Electronic Supporting Information Available

Proton-Assisted Dissociation of a Triple-Stranded Dinuclear Europium Helicate

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(6 pages)

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Table S1 Variation of the pseudo-first order rate constants k_{obs} for the dissociation of $Eu_2\mathbf{L}_3$ versus $[HClO_4]_{tot}$ [a]

Absorption [b]	
$[HClO_4]_{tot} \times 10^3$ (mol L^{-1})	$k_{obs} \times 10^3$ (s^{-1})
50	4.3(3)
100	14.5(8)
150	27 (1)
200	37(2)
250	38(2)
350	56(3)
400	54(2)
450	57(3)
500	63(2)
600	68(3)
650	74(3)
700	71(4)
750	78(3)
800	81(3)
850	83(2)
900	83(3)

[a] Solvent: water; T = 25.0 ± 0.2 °C. [b] Gated luminescence (λ_{exc} = 324 nm; λ_{ana} = 595 nm): delay 0.05 ms; cycle time 200 ms; gate time 1 ms; 1 flash; excitation and emission slits 12.5 nm; $[Eu_2\mathbf{L}_3]_{tot} = 6.08 \times 10^{-7}$ M. The errors are given as 3σ.

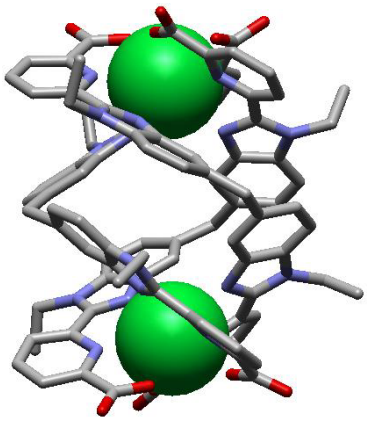

Fig. S1 Schematic view of the X-ray structure of $Eu_2\mathbf{L}_3$. Redrawn from ref. 7d.

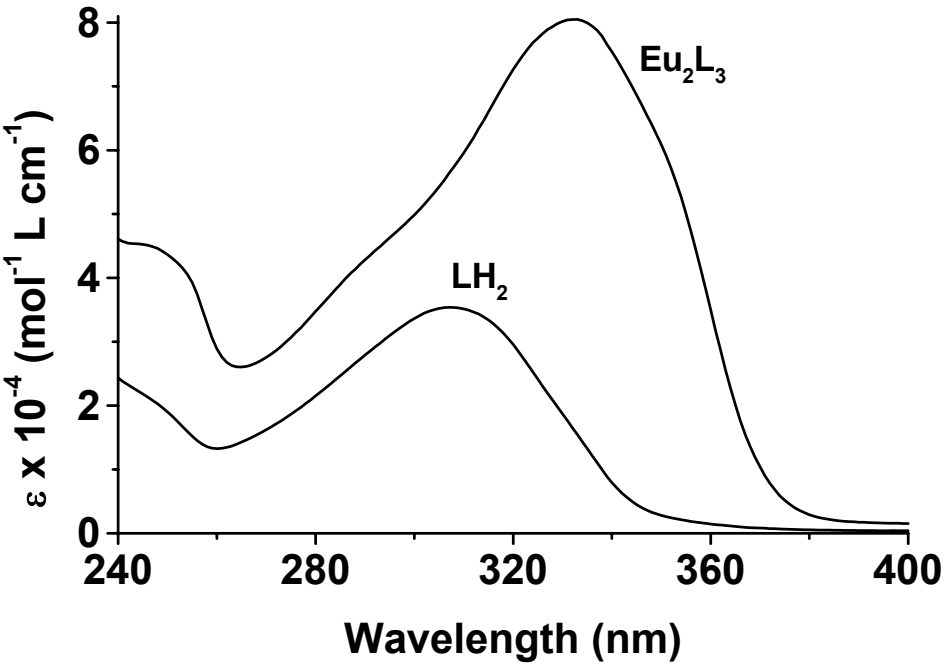

Fig. S2 Electronic spectra of $\mathbf{L}H_2$ and its Europium complex $Eu_2\mathbf{L}_3$. T = 25.0(2) °C; p[H] = 6.15(5) (0.1 M MES).

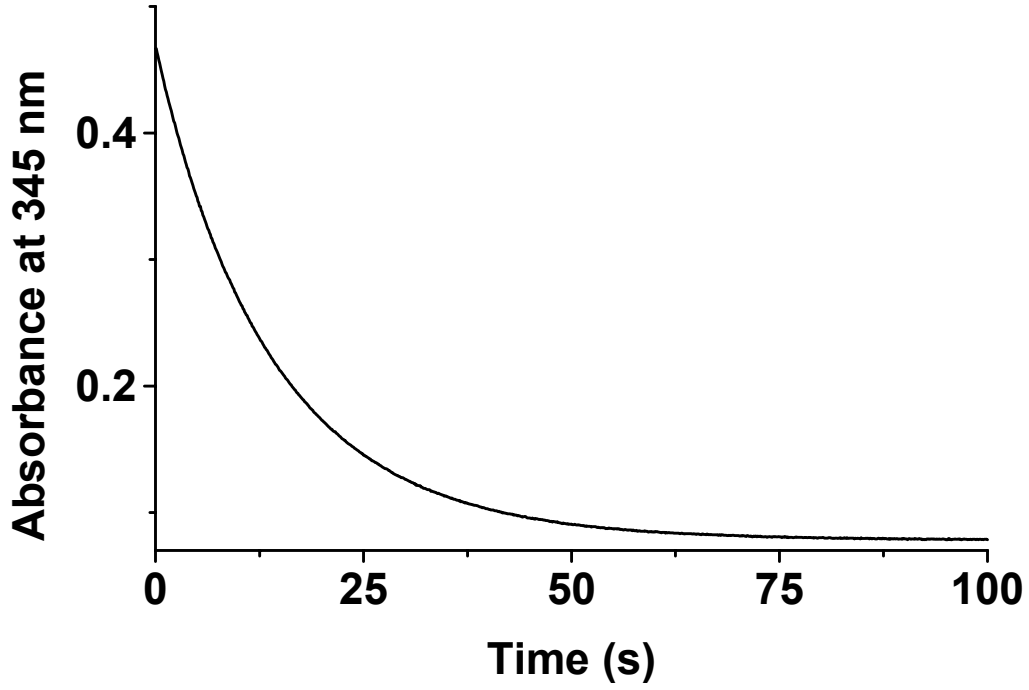

Fig. S3 Variation of absorbance at 345 nm versus time. Solvent: water; $T = 25.0 \pm 0.2$ °C; $l = 1$ cm; $[Eu_2\mathbf{L}_3]_{tot} = 7.22 \times 10^{-6}$ M; $[HClO_4]_{tot} = 0.834$ M.

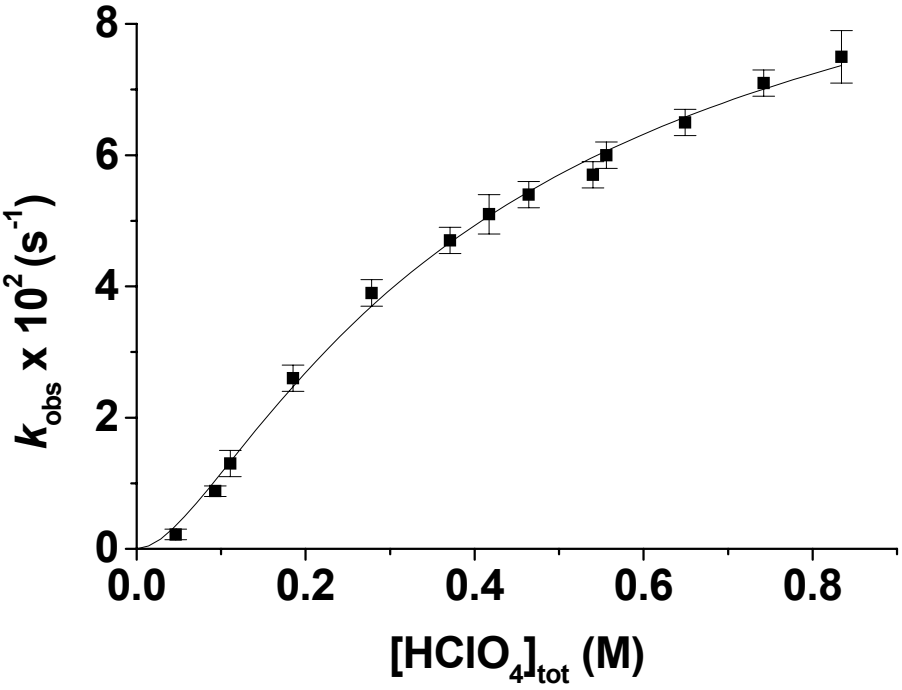

Fig. S4 Pseudo-first order rate constants k_{obs} relative to the dissociation of $Eu_2\mathbf{L}_3$ as a function of $[HClO_4]_{tot}$. Solvent: water; T = 25.0 ± 0.2 °C; UV-visible absorption spectroscopy (λ = 345 nm).

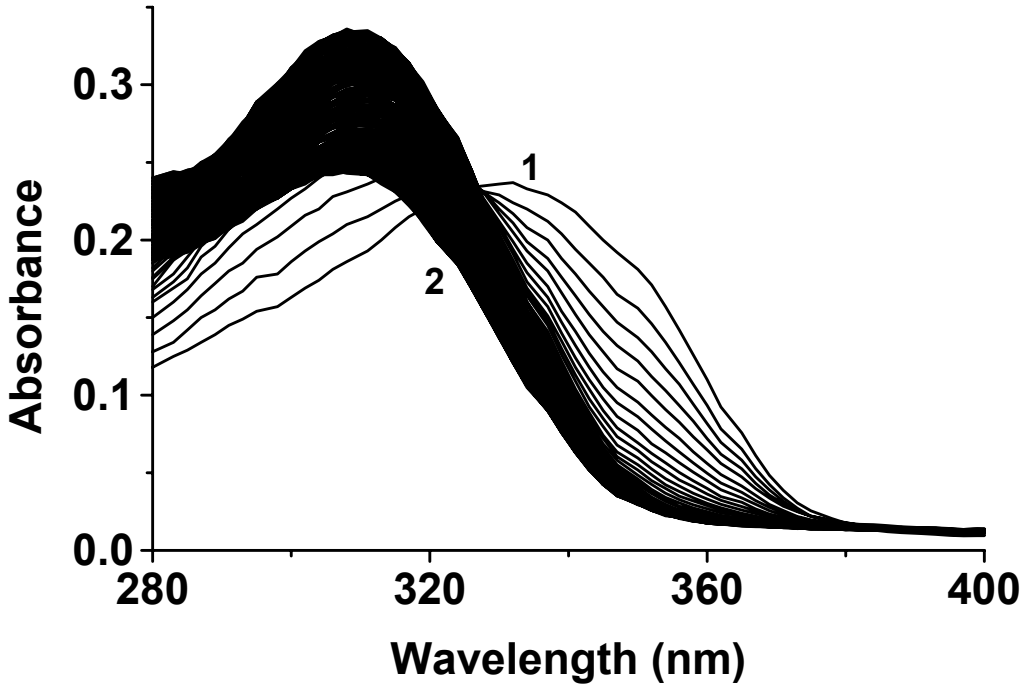

Fig. S5 Absorbance spectra during the dissociation of $Eu_2\mathbf{L}_3$. Solvent: water; T = 25.0 ± 0.2 °C; $[Eu_2\mathbf{L}_3]_{tot} = 1.51 \times 10^{-5}$ M; $[HClO_4]_{tot}$ = 0.2 M; l = 0.2 cm. (**1**) t = 0.65 s; (**2**) 1000 s.

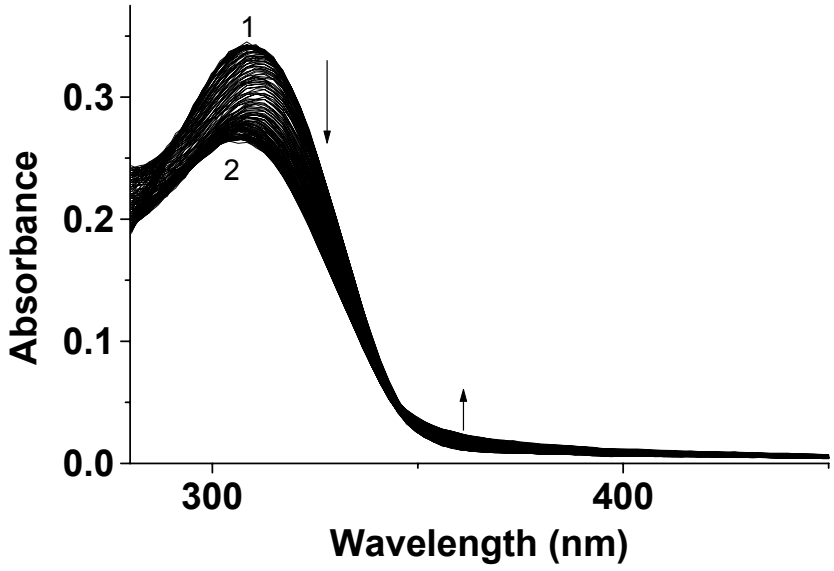

Fig. S6 Absorbance spectra during decarboxylation of **L** under acidic conditions. Solvent: water; T = 25.0 ± 0.2 °C; $[\mathbf{L}]_{tot}$ = 5.41 × 10^{-5} M; $[HClO_4]_{tot}$ = 0.25 M; l = 0.2 cm. (1) t = 0.65 s, (2) 1000 s.

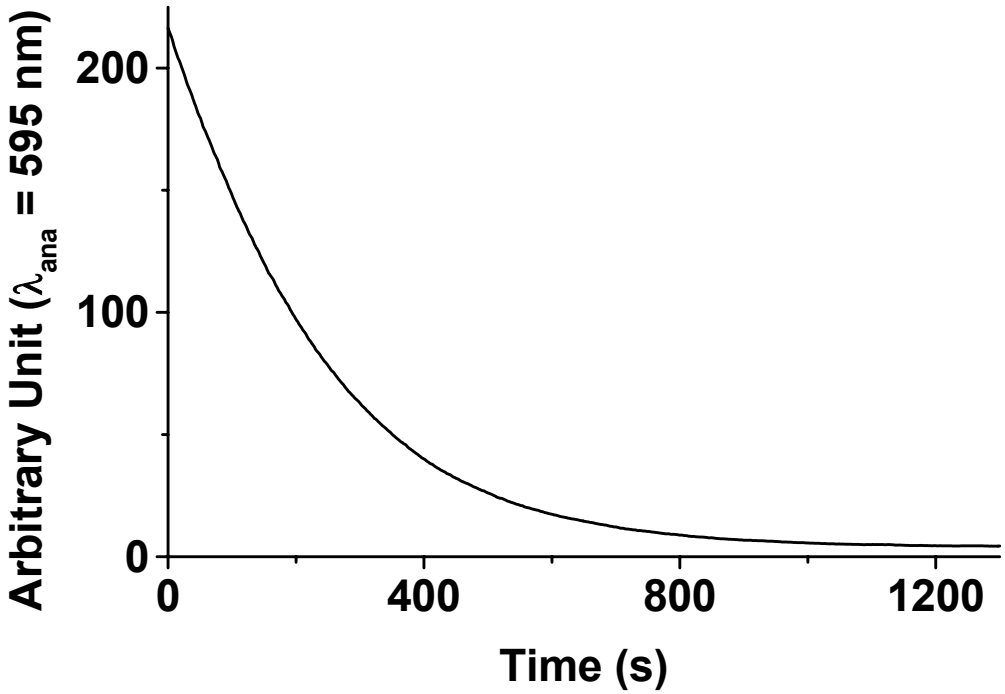

Fig. S7. Variation of the luminescence intensity at 595 nm ($^5D_0 \rightarrow {}^7F_1$ transition) versus time during the dissociation of $Eu_2\mathbf{L}_3$ in water at 25.0 ± 0.2 °C; $[Eu_2\mathbf{L}_3]_{tot}$ = 6.08 × 10^{-7} M; $[HClO_4]_{tot}$ = 0.05 M.