(s)-2,2’-Bis[5-(p-phenyloxyl)-10,15,20-triphenylporphyrin-methyl]-1,1’-binaphthyl

Hai-Yang Liu1*, Yao-Wei Li1, Tat-Shing Lai1,3, Xiao Ying2, Jun-Chun Tian1 and Guo-bang Gu1*

1, Department of Applied Chemistry, 2, Department of Applied Physics, South China University of Technology, Guangzhou 510641, China. (E-mail: chhyliu@scut.edu.cn)
3, Department of Chemistry, Hong Kong University of Science and Technology, Hong Kong, China

Received: 5 September 2003 / Accepted: 18 September 2003 / Published: 24 February 2004

(s)-2,2’-Bis[Bromomethyl]-1,1’-binaphthyl was prepared via the bromination of (s)-2,2’-dimethyl-1,1’-binaphthyl[1] by N-bromosuccinimide (NBS) in CCl4 with benzoyl peroxide as initiator (yield: 45.0%). The mixture of 2,2’-Bis[bromomethyl]-1,1’-binaphthyl (0.10g, 0.23 mmol), 5-(p-hydroxy)phenyl-10,15,20-triphenylporphyrin (0.73g, 1.16 mmol) and anhydrous potassium carbonate (1g) was stirred in dry DMF (30 mL) for 24 hours at room temperature. Reaction mixture was then poured into saturated NaCl aqueous solution (100 mL). The precipitate was filtered and washed with water, dried in vacuum. The product was purified by chromatography on silica gel with dichloromethane as an eluent. (s)-2,2’-Bis[5-(p-phenoxyl)-10,15,20-triphenylporphyrin-methyl]-1,1’-binaphthyl was obtained as a purple solid (0.29 g, yield: 81.9%).

1H-NMR (300 MHz, in CDCl3) δ(ppm): -2.85 (s, 4H, pyrrole NH), 5.15-5.31 (m, 4H, CH2), 7.16-8.23 (several m, 50 H, Ar-H), 8.70-8.81 (m, 16 H, pyrrole b-H).

IR(KBr) νmax (cm⁻¹): 3312.9 (w), 3052.6 (w), 1597.8 (m), 1557.8 (w), 1505.5 (m), 1471.5 (m), 1440.4 (w), 1400.2 (w), 1349.6 (m), 1287.7 (m), 1223.0 (s), 1174.2 (m), 1108.1 (w), 1072.3 (w), 1001.3 (m), 980.6 (m), 965.8 (s), 845.1 (w), 799.6 (s), 729.6 (s), 700.9 (s), 520.5 (w).

UV-Vis (in CH2Cl2) 1max (nm): 418.1, 515.0, 552.0, 591.1, 647.0.

CD (in CH2Cl2) De (l, nm): -5.0 (285.2 ), -5.0 (395.3 ), +7.1 (418.2).

FAB-MS m/z: 1539.9 [M+H]+.

Acknowledgment
This work was supported by the Natural Science Foundation of China (No.29971011) and Natural Science Foundation of Guangdong Province(No.000489).
Reference

© 2004 MDPI. All rights reserved.