Electronic Supplementary Material (ESI) for Journal of Materials Chemistry B.

Supporting Information

Binding of an amphiphilic phthalocyanine to pre-formed liposomes confers light-triggered cargo release

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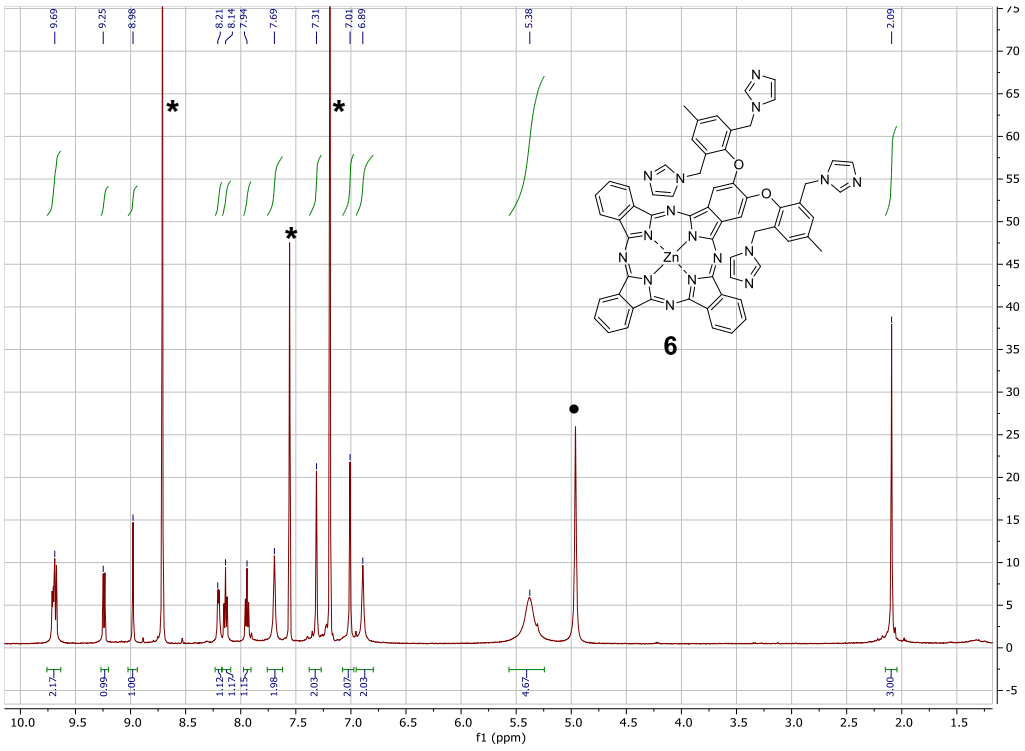

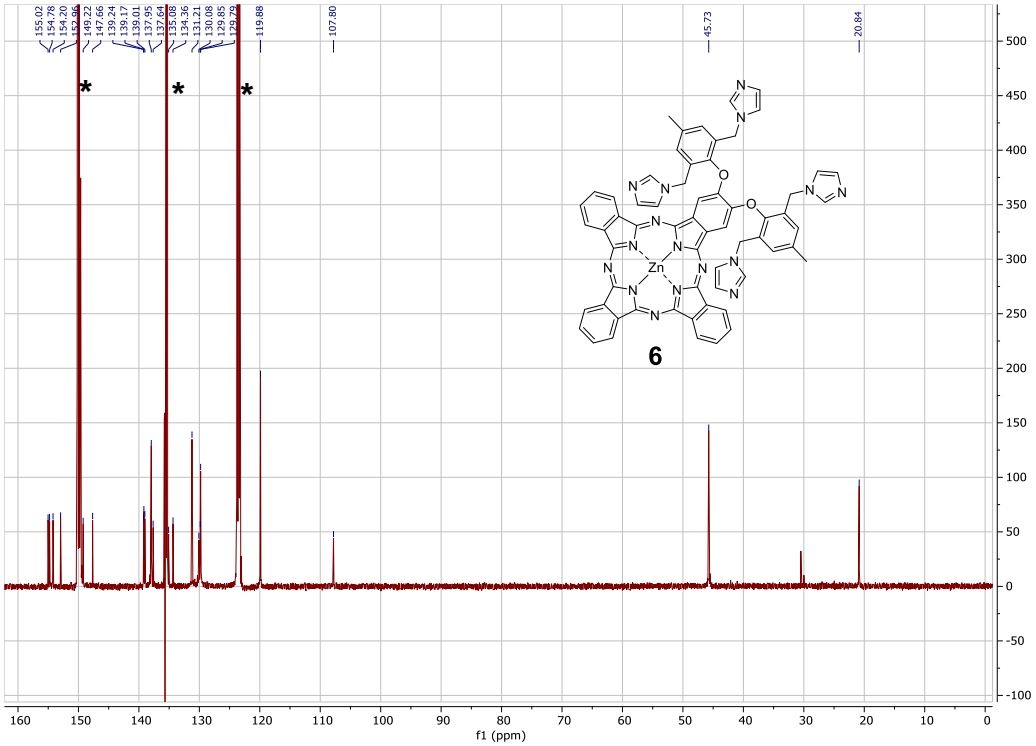

Figure S1. ^{1}H NMR (500 MHz, pyridine-d_5) (A) and ^{13}C NMR (125 MHz, pyridine-d_5) (B) spectra of compound **6**. Asterisks indicate residual signals of solvent, dot indicates water.

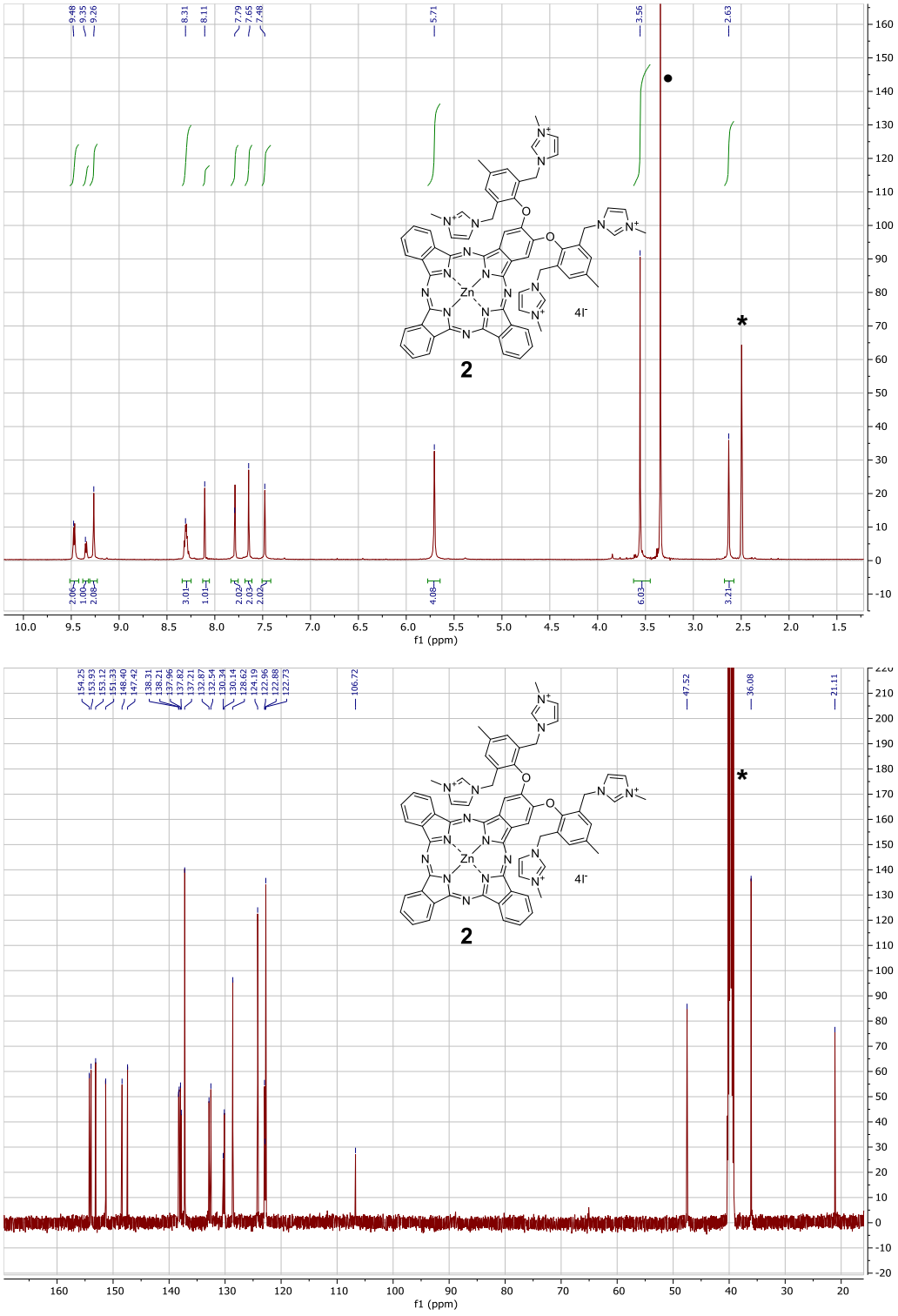

Figure S2. ^{1}H NMR (500 MHz, DMSO-d_6) (A) and ^{13}C NMR (125 MHz, DMSO-d_6) (B) spectra of compound **2**. Asterisks indicate residual signals of solvent, dot indicates water.

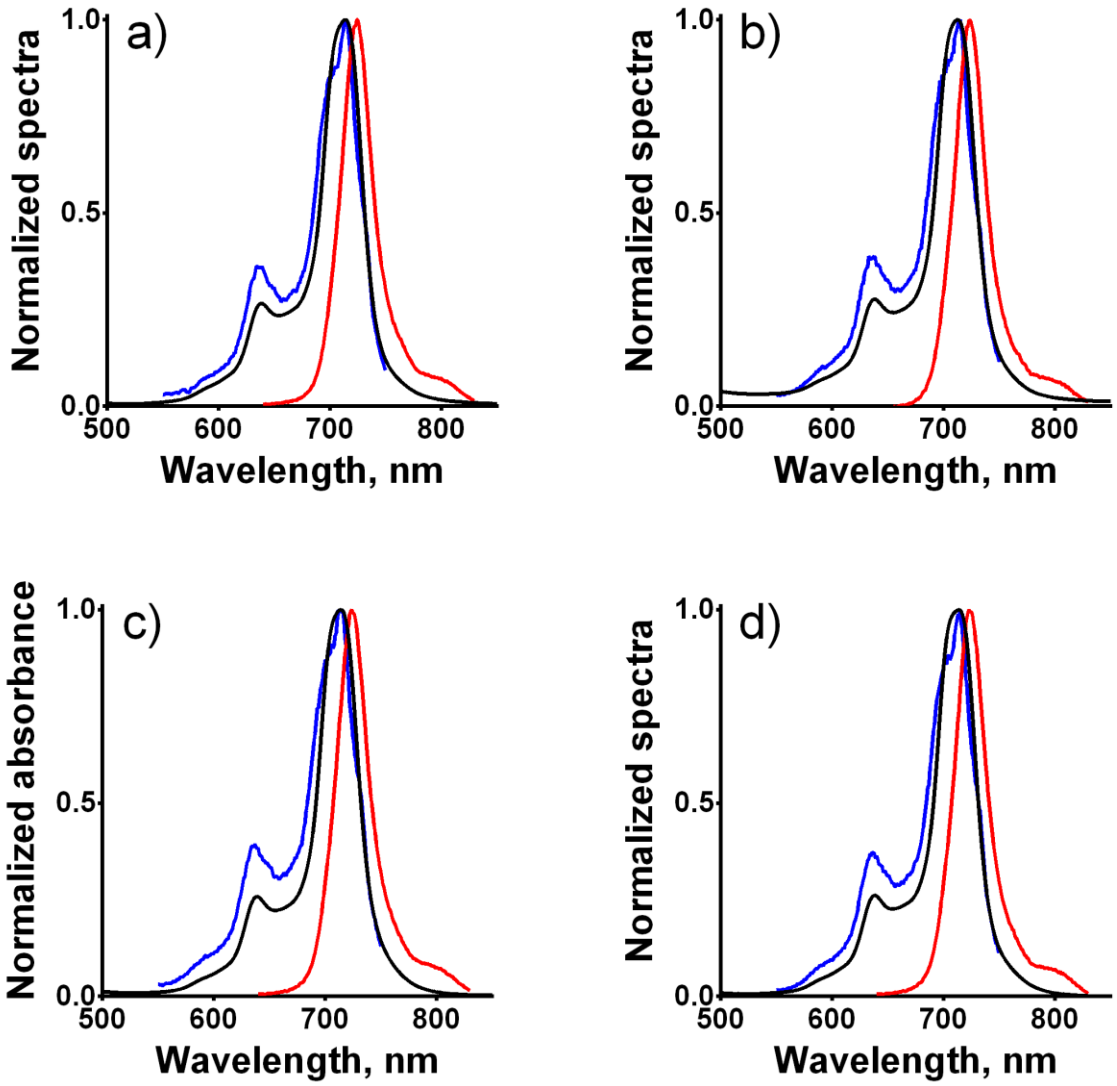

Figure S3. Normalized absorption (black), emission (red) and excitation (blue) spectra of **1** in (A) dPBS, (B) water, (C) Triton X-100 and (D) liposomes.

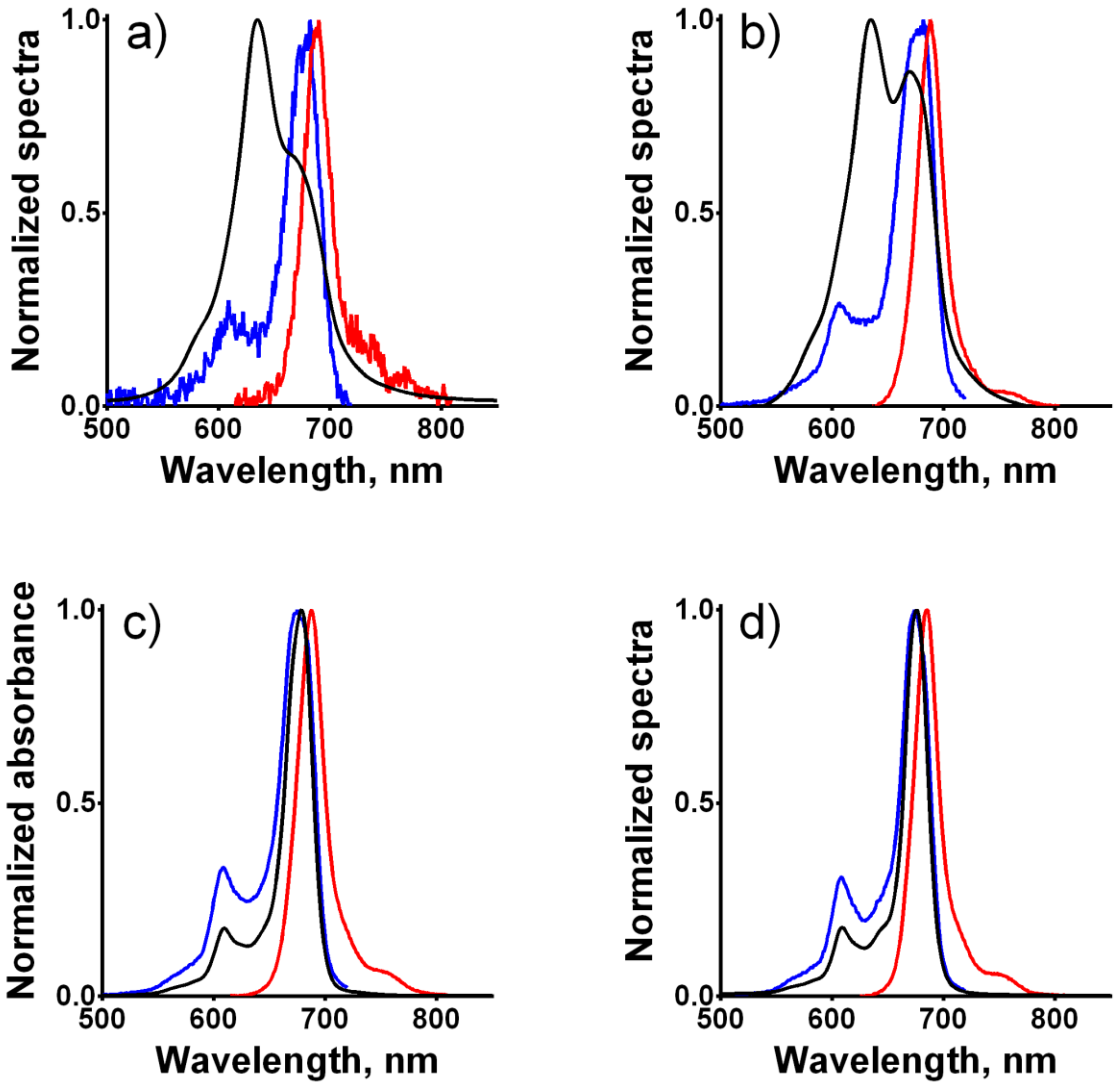

Figure S4. Normalized absorption (black), emission (red) and excitation (blue) spectra of **2** in (A) dPBS, (B) water, (C) Tx-100 solution and (D) liposomes.

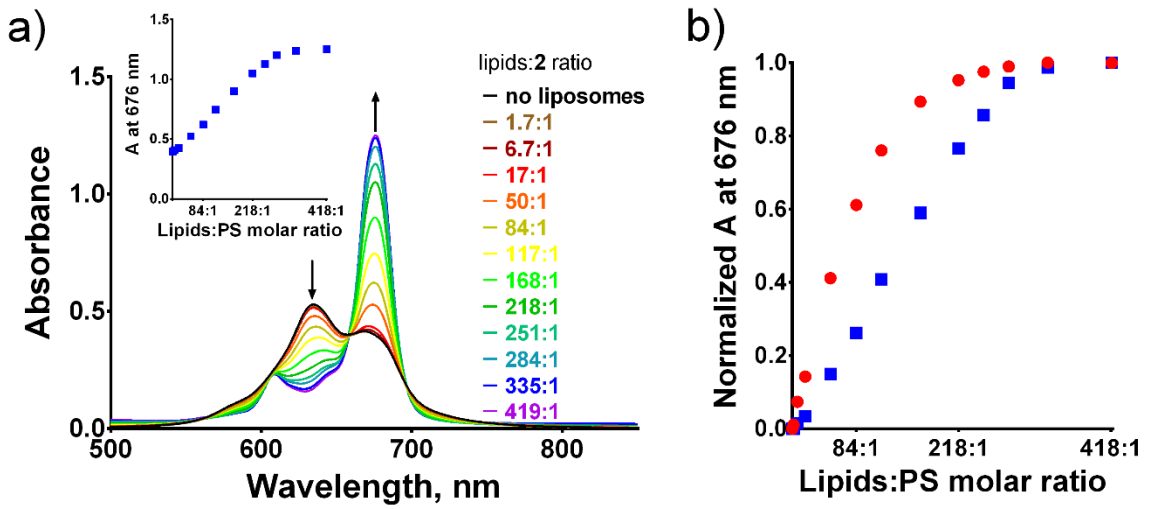

Figure S5. Titration experiment. (A) Gradual addition of liposomes to solution of **2** in deionized water. Molar ratios of lipids to PS are specified in the figure. Inset: changes of absorbance at 676 nm in dependence on Lipids:PS molar ratio. (B) Changes in absorbance at 676 nm of **2** in dependence on Lipids:PS molar ratio in water (blue squares) and dPBS (red circles).

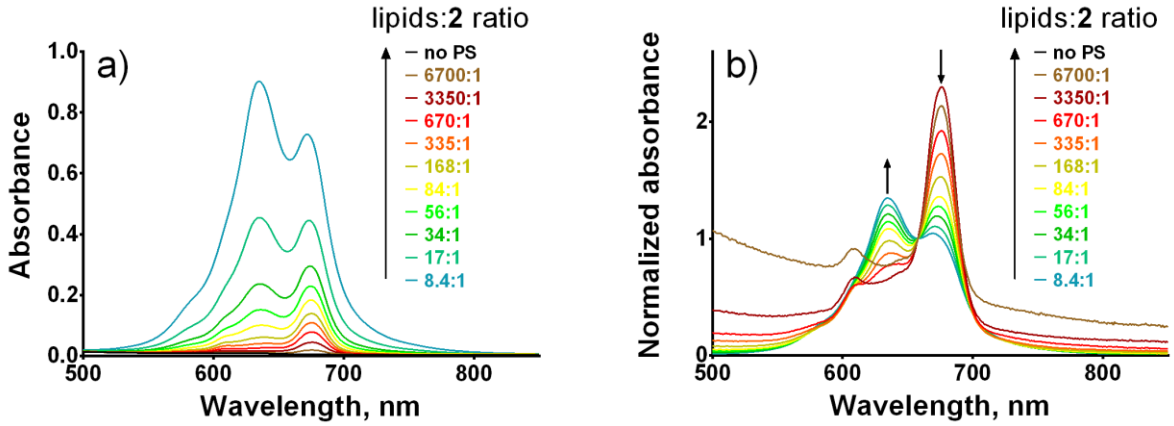

Figure S6: Titration experiment. Gradual addition of **2** to solution of liposomes (0.065 mg/mL of lipids) in dPBS. Molar ratios of lipids to PS are specified in the figure. (A) Absorption spectra. (B) Absorbance spectra normalized to isosbestic point at 658 nm.

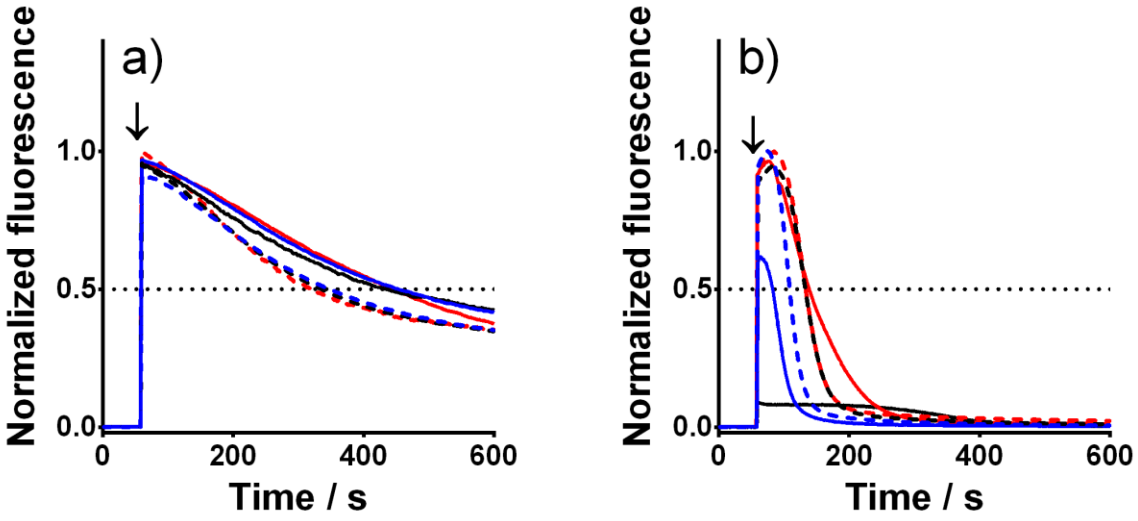

Figure S7: Photobleaching experiments with (A) compound **1** and (B) compound **2**. Blue lines – deionized water, black lines – dPBS, red lines – liposomes. Dashed lines – respective experiments after addition of Triton X-100. Normalized to highest value in each data set.

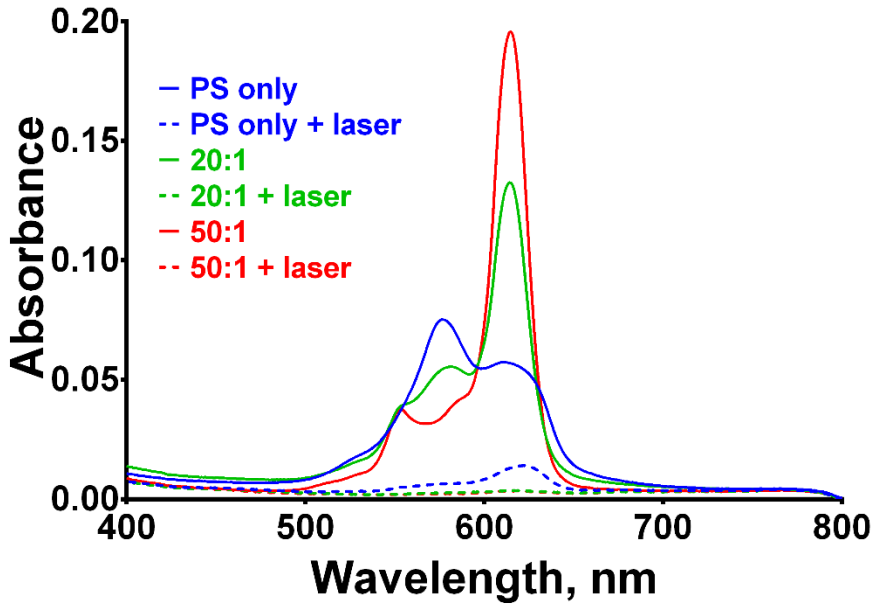

Figure S8: Photobleaching of **2** in dPBS - absorbance spectra of **2** before (full lines) and after (dashed lines) irradiation with laser. Blue lines – compound **2** only, green lines – compound **2** with liposomes in 20:1 molar ratio, red lines – compound **2** with liposomes in 50:1 molar ratio.

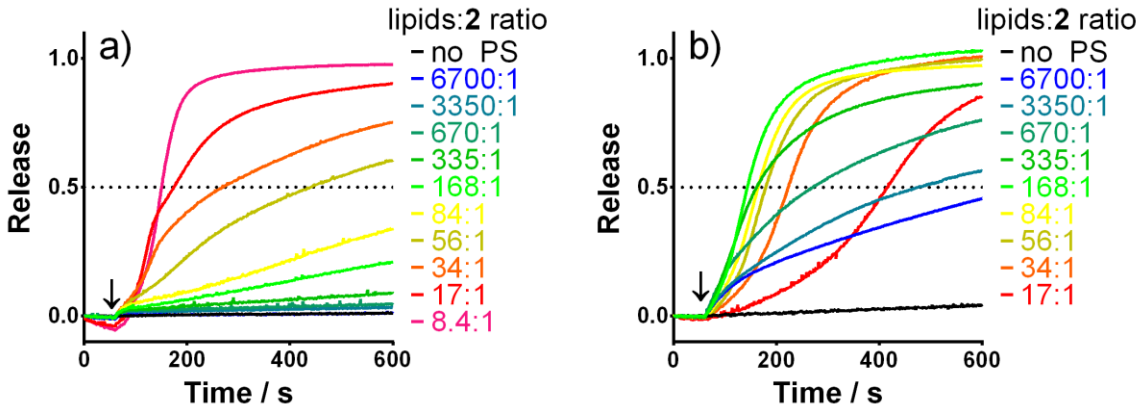

Figure S9. Light-triggered release of BO14 from liposomes mixed with **2**. Molar ratios of lipids to PS are specified in the figure with concentration of lipids in solution (A) 0.065 mg/mL and (B) 0.65 mg/mL. Arrow indicates switching-on the laser.

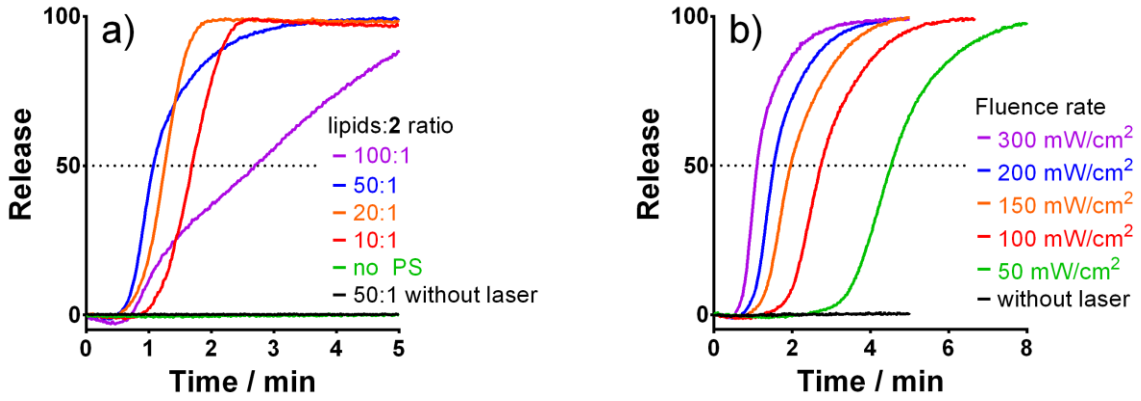

Figure S10. (A) Light-triggered release of Dox from liposomes mixed with **2**. Molar ratios of lipids to PS are specified in the figure. (B) Light-triggered release of Dox from liposomes (lipids:PS molar ratio is 50:1) based on different fluence rates (specified in the figure).

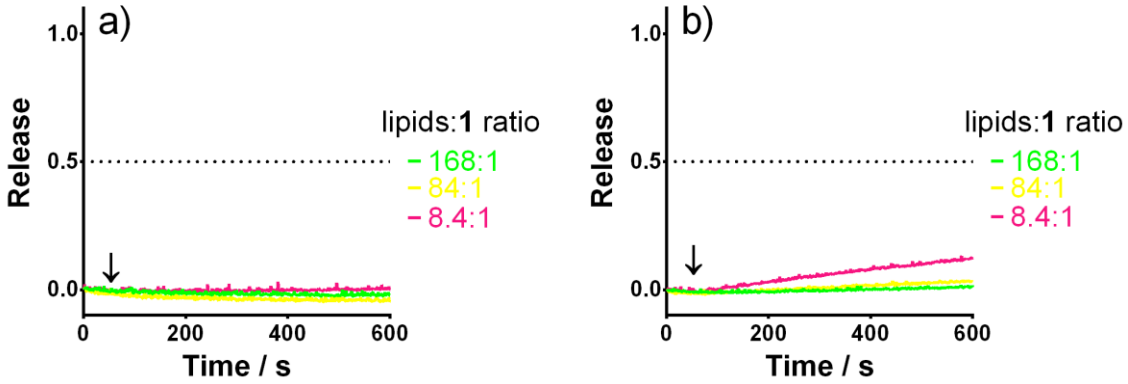

Figure S11. Light-triggered release of BO14 from liposomes mixed with **1**. Molar ratios of lipids to PS are specified in the figure with concentration of lipids in solution (A) 0.065 mg/mL and (B) 0.65 mg/mL. Arrow indicates switching-on the laser.

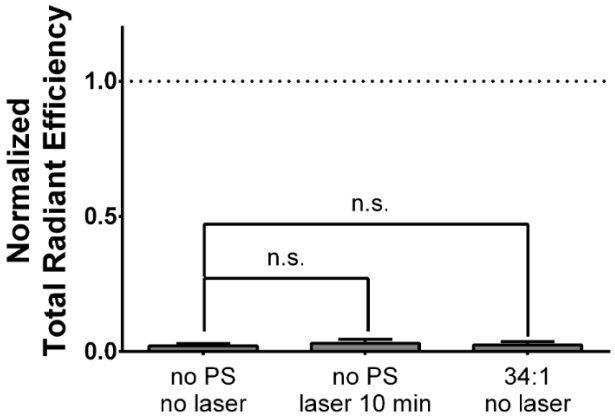

Figure S12: Negative-control experiments in 2.5% agarose gel release experiments. Statistical significance between groups: # (t test), $p < 0.05$.

Table S1. Liposomes with various lipid: PS ratios of **2**

	Liposomes alone	**100:1**	**50:1**	**20:1**	**10:1**
Diameter (nm)	88.7 ± 0.8	95.2 ± 0.9	94.0 ± 2.8	95.3 ± 3.1	97.1 ± 2.2
Polydispersity	0.1 ± 0.02	0.05 ± 0.05	0.08 ± 0.07	0.08 ± 0.02	0.11 ± 0.06
Zeta Potential	1.47 ± 1.6	3.24 ± 5.8	1.07 ± 0.9	-11.4 ± 1.5	-7 ± 3.7