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APPENDIX

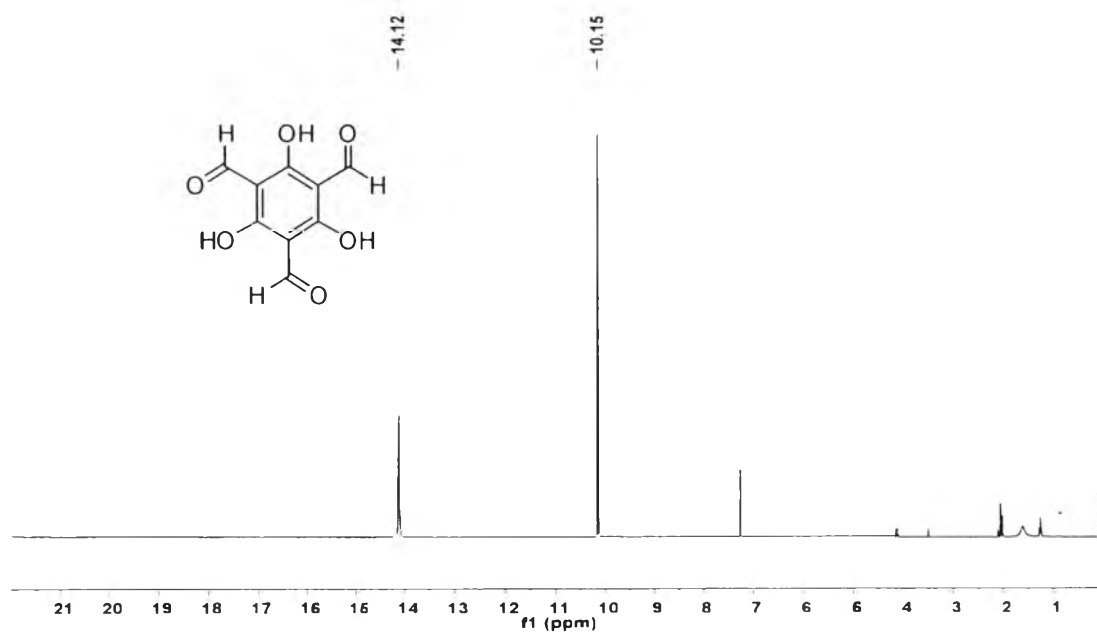


Figure A.1 $^1\text{H-NMR}$ spectrum (CDCl_3) of 1,3,5-triformyl-2,4,6-trihydroxybenzene (51)

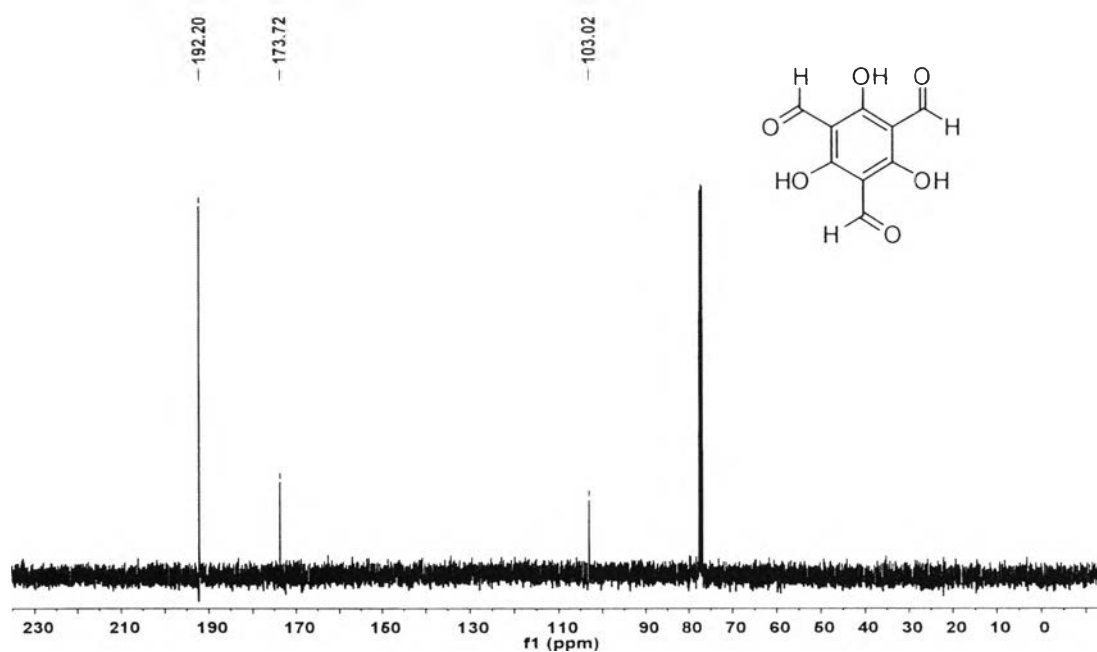


Figure A.2 $^{13}\text{C-NMR}$ spectrum (CDCl_3) of 1,3,5-triformyl-2,4,6-trihydroxybenzene (51)

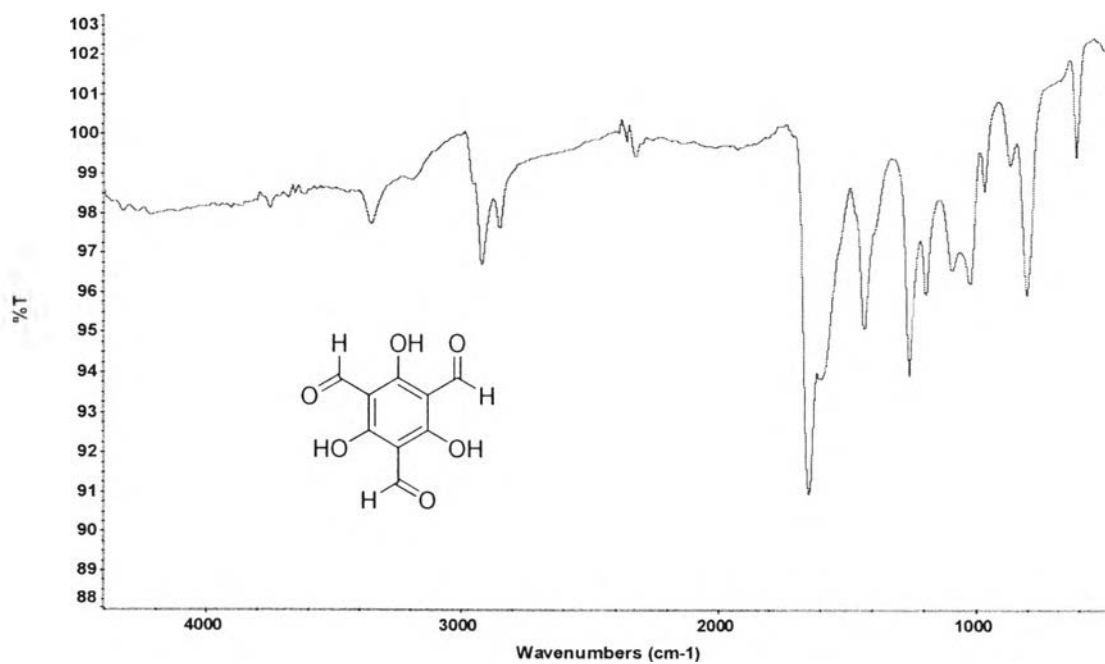


Figure A.3 IR spectrum (KBr) of 1,3,5-triformyl-2,4,6-trihydroxybenzene (51)

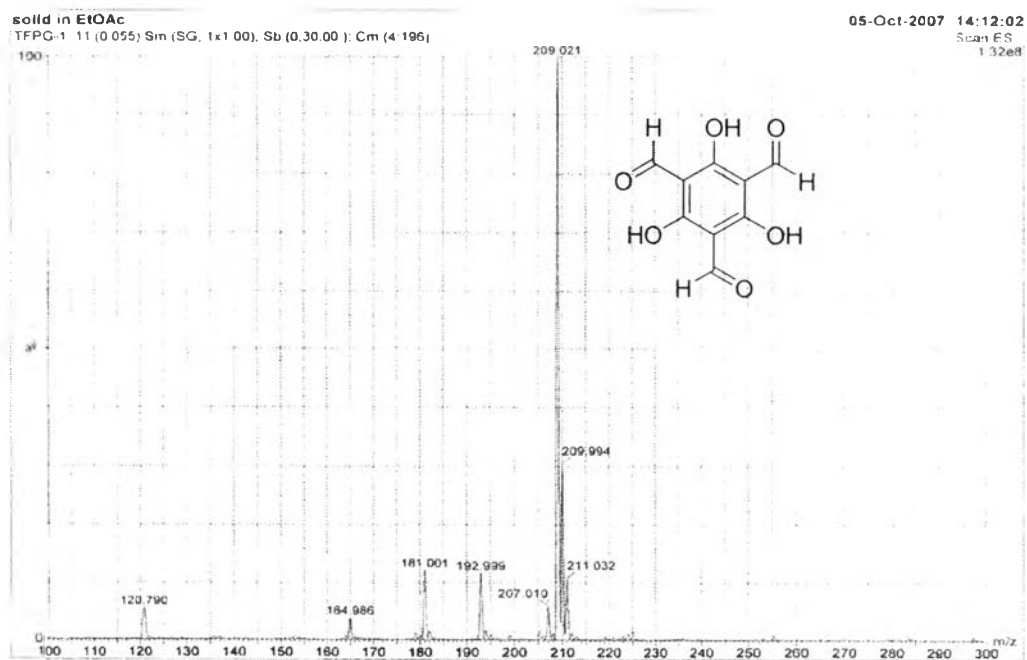


Figure A.4 Mass spectrum of 1,3,5-triformyl-2,4,6-trihydroxybenzene (51)

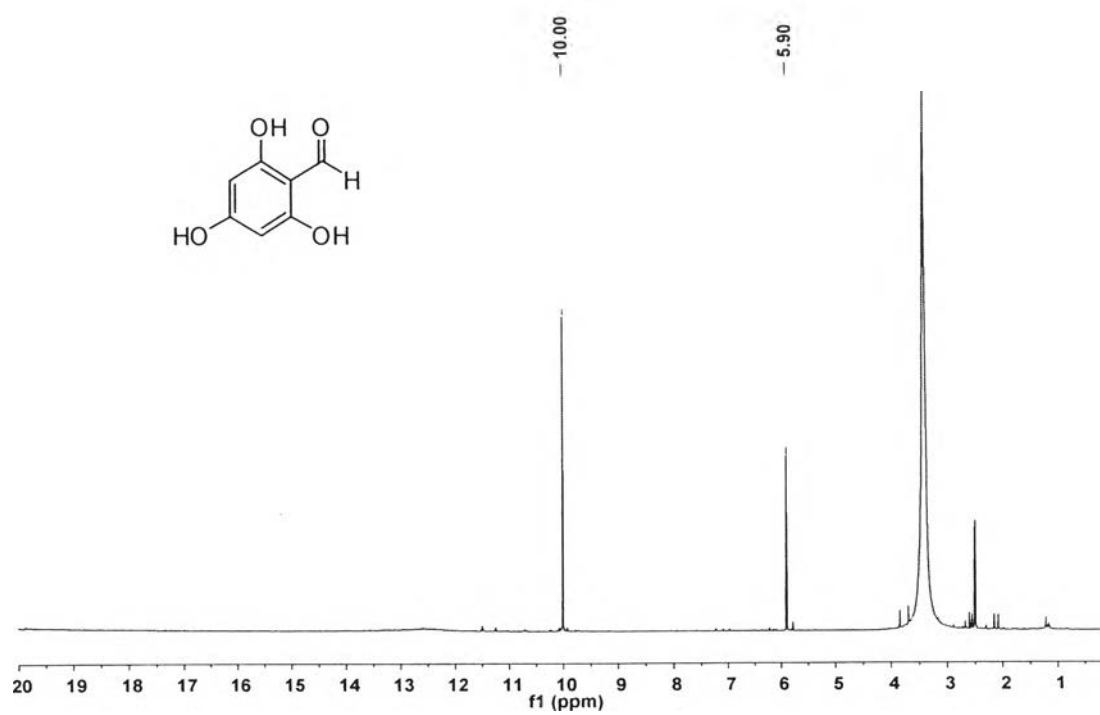


Figure A.5 ^1H -NMR spectrum ($\text{DMSO-}d_6$) of 2,4,6-trihydroxybenzaldehyde

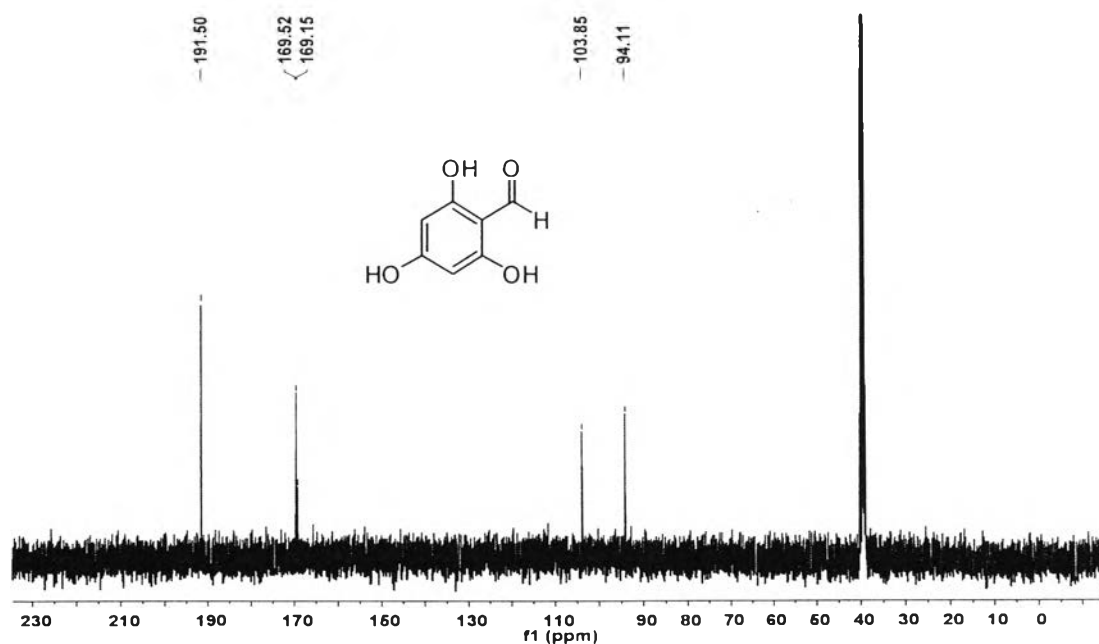


Figure A.6 ^{13}C -NMR spectrum ($\text{DMSO-}d_6$) of 2,4,6-trihydroxybenzaldehyde

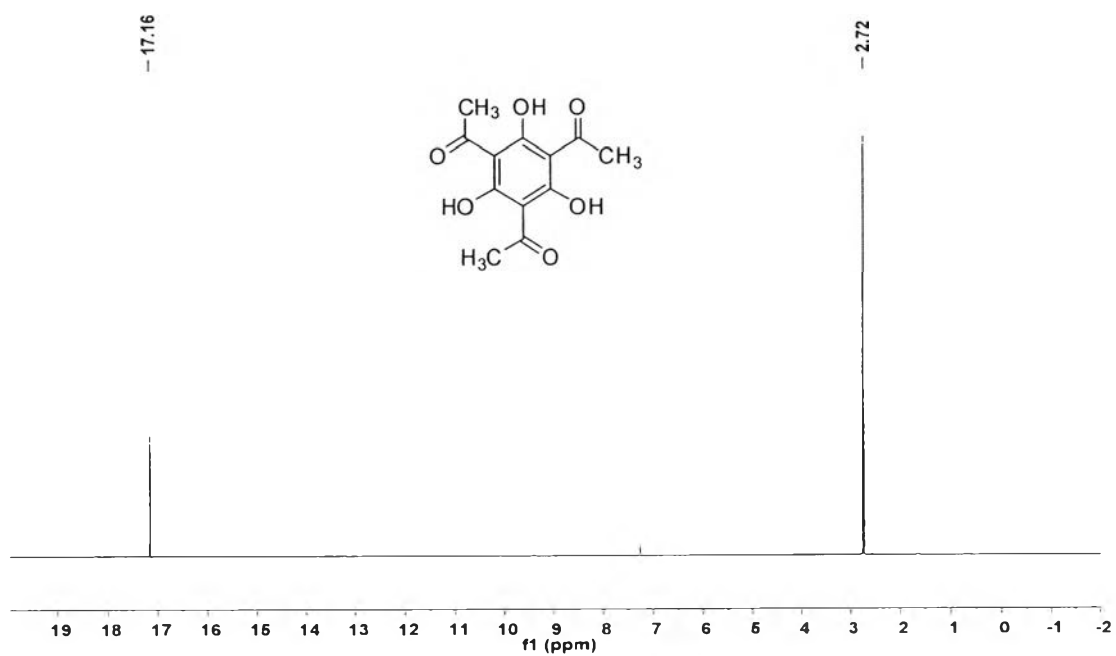


Figure A.7 $^1\text{H-NMR}$ spectrum (CDCl_3) of 1,3,5-triacetyl-2,4,6-trihydroxybenzene (53)

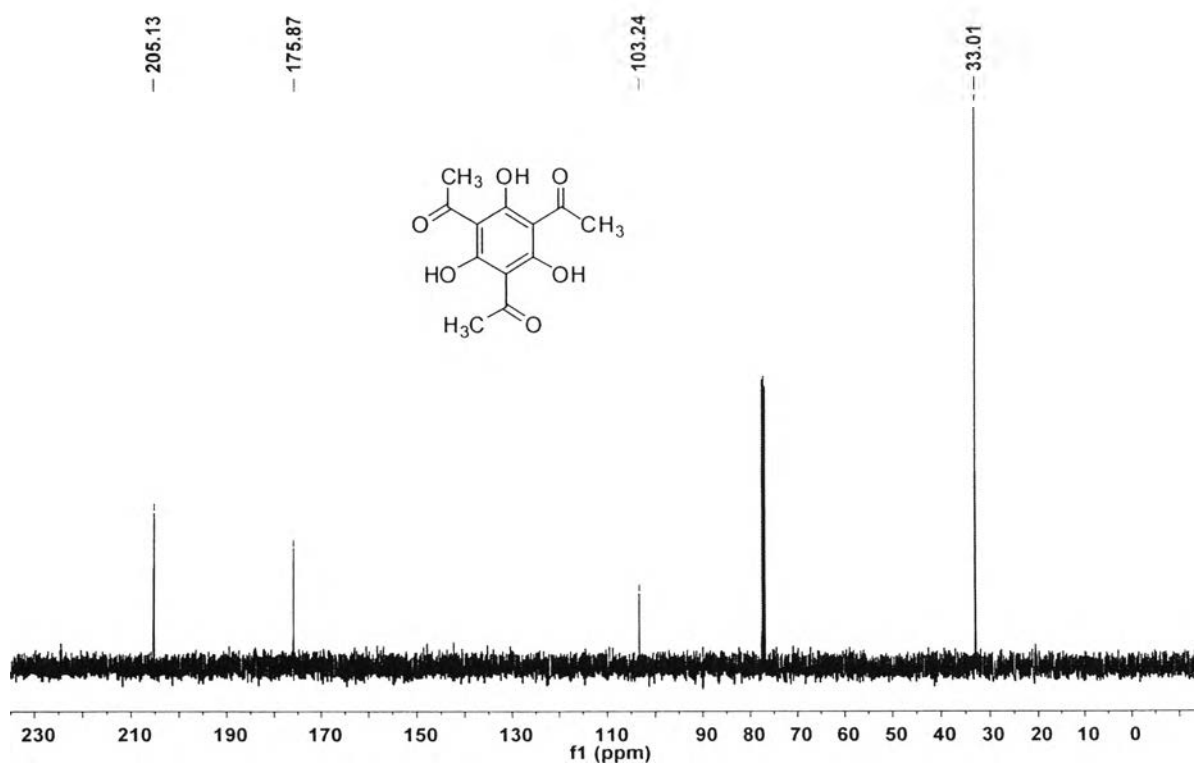


Figure A.8 $^{13}\text{C-NMR}$ spectrum (CDCl_3) of 1,3,5-triacetyl-2,4,6-trihydroxybenzene (53)

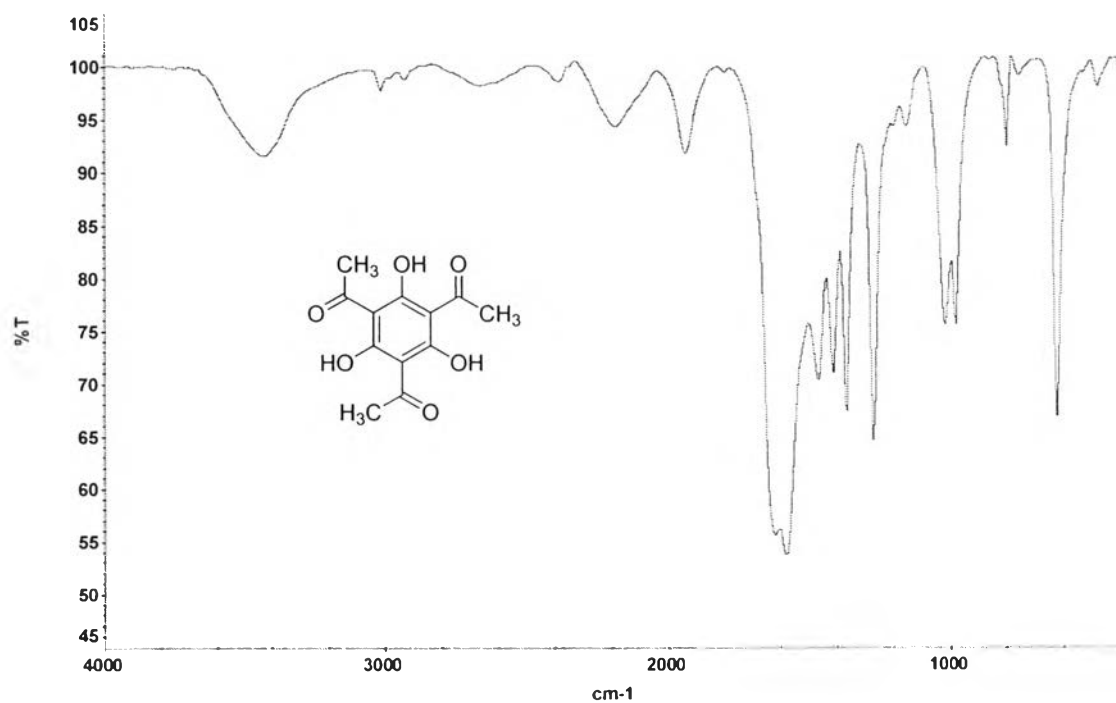


Figure A.9 IR spectrum (KBr) of 1,3,5-triacetyl-2,4,6-trihydroxybenzene (53)

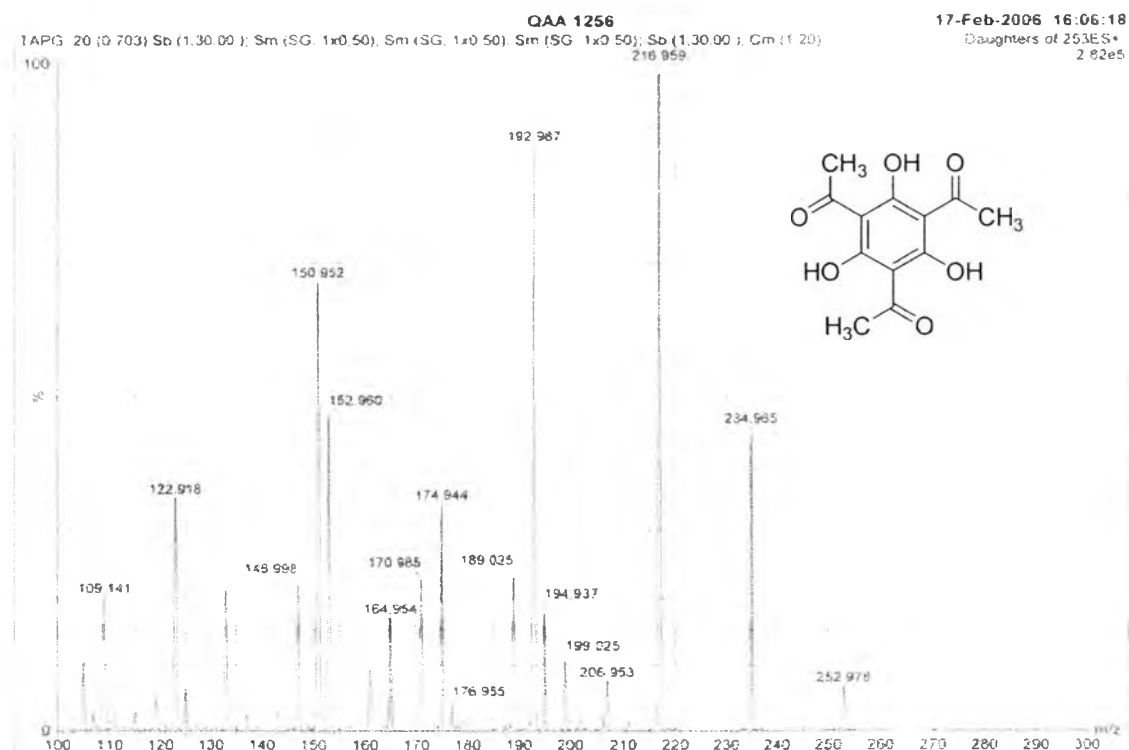


Figure A.10 Mass spectrum of 1,3,5-triacetyl-2,4,6-trihydroxybenzene (53)

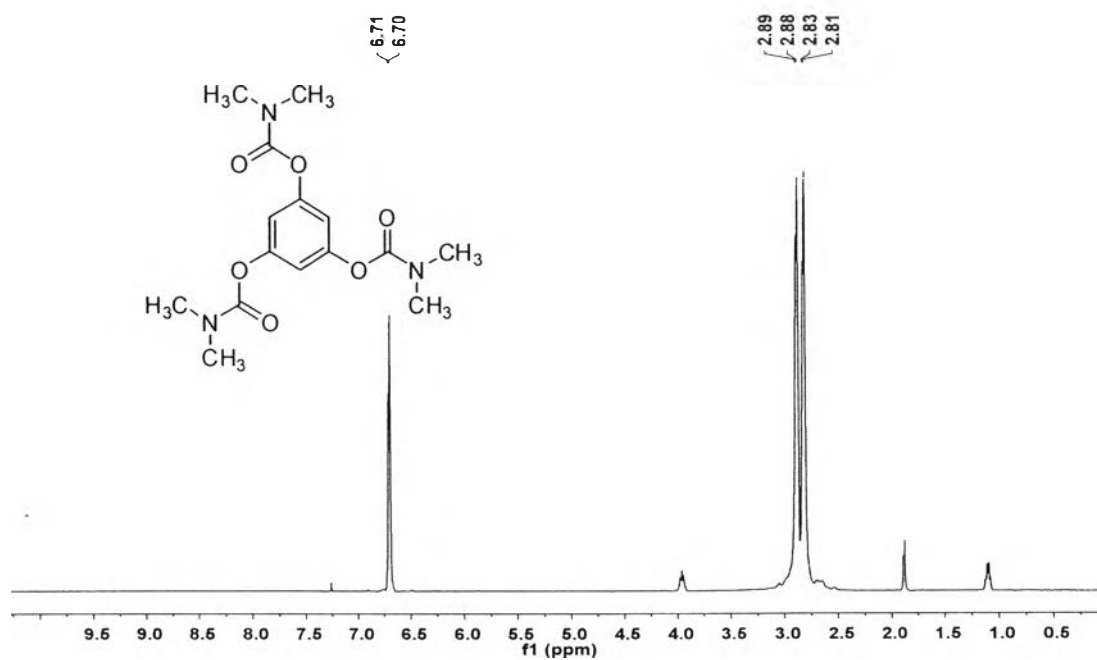


Figure A.11 $^1\text{H-NMR}$ spectrum (CDCl_3) of 1,3,5-tris(*N,N*-dimethylcarbamoyl)benzene (57)

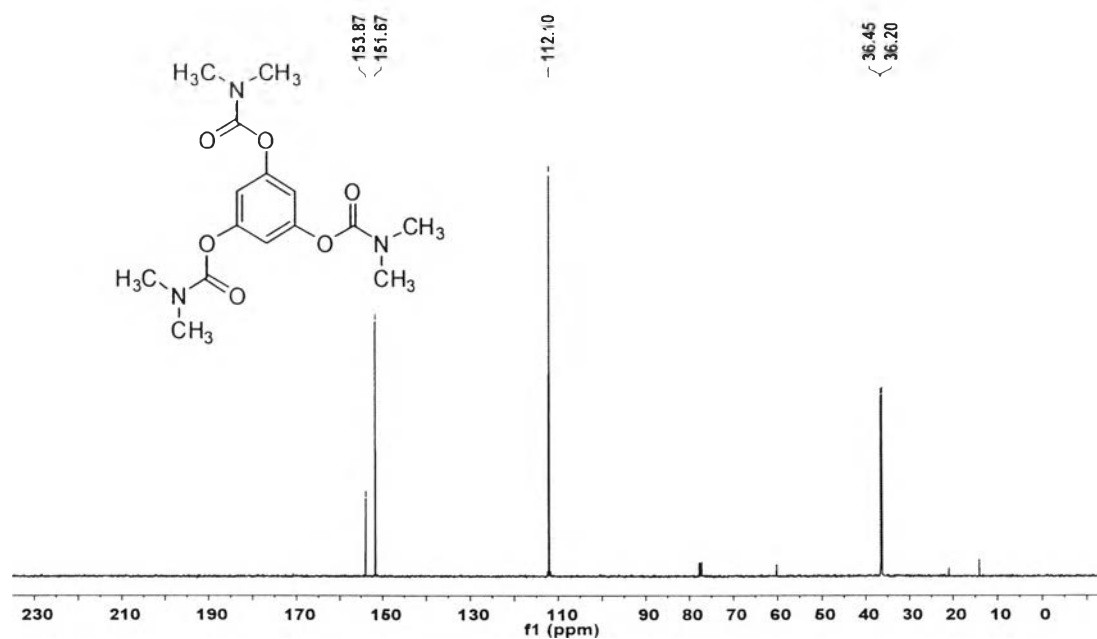


Figure A.12 $^{13}\text{C-NMR}$ spectrum (CDCl_3) of 1,3,5-tris(*N,N*-dimethylcarbamoyl)benzene (57)

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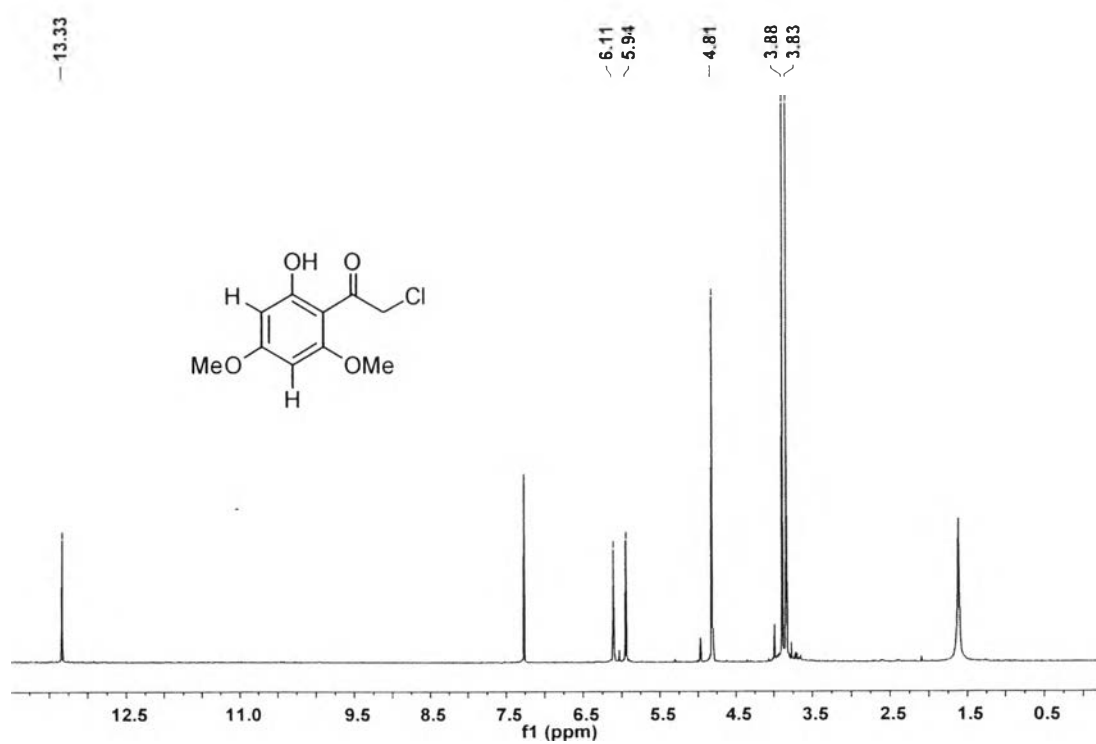


Figure A.15 ¹H-NMR spectrum (CDCl₃) of 2-chloroacetyl-3,5-dimethoxyphenol (63)

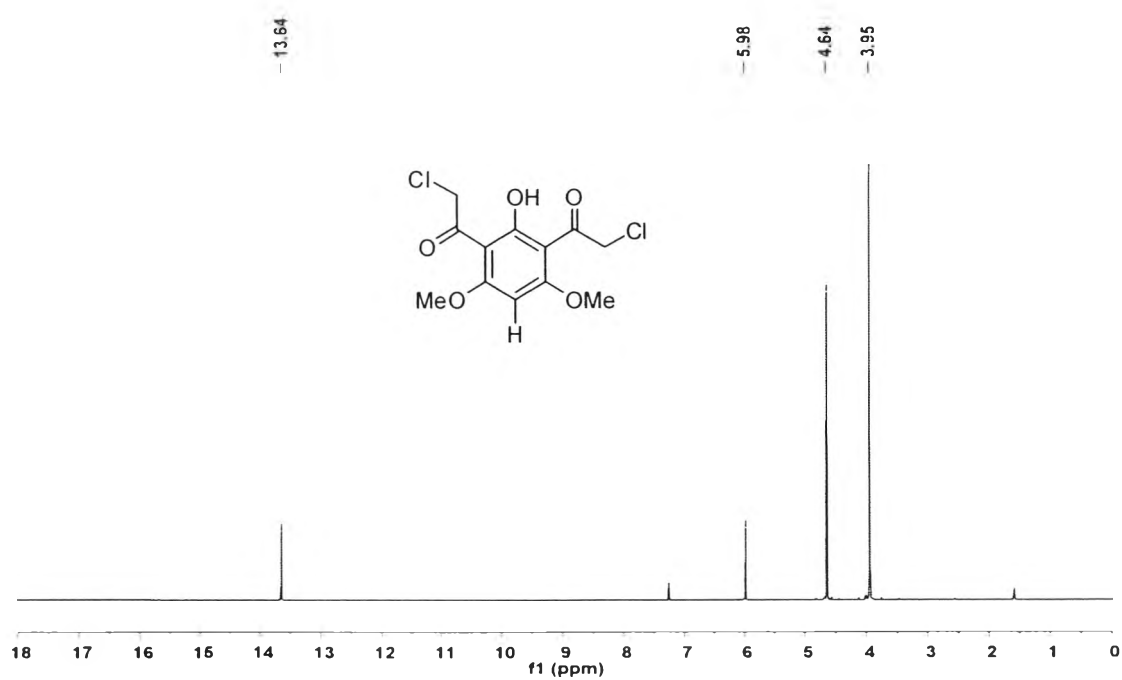


Figure A.16 ¹H-NMR spectrum (CDCl₃) of 2,6-bis(chloroacetyl)-3,5-dimethoxyphenol (64)

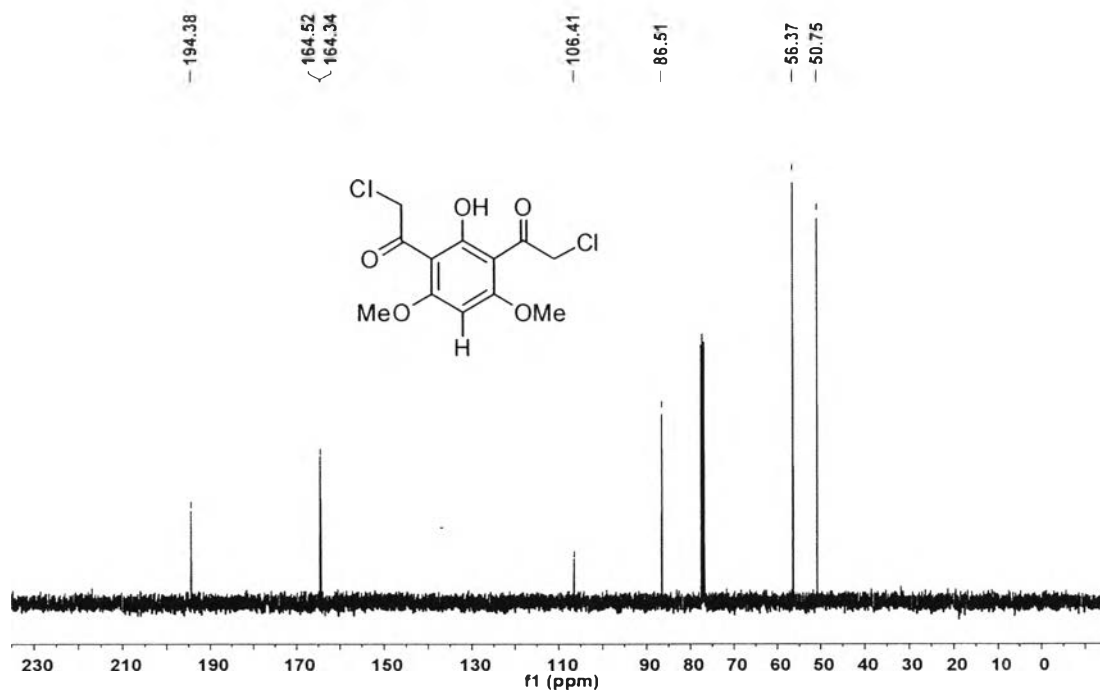


Figure A.17 ^{13}C -NMR spectrum (CDCl_3) of 2,6-bis(chloroacetyl)-3,5-dimethoxy phenol (64)

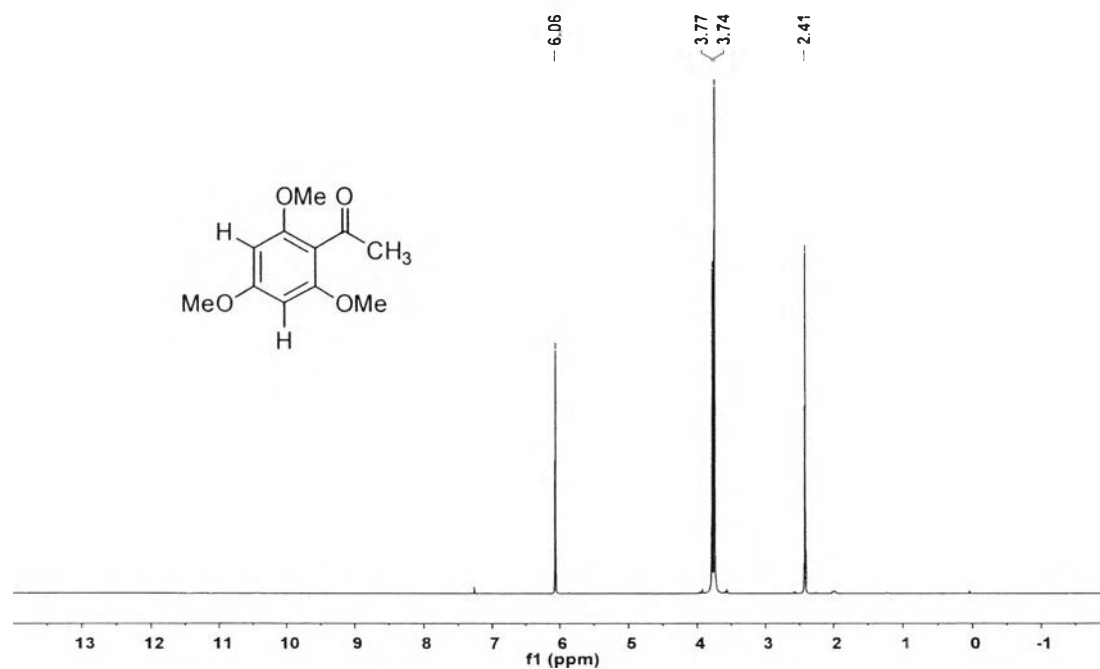


Figure A.18 ^1H -NMR spectrum (CDCl_3) of 2,4,6-trimethoxyacetophenone (65)

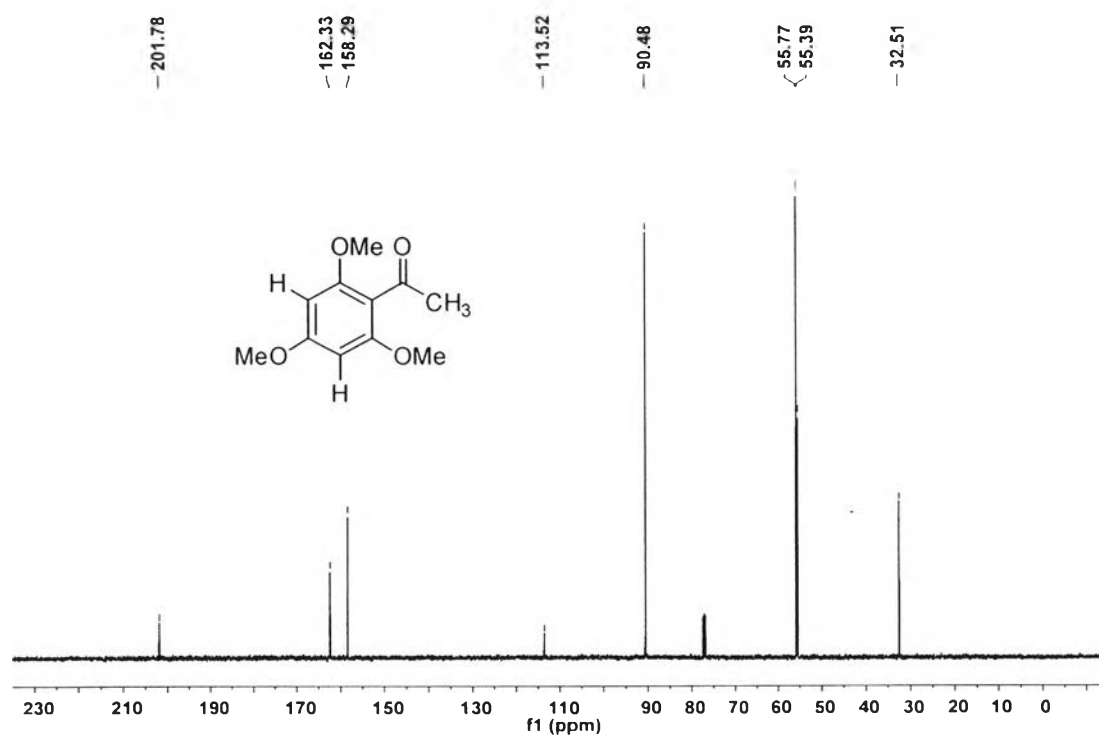


Figure A.19 ^{13}C -NMR spectrum (CDCl_3) of 2,4,6-trimethoxyacetophenone (65)

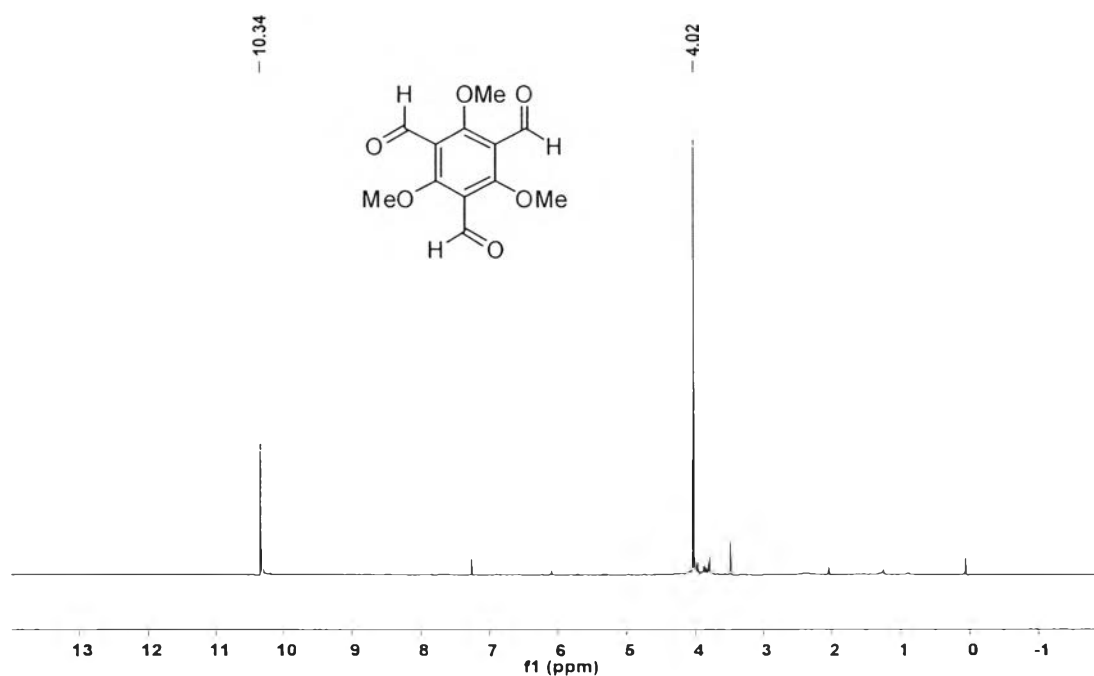


Figure A.20 ^1H -NMR spectrum (CDCl_3) of 1,3,5-triformyl-2,4,6-trimethoxybenzene (66)

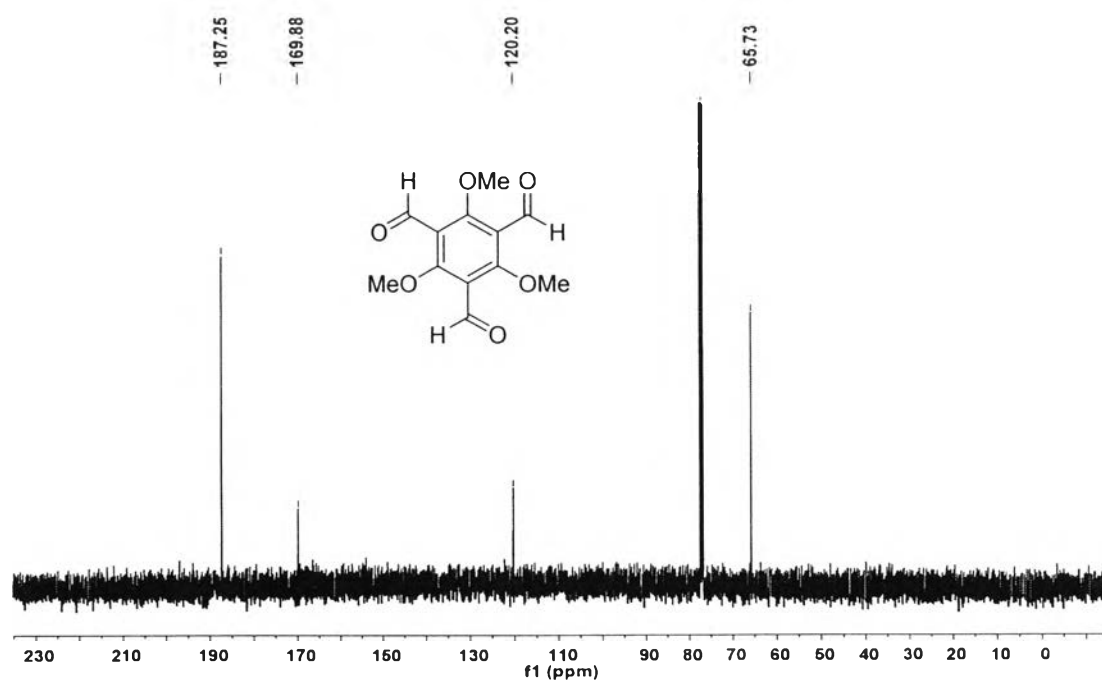


Figure A.21 ^{13}C -NMR spectrum (CDCl_3) of 1,3,5-triformyl-2,4,6-trimethoxybenzene (66)

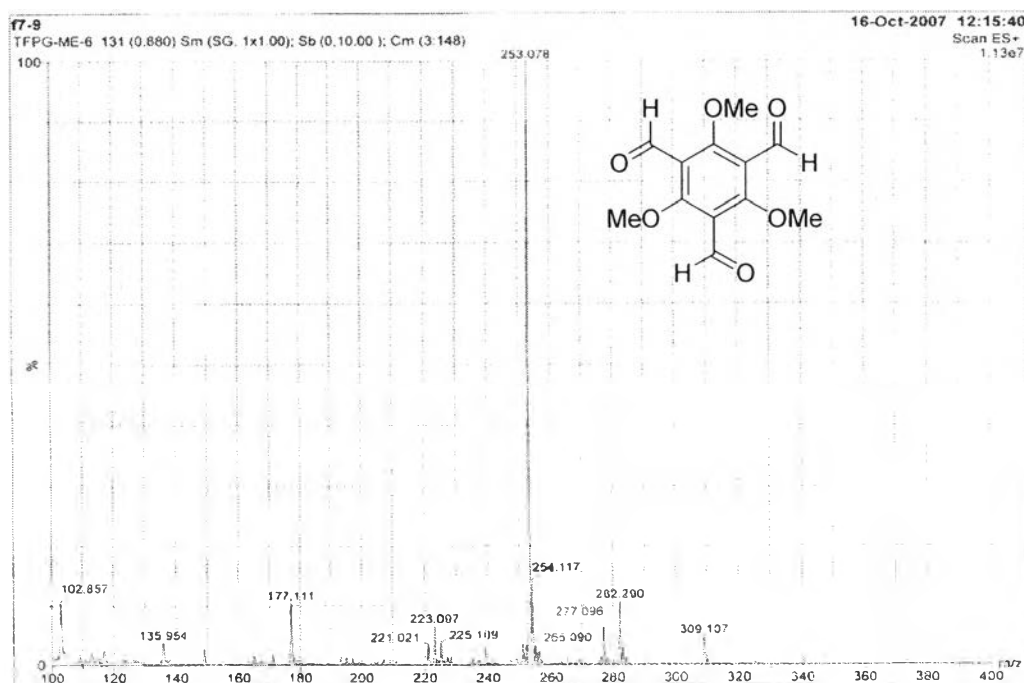


Figure A.22 Mass spectrum of 1,3,5-triformyl-2,4,6-trimethoxybenzene (66)

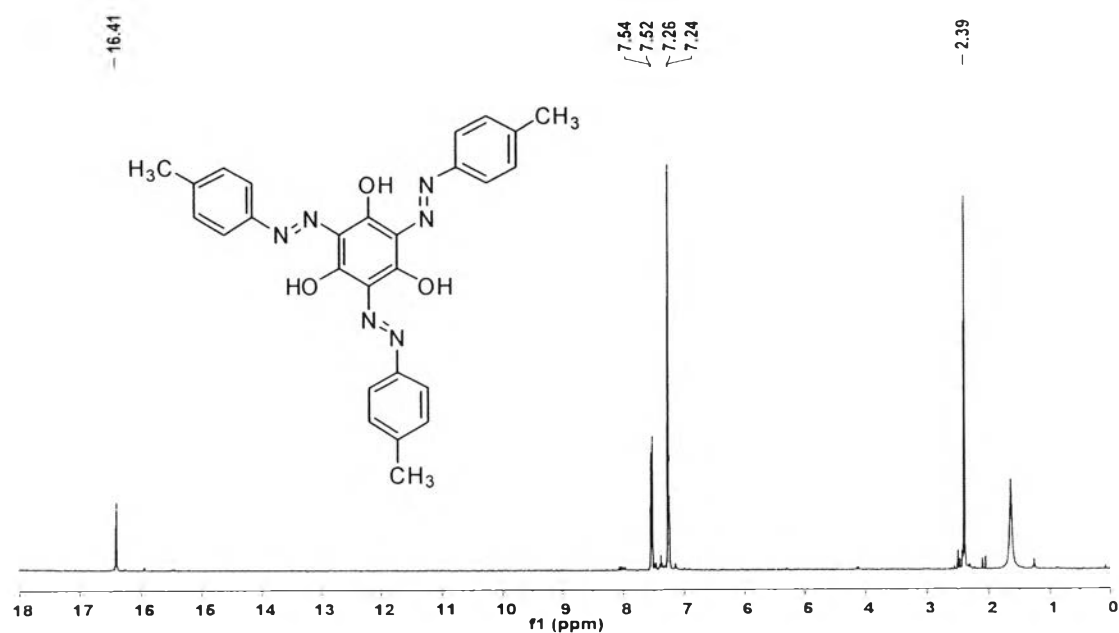


Figure A.23 ¹H-NMR spectrum (CDCl₃) of 1,3,5-tris-(*p*-tolyldiazo)-2,4,6-trihydroxy benzene (69)

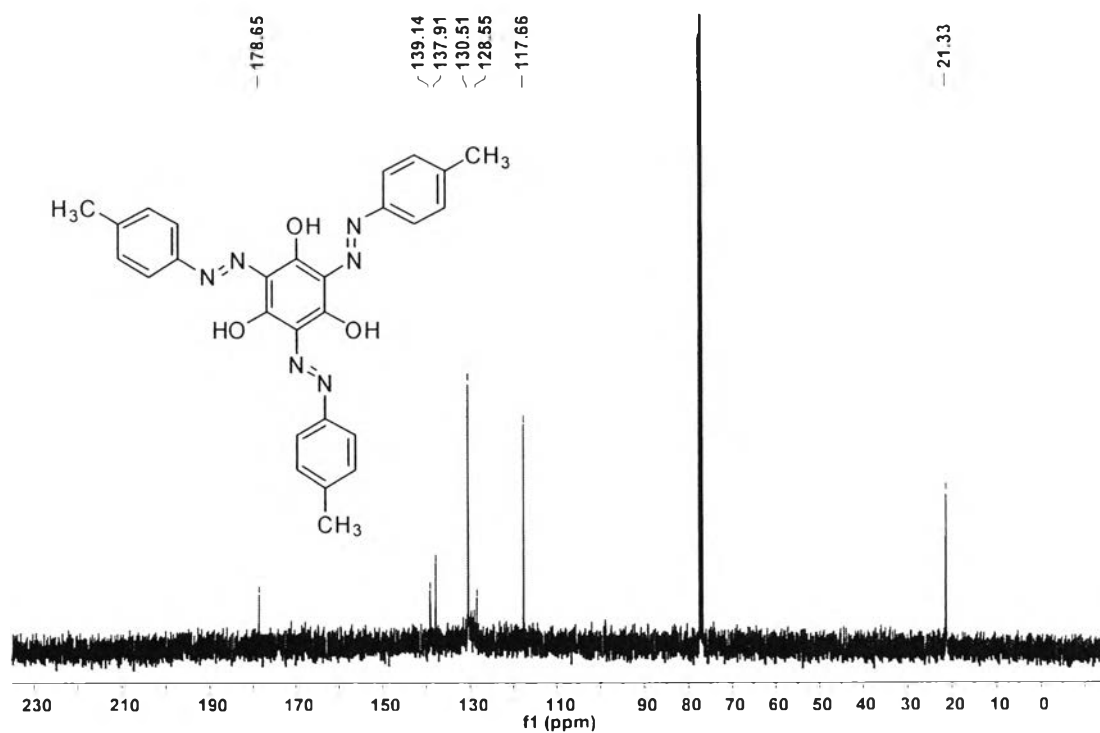


Figure A.24 ¹³C-NMR spectrum (CDCl₃) of 1,3,5-tris-(*p*-tolyldiazo)-2,4,6-trihydroxy benzene (69)

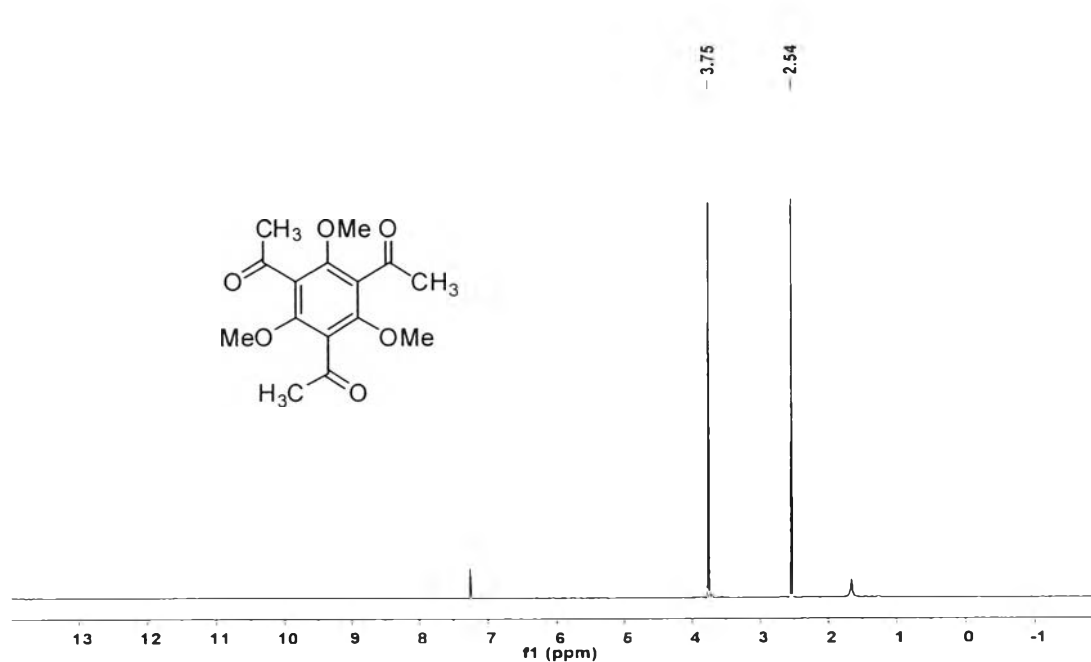


Figure A.25 ¹H-NMR spectrum (CDCl₃) of 1,3,5-triacetyl-2,4,6-trimethoxybenzene (70)

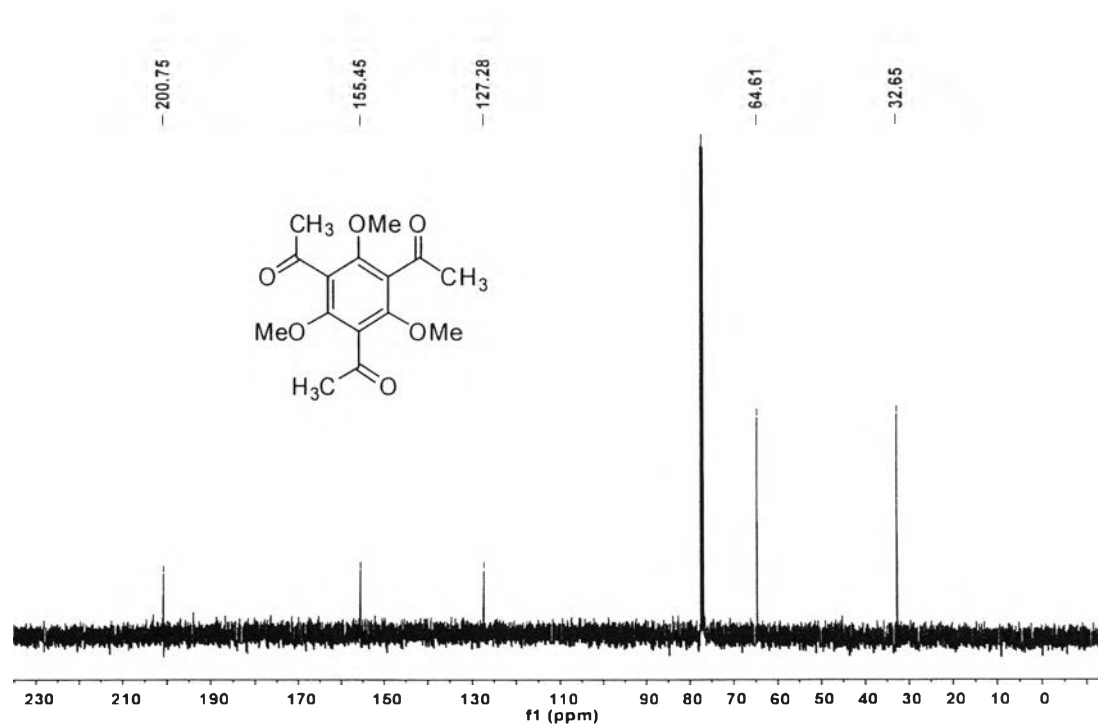


Figure A.26 ¹³C-NMR spectrum (CDCl₃) of 1,3,5-triacetyl-2,4,6-trimethoxybenzene (70)

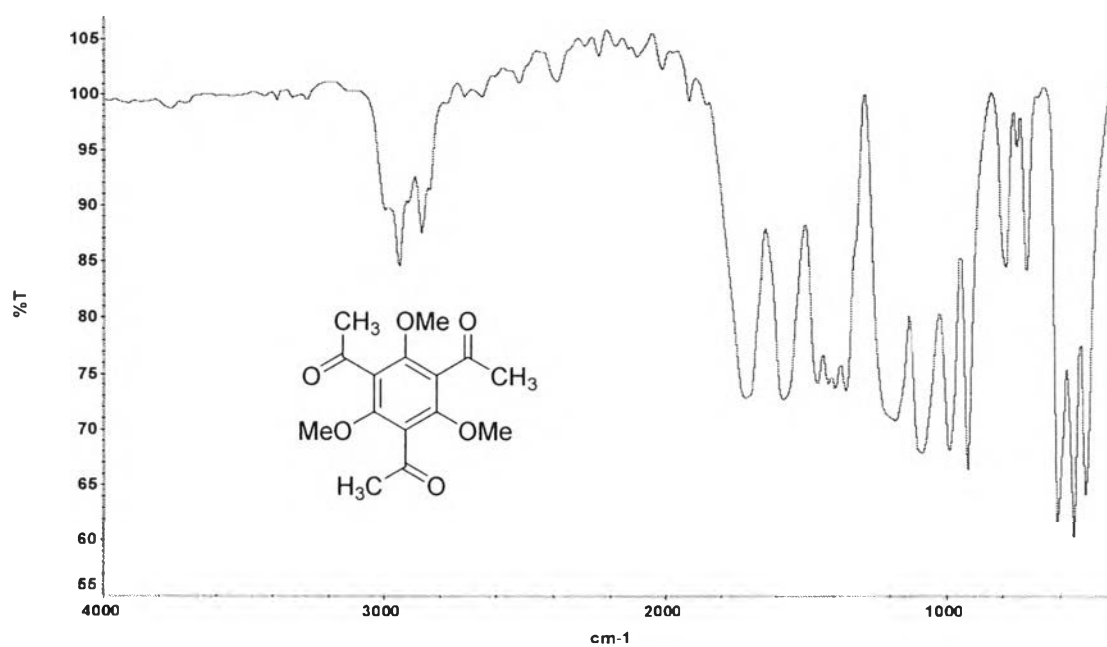


Figure A.27 IR spectrum (KBr) of 1,3,5-triacetyl-2,4,6-trimethoxybenzene (70)

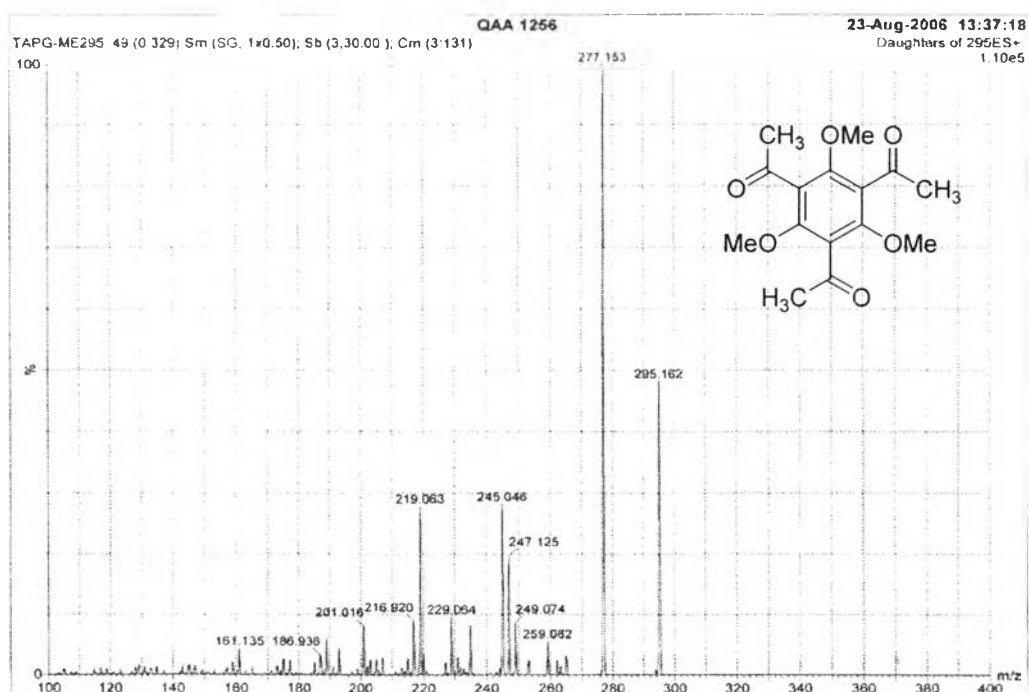


Figure A.28 Mass spectrum of 1,3,5-triacetyl-2,4,6-trimethoxybenzene (70)

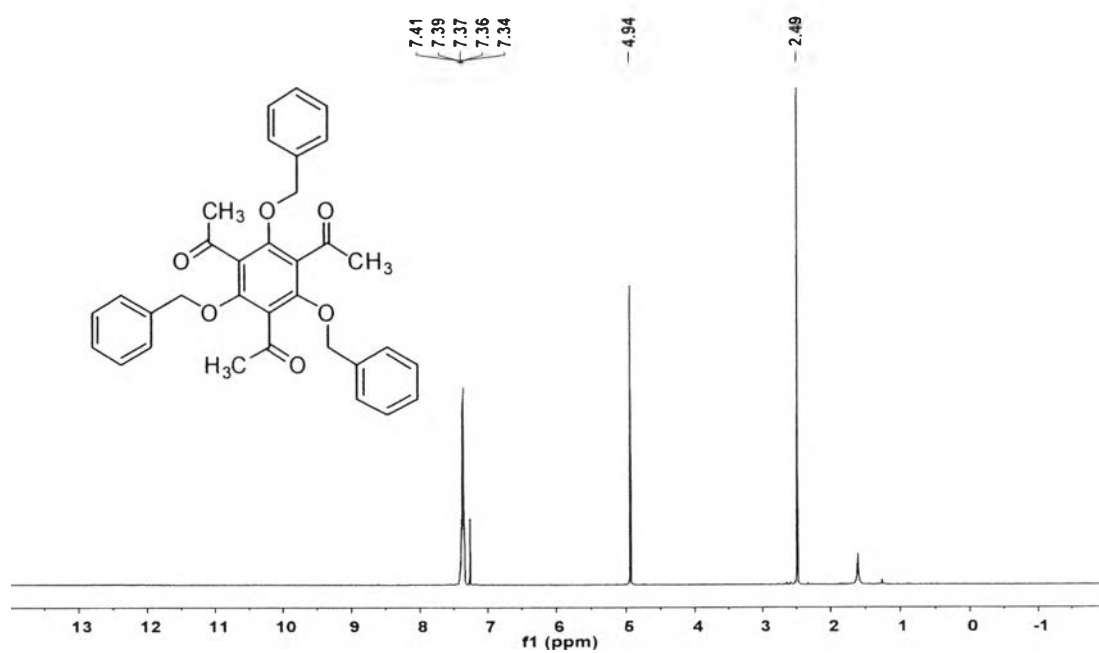


Figure A.29 ¹H-NMR spectrum (CDCl₃) of 1,3,5-triacetyl-2,4,6-tribenzyloxybenzene (71)

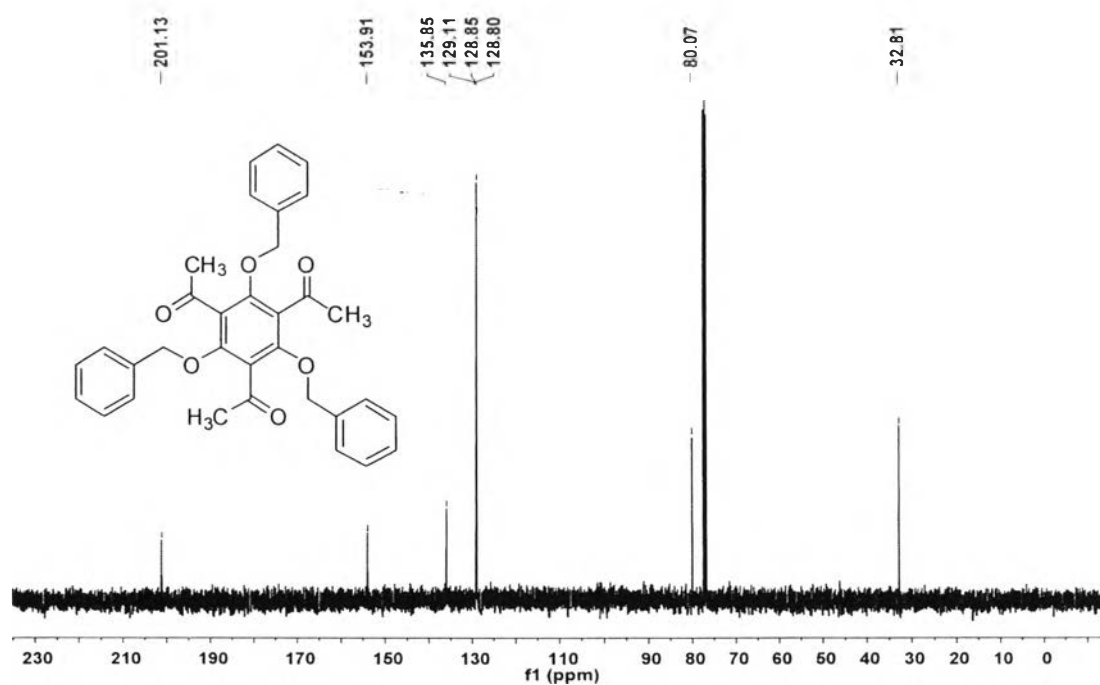


Figure A.30 ¹³C-NMR spectrum (CDCl₃) of 1,3,5-triacetyl-2,4,6-tribenzyloxybenzene (71)

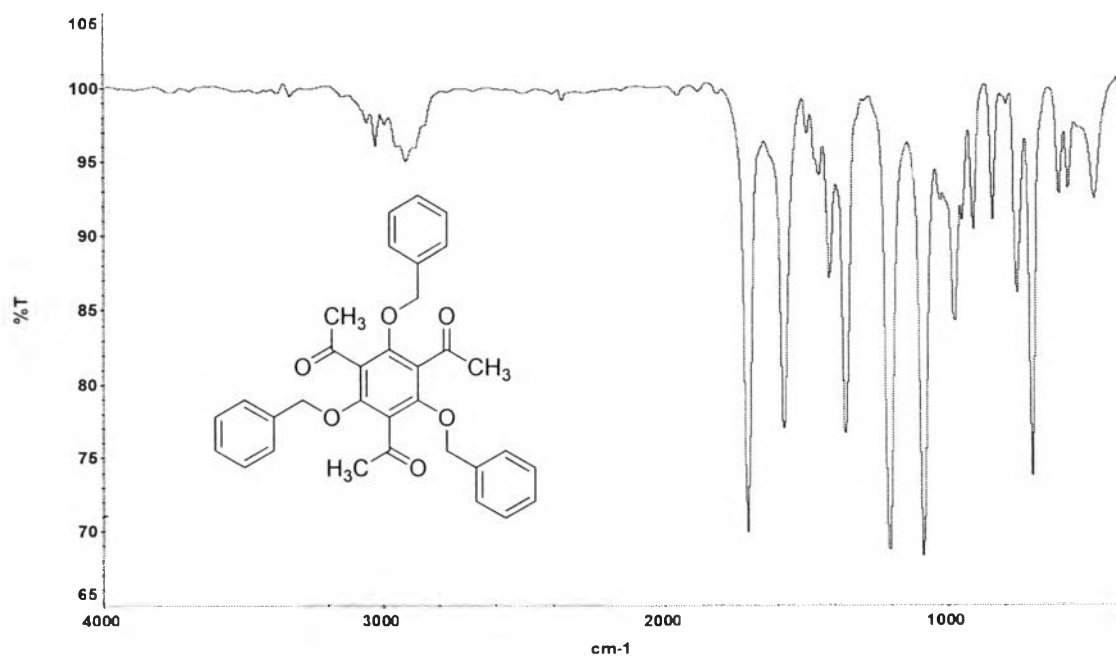


Figure A.31 IR spectrum (KBr) of 1,3,5-triacetyl-2,4,6-tribenzyloxybenzene (71)

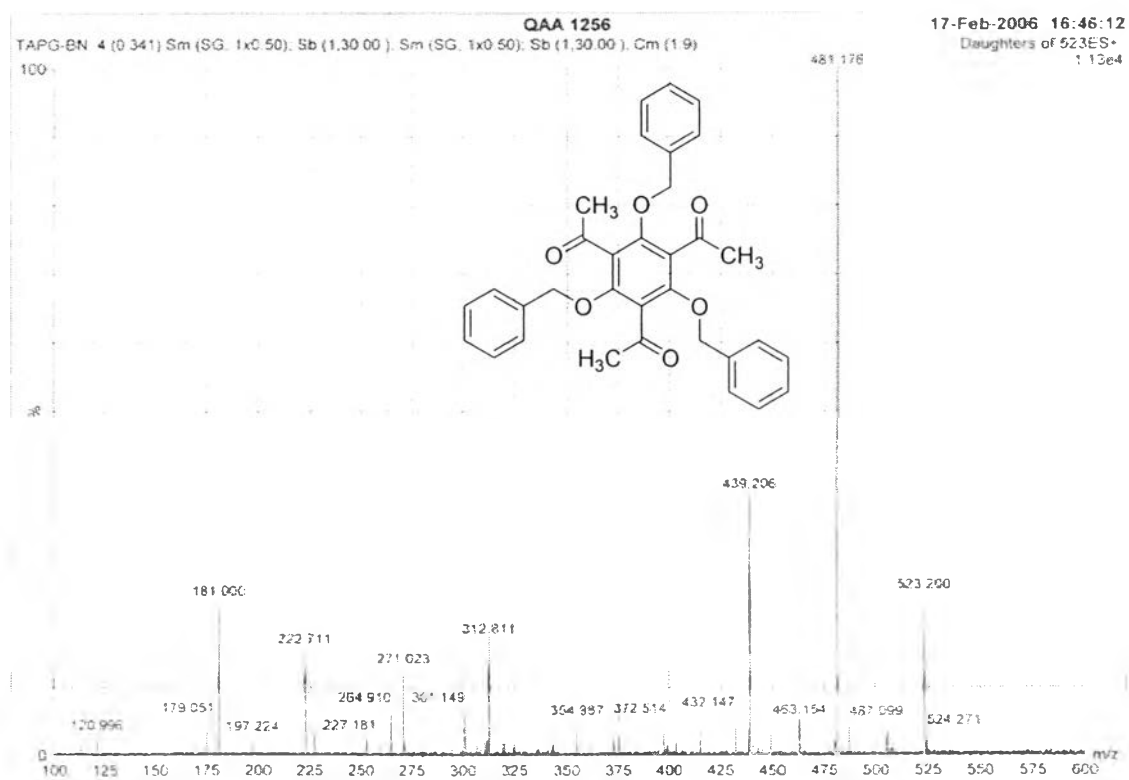


Figure A.32 Mass spectrum of 1,3,5-triacetyl-2,4,6-tribenzyloxybenzene (71)

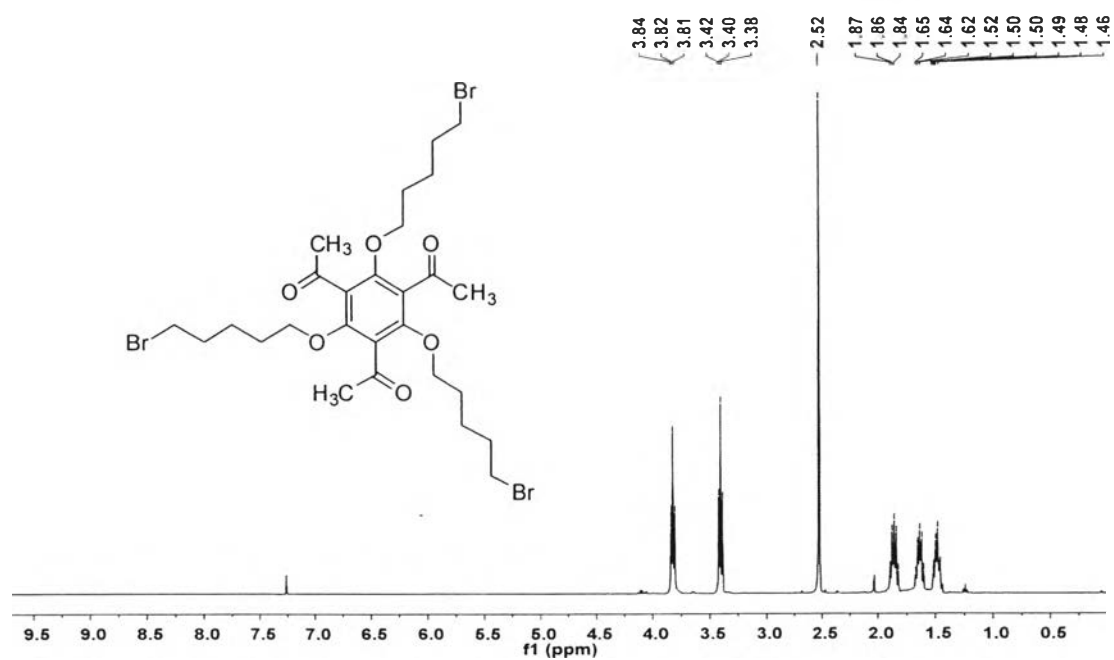


Figure A.33 $^1\text{H-NMR}$ spectrum (CDCl_3) of 1,3,5-triacetyl-2,4,6-tris(5'-bromopentyl oxy)benzene (22)

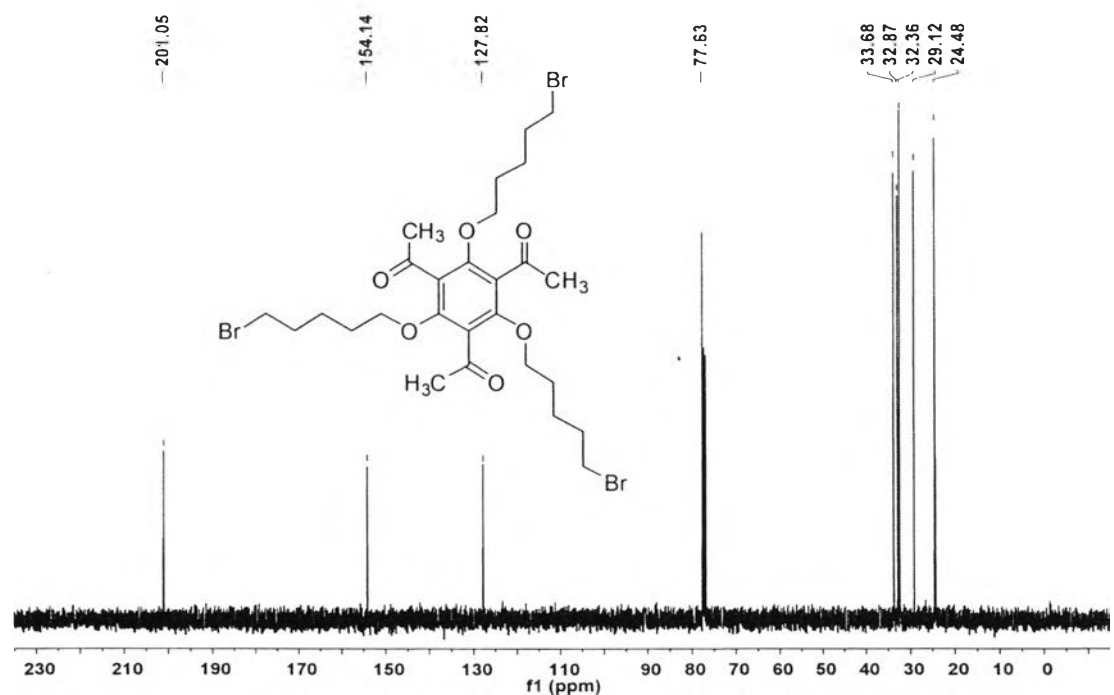


Figure A.34 $^{13}\text{C-NMR}$ spectrum (CDCl_3) of 1,3,5-triacetyl-2,4,6-tris(5'-bromopentyl oxy)benzene (72)

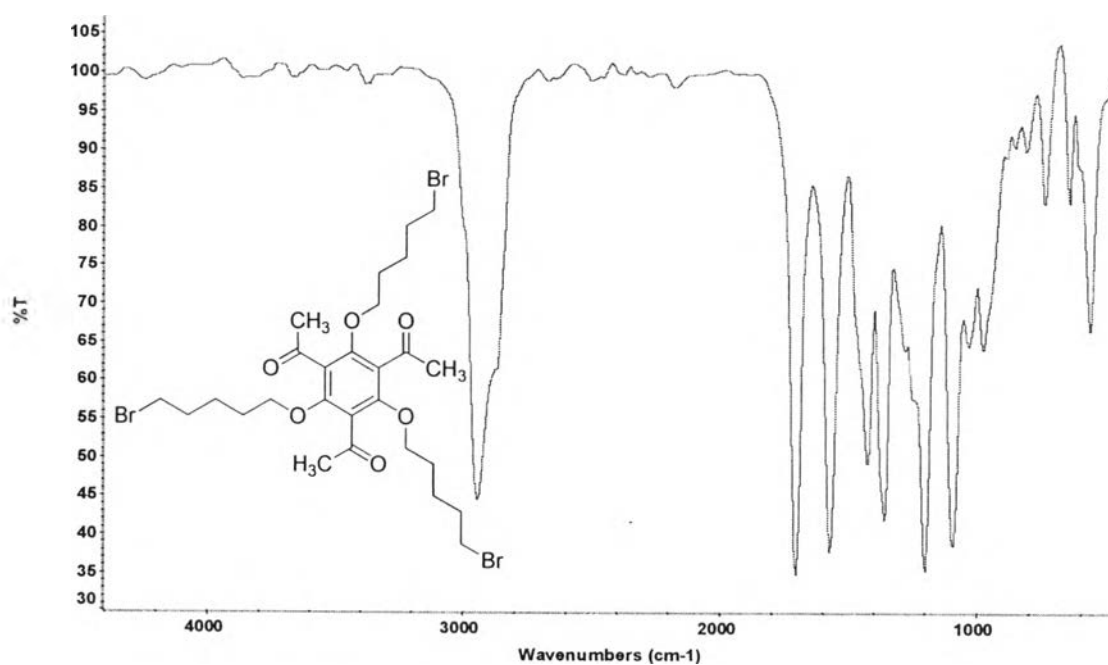


Figure A.35 IR spectrum (KBr) of 1,3,5-triacetyl-2,4,6-tris(5'-bromopentyloxy)benzene (72)

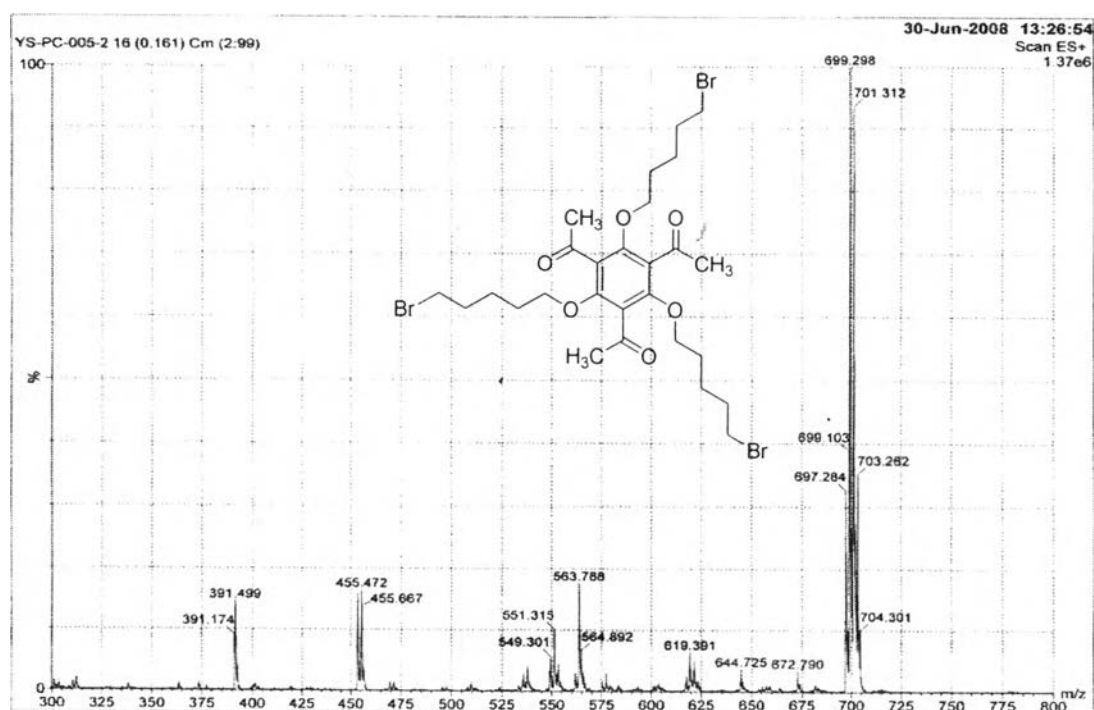


Figure A.36 Mass spectrum of 1,3,5-triacetyl-2,4,6-tris(5'-bromopentyloxy)benzene (72)

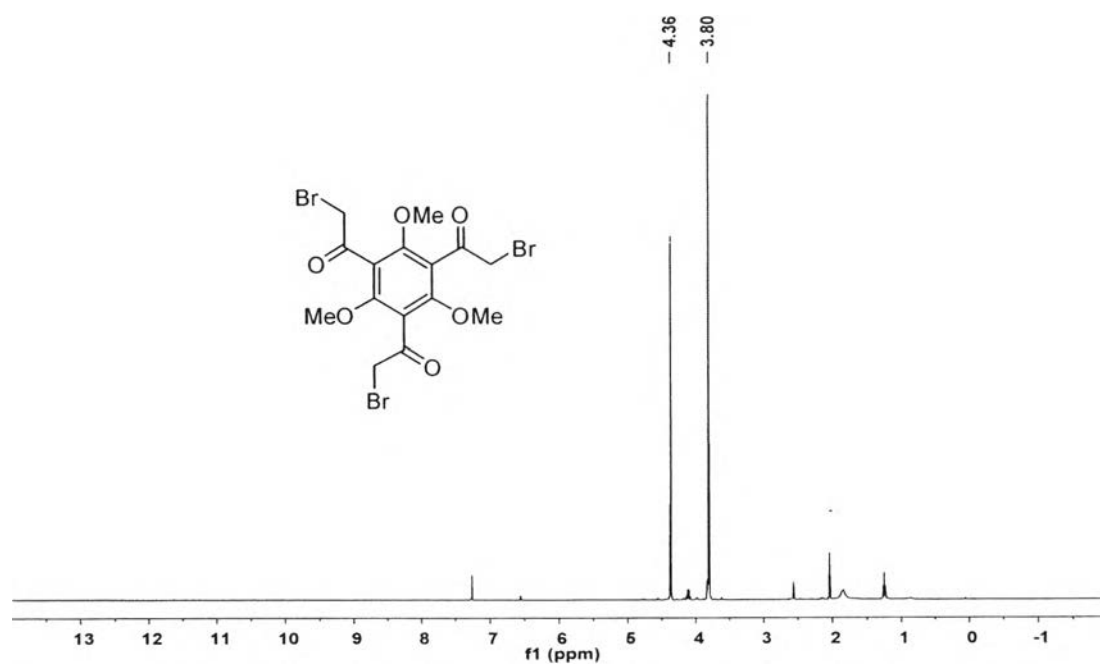


Figure A.37 ¹H-NMR spectrum (CDCl₃) of 1,3,5-tris(α-bromoacetyl)-2,4,6-trimethoxybenzene (**73**)

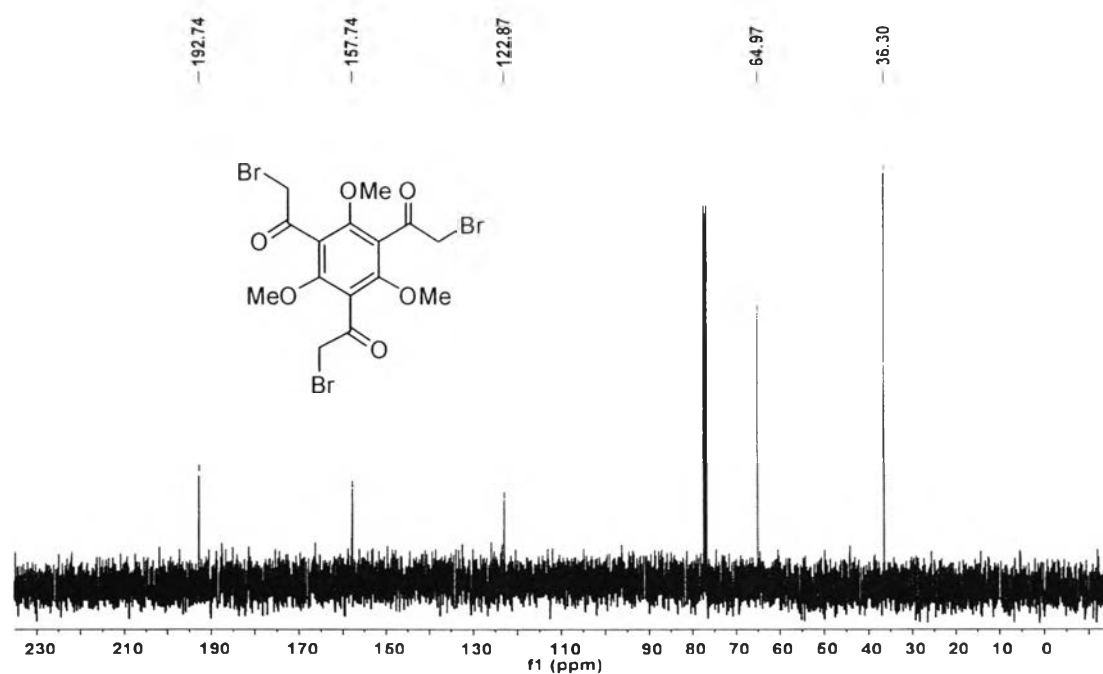


Figure A.38 ¹³C-NMR spectrum (CDCl₃) of 1,3,5-tris(α-bromoacetyl)-2,4,6-trimethoxybenzene (**73**)

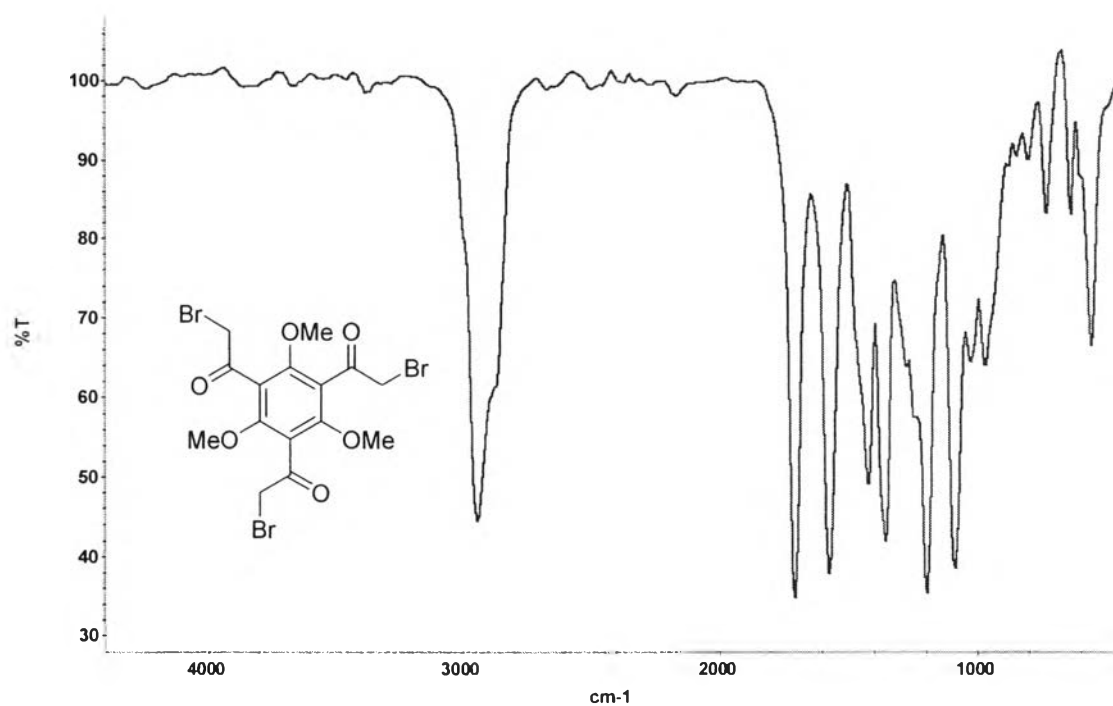


Figure A.39 IR spectrum (nujol) of 1,3,5-tris(α -bromoacetyl)-2,4,6-trimethoxybenzene (73)

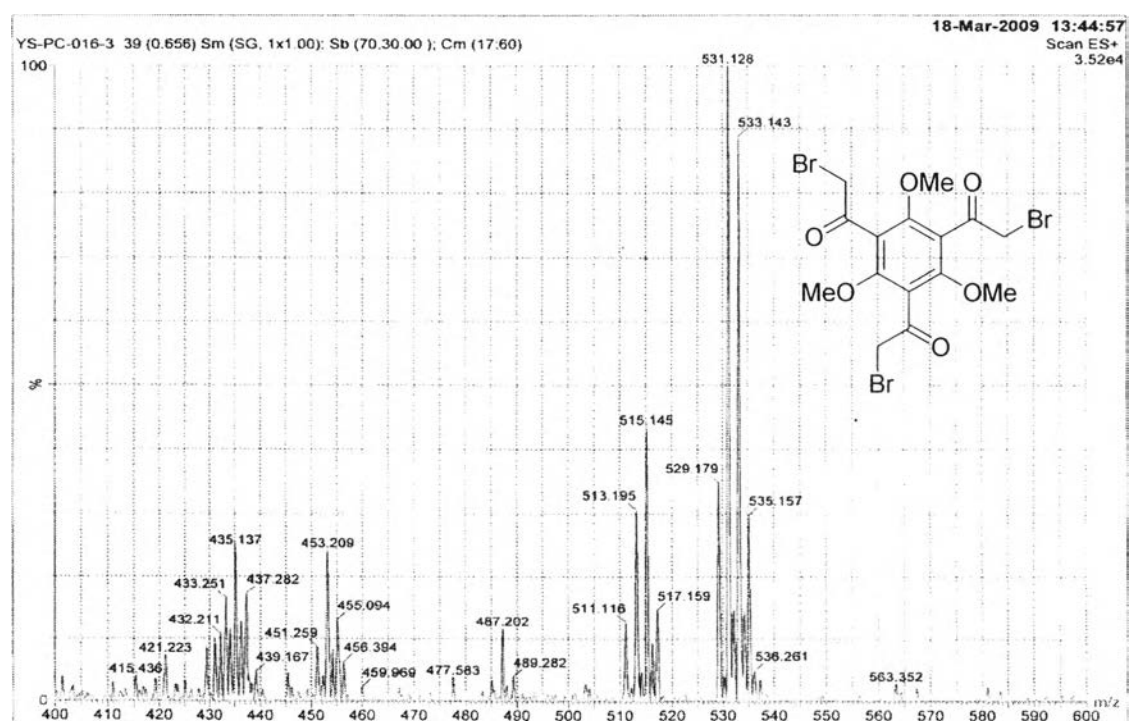


Figure A.40 Mass spectrum of 1,3,5-tris(α -bromoacetyl)-2,4,6-trimethoxybenzene (73)

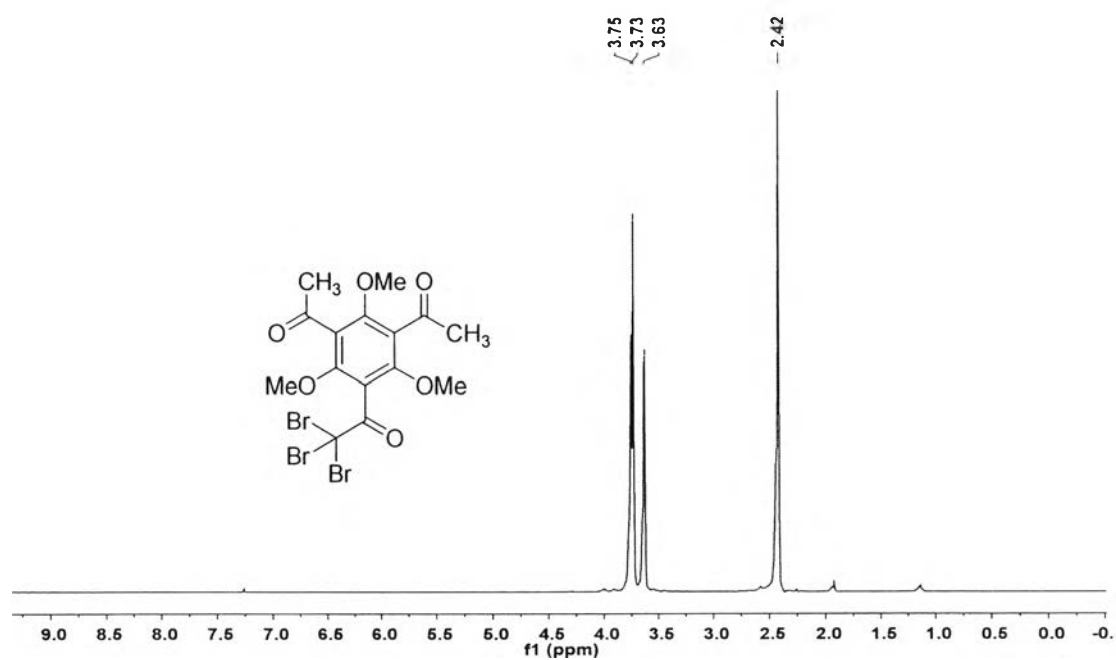


Figure A.41 ¹H-NMR spectrum (CDCl₃) of 1-tribromoacetyl-3,5-diacetyl-2,4,6-trimethoxybenzene (74)

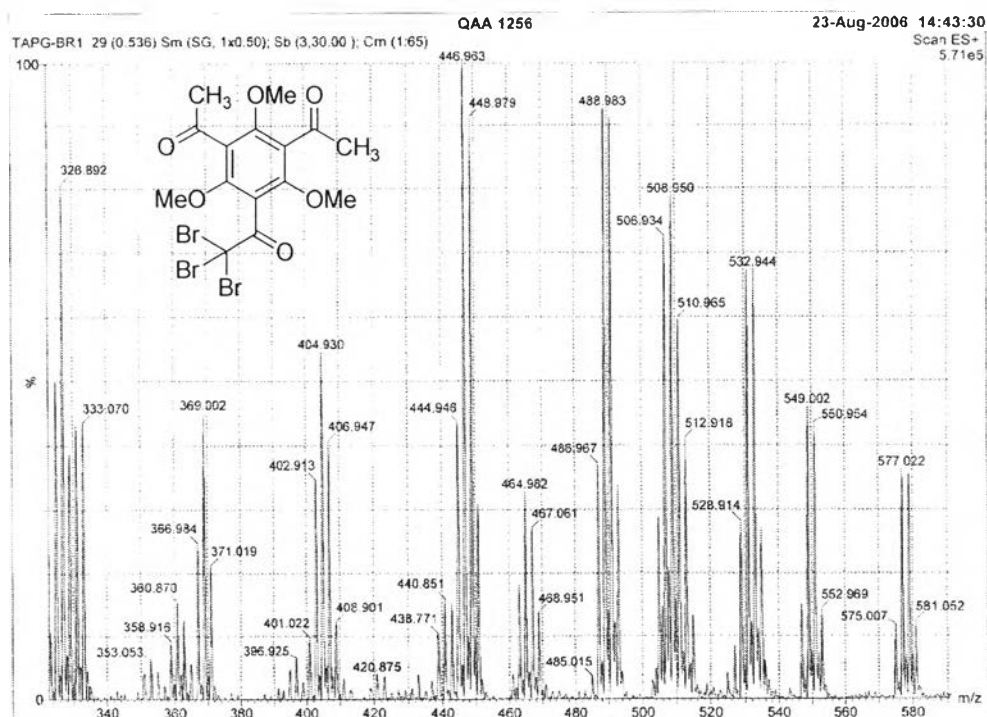


Figure A.42 Mass spectrum of 1-tribromoacetyl-3,5-diacetyl-2,4,6-trimethoxybenzene (74)

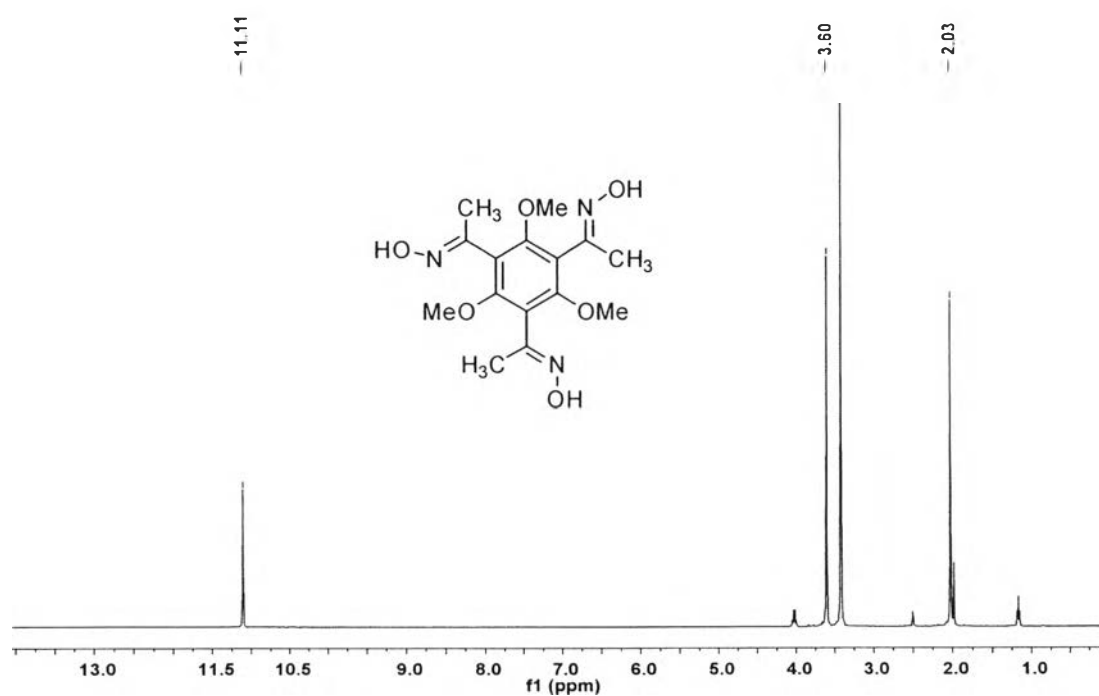


Figure A.43 ¹H-NMR spectrum (DMSO-*d*₆) of 1,3,5-tris(*N*-hydroxyimino)ethyl-2,4,6-trimethoxybenzene (75)

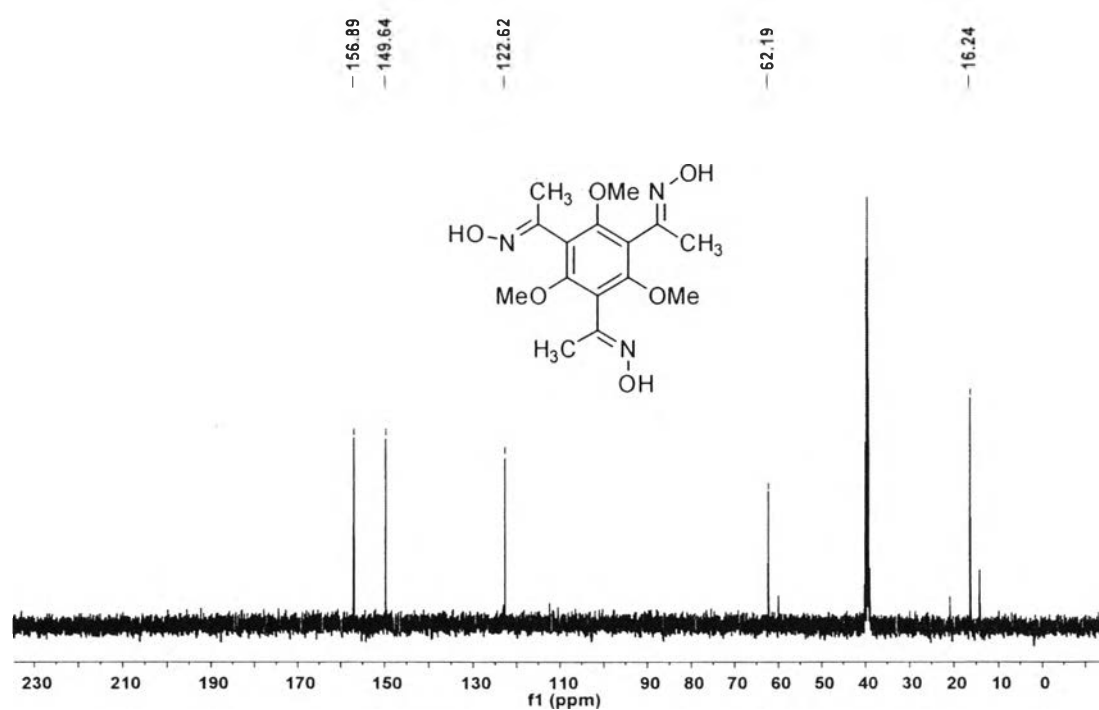


Figure A.44 ¹³C-NMR spectrum (DMSO-*d*₆) of 1,3,5-tris(*N*-hydroxyimino)ethyl-2,4,6-trimethoxybenzene (75)

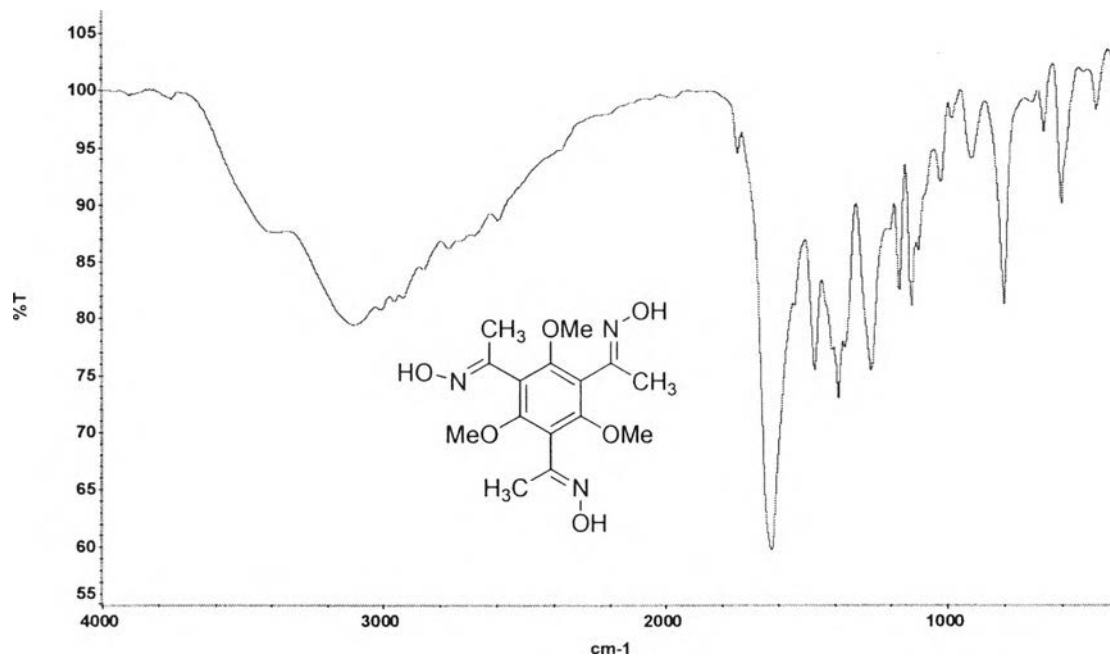


Figure A.45 IR spectrum (KBr) of 1,3,5-tris(*N*-hydroxyimino)ethyl-2,4,6-trimethoxybenzene (75)

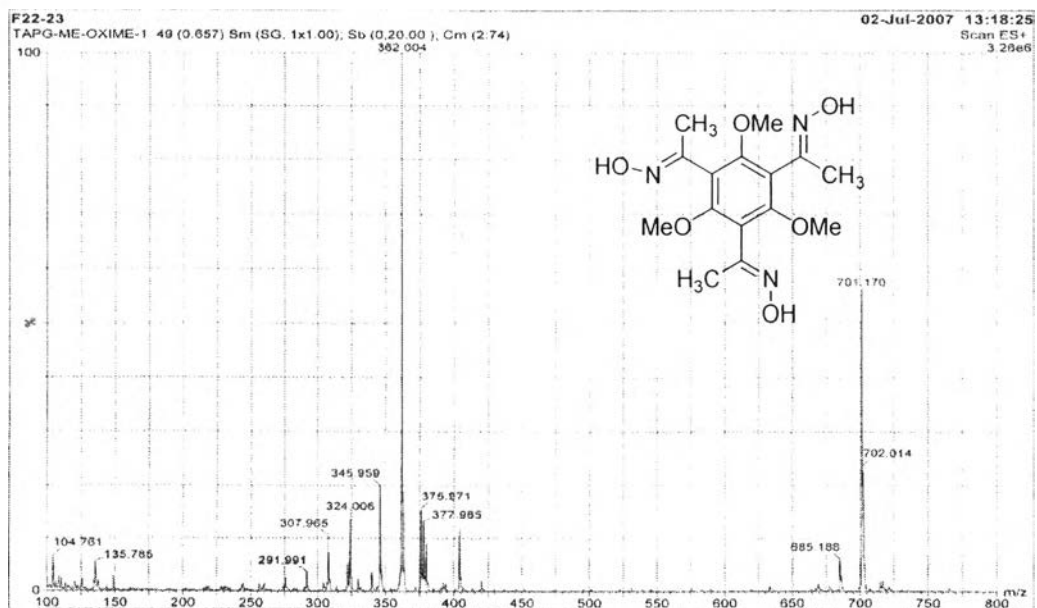


Figure A.46 Mass spectrum of 1,3,5-tris(*N*-hydroxyimino)ethyl-2,4,6-trimethoxybenzene (75)

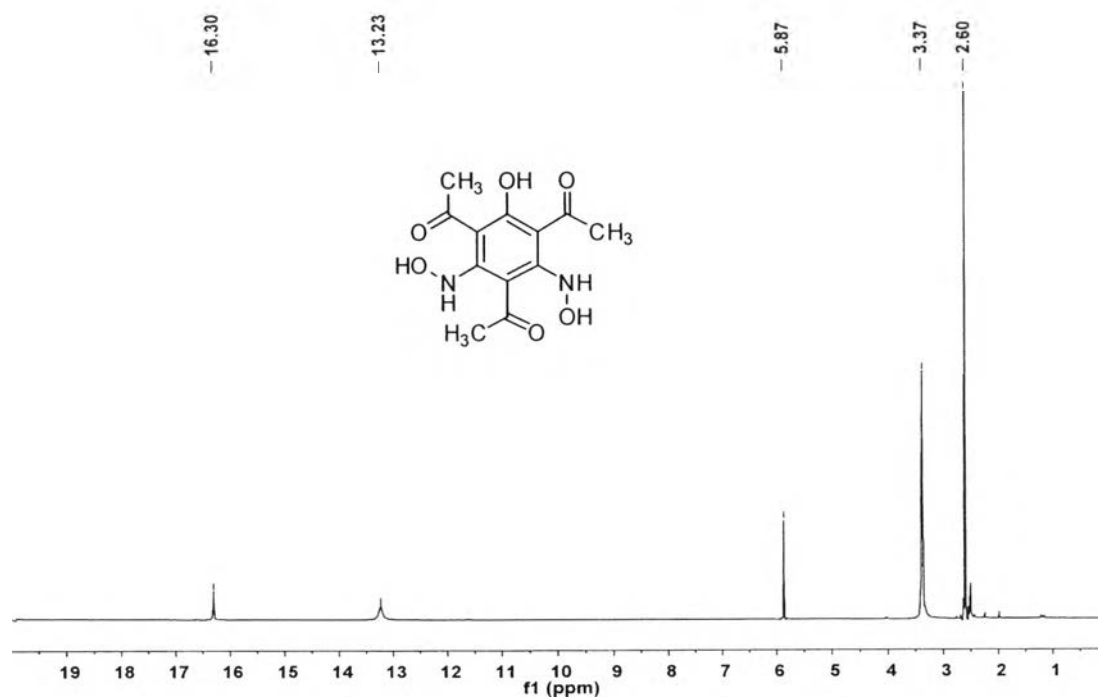


Figure A.47 $^1\text{H-NMR}$ spectrum (DMSO- d_6) of compound 76

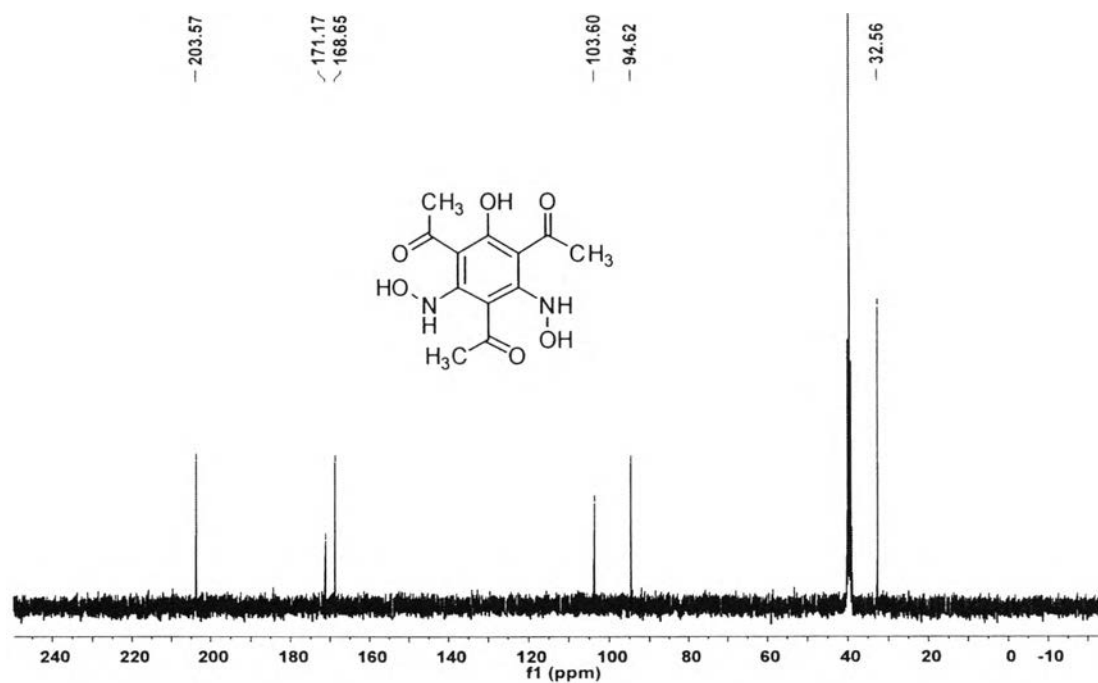


Figure A.48 $^{13}\text{C-NMR}$ spectrum (DMSO- d_6) of compound 76

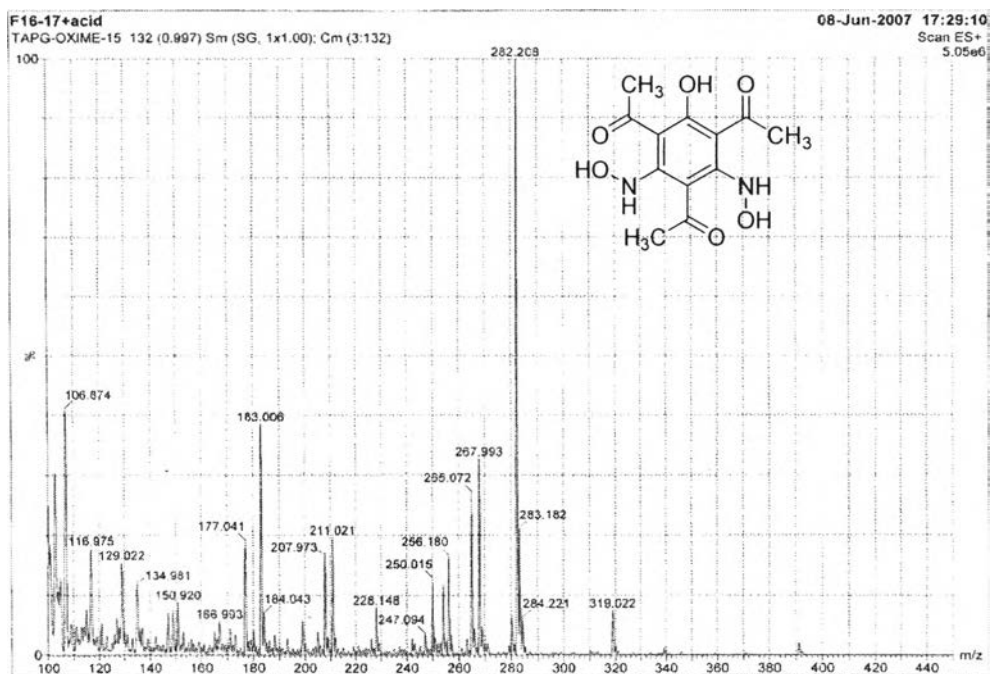


Figure A.49 Mass spectrum of compound 76

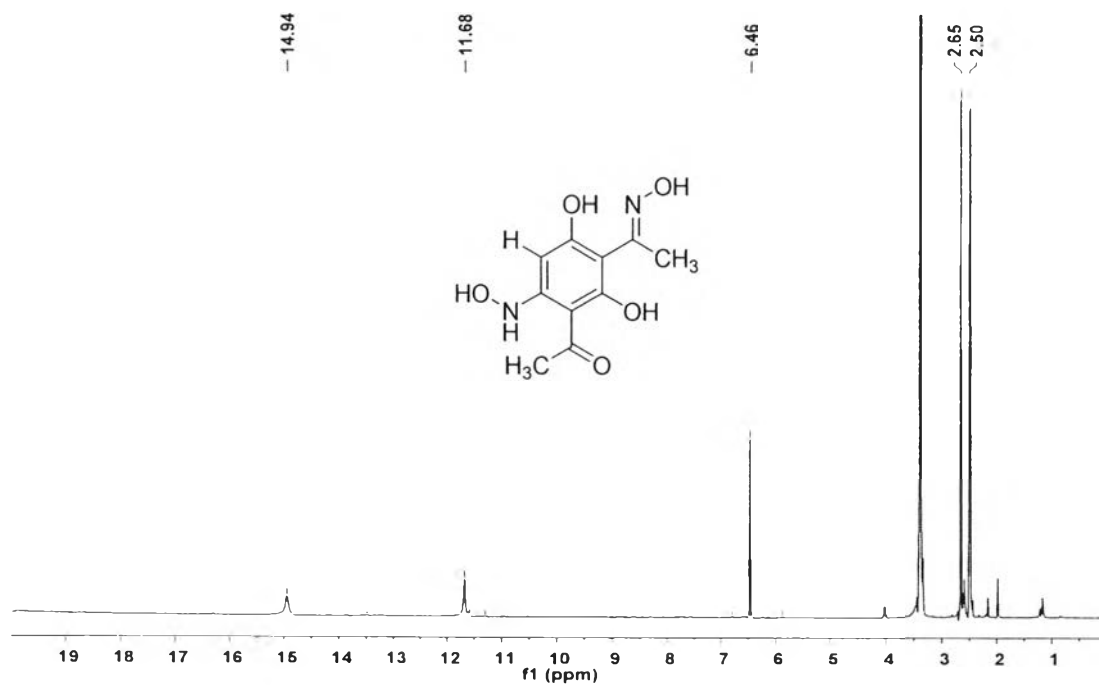


Figure A.50 ¹H-NMR spectrum (DMSO-*d*₆) of compound 77

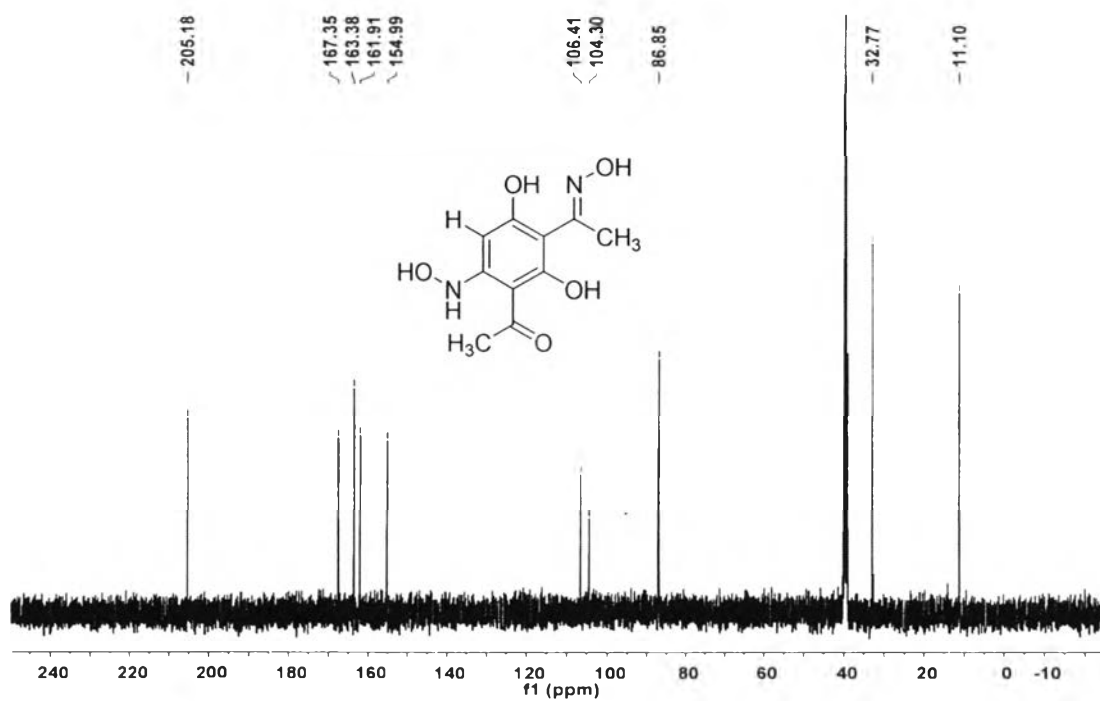


Figure A.51 $^{13}\text{C-NMR}$ spectrum (DMSO- d_6) of compound 77

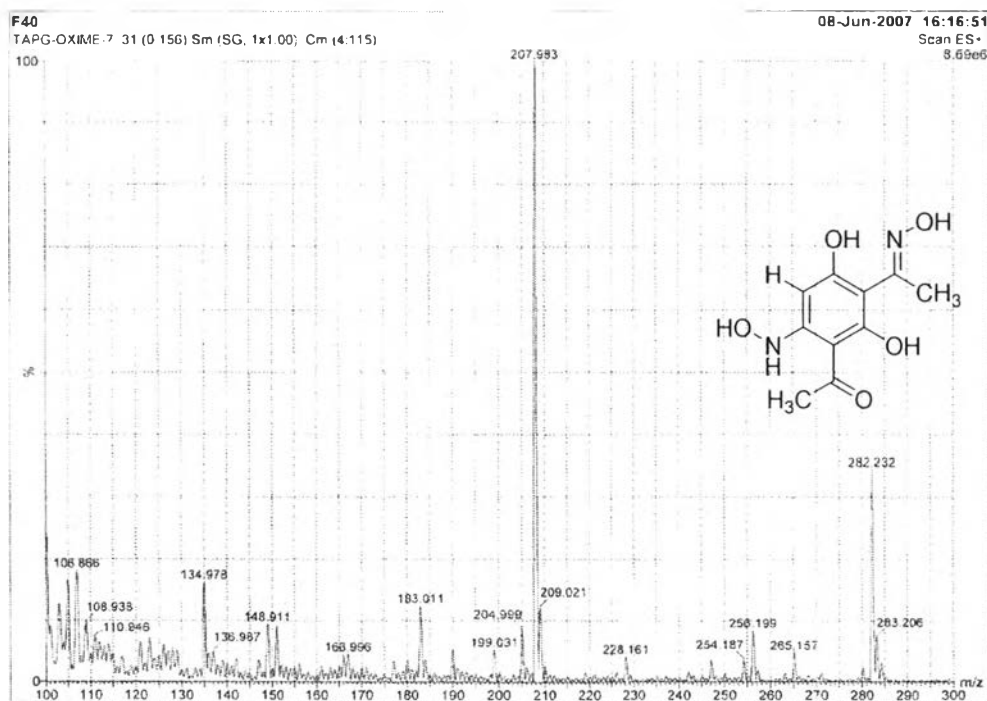


Figure A.52 Mass spectrum of compound 77

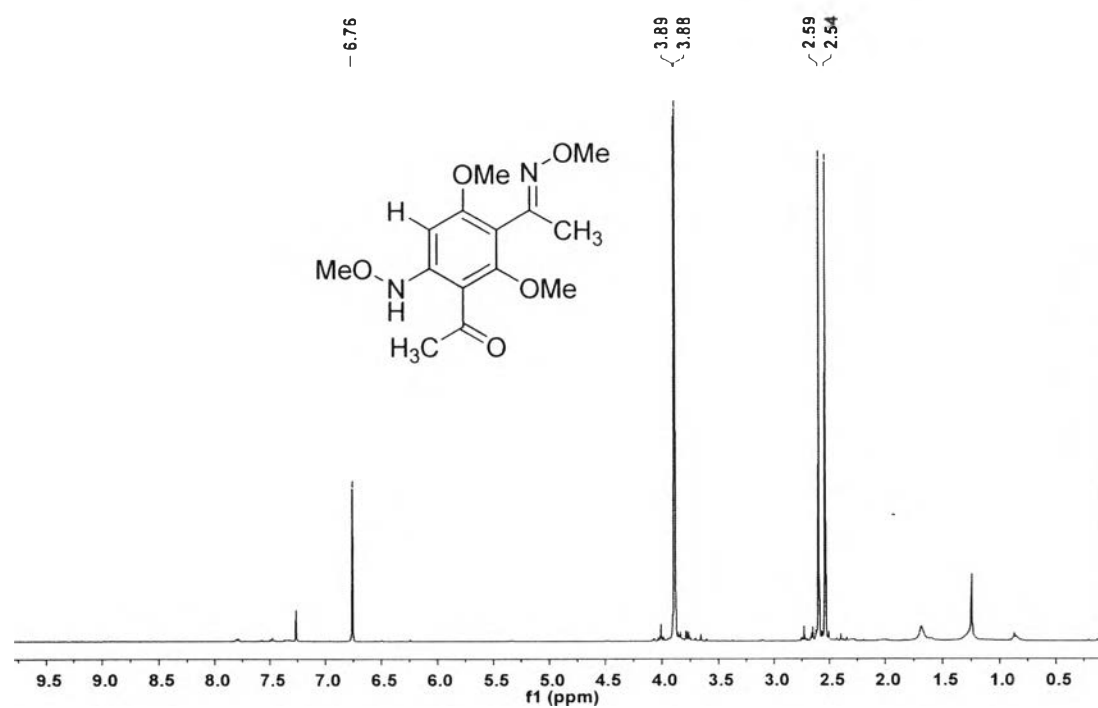


Figure A.53 ¹H-NMR spectrum (CDCl₃) of compound 78

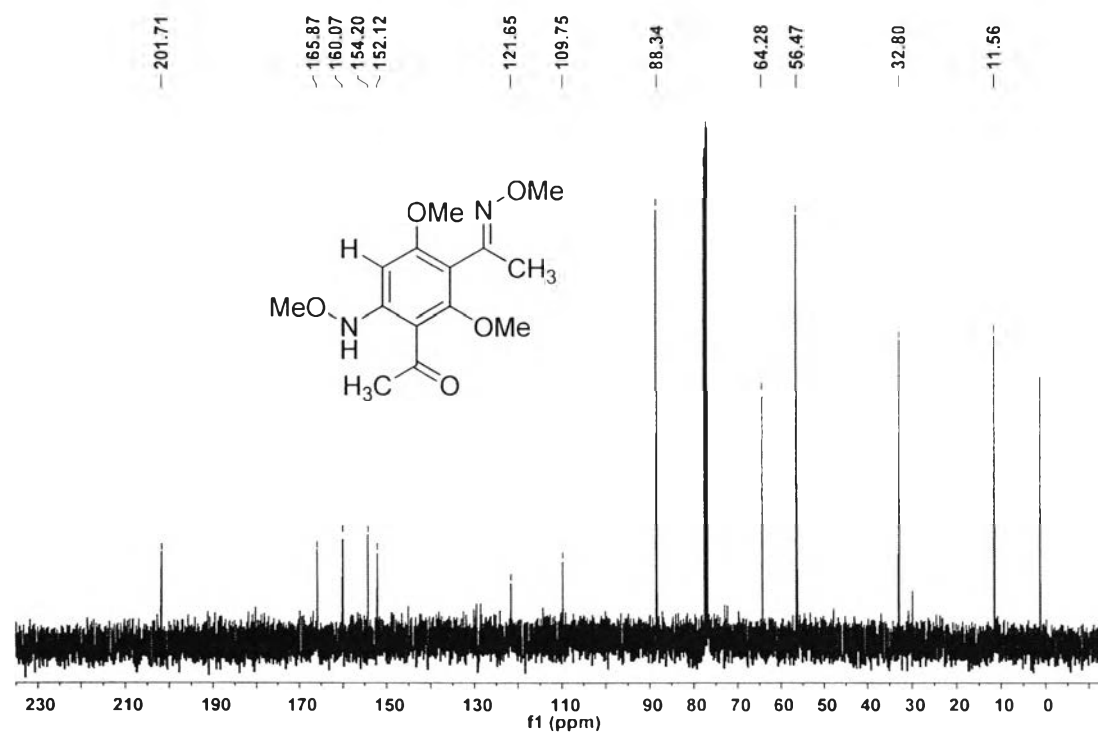


Figure A.54 ¹³C-NMR spectrum (CDCl₃) of compound 78

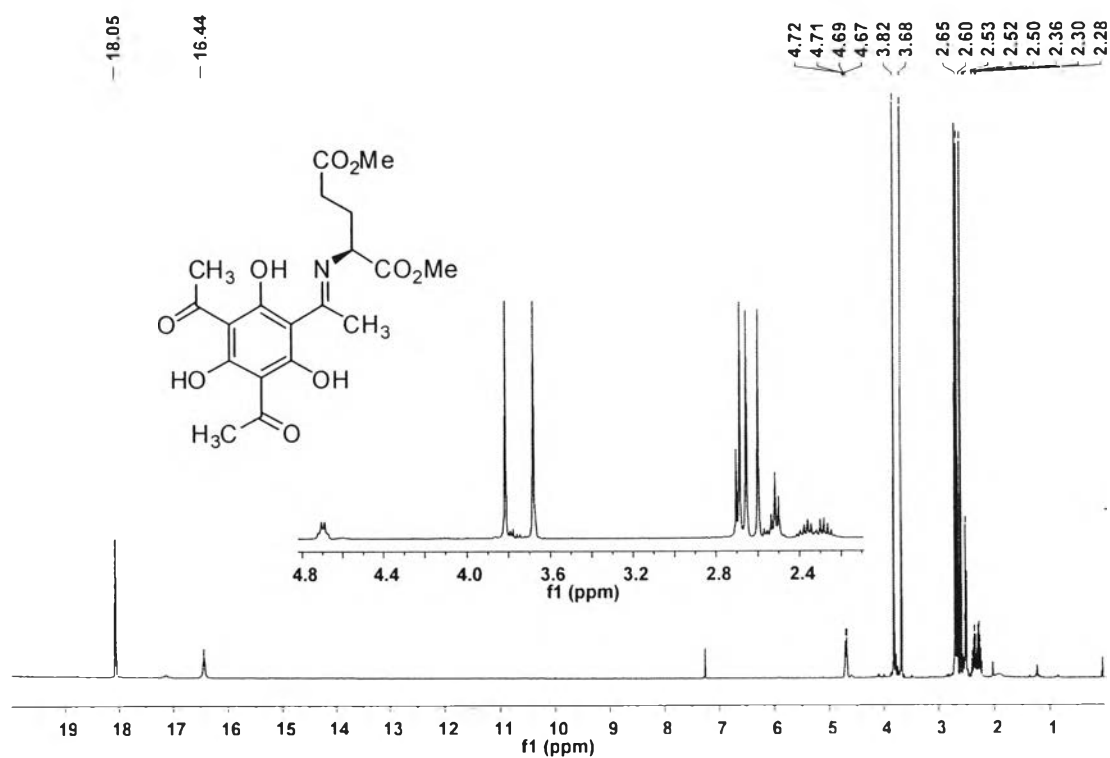


Figure A.55 $^1\text{H-NMR}$ spectrum (CDCl₃) of compound 83

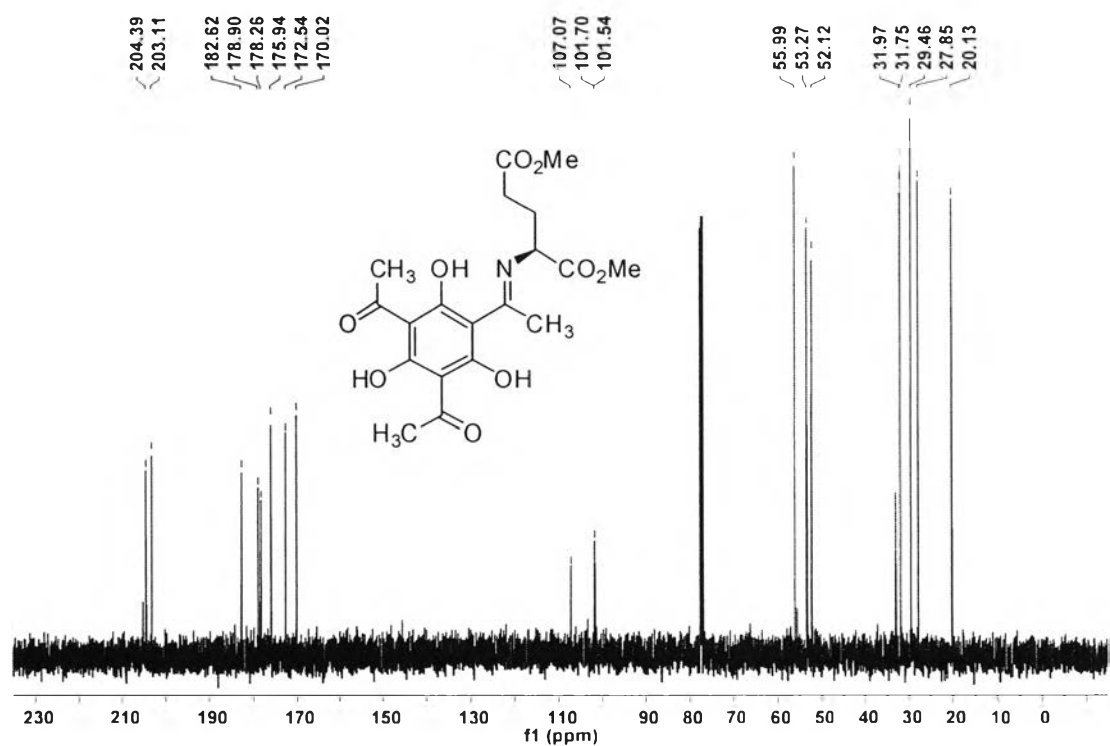


Figure A.56 $^{13}\text{C-NMR}$ spectrum (CDCl₃) of compound 83

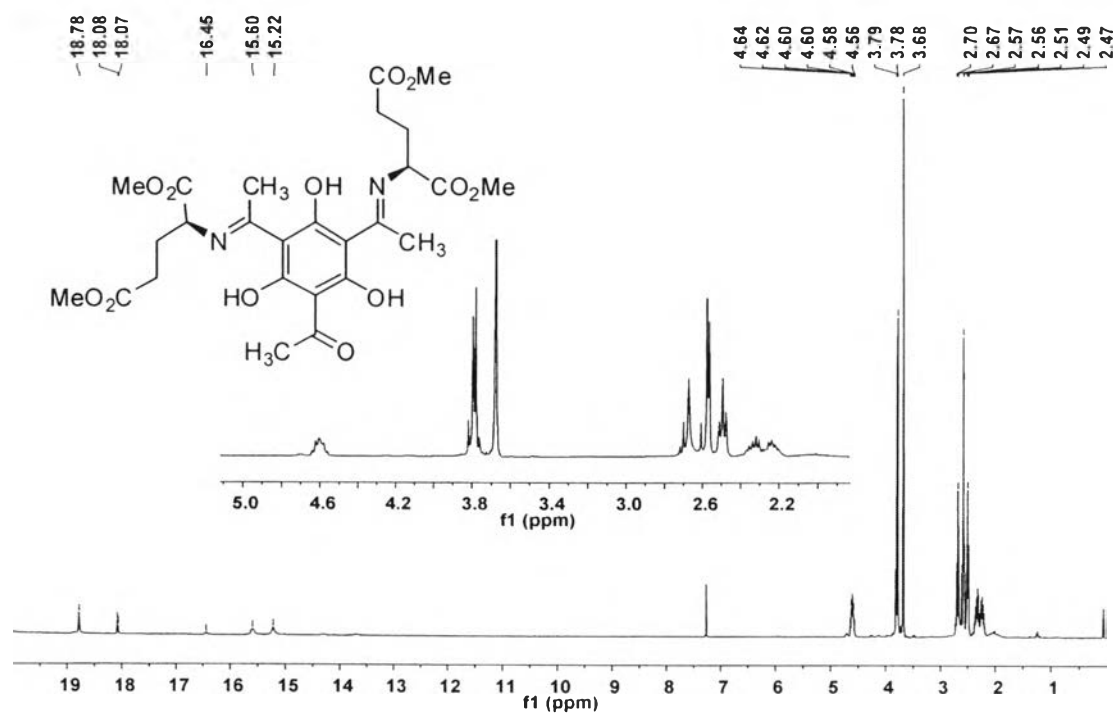


Figure A.57 $^1\text{H-NMR}$ spectrum (CDCl₃) of compound 84

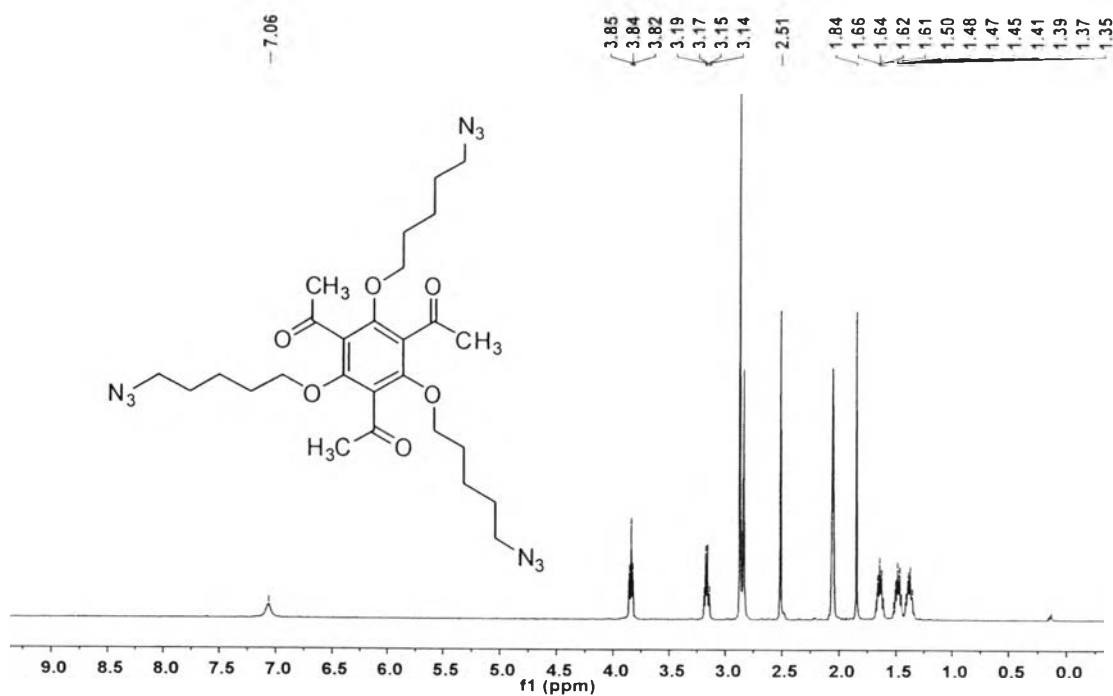


Figure A.58 $^1\text{H-NMR}$ spectrum (CDCl₃) of 1,3,5-triacetyl-2,4,6-tris(5'-azidopentyl-oxy)benzene (85)

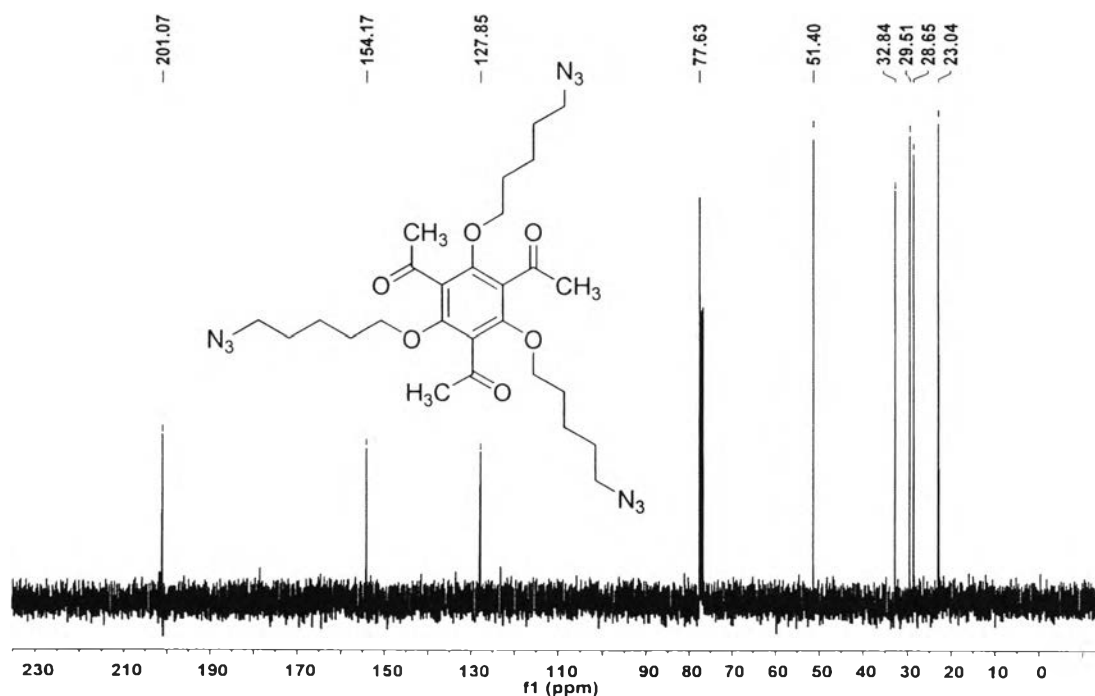


Figure A.59 ^{13}C -NMR spectrum (CDCl_3) of 1,3,5-triacetyl-2,4,6-tris(5'-azidopentyl-oxy)benzene (85)

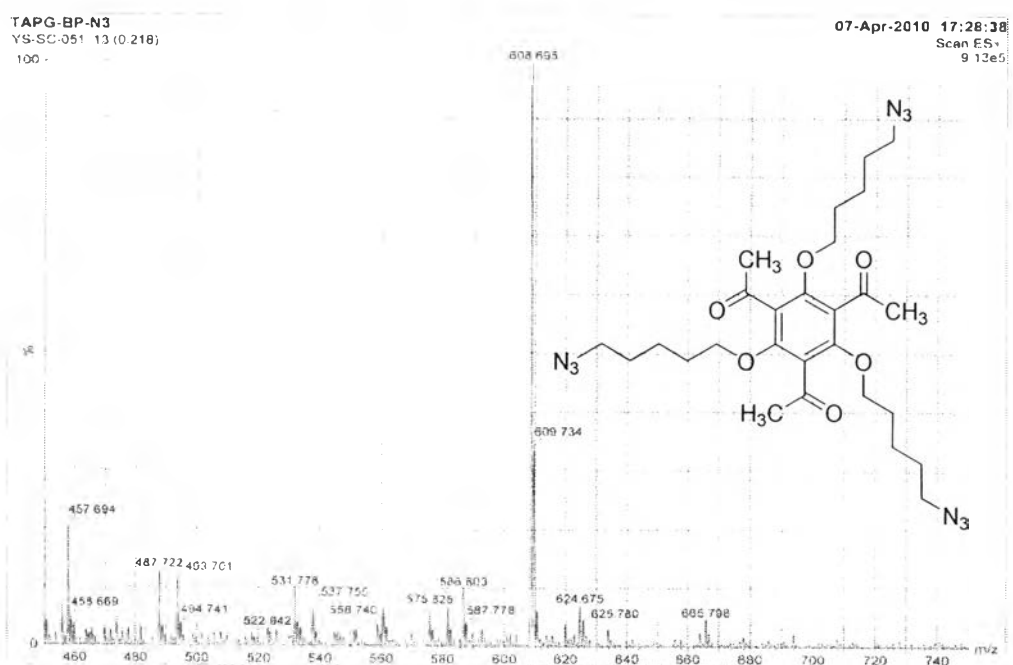


Figure A.60 Mass spectrum of 1,3,5-triacetyl-2,4,6-tris(5'-azidopentyl-oxy)benzene (85)

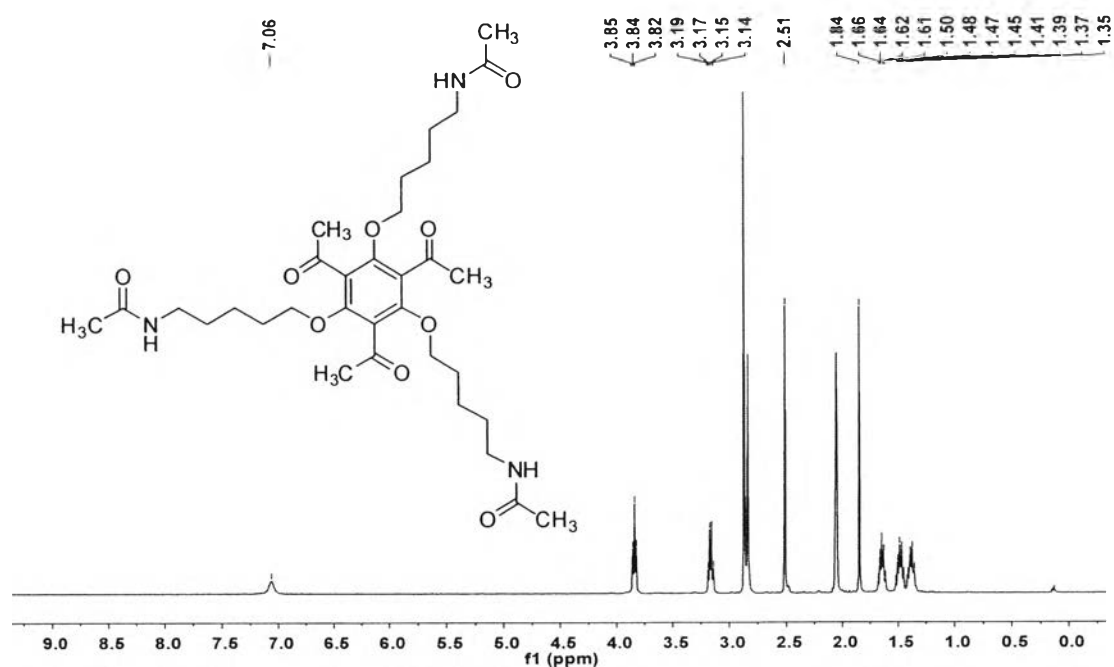


Figure A.61 $^1\text{H-NMR}$ spectrum (Acetone- d_6) of 1,3,5-triacetyl-2,4,6-tris[*N*-acetyl-(5'-aminopentyloxy)]benzene (**86a**)

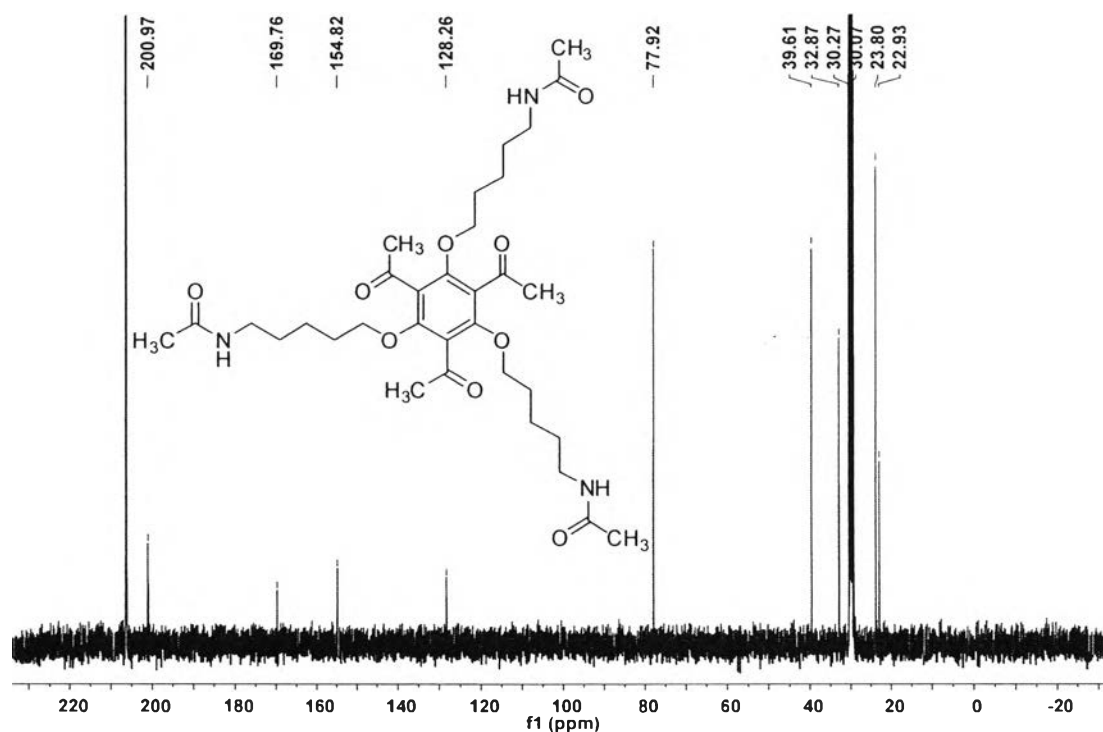


Figure A.62 $^{13}\text{C-NMR}$ spectrum (Acetone- d_6) of 1,3,5-triacetyl-2,4,6-tris[*N*-acetyl-(5'-aminopentyloxy)]benzene (**86a**)

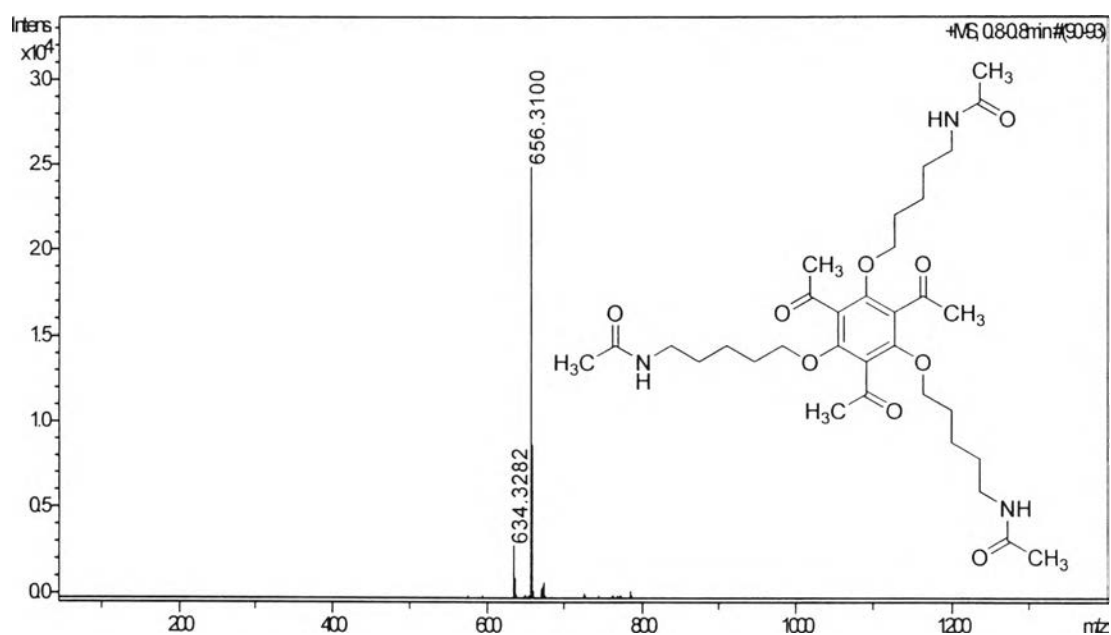


Figure A.63 Mass spectrum of 1,3,5-triacetyl-2,4,6-tris[*N*-acetyl-(5'-aminopentyl oxy)]benzene (86a)

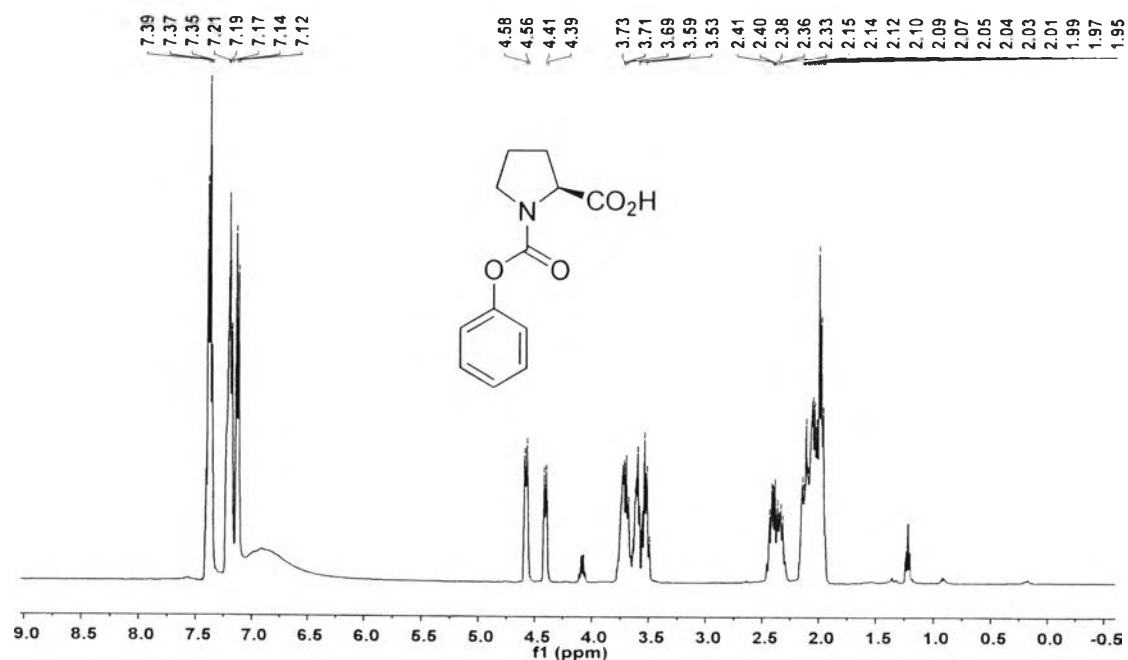


Figure A.64 $^1\text{H-NMR}$ spectrum (Acetone- d_6) of *N*-(phenyloxycarbonyl)-L-proline (87)

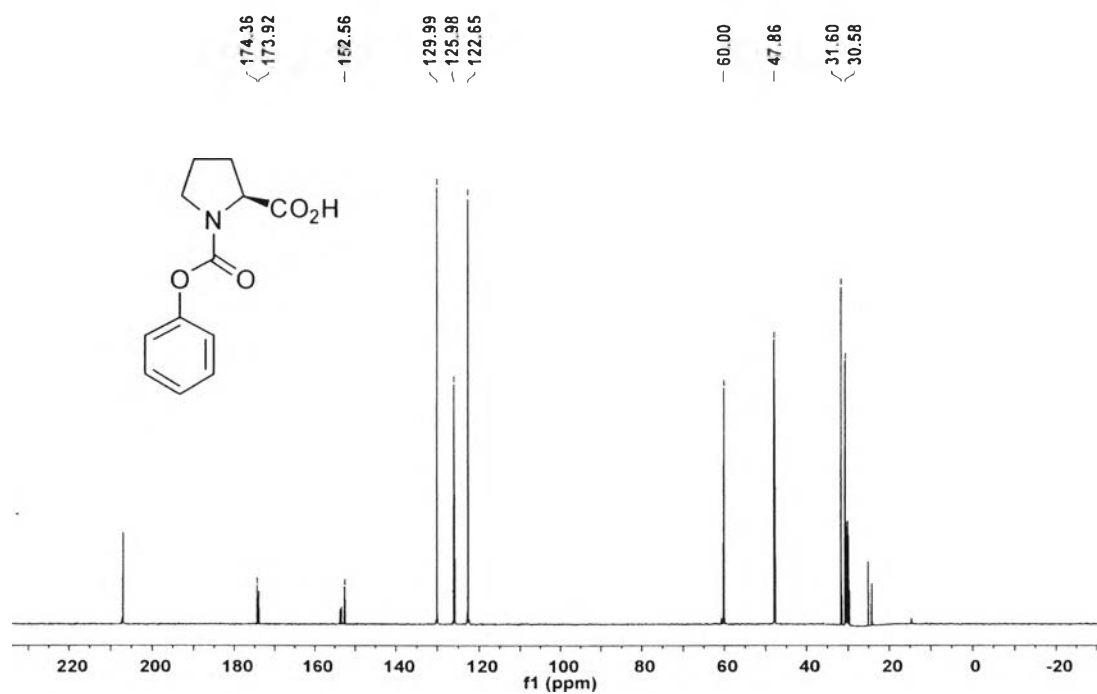


Figure A.65 $^{13}\text{C-NMR}$ spectrum (Acetone- d_6) of *N*-(phenyloxycarbonyl)-L-proline (87)

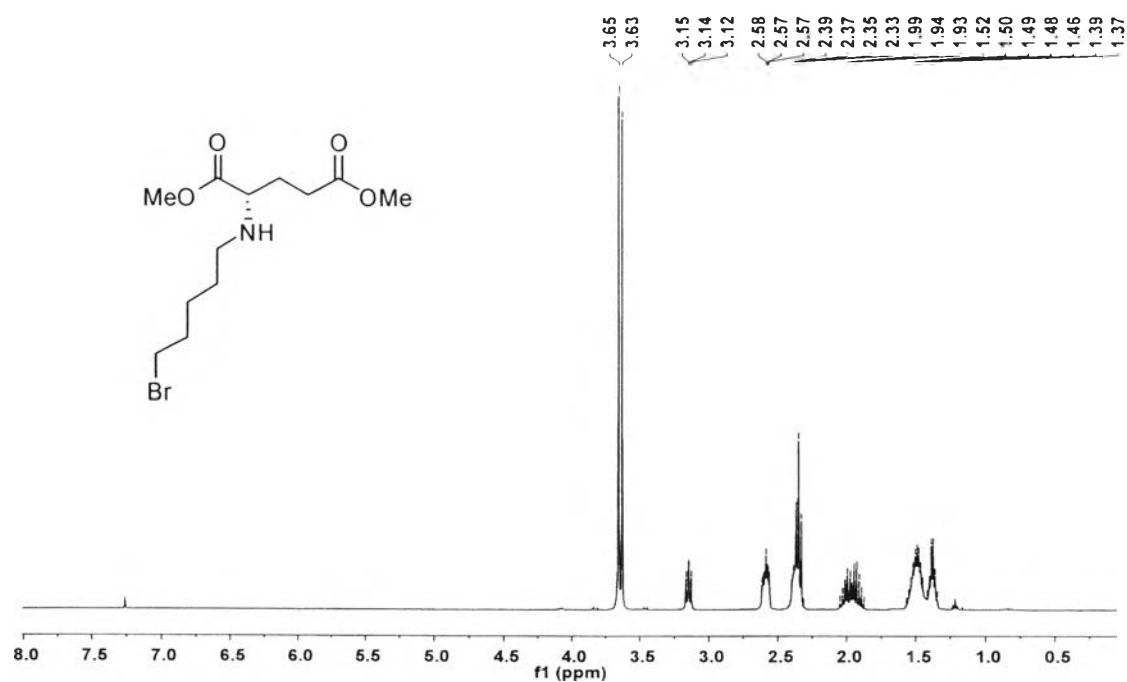


Figure A.66 $^1\text{H-NMR}$ spectrum (CDCl_3) of *N*-(5'-bromopentyl)-L-glutamate dimethyl ester (90)

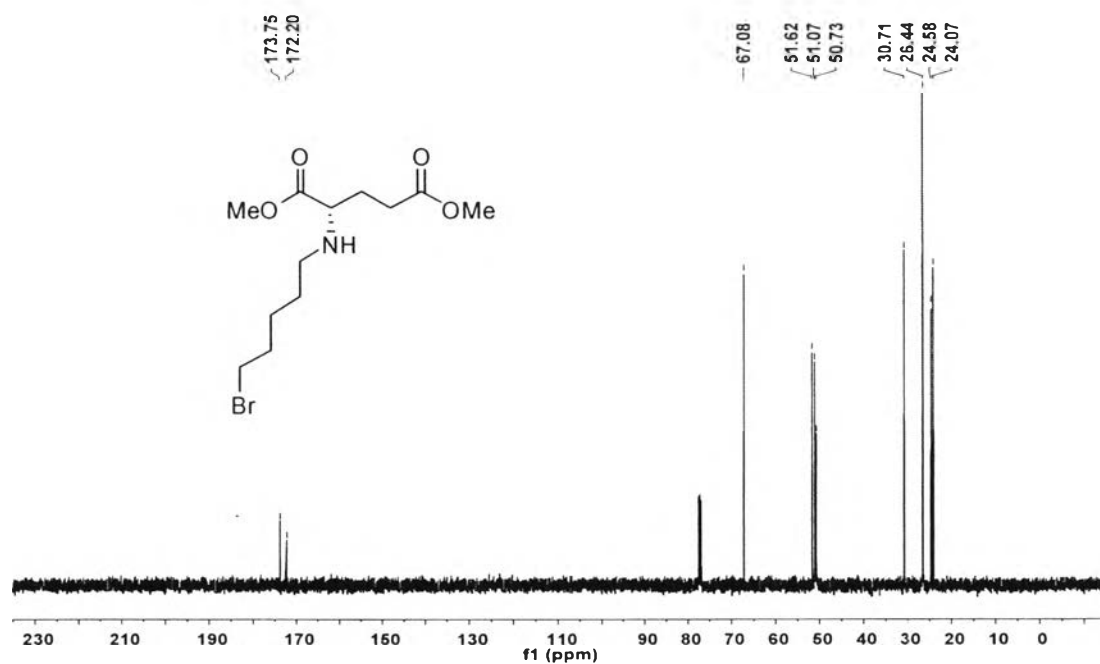


Figure A.67 $^{13}\text{C-NMR}$ spectrum (CDCl₃) of *N*-(5'-bromopentyl)-L-glutamate dimethyl ester (90)

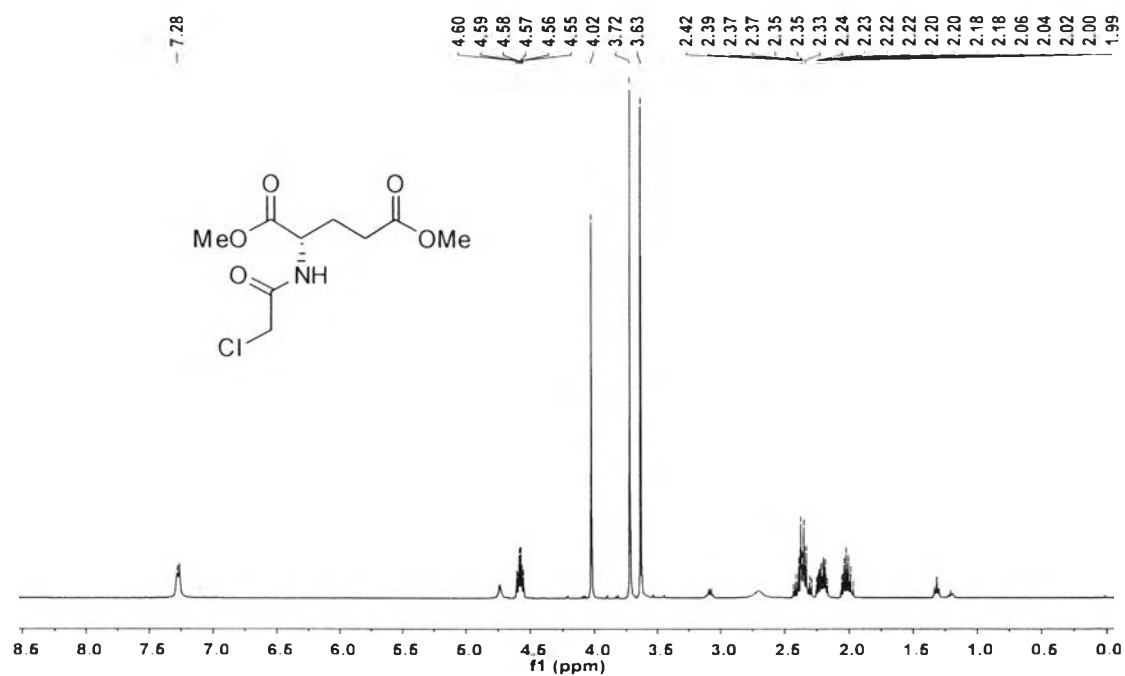


Figure A.68 $^1\text{H-NMR}$ spectrum (CDCl₃) of *N*-(chloroacetyl)-L-glutamate dimethyl ester (91)

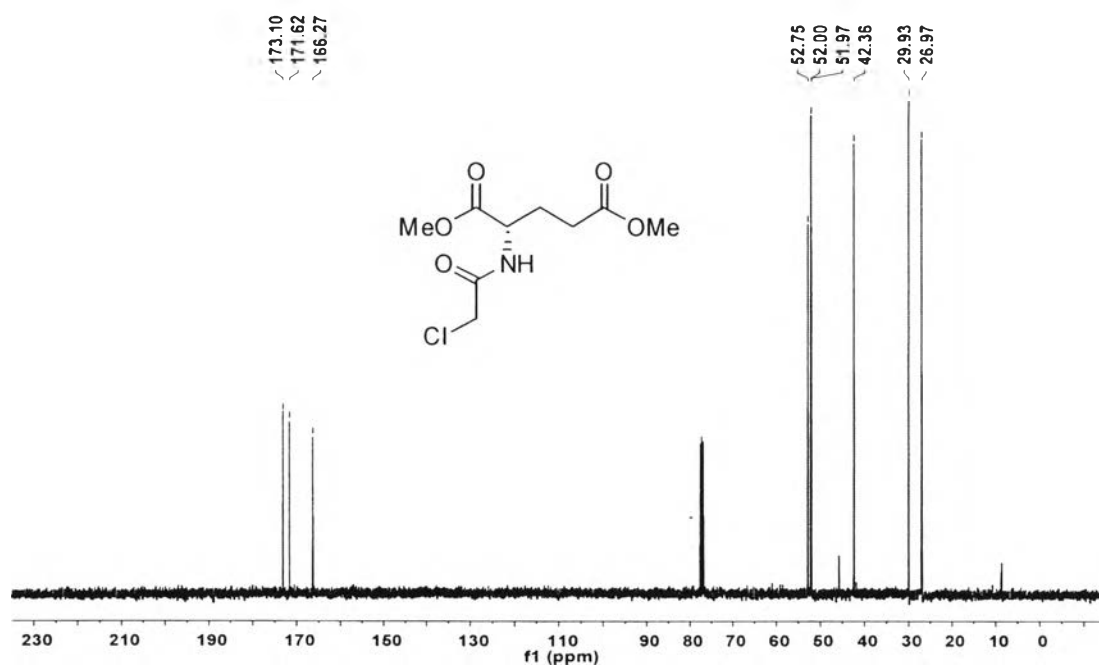


Figure A.69 ^{13}C -NMR spectrum (CDCl_3) of *N*-(chloroacetyl)-L-glutamate dimethyl ester (91)

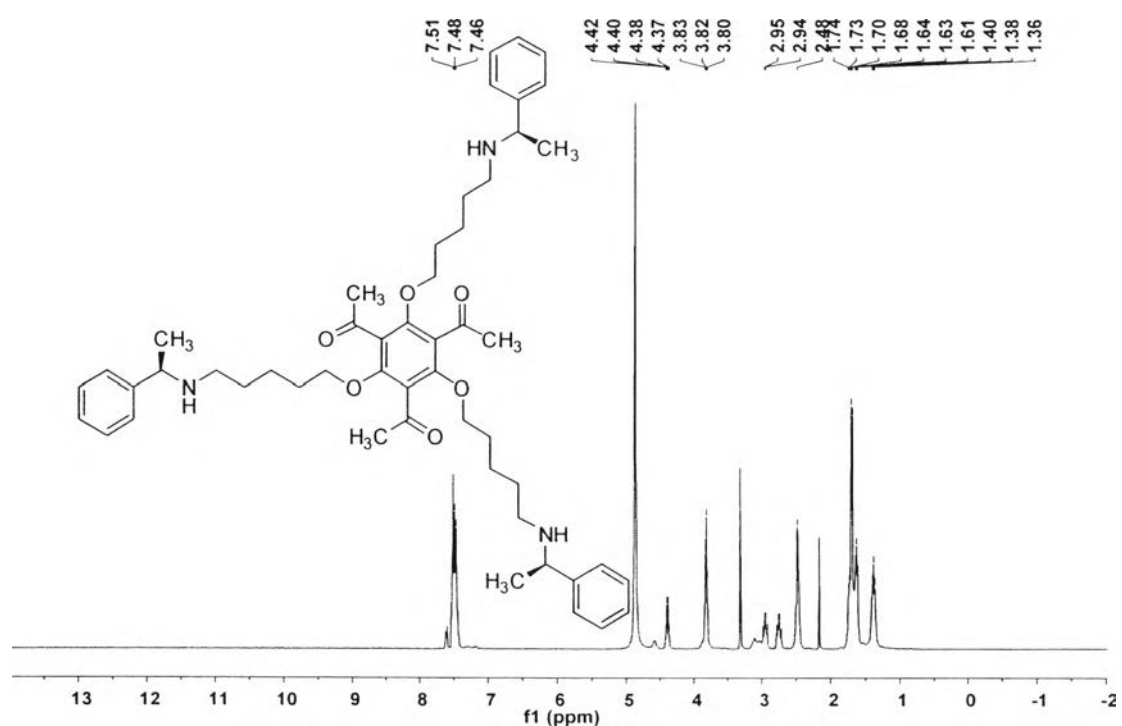


Figure A.70 ^1H -NMR spectrum (CD_3OD) of 1,3,5-triacetyl-2,4,6-tris[5'-((*R*)-1-phenylethylamino)pentyl]oxy]benzene (94)

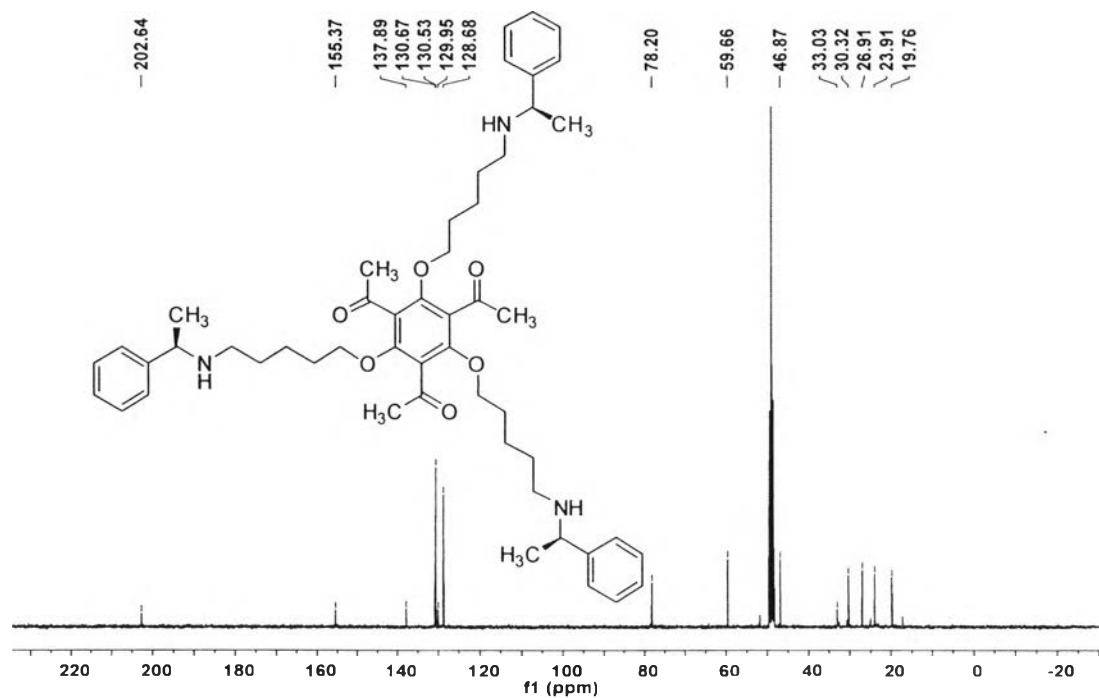


Figure A.71 ^{13}C -NMR spectrum (CD_3OD) of 1,3,5-triacetyl-2,4,6-tris[5'-((*R*)-1-phenylethylamino)pentyl]oxybenzene (**94**)

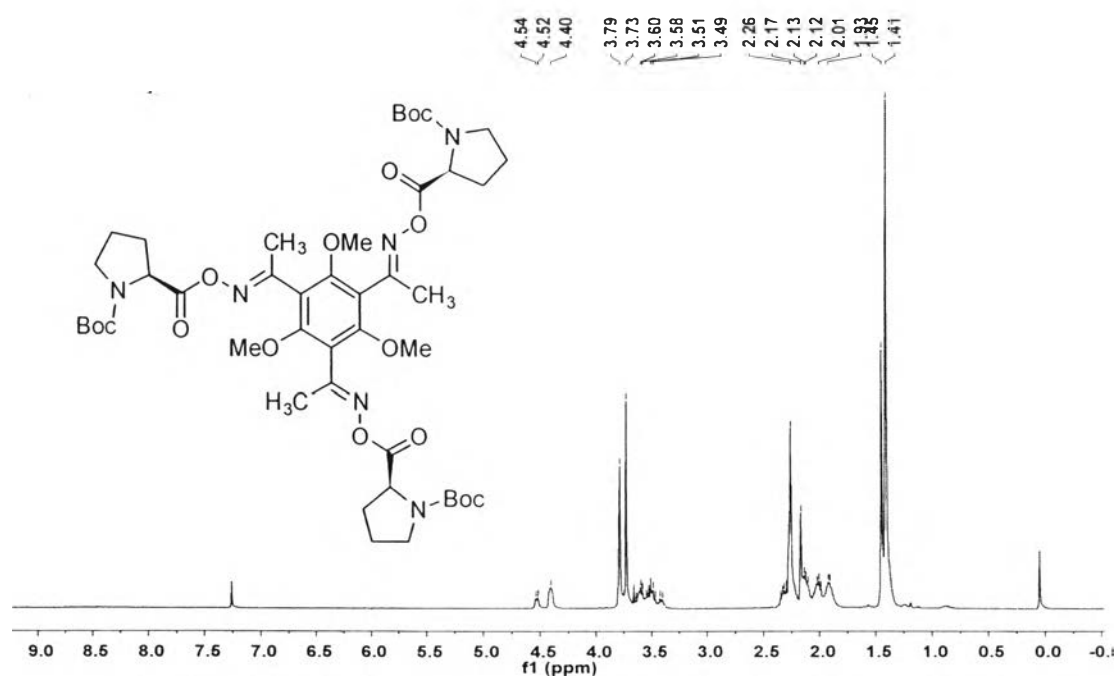


Figure A.72 ^1H -NMR spectrum (CDCl_3) of compound **100**

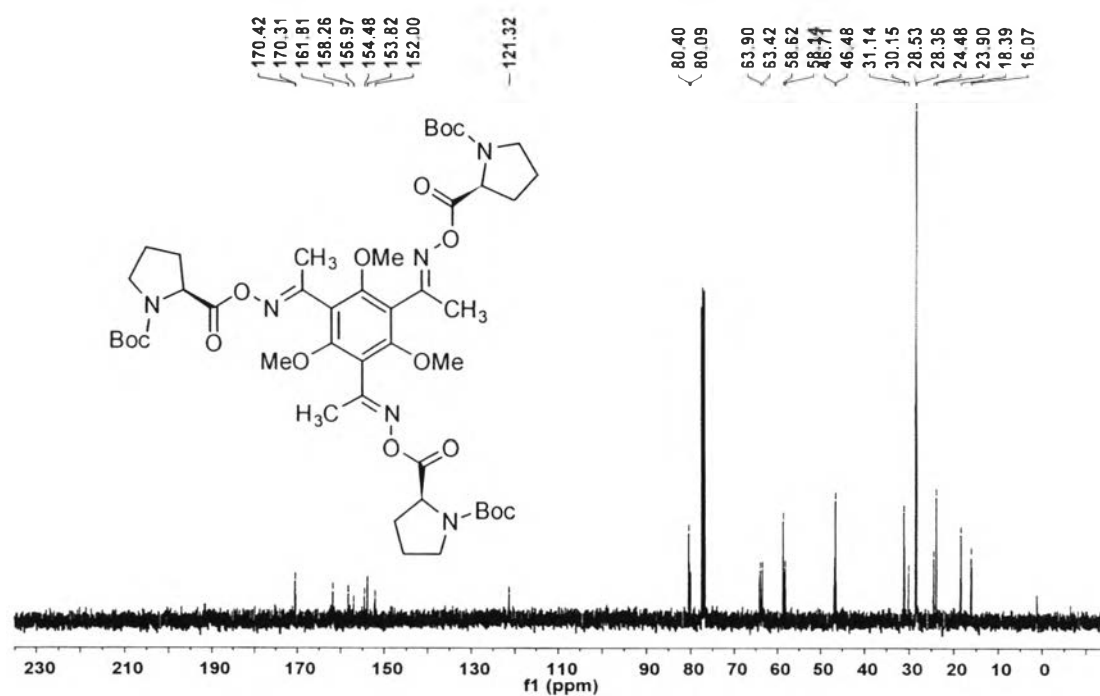


Figure A.73 ^{13}C -NMR spectrum (CDCl_3) of compound 100

VITA

The author, Saowanaporn Choksakulporn, was born in Nakhon Phanom, Thailand on September 12, 1981. After graduating from high school in 1998, she attended Khon Kaen University and chose chemistry as her major. After wonderful four years, she earned a second honored B. S. degree in Chemistry in 2003. In the same year, she was accepted as a master student in Department of Chemistry, Faculty of Science, Chulalongkorn University. She worked under the supervision of Assistant Professor Dr. Yongsak Sritana-anant with the project to synthesize hexasubstituted benzene platform. She received the M. S. degree in 2005. In order to learn the forefront of chemistry, she continued as a Ph.D. student in organic chemistry in 2006, also joining Dr. Yongsak's research group and worked on the synthesis of restricted tripodal ligands constructed from hexasubstituted benzene platform toward molecular recognition and chiral discrimination.

