Electronic Supporting Information

Controlled Release of Hydrophilic Guest Molecules from Photoresponsive Nucleolipid Vesicles

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1. Synthesis route of LA

Scheme S1. The synthesis route of LA. a) 5'-DMT protected nucleobase phosphoramidite, 5-ethylthiotetrazole, THF, room temperature, 6 h; b) H_2O_2 in THF, room temperature, 1 h; c) Cl_3CCOOH in CH_2Cl_2 (10%), room temperature, 0.5 h; d) $\text{NH}_3 \cdot \text{H}_2\text{O}$ in sealed tube, 80 °C, 12 h.

2. ^1H -NMR spectra of PLA and LA

Compound 2

Compound 3

Compound 4 (LA)

Compound 5 (PLA)

¹H
PROTON MeOD I

3. MALDI-TOF MS Spectra of PLA and LA

Compound 2

Compound 3

Compound 4 (LA)

Compound 5 (PLA)

4. The Irradiation Geometry

Figure S1. The irradiation geometry of UV light.

5. DLS profiles of unloaded PLA and LA vesicles in aqueous solution

Figure S2. DLS profiles of unloaded PLA and LA vesicles in aqueous solution. Note that their preparation was similar to the procedure in the text except for no dye loading and gel filtration.

6. Release Profiles of CF-loaded LA Vesicles

Figure S3. CF release profiles from CF-loaded LA vesicles under different conditions.

7. The Confocal Movie of a CF-loaded PLA Vesicle

PLA-1.avi

Movie S1. The confocal movie of a CF-loaded PLA vesicle