Electronic supporting Information

Fluorescent chirality recognition by simple boronate ensembles with aggregation-induced emission capability

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General
NMR spectra were taken by a Bruker Avance 500 (1H: 500 MHz) spectrometer and JEOL JMN-EC S400 (11B: 128 MHz). In 1H NMR measurements, chemical shifts (δ) are reported downfield from the internal standard Me4Si. Electrospray ionization (ESI) mass spectrum was recorded on a Mariner System 5231 (Applied Biosystems). Fluorescence spectra were measured using a JASCO FP-6300 spectrophotometers. Powder X-ray diffraction (PXRD) data were collected by a Rigaku RINT-TTR III X-ray diffractometer with Cu Kα radiation. Dynamic light scattering (DLS) measurements were performed using an ELSZ-2 (OTSUKA ELECTRONICS) instrument.

Materials
Unless otherwise indicated, reagents used for the synthesis were commercially available and were used as supplied. Synthesis of 4,4’-(2,2-diphenylethane-1,1-diyl)bis(dihydroxyborylbenzene) (DB-TPE) was conducted according to the method previously reported (A. Ozawa, A. Shimizu, R. Nishiyabu and Y. Kubo, Chem. Commun., 2015, 51, 118−121).

Fig. S1 ESI-MS spectrum (negative mode) of a mixture of L-tartaric acid (7.50×10⁻⁵ M) and DB-TPE (3.75×10⁻⁵ M) in THF after aging for 20 h in the presence of molecular sieve 4A. The ESI data were acquired at 100 °C.
Fig. S2 Emission spectra of mixture of L-TPE-TA and (1S,2S)-1 (blue line) or (1R,2R)-1 (red line) with an increase in ethanol fraction \( f \) in THF. [L-TPE-TA] = 0.75 mM, [1] = 1.50 mM. \( \lambda_{\text{ex}} = 365 \) nm. Data were acquired in 30 min after the addition of each enantiomers of 1.

Fig. S3 Emission spectra of a mixture of D-TPE-TA (0.75 mM) upon adding (1S,2S)-1 (1.50 mM) or (1R,2R)-1 (1.50 mM) in EtOH/THF (4:1 v/v) at 25 \(^\circ\)C. \( \lambda_{\text{ex}} = 365 \) nm. Data were acquired in 30 min after the addition of each enantiomer of 1.
Fig. S4 Powder X-ray diffraction patterns of aggregated \textit{L}-TPE-TA/(1S,2S)-1 salt (blue line) (a) or \textit{L}-TPE-TA with (1R,2R)-1 salt (red line) (b). (c) Salt formation of \textit{L}-TPE-TA and (1S,2S)-1. (d) A part of a plausible network structure from the salt formation of \textit{L}-TPE-TA and (1R,2R)-1.
**Fig. S5** Emission spectra of a mixture of d-TPE-TA (0.75 mM) upon adding (1S,2S)-2 (1.50 mM) or (1R,2R)-2 (1.50 mM) in EtOH/THF (1:5 v/v) at 25 °C. $\lambda_{ex} = 365$ nm. Data were acquired in 30 min after the addition of each enantiomer of 2.

![Emission spectra graph](image)

**Fig. S6** Plausible binding modes of L-TPE-TA with (1S,2S)-1 (a) and L-TPE-TA with (1R,2R)-2 (b).

![Binding mode diagrams](image)
**Fig. S7** Emission spectra of a mixture of \textbf{d-TPE-TA} (0.50 mM) and cinchonidine (1.00 mM) or cinchonine (1.00 mM) in THF at 25 °C. $\lambda_{\text{ex}} = 365$ nm. Data were acquired in 30 min after the addition of cinchonidine or cinchonine.