# Electronic supplementary information (ESI)

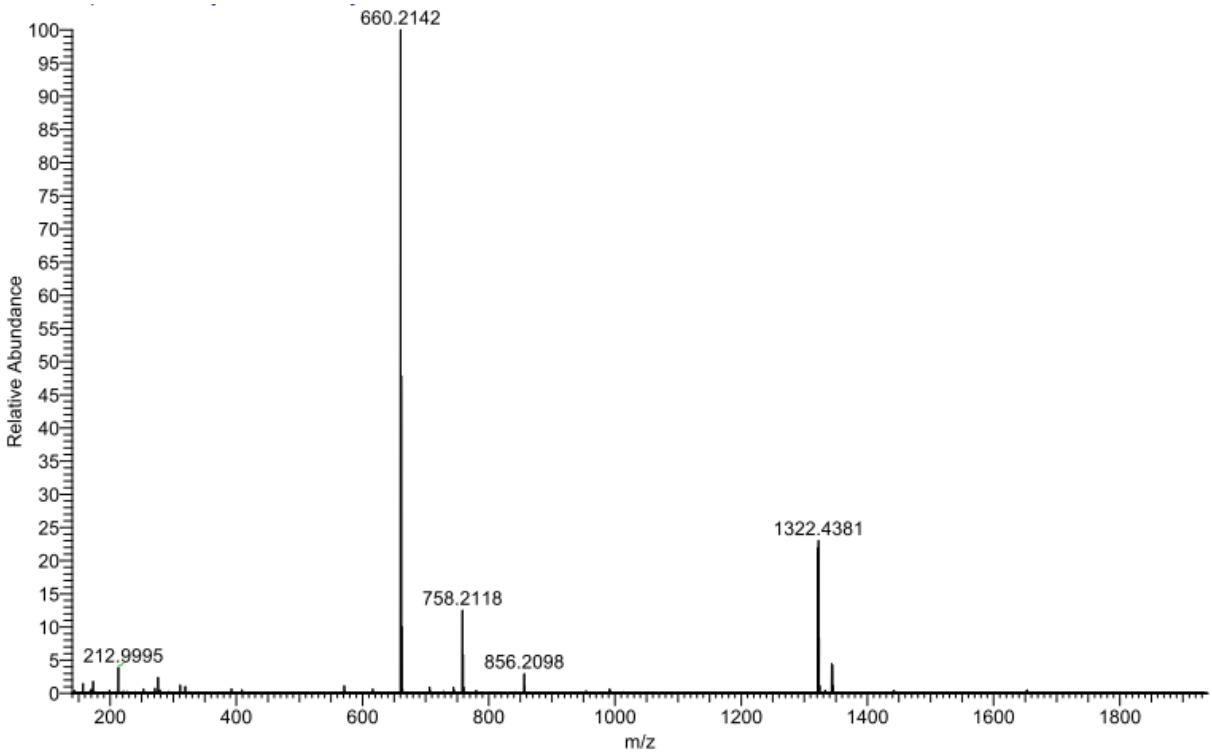



**Figure S1**. ESI-MS (*m/z*)(MeOH/MeOH + DEA): calcd. for **2** $C_{42}H_{26}N_7O_2$: 661.2142 found $(M-H)^-$ : 660.2153.

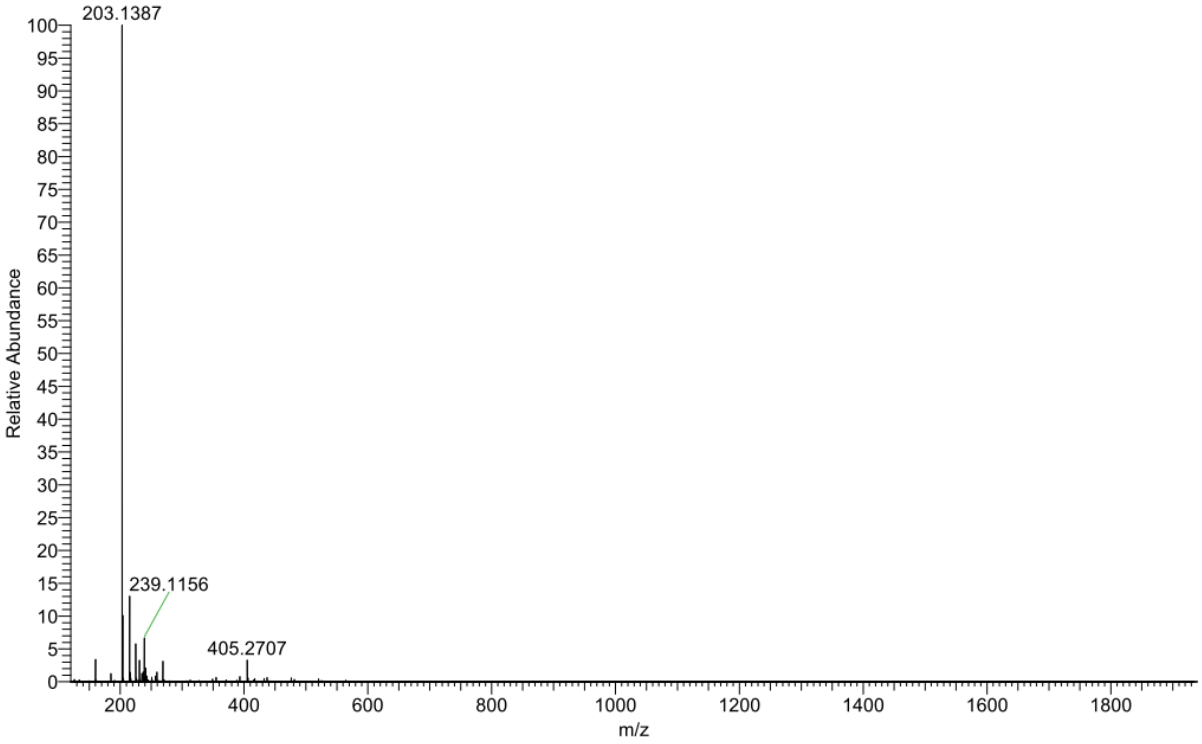



**Figure S2.** ESI-MS (m/z) (MeOH + $NH_4OAc$): calcd. for **3** ($C_9H_{19}N_2O_3$): 202.1387; found $(MH)^+$: 203.1387

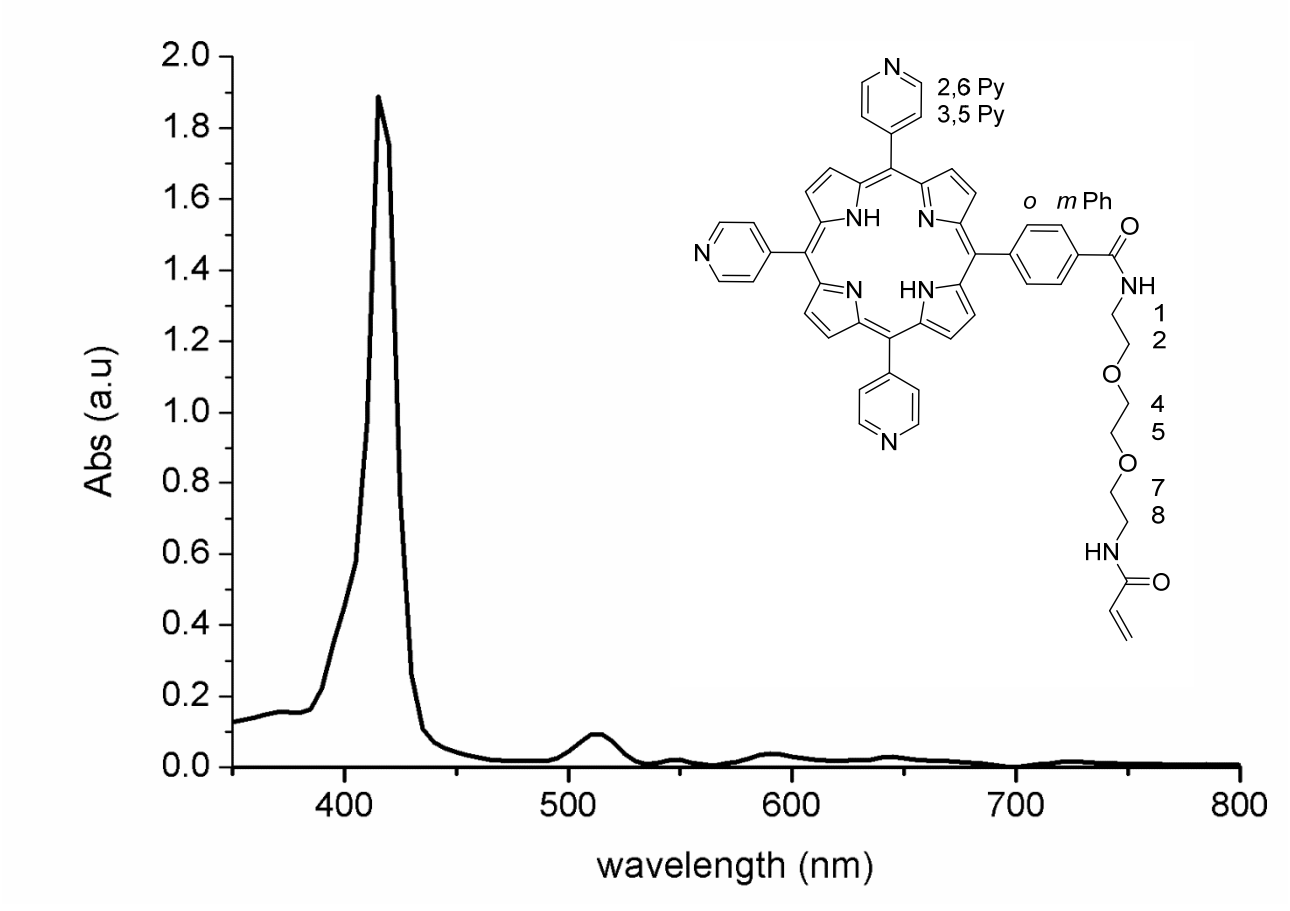



**Figure S3.** Absorption spectra of **4** in $CH_2Cl_2$.

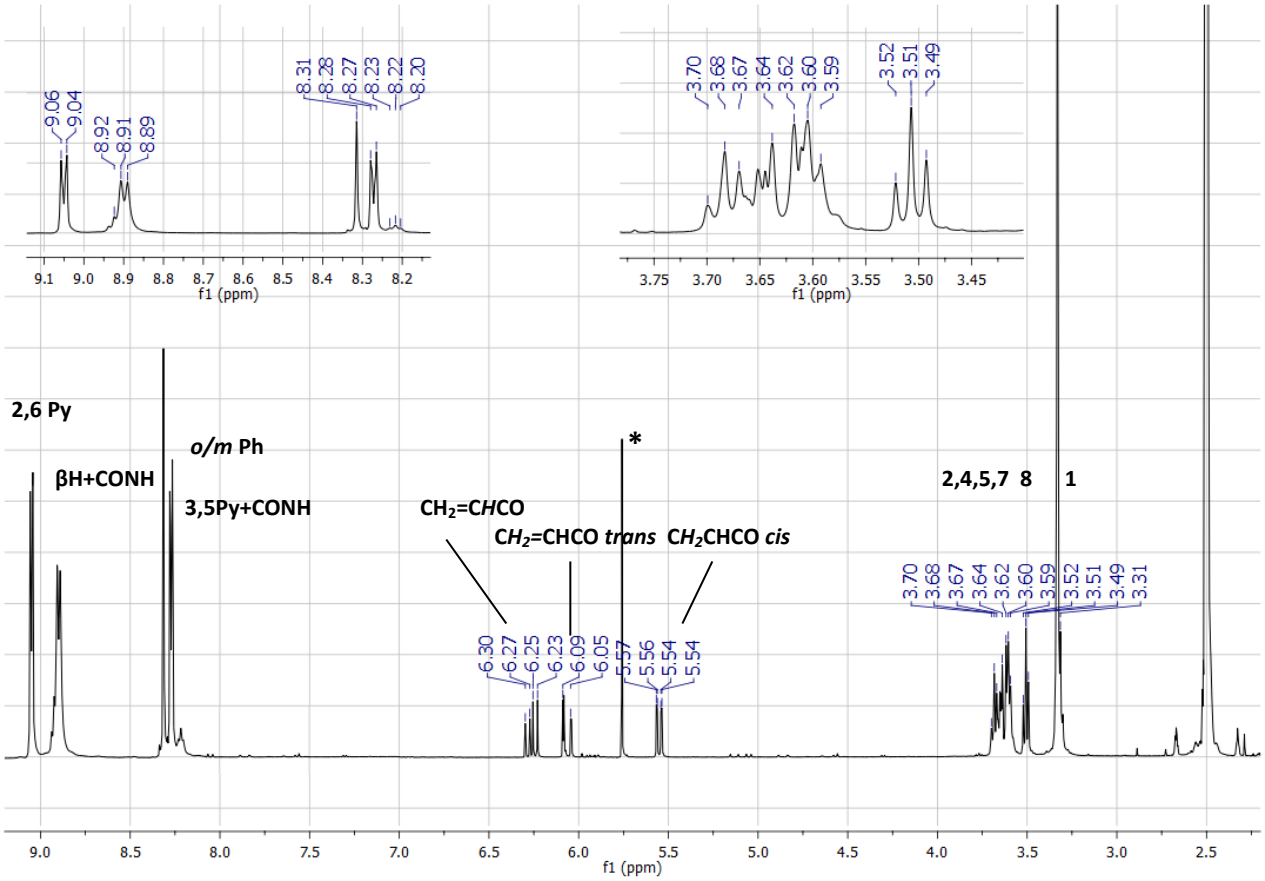


**Figure S4.**[1]H NMR spectrum of **4** in DMSO-$d_6$ *=impurity ($CH_2Cl_2$)

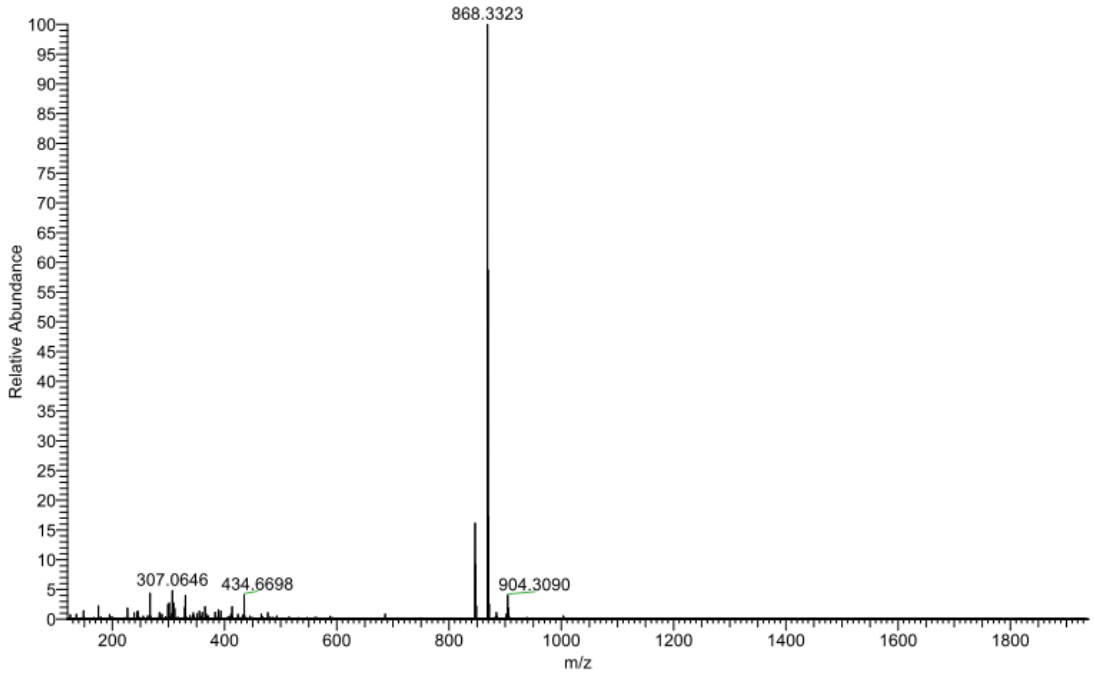



**Figure S5.** ESI-MS (m/z) (MeOH + $NH_4OAc$): calcd. for **4** ($C_{51}H_{43}N_9O_4$): 845.34; found (M+ $Na^+$) 868.3330.

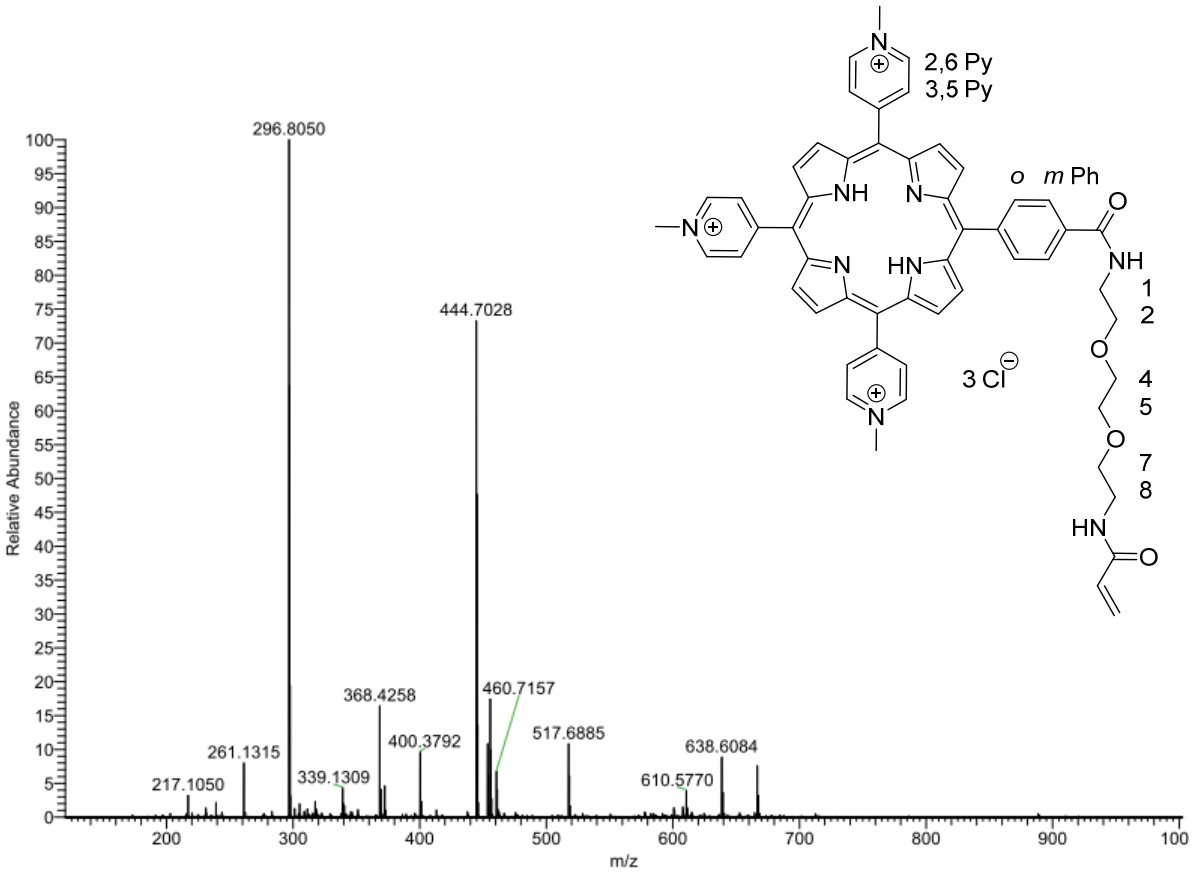


**Figure S6.** ESI-MS (m/z) (MeOH + $NH_4OAc$): calcd. for **5** ($C_{54}H_{52}N_9O_4Cl_3$): 296.8050 (z=3); found $(M - 3Cl)^{3+}$ 296.8042.

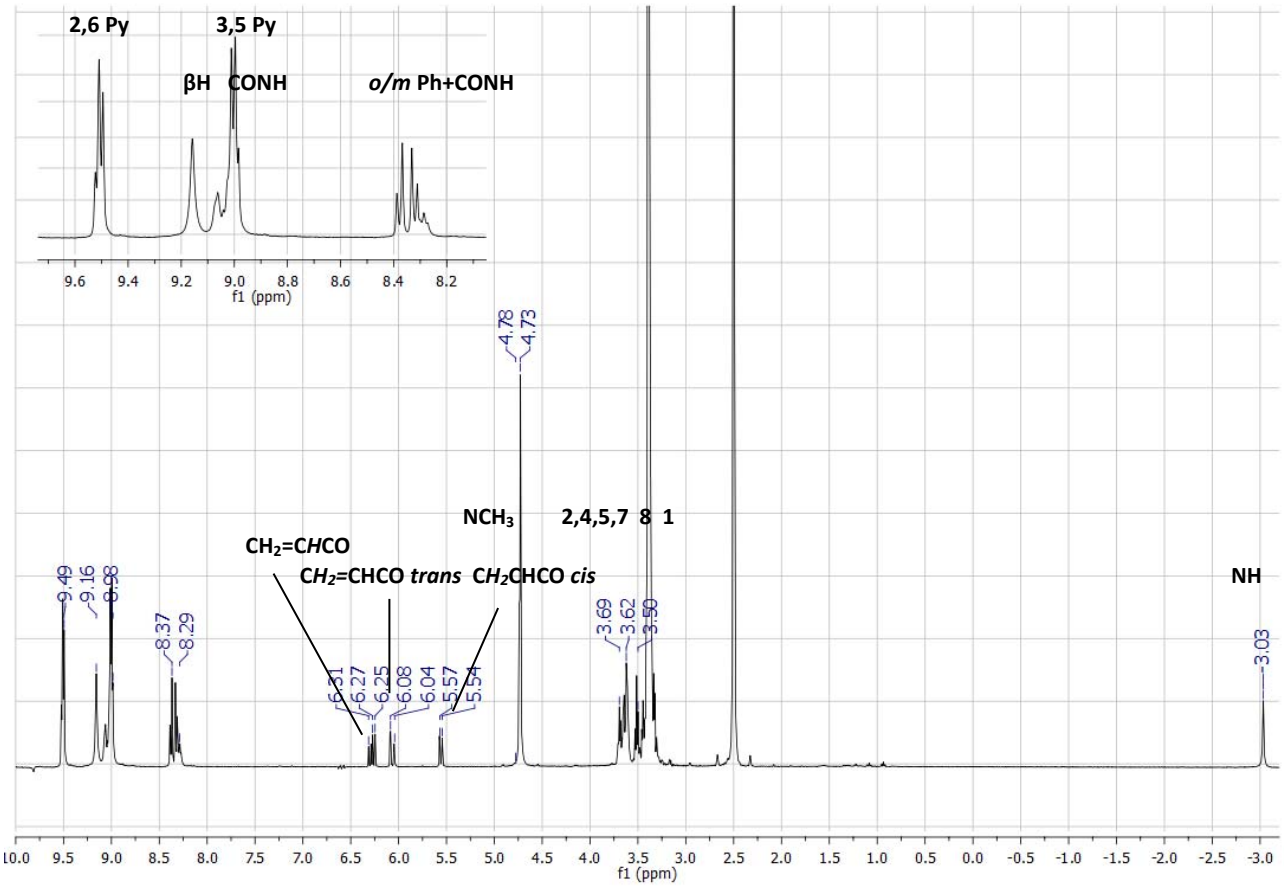



**Figure S7.** $^1H$ NMR spectrum of of **5** in DMSO-$d_6$

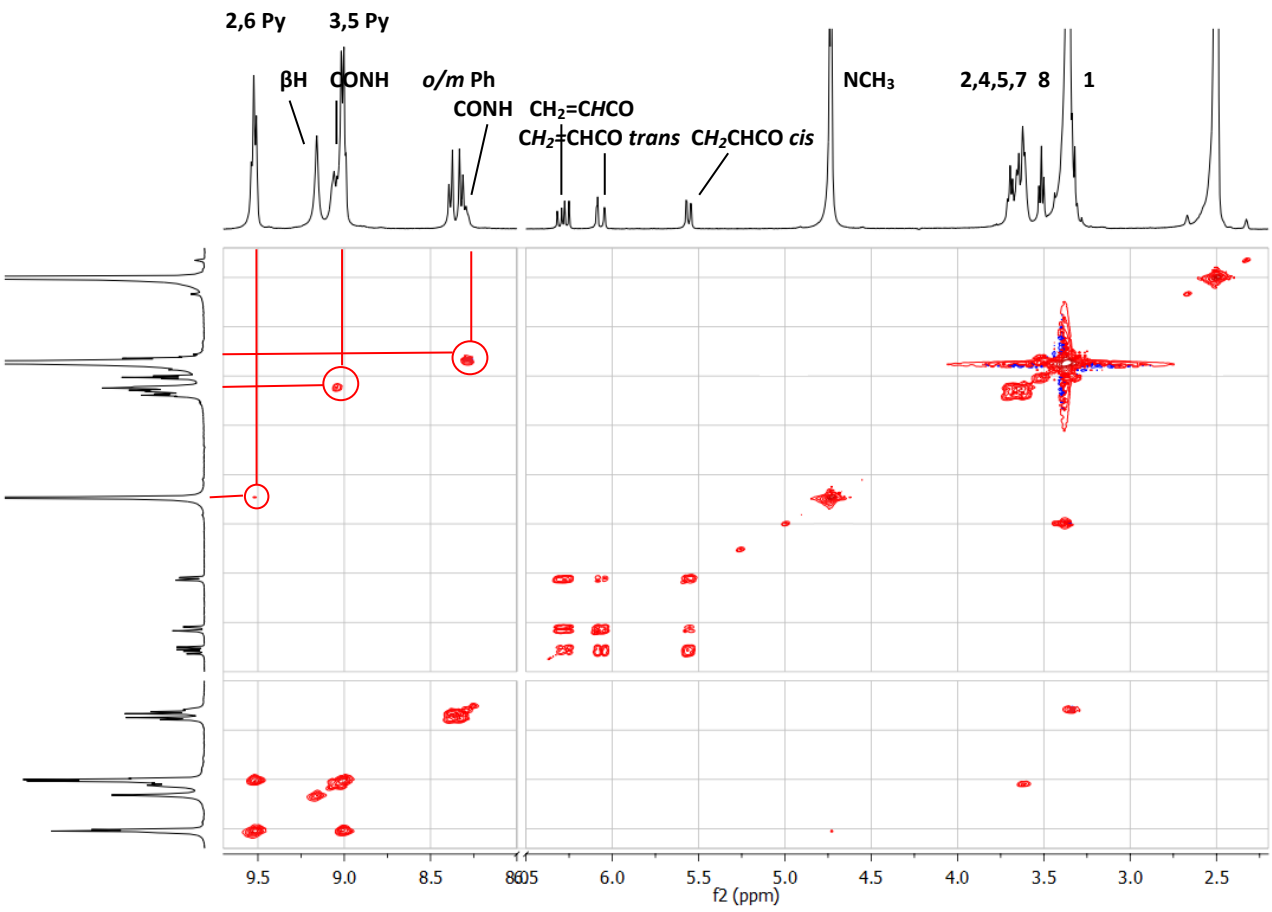



**Figure S8.** H-H COSY of **5** in DMSO-$d_6$

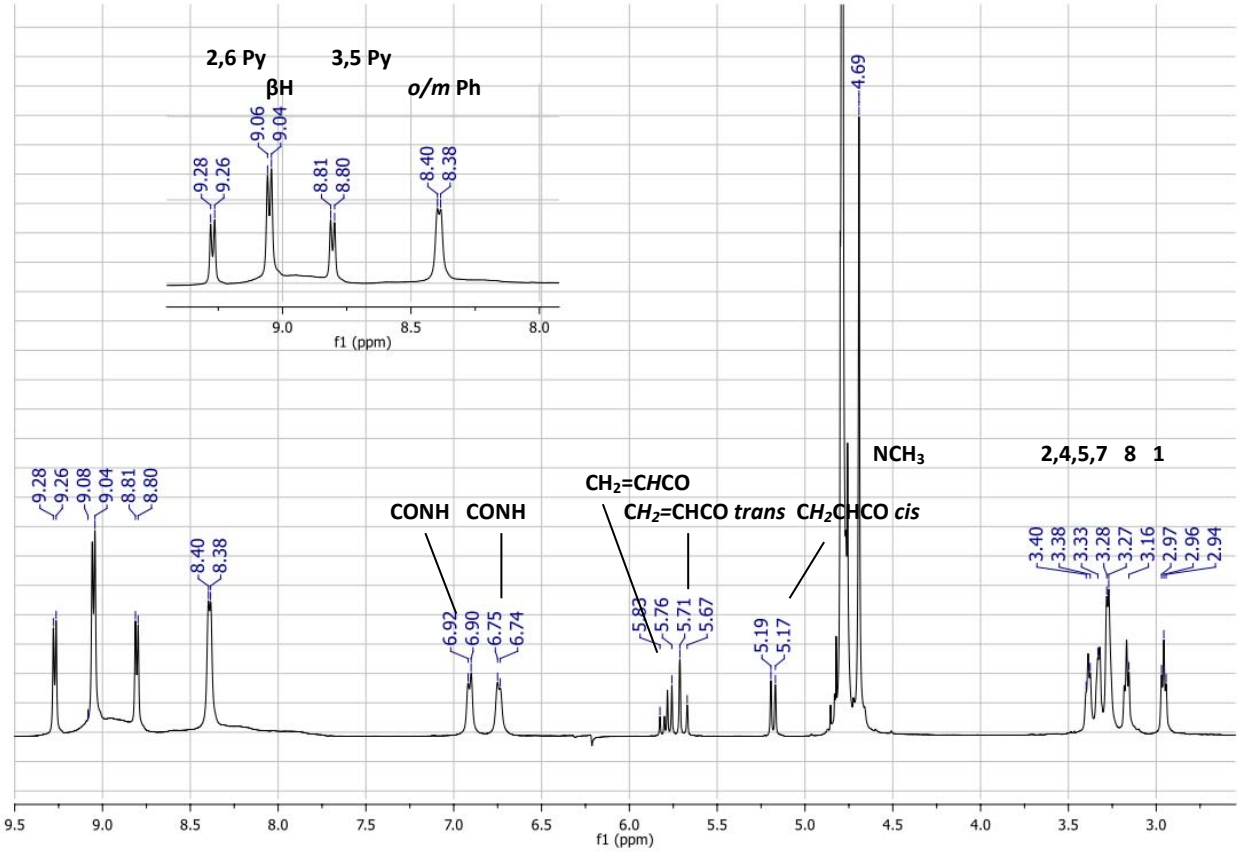



**Figure S9.** $^{1}$H NMR spectrum of **5** in $D_2O$

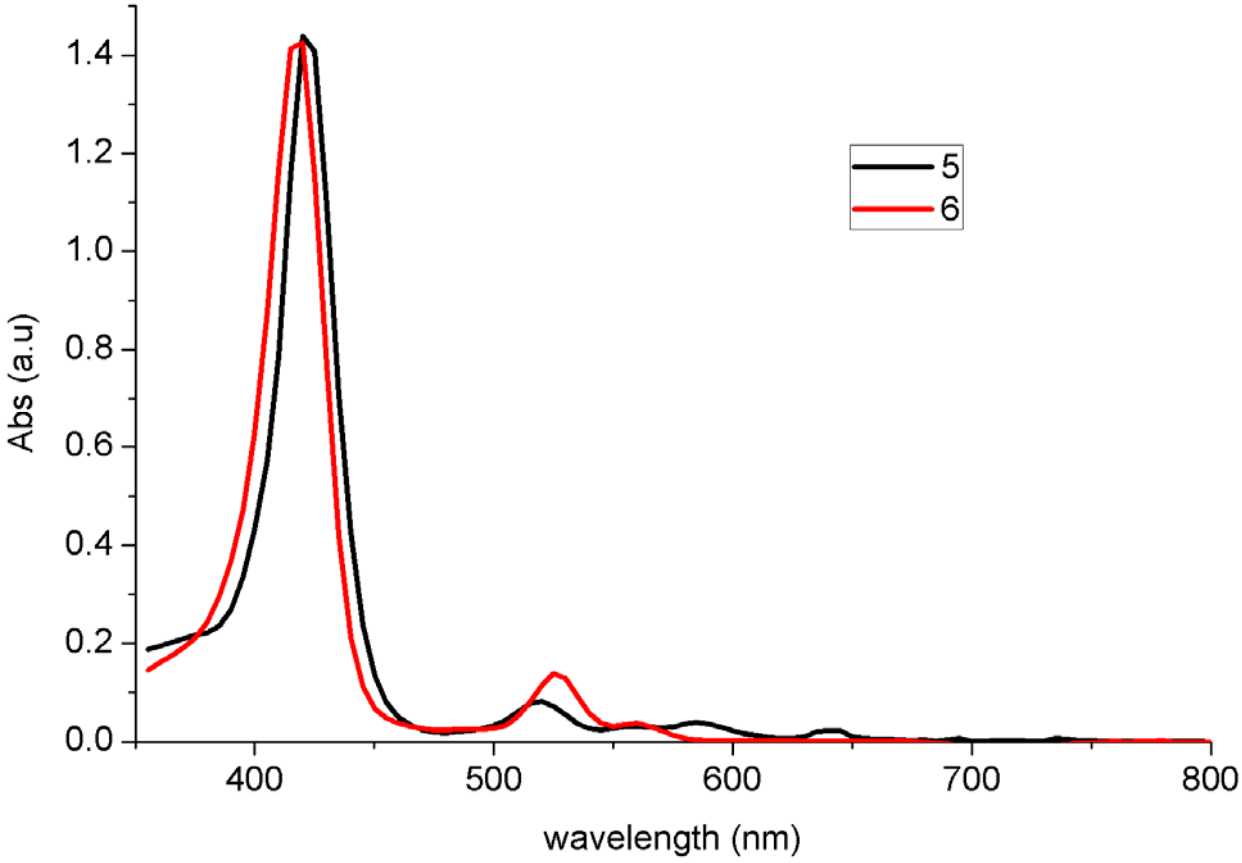



**Figure S10 (a).** Absorption spectra of **5** and **6** in PBS (pH=6.0).

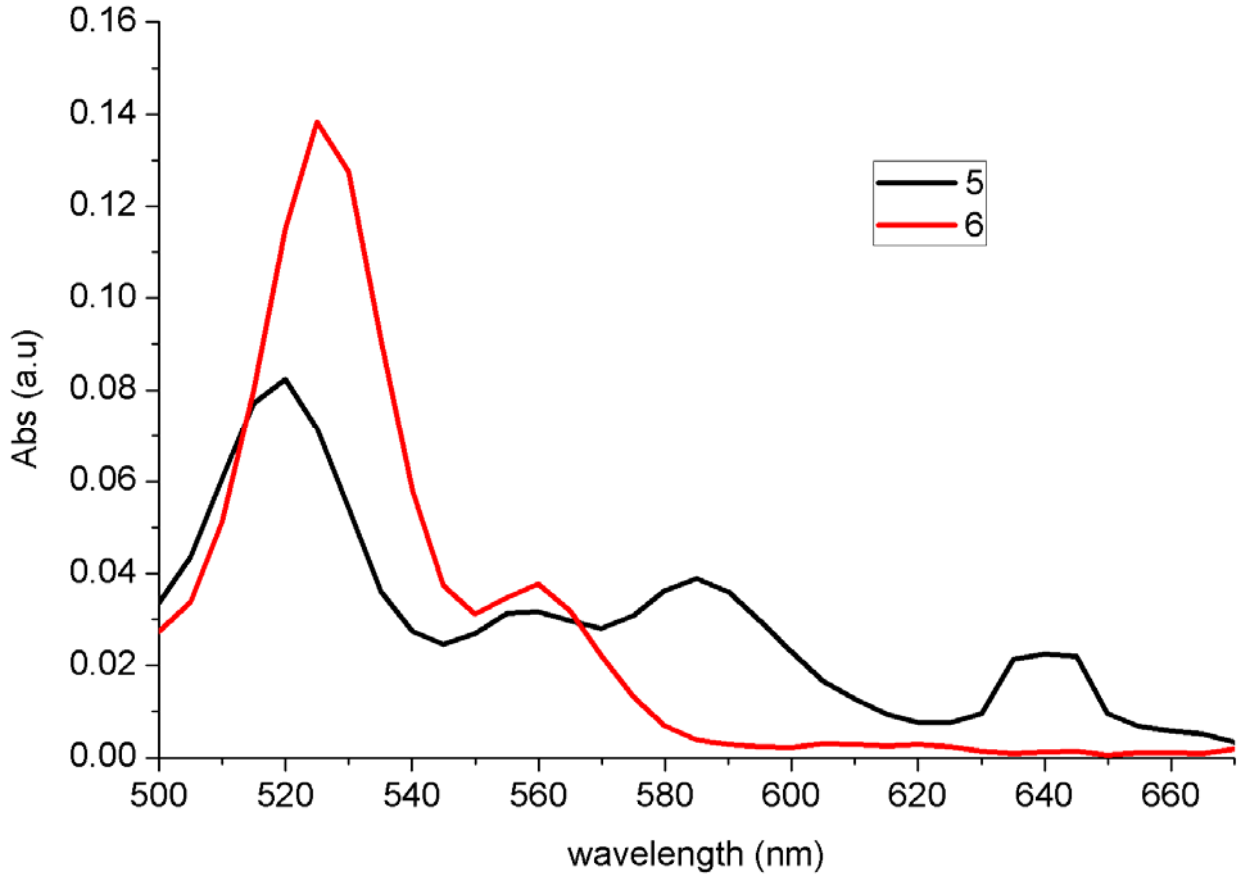
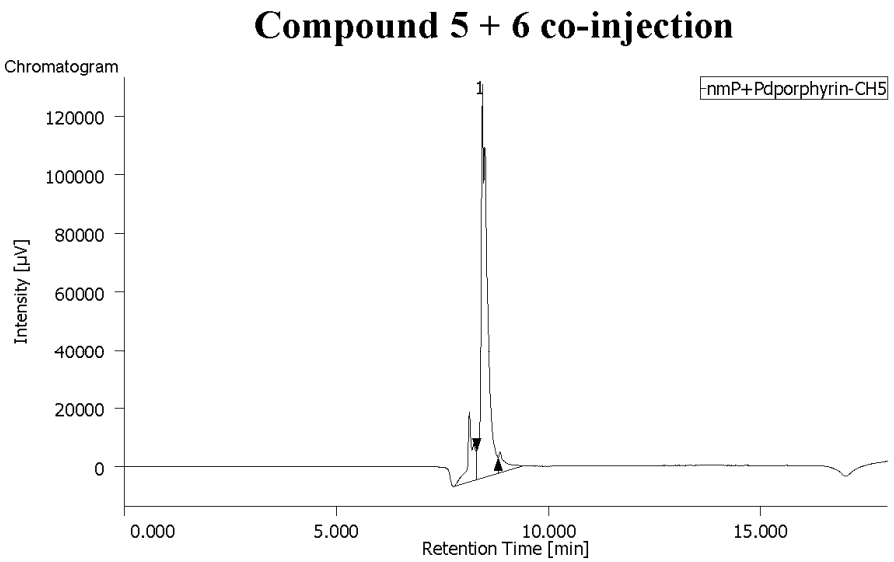



**Figure S10 (b).**Wavelength range 500-660 nm, absorption spectra of **5** and **6** in PBS (pH=6.0).




Peak Information

| Peak Name | tR [min] | Area [µV·sec] | Height [µV] | Area% | Height% | Quantity | NTP | Selectivity | Symmetry Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 + 6 | 8.440 | 1321210 | 130487 | 100.000 | 100.000 | N/A | 18607 | N/A | N/A | |

| Peak Name | Peak Factor |
|---|---|
| 5 + 6 | 1.00000 |

**Figure S11.** HPLC trace of the water soluble porphyrin **5** and **6** conjected for qualitative comparison. Gradient: see Material and Methods.

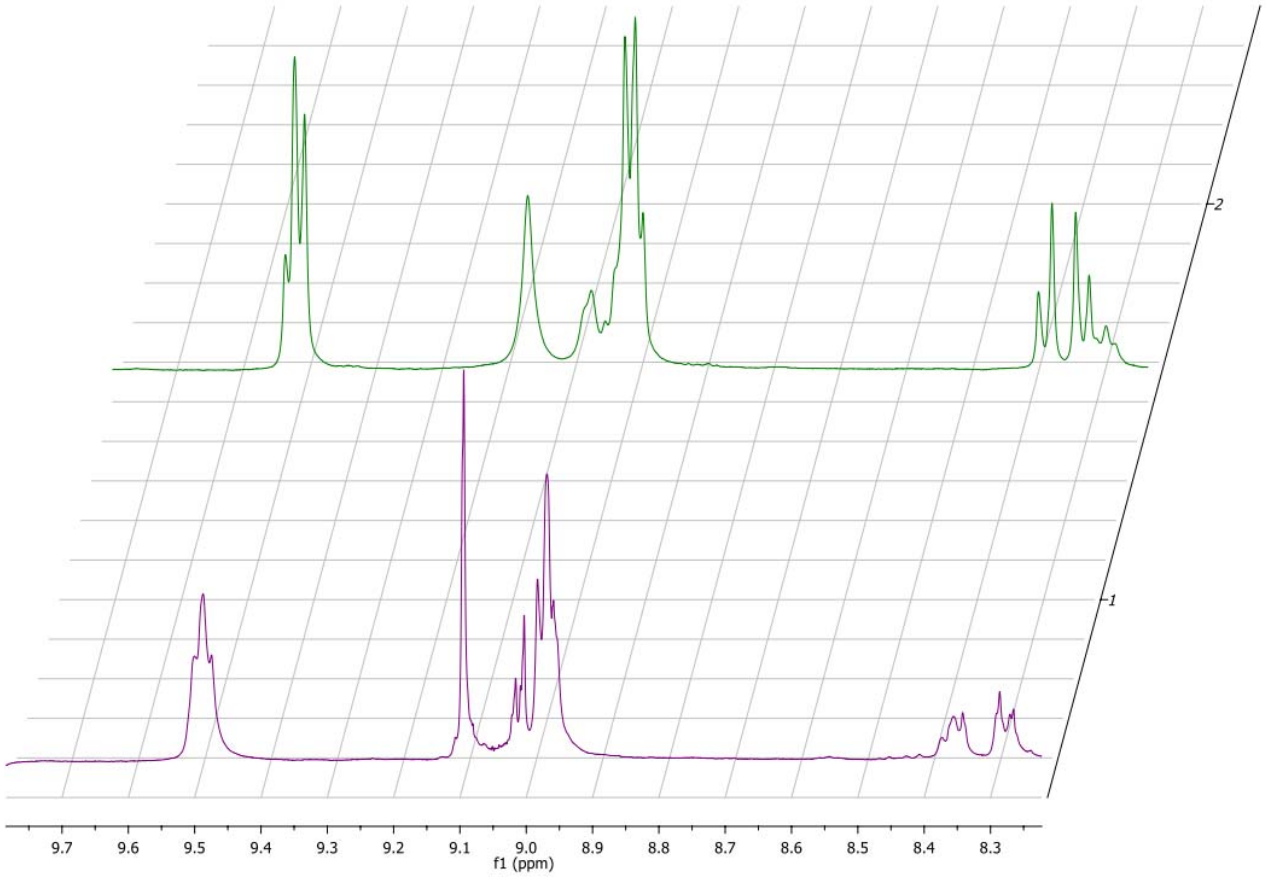



**Figure S12.** Superimposition of $^{1}$H NMR spectrum of **6** in DMSO-$d_6$ (bottom) and $^{1}$H NMR spectrum of **5** in DMSO-$d_6$(up).

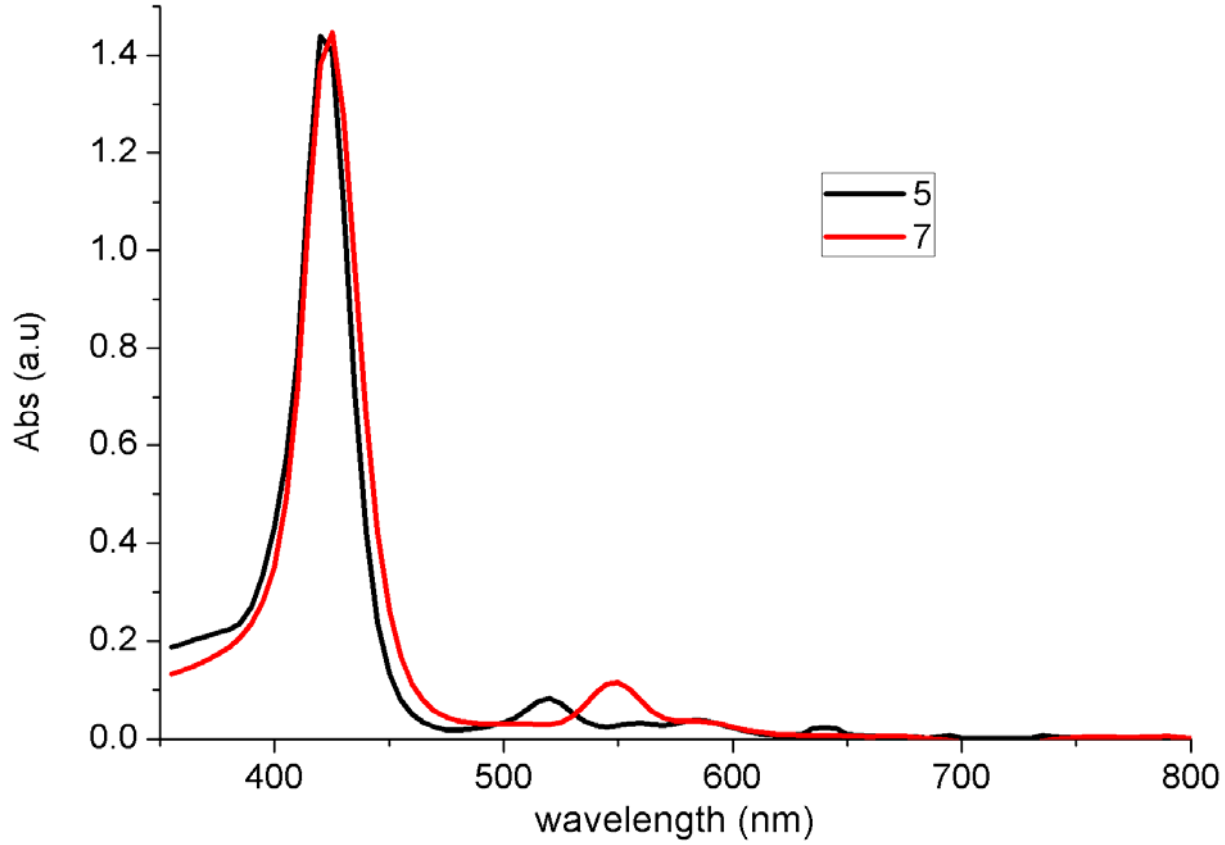



**Figure S13 (a).** Absorption spectra of **5** and **7** in PBS.

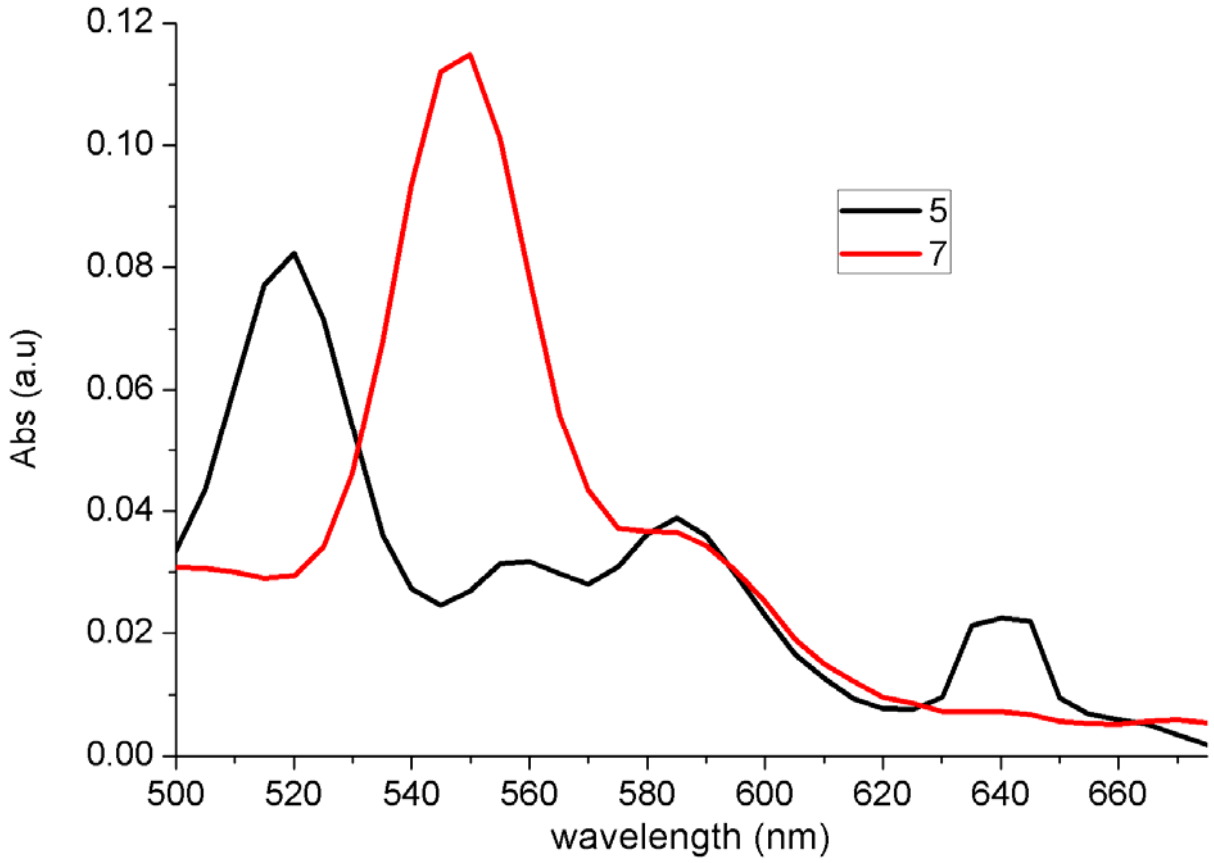



**Figure S13 (b).**Wavelength range 500-660 nm, absorption spectra of **5** and **7** in PBS.

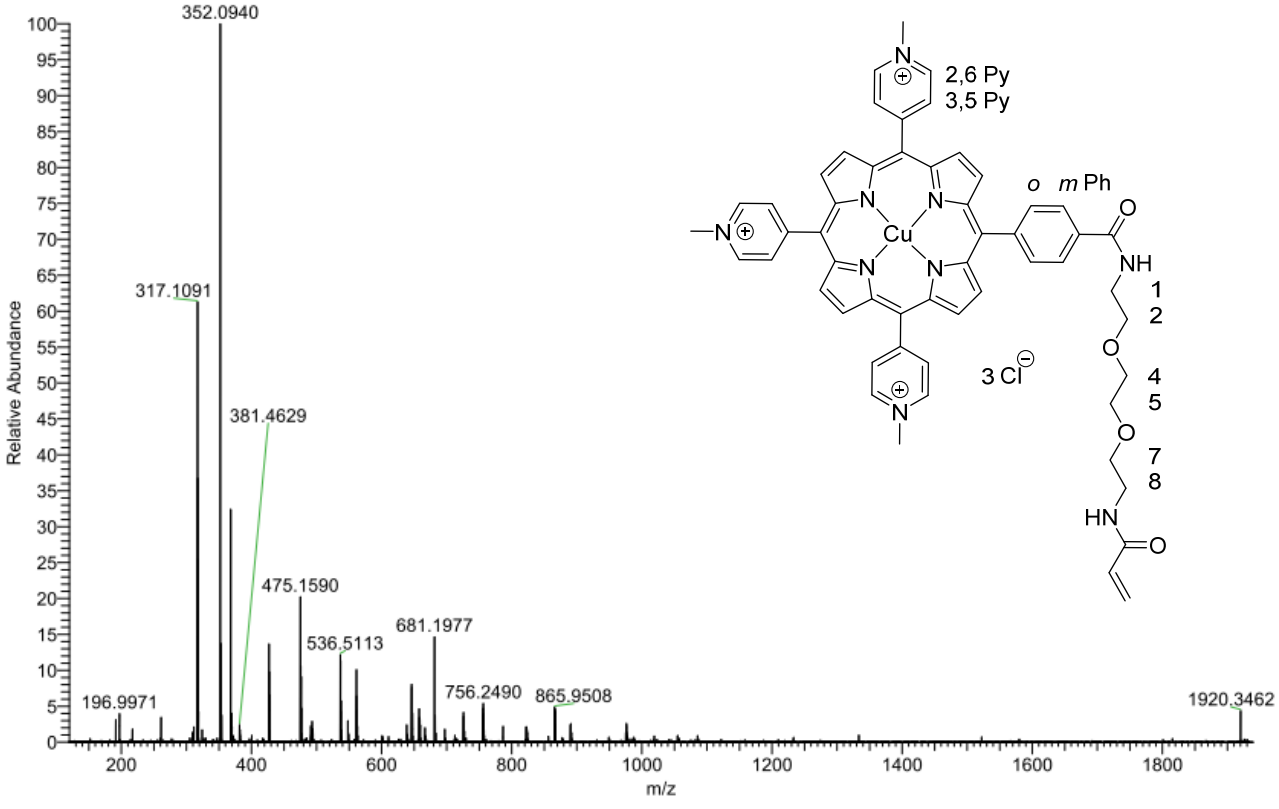
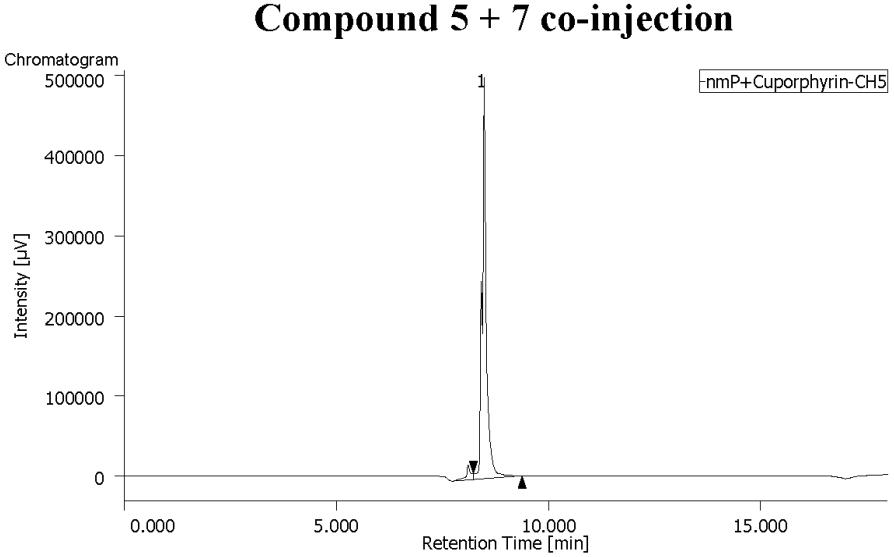


**Figure S14.** ESI-MS (m/z) (MeOH + $NH_4OAc$),: calcd. for **7** ($C_{54}H_{52}N_9O_4Cl_3$): 317.1091 (z=3); found $(M - 3Cl)^{3+}$ 317.1088.




Peak Information

| Peak Name | tR [min] | Area [µV·sec] | Height [µV] | Area% | Height% | Quantity | NTP | Selectivity | Symmetry Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 + 7 | 8.480 | 3380881 | 484695 | 100.000 | 100.000 | N/A | 34265 | N/A | 1.331 | |

| Peak Name | Peak Factor |
|---|---|
| 5 + 7 | 1.00000 |

**Figure S15.** HPLC trace of the water soluble porphyrin **5** and **7** conjected for qualitative comparison. Gradient: see Material and Methods.

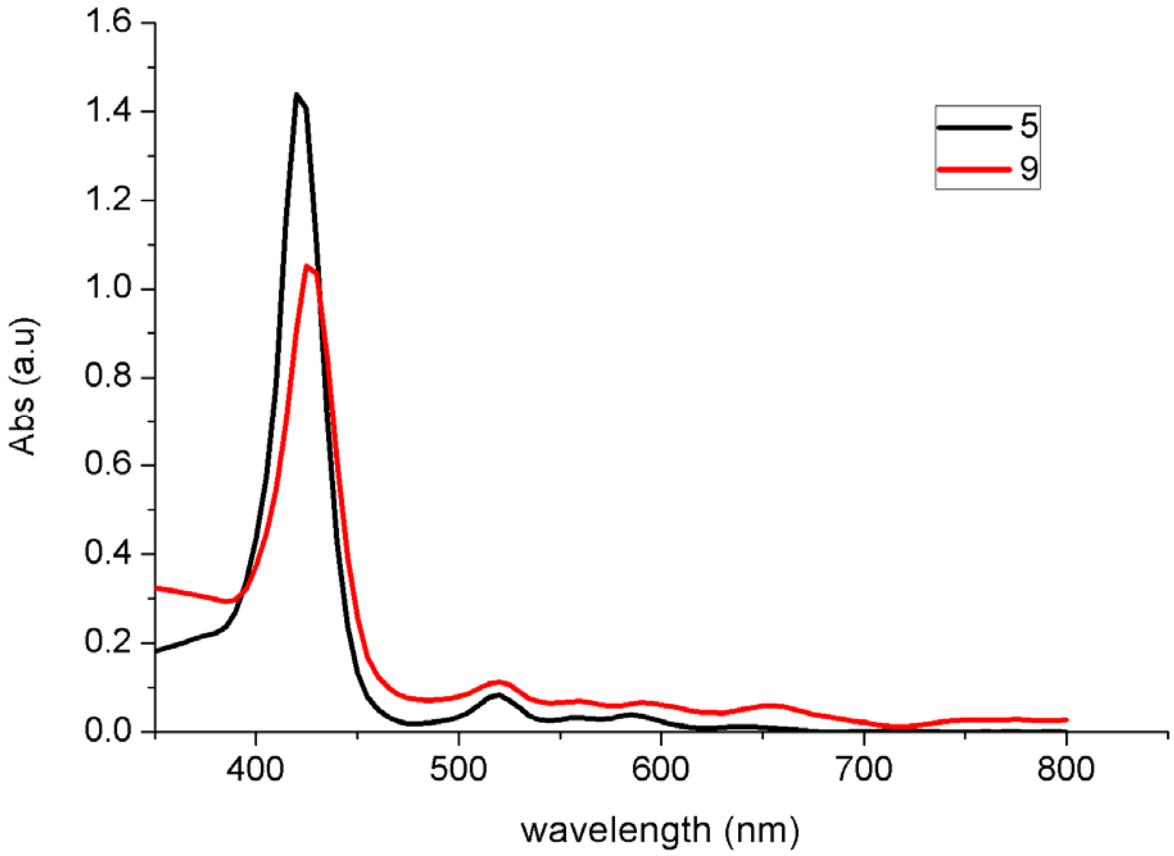
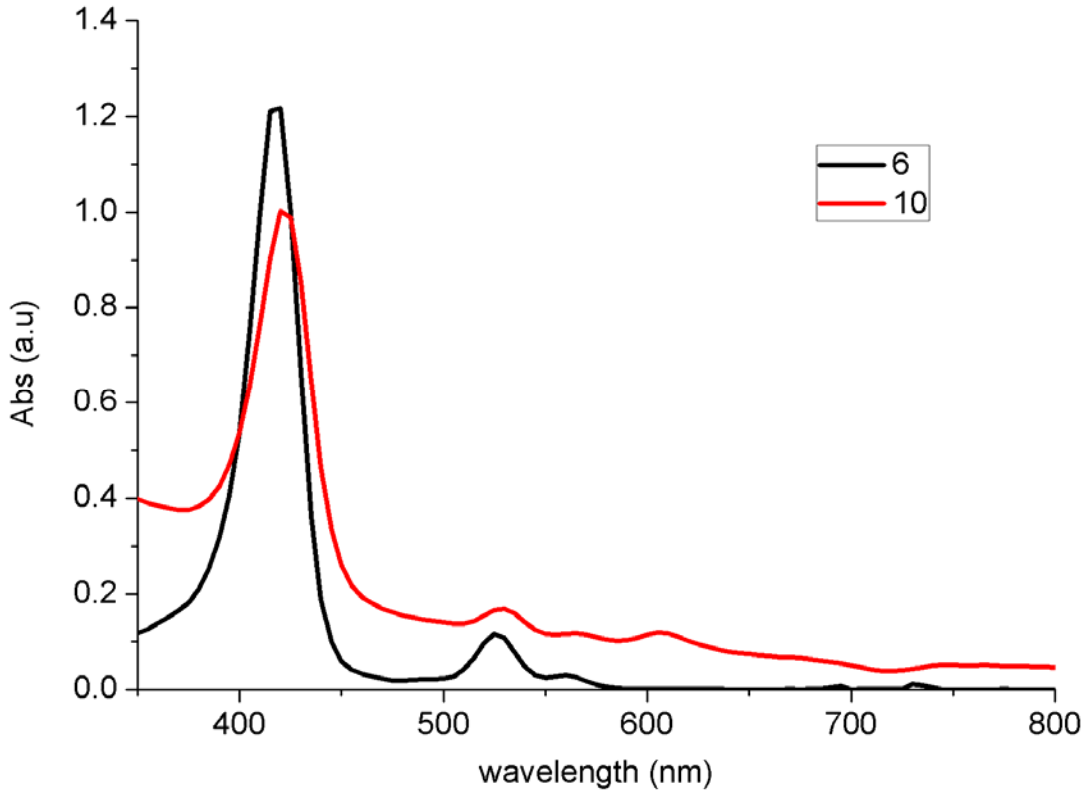



**Figure S16.** Absorption spectra of **5** and **9**.



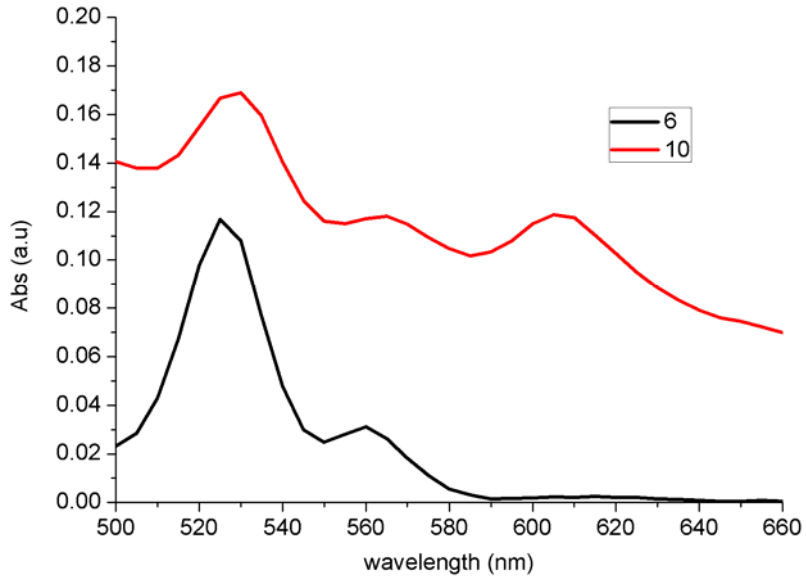



**Figure S17.** Absorption spectra of **6** and **10.**

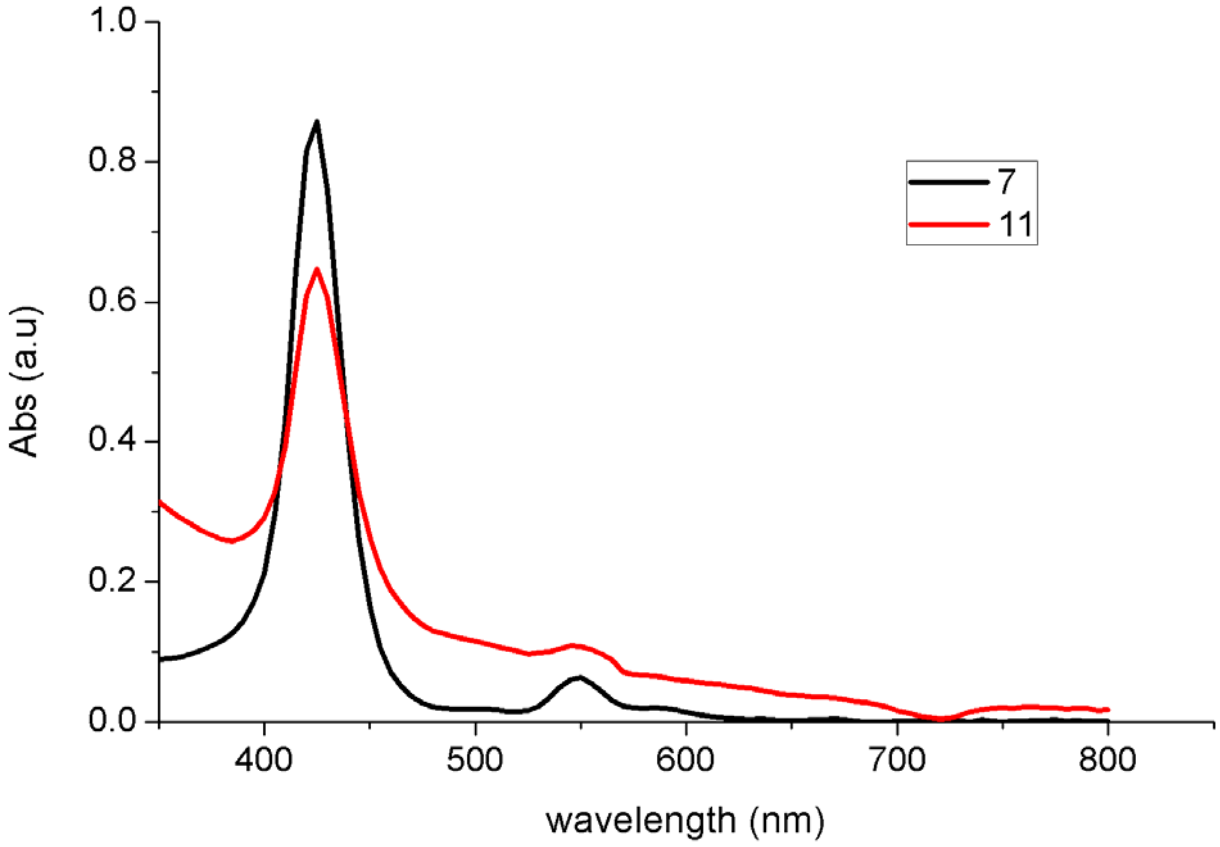



**Figure S18.** Absorption spectra of **7** and **11**.

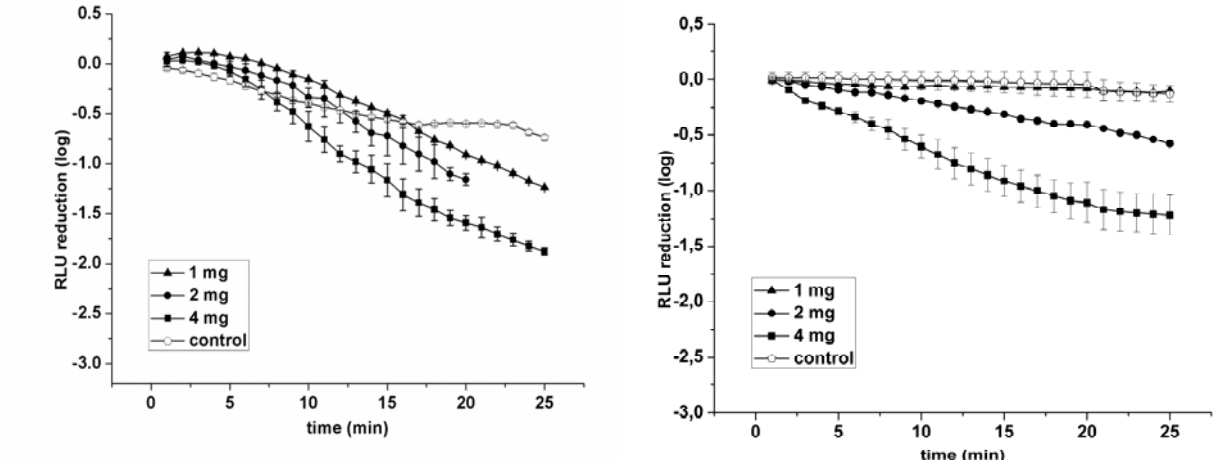



**Figure S19.** Kill curves obtained for the 1 mg/cm$^3$, 2 mg/cm$^3$ and 4 mg/cm$^3$ photoantimicrobial hydrogel previously cut in 4 squares against *E. coli* under light illumination (a) for 25 min (fluence rate of 14.5 mW/cm$^{-2}$ and a total light dose 21.8 J/cm$^2$) and in the dark (b). Dark and light experiments were done with the cell suspensions of 2 × 10$^6$ CFU ml$^{-1}$. The optical fiber was placed 6 cm from the plates. Values represent the mean of two separate experiments.

The filled triangles correspond to the killing curve obtained adding 1 mg/cm$^3$ to the *E. coli* suspension while the filled circles correspond to the killing curve obtained adding 2 mg/cm$^3$ to the *E. coli* suspension. The filled squares corresponds to the killing curve obtained adding 4 mg/cm$^3$ hydrogel to the *E. coli* suspension.

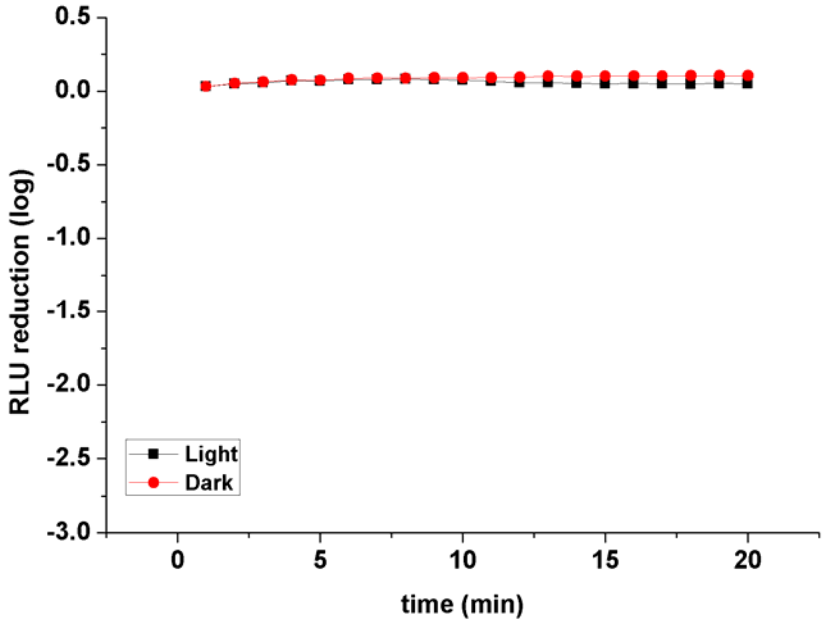



**Figure S20.** Control experiment on an *E. coli* suspension irradiated and in the dark indicated that light doses alone up to 21.8 J $cm^2$.