Electronic Supplementary Information (ESI) for:

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

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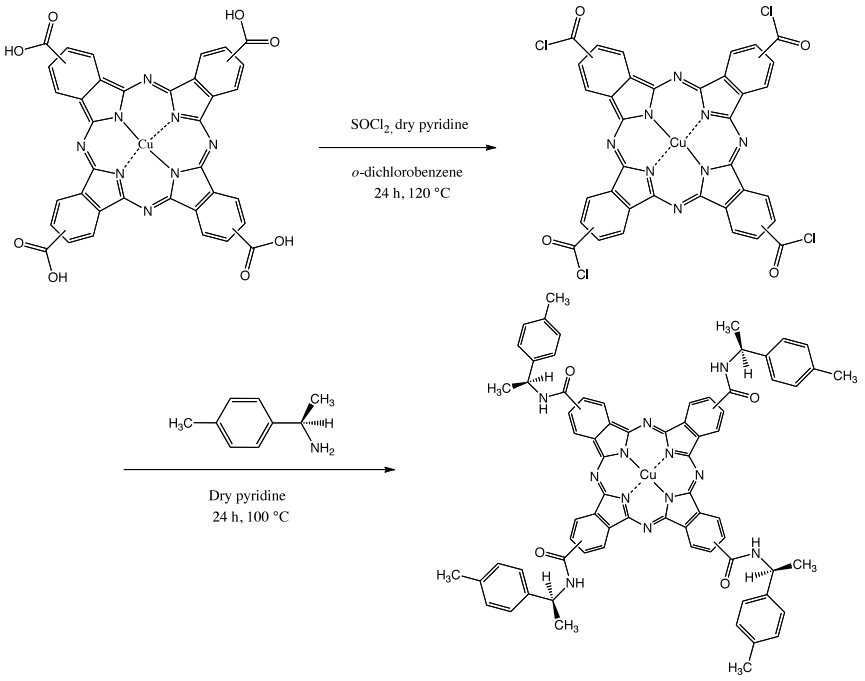
Synthesis of CuPc-(*S*)

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‴)-tetrakis(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‴)-tetrakis{(*S*)-(1-(*p*-tolyl)ethylaminocarbonyl}phthalocyanate copper(II), CuPc-(*S*).

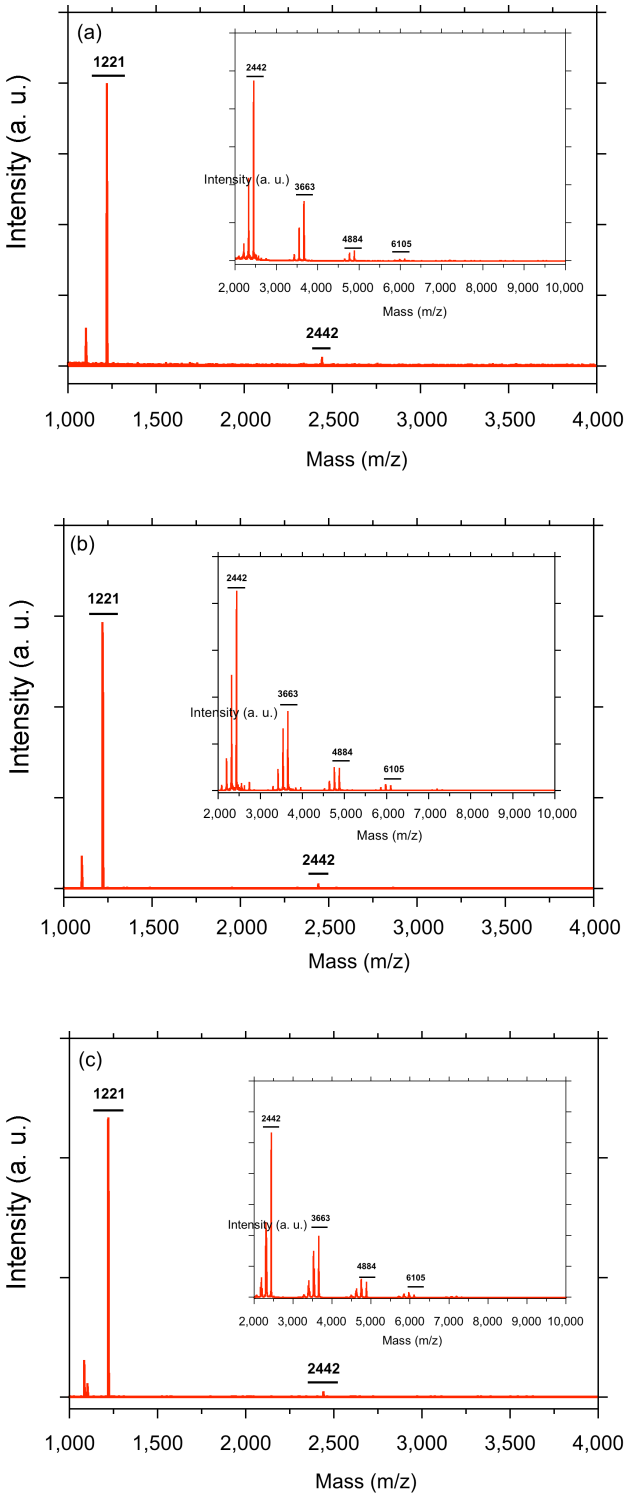


Figure S1. MALDI-TOF MS spectra of (a) CuPc-(*R*), (b) CuPc-(*S*) and (c) CuPc-(*RS*).

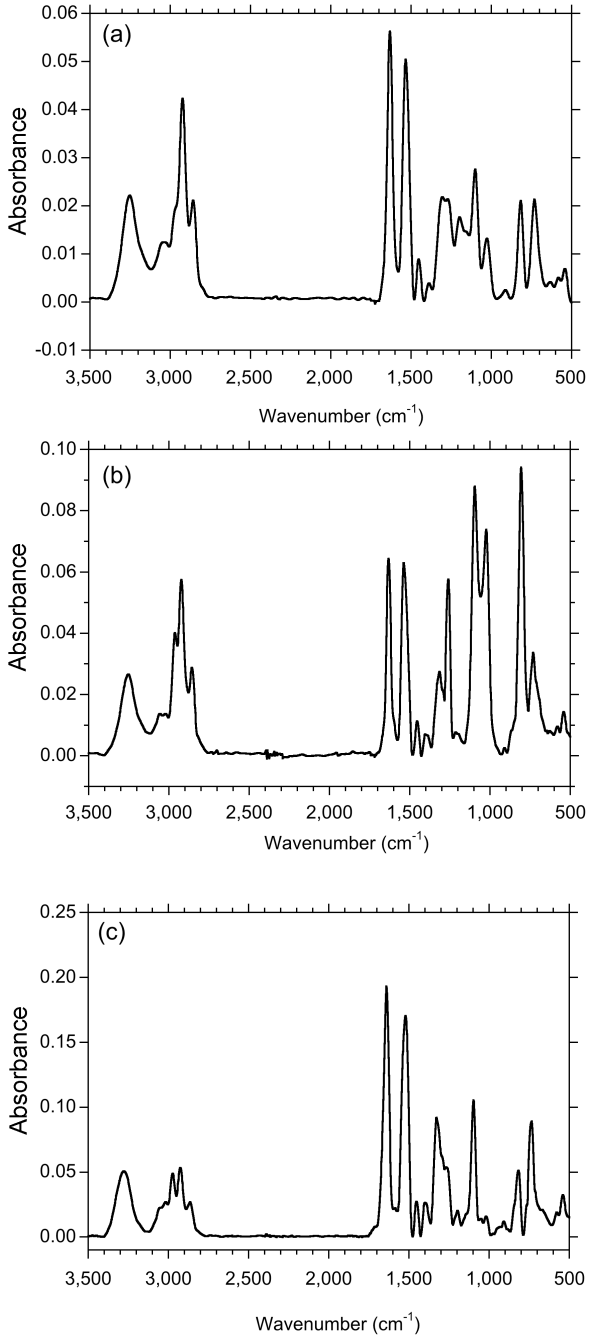


Figure S2. FT-IR spectrum of (a) CuPc-(*R*), (b) CuPc-(*S*) and (c) CuPc-(*R,S*).

Frequencies / cm^{-1}			
(a)	(b)	(c)	(d)
ν_{N-H}	ν_{Ar-C-H} ν_{C-H}	$\nu_{C=O}$	ν_{C-N} and δ_{C-H}
3265	2962, 2922, 2854	1631	1540

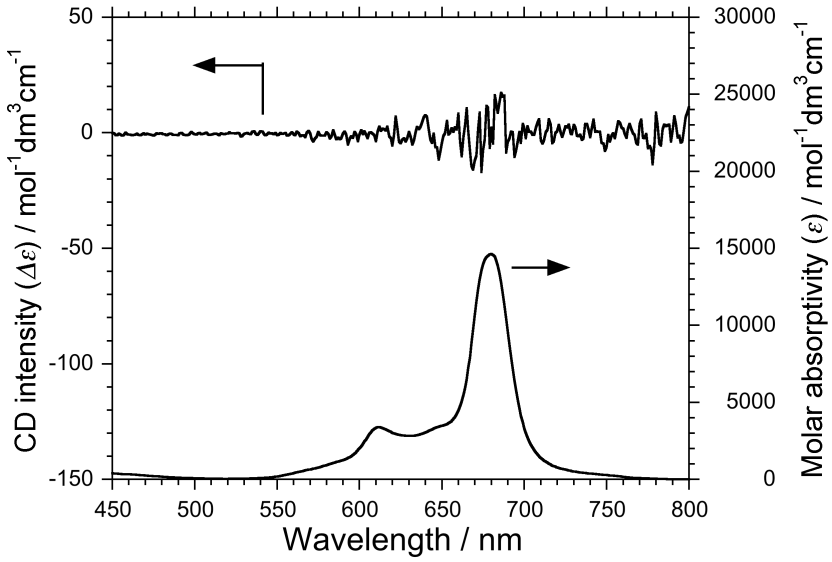


Figure S3. CD and UV-vis spectra of CuPc-(*S*) (5.0×10^{-5} mol/L) in DMF at 25 °C.

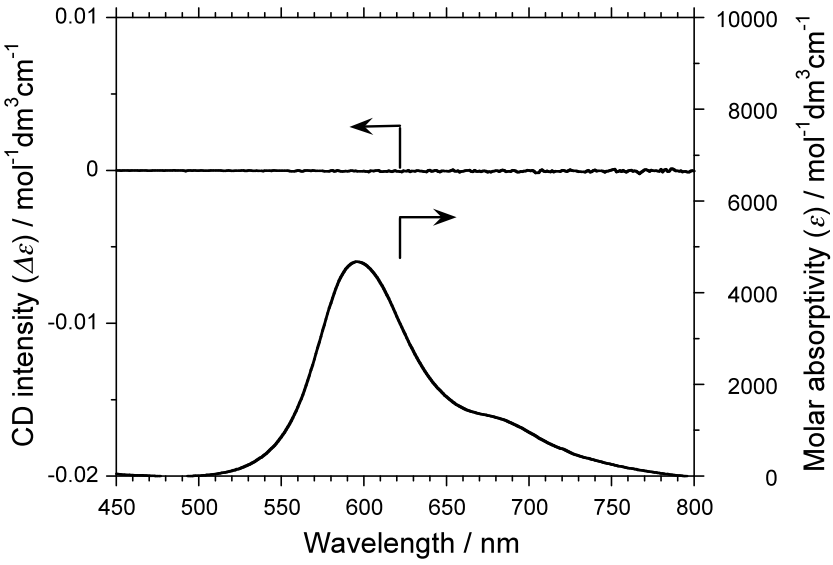


Figure S4. CD and UV-vis spectra of CuPc-(*RS*) (5.0×10^{-5} mol/L) in $CHCl_3$ at 25 ºC.

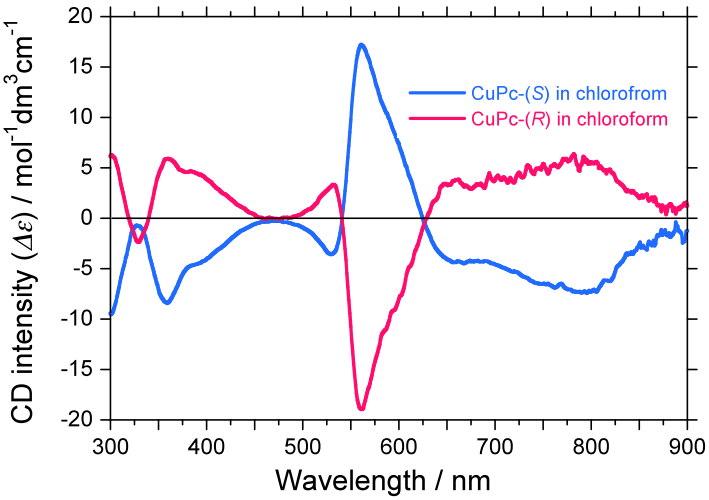


Figure S5. CD spectra of CuPc-(*S*) and CuPc-(*R*) (5.0×10^{-5} mol/L) in chloroform at 25 °C.

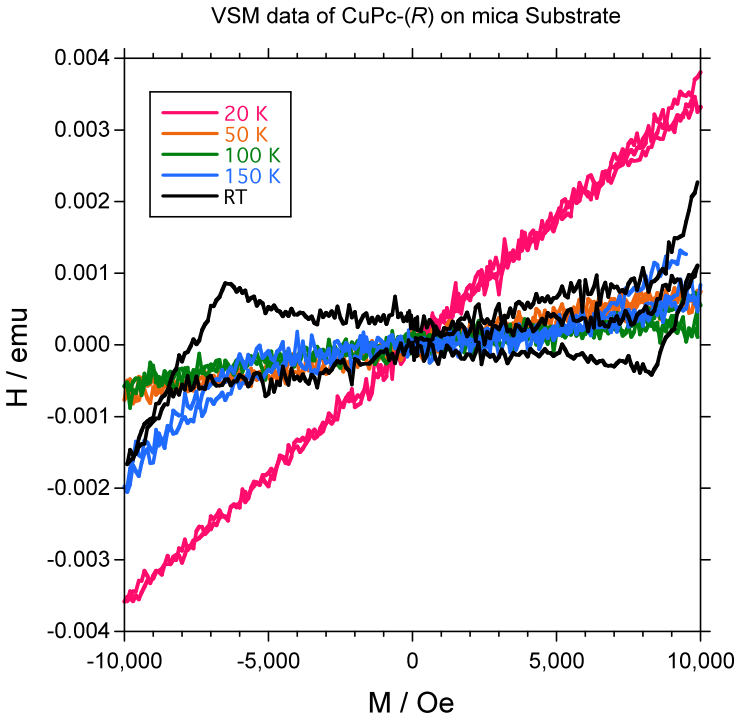


Figure S6. VSM curves of CuPc-(*R*) on mica casting from chloroform solution (1×10^{-4} mol/L) at 25 °C. The VSM curves of CuPc-(*R*) involved the contribution from that of mica because mica itself has its own VSM characteristics.

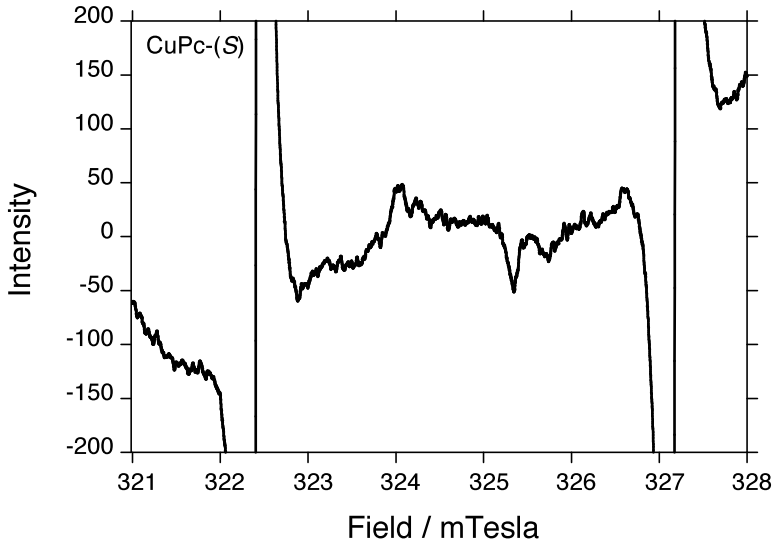


Figure S7. EPR spectrum of CuPc-(*S*) (1×10^{-4} mol/L) in chloroform at room temperature measured by JEOL JES-FA 100.

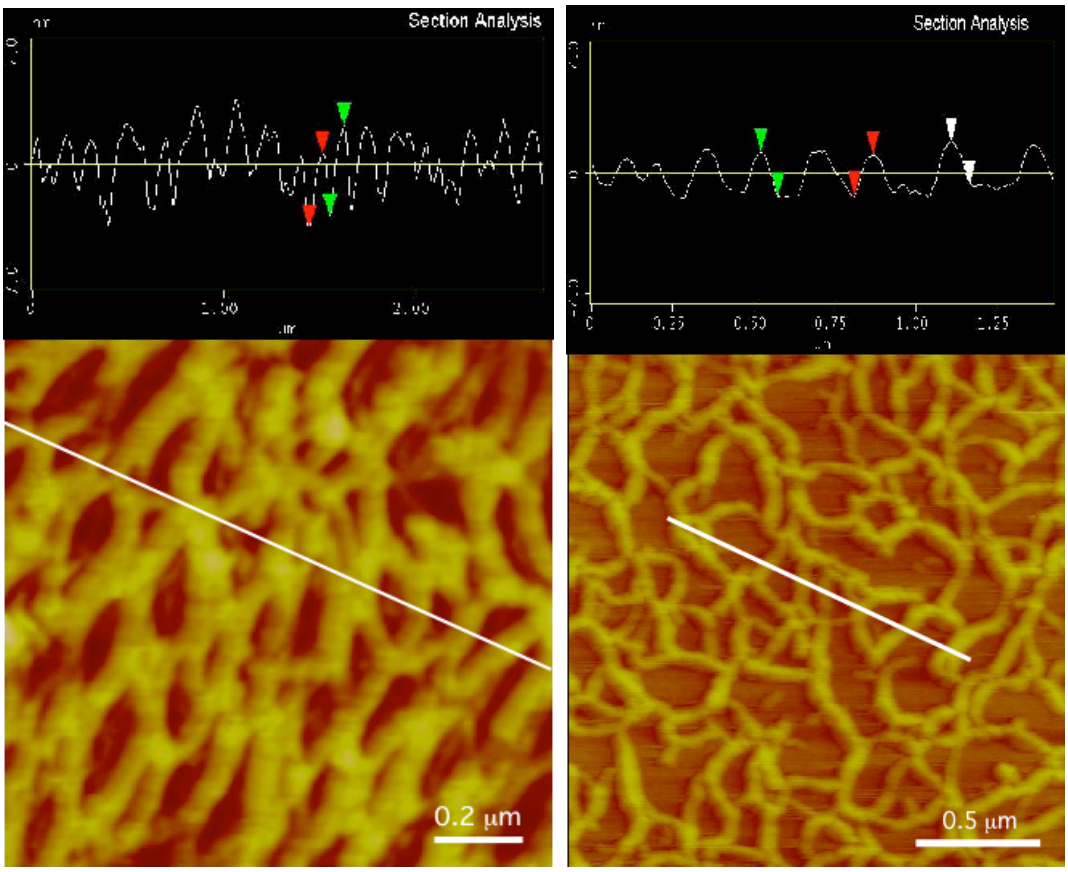


Figure S8. AFM images and section analysis of specimen on mica cast from dilute chloroform solutions of (left) CuPc-(*S*) (1×10^{-4} mol/L) and (right) CuPc-(*R*) (1×10^{-4} mol/L).

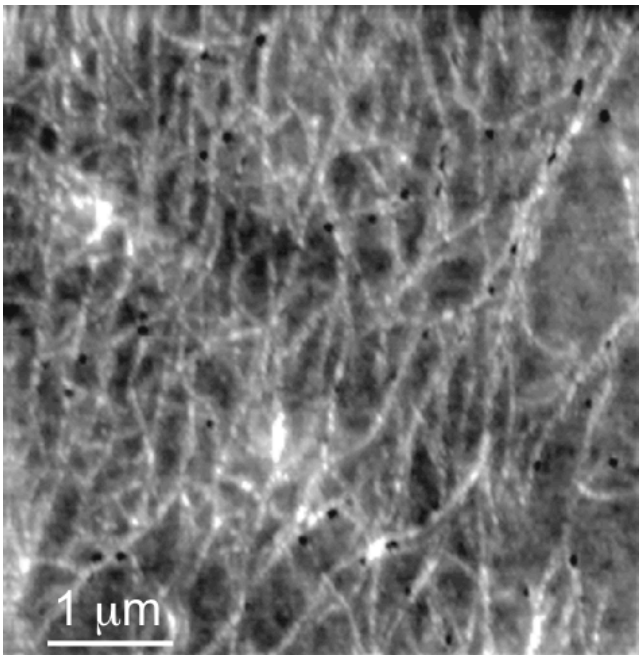


Figure S9. AFM imaging of NiPc-(*R*) specimen on mica prepared by cast from its chloroform solution (8×10^{-5} mol/L). The image was re-edited from the original data appeared in Figure 3a of Ref. 9. AFM image was recorded on a Seiko SPI3800N atomic force microscope with dynamic force mode and a standard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

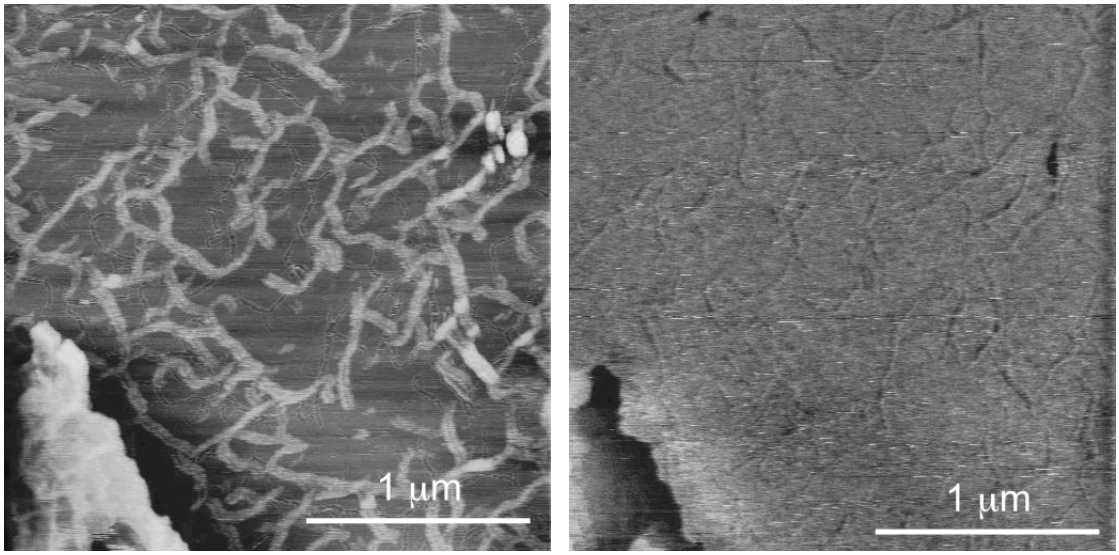


Figure S10. (left) AFM imaging and (right) its MFM imaging of CuPc-(*R*) specimen on mica prepared by cast from its chloroform solution (1×10^{-4} mol/L), conducted by a Veeco NanoScope IIIa with AFM and MFM modes.