

Electronic Supplementary Information for:

**De novo Synthesis and Properties of Analogues
of the Self-Assembling Chlorosomal Bacteriochlorophylls**

Olga Mass, Dinesh R. Pandithavidana, Marcin Ptaszek, Koraliz Santiago,
Joseph W. Springer, Jieying Jiao, Qun Tang, Christine Kirmaier,
David Bocian, Dewey Holten, and Jonathan S. Lindsey

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1. Resonance Raman Spectra.

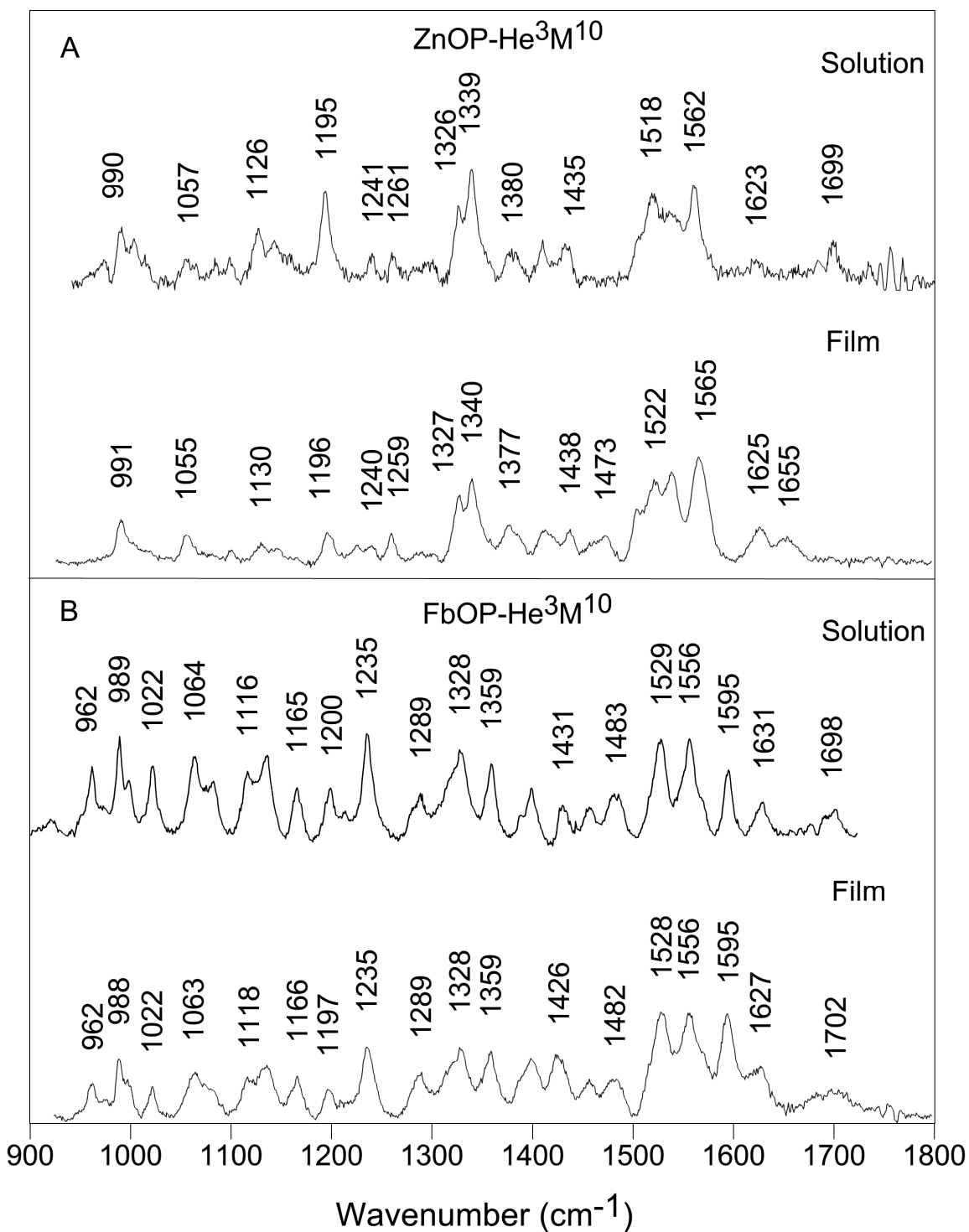
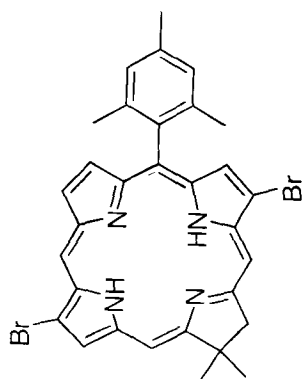
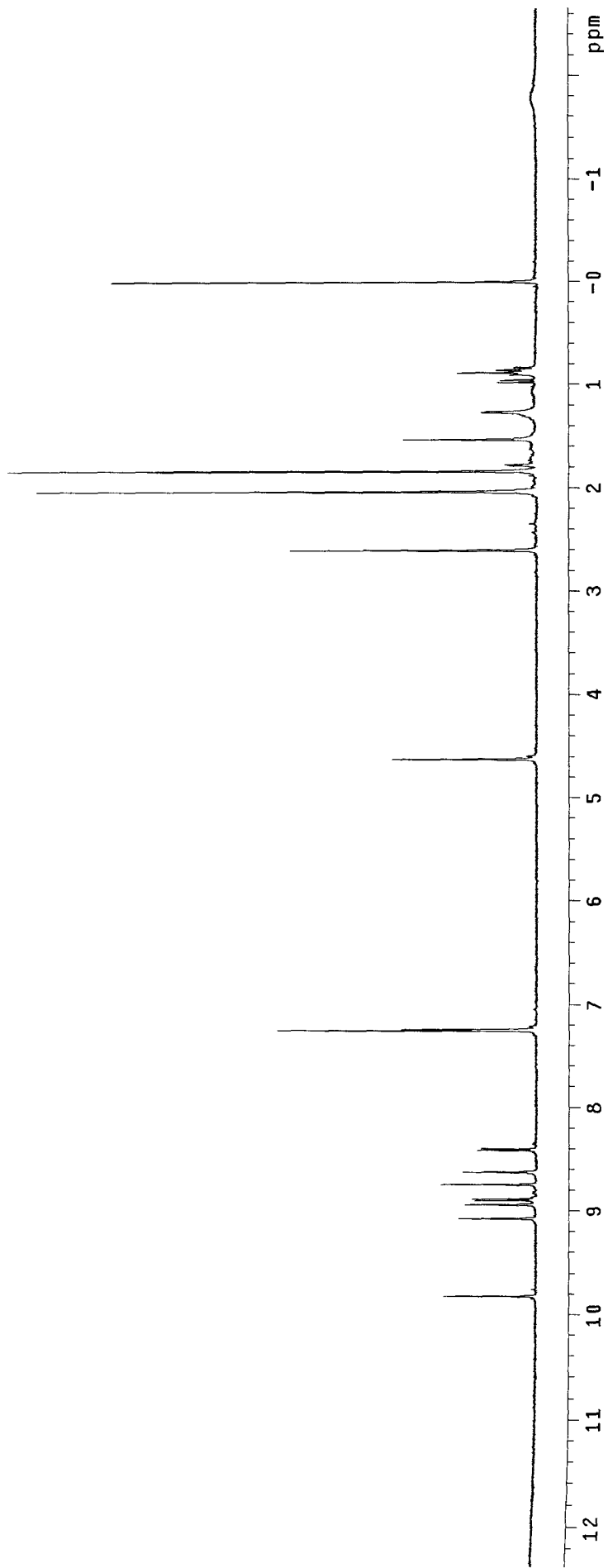
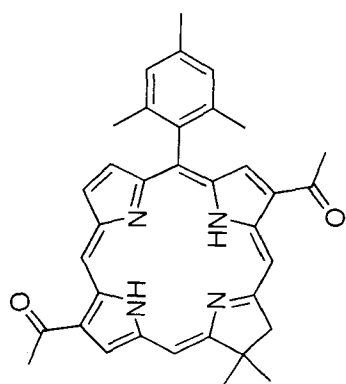


Figure S1. Soret excitation ($\lambda_{\text{ex}} = 415 \text{ nm}$) of (A) ZnOP-He³M¹⁰, and (B) FbOP-He³M¹⁰ in CH_2Cl_2 solutions and solid films.

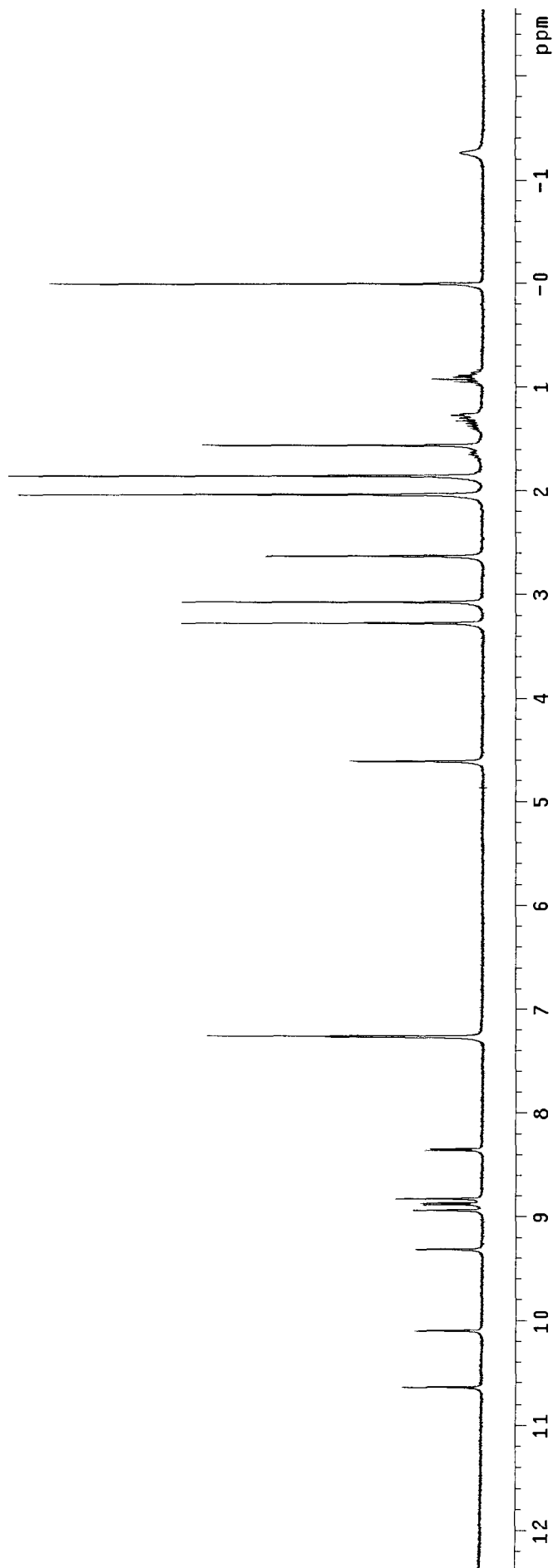


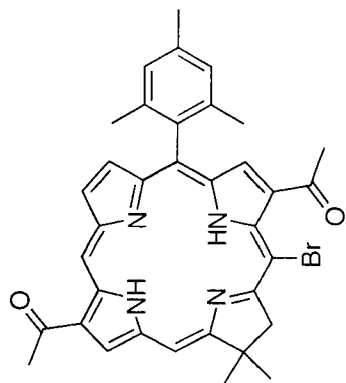
FbC-Br^{3,13}M¹⁰
(in CDCl₃)



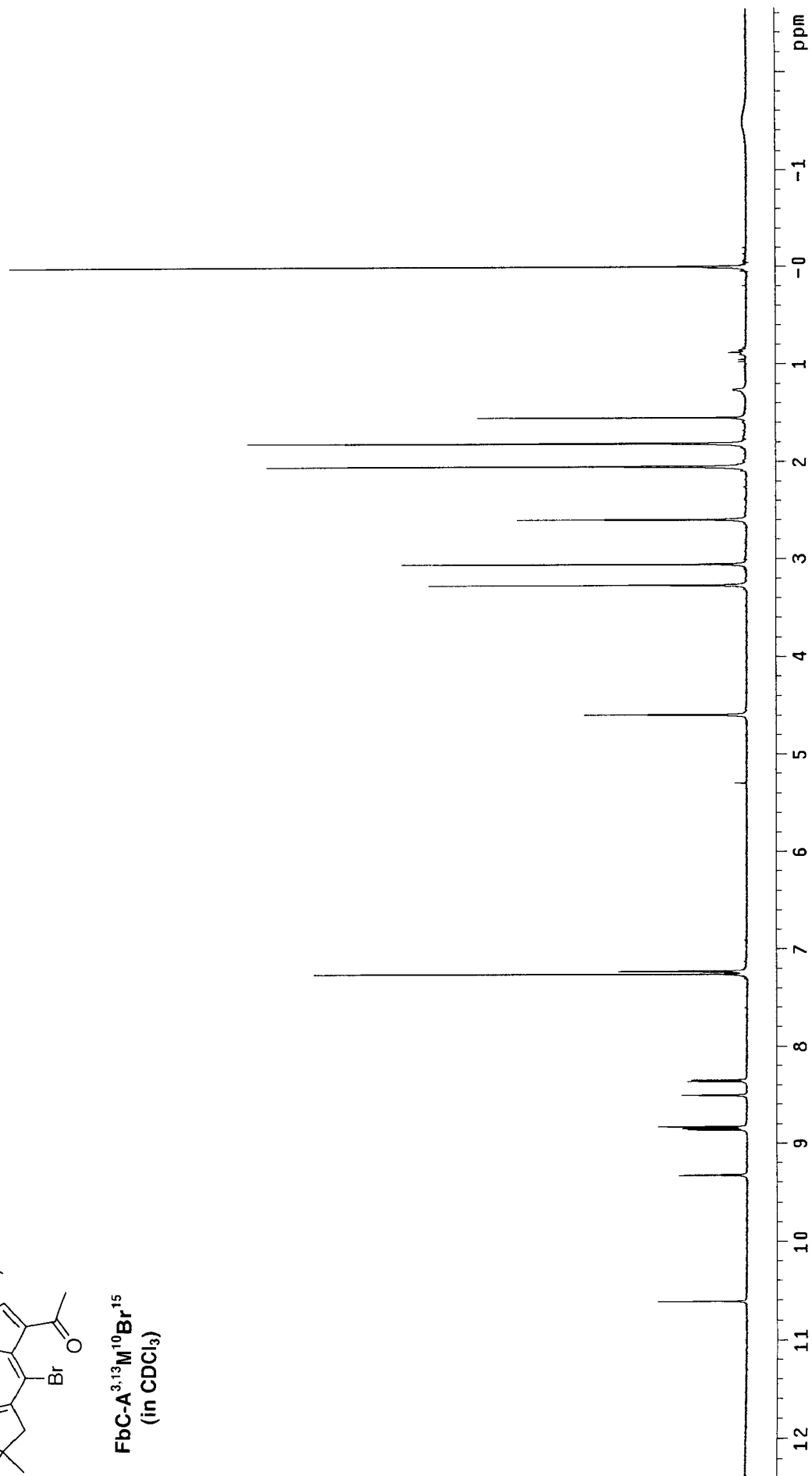


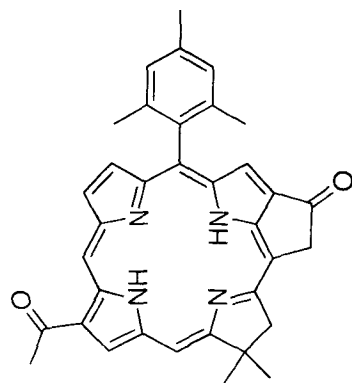
FbC-A $^{3,13}\text{M}^{10}$
(in CDCl_3)



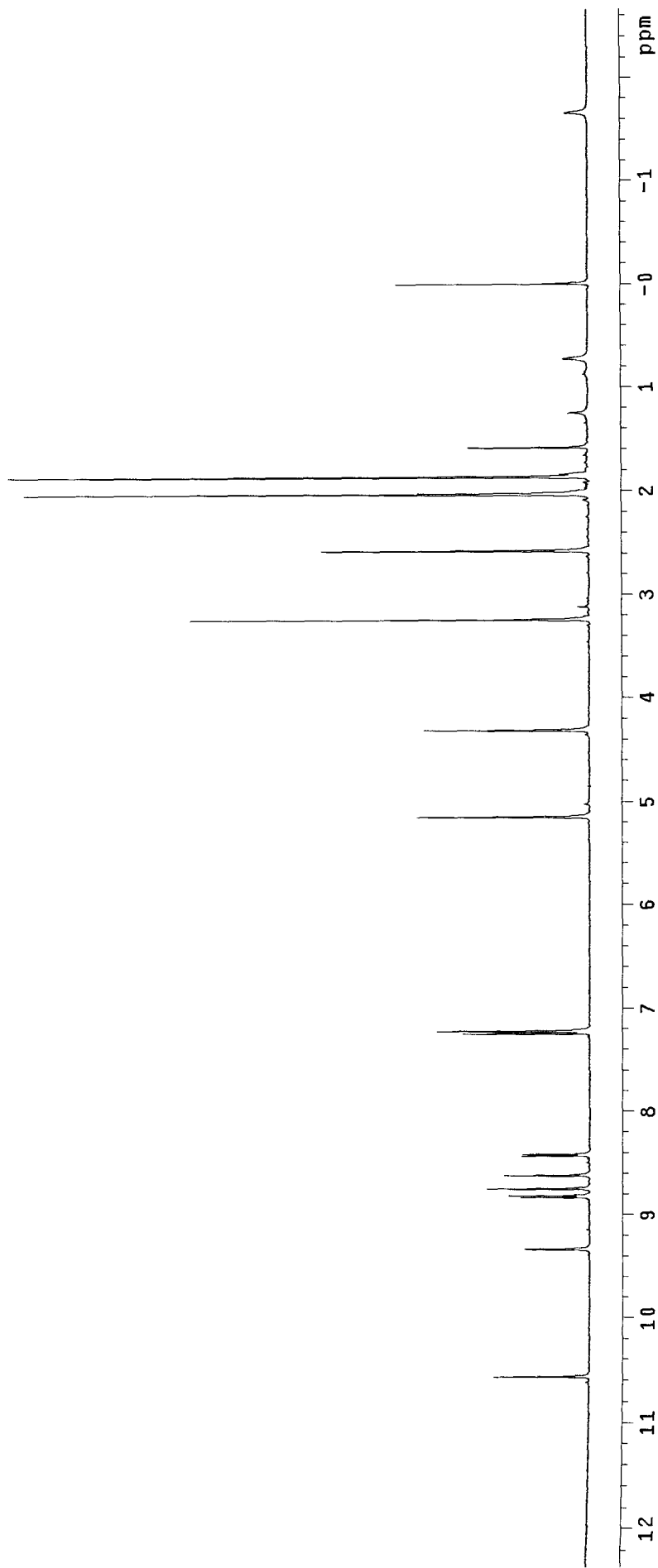


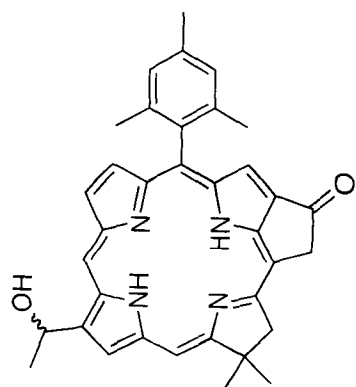
FbC-A^{3,13}M¹⁰Br¹⁵
(in CDCl₃)



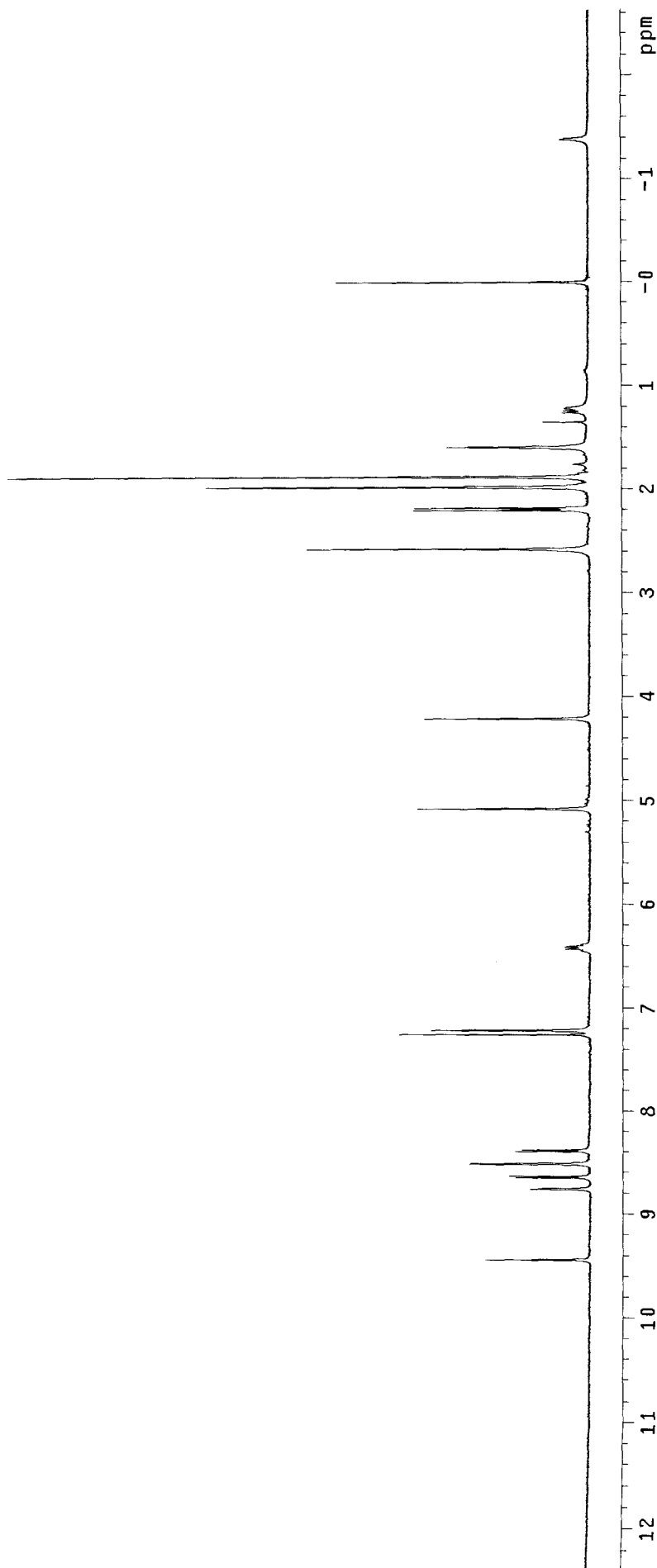


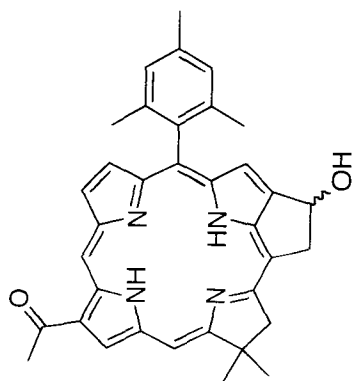
FbOP-A³M¹⁰
(in CDCl₃)



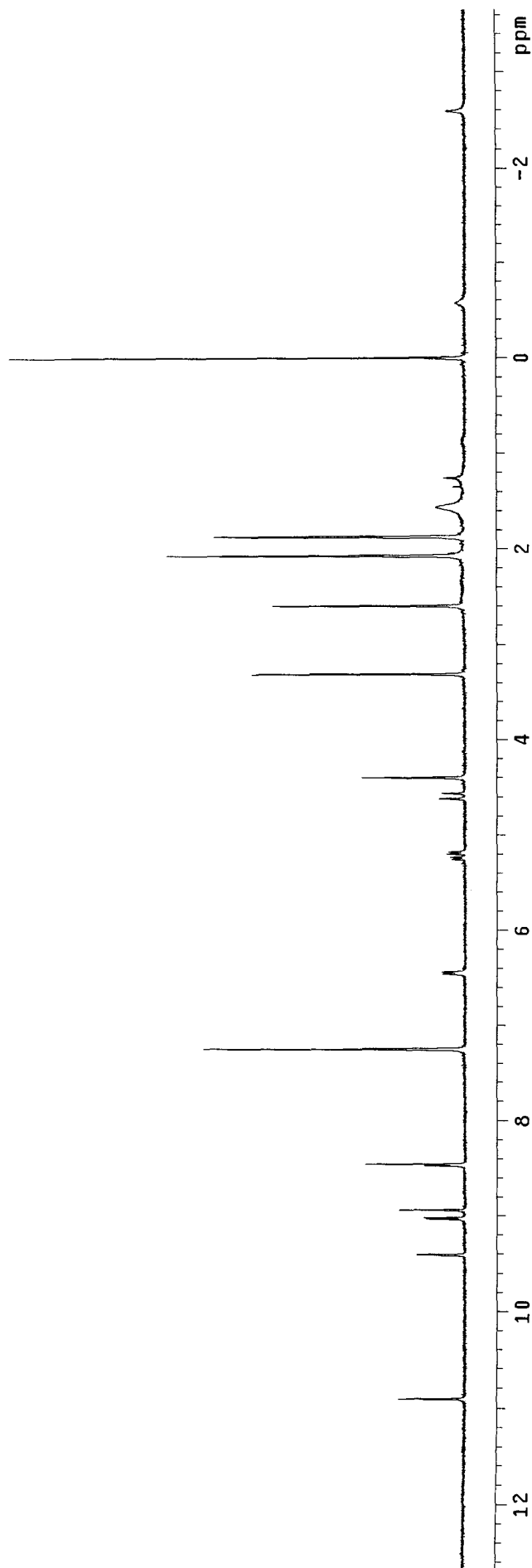


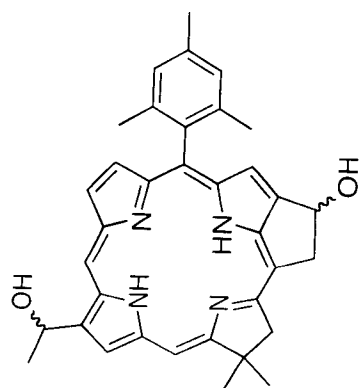
FbOP-He³M¹⁰
(in CDCl₃)



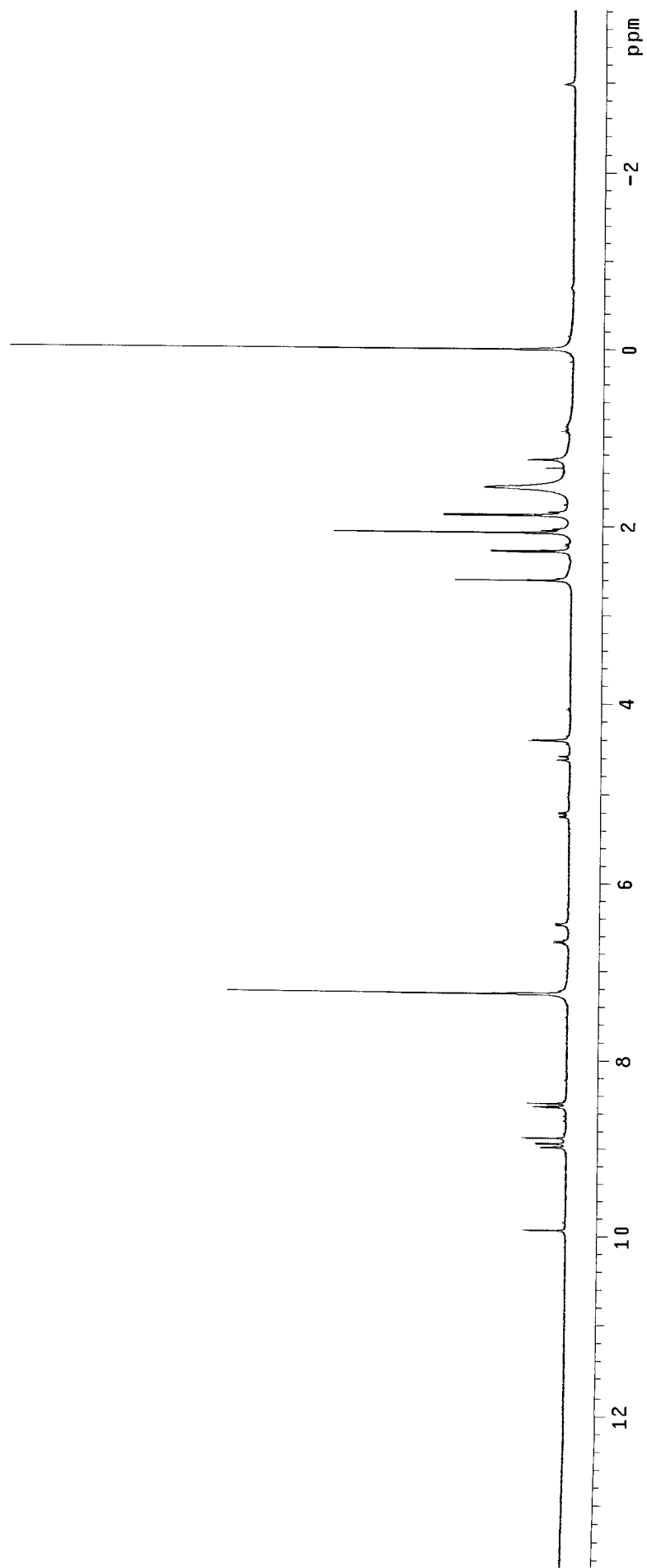


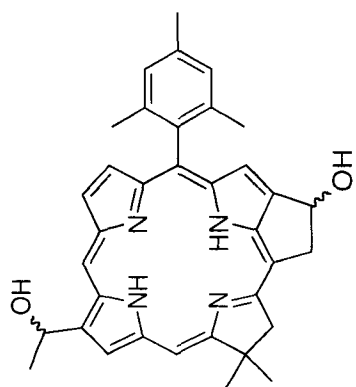
FbHP-A-3M¹⁰
(in CDCl₃)



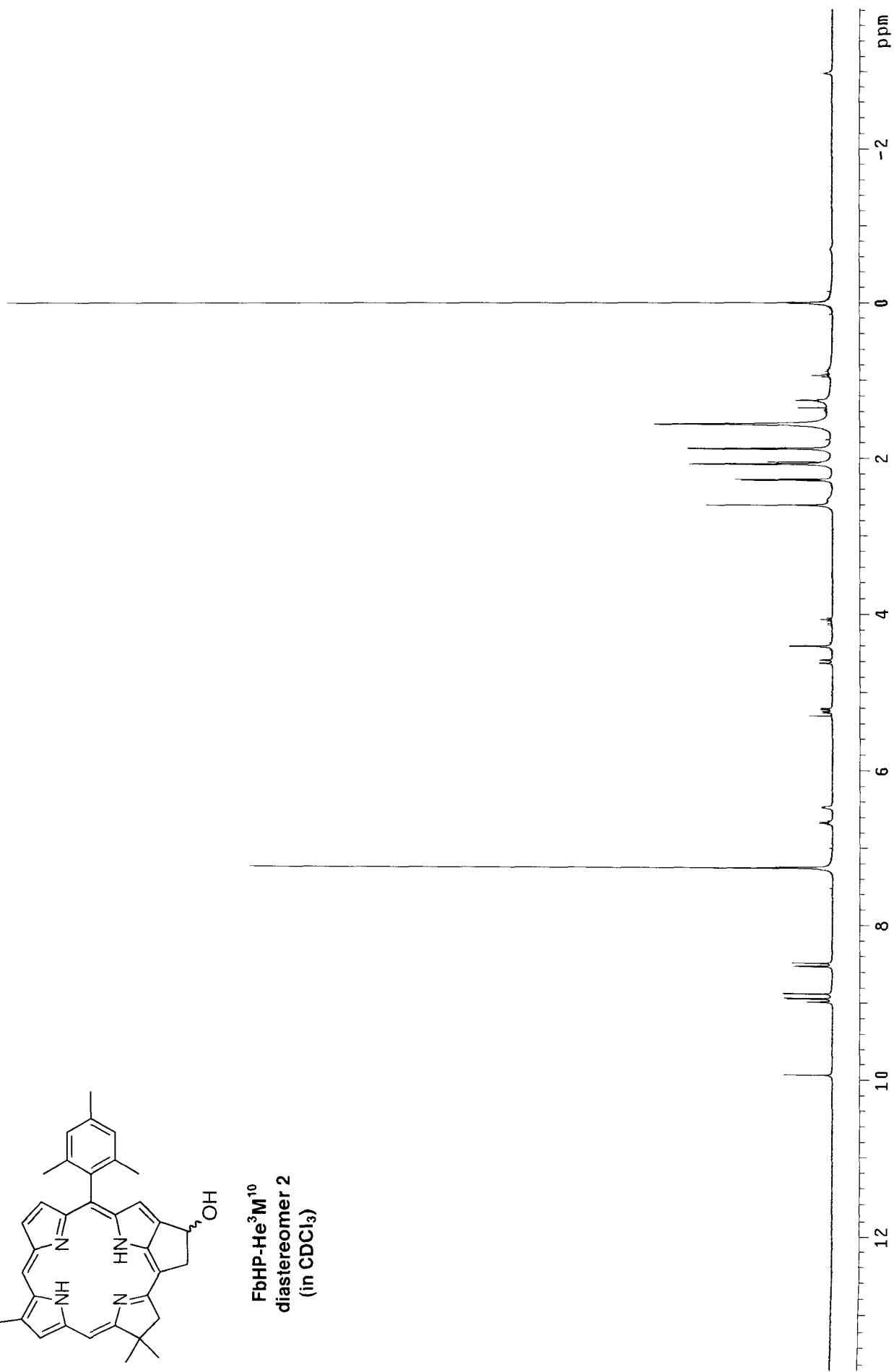


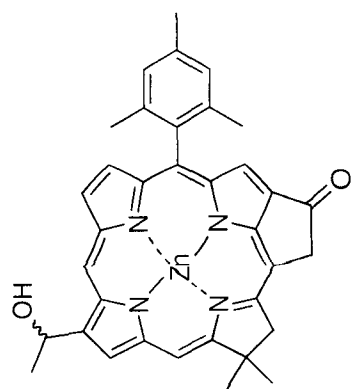
**FbHP-He³M¹⁰
diastereomer 1
(in CDCl₃)**



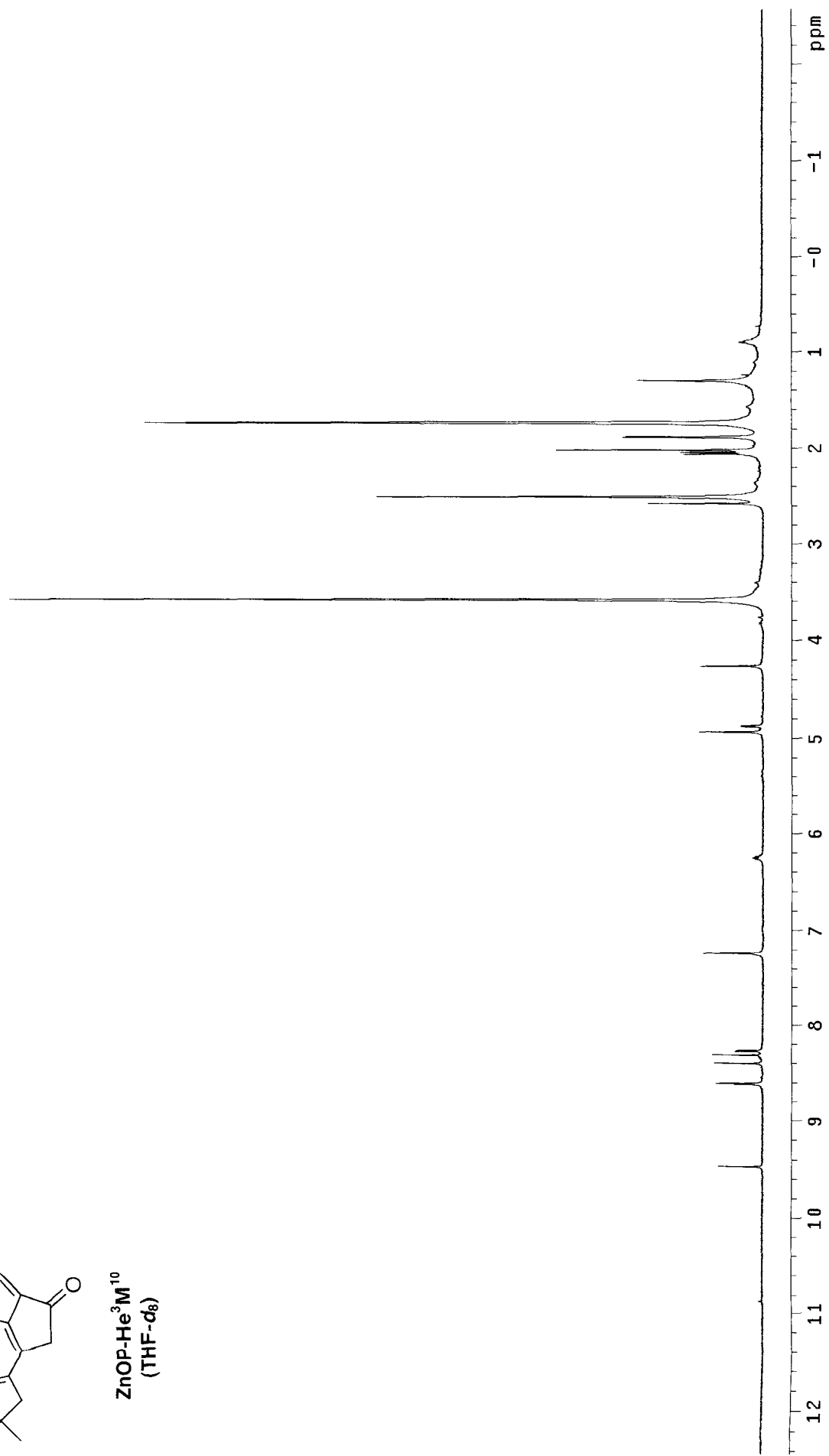


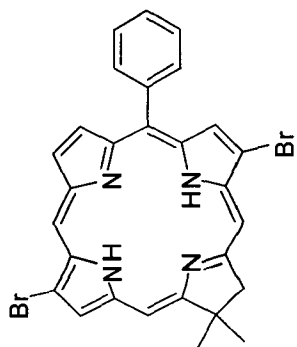
FbHP-He³M¹⁰
diastereomer 2
(in CDCl₃)



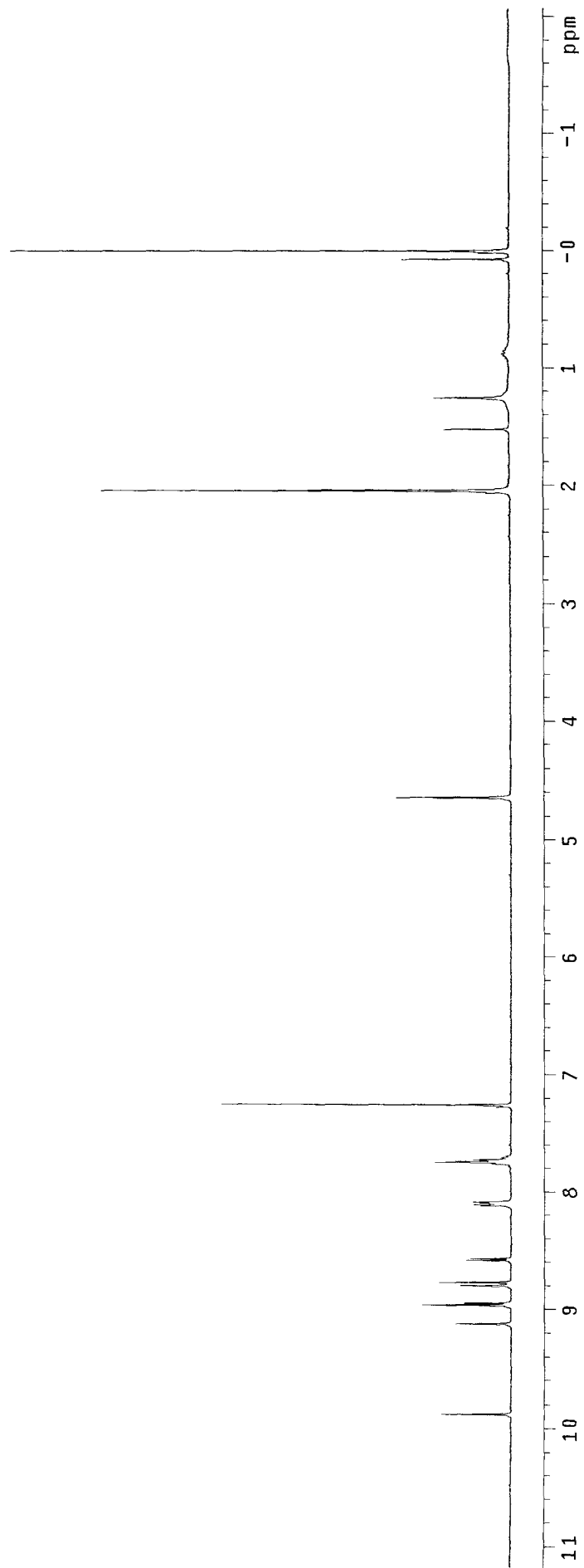


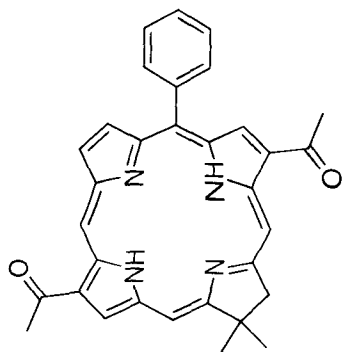
ZnOP-He³M¹⁰
(THF-d₈)



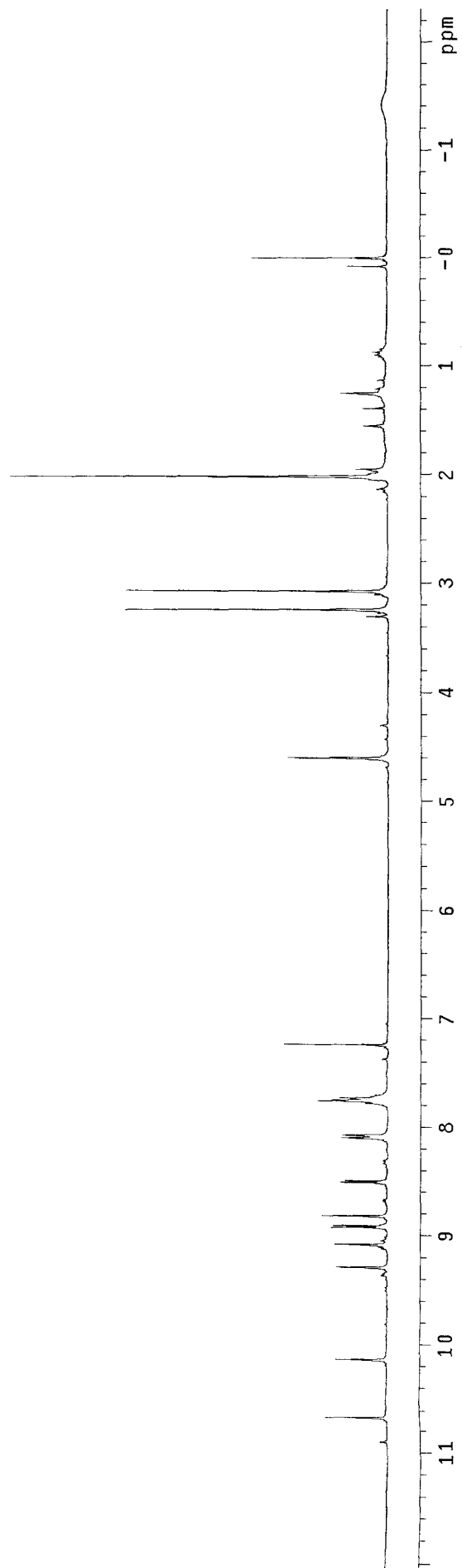


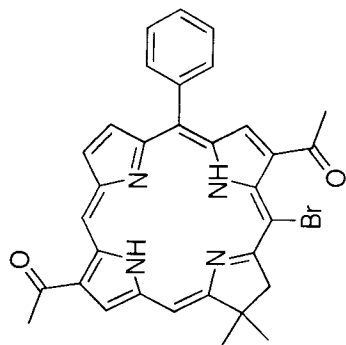
FbC-Br^{3,13}p10
(in CDCl₃)



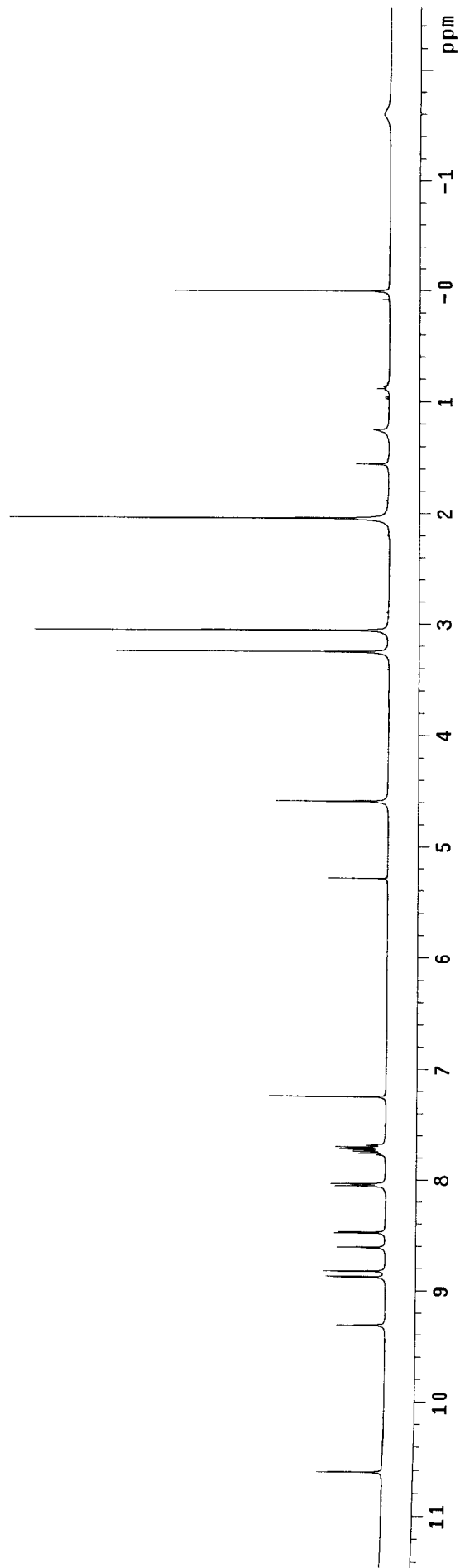


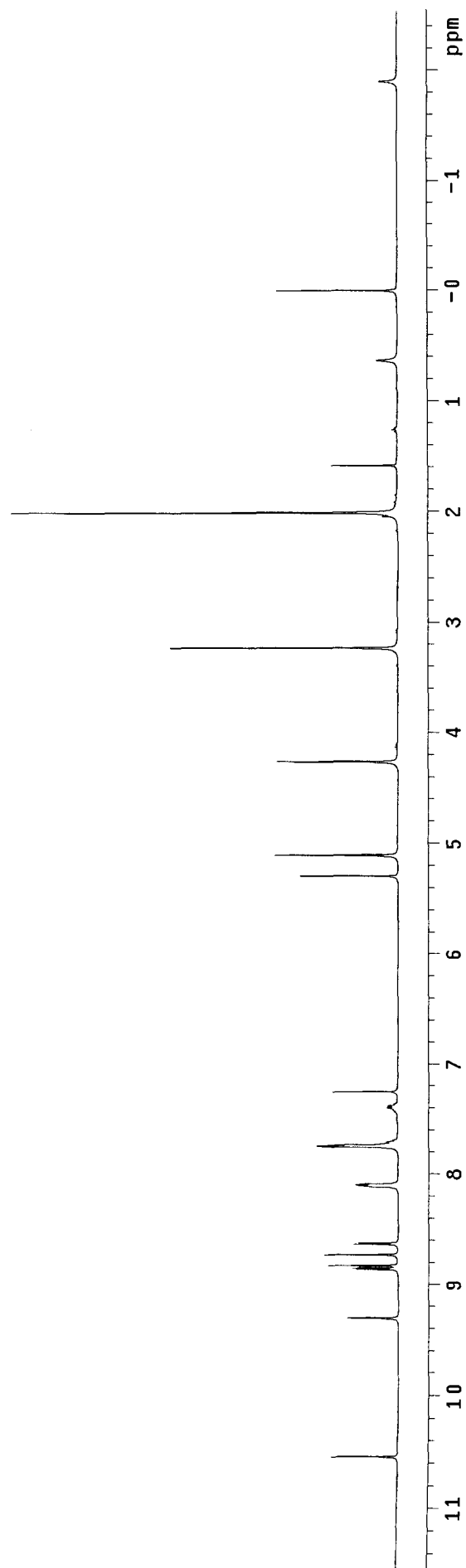
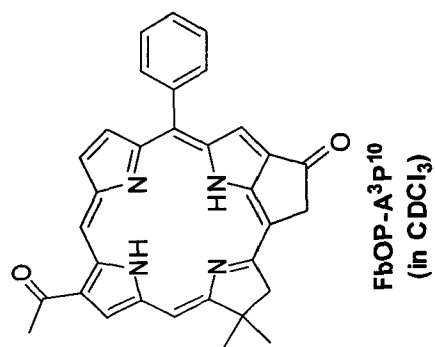
FbC-A $^{3,13}\text{P}^{10}$
(in CDCl_3)

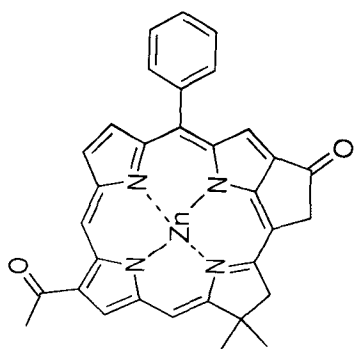




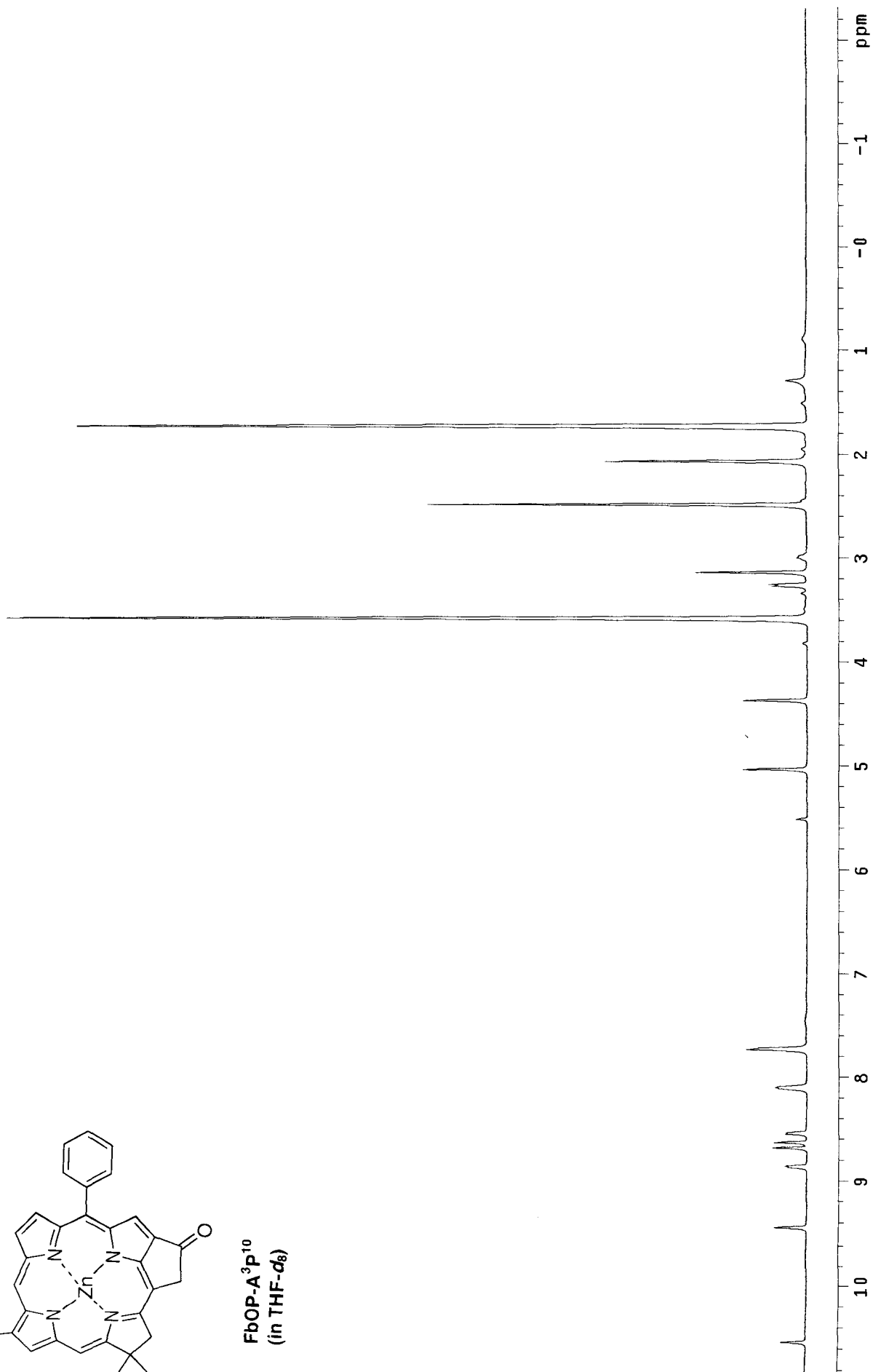
FbC-A^{3,13P¹⁰Br¹⁵}
(in CDCl₃)

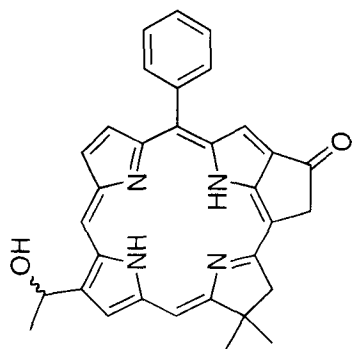




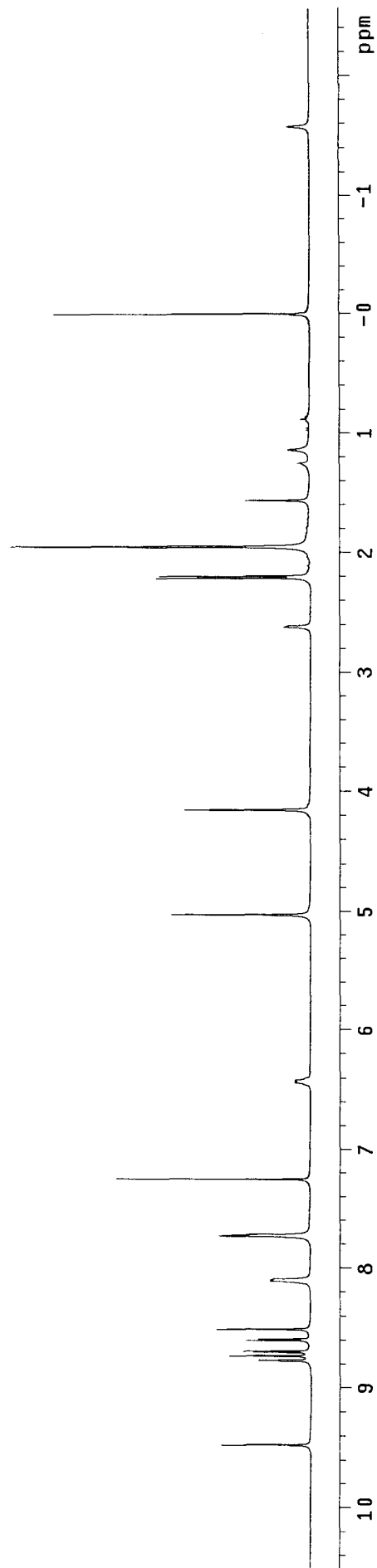


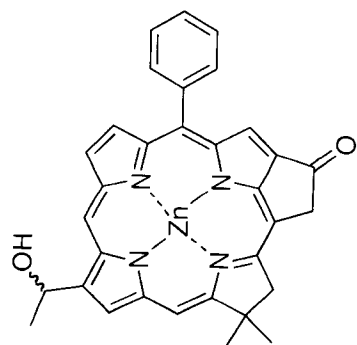
FbOP-A³P¹⁰
(in THF-*d*₈)



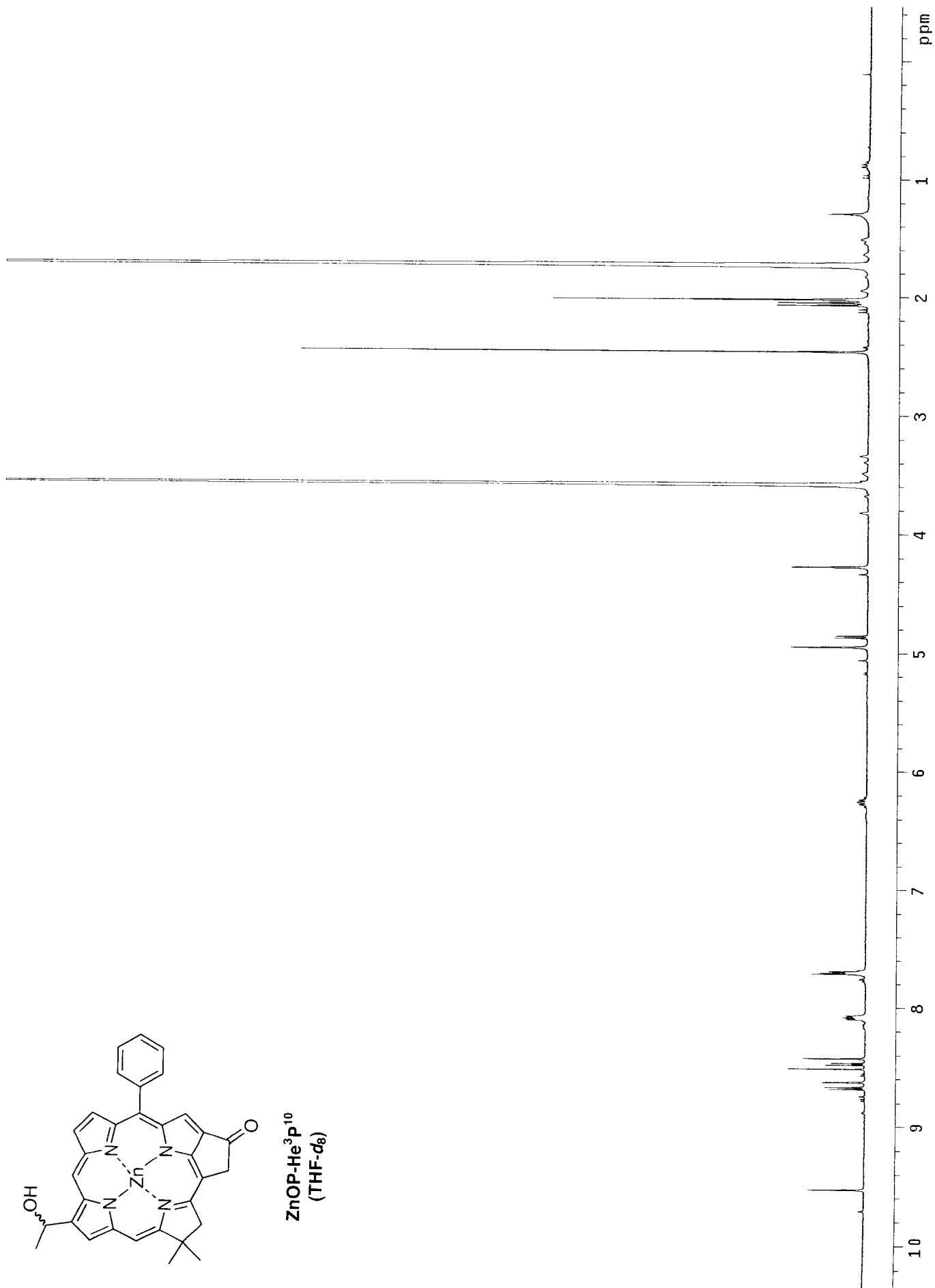


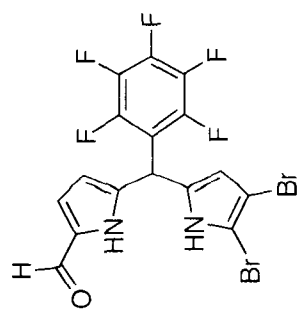
FbOP-He³P¹⁰
(in CDCl₃)



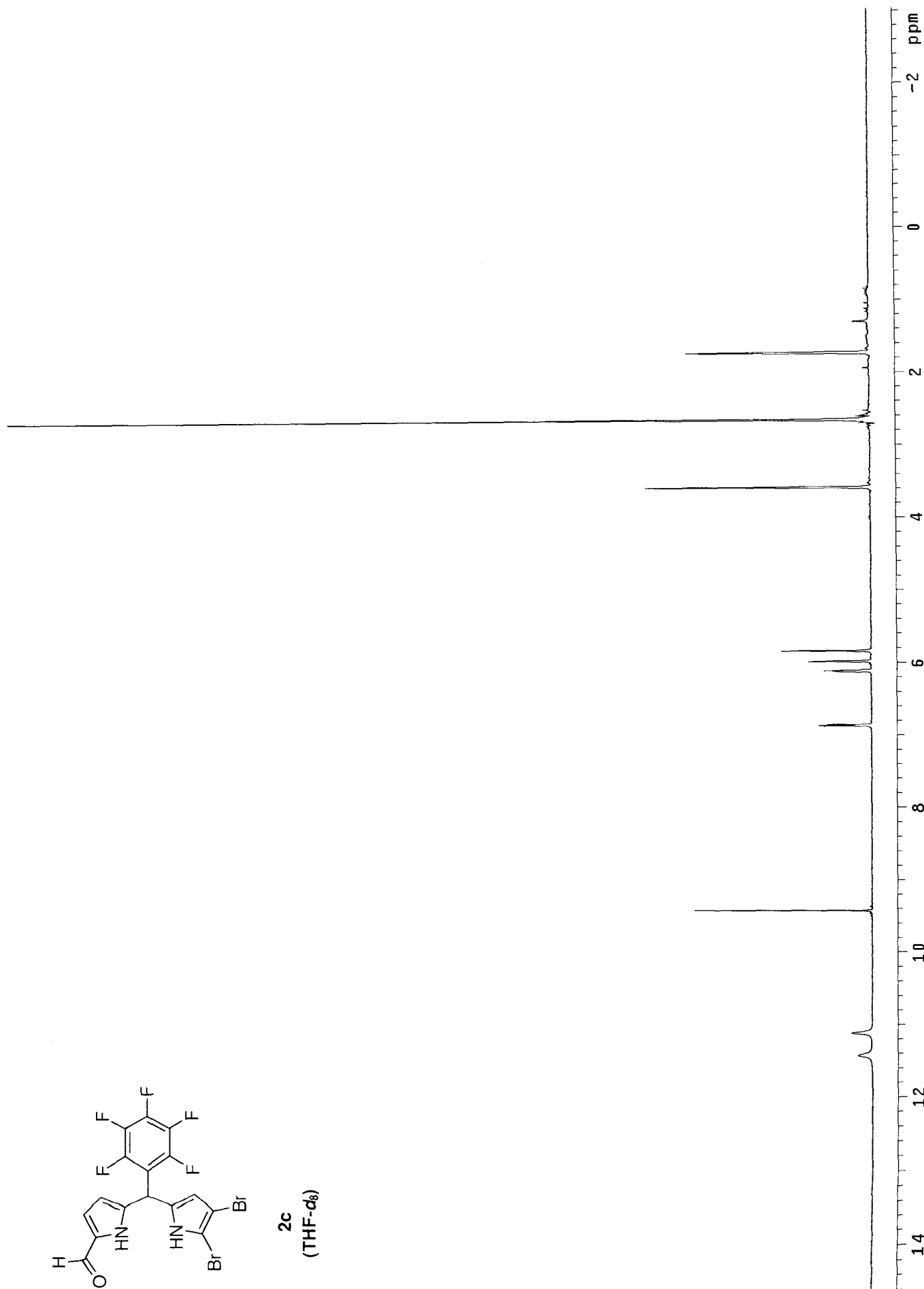


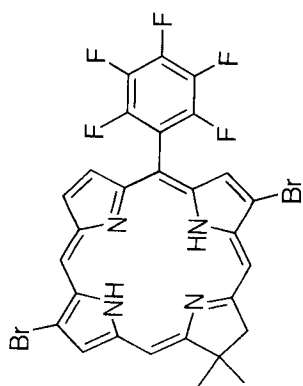
ZnOP-He³P¹⁰
(THF-*d*₈)



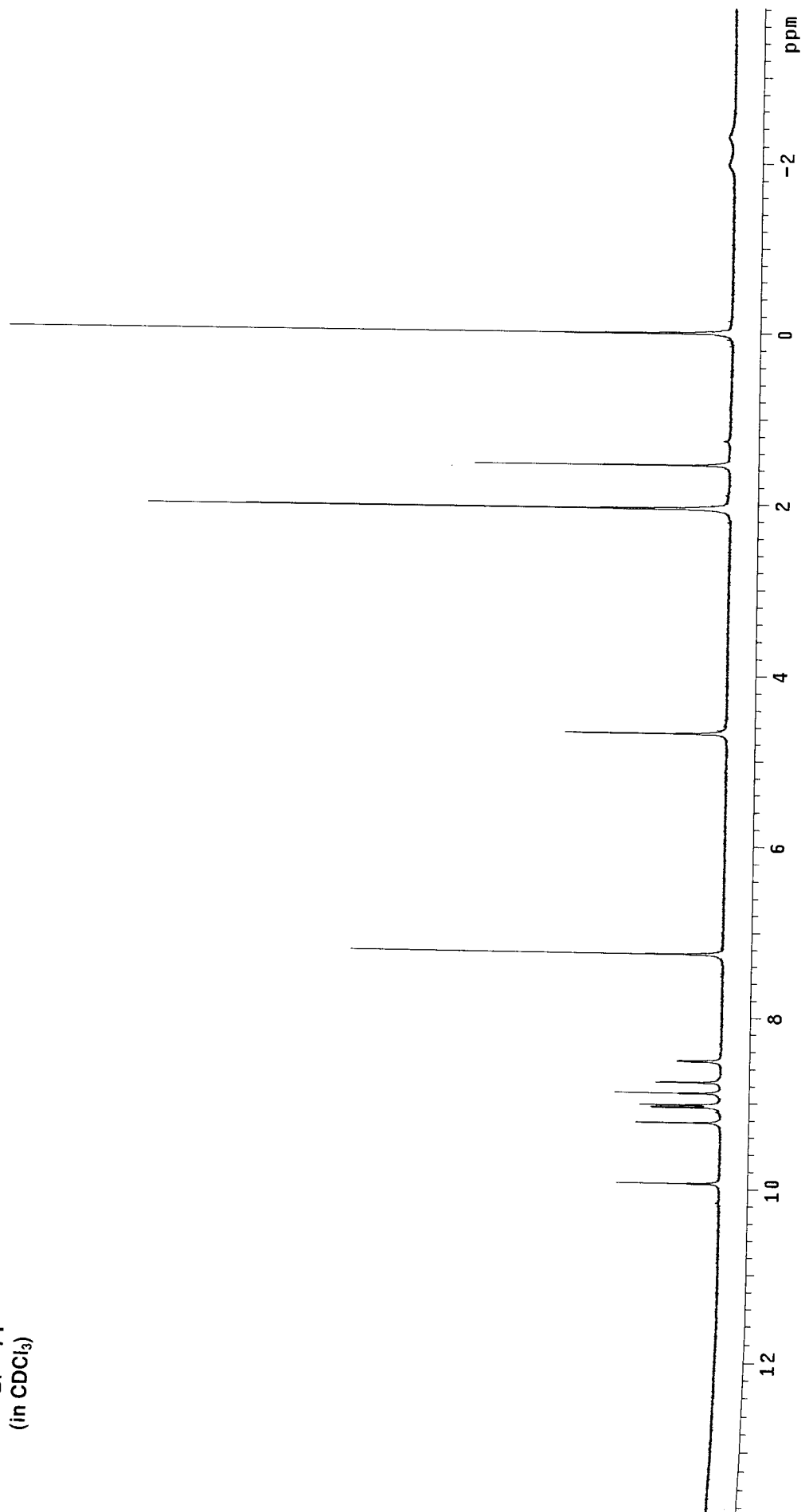


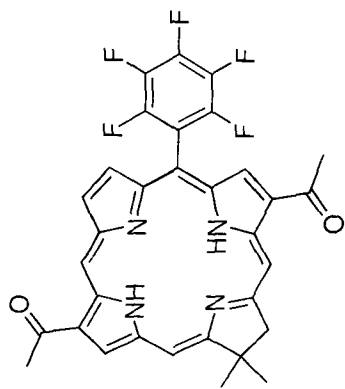
2c
(THF-*d*₈)



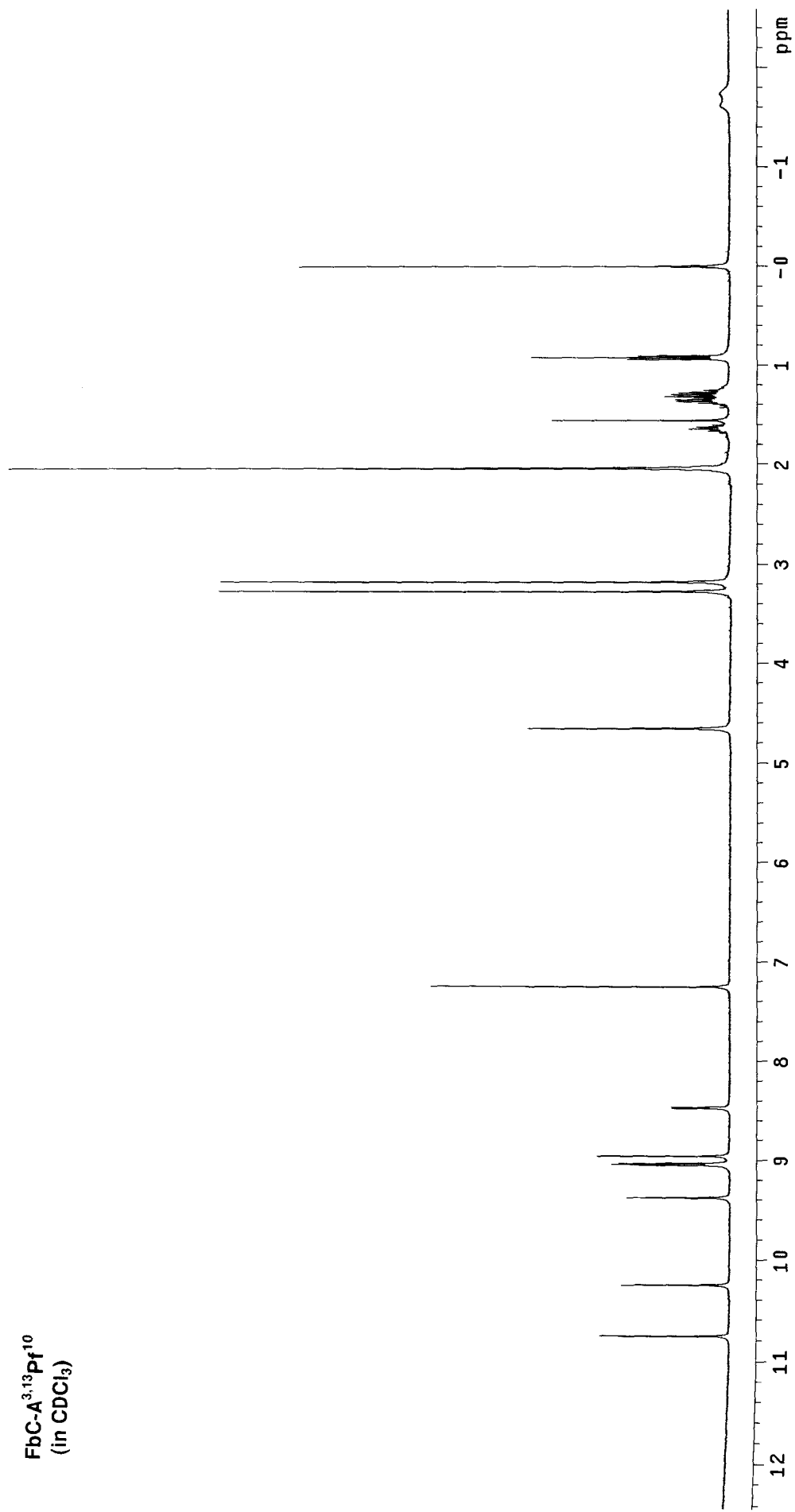


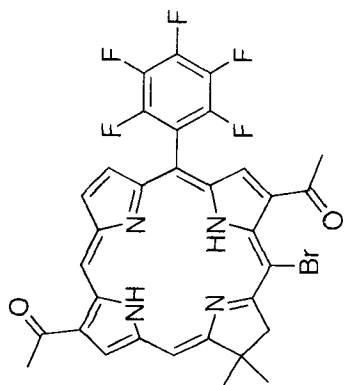
FbC-Br^{3,13}Pf¹⁰
(in CDCl₃)



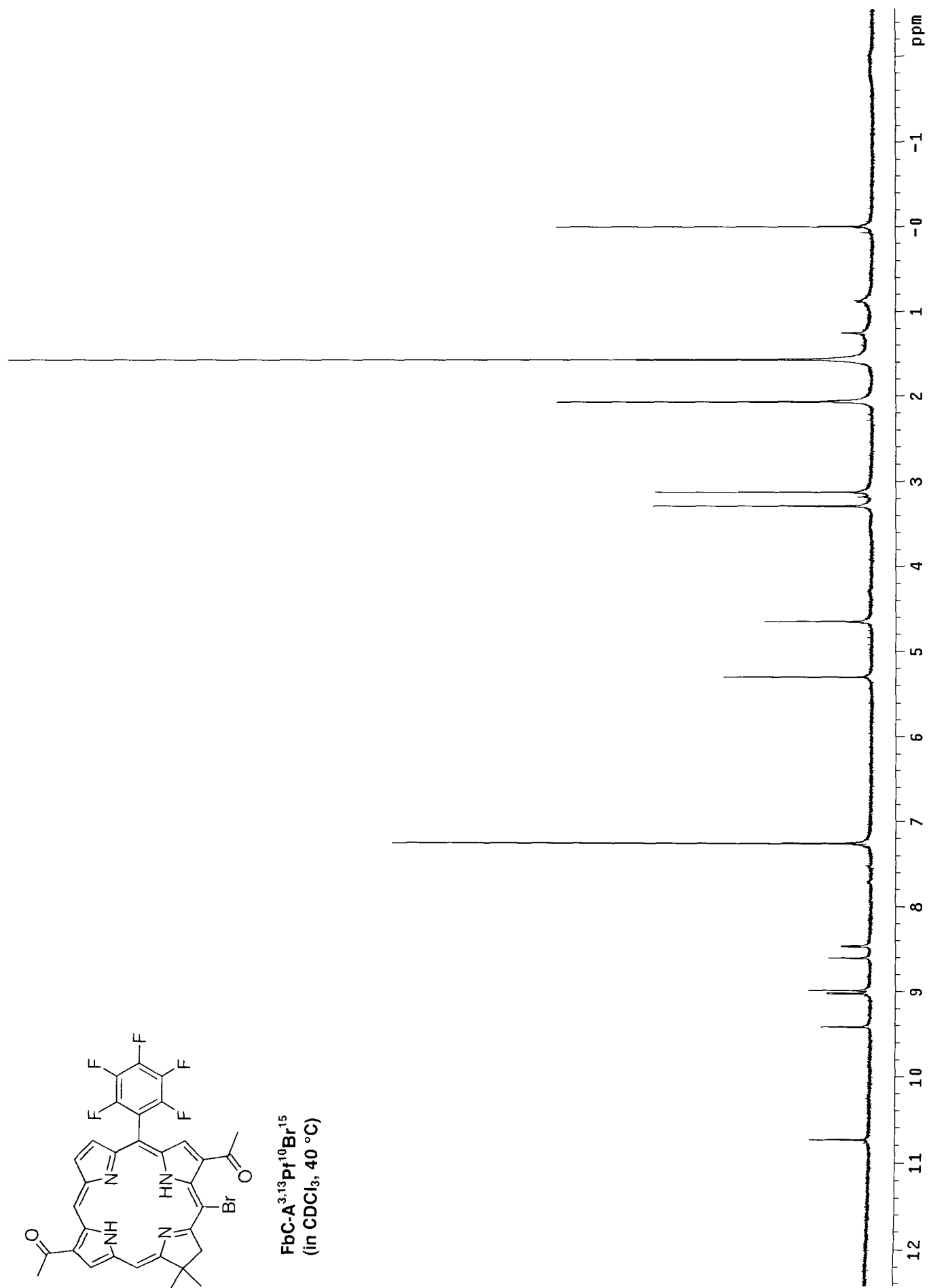


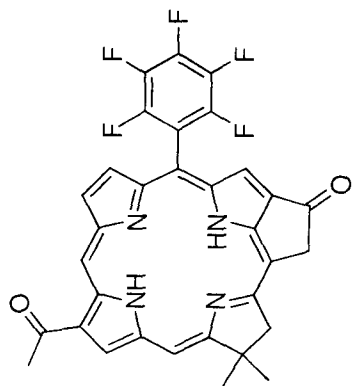
FbC-A-^{3,13}Pf¹⁰
(in CDCl₃)



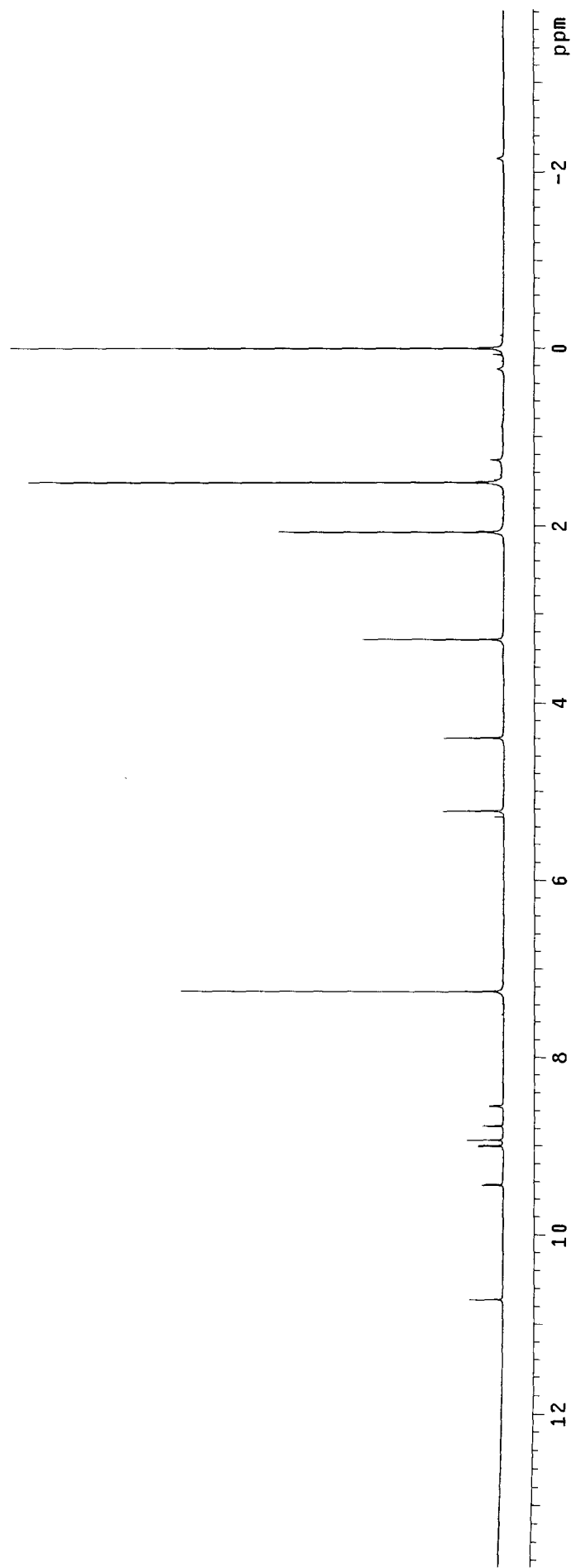


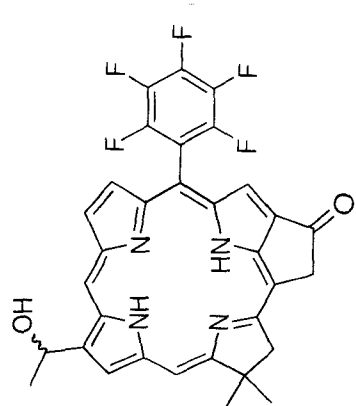
FbC-A^{3,13}Pt¹⁰Br¹⁵
(in CDCl₃, 40 °C)



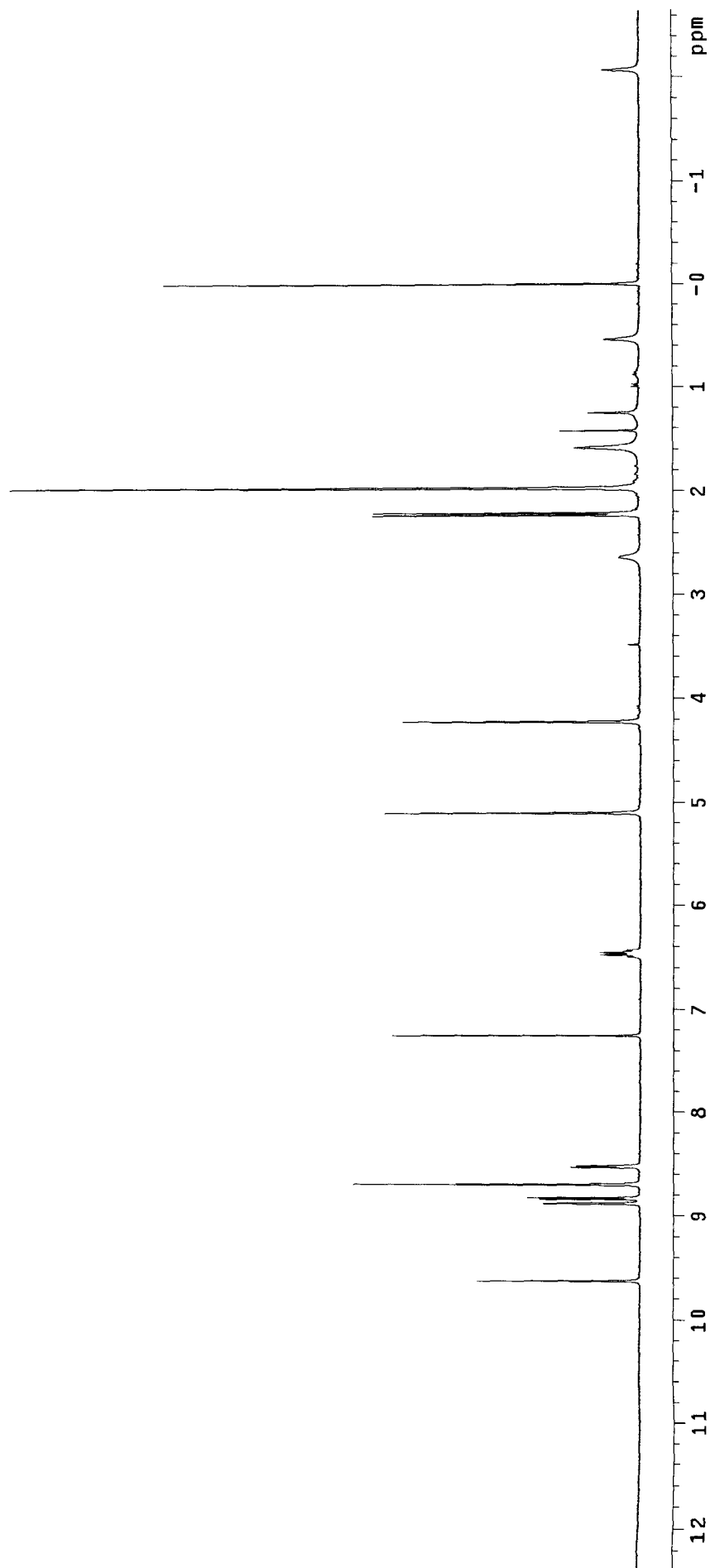


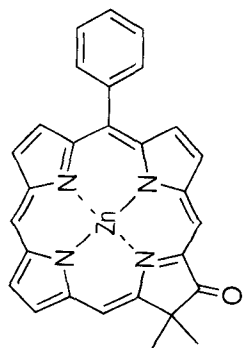
FbOP-A $^3\text{PF}^{10}$
(in CDCl_3)



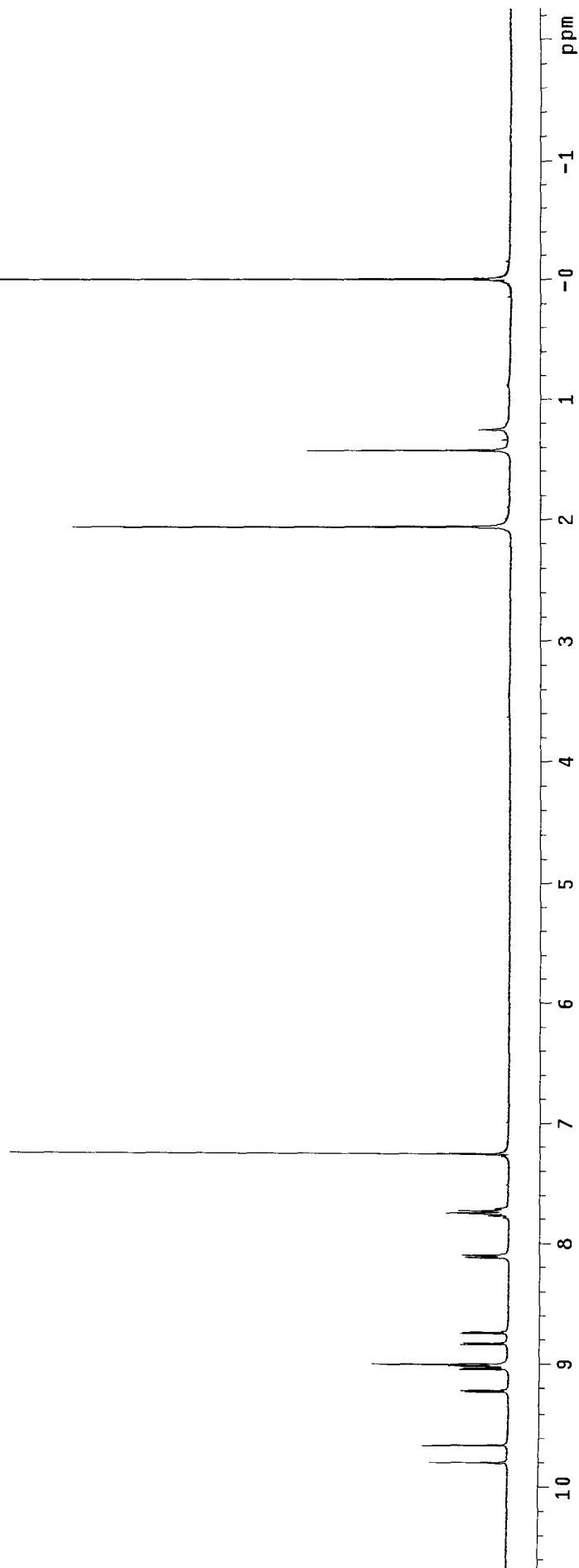


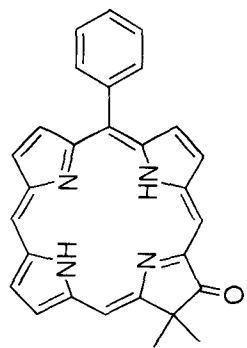
FbOP-He³Pf¹⁰
(in CDCl₃)



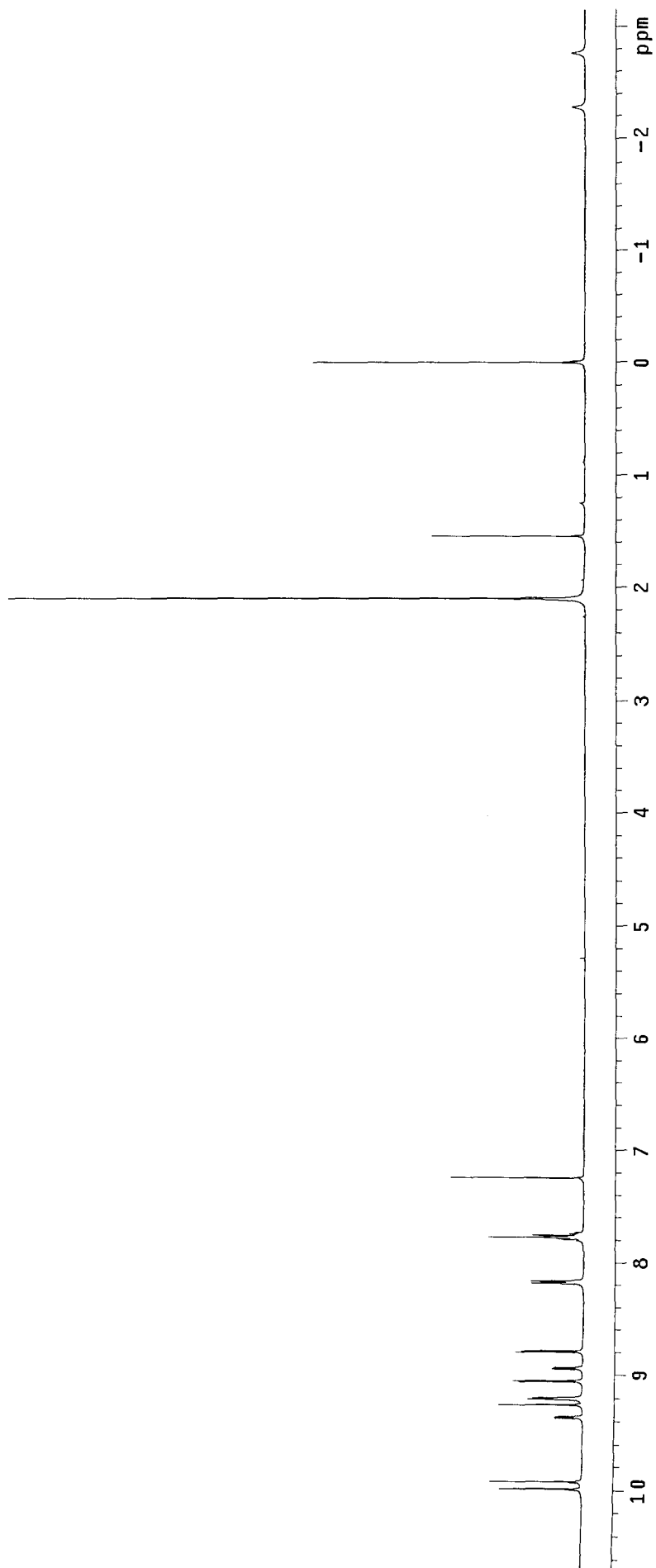


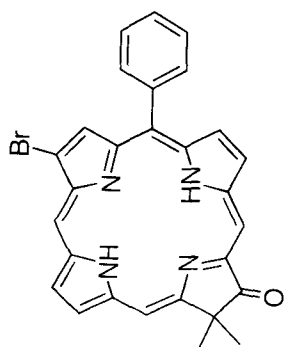
OxoZnC-P¹⁰
(in CDCl₃)



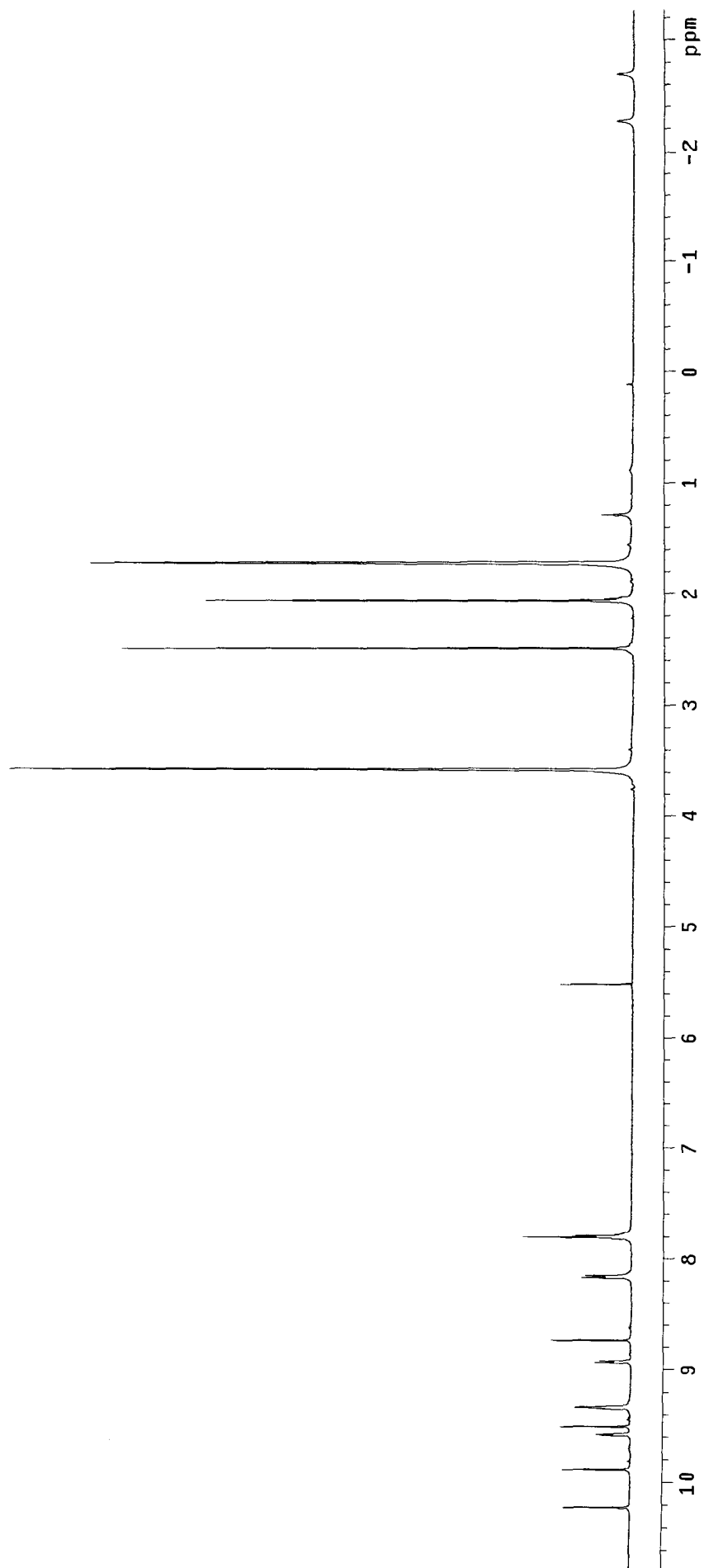


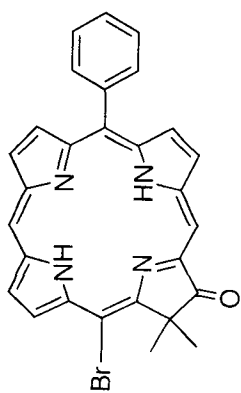
OxoFbC-P¹⁰
(in CDCl₃)



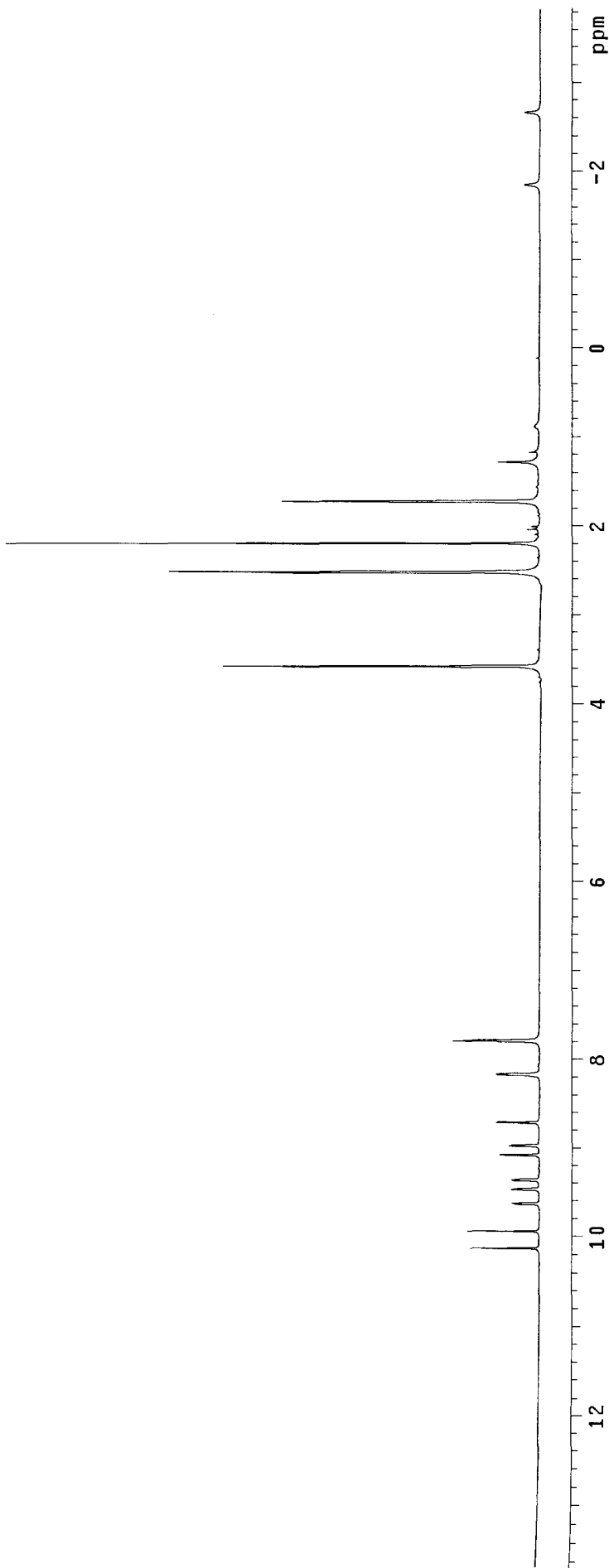


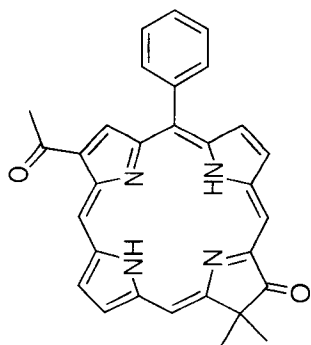
OxoFbC-Br⁷P¹⁰
(THF-d₈)



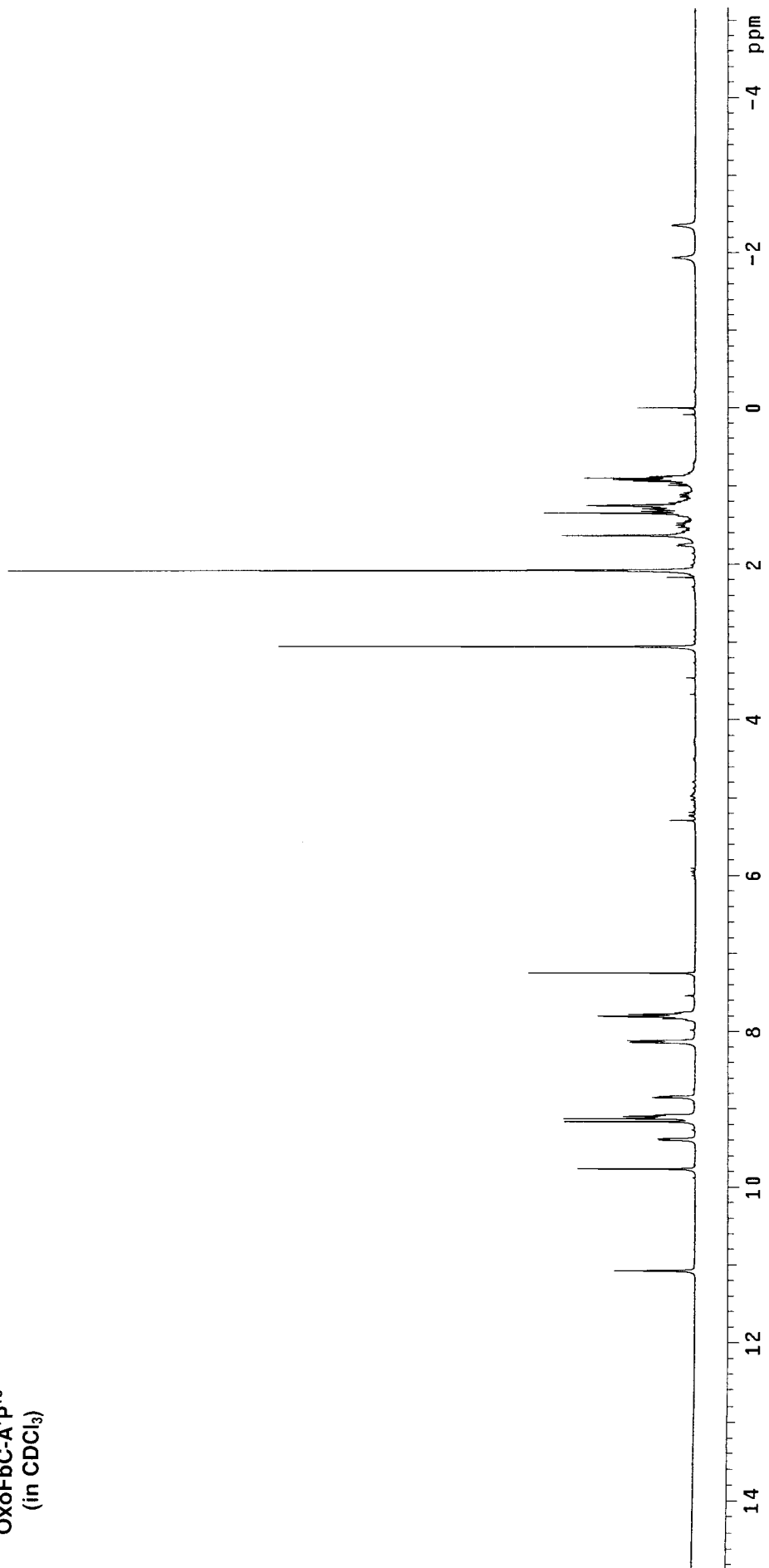


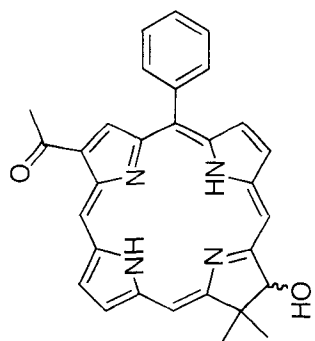
OxoFbC-P¹⁰Br²⁰
(in CDCl₃)



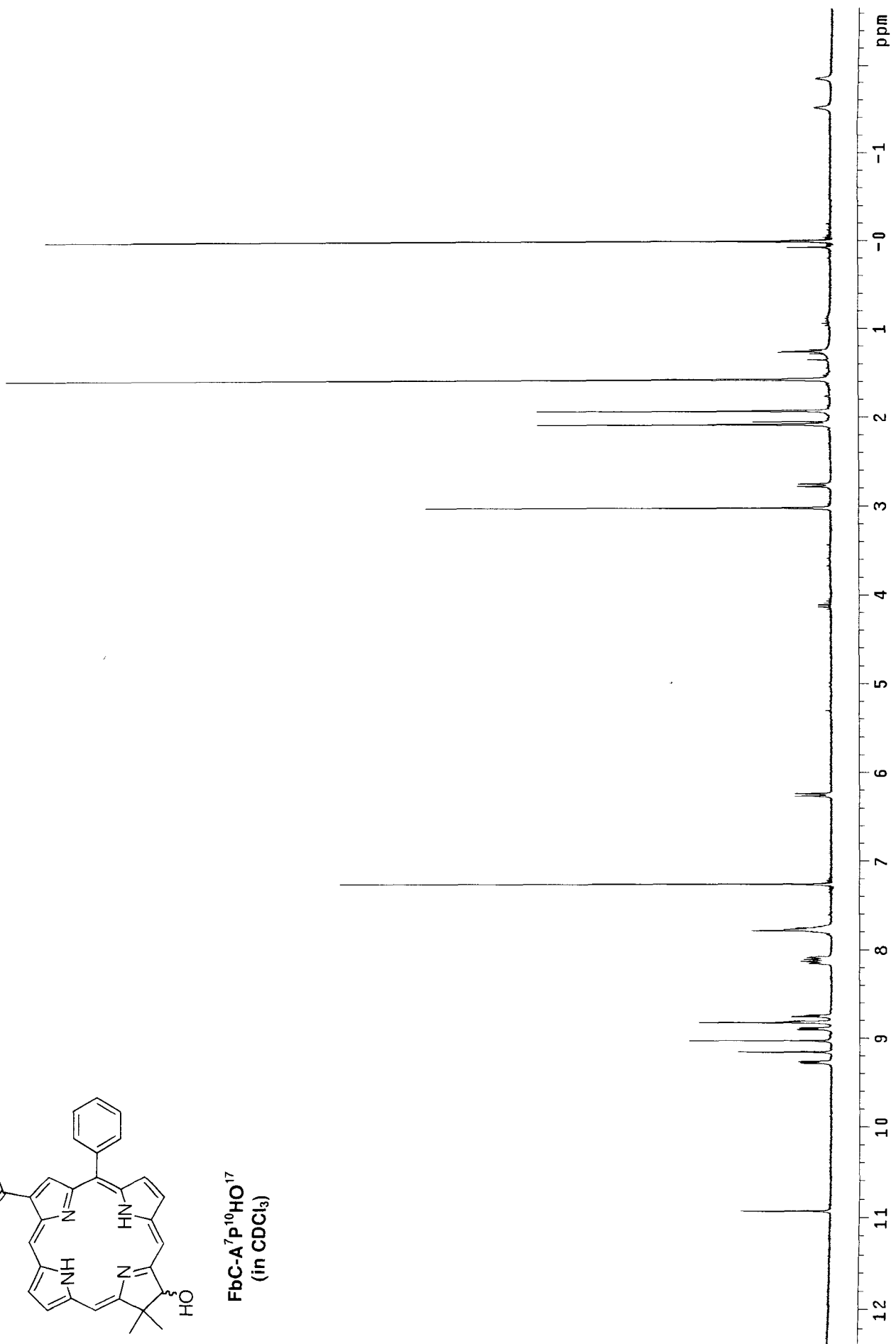


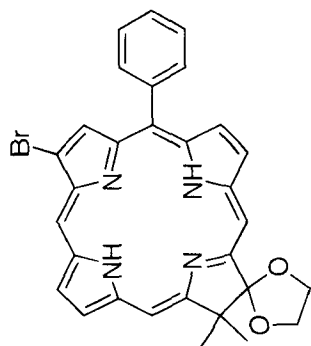
Oxofbc-A-7p10
(in CDCl₃)



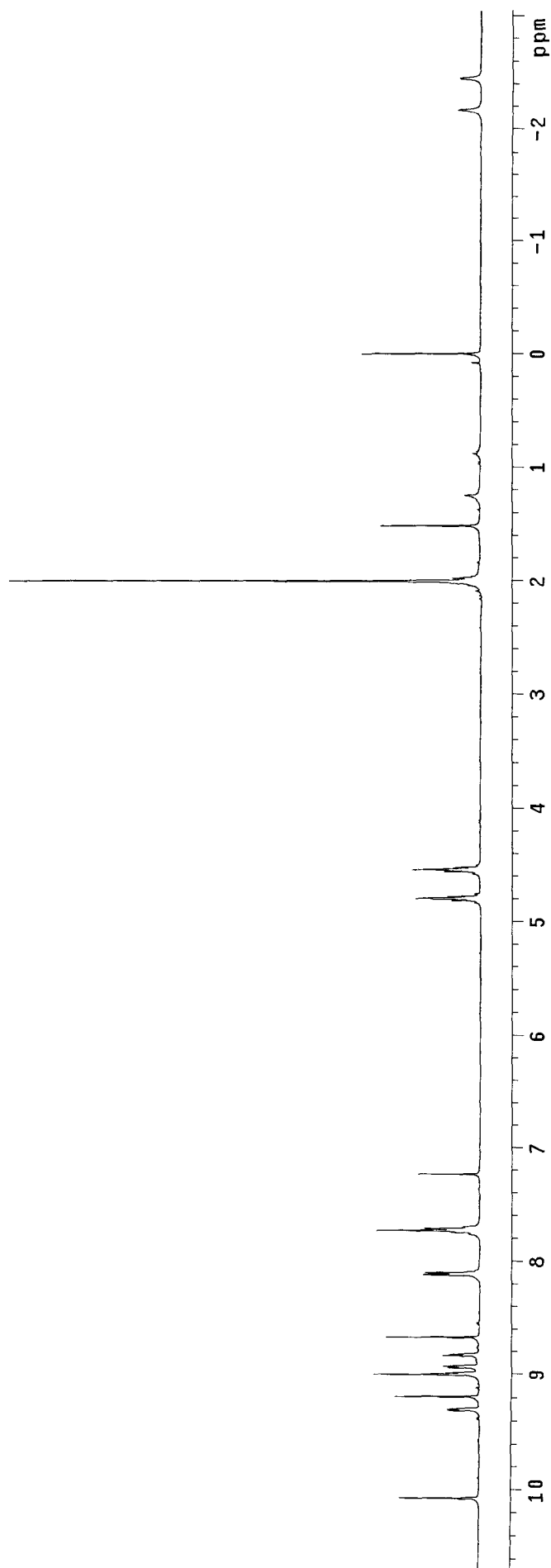


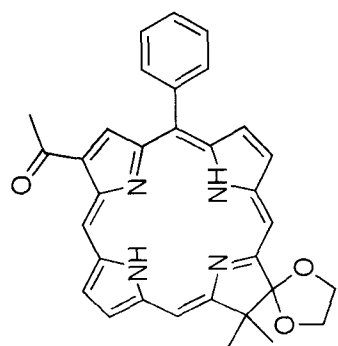
FbC-A⁷P¹⁰HO¹⁷
(in CDCl₃)



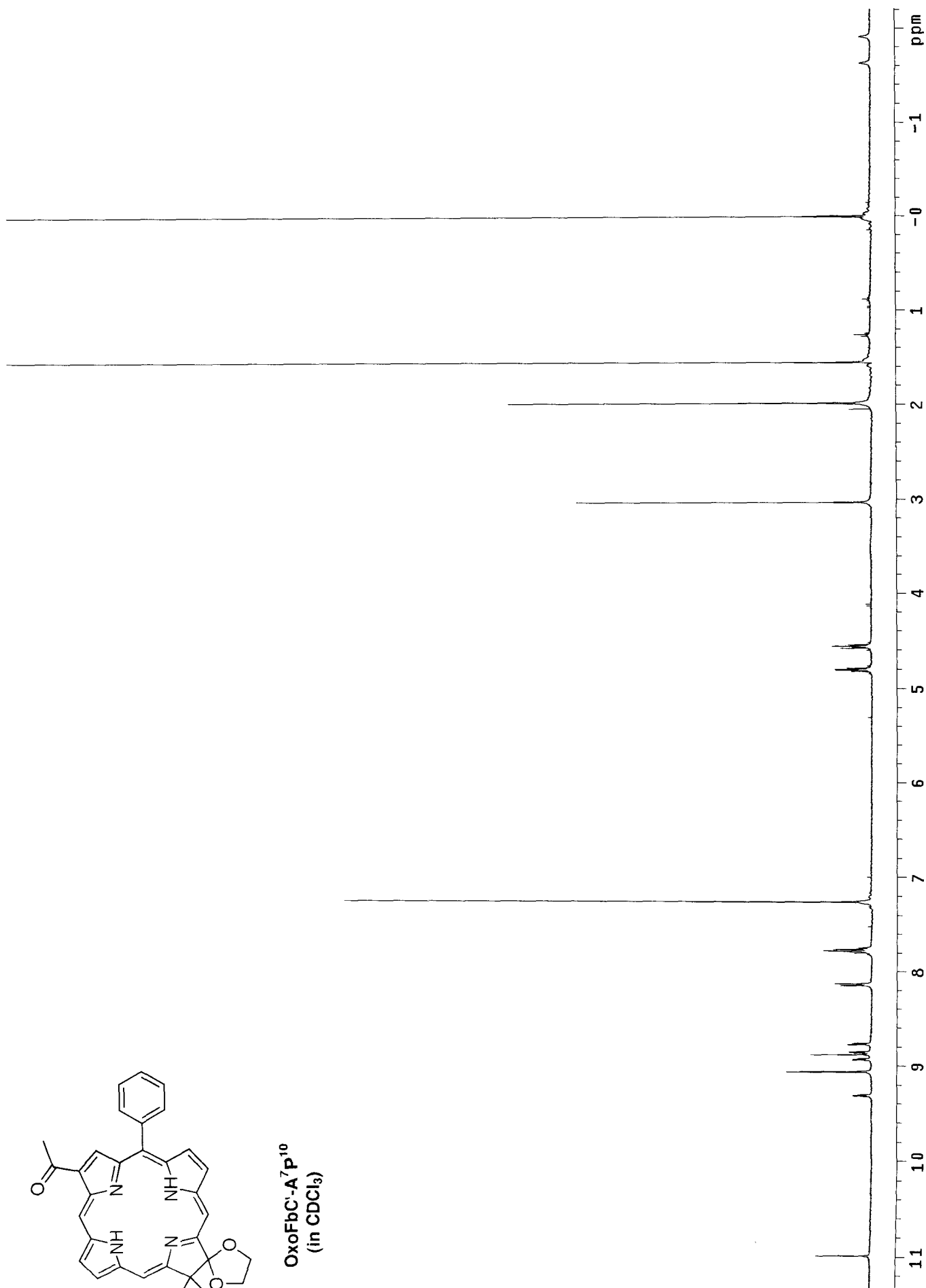


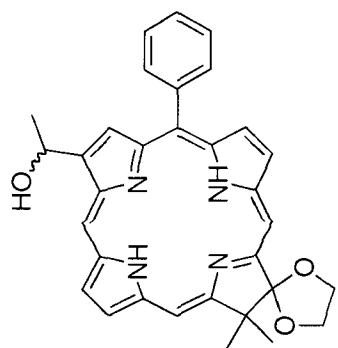
OxoFbC⁻-Br⁷P¹⁰
(in CDCl₃)



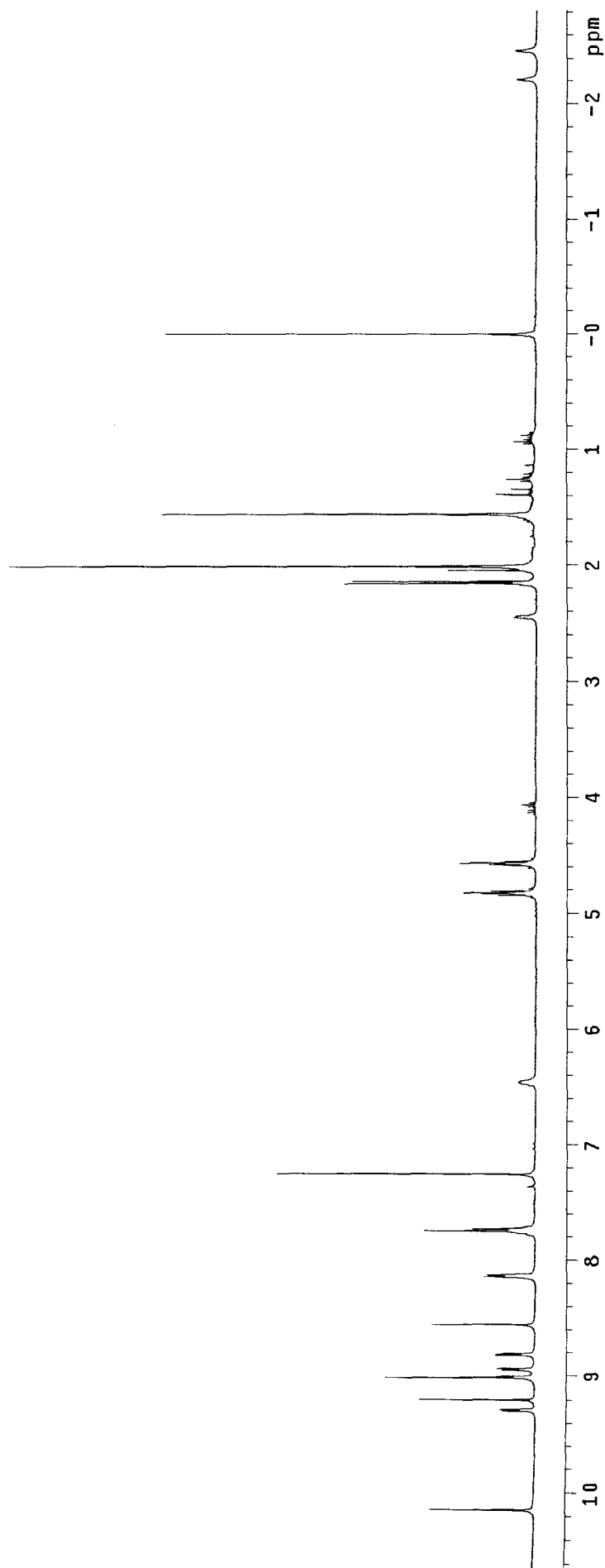


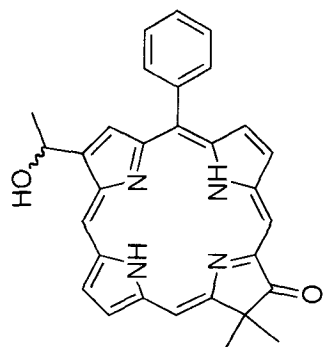
OxoFbC-A7P¹⁰
(in CDCl₃)



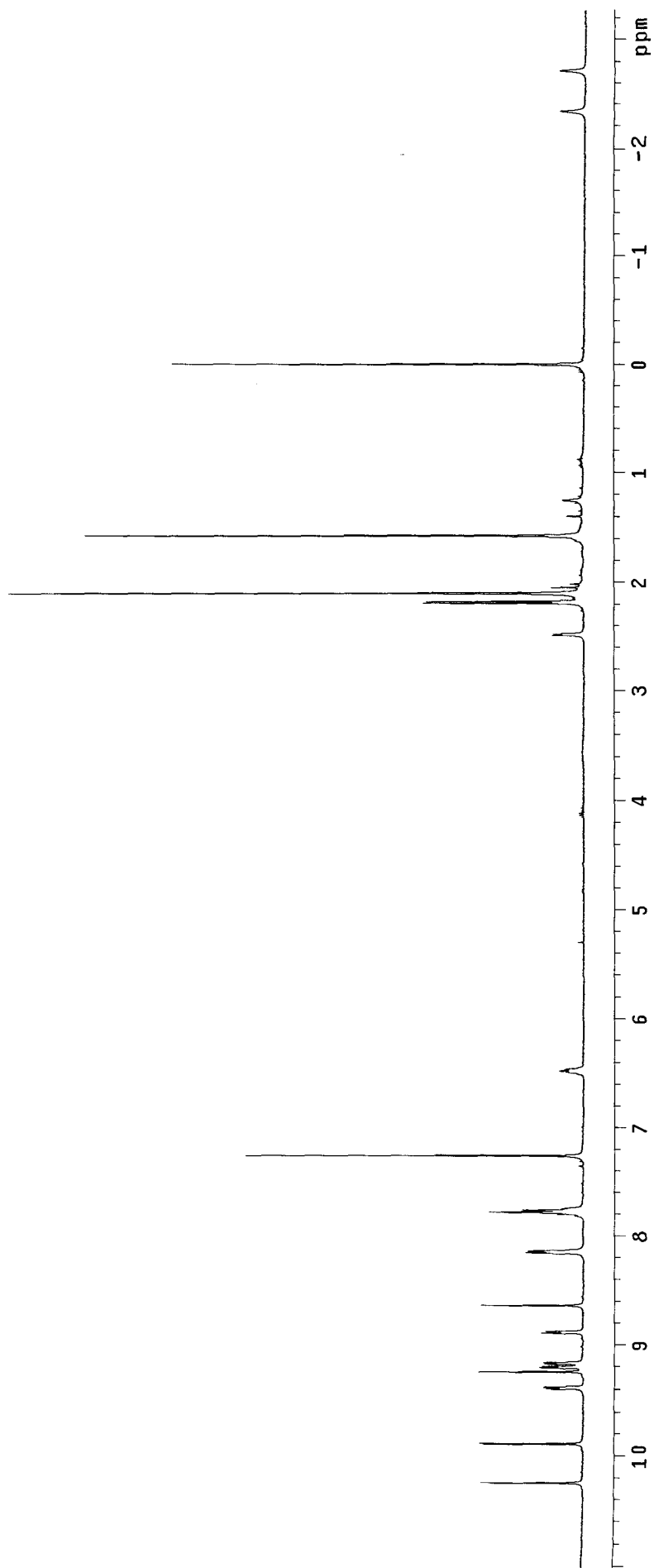


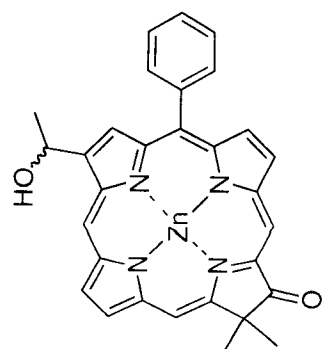
Oxoflavin-He⁷P¹⁰
(in CDCl₃)





OxoFbC-He⁷P¹⁰
(in CDCl₃)





Oxozinc-He⁷p¹⁰
(THF-d₈)

