Electronic Supplementary Material (ESI) for Dalton Transactions

Supplementary Information for

Fluorescence signaling systems for sensing Hg(II) ion derived from A_2B-corroles

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Table S1: UV-Visible absorption and the extinction coefficient of the corroles1-**4** in toluene and dichloromethane.

Corroles	Solvents	λ_{max} /nm (ε/m^{-1} cm^{-1})
1	Toluene	448 (10,200), 595 (2,830)
	CH_2Cl_2	424 (15,800), 594 (3,150)
2	Toluene	448 (17,500), 596 (6,900)
	CH_2Cl_2	426 (54,950), 597 (12,800)
3	Toluene	445 (31,470), 599 (11,700), 638^{sh} (11,200)
	CH_2Cl_2	437 (40,800), 595 (13,400), 635^{sh} (12,550)
4	Toluene	448 (34,400), 591 (11,544), 662 (11,400)
	CH_2Cl_2	439 (60,100), 592 (20,300), 652 (19,400)

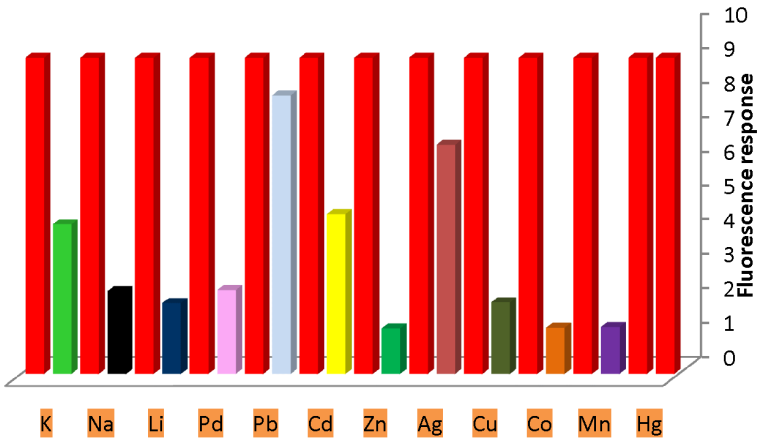

Figure S1. Hg^{2+} ion sensing in presence of other metal ion. The fluorescence response (Fo/F) in presence of divalent metal ion is plotted. Fo=fluorescence intensity in absence of any metal ion & F= fluorescence intensity in the presence of metal ions. Initial red bar shows the extent of quenching by Hg^{2+} ion and respective coloured bar signifies Hg^{2+} ion quenching in presence of divalent metal ion.

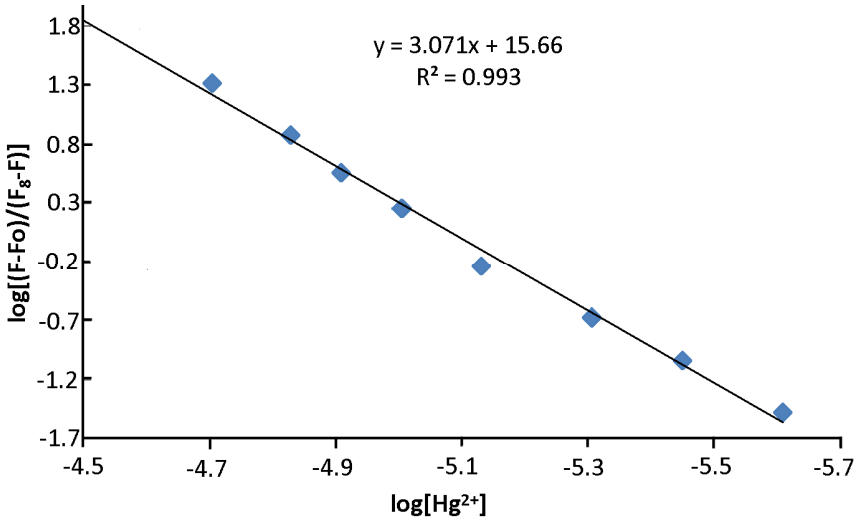

Figure S2. A plot for the determination of association constant for **4** with Hg^{2+} ion ; log of the ratio of (F-Fo) over (F_8-F) versus log of the free Hg^{2+} ion concentration. Fo=fluoroscence intensity in the absence of Hg^{2+}ion : F_8=fluorescence intensity in the presence of excess Hg^{2+}ion. F= fluoroscence intensity at a given amount of Hg^{2+}ion. For detail derivation please refer X. J. Zhu, S. T. Fu, W. K. Wong, J. P. Guo, W. Y. Wong, *Angew. Chem.*, 2006, **118**, 3222.

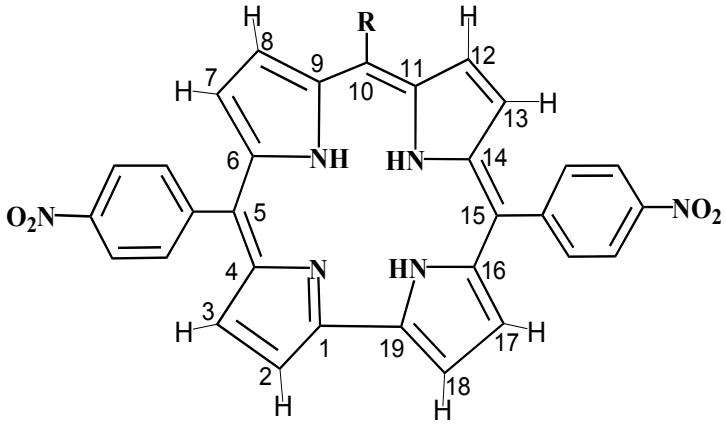

Table S2. ^{1}H NMR chemical shifts (ppm) in $CDCl_3$

Corrole	$^{1}H_a$(2, 18)	$^{1}H_c$(7,13)	$^{1}H_b$(3,17)	$^{1}H_d$(8,12)	Reference
1	9.102	8.899	8.650 (overlapped)		This work
2	9.054	8.862	8.695	8.374	This work
3	9.075	8.758	8.626 (overlapped with napthyl-H)	8.352	This work
4	8.957	8.778	8.611 (overlapped)		This work
H_3(tpfc)	9.100	8.750	8.570 (2d overlapping, 4H)		*Magn. Reson. Chem.* 2004; **42**: 624–635.

The electronic communication within the whole corrole molecules is evident from the chemical shift value of the β-pyrrolic hydrogens. The higher deshielding of the 2, 18-hydrogen and its high resemblems to that of free base 5,10,15-tris(pentafluorophenyl)corrole signifies that the electronic communication or electron withdrawl by the nitro-phenyl group in the studied A2B corroles. This effect further stabilise the macrocycle to a greater extent. In case of corrole **2** and **3** an appreciable overlap between the 3, 17, 8, 12 hydrogens with that of hydrogens from meso-dimethylphenyl and tridecyloxyphenyl group has been found. Chemical shift value for meso-phenyl hydrogens are given in the text in the experimental section. In all the cases the signals for the NH protons were not detected.

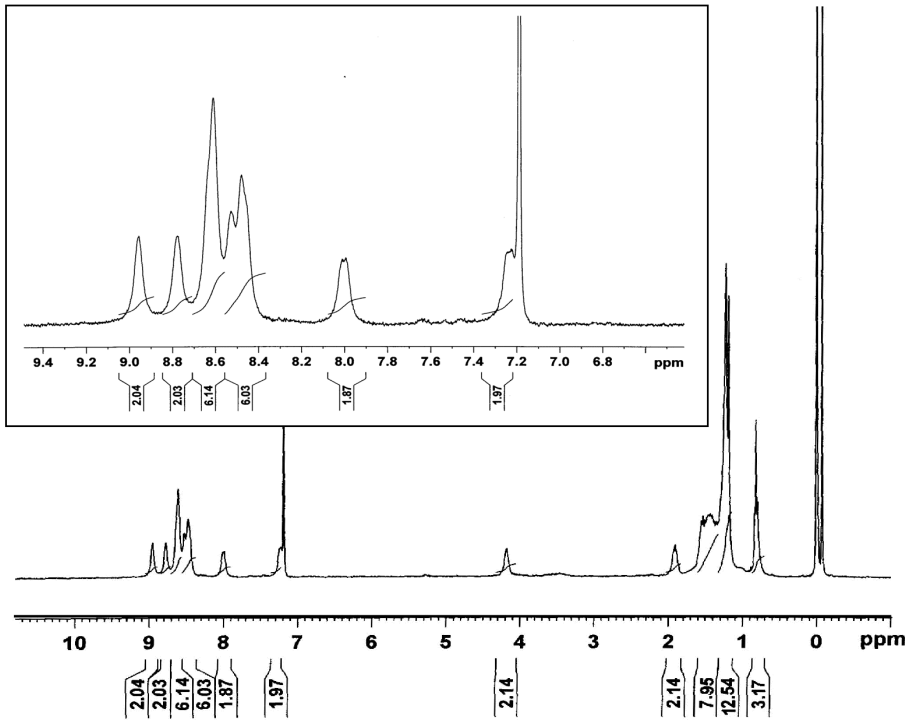

Figure S3. ^{1}H NMR spectrum of **4.** Inset shows the extended aromatic region.

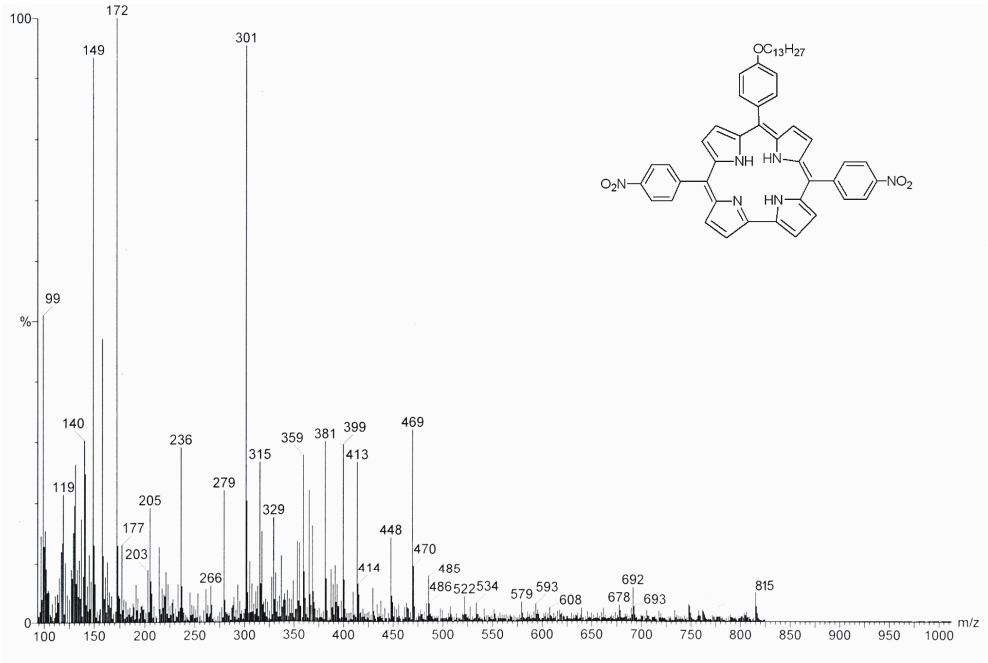

Figure S4. ESIMS spectrum of **4.**