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Supplementary material

The Formation of Fluorescent Alkaline Earth Complexes by 4-{2-[10-(2-Morpholinoethyl)-9-anthryl]methyl}morpholine and its -Ethyl}morpholine and -Propyl}morpholine Analogues in Acetonitrile

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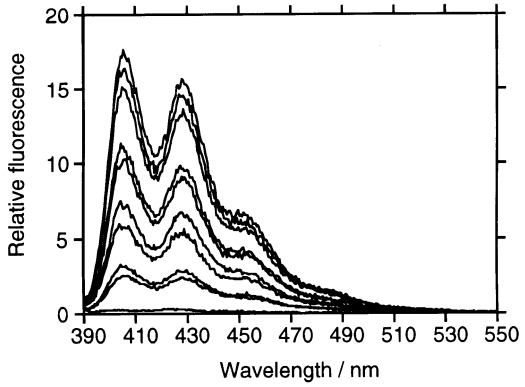

Fig. S1. The increase in emission of (1) (3.00×10^{-6} mol dm^{-3}) with [Ca^{2+}] (1.00×10^{-4}-6.00×10^{-3} mol dm^{-3}) in acetonitrile at I = 0.05 mol dm^{-3} (NEt_4ClO_4) and 298.2 K when excited at 378 nm. The emission of (1) alone coincides with the base line.

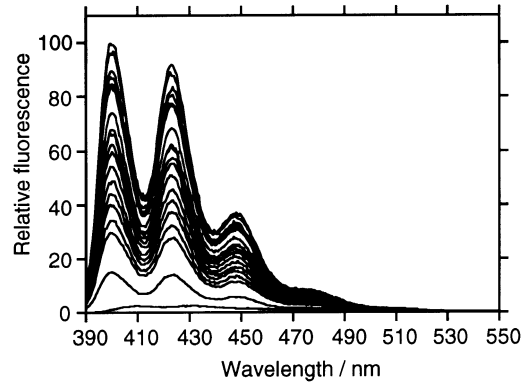

Fig. S2. The increase in emission of (2) (3.00×10^{-6} mol dm^{-3}) with [Mg^{2+}] (5.00×10^{-6}-5.00×10^{-3} mol dm^{-3}) in acetonitrile at I = 0.05 mol dm^{-3} (NEt_4ClO_4) and 298.2 K when excited at 365 nm. The lowest emission spectrum is that of (2) alone.

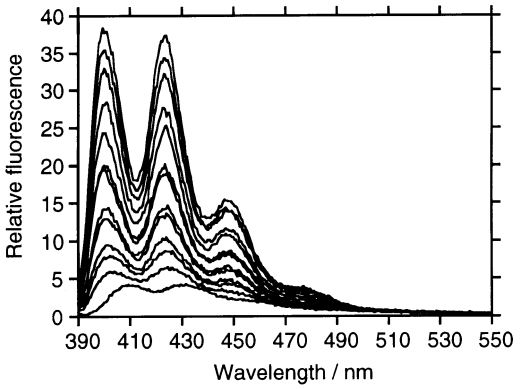

Fig. S3. The increase in emission of (2) (3.00×10^{-6} mol dm^{-3}) with [Sr^{2+}] (1.00×10^{-5}-6.00×10^{-3} mol dm^{-3}) in acetonitrile at I = 0.05 mol dm^{-3} (NEt_4ClO_4) and 298.2 K when excited at 378 nm. The lowest emission spectrum is that of (2) alone.

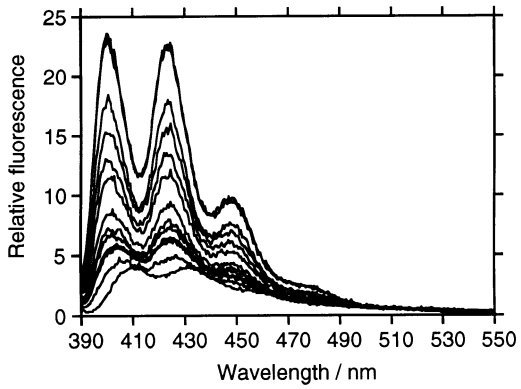

Fig. S4. The increase in emission of (2) (3.00×10^{-6} mol dm^{-3}) with [Ba^{2+}] (1.00×10^{-5}-6.00×10^{-3} mol dm^{-3}) in acetonitrile at I = 0.05 mol dm^{-3} (NEt_4ClO_4) and 298.2 K when excited at 379 nm. The lowest emission spectrum is that of (2) alone.

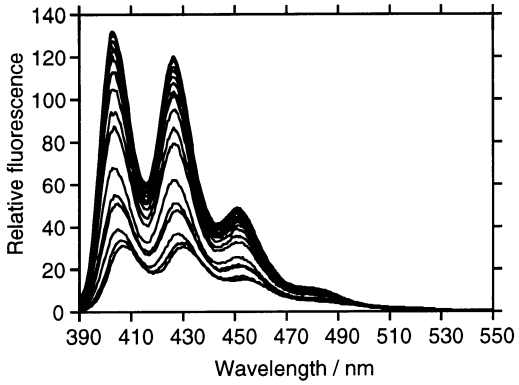

Fig. S5. The increase in emission of (3) (3.00×10^{-6} mol dm^{-3}) with [Mg^{2+}] (1.00×10^{-6}-8.00×10^{-5} mol dm^{-3}) in acetonitrile at I = 0.05 mol dm^{-3} (NEt_4ClO_4) and 298.2 K when excited at 377 nm. The lowest emission spectrum is that of (3) alone.

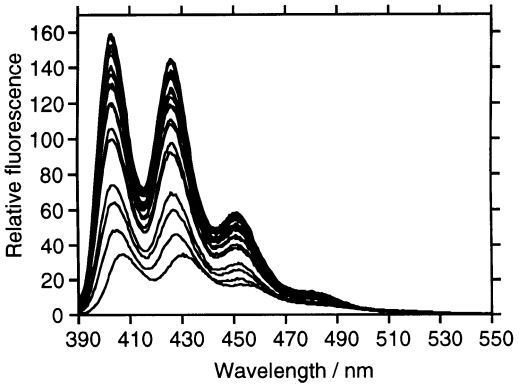

Fig. S6. The increase in emission of (3) (3.00×10^{-6} mol dm^{-3}) with [Ca^{2+}] (5.00×10^{-5}-5.00×10^{-3} mol dm^{-3}) in acetonitrile at I = 0.05 mol dm^{-3} (NEt_4ClO_4) and 298.2 K when excited at 378 nm. The lowest emission spectrum is that of (3) alone.

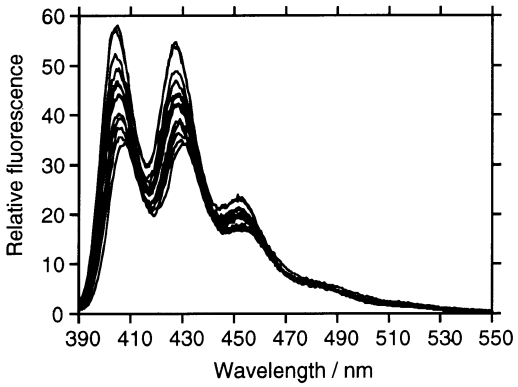

Fig. S7. The increase in emission of (3) (3.00×10^{-6} mol dm^{-3}) with [Ba^{2+}] (1.00×10^{-4}-6.00×10^{-3} mol dm^{-3}) in acetonitrile at I = 0.05 mol dm^{-3} (NEt_4ClO_4) and 298.2 K when excited at 378 nm. The lowest emission spectrum is that of (3) alone.

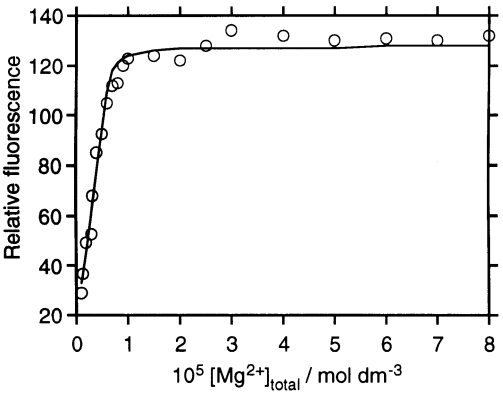

Fig. S8. Emission variation of (3) (3.00×10^{-6} mol dm^{-3}) at 403 nm with increase in [Mg^{2+}] in acetonitrile and I = 0.05 mol dm^{-3} (NEt_4ClO_4) and 298.2 K when excited at 377 nm. The solid curves represent the best fit of the algorithm for the formation of $[Mg(3)]^{2+}$ and $[Mg(3)']^{2+}$ and $[Mg_2(3)]^{4+}$ to the experimental data points over the range 390-490 nm.