Supplementary Materials

Structural Effect of Fluorophore on Phenylboronic Acid Fluorophore/Cyclodextrin Complex for Selective Glucose Recognition

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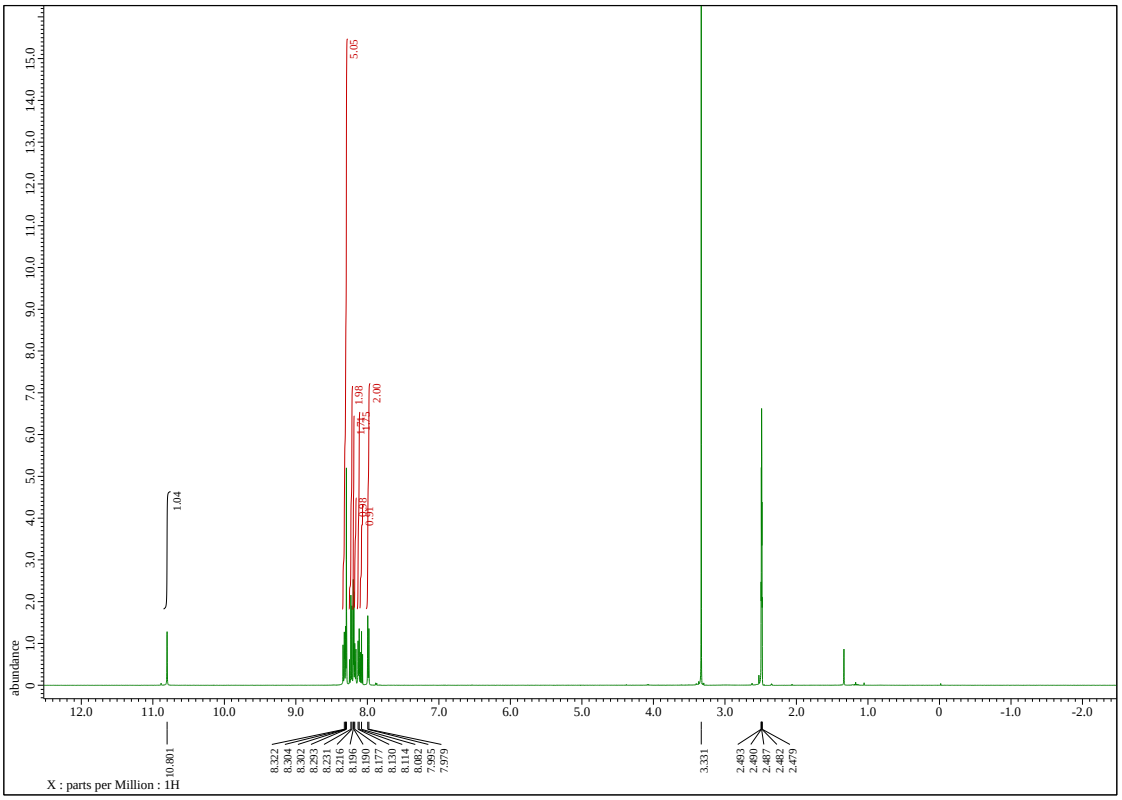
1. Characterization data



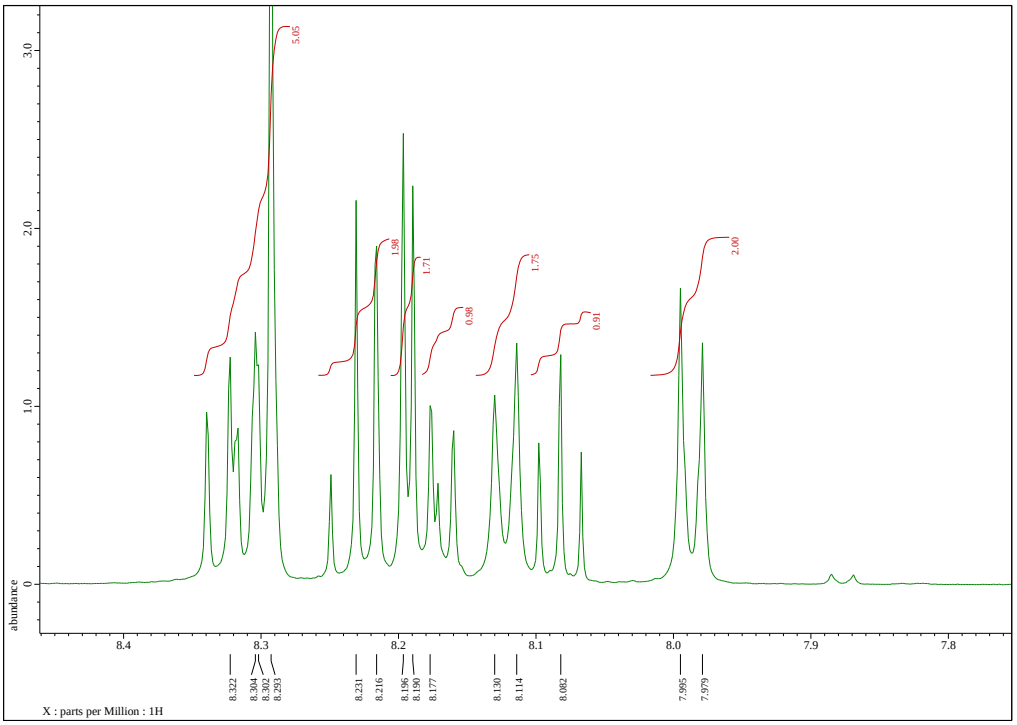


Fig. S1 ^{1}H NMR spectra for **1** (500 MHz, in DMSO-d_6).

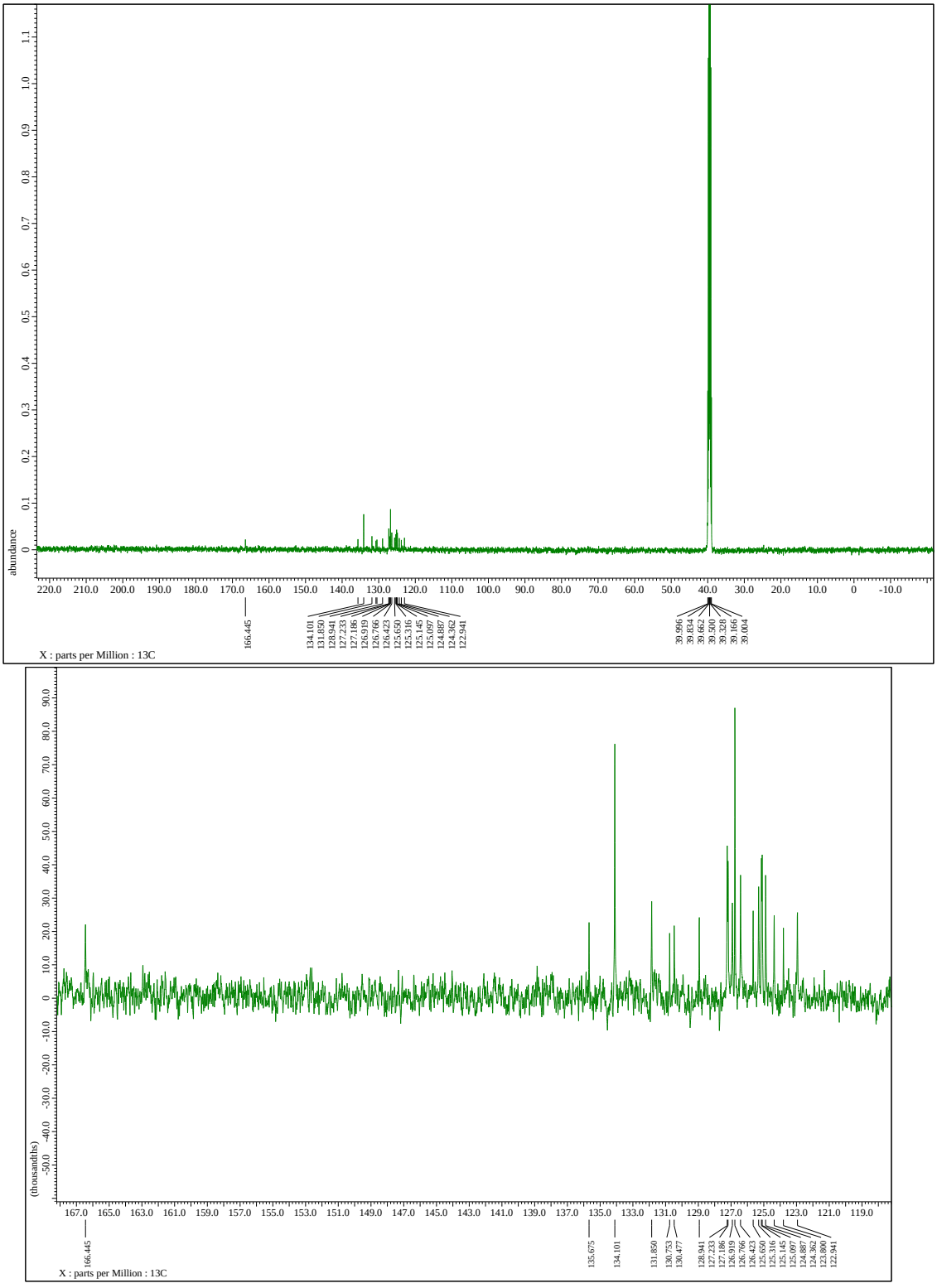


Fig. S2 ^{13}C NMR spectra for **1** (125 MHz, in DMSO-d_6).

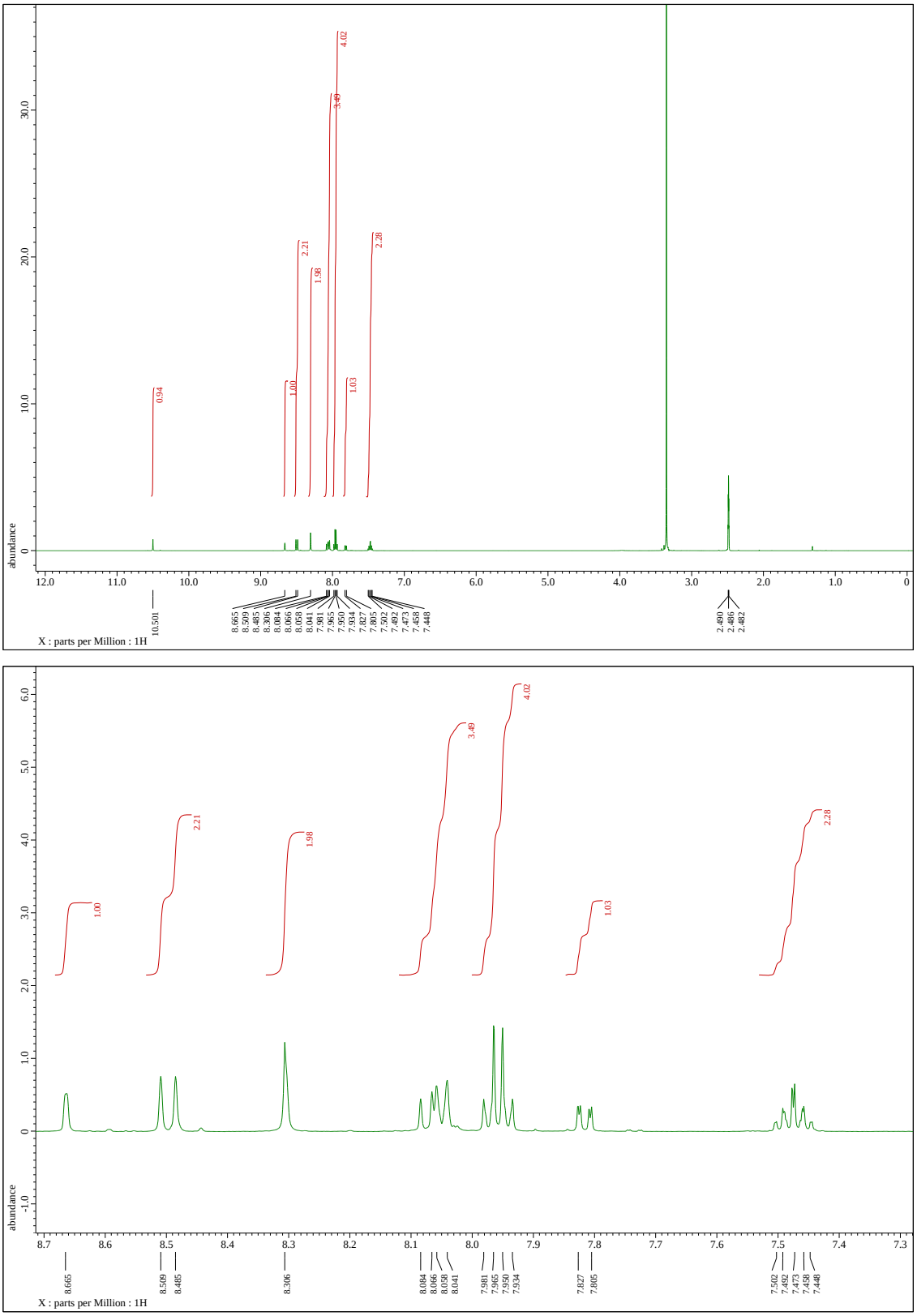


Fig. S3 ^{1}H NMR spectra for **2** (500 MHz, in DMSO-d_6).

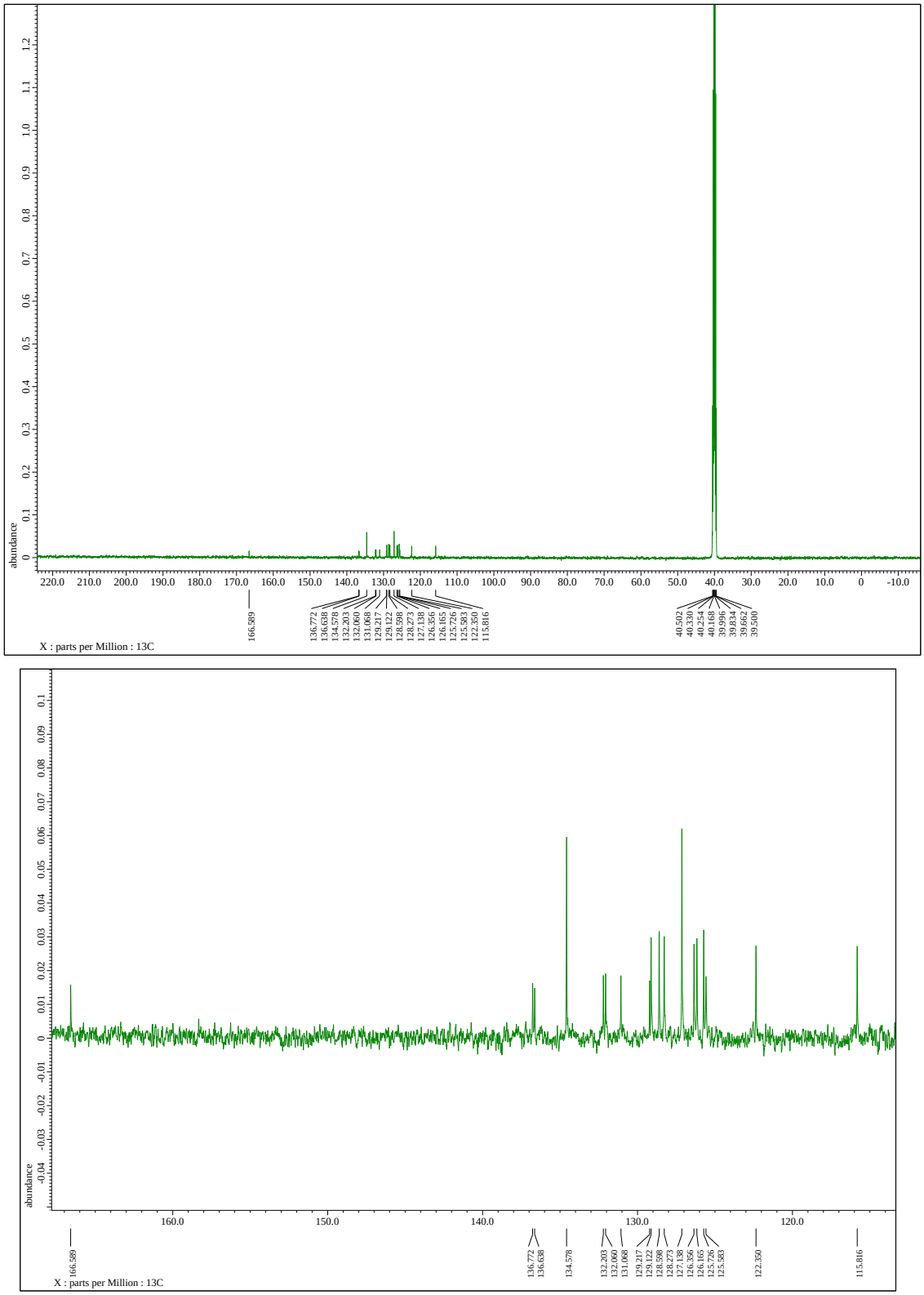


Fig. S4 ^{13}C NMR spectra for **2** (125 MHz, in DMSO-d_6).

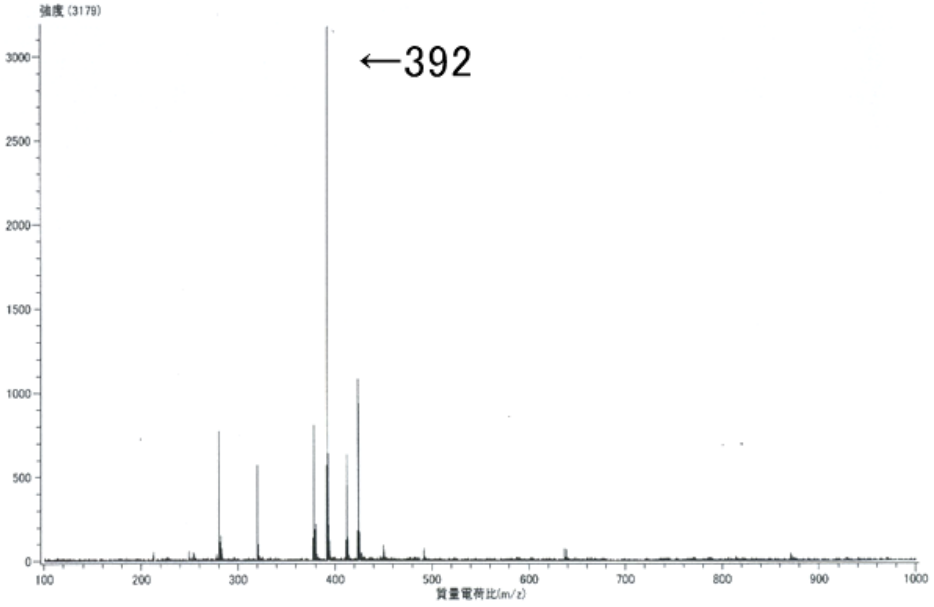


Fig. S5 The ESI-TOF-MS spectra for **1**.

2. The pH dependence of UV-vis spectra for probe/*β*-CyD complex.

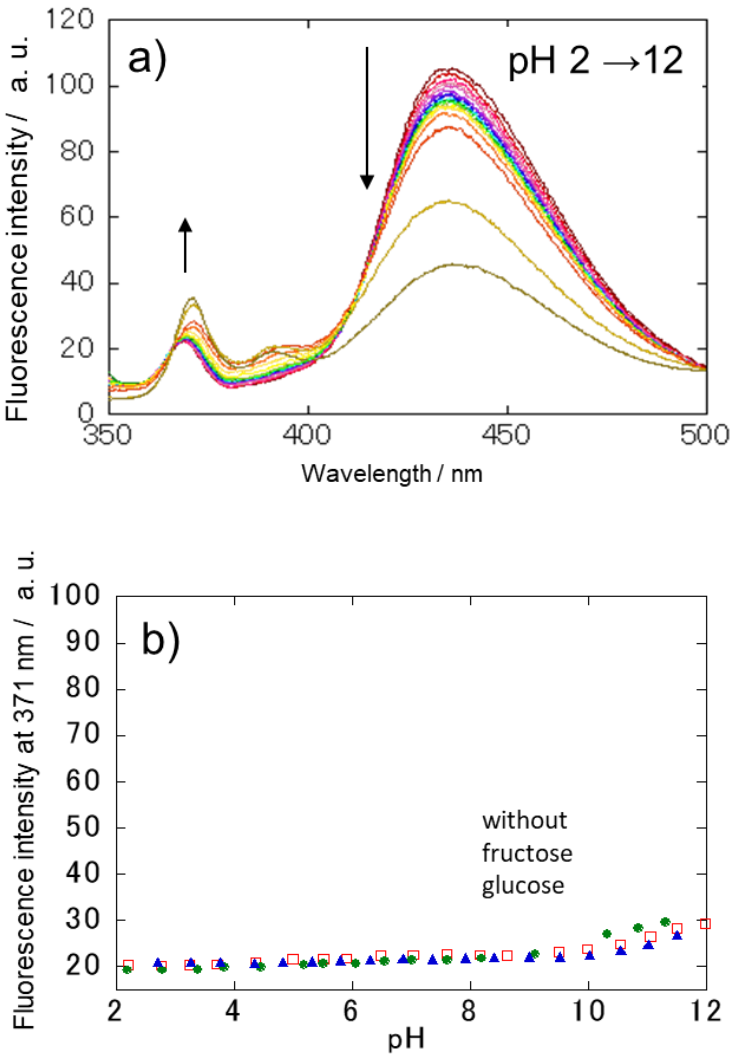


Fig. S6 pH dependence of fluorescence spectra (a) and fluorescence intensity at 371 nm (b) for **1**/*β*-CyD in 2% DMSO–98% water (v/v). [**1**] = 1.0×10^{-5} M (M = mol dm^{-3}), [*β*-CyD] = 5 mM, pH adjusted with 0.01 M phosphate buffer, at 25 ℃, I = 0.1 M with NaCl, [fructose], [glucose] = 0 or 30 mM, λ_{ex} = 328 nm.

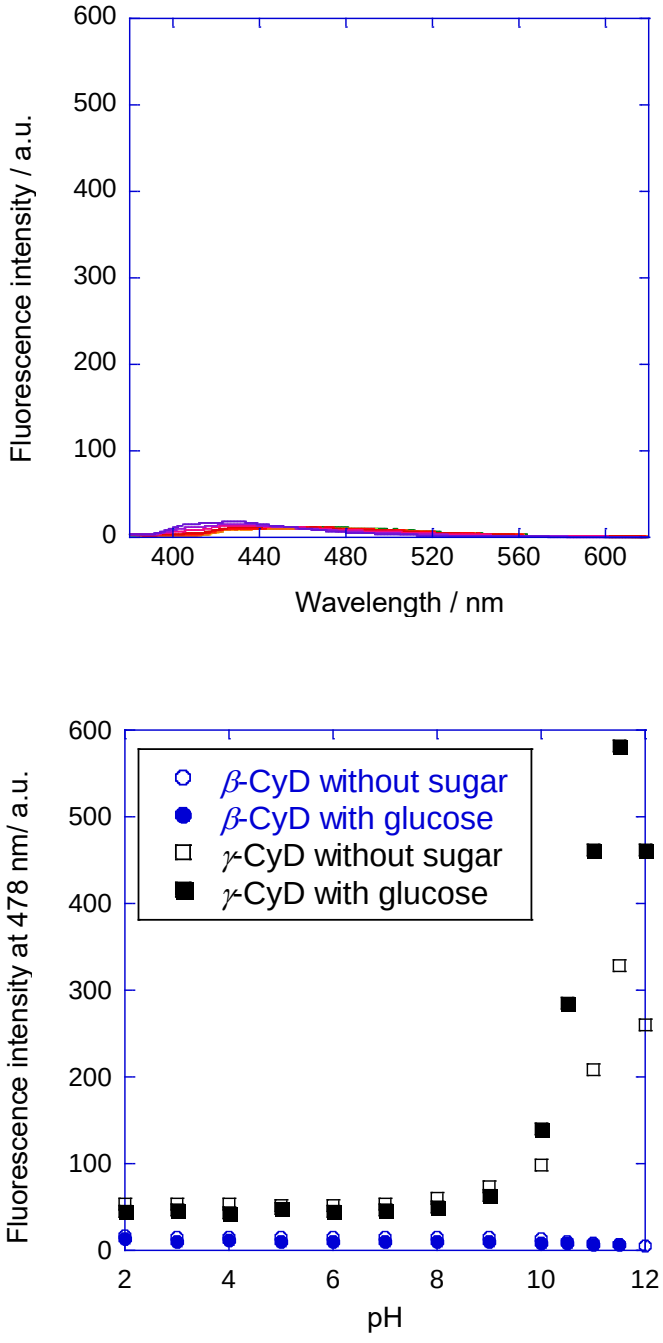


Fig. S7 pH dependence of fluorescence spectra for **2**/*β*-CyD (a) and fluorescence intensity at 478 nm (b) for **2**/*β*-CyD and **2**/*γ*-CyD in 2% DMSO–98% water (v/v). [**2**] = 5.0×10^{-6} M, [*β*-CyD] = 5 mM, [glucose] = 0 or 6 mM, pH adjusted to 11.0 with 0.01 M Na_2CO_3 buffer, I = 0.1 M with NaCl, , at 25 ℃. λ_{ex} = 325 nm.

3. The pH dependence of UV-vis spectra for **2**/γ-CyD complex.

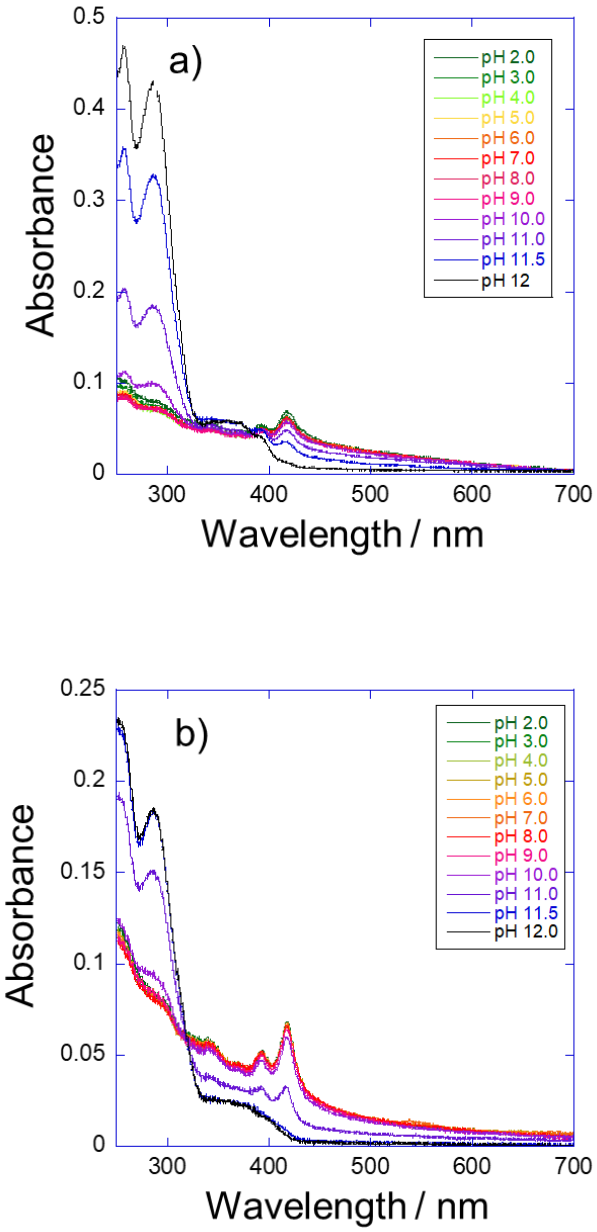


Fig. S8 pH dependence of UV-vis spectra for **2**/γ-CyD in 2% DMSO–98% water (*v*/*v*), without sugar (a), in 30 mM glucose (b). [**2**] = 1.0×10^{-5} M, [γ-CyD] = 5 mM, pH adjusted with 0.01 M phosphate buffer, at 25°C, I = 0.1 M with NaCl.

4. The thermal dependence for **2**/γ-CyD complex.

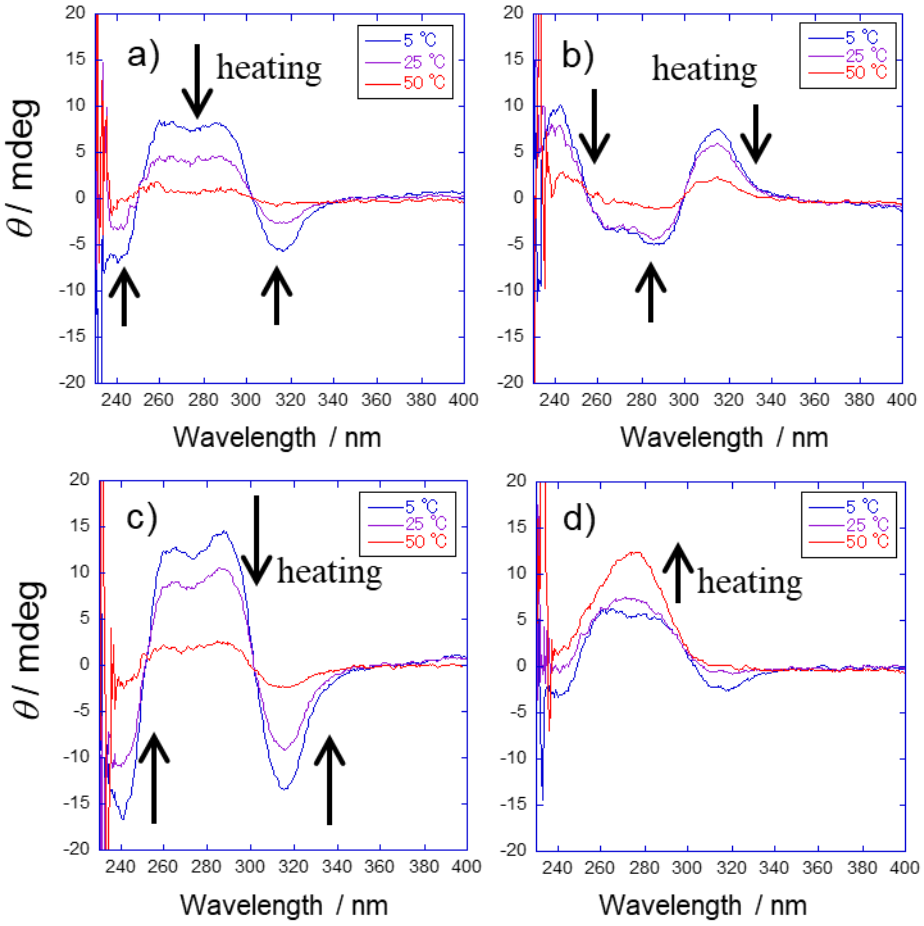


Fig. S9 The thermal-dependence of ICD spectra for **2**/γ-CyD in 4% DMSO–96% water (*v*/*v*), without sugar (a), in 30 mM glucose (b), in 30 mM galactose (c), in 30 mM fructose. [**2**] = 1.0×10^{-5} M, [γ-CyD] = 5 mM, pH adjusted to 11.0 by 0.01 M Na_2CO_3 phosphate buffer, at 25°C, I = 0.1 M with NaCl.

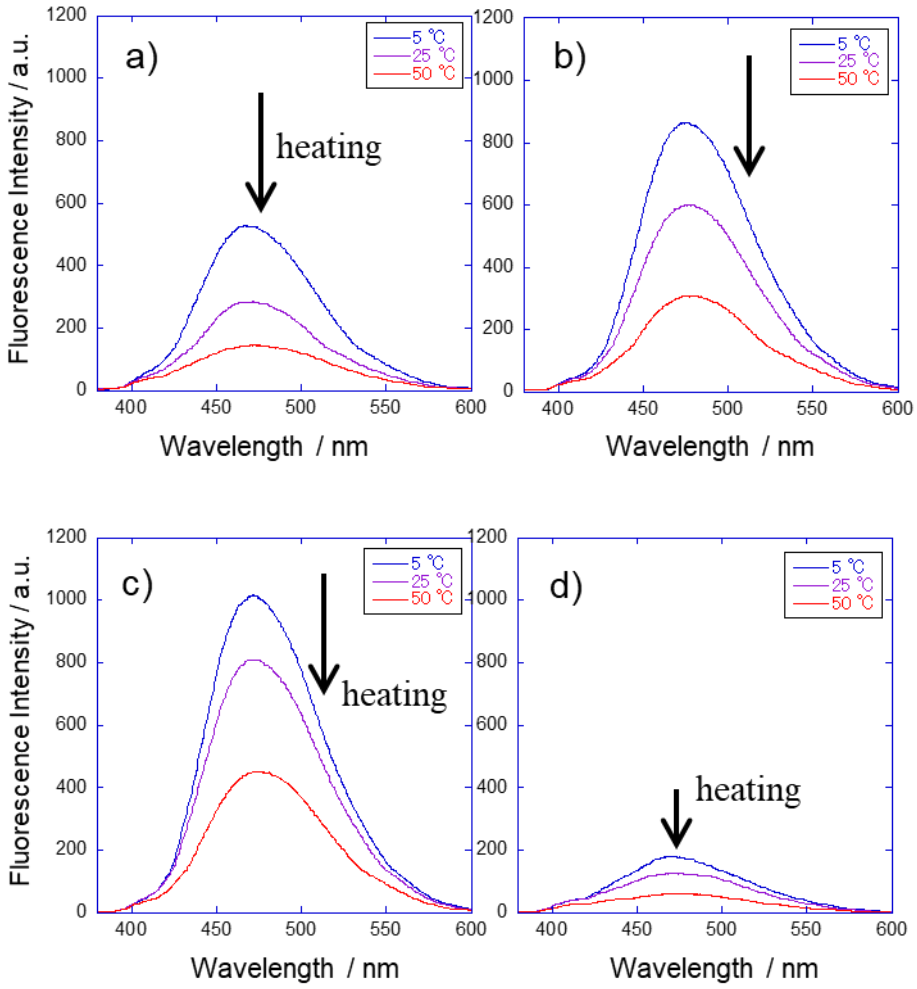


Fig. S10 The thermal-dependence of fluorescence spectra for **2**/γ-CyD in 2% DMSO–98% water (*v*/*v*), without sugar (a), in 6.0 mM glucose (b), in 6.0 mM galactose (c), in 6.0 mM fructose. [**2**] = 5.0×10^{-6} M, [γ-CyD] = 5 mM, pH adjusted to 11.0 by 0.01 M Na_2CO_3 phosphate buffer, at 25℃,

5. The CD spectra in the presence of sugar only

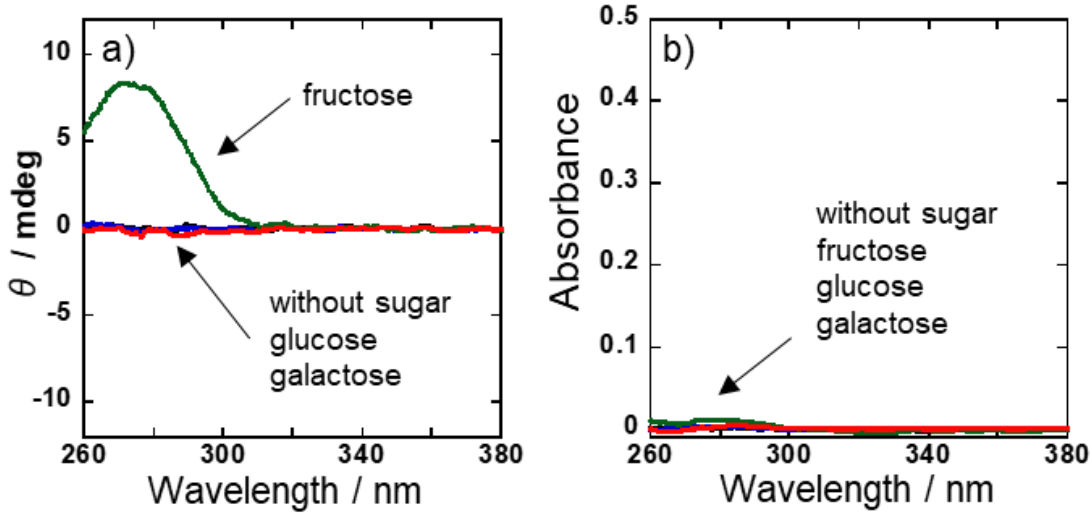


Fig. S11 The ICD (a) and UV-vis (b) spectra for sugars in water. [sugar] = 30 mM, I = 0.1 M with NaCl, at 25°C.