Supplementary Material

for

Glutathione-responsive disassembly of disulfide dicyanine for tumor imaging with reduction in background signal intensity

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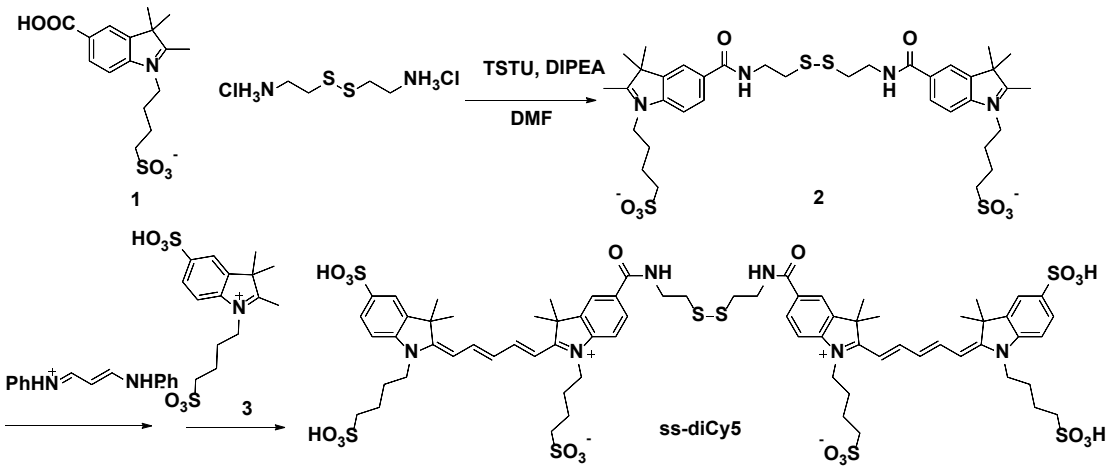

Figure S1: The synthesis route of **ss-diCy5**

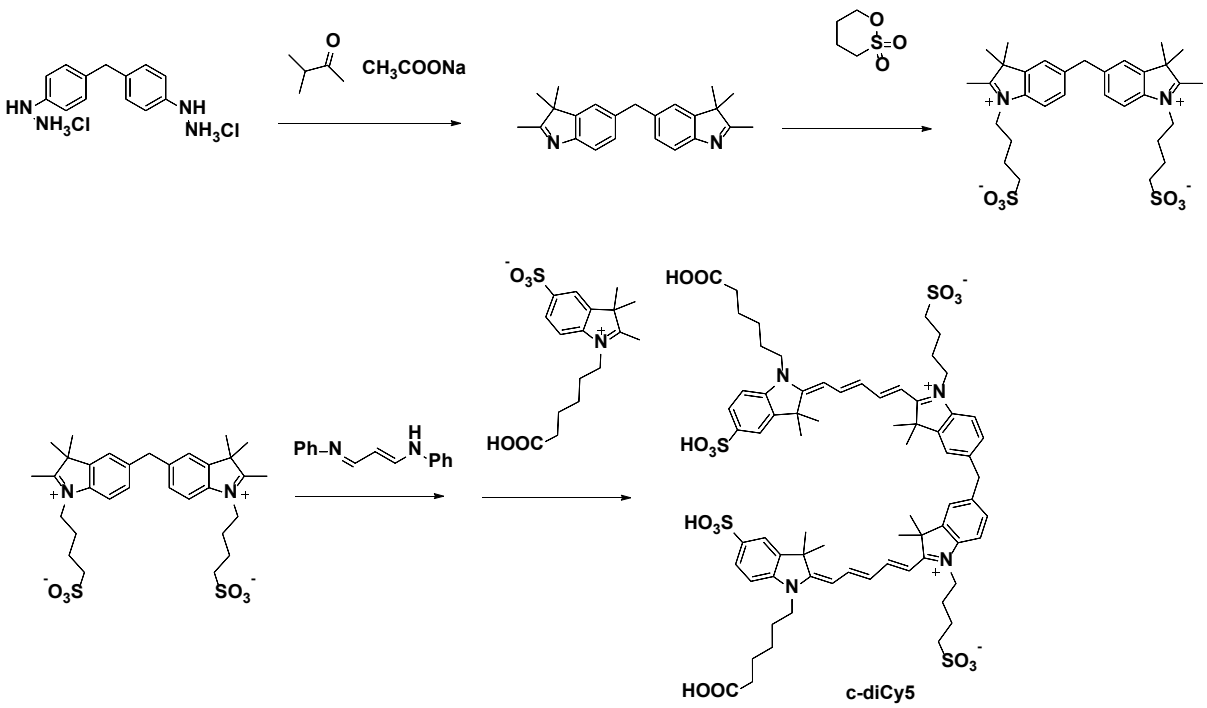

Figure S2: The synthesis route of **c-diCy5**

Figure S3: ^{1}H NMR spectra of diindole intermediates.

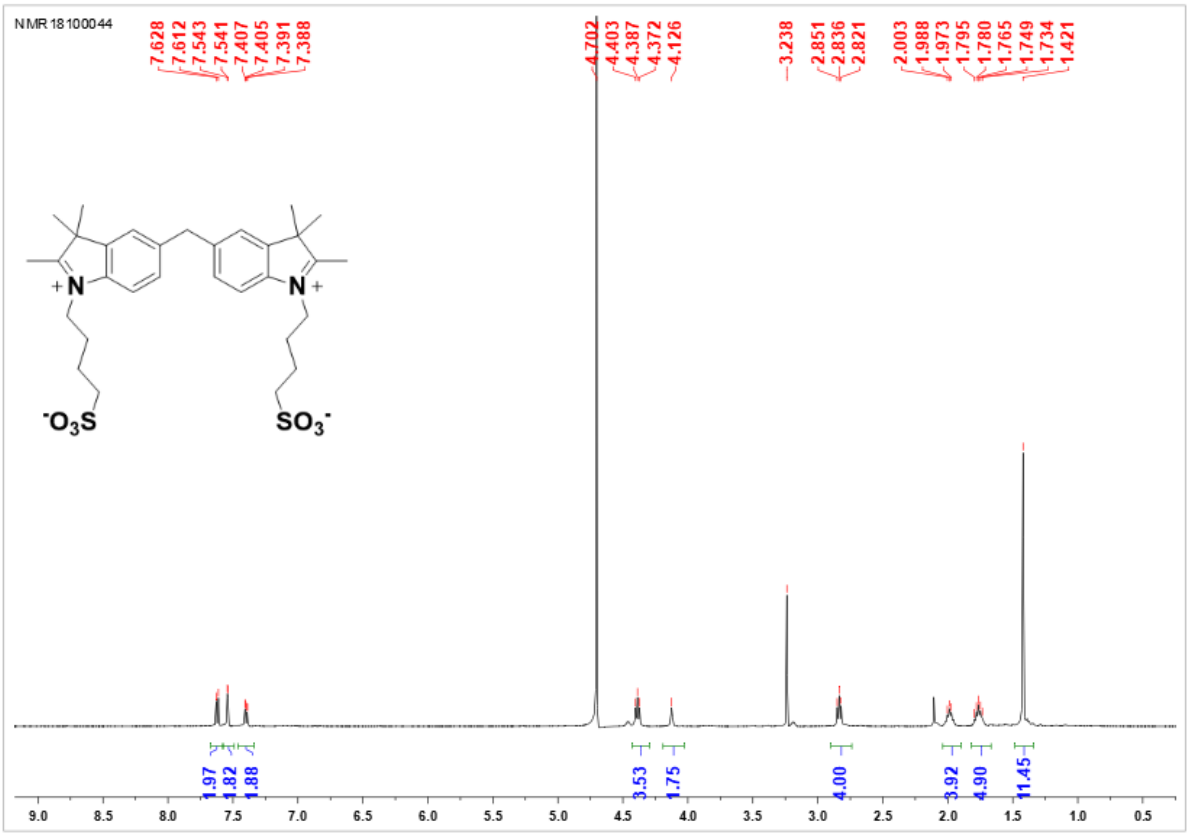

Figure S4: ^{1}H NMR spectra of Methylene diindole quaternary ammonium salt

Figure S5: HRMS spectra of **c-diCy5**

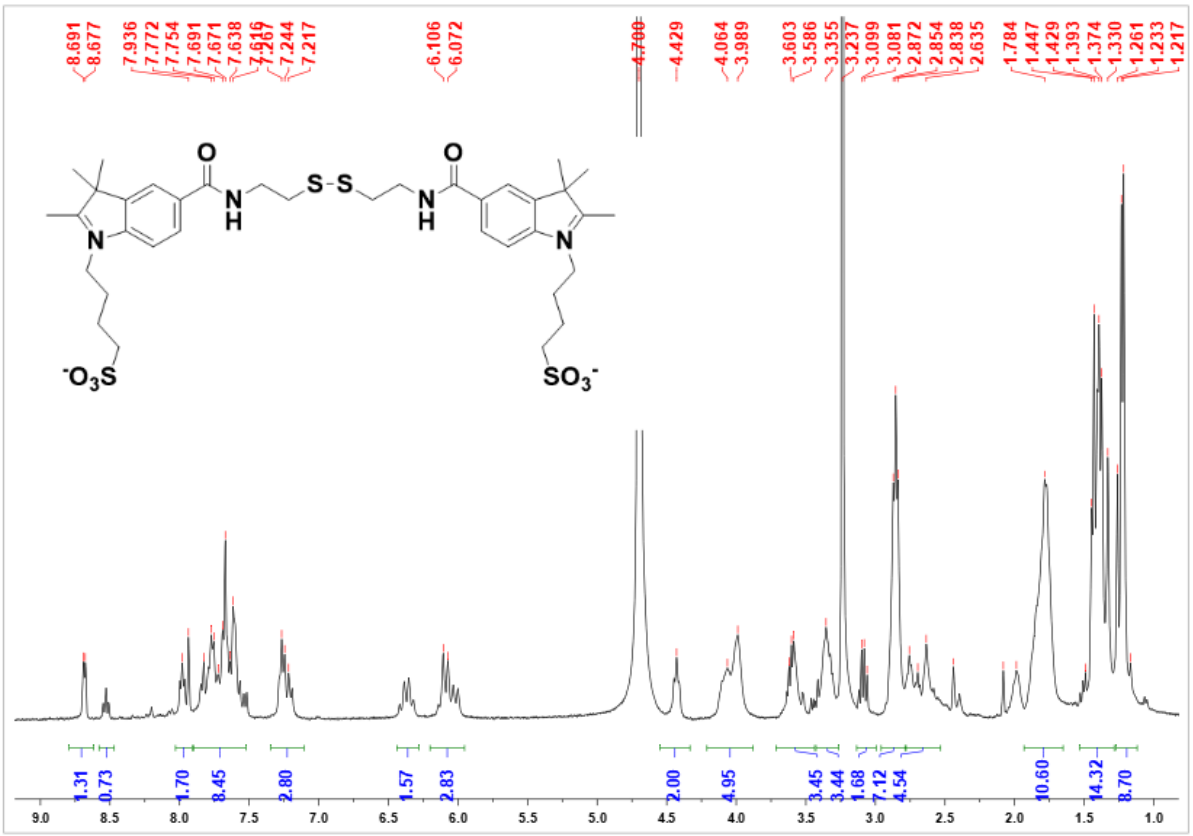

Figure S6: ^{1}H NMR spectra of disulfide diindole quaternary ammonium salt

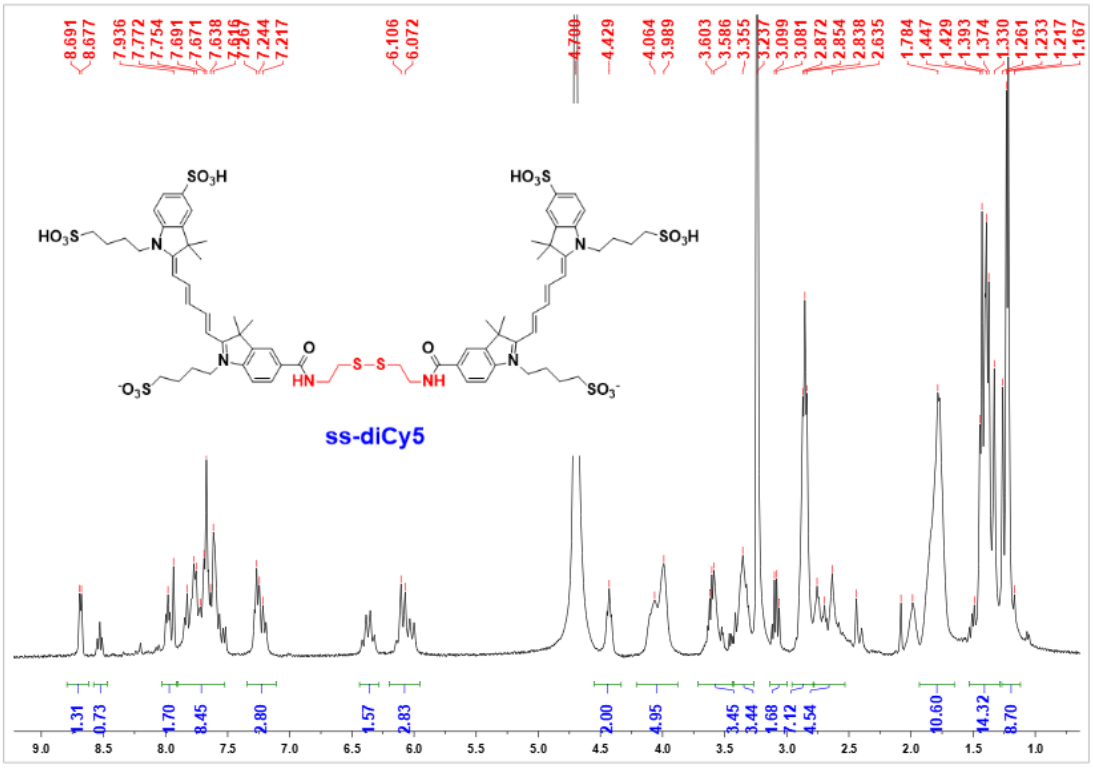

Figure S7: ^{1}H NMR spectra of **ss-diCy5**

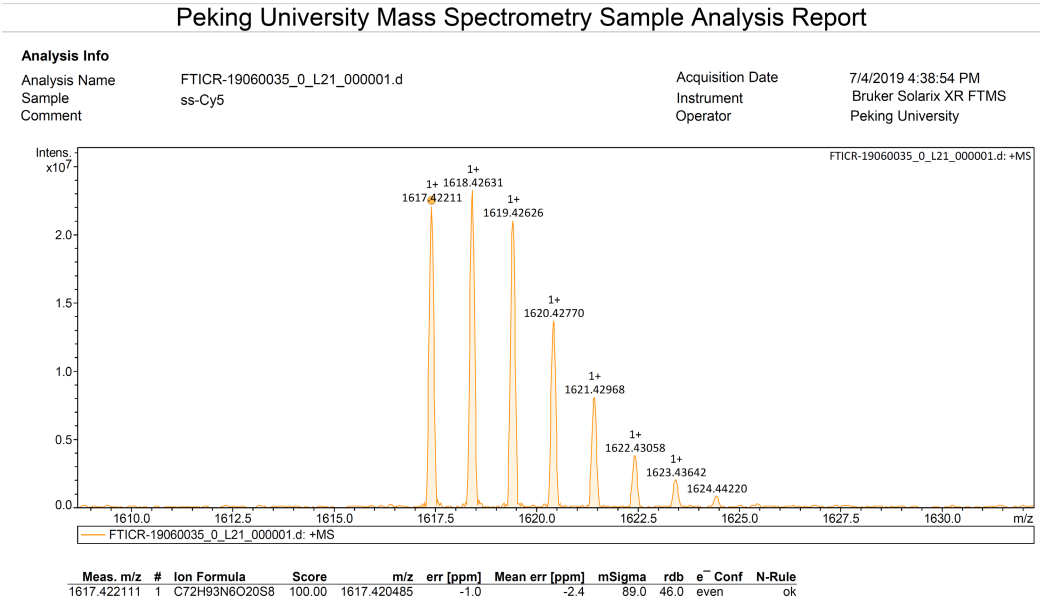

Figure S8: HRMS spectra of **ss-diCy5**

Synthesis of ss-diNH800cw

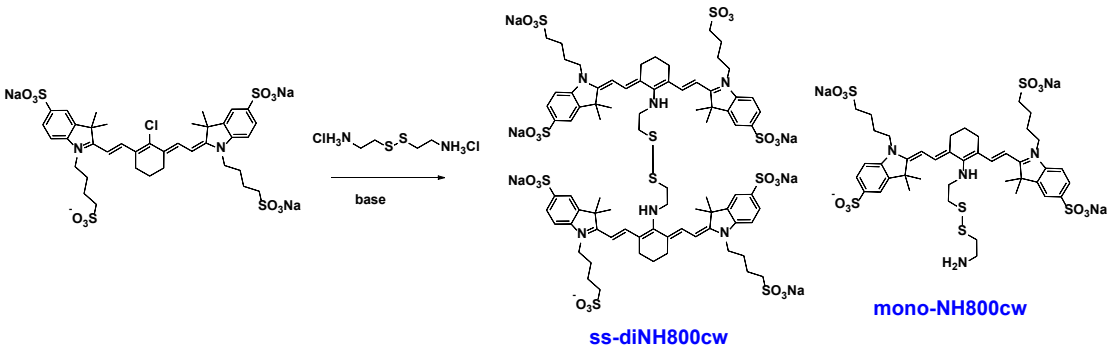

Figure S9: Synthetic route of **ss-diNH800CW**

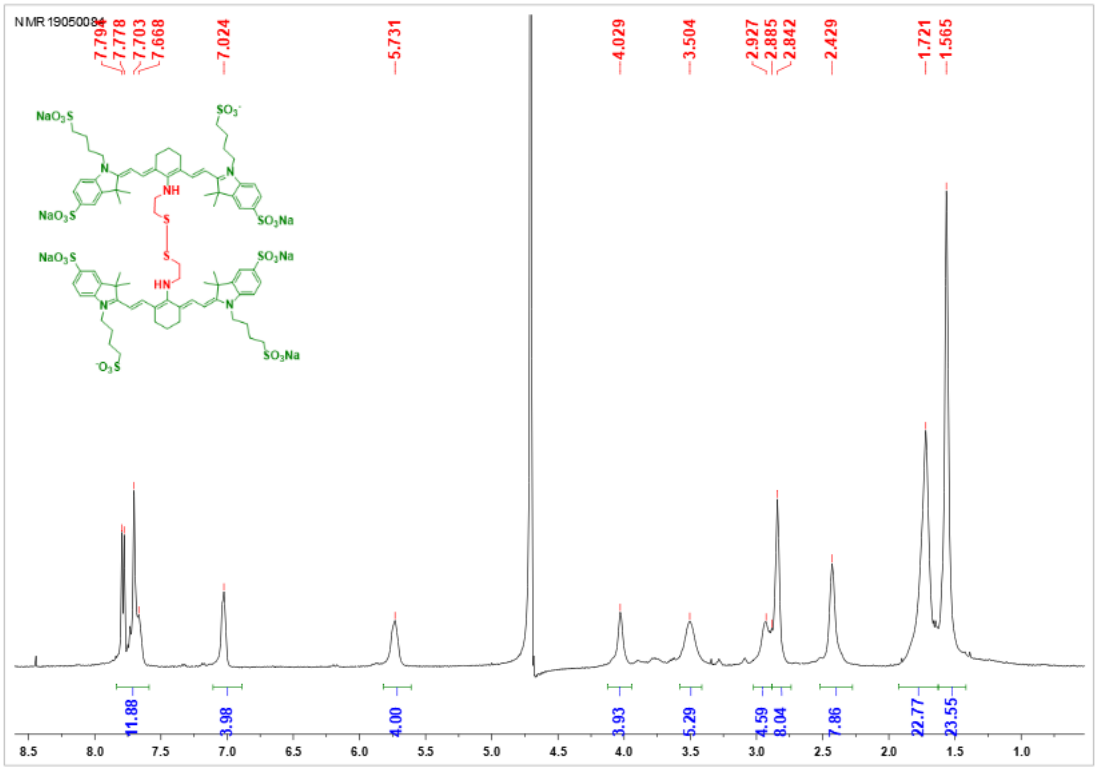

Figure S10: ^{1}H NMR spectra of **ss-diNH800CW**

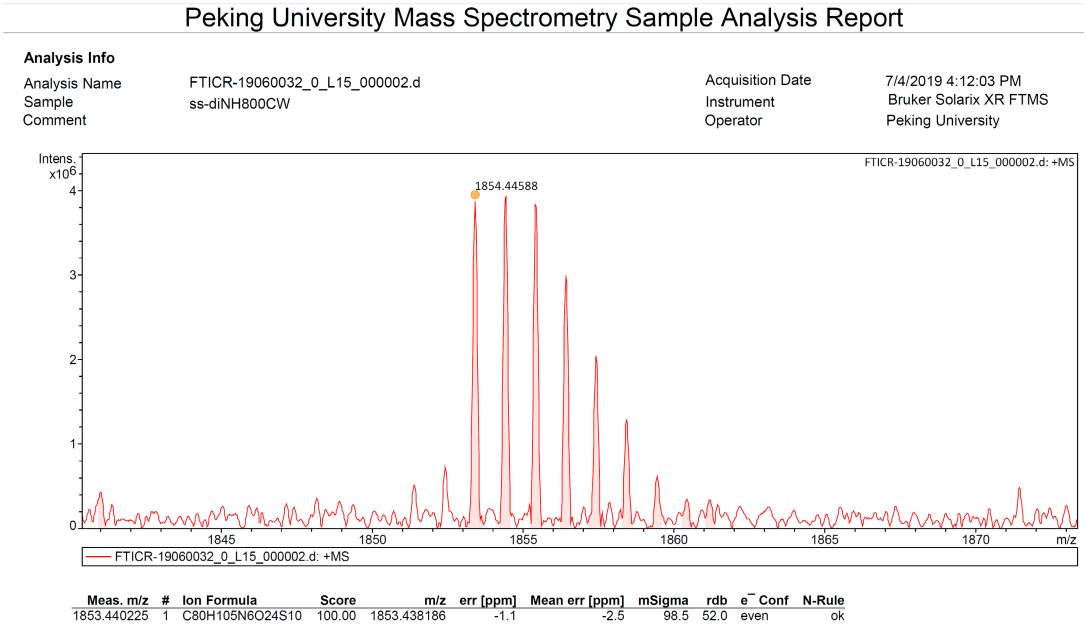

Figure S11: HRMS spectra of **ss- diNH800CW**

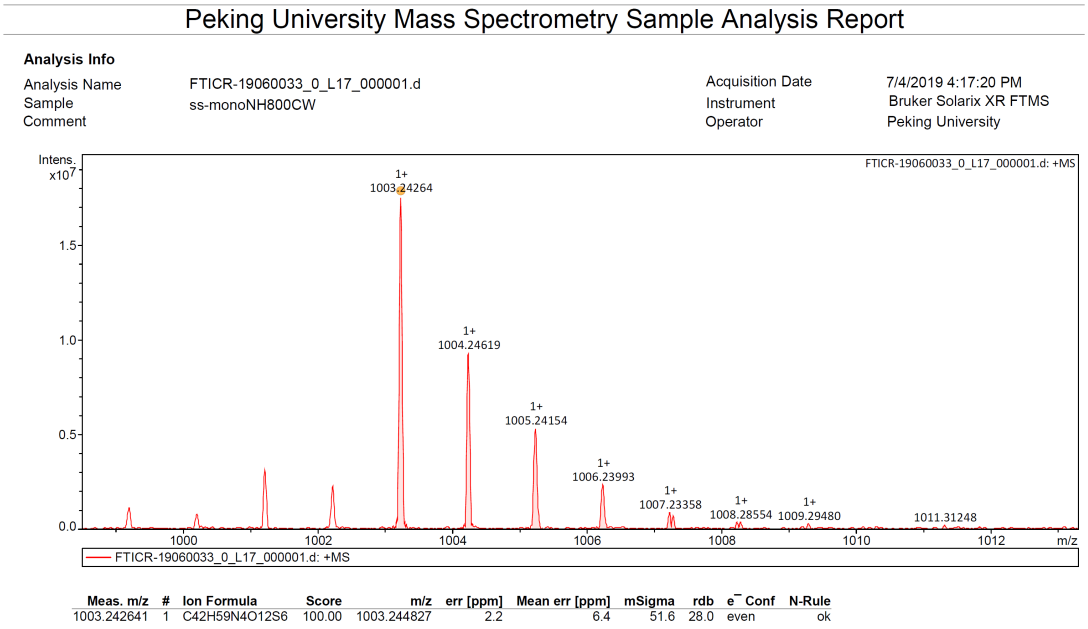

Figure S12: HRMS spectra of **mono-NH800CW**

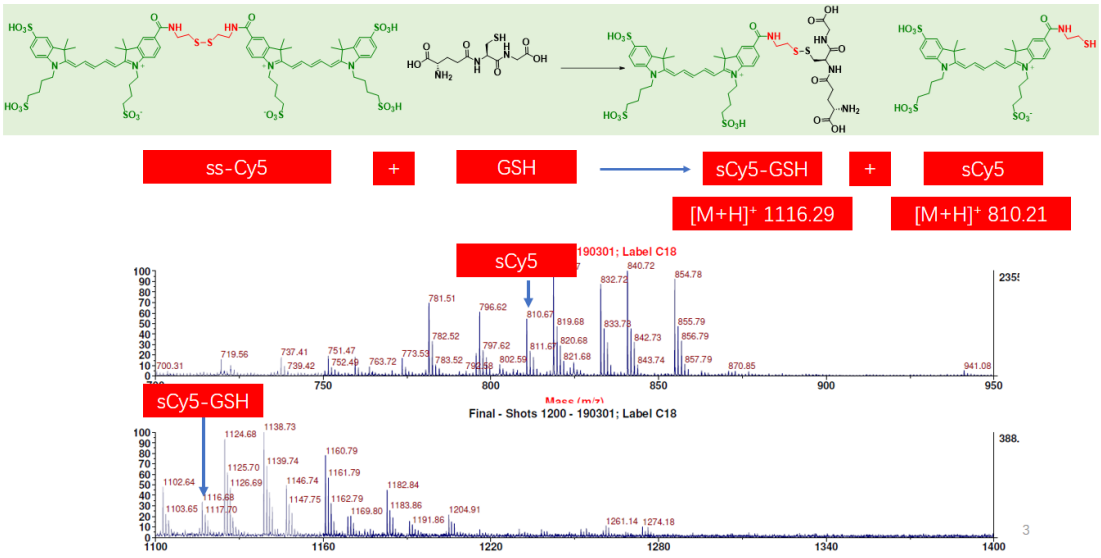

Figure S13: MALDI-TOF spectra of **ss-diCy5** in GSH solution

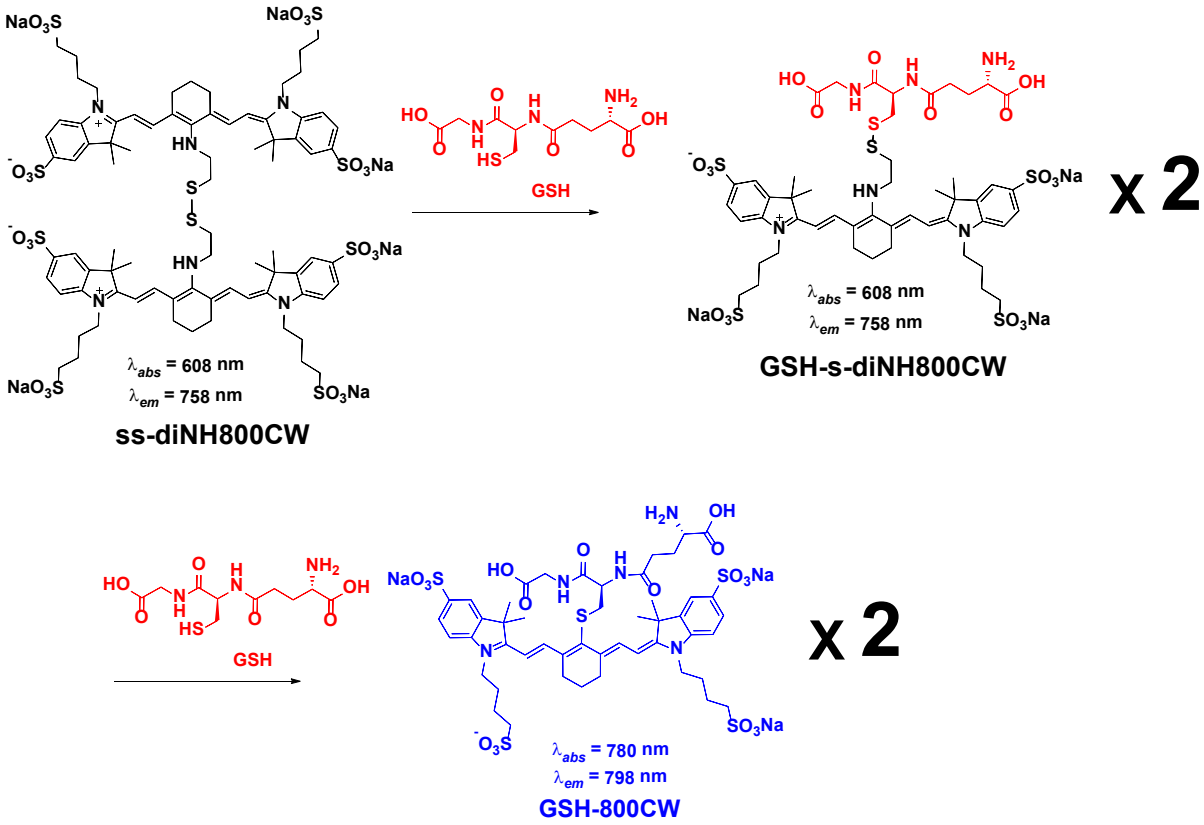

Figure S14: The proposed reactions in **ss- diNH800CW** GSH solution

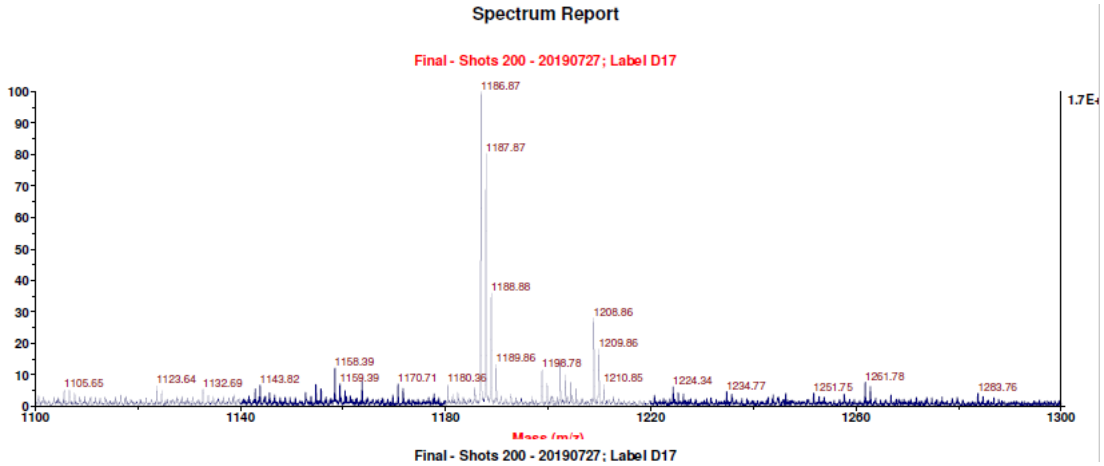

Figure S15: MALDI-TOF spectra of **ss- diNH800CW** in the GSH solution

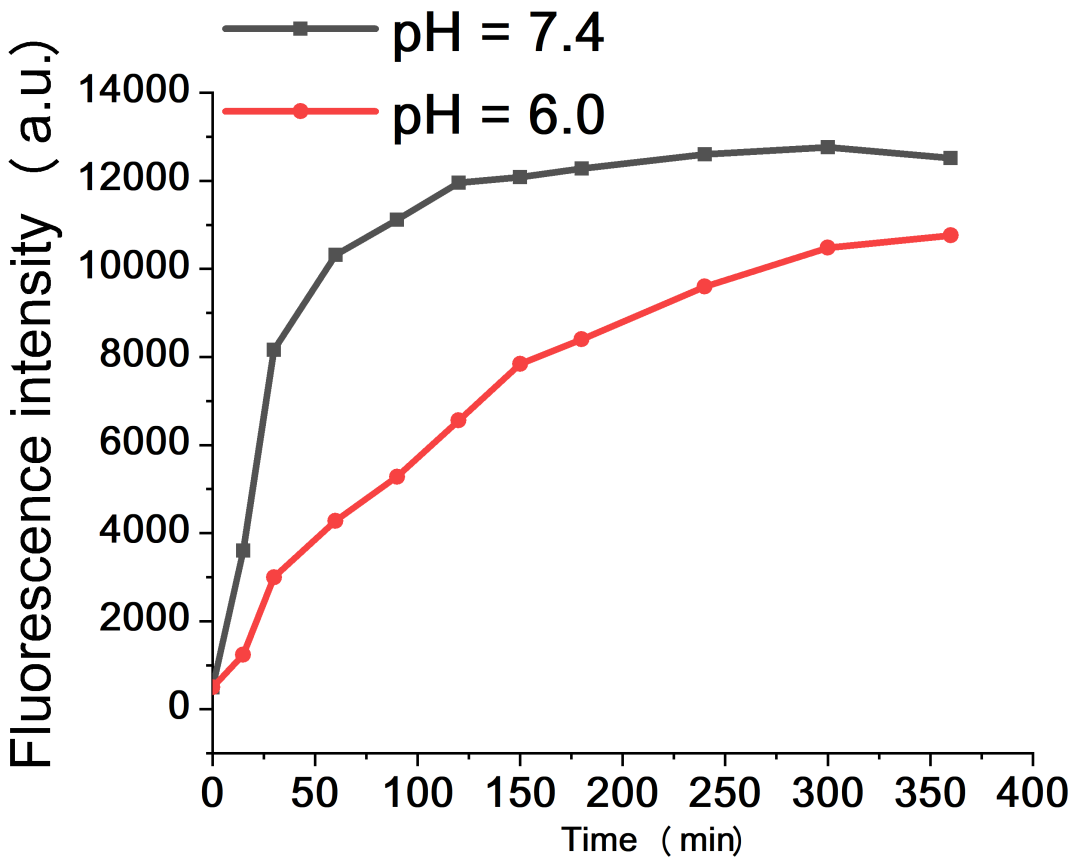

Figure S16: The fluorescence intensity enhancement of **ss-diNH800CW**(5 μM) at ~~the~~ a pH of 6.0 and 7.4 in the presence of GSH (1.5 mM) in PBS solution (25 °C). λ_{ex} = 650 nm.