Electronic Supplementary Information (ESI) for:

**Optically Active Copper(II) Phthalocyanine Supramolecules Induced by Peripheral Group Homochirality**

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**Synthesis of CuPc-(S)**

A typical synthetic procedure of CuPc-(S) was described: 4(5),4'(5'),4"(5'"),4"'(5'"")-Tetracarboxyphthalocyanate copper(II) (Wako, 0.10 g) was reacted with SOCl\(_2\) (20 mL) in o-dichlorobenzene (40 mL) in the presence of catalytic amount of pyridine to give copper(II): 4(5),4'(5'),4"(5'"),4"'(5'"")-tetakis(chlorocarbonyl)phthalocyanine. After removing o-dichlorobenzene and SOCl\(_2\) in a reduced pressure, the resulting solid and (S)-1-(p-tolyl)ethylamine (0.068 g, 0.50 mmol) in a dry pyridine (5 mL) was reacted at 100 °C for 24 h. The crude solid was washed with hexane repeatedly and dried in a vacuum overnight. The crude product was purified by silica gel column chromatography (CHCl\(_3\)/methanol = 100/2 (v/v)) and collected as a first purple fraction (CuPc-(S)). Because a very small amount of the product was isolated, the product was not weighed. CuPc-(R) and CuPc-(RS) were prepared by the similar methods, respectively.

![Scheme S1. Synthetic route of 4(5),4'(5'),4"(5'"),4"'(5'"")-tetakis[(S)-(1-(p-tolyl)ethylaminocarbonyl]phthalocyanate copper(II), CuPc-(S).](image-url)
Figure S1. MALDI-TOF MS spectra of (a) CuPc-(R), (b) CuPc-(S) and (c) CuPc-(RS).
**Figure S2.** FT-IR spectrum of (a) CuPc-(R), (b) CuPc-(S) and (c) CuPc-(R,S).

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<th>(a)</th>
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<tr>
<td></td>
<td>$f_{\text{N-H}}$</td>
<td>$f_{\text{C=C-H}}$</td>
<td>$f_{\text{C=O}}$</td>
<td>$f_{\text{C-N}}$ and $\delta_{\text{C-H}}$</td>
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<tr>
<td></td>
<td>3265</td>
<td>2962, 2922, 2854</td>
<td>1631</td>
<td>1540</td>
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Frequencies / cm$^{-1}$
Figure S3. CD and UV-vis spectra of CuPc-(S) \((5.0 \times 10^{-5}\text{ mol/L})\) in DMF at 25 °C.

Figure S4. CD and UV-vis spectra of CuPc-(RS) \((5.0 \times 10^{-5}\text{ mol/L})\) in CHCl₃ at 25 °C.
Figure S5. CD spectra of CuPc-(S) and CuPc-(R) (5.0 × 10^{-5} mol/L) in chloroform at 25 °C.

Figure S6. VSM curves of CuPc-(R) on mica casting from chloroform solution (1 × 10^{-4} mol/L) at 25 °C. The VSM curves of CuPc-(R) involved the contribution from that of mica because mica itself has its own VSM characteristics.
Figure S7. EPR spectrum of CuPc-(S) \((1 \times 10^{-4} \text{ mol/L})\) in chloroform at room temperature measured by JEOL JES-FA 100.

Figure S8. AFM images and section analysis of specimen on mica cast from dilute chloroform solutions of (left) CuPc-(S) \((1 \times 10^{-4} \text{ mol/L})\) and (right) CuPc-(R) \((1 \times 10^{-4} \text{ mol/L})\).
**Figure S9.** AFM imaging of NiPc-(R) specimen on mica prepared by cast from its chloroform solution (8 × 10^{-5} mol/L). The image was re-edited from the original data appeared in Figure 3a of Ref. 9. AFM image was recorded on a Seiko SPI3800N atomic force microscope with dynamic force mode and a standard silicon probe with a 14 N/m spring constant.

**Figure S10.** (left) AFM imaging and (right) its MFM imaging of CuPc-(R) specimen on mica prepared by cast from its chloroform solution (1 × 10^{-4} mol/L), conducted by a Veeco NanoScope IIIa with AFM and MFM modes.