

Supporting Information

A Simple Fluorescent Receptor Selective for Mg^{2+}

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Table 1. Fluorescence spectral parameters of receptor **1** and **1**-cation complex, and cation binding constants (K_a) in ACN

	λ_{em} , nm	Φ	K_a , L mol^{-1}
1	- ^a	0.0015	- ^a
1 - Mg^{2+}	436	0.262	$(2.27 \pm 0.65) \times 10^7$
1 - Ca^{2+}	442	0.091	$(6.48 \pm 0.10) \times 10^6$
1 - Ba^{2+}	439	0.015	- ^a
1 - K^+	442	0.005	- ^a
1 - Na^+	- ^a	0.003	- ^a

a. Too weak to be determined

1. Photo of fluorescence of receptor **1** and **1**-cation complex in ACN

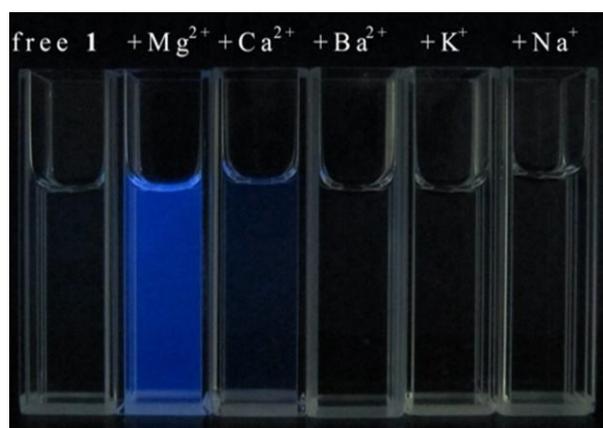


Figure S1. Photo of fluorescence of receptor **1** ($1.0 \times 10^{-5} \text{ mol L}^{-1}$) and **1**-cation (1 equiv) complex in ACN, which was taken under a handle UV (302 nm) lamp.

2. Fluorescence spectra of receptor **1** in ACN-H₂O (9:1, V/V) in the presence of Mg²⁺

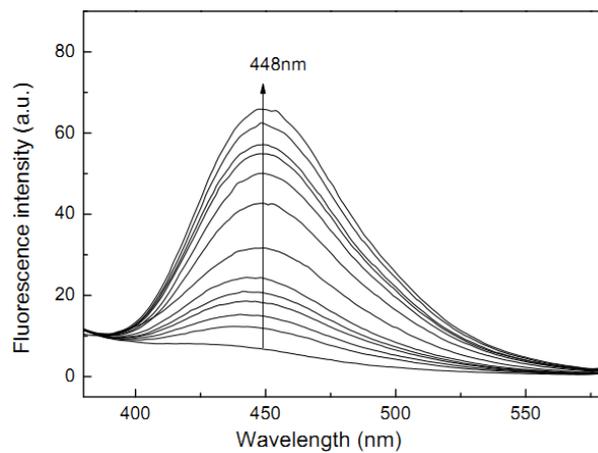


Figure S2. Fluorescence spectra of receptor **1** (1.0×10^{-5} mol L⁻¹) in ACN-H₂O (9:1, V/V) in the presence of increasing concentration of Mg²⁺.

3. Fluorescence intensity of receptor **1** in ACN-H₂O (9:1, V/V) in the presence of individual metal ions

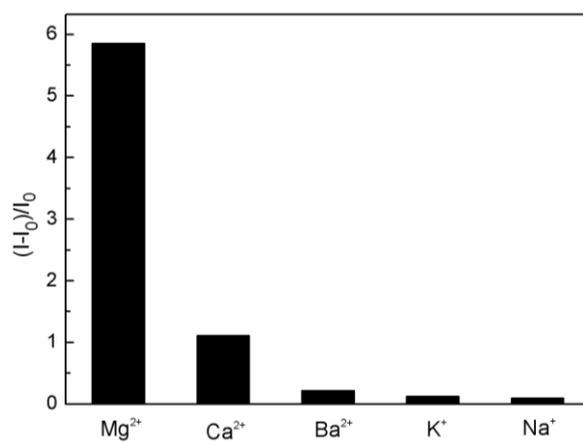


Figure S3. Fluorescence intensity of receptor **1** (1.0×10^{-5} mol L⁻¹) toward metal ions (1.0×10^{-4} mol L⁻¹) in ACN-H₂O (9:1, V/V).

4. Absorption and fluorescence spectra of receptor **2** in ACN in the presence of Mg^{2+}

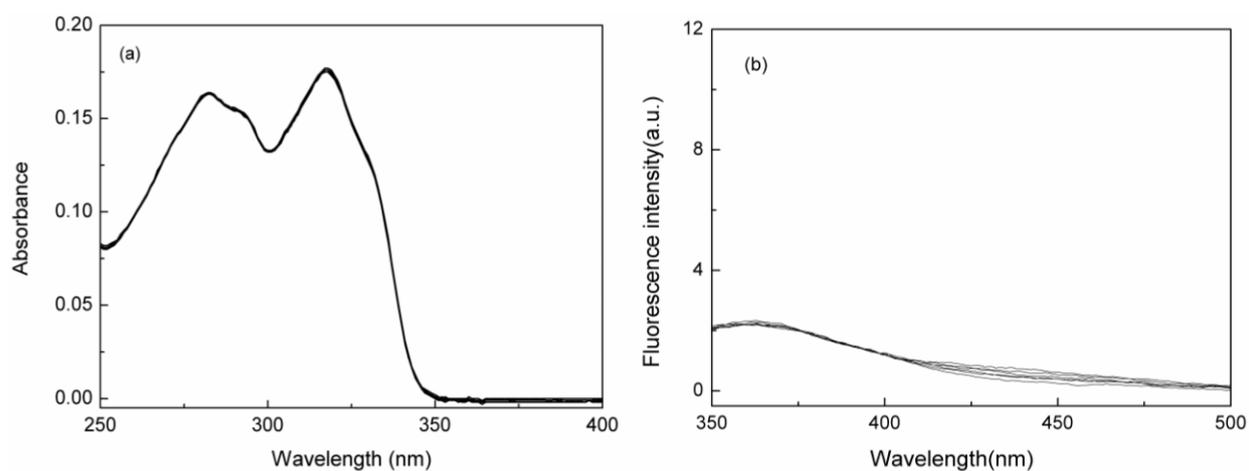


Figure S4. Absorption (a) and fluorescence (b) spectra of receptor **2** ($1.0 \times 10^{-5} \text{ mol L}^{-1}$) in ACN in the presence of increasing concentration of Mg^{2+} . The excitation wavelength for obtaining fluorescence spectra was 298 nm.

5. 2D COSY spectrum of receptor **1** in $DMSO-d_6$

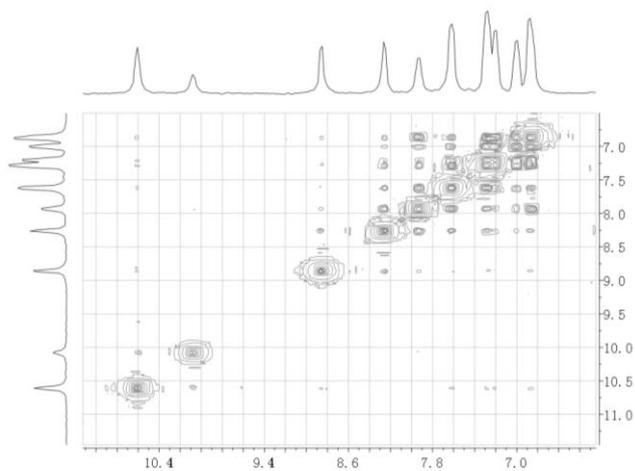


Figure S5. 500 MHz H-H COSY spectrum of receptor **1** in $DMSO-d_6$

6. IR spectra of receptor **1** and **1**-Mg²⁺ complex

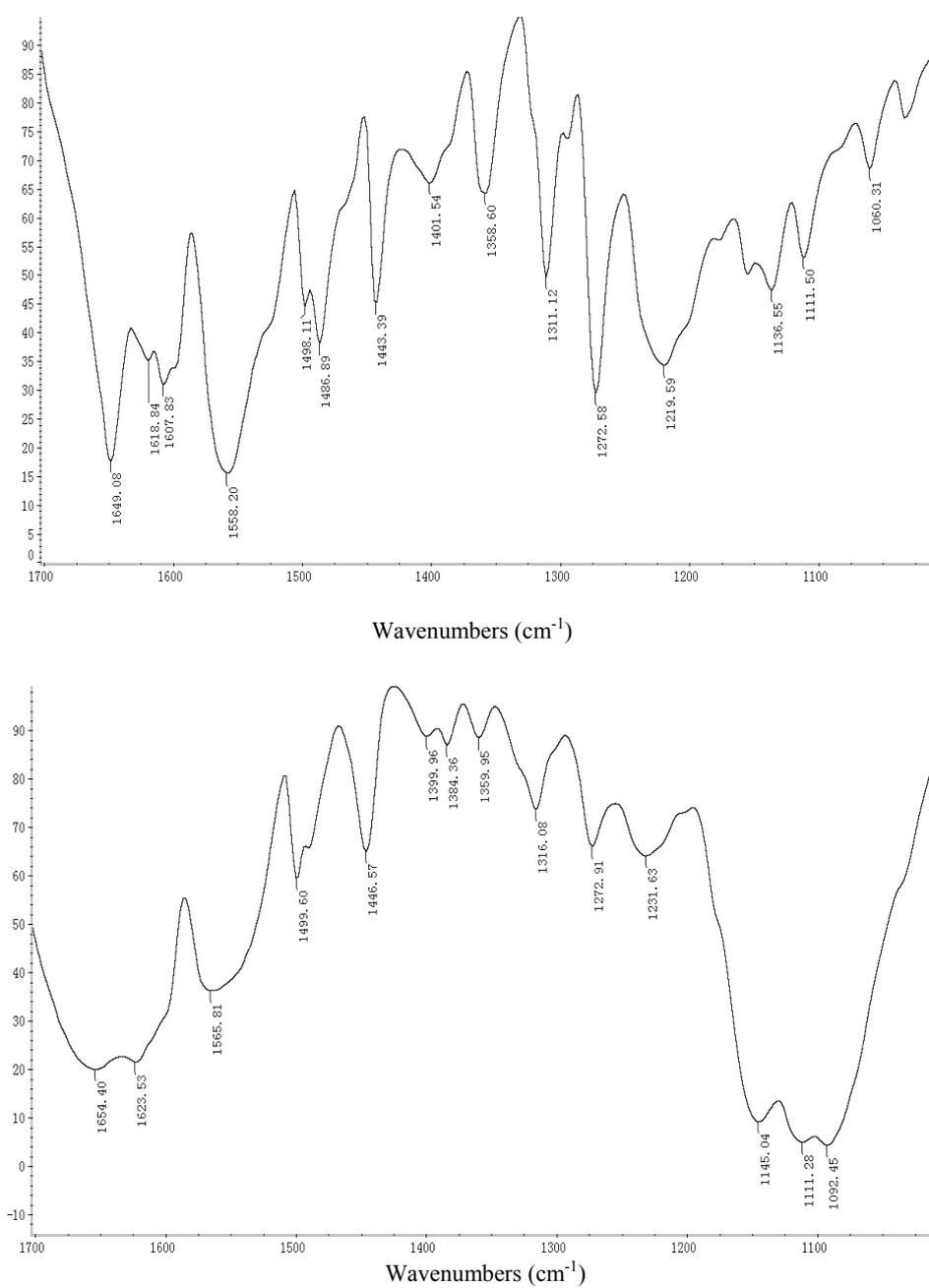


Figure S6. Partial IR spectra of receptor **1** (top) and **1**-Mg²⁺ complex (bottom).