Supplementary Information

Enantioselective recognition by highly ordered porphyrin-assembly on chiral molecular gel

Hirokuni Jintoku[a], Makoto Takafuji[a,b], Reiko Oda[c] and Hirotaka Ihara*[a,b]

[a] *Department of Applied Chemistry and Biochemistry, Kumamoto University, Kumamoto 860-8555, Japan*

[b] *Kumamoto Institute for Photo-Electro Organics (PHOENICS), Kumamoto, 862-0901, Japan*

[c] *Institut Européen de Chimie et Biologie, UMR 5248 CBMN, CNRS-Université de Bordeaux-ENITAB, 2 rue Robert Escarpit, F-33607 Pessac, France*

* ihara@kumamoto-u.ac.jp

1. Materials and Generals

5-(4-methoxycarbonylphenyl)-10,15,20-triphenyl-21H,23H-porphine and amino acid methyl esters were purchased from Wako Pure Chemical Industries and Tokyo Chemical Industry, respectively. N^1,N^5-didodecyl-L-glutamide (***g***) and zinc porphyrin lipid (***g*-TPP/Zn**) were synthesized by the previously reported procedure with slight modification. UV-visible, CD and fluorescence spectra were measured with V-560 (JASCO), J725 (JASCO) and FP-6500 (JASCO), respectively. The Stern-Volmer constants were determined in the concentrations below 0.30 equimolar of His-OMe for ***g*-TPP/Zn**. (50 μM).

2. Sample Preparation for Spectroscopic Measurement[1]

(1) The free amino acid methyl ester solution was prepared from its hydrochloride salt. 10 mg of amino acid methyl ester was dissolved in 1.0 mL of methanol with Na_2CO_3 (100 mg).

(2) Solvent (methanol) was removed under a stream of nitrogen and then placement under high vacuum (0.1 Torr) for an hour.

(3) Toluene was added to yield the free amino acid methyl ester solution (4.0 mM).

(4) An aliquot of 5 μL of the amino acid methyl ester solution (1 equiv) was added to the prepared 0.05 mM of zinc porphyrin lipid (***g*-TPP/Zn**) solution to obtained ***g*-TPP/Zn**/ amino acid methyl ester complex.

1. X. Huang, B. H. Rickman, B. Borhan, N. Berova, and K. Nakanishi, *J. Am. Chem. Soc*, 1998, **120**, 6185–6186.

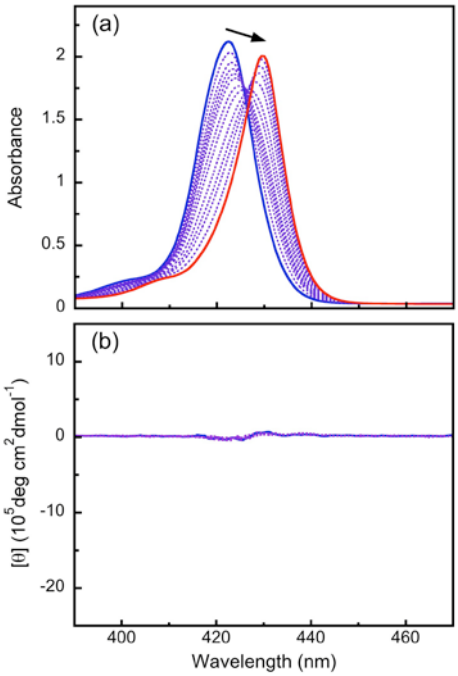

Figure S1. (a) UV-vis and (b) CD spectral changes of ***g*-TPP/Zn** (50 μM) upon addition of L-His-OMe (0 - 500 μM) in chloroform at 20 ˚C.

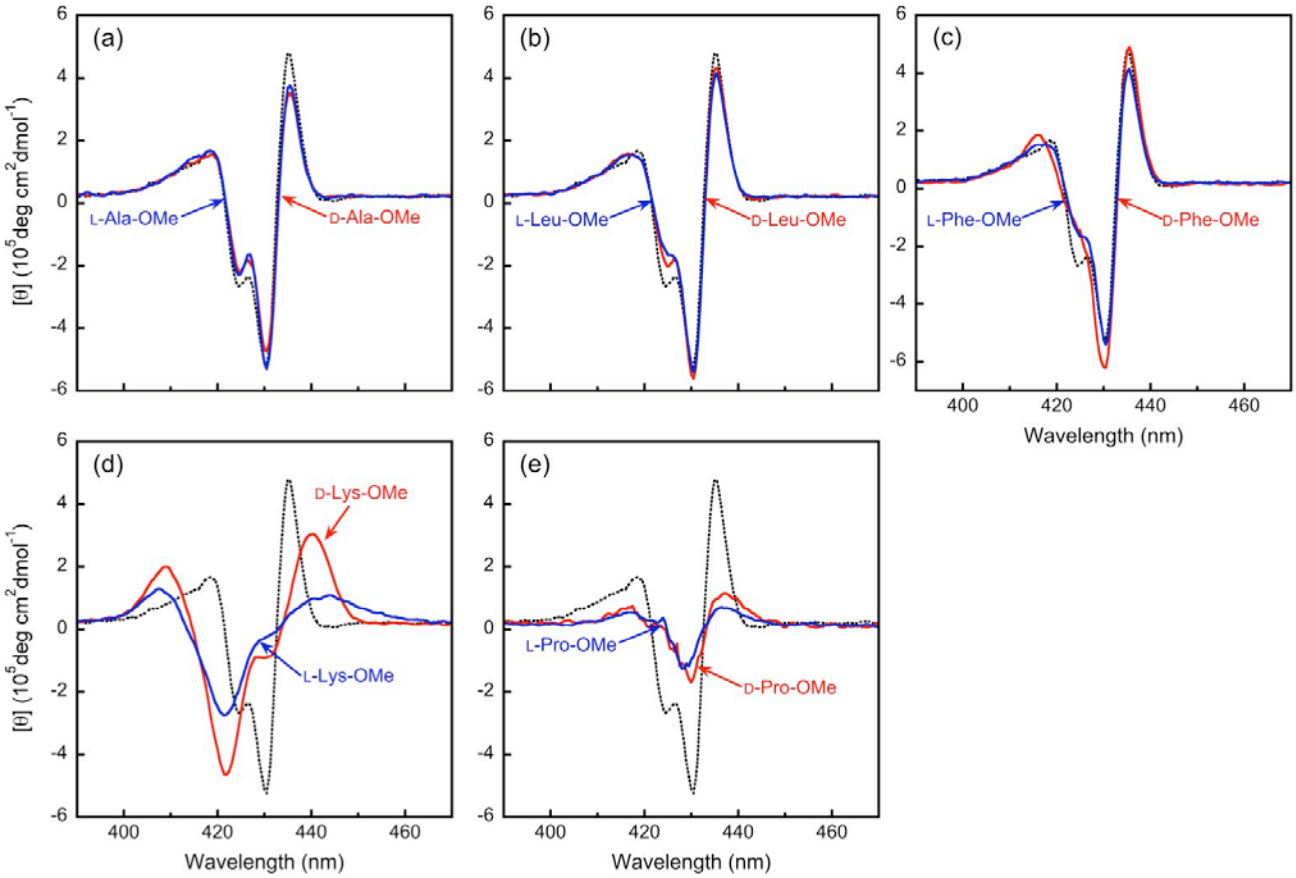

Figure S2. CD spectra of ***g*-TPP/Zn** (50 μM) with and without an equimolar of (a) Ala-OMe, (b) Leu-OMe, (c) Phe-OMe (d) Lys-OMe, and (e) Pro-OMe in cyclohexane at 20 ˚C.