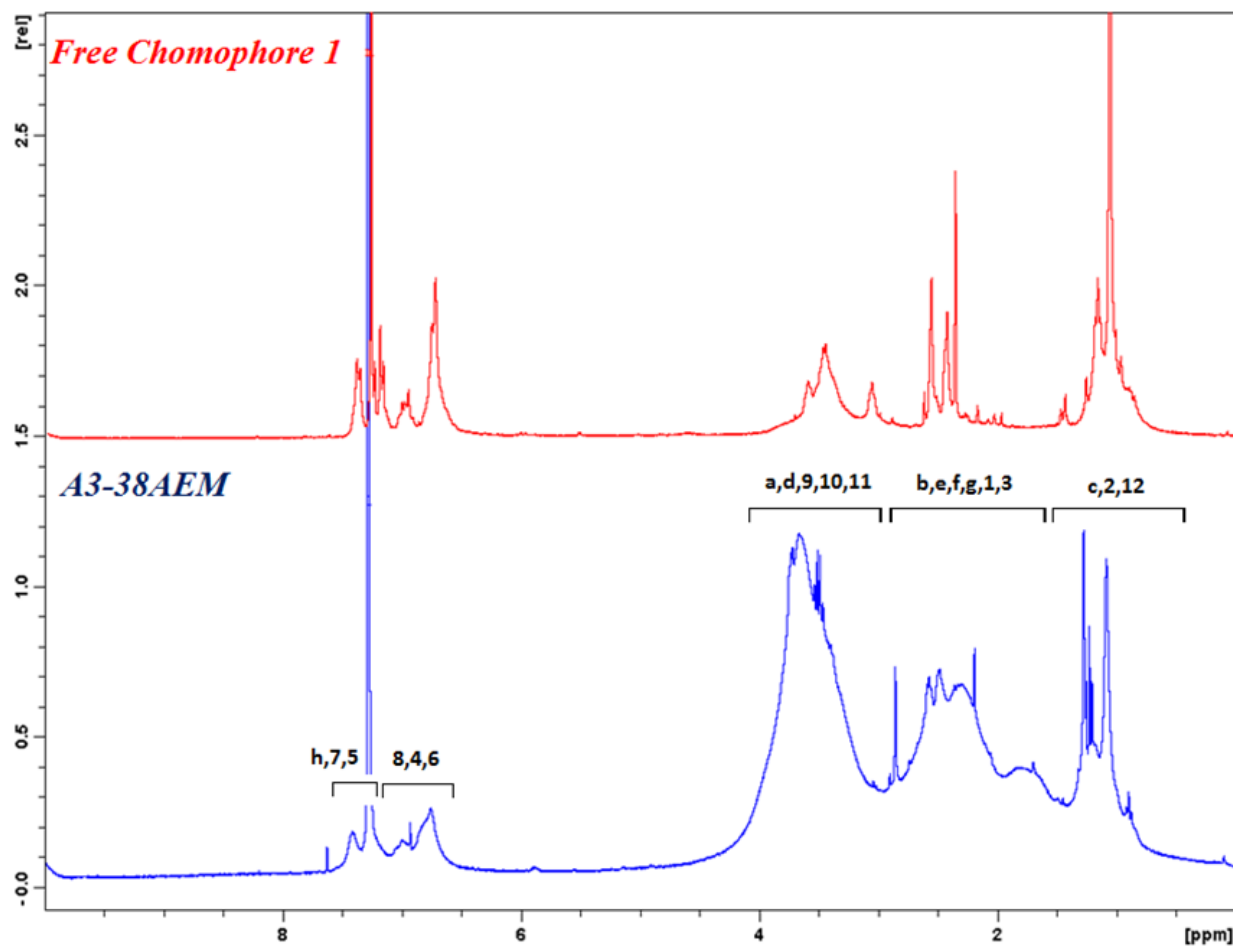


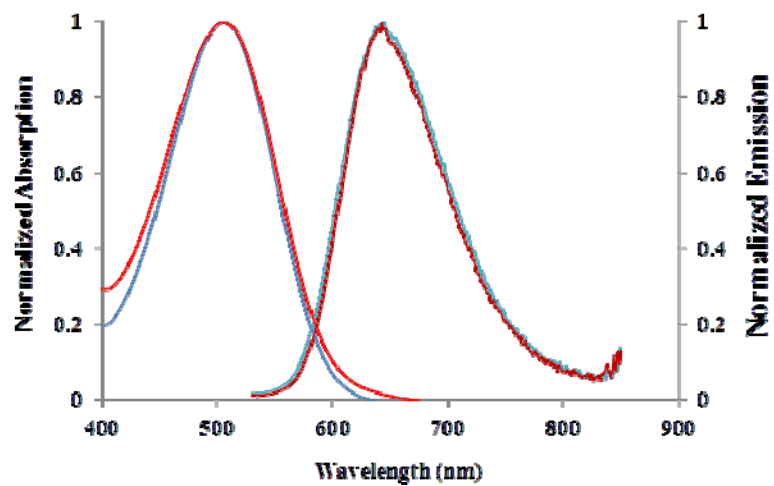
Fig. S2 Evolution of molar masses and dispersities versus global conversion for NAM/NAS copolymerization using A Lipid-CTA.



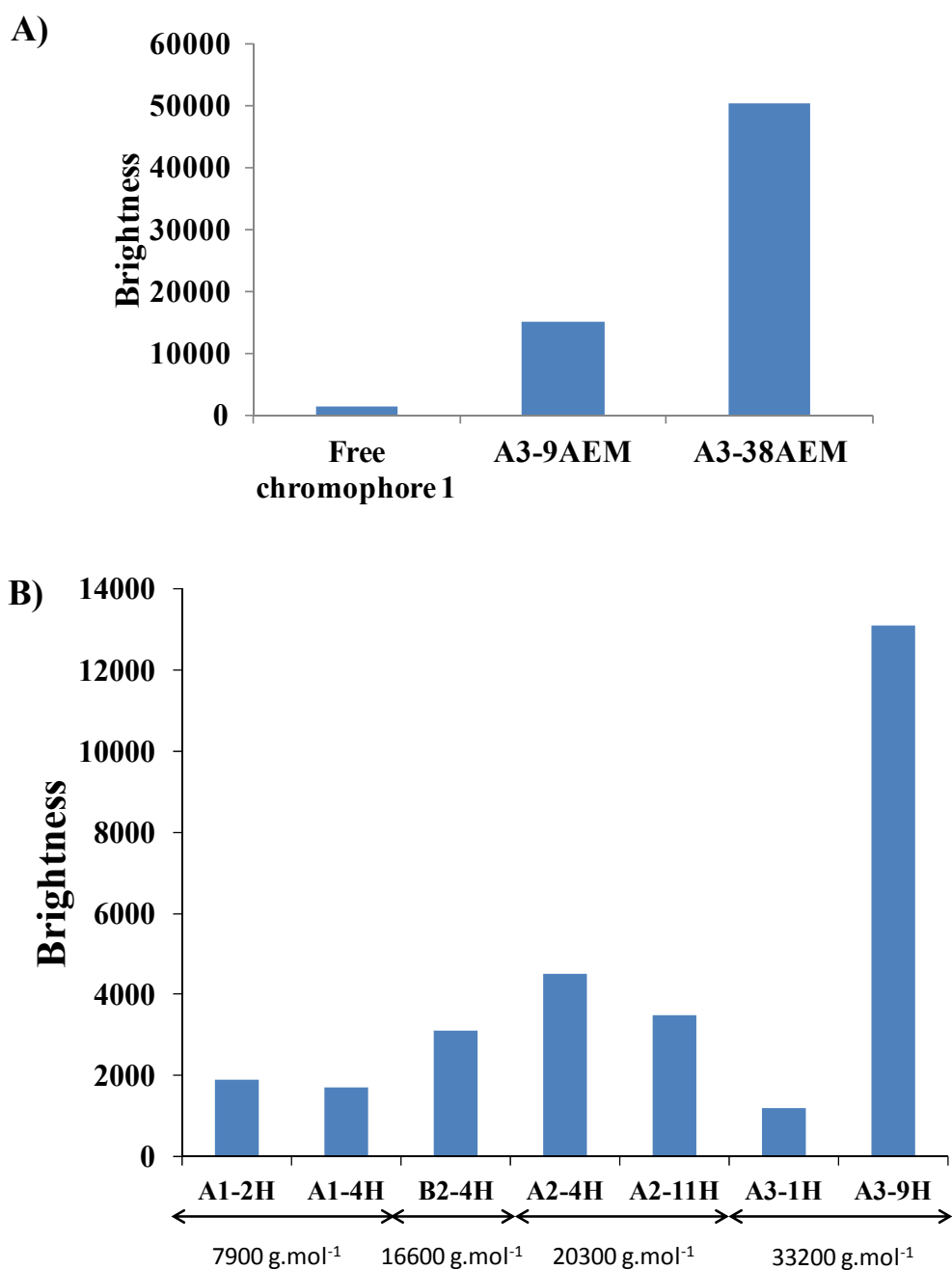
**Fig. S3** Typical SEC chromatogram for **A1** LEP synthesized by the RAFT polymerization process.



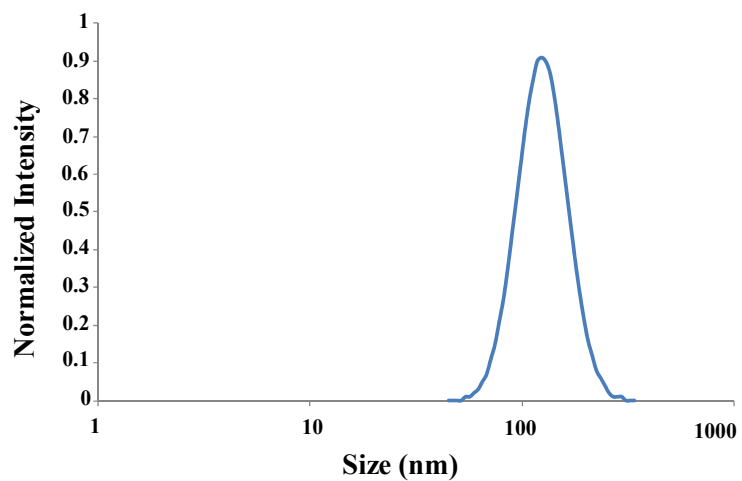
**Fig. S4**  $^1\text{H}$  NMR (200 MHz) spectrum of **A3-38AEM** fluorescent LEP in  $\text{CDCl}_3$ .



**Fig. S5** Absorption and emission spectra of A3-9AEM fluorescent LEP (blue) and free chromophore **1** (red) in chloroform.



**Fig. S6** Brightness of the free chromophore 1, **A3-9AEM** and **A3-38AEM** capped conjugates determined in  $\text{CHCl}_3$  (A) and of the hydrolyzed conjugates in water related to the corresponding Lipid-P(NAM-co-NAS) backbone MW (B).



**Fig. S7** Size distribution measured by DLS for a LUV sample (containing EggPC/PS (80/20 wt%) and 0.1 mol% of **A3-9H** fluorescent LEP) that was obtained by extrusion through a 100 nm pore-size polycarbonate membrane.