Supporting Information

Synthesis, Photophysical, and Magnetic Studies of Ternary Lanthanide(III) Complexes of Naphthyl Chromophore Functionalized Imidazo[4,5-*f*][1,10]-phenanthroline and Dibenzoylmethane

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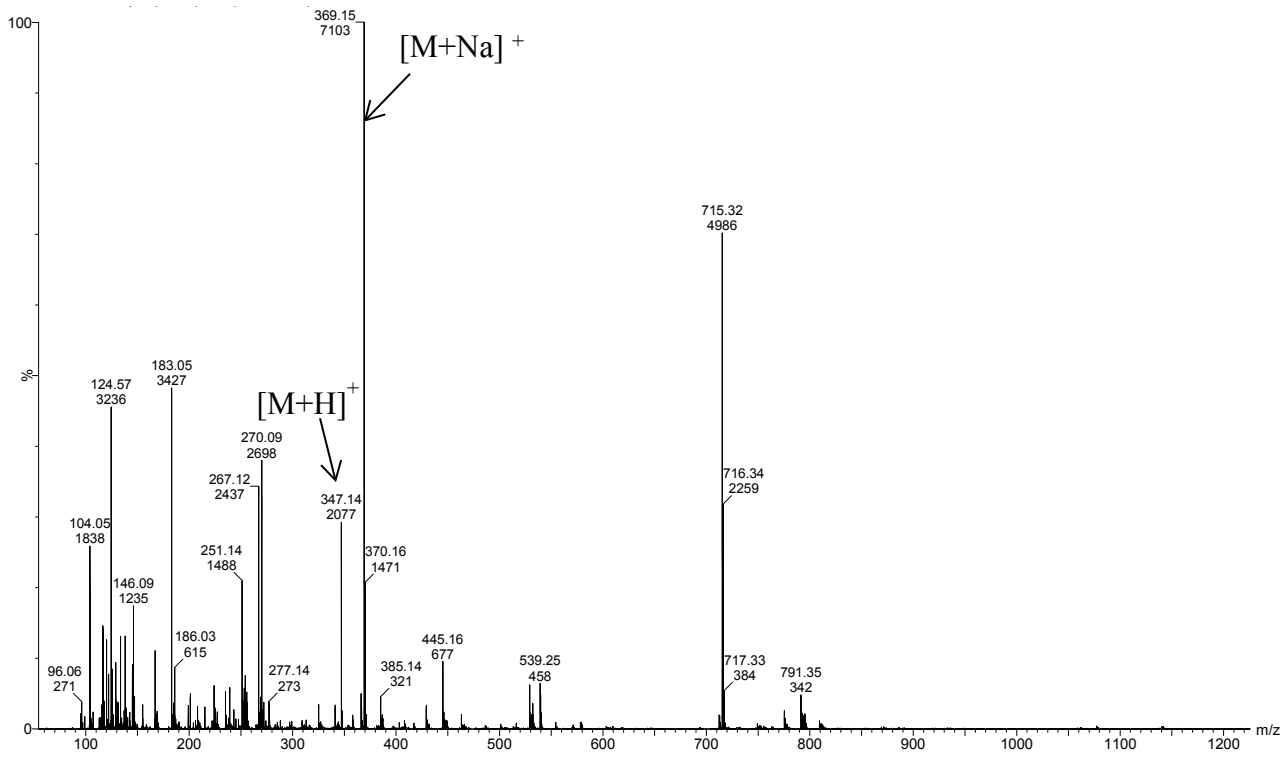

Figure S1. ESI-TOF mass spectrum of **L1**.

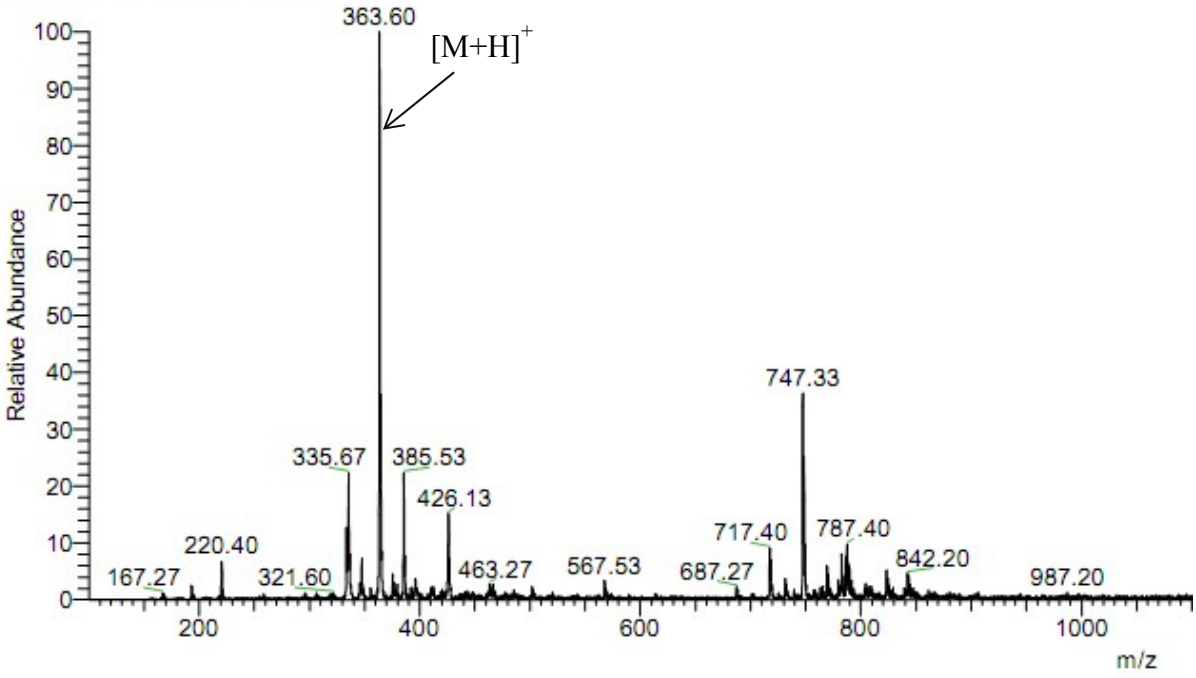

Figure S2. ESI-TOF mass spectrum of **L2**.

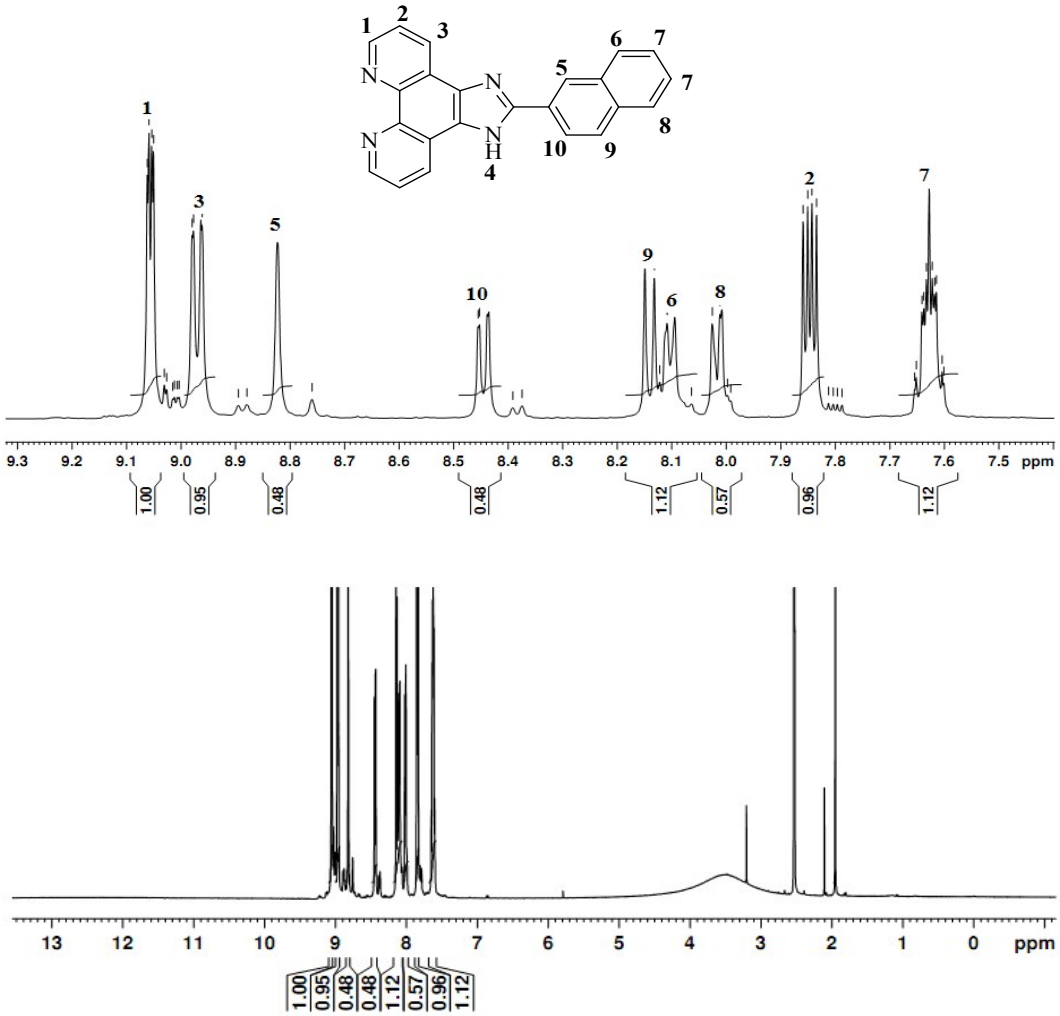

Figure S3. 500 MHz ^{1}H NMR spectrum of **L1** in DMSO-d_6 at 25 °C.

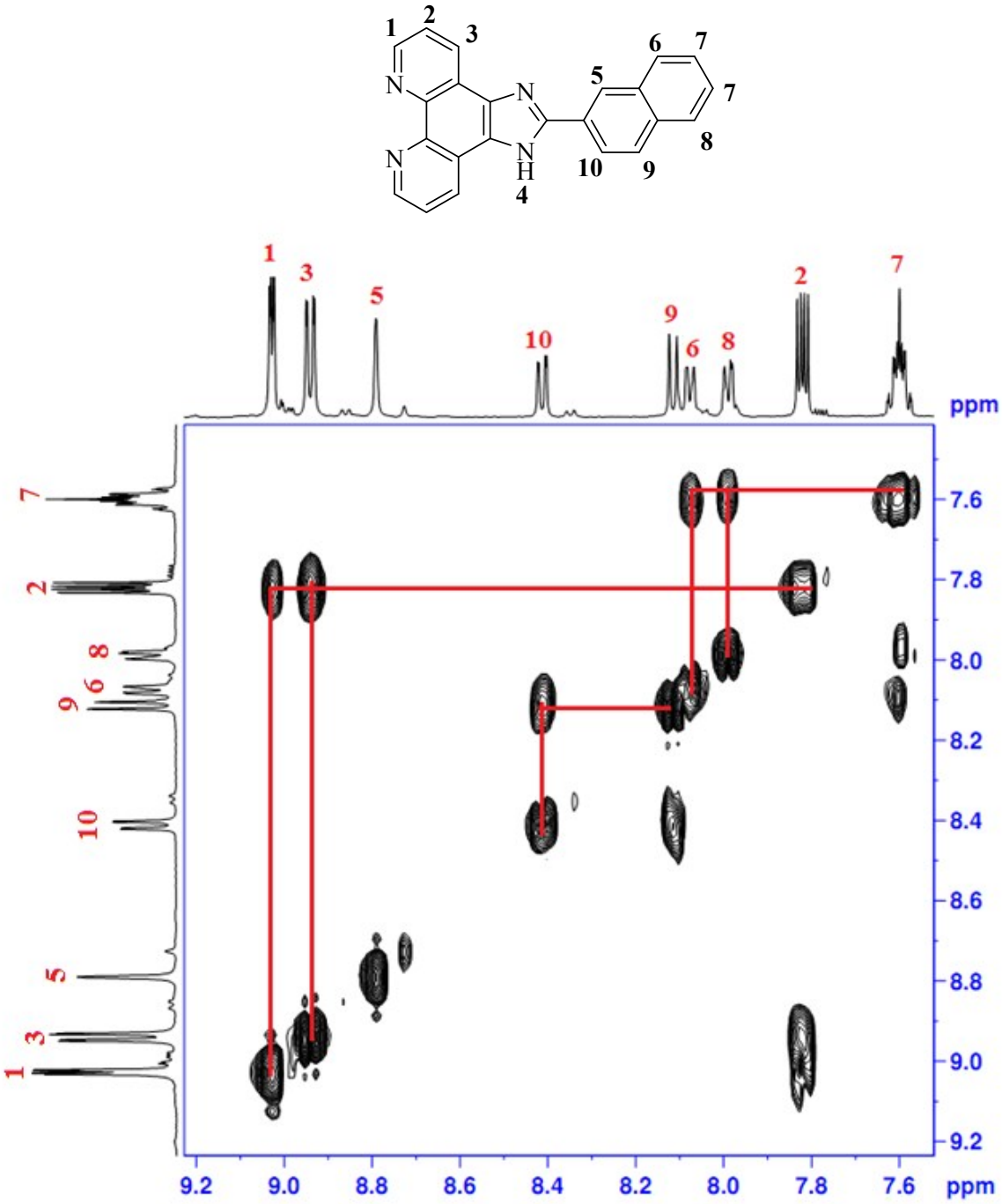

Figure S4. ^{1}H-^{1}H COSY spectrum of **L1**.

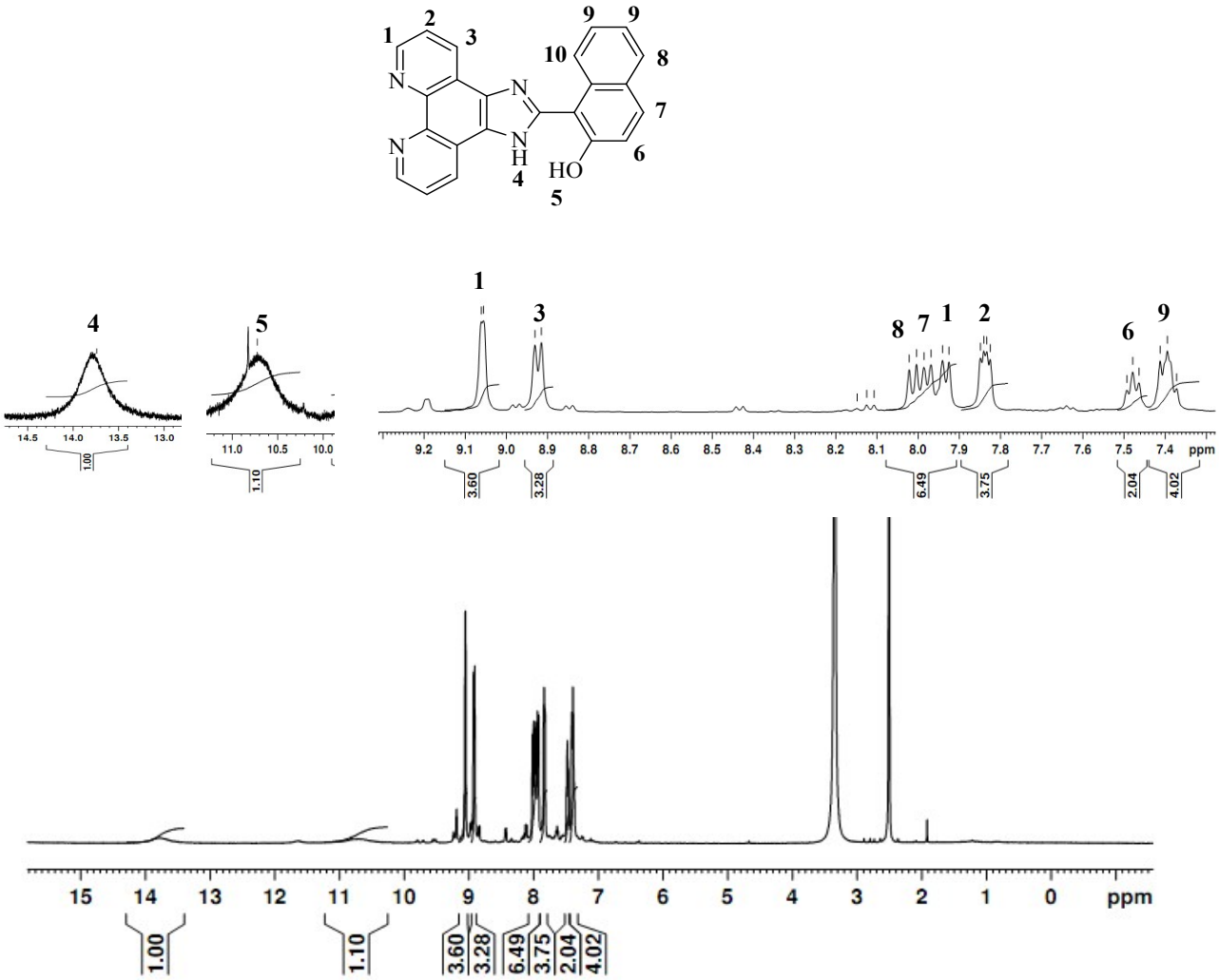

Figure S5. 500 MHz ^{1}H NMR spectrum of **L2** in DMSO-d_6 at 25 °C.

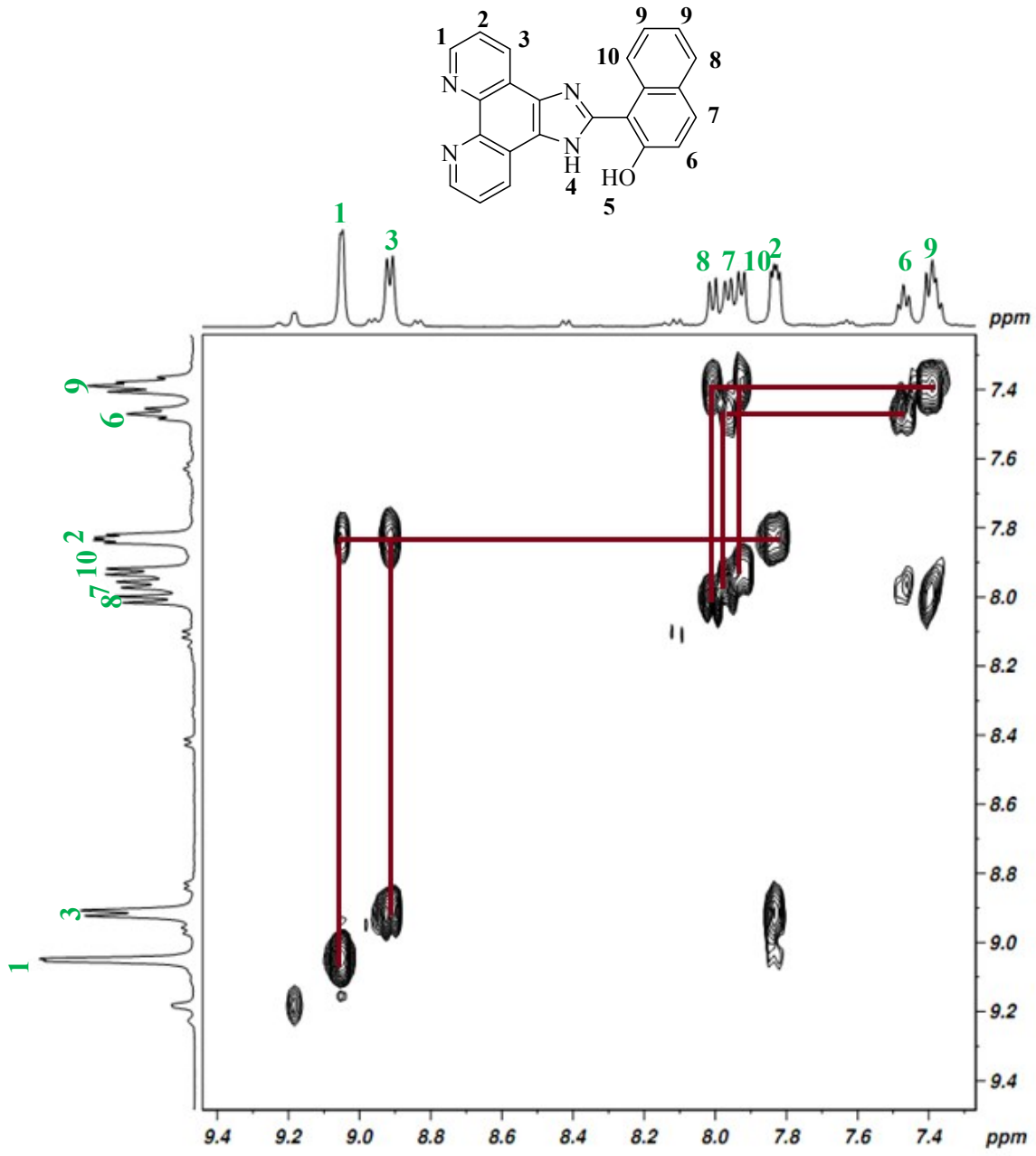

Figure S6. ^{1}H-^{1}H COSY spectrum of **L2**.

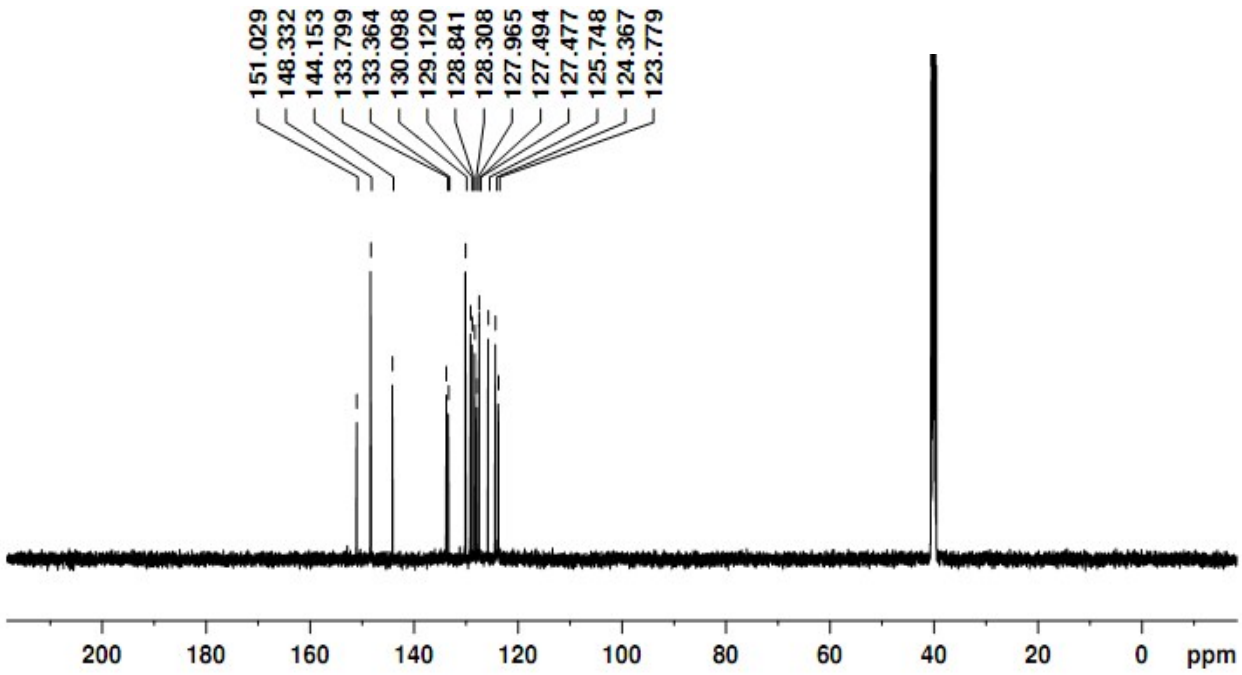

Figure S7. 125 MHz ^{13}C NMR spectrum of **L1** in DMSO-d_6 at 25 °C.

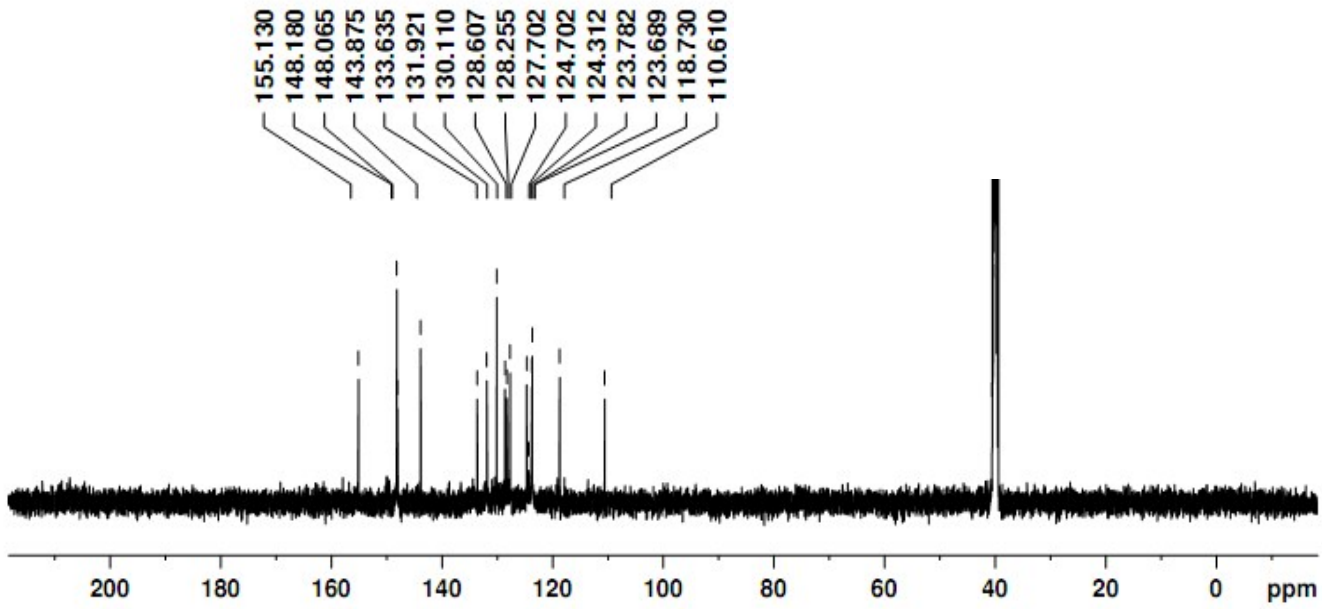

Figure S8. 125 MHz ^{13}C NMR spectrum of **L2** in DMSO-d_6 at 25 °C.

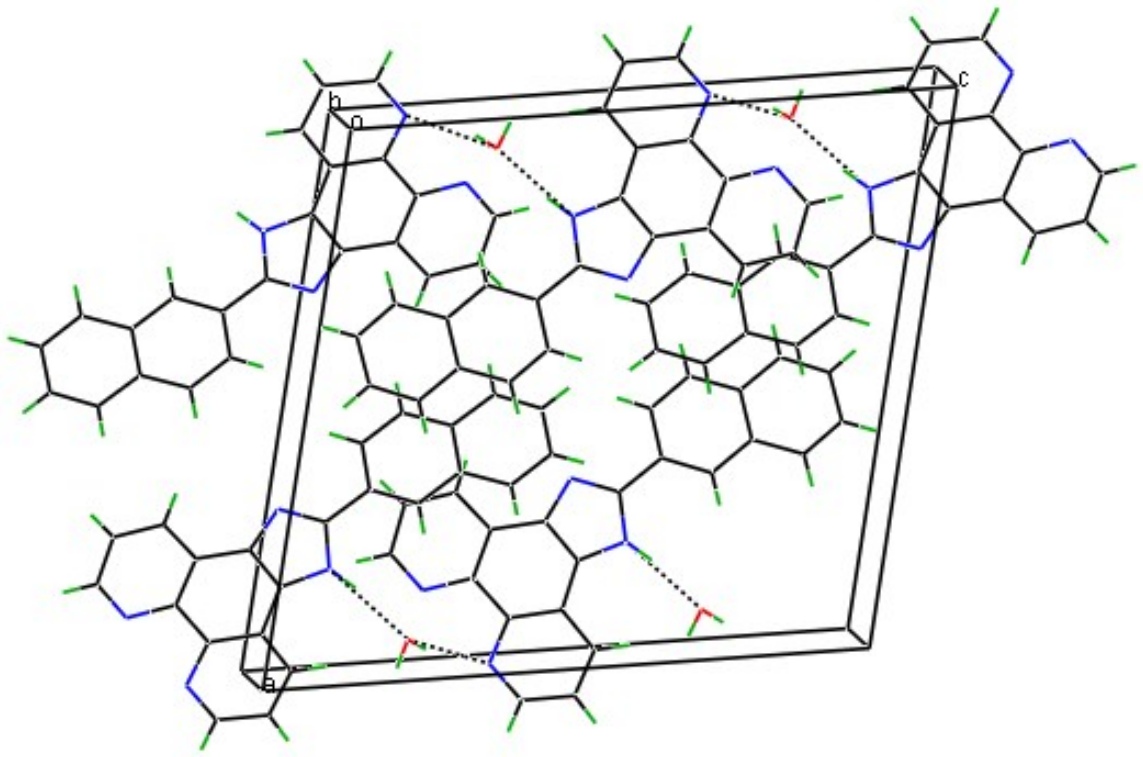

Figure S9. Unit cell packing diagram displaying hydrogen bonding of **L1**.

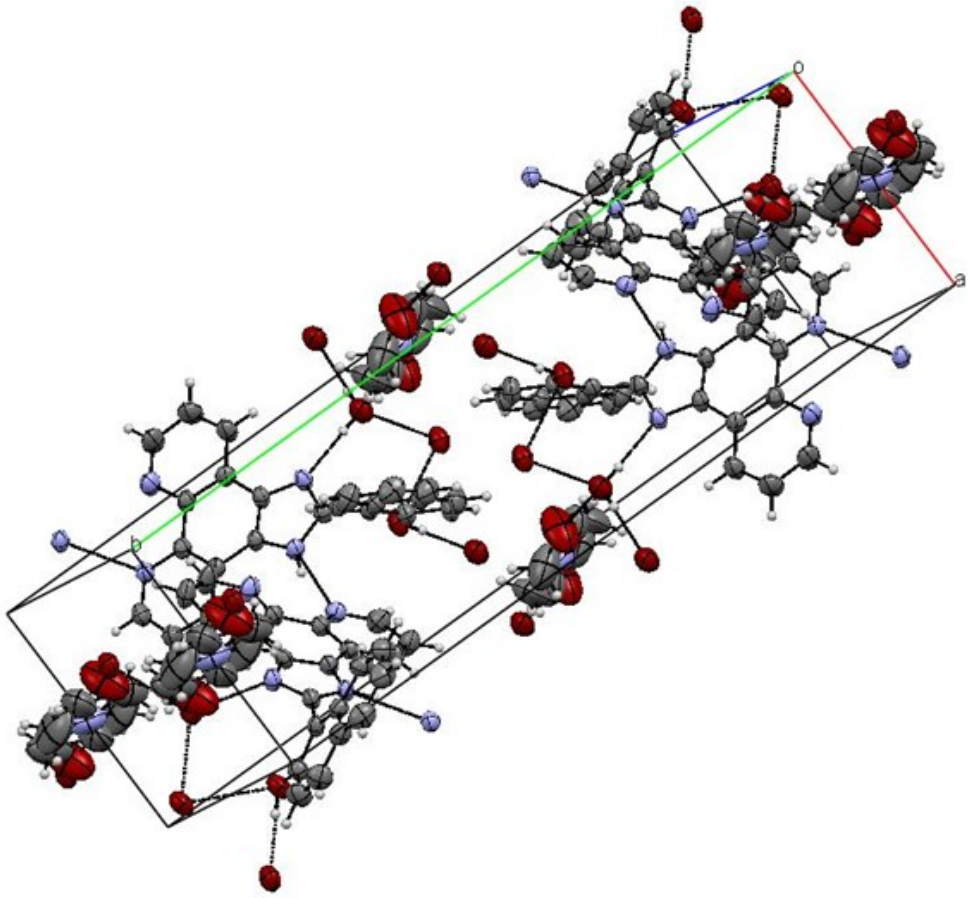

Figure S10. Unit cell packing diagram displaying hydrogen bonding of **L2.**

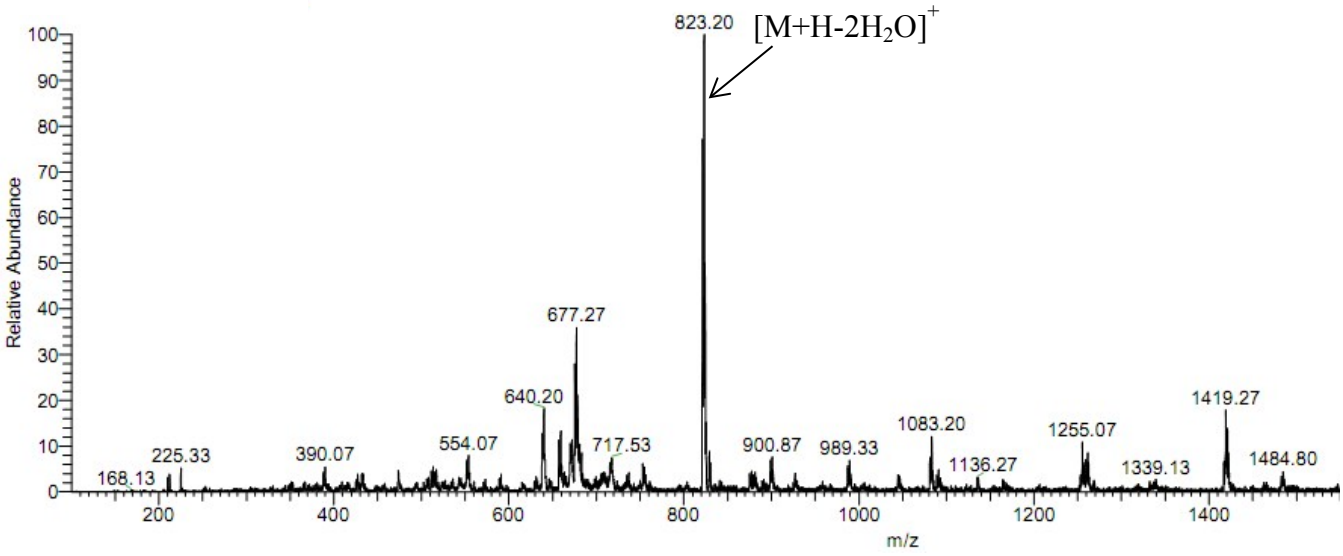

Figure S11. ESI-TOF mass spectrum of $[Eu(DBM)_3(H_2O)_2]$.

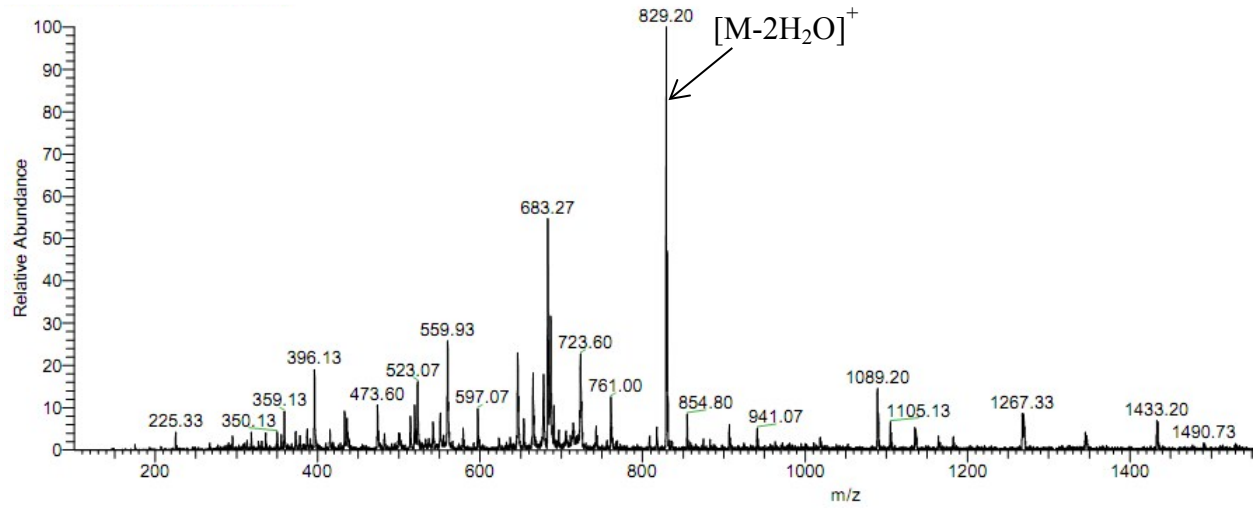

Figure S12. ESI-TOF mass spectrum of $[Tb(DBM)_3(H_2O)_2]$.

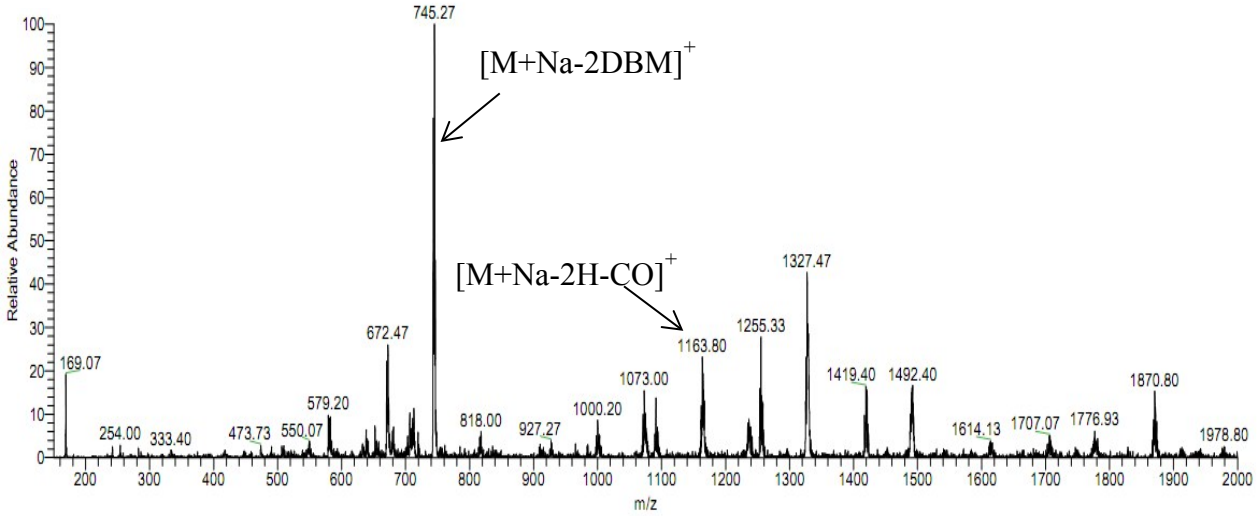

Figure S13. ESI-TOF mass spectrum of [Eu(DBM)$_3$(**L1**)].

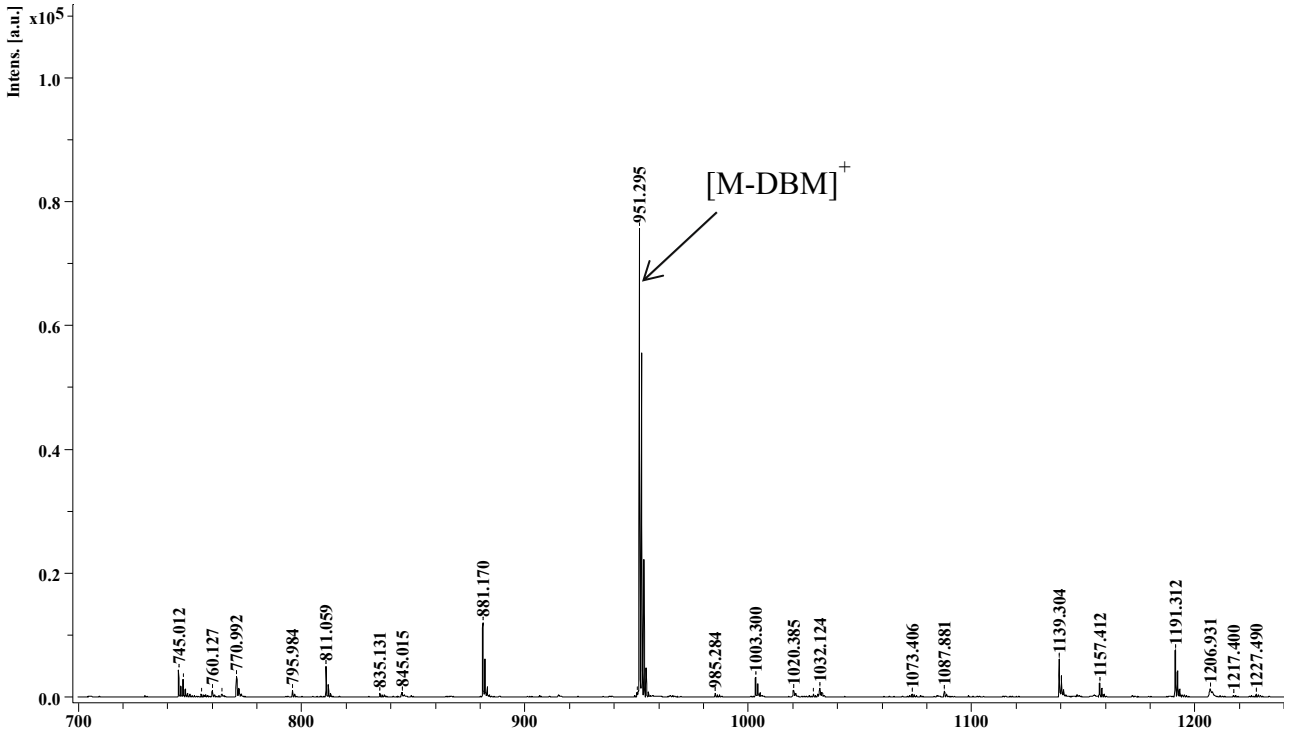

Figure S14. MALDI-TOF mass spectrum of [Tb(DBM)$_3$(**L1**)].

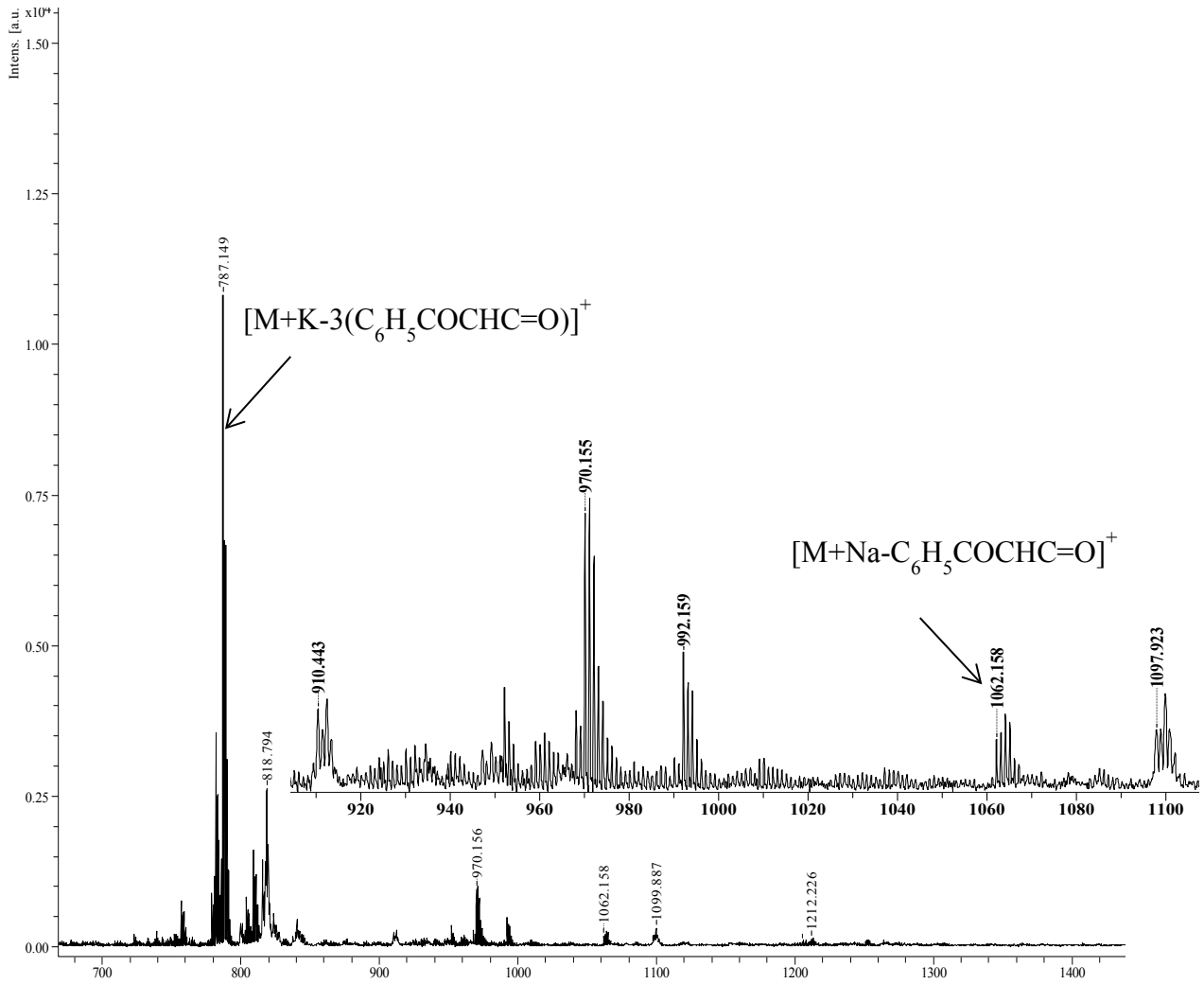

Figure S15. MALDI-TOF mass spectrum of [Eu(DBM)$_3$(**L2**)].

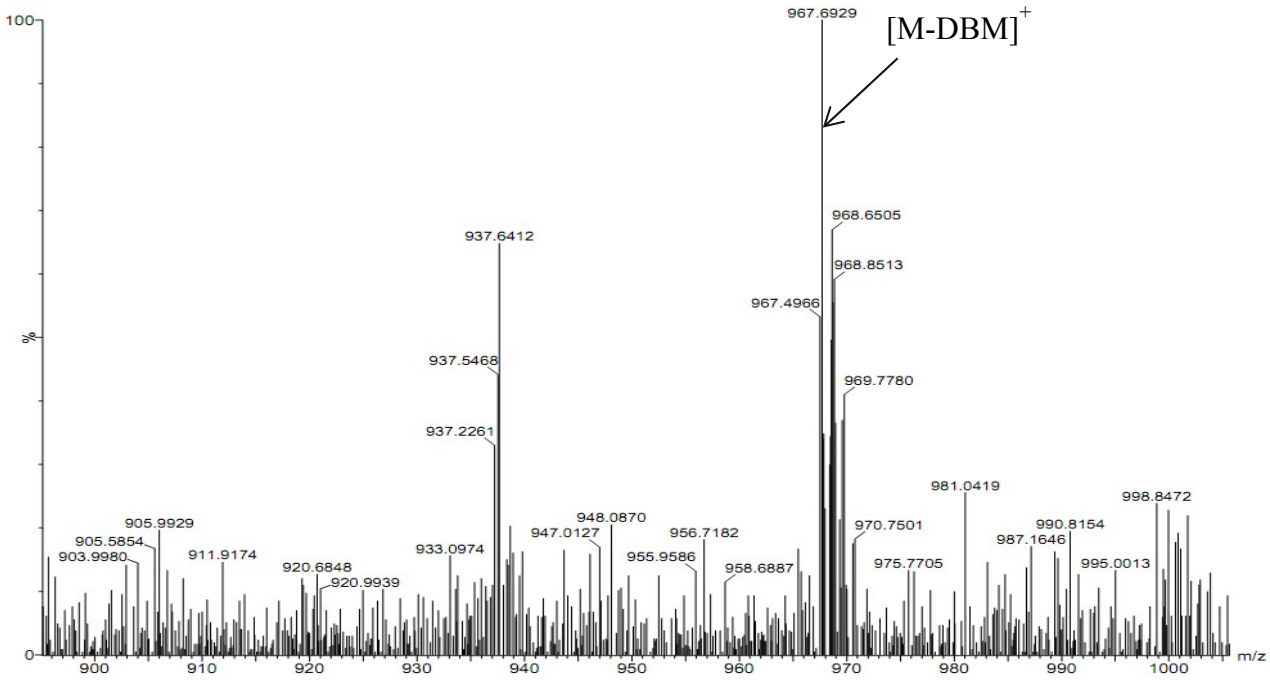

Figure S16. ESI mass spectrum of [Tb(DBM)$_3$(**L2**)].

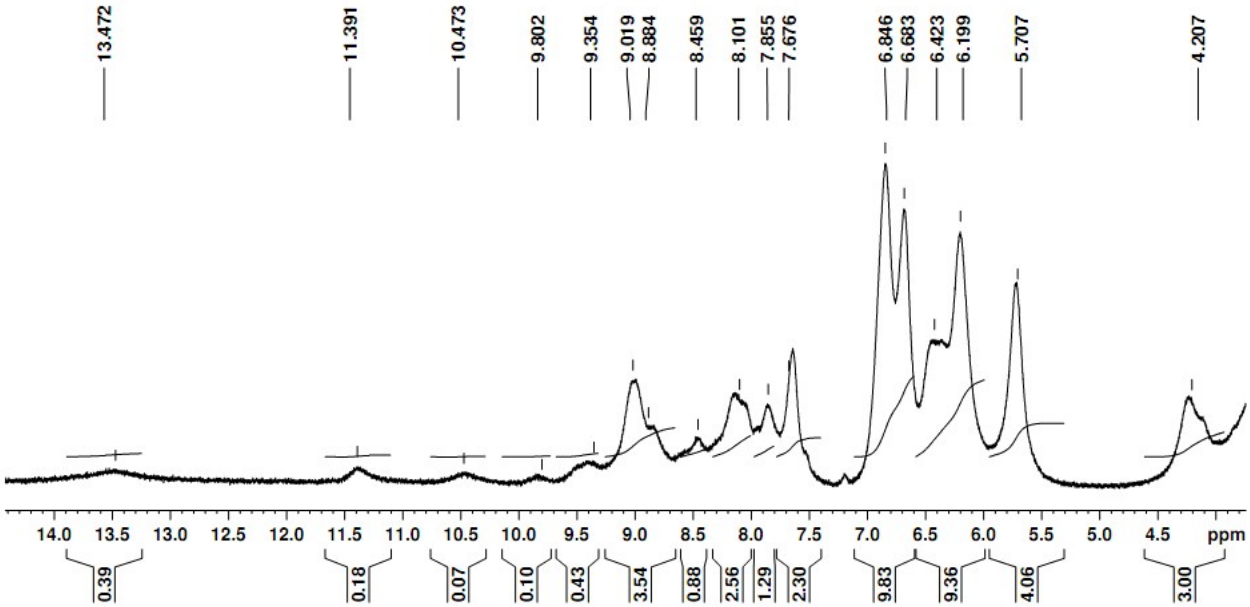

Figure S17. 500 MHz ^{1}H NMR spectrum of [Eu(DBM)$_3$(**L1**)] in DMSO-d_6 at 25 °C.

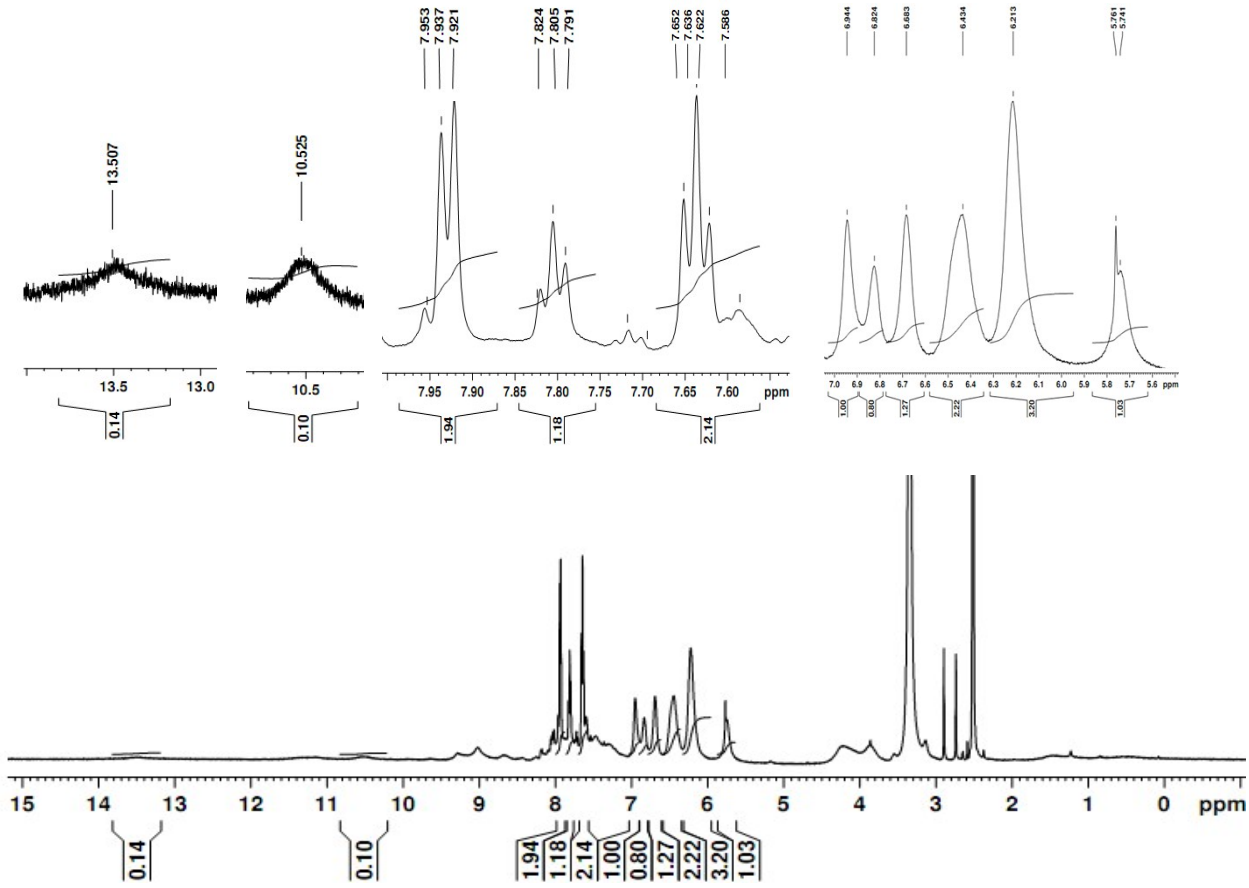

Figure S18. 500 MHz ^{1}H NMR spectrum of [Eu(DBM)$_3$(**L2**)] in DMSO-d_6 at 25 °C.

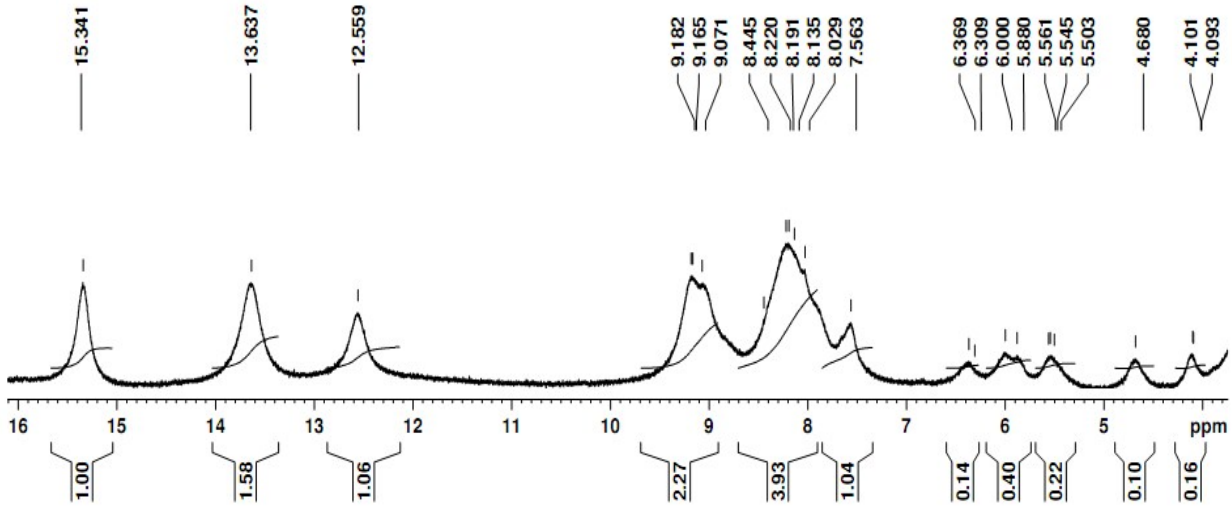

Figure S19. 500 MHz ^{1}H NMR spectrum of [Tb(DBM)$_3$(**L1**)] in DMSO-d_6 at 25 °C.

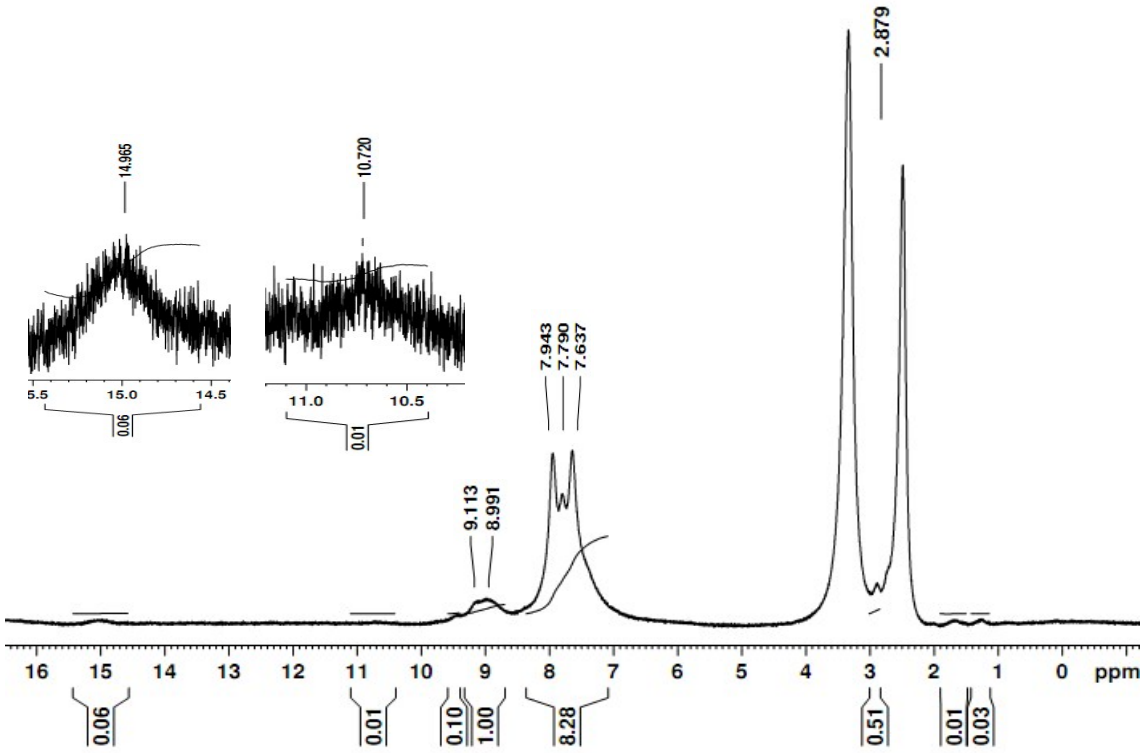

Figure S20. 500 MHz ^{1}H NMR spectrum of [Tb(DBM)$_3$(**L2**)] in DMSO-d_6 at 25 °C.

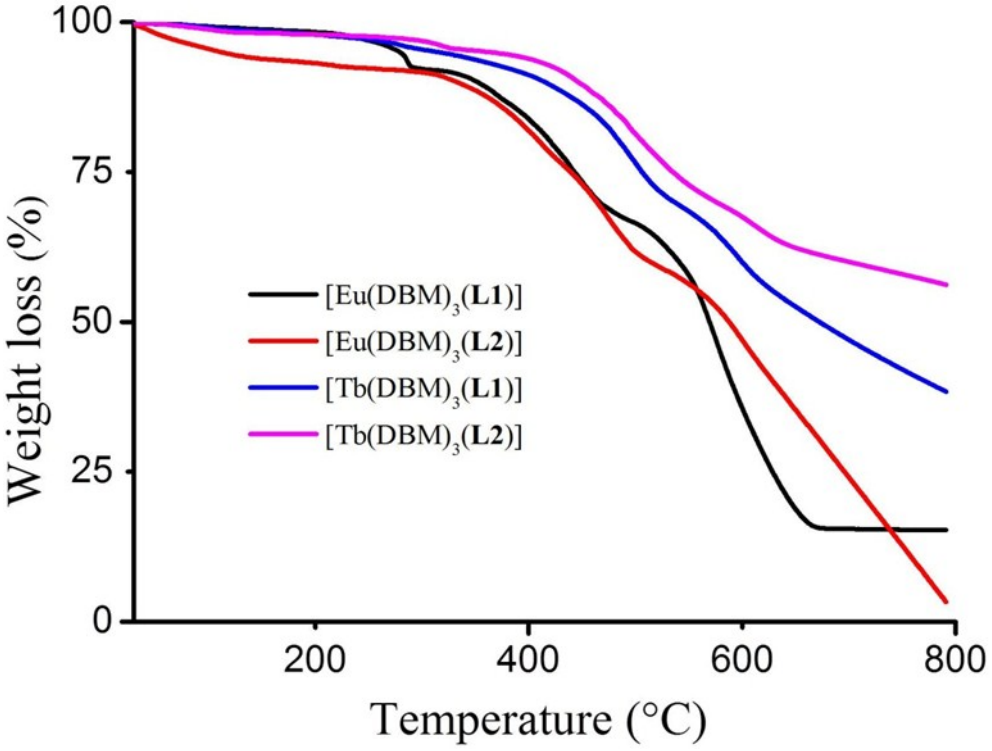

Figure S21. TGA curves of the complexes in N_2 atmosphere.

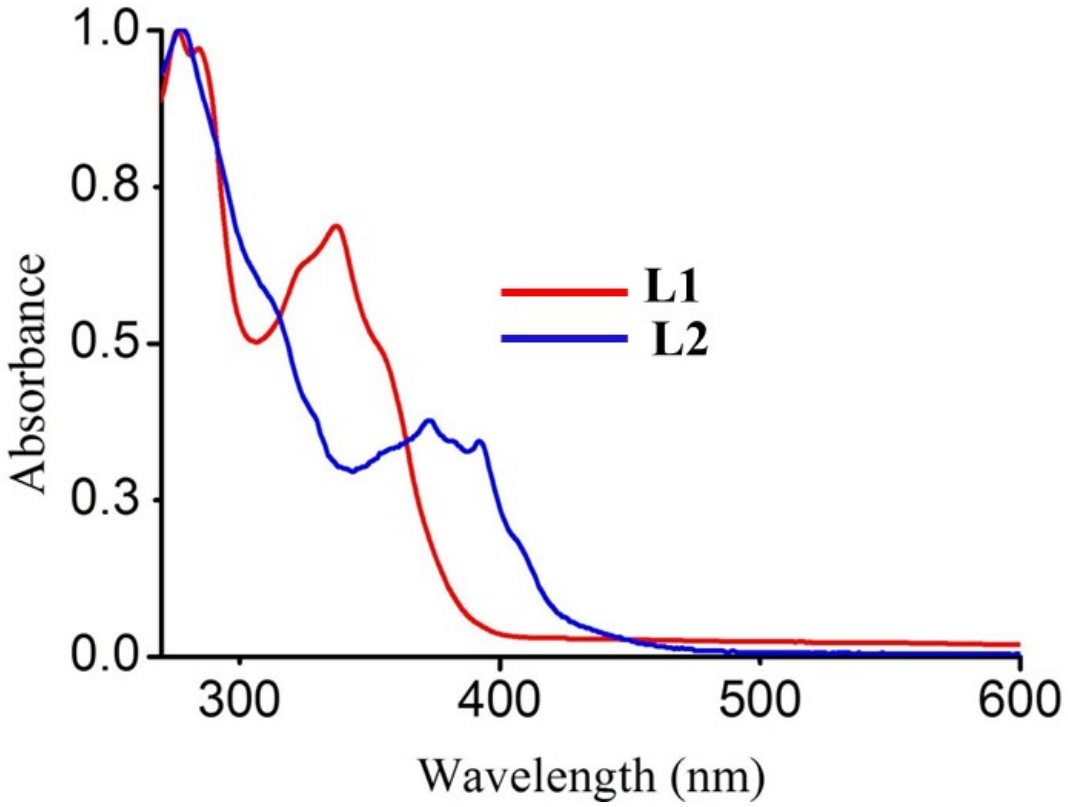

Figure S22. Electronic absorption spectra of **L1** and **L2**.

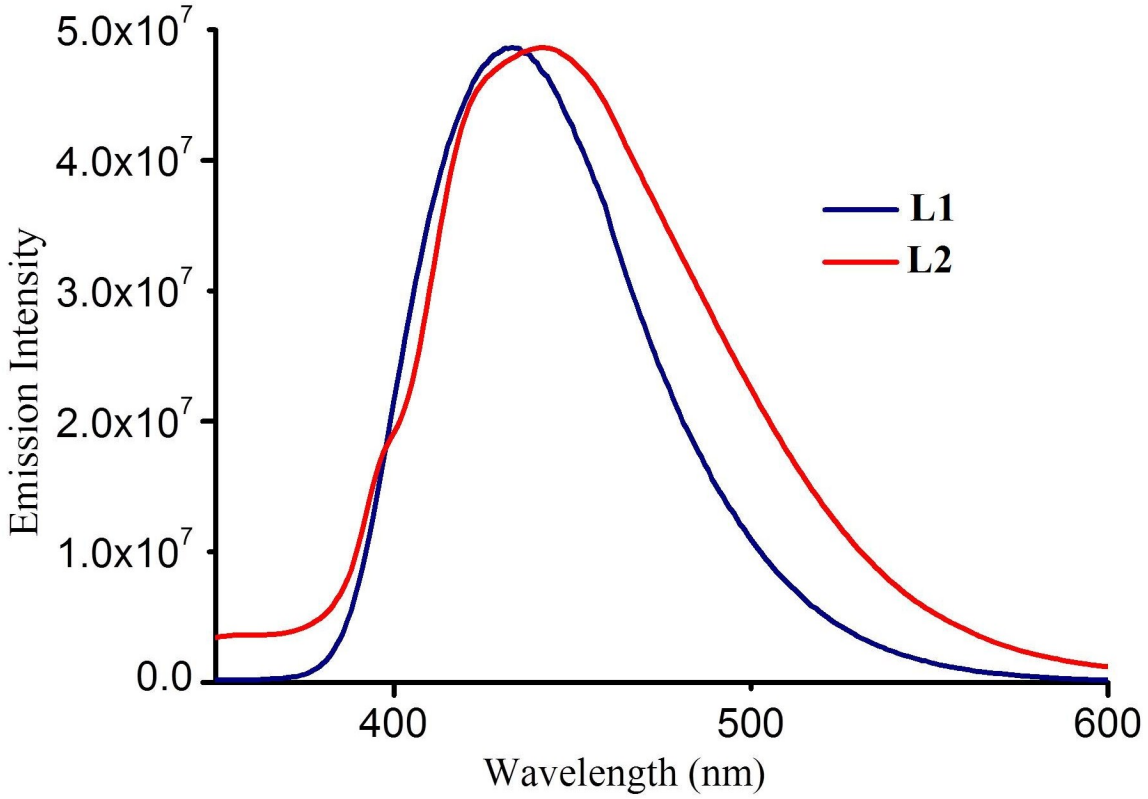

Figure S23. Photoluminescence spectra of **L1** and **L2** (λ_{ex} = 278 nm).

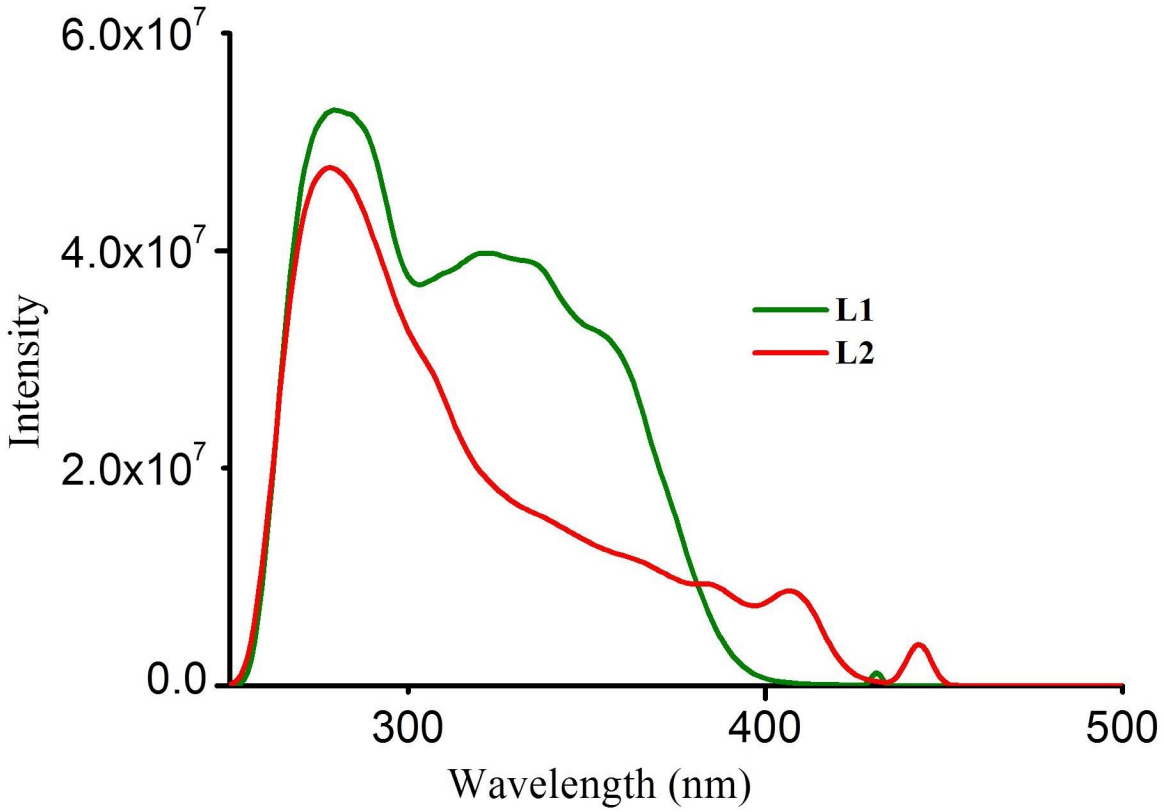

Figure S24. Excitation spectra of **L1** and **L2**.

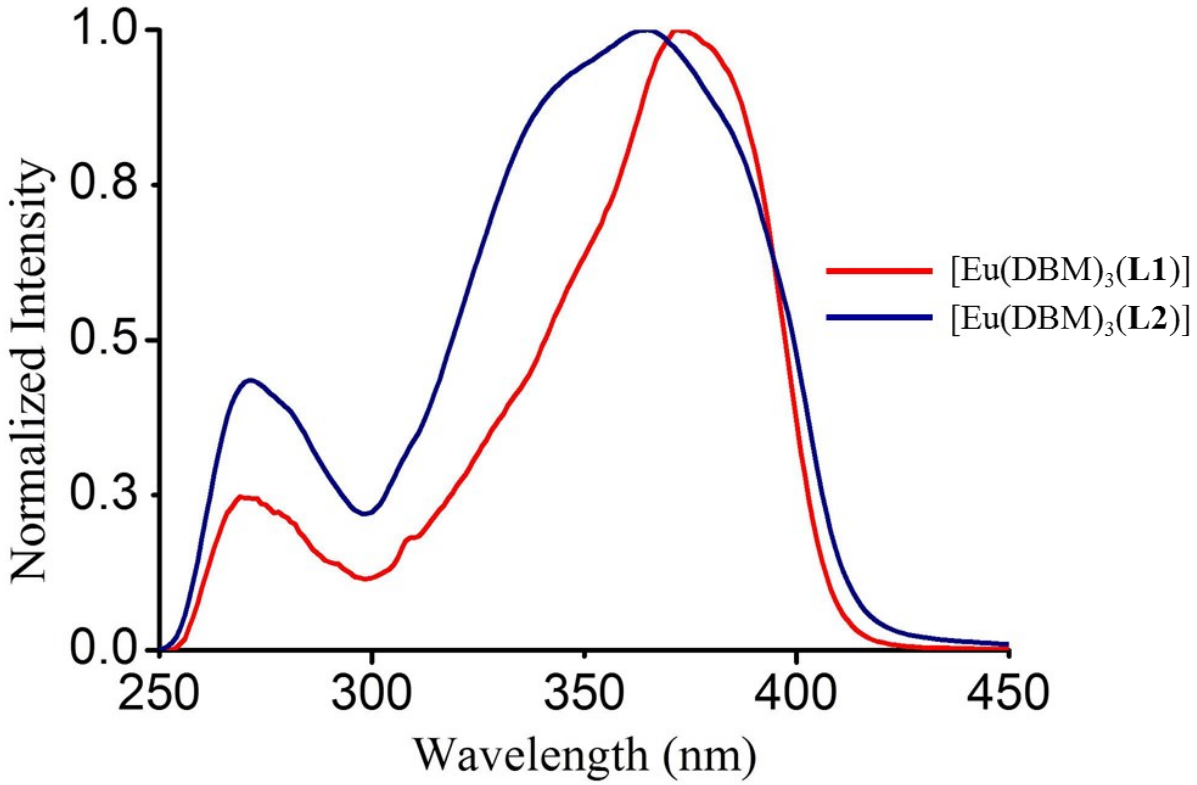

Figure S25. Excitation spectra of [Eu(DBM)$_3$(**L1**)] (λ_{ex} = 372 and 269 nm) and [Eu(DBM)$_3$(**L2**)] (λ_{ex} = 365 and 271 nm).

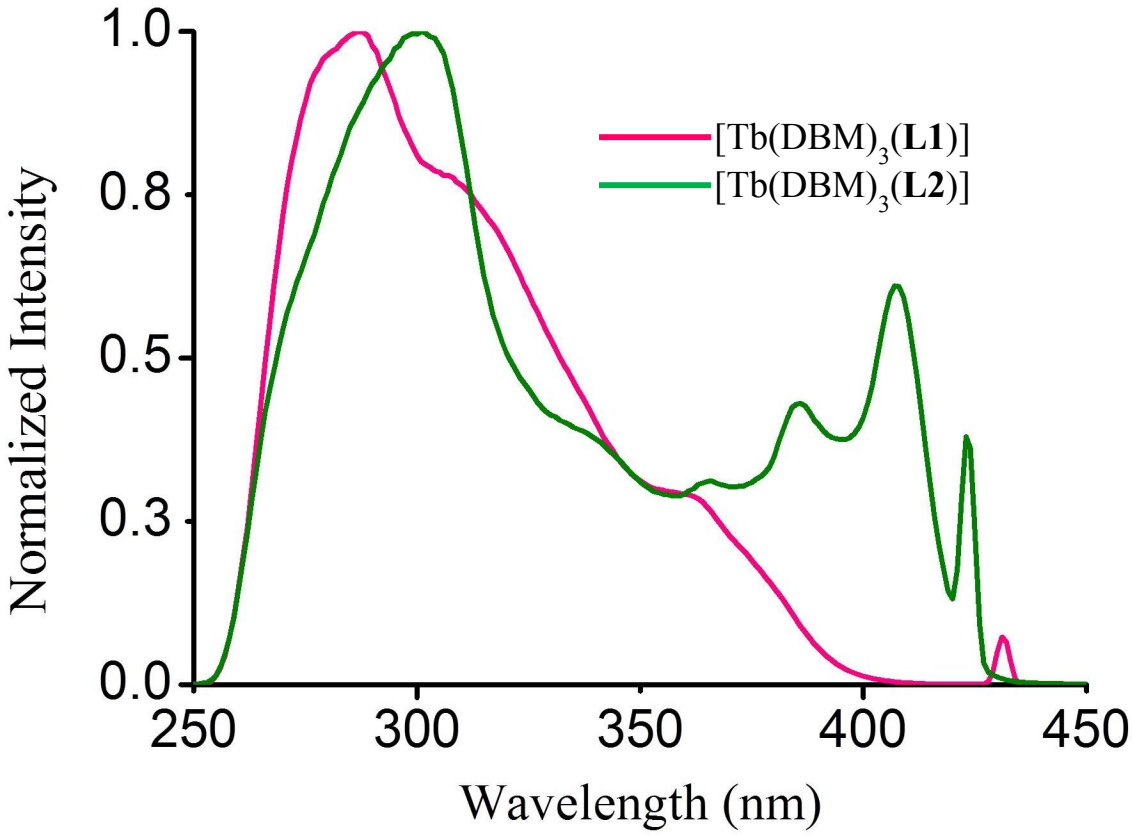

Figure S26. Excitation spectra of [Tb(DBM)$_3$(**L1**)] (λ_{ex} = 362, 307, and 287 nm) and [Tb(DBM)$_3$(**L2**)] (λ_{ex} = 407, 386, 365 and 2301 nm).

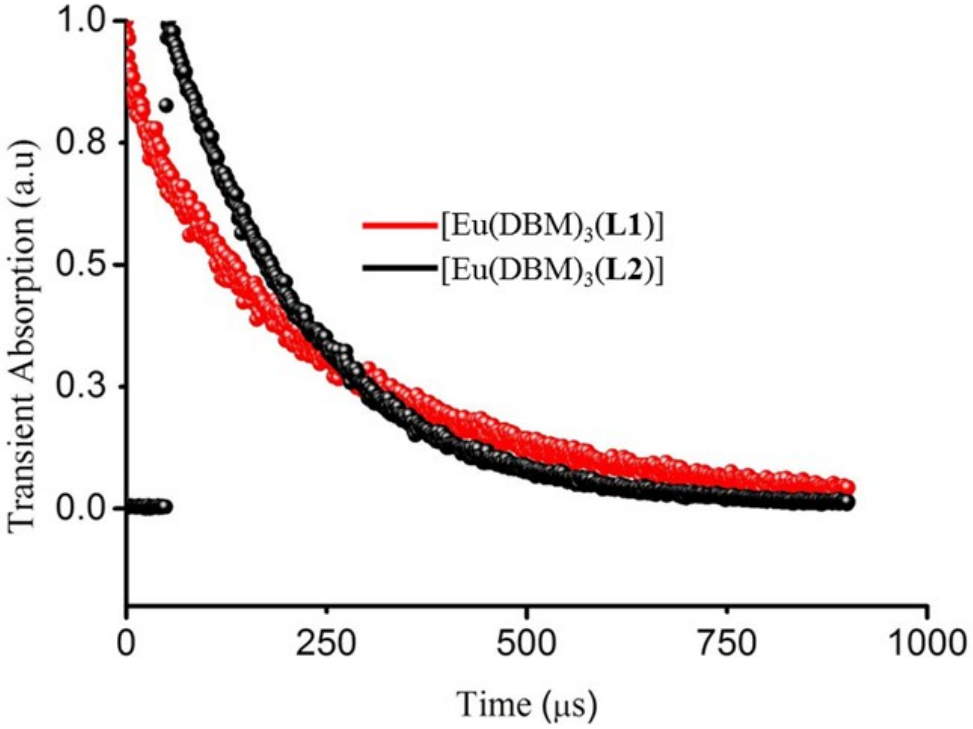

Figure S27. Luminescence decay curves of [Eu(DBM)$_3$(**L1**)] and [Eu(DBM)$_3$(**L2**)] in C_6D_6.