

Supporting information for

Efficient photosensitization of terbium ions enabled by hydrolysis
of siloxy groups in ligands with specific side-chains

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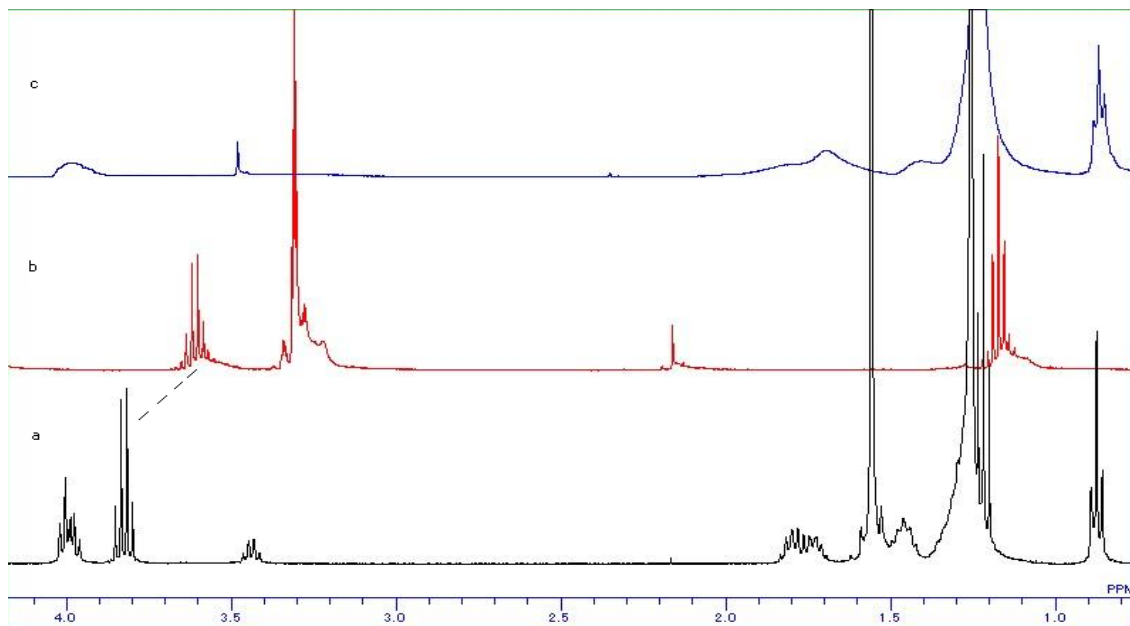


Figure S1. a: ^1H NMR spectrum of compound **1** in CDCl_3 ; **b:** ^1H NMR spectrum was observed when 6.7 mg of **1** was dissolved in 0.7 ml of CD_3OD at 50°C , to which was added 0.7 ml of HCl ($\text{pH} = 1.0$) in CD_3OD and stirred for 6 hours. No peaks from compound **1** were detected; **c:** ^1H NMR spectrum of solid of hydrolyzed products precipitated from the reaction of **1** in CDCl_3 .

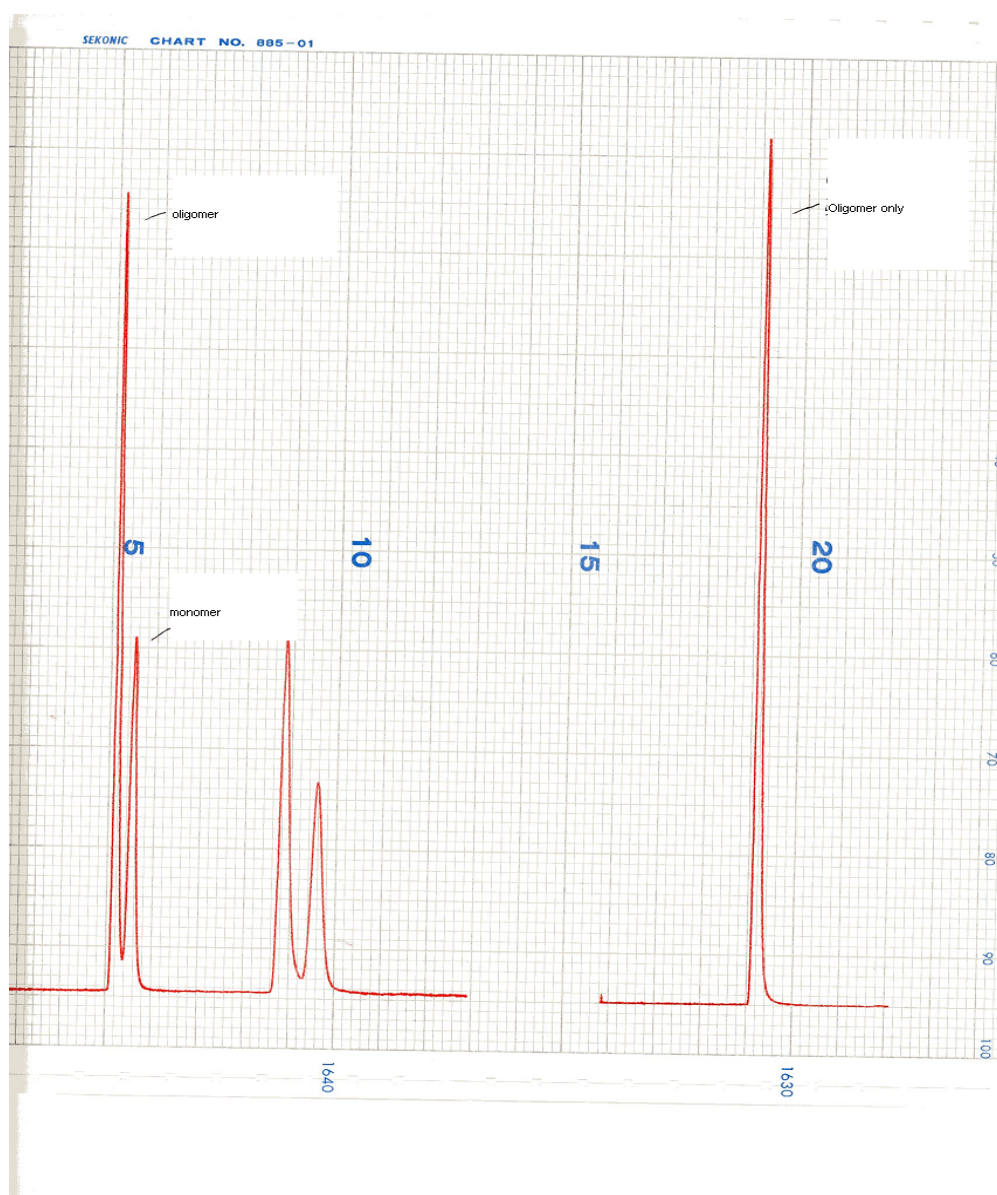


Figure S2. We manually mixed free compound **1** (monomer) and hydrolyzed oligomer in CHCl_3 , then eluted by CHCl_3 through polystyrene packed column in GPC (left), and oligomer only (right).

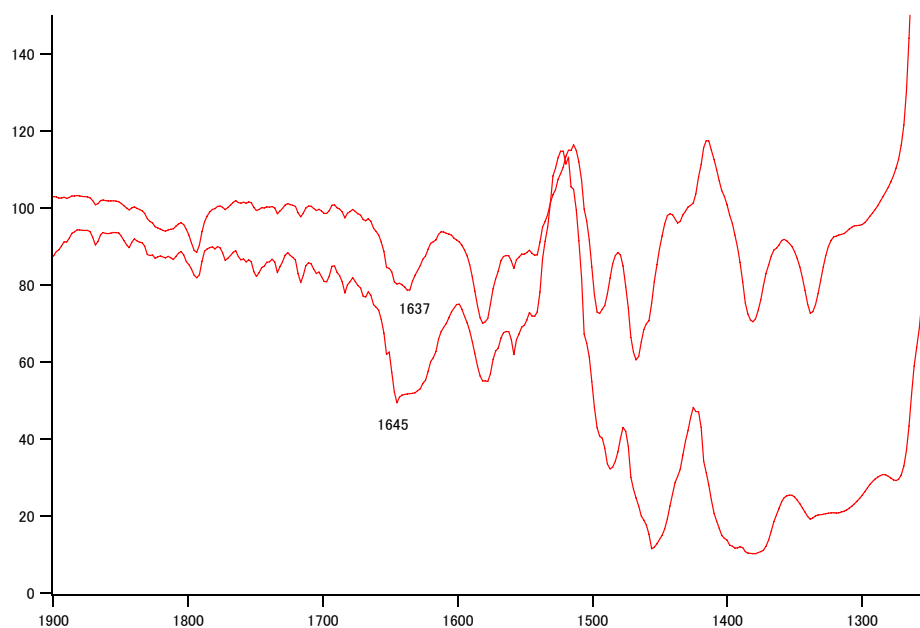


Figure S3. IR spectra of hydrolytic compound **1** before (top) and after addition of terbium ions ($1/Tb = 1/1$) (lower).

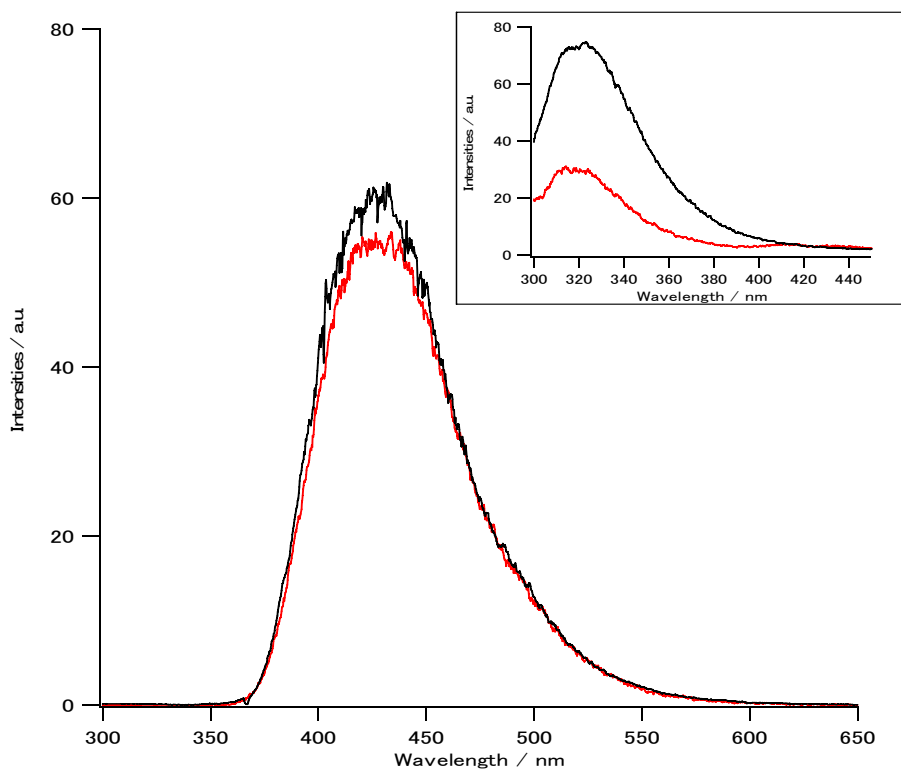


Figure S4. Phosphorescence spectra of compound **1** with Tb ions ($1/\text{Tb} = 1/1$, 5×10^{-6} M, $\text{CHCl}_3/\text{EtOH} = 99/1$) before (red) and after hydrolysis (black). Ex = 280 nm. Inset: Emission of compound **1** (5×10^{-6} M, CHCl_3) before (red) and after hydrolysis (black).

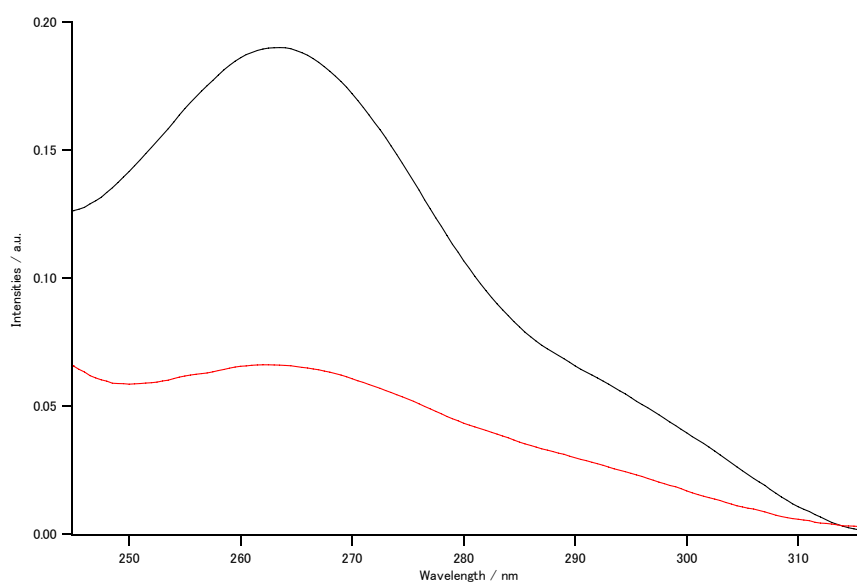


Figure S5. Absorption spectra of compound **1** (5×10^{-6} M, CHCl_3) before (red) and after hydrolysis (black).

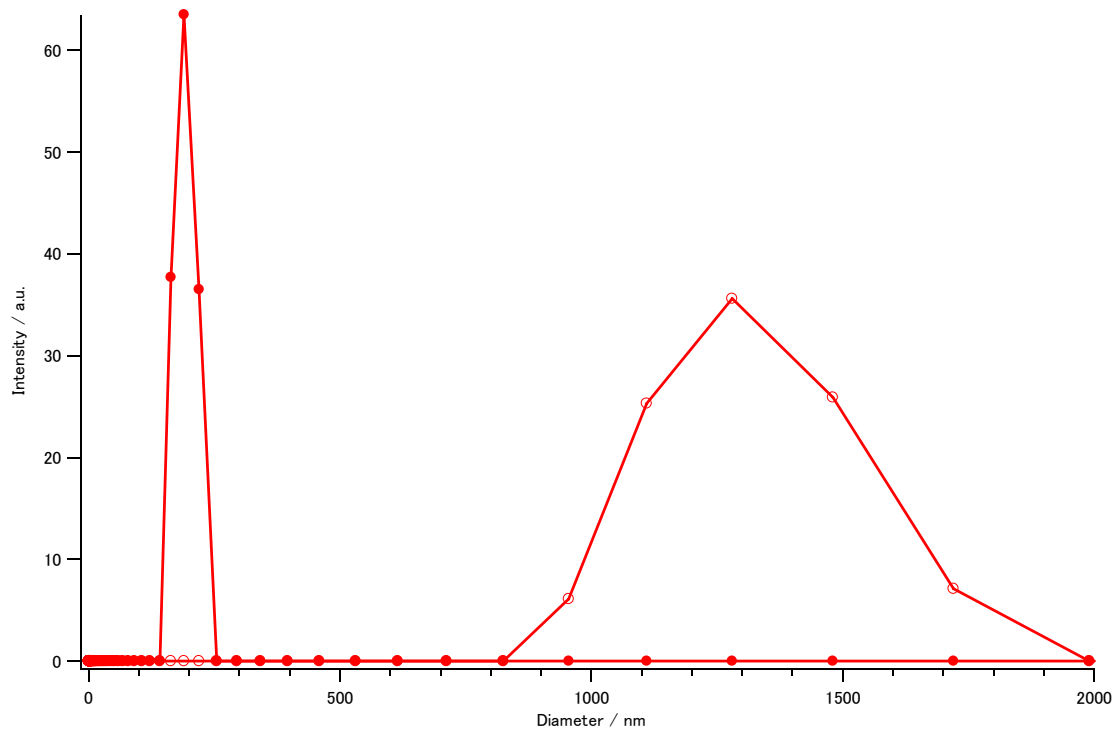
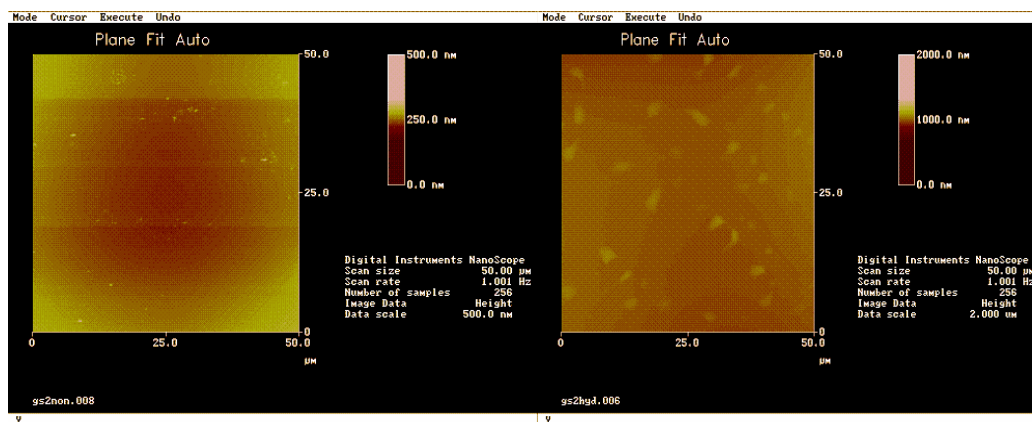
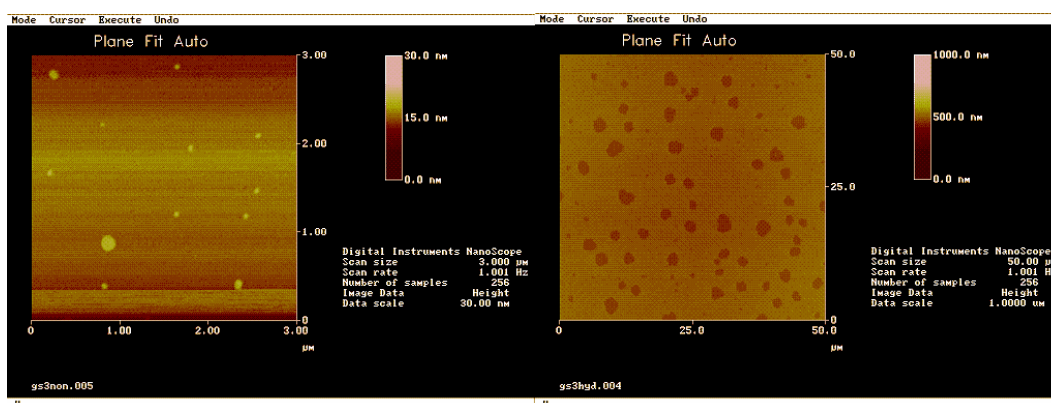


Figure S6. DLS data of compound **1** (5×10^{-6} M, CHCl_3) before (full circle) and after hydrolysis (empty circle).



a

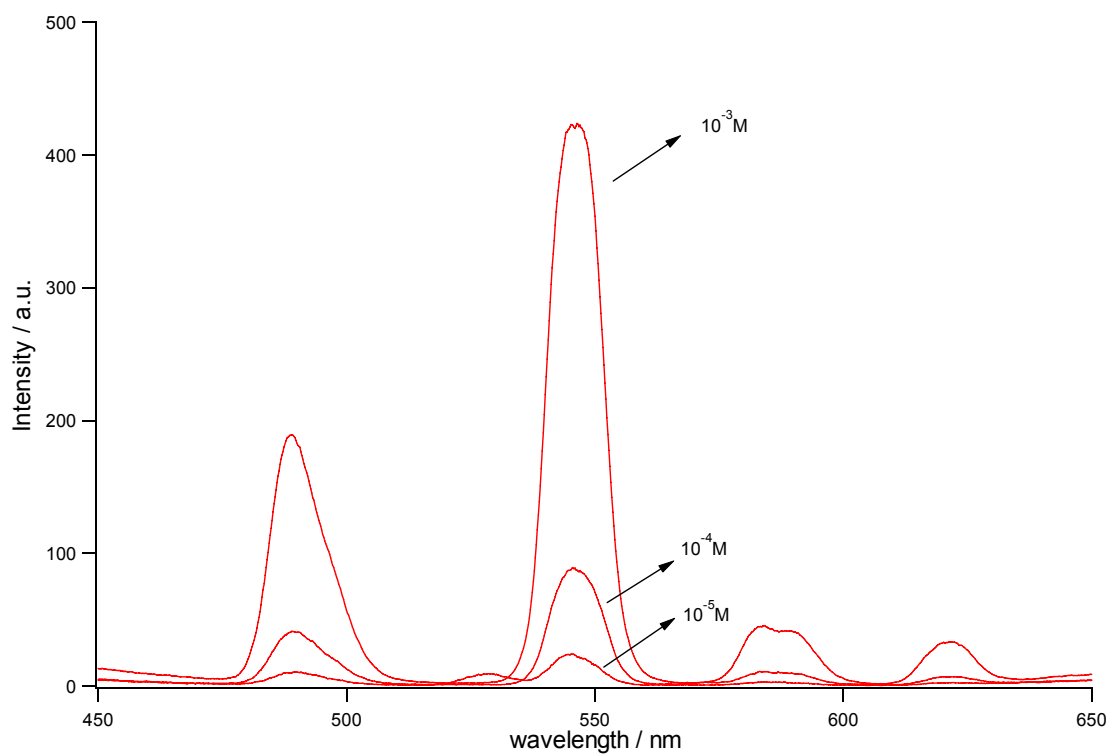
b



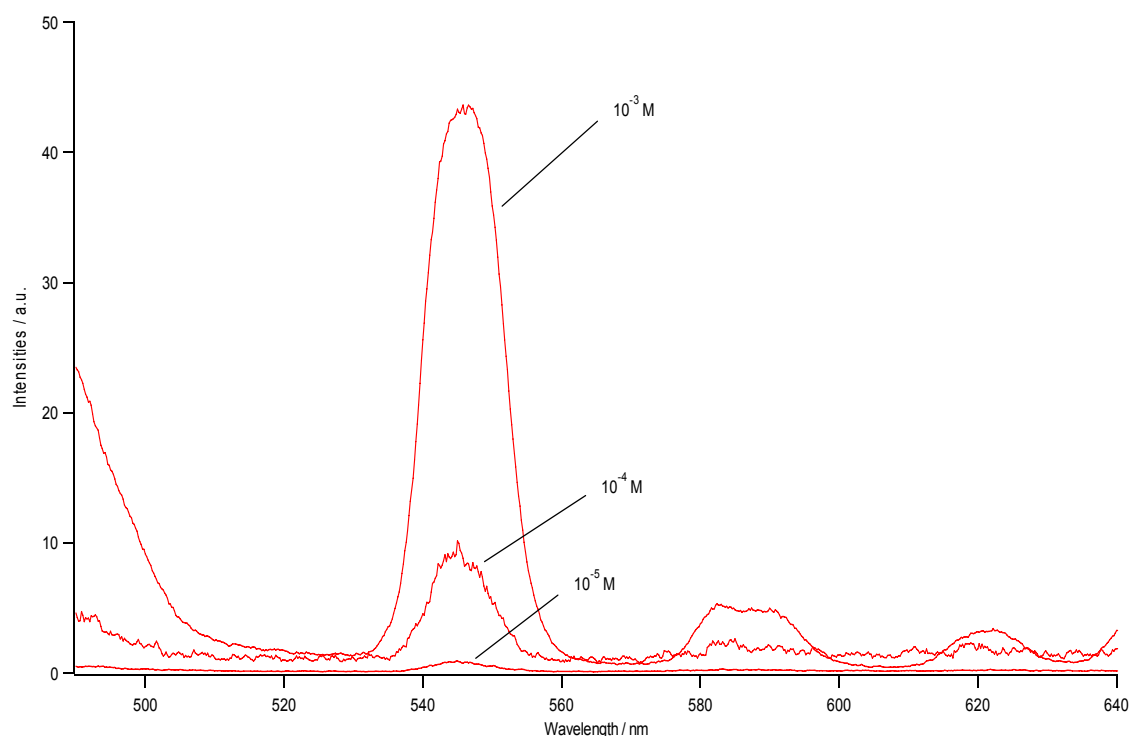
c

d

Figure S7. AFM of compounds **2** (upper) and **3** (lower, 10^{-3} M, CHCl_3) before (a,c) and after hydrolysis (b,d).



a



b

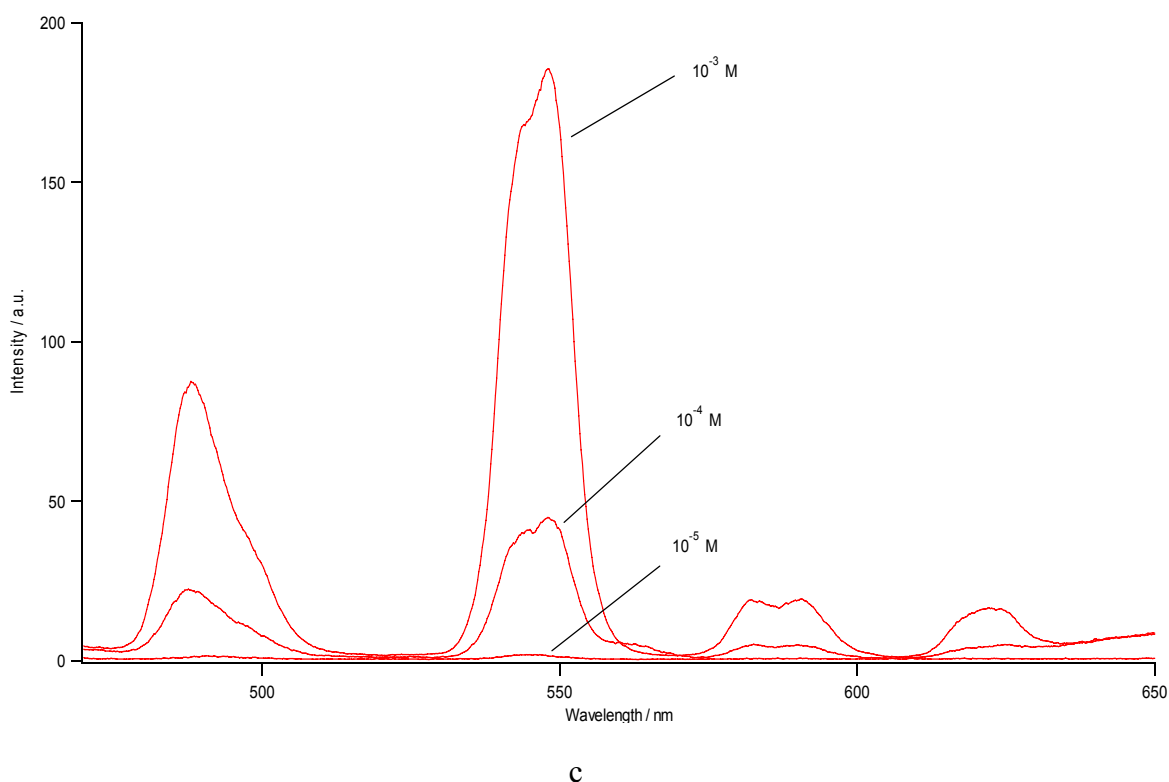


Figure S8. a: Emission spectra of compound **1** (10^{-5} to 10^{-3} M) with Tb ions (Tb was fixed as 10^{-5} M, $\text{CHCl}_3/\text{EtOH} = 99/1$). $\text{Ex} = 280$ nm. **b:** Emission spectra of compound **2** (10^{-5} to 10^{-3} M) with Tb ions (Tb was fixed as 10^{-5} M, $\text{CHCl}_3/\text{EtOH} = 99/1$). $\text{Ex} = 280$ nm. **c:** Emission spectra of compound **3** (10^{-5} to 10^{-3} M) with Tb ions (Tb was fixed as 10^{-5} M, $\text{CHCl}_3/\text{EtOH} = 99/1$). $\text{Ex} = 280$ nm.