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APPENDICES

APPENDIX A

A. Stock Solution Preparation

Phosphate buffer pH 6.8 stock solution

Preparation of phosphate buffer stock solution 500 mM 1000 mL with K2HPO4 (MW 174.18, 42.5521 g) and KH_2PO_4 (MW 136.09, 34.7982 g) in deionizers water. K_2HPO_4 and KH_2PO_4 were dissolved in 900 mL deionizers water and measured pH with pH meter (pH 211 microprocessor pH meters, HANNA Instrument) then adjust pH to 6.8 with 0.1 M HCl and 0.1 M NaOH next adjust volume to 1000 mL.

$$pH = pKa + \log\frac{[HPO_4^{2-}]}{[H_2PO_4^-]}$$

$$6.8 = 6.82 + \log\frac{[HPO_4^{2-}]}{[H_2PO_4^-]}$$

$$0.2 = \log\frac{[H_2PO_4^-]}{[HPO_4^{2-}]}$$

$$\frac{1.0471}{1} = \frac{[H_2PO_4^-]}{[HPO_4^{2-}]}$$

$$[H_2PO_4^-] = [CA]$$

$$[CA] = (1.0471/2.0471)\,x\,0.5$$

$$[CA] = 0.2557$$

$$KH_2HPO_4 \text{ was used } 0.2557 \text{ moles}, 34.7982\,g$$

$$[HPO_4^{2-}] = [CB]$$

$$[CB] = (1/2.0471)\,x\,0.5$$

$$[CB] = 0.2443$$

$$K_2HPO_4 \text{ was used } 0.2443 \text{ moles}, 42.5521\,g$$

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APPENDIX B

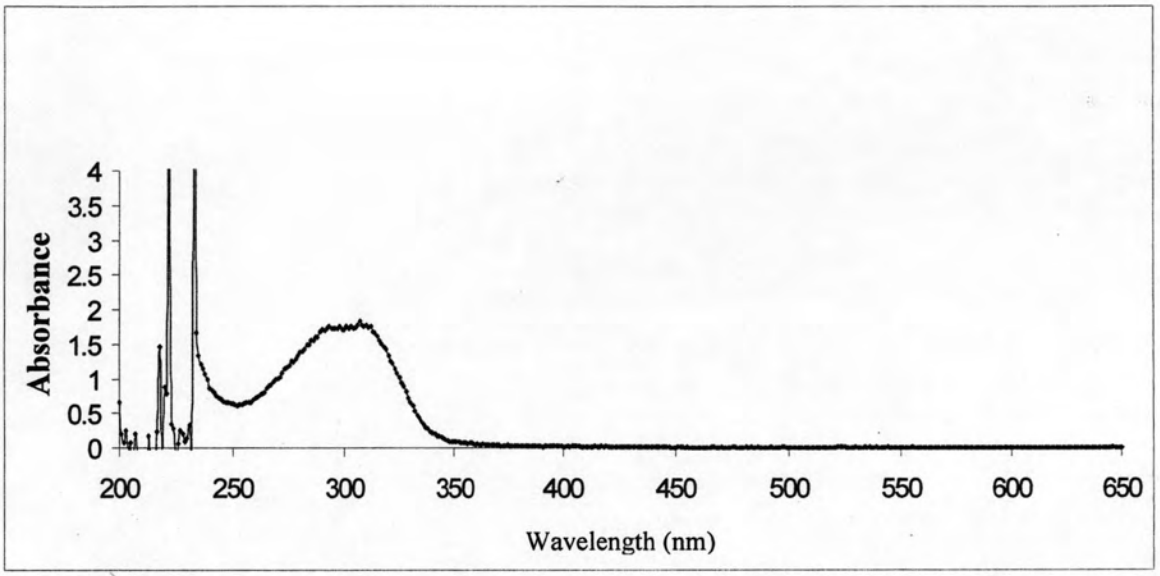


Figure B-1 UV spectrum of CH_2Cl_2 crude extract of Chai-nat 1 (CN) strain

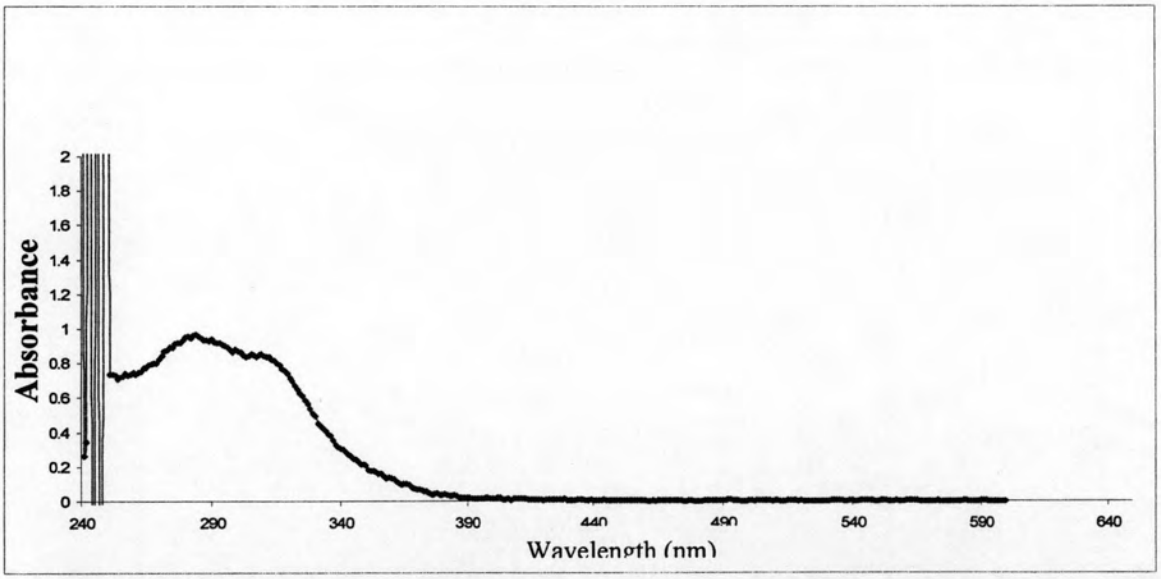


Figure B-2 UV spectrum of EtOAc crude extract of Chai-nat 1 CN strain

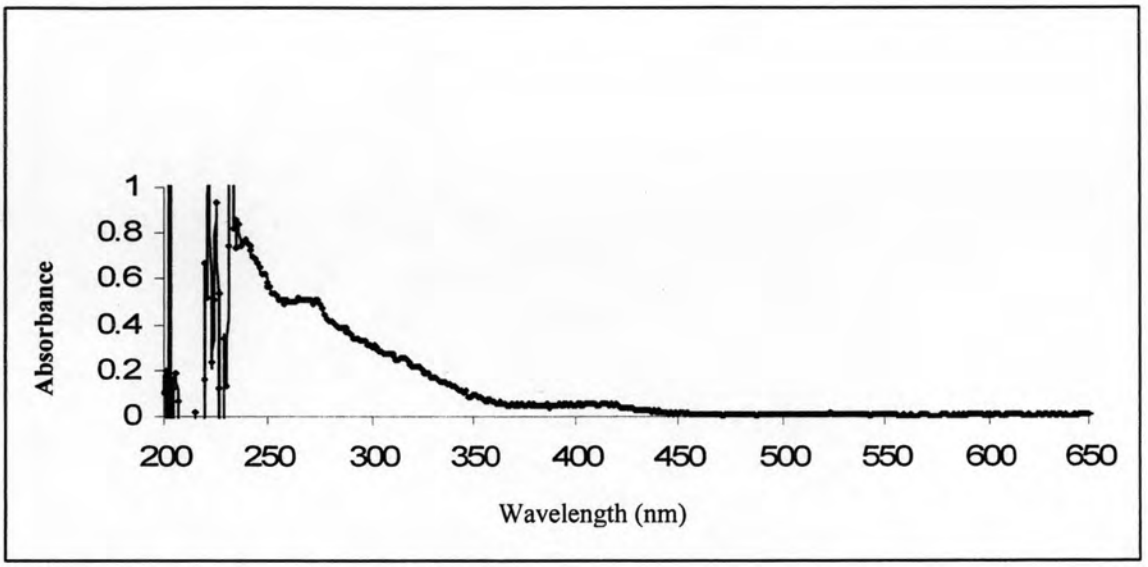


Figure B-3 UV spectrum of CH_2Cl_2 crude extract of Look Daeng Pattani (LD) strain

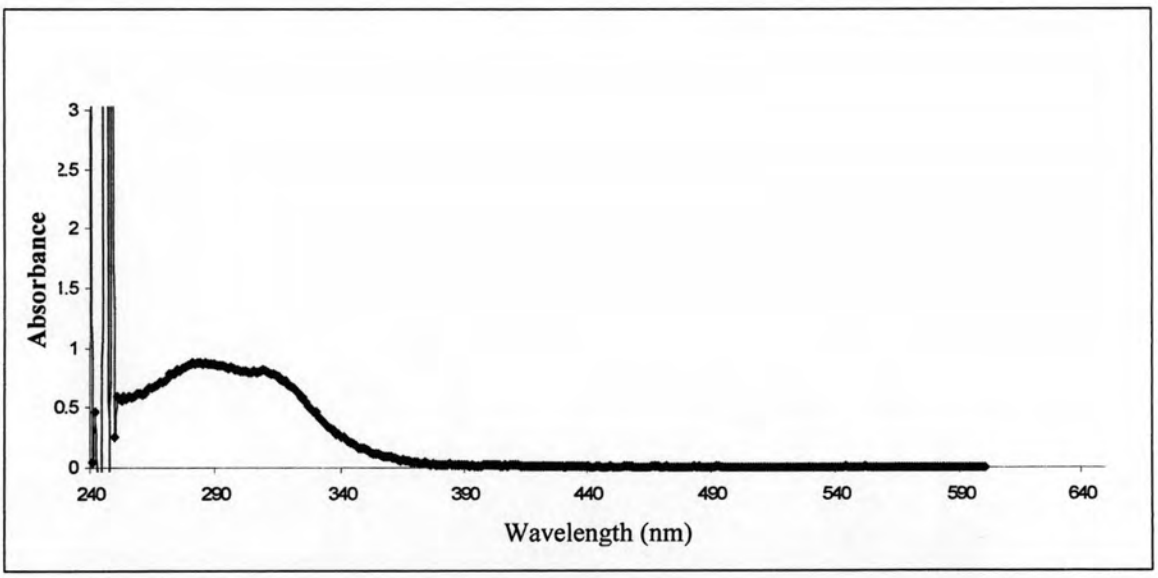


Figure B-4 UV spectrum of EtOAc crude extract of Look Daeng Pattani (LD) strain

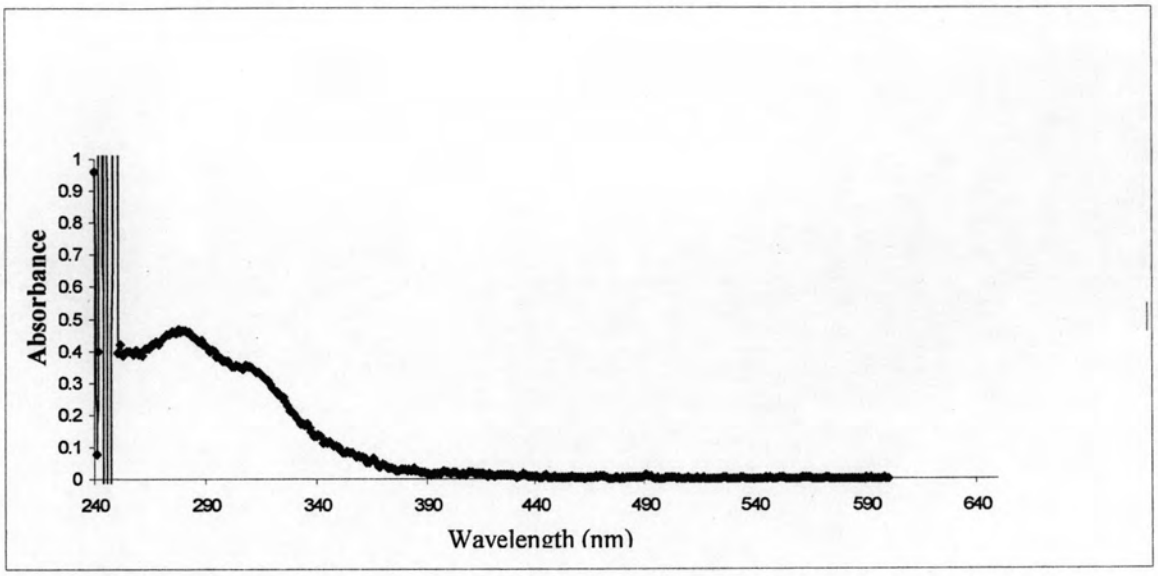


Figure B-5 UV spectrum of EtOAc crude extract of Leb Nok Pattani (LN) strain

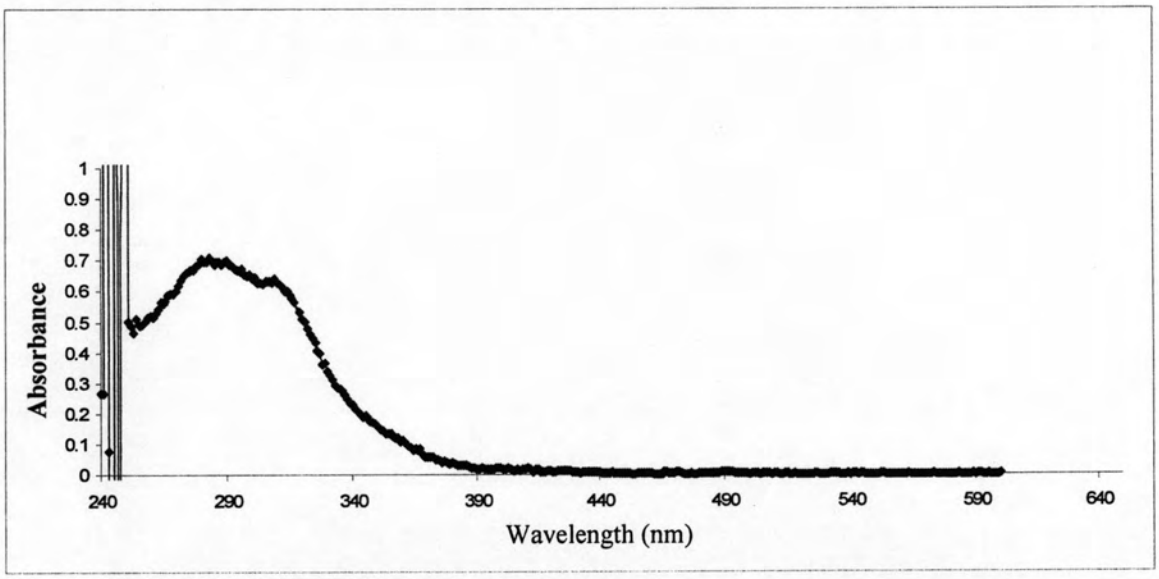


Figure B-6 UV spectrum of EtOAc crude extract of Jasmine (JM) strain

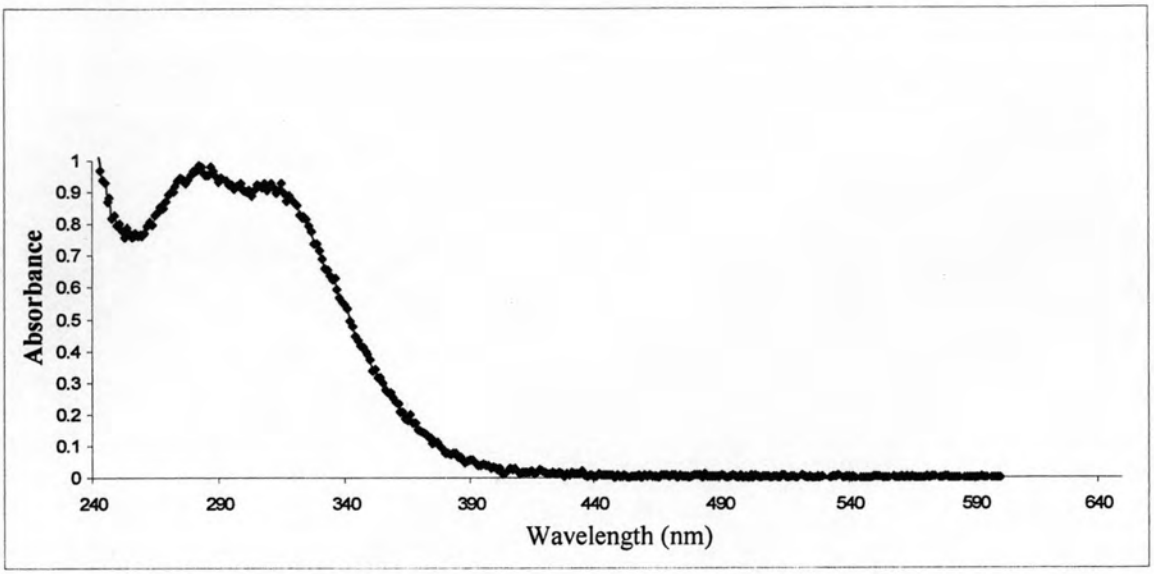


Figure B-7 UV spectrum of MeOH crude extract of Jasmine (JM) strain

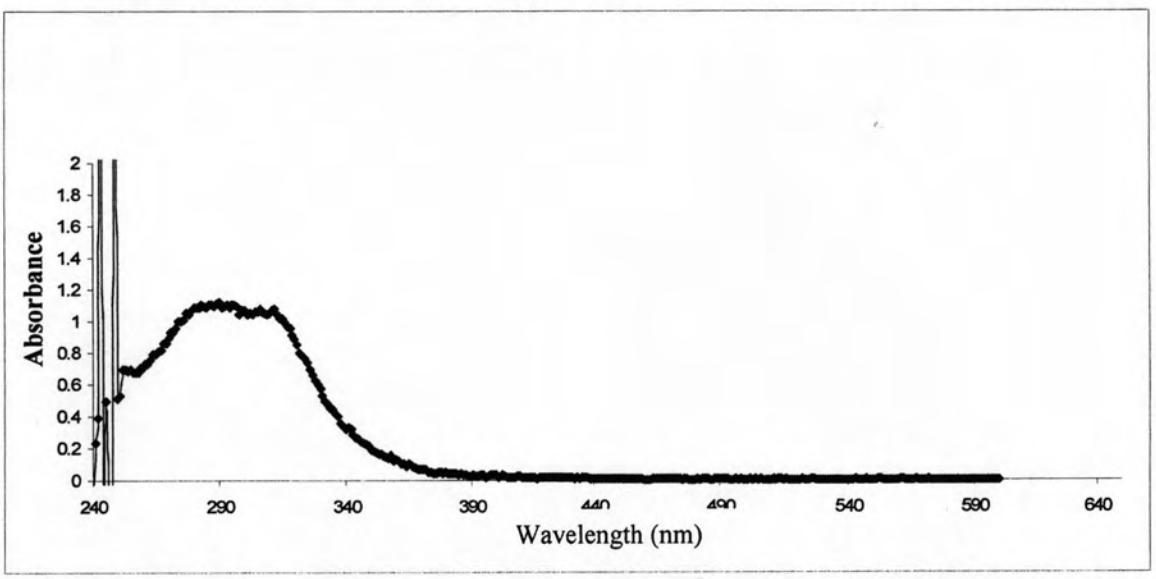


Figure B-8 UV spectrum of EtOAc crude extract of Go Ko 1 (GK) strain

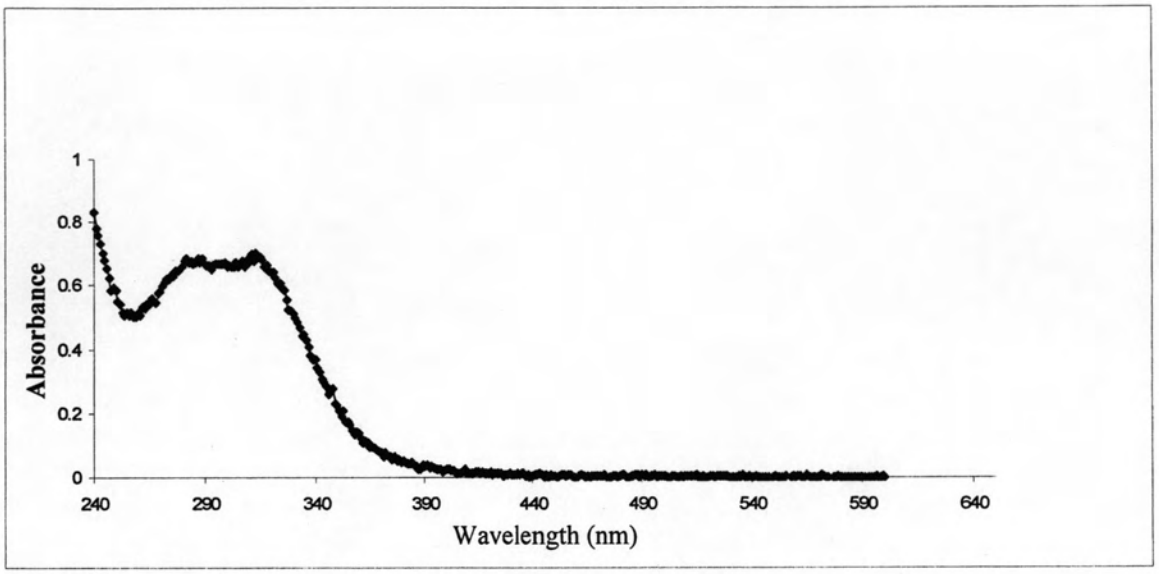


Figure B-9 UV spectrum of MeOH crude extract of Go Ko 1 (GK) strain

APPENDIX C

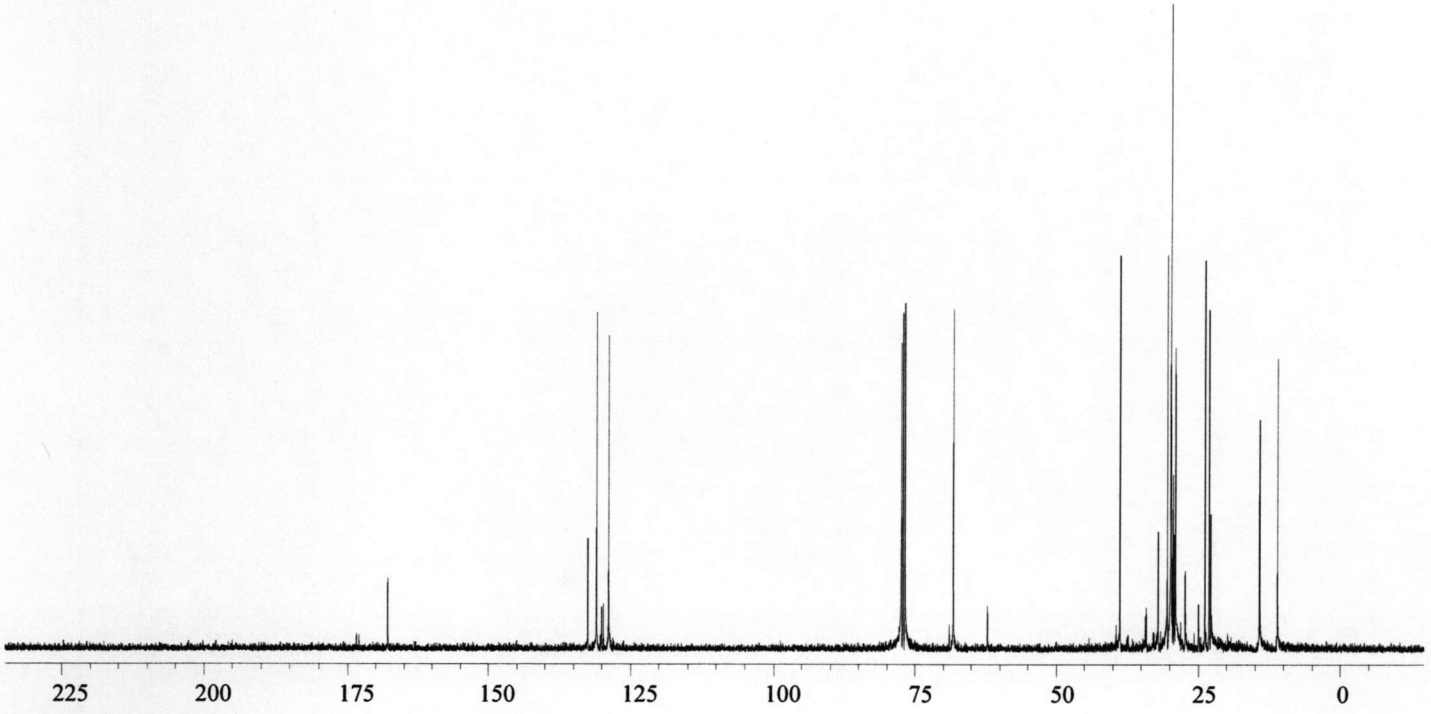


Figure C-1 The ^{13}C NMR spectrum ($CDCl_3$) of dipentyl phthalate

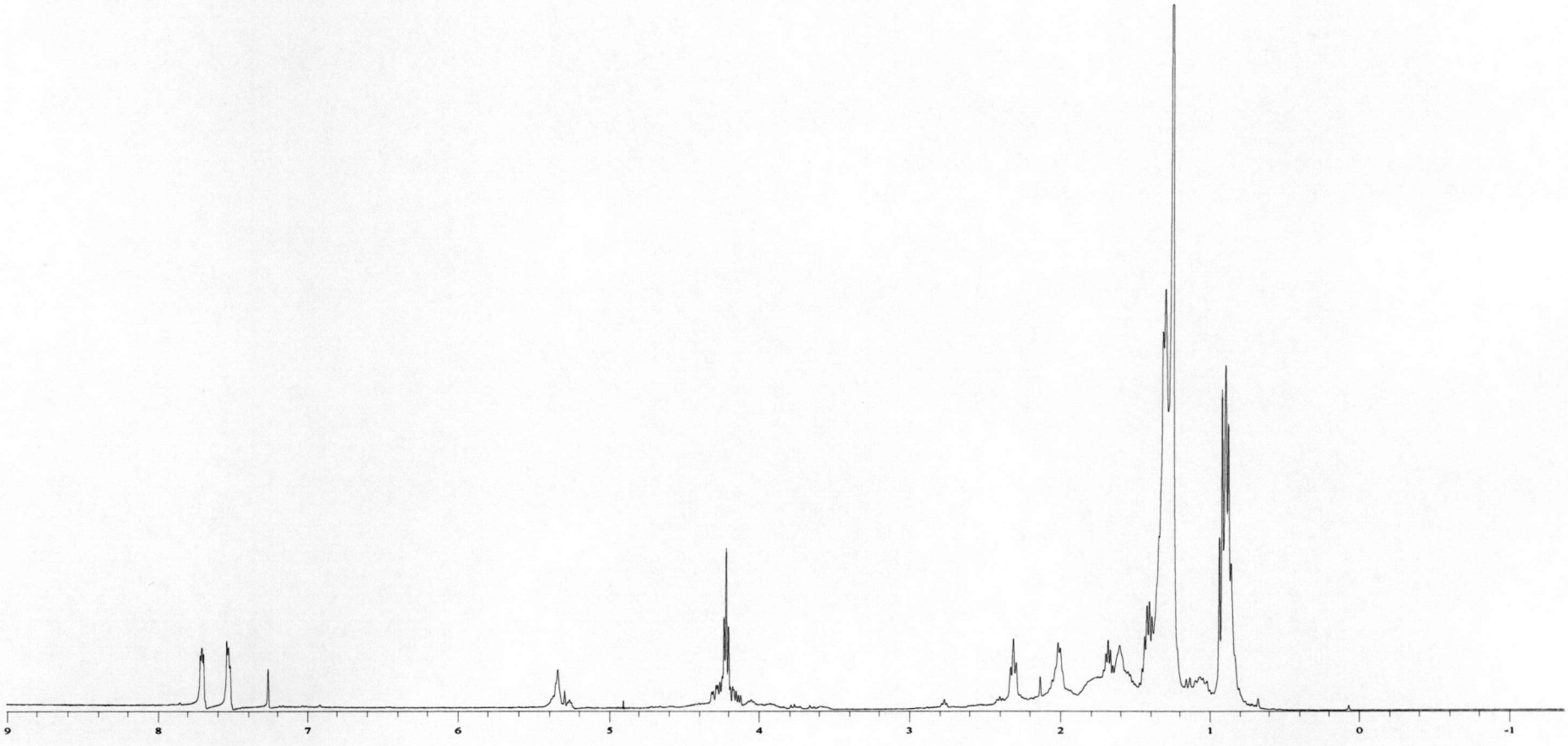


Figure C-2 The 1H NMR spectrum ($CDCl_3$) of dipentyl phthalate

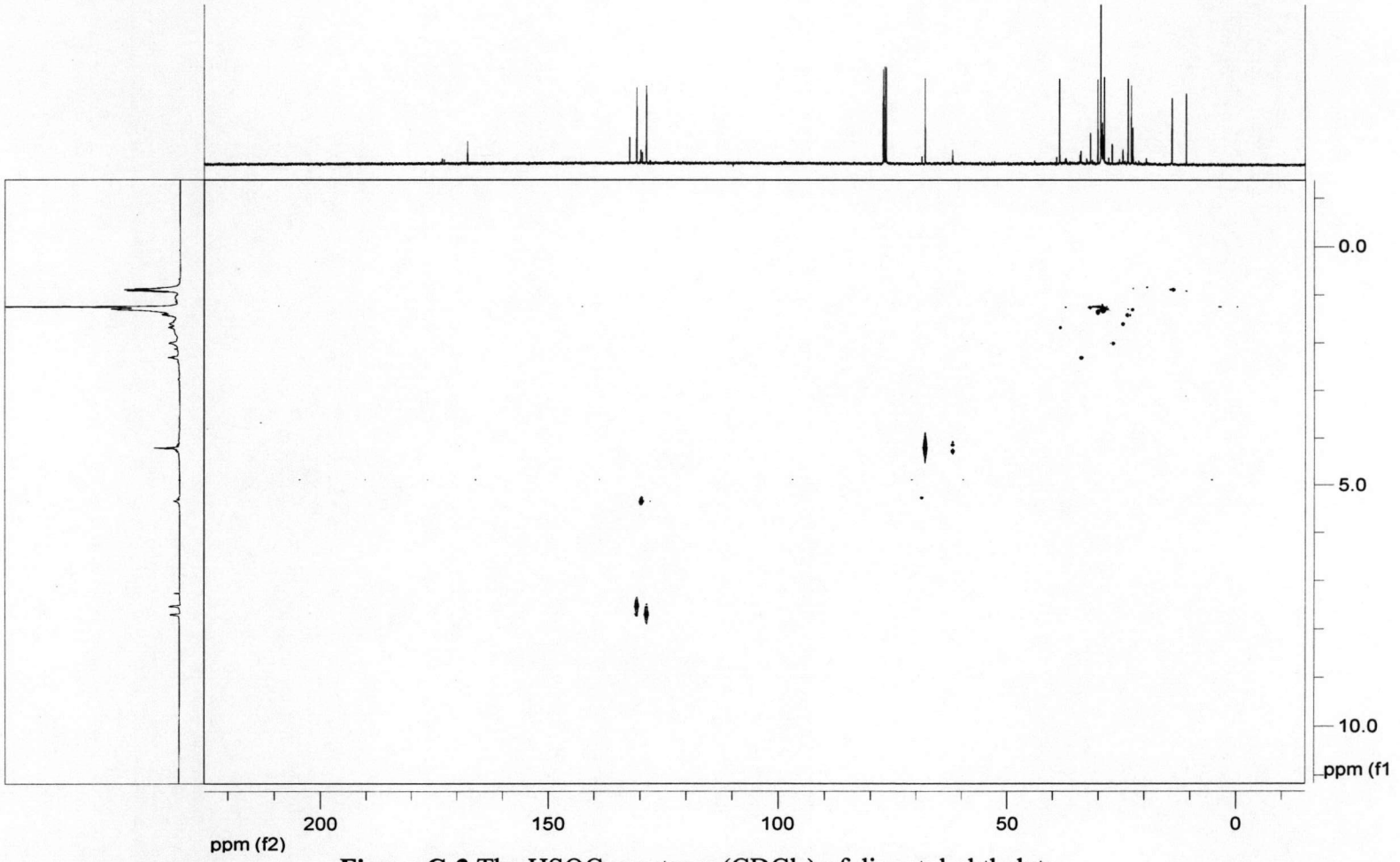


Figure C-3 The HSQC spectrum ($CDCl_3$) of dipentyl phthalate

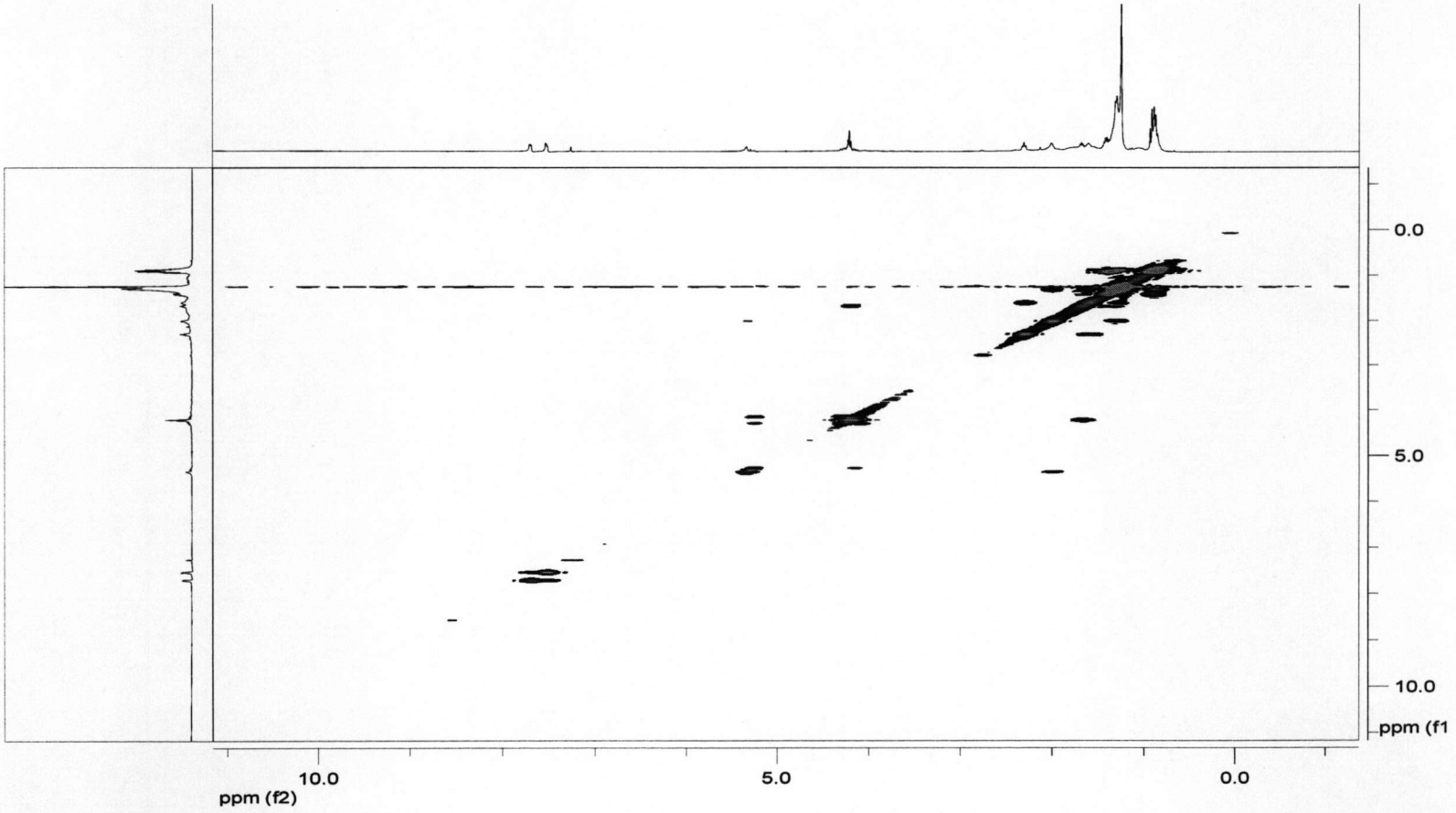


Figure C-4 The COSY spectrum ($CDCl_3$) of dipentyl phthalate

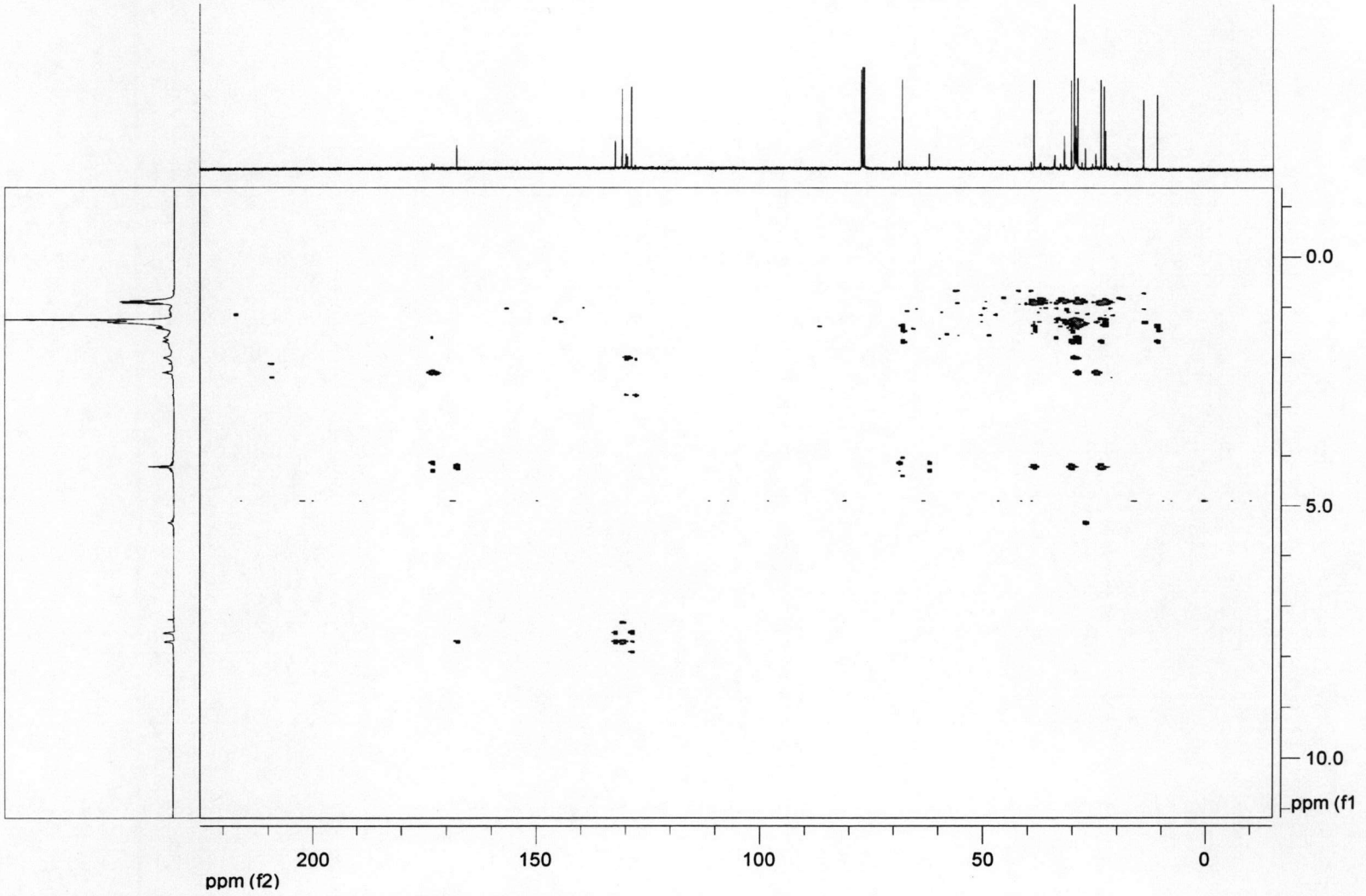


Figure C-5 The HMBC spectrum ($CDCl_3$) of dipentyl phthalate

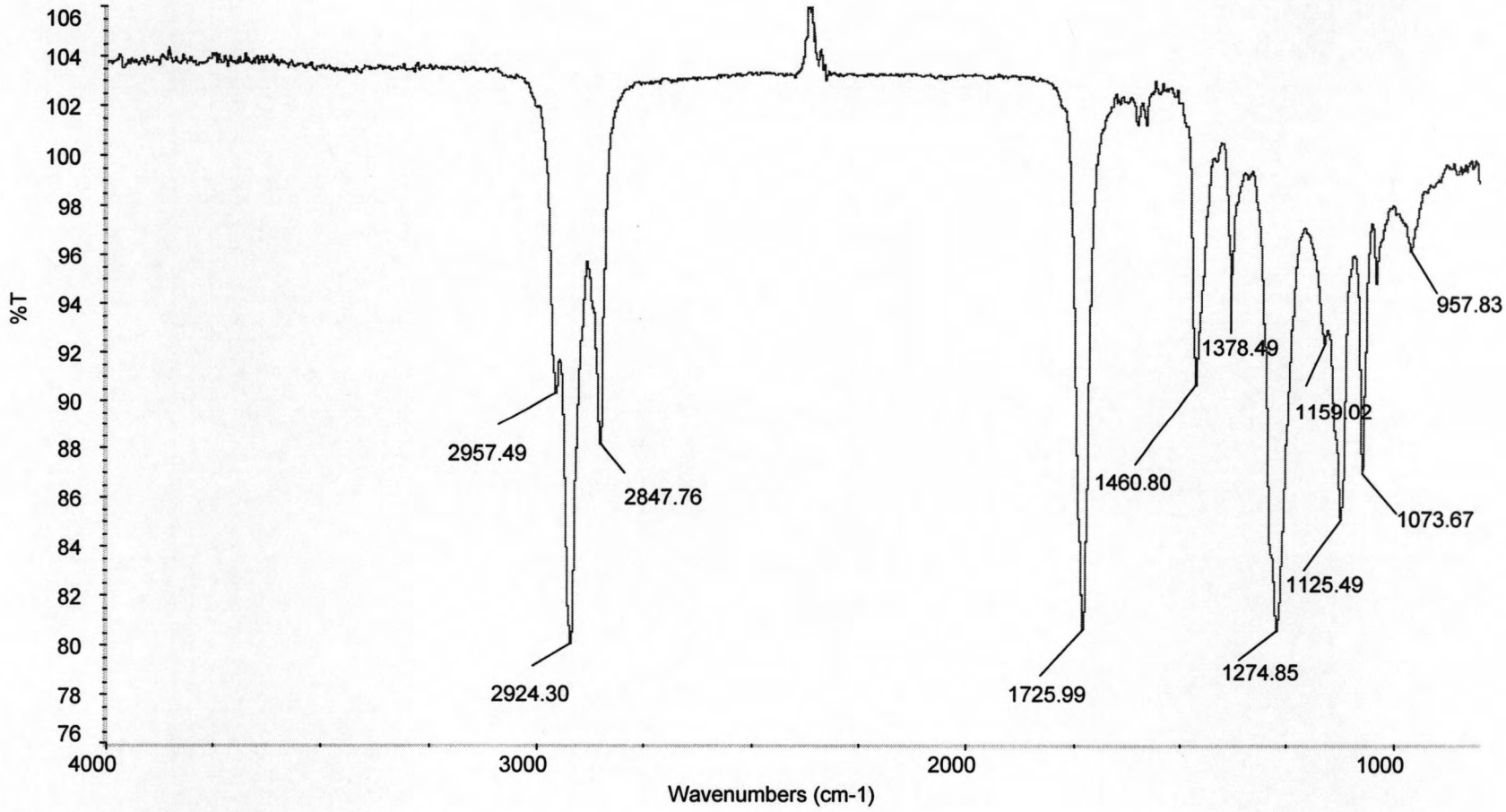


Figure C-6 The IR spectrum of dipentyl phthalate

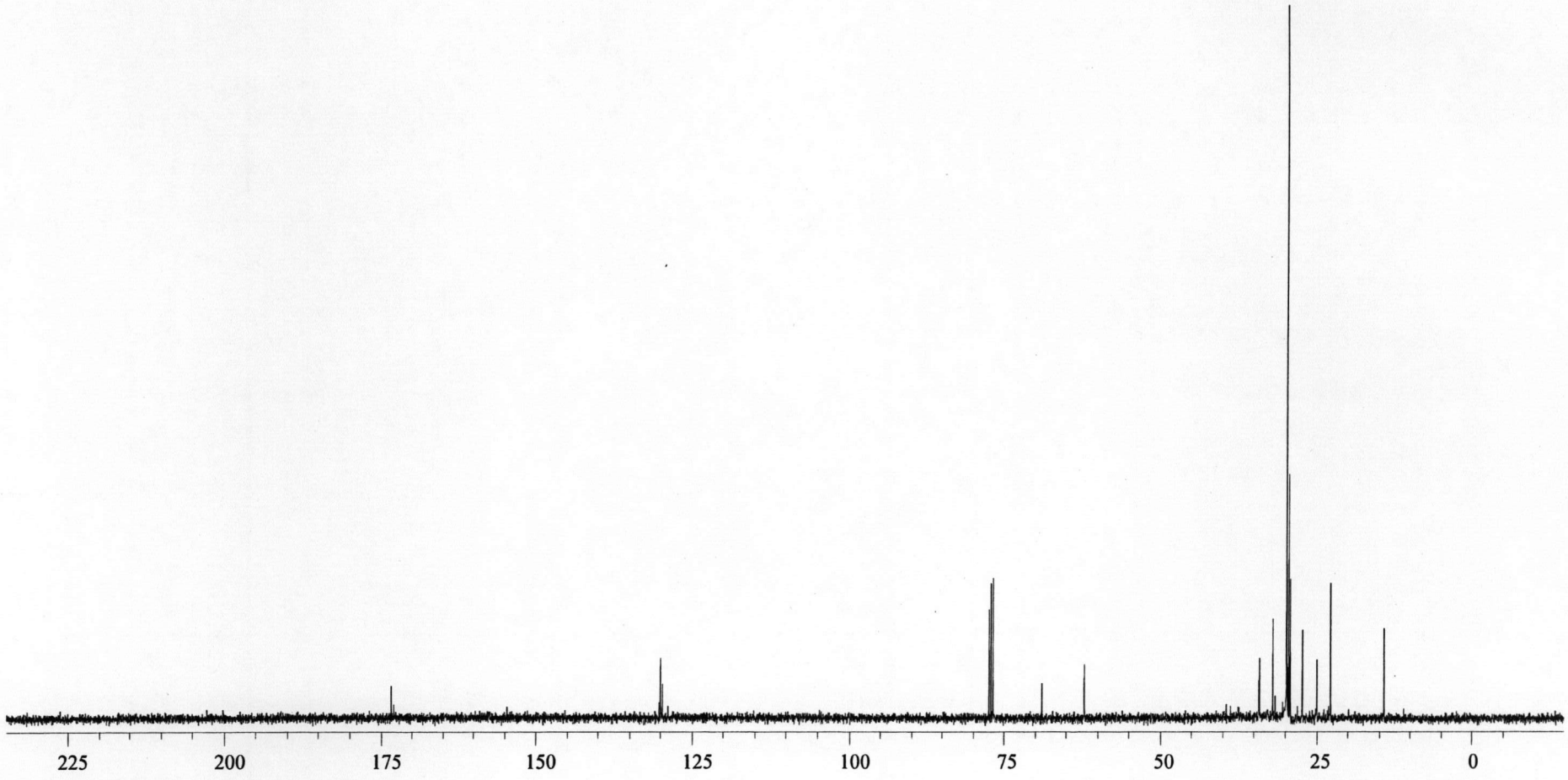


Figure C-7 The ^{13}C NMR spectrum ($CDCl_3$) of 5-decene

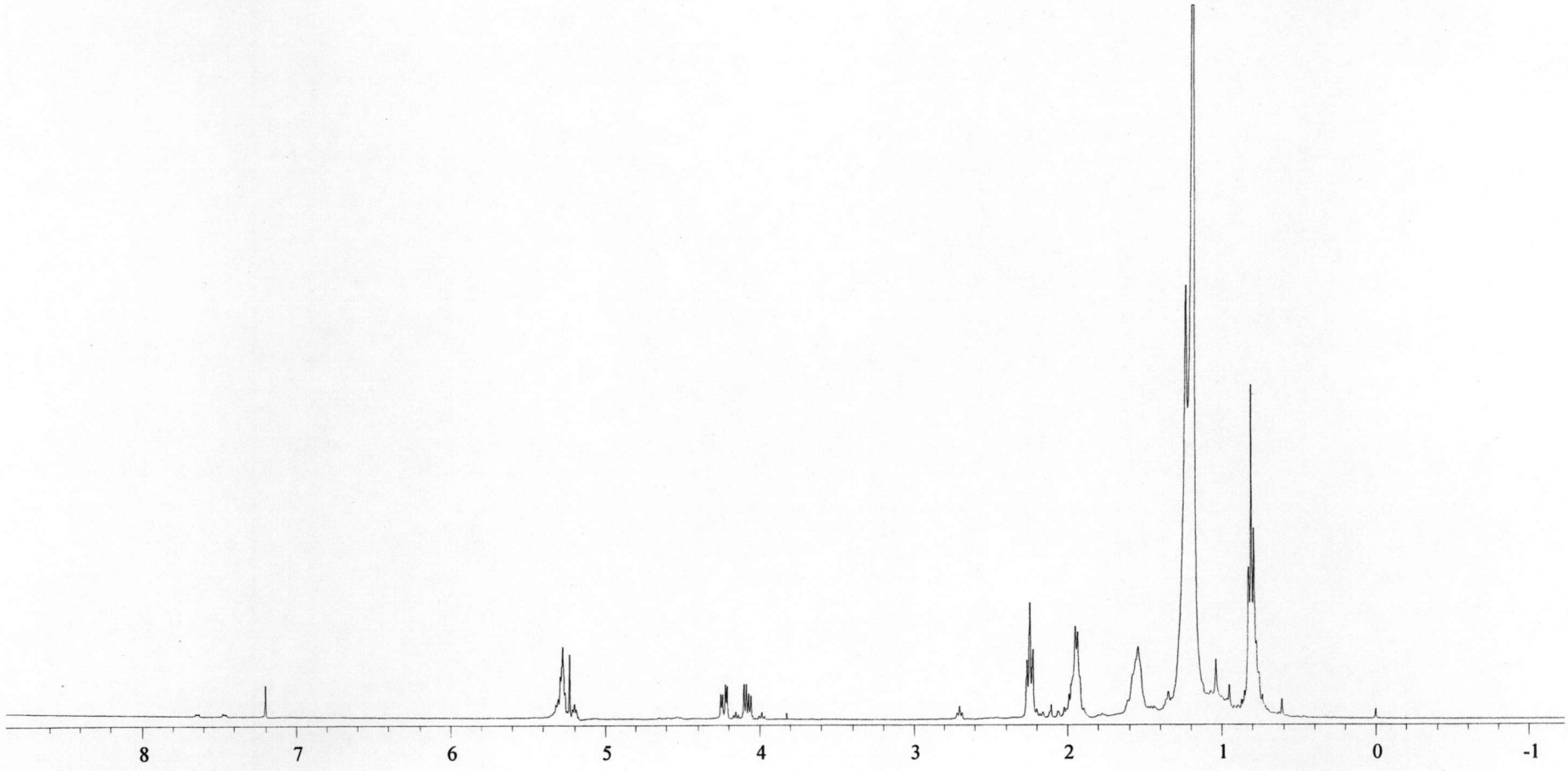


Figure C-8 The 1H NMR spectrum ($CDCl_3$) of 5–decene

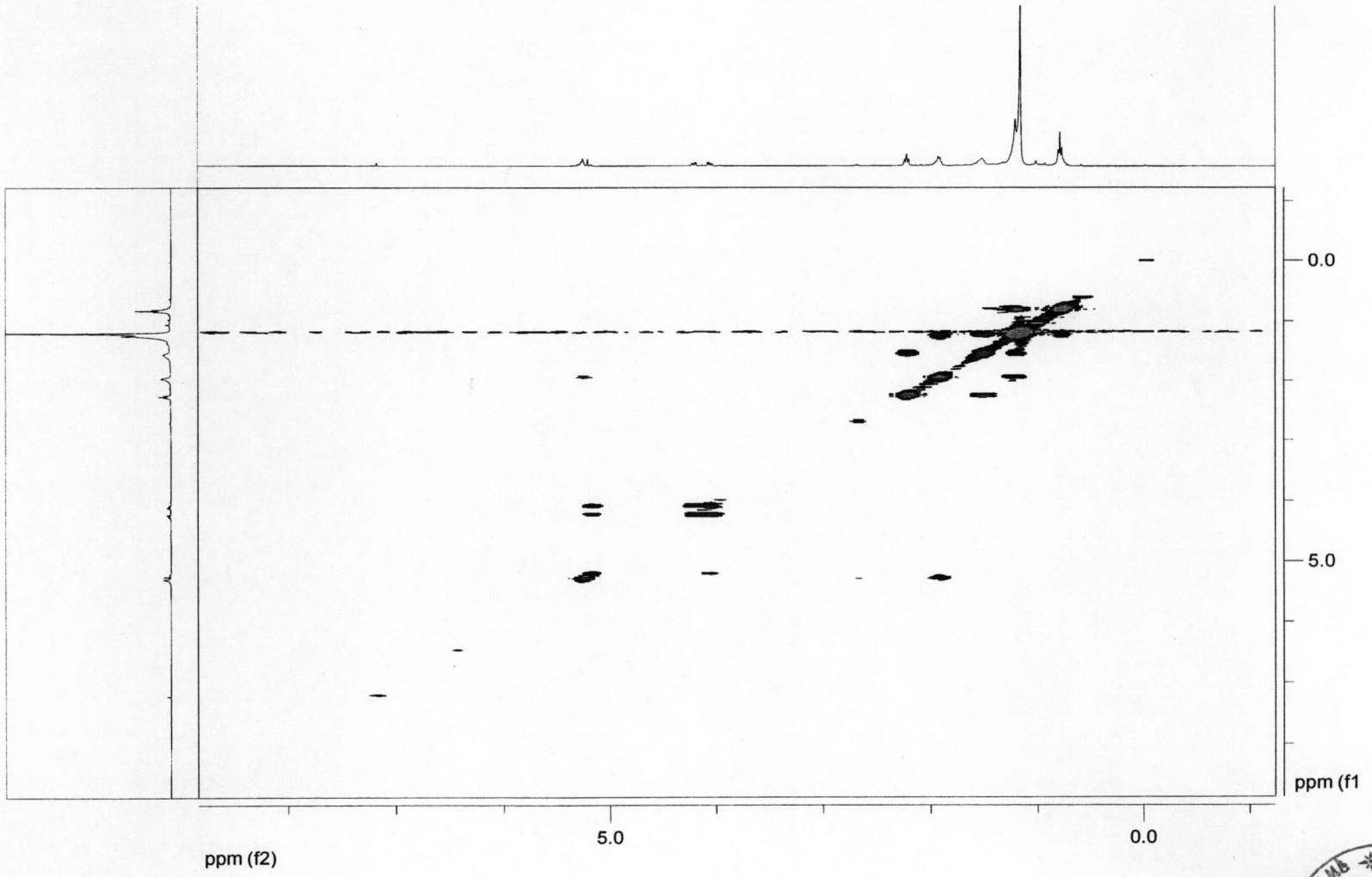


Figure C-9 The COSY spectrum ($CDCl_3$) of 5–decene

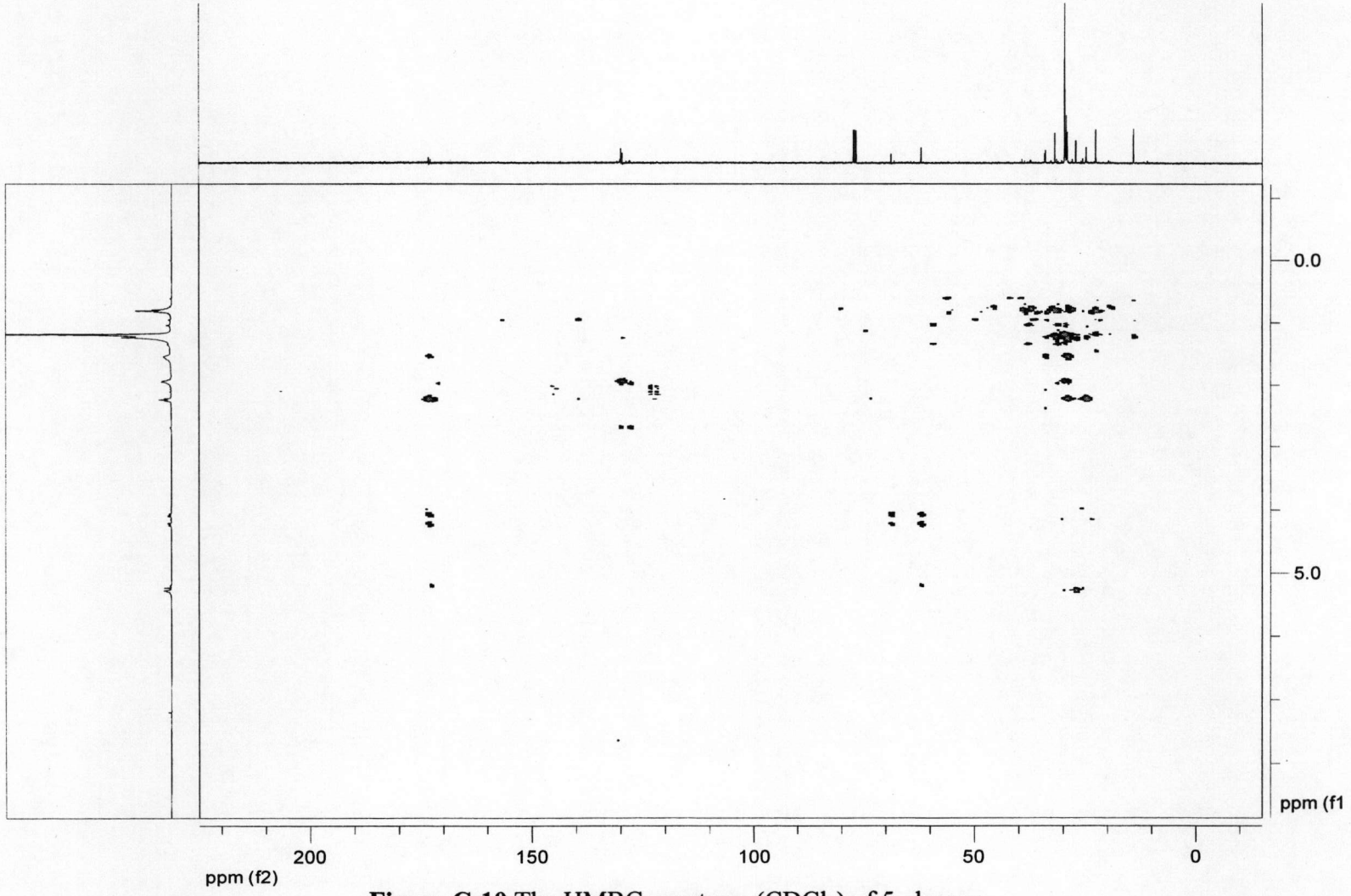


Figure C-10 The HMBC spectrum ($CDCl_3$) of 5–decene

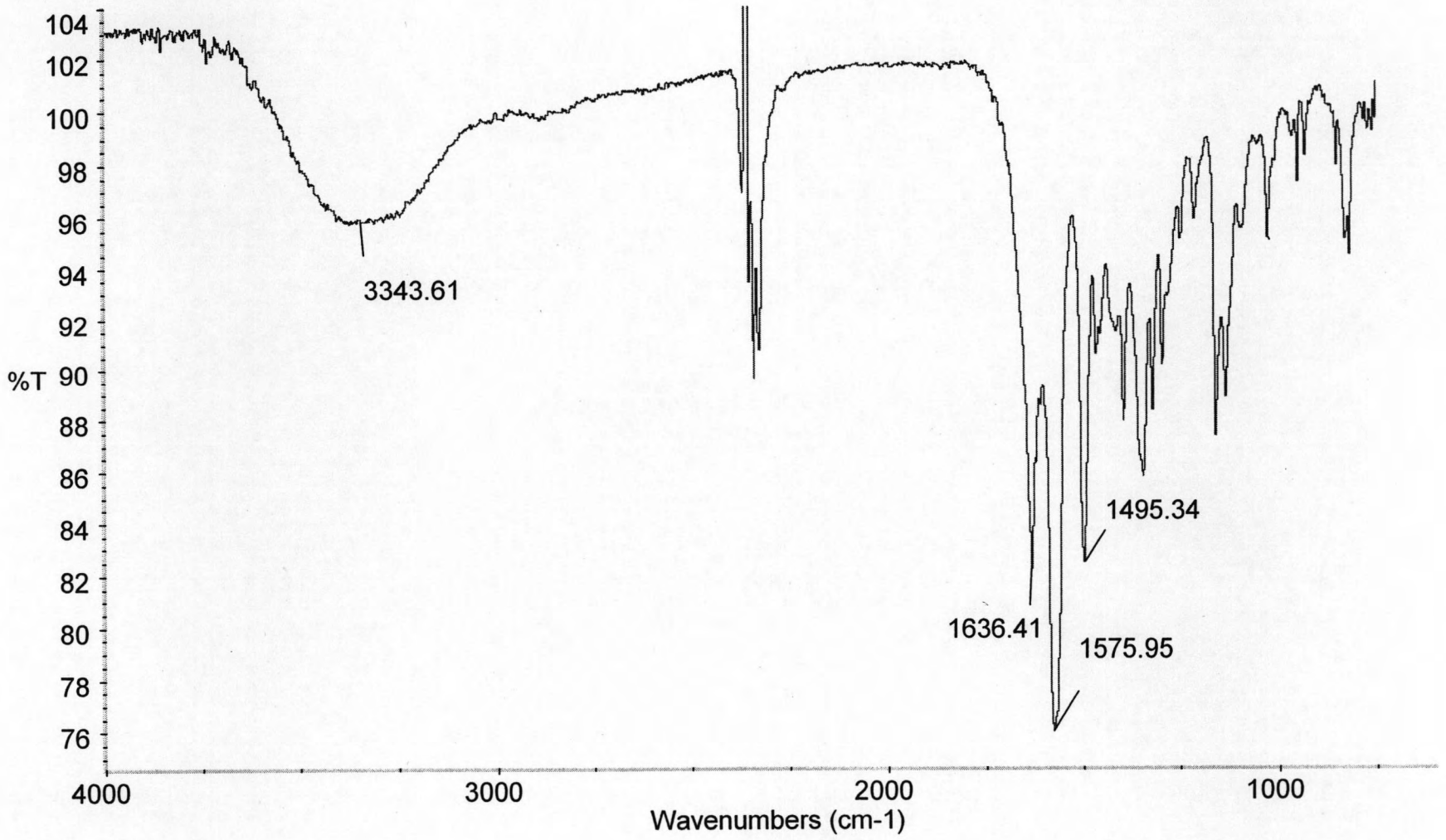


Figure C-11 IR spectrum of 4-hydroxy-3-methoxycinnamaldehyde

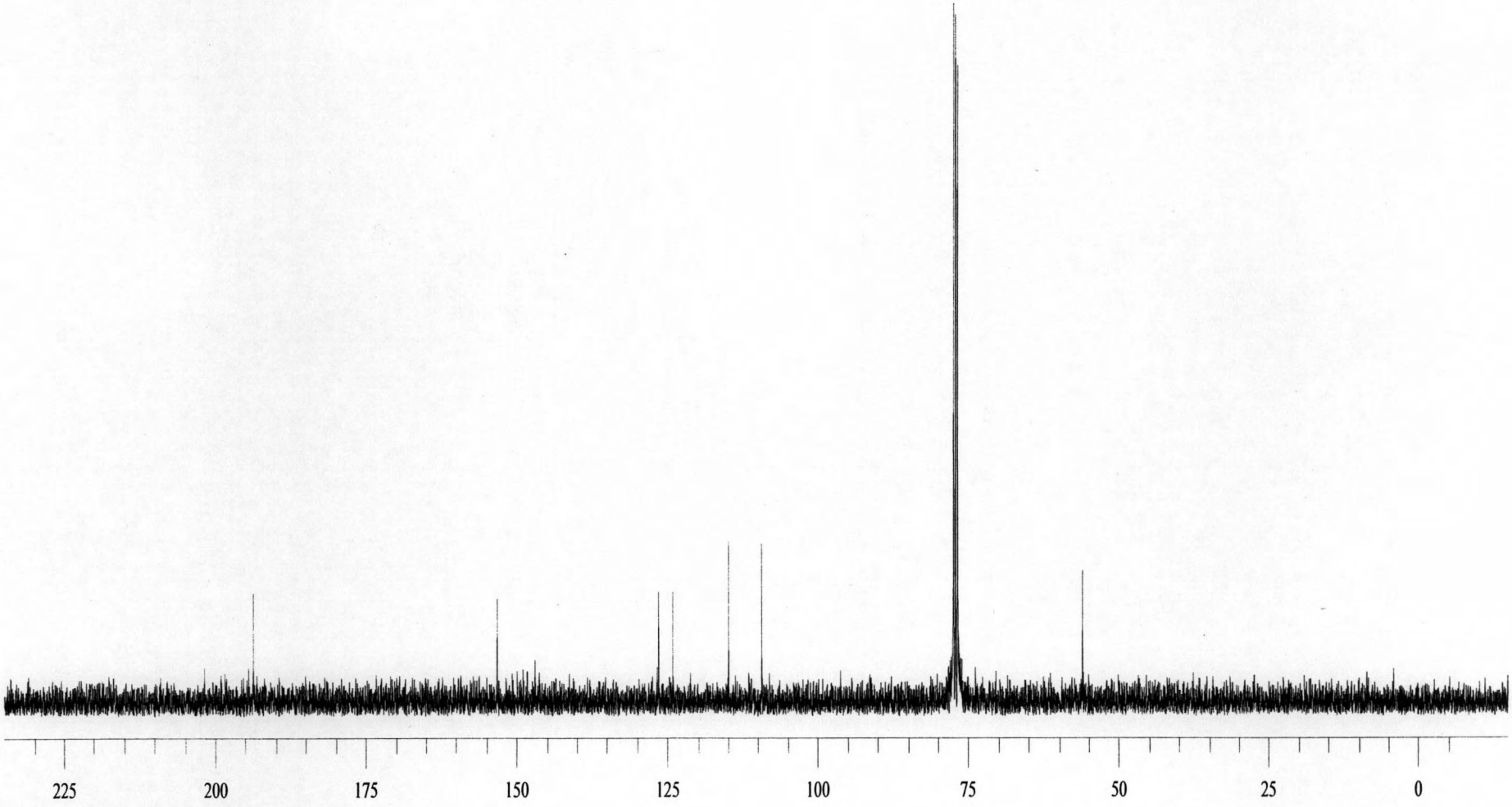


Figure C-12 ^{13}C NMR spectrum ($CDCl_3$) of 4-hydroxy-3-methoxycinnamaldehyde

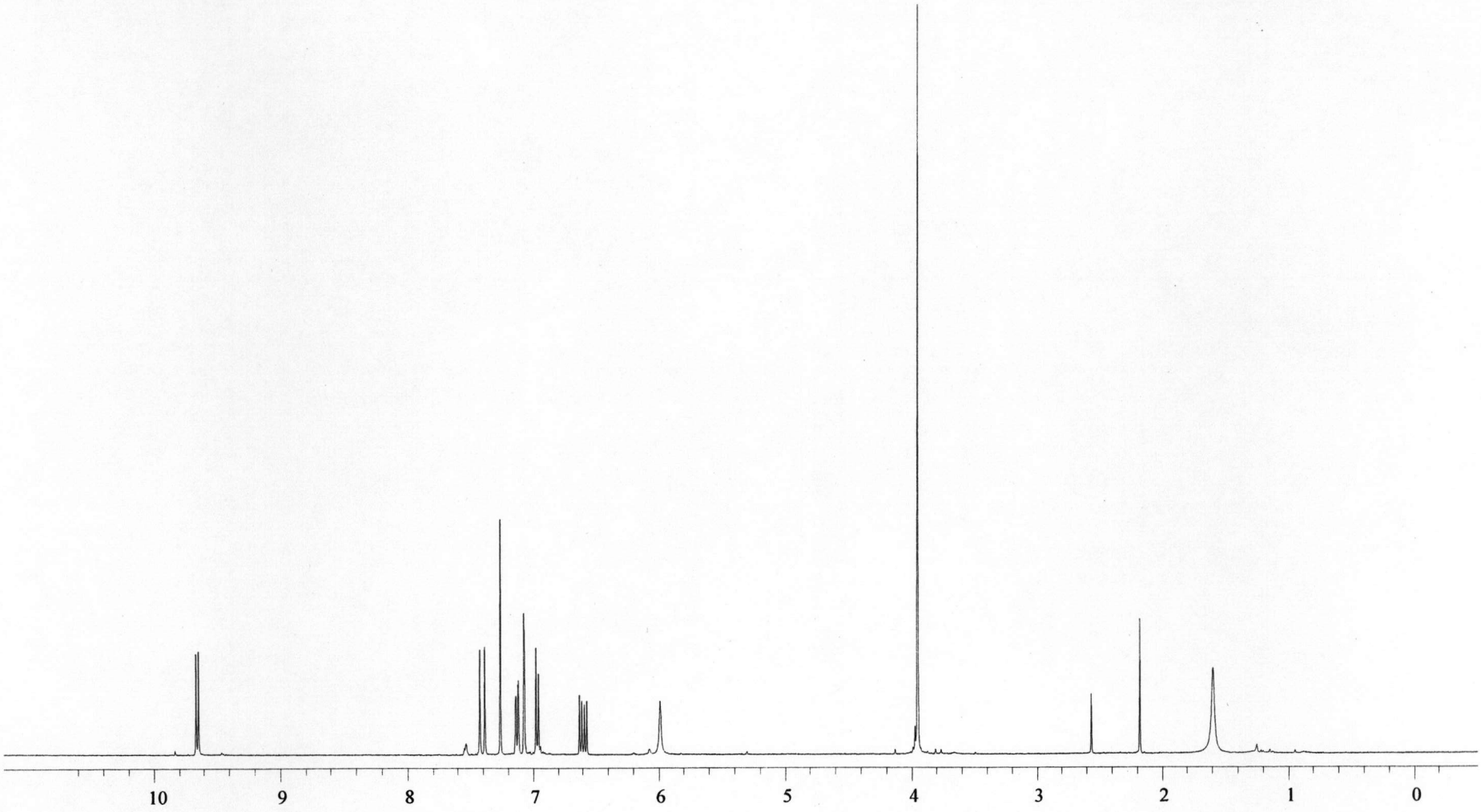


Figure C-13 The 1H NMR spectrum ($CDCl_3$) of 4-hydroxy-3-methoxycinnamaldehyde

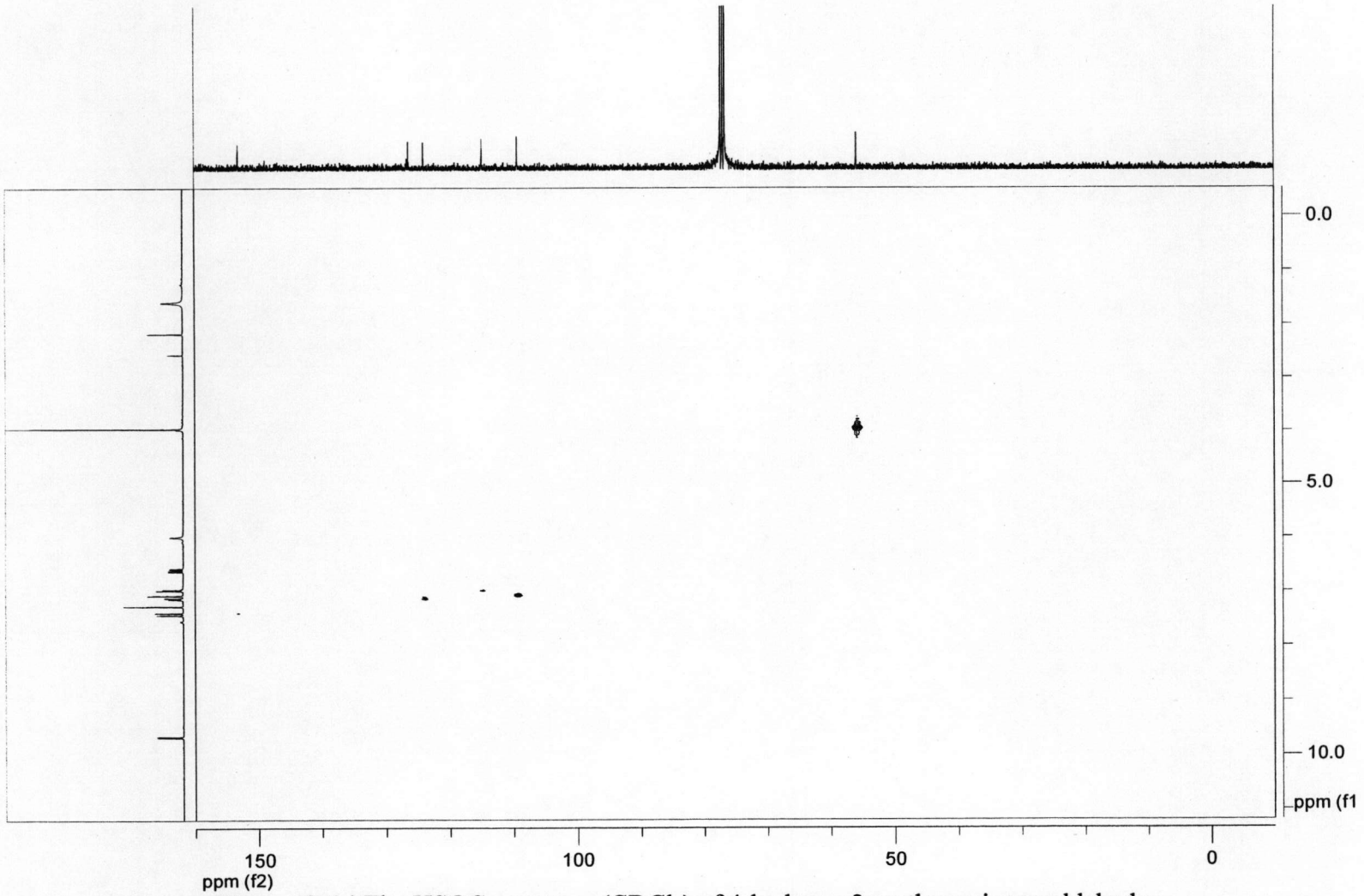


Figure C-14 The HSQC spectrum ($CDCl_3$) of 4-hydroxy-3-methoxycinnamaldehyde

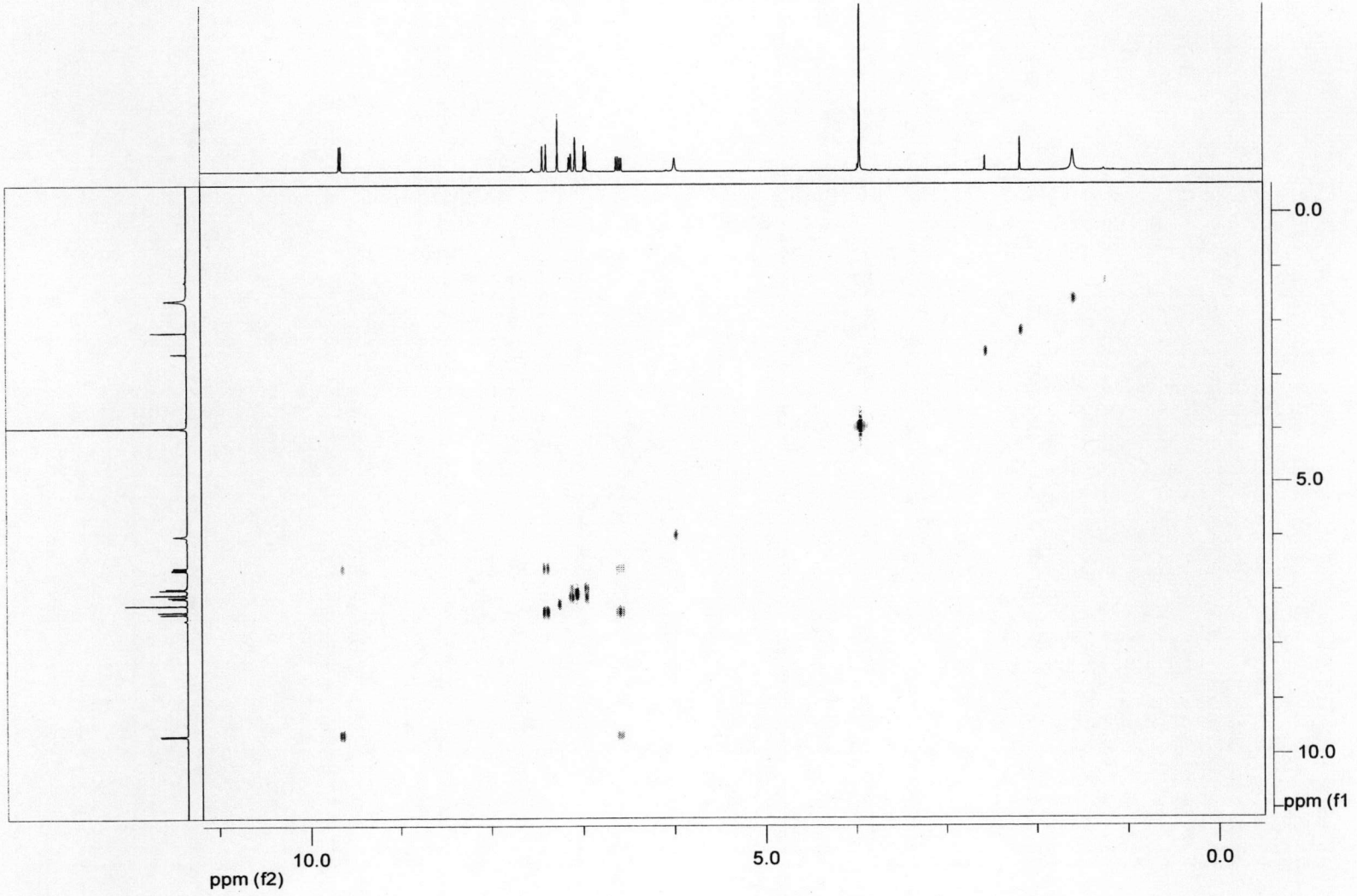


Figure C-15 The COSY spectrum ($CDCl_3$) of 4-hydroxy-3-methoxycinnamaldehyde

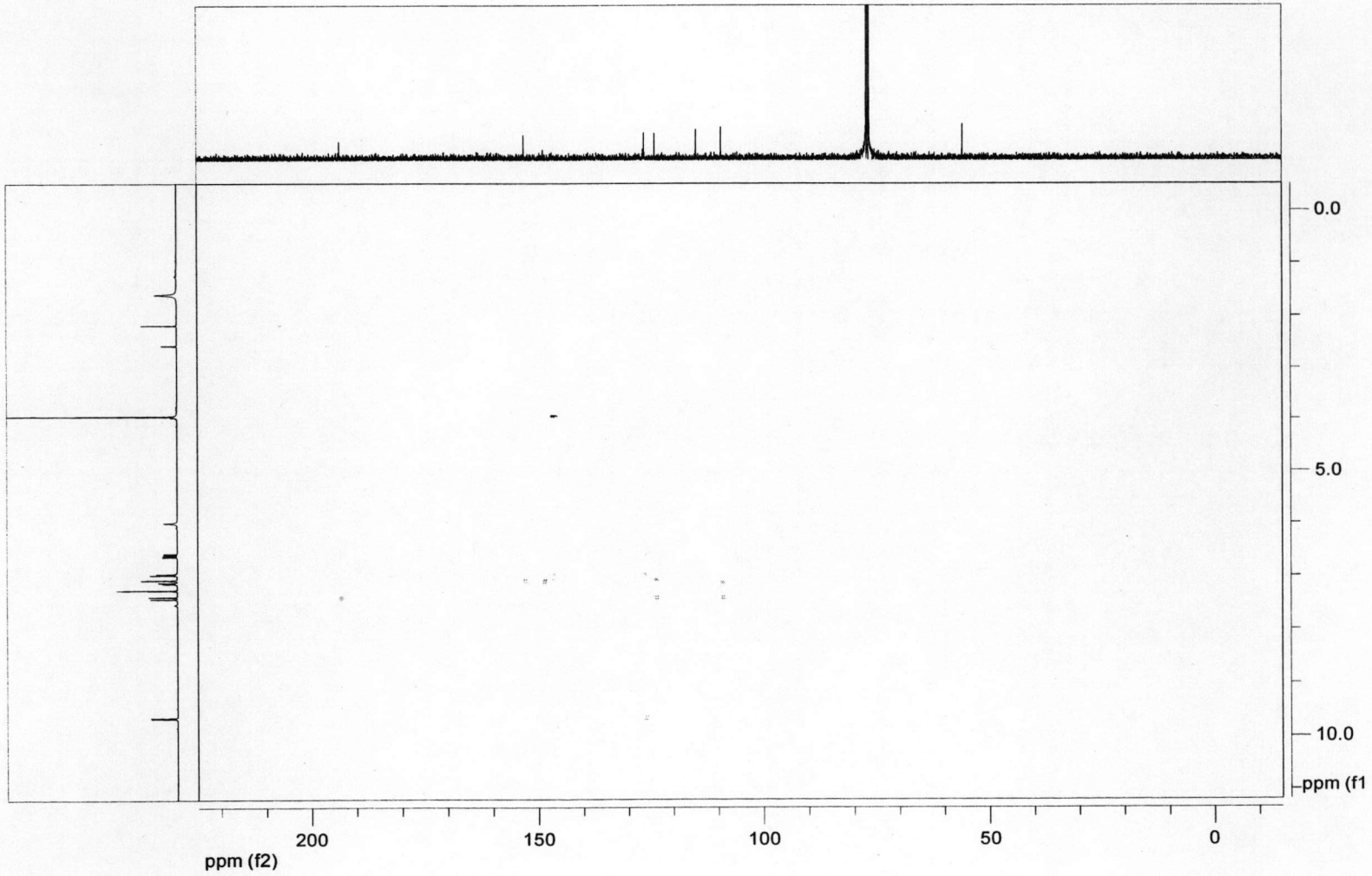
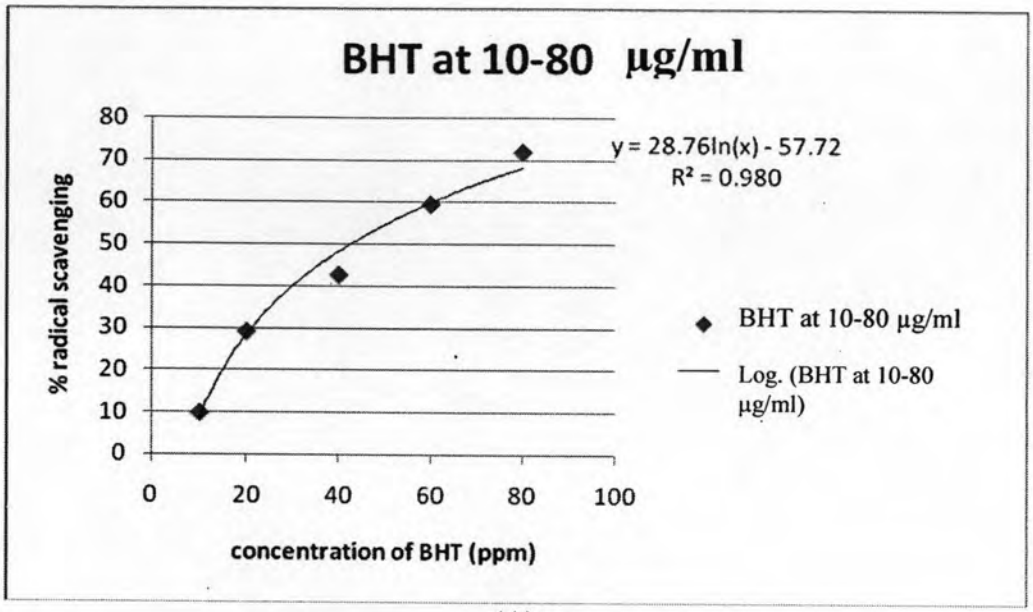
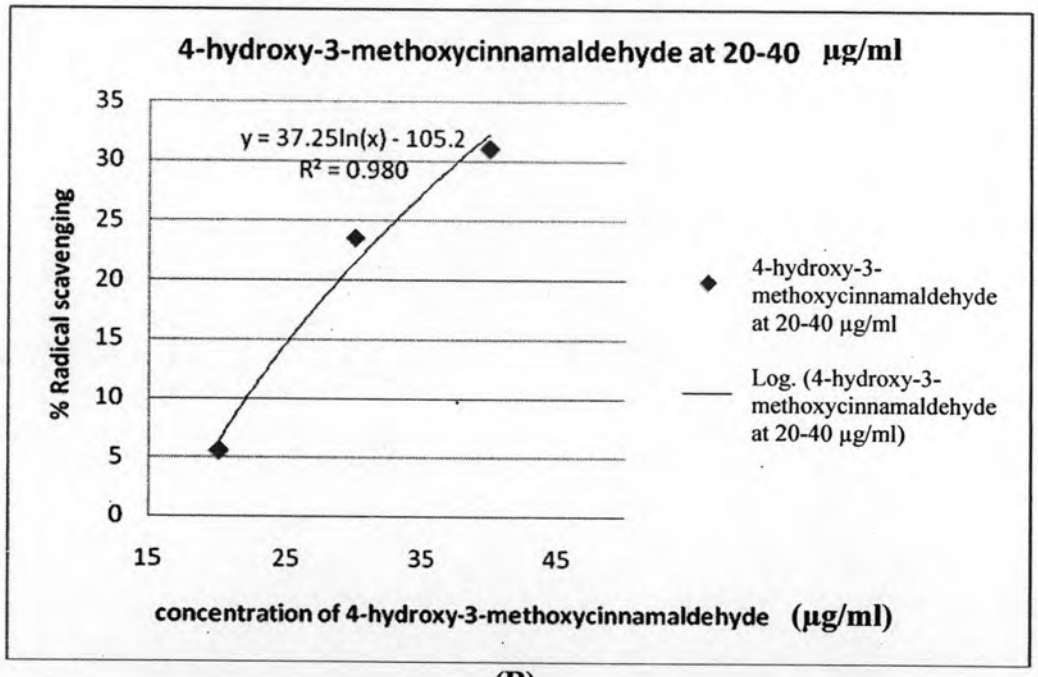


Figure C-16 The HMBC spectrum ($CDCl_3$) of 4-hydroxy-3-methoxycinnamaldehyde

APPENDIX D



(A)



(B)

Figure C-1 Free radical scavenging capacity of (A) BHT and (B) 4-hydroxy-3-methoxycinnamaldehyde as determined by the DPPH method. Results are means of three replicates

VITA

Mr. Tonsiripakdee was born on May 1, 1981 in Narathiwat. He got a Bachelor of Science Degree in Biochemistry from Kasetsart University in 2003. After that, Mr. Tonsiripakdee has been graduate student working for Master degree in Biotechnology program at Chulalongkorn University. During his Master of Science study, he was also awarded a research grant (Ratchadapiseksompote fund, 90 years CU fellowship) from the Graduate School, Chulalongkorn University.

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