

Selectivity in Reduction of Natural Furanoheliangolides with Stryker's Reagent

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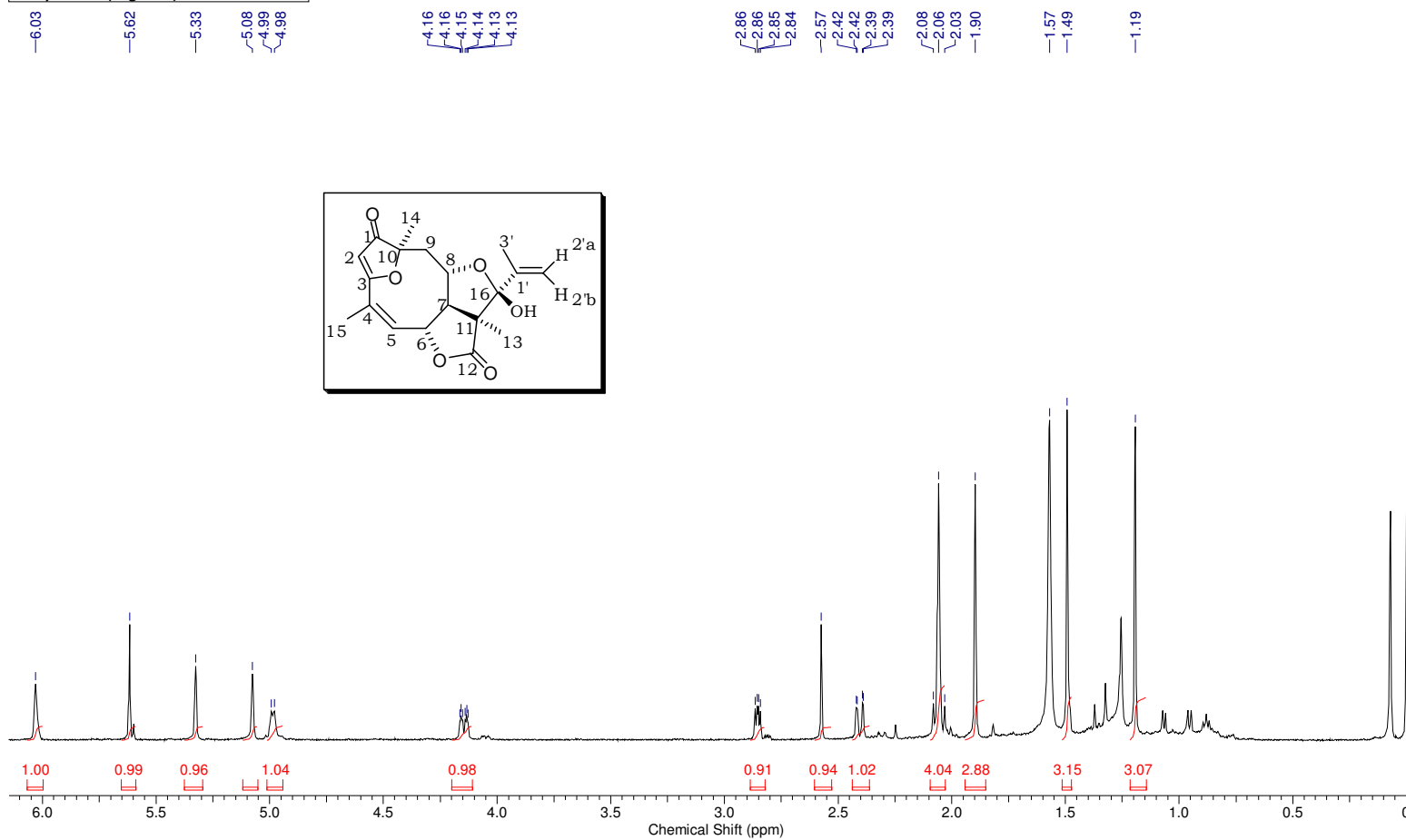
gNOESY spectra of compounds 11, 12, 14 and 16 -----S32, S38, S49 and S60

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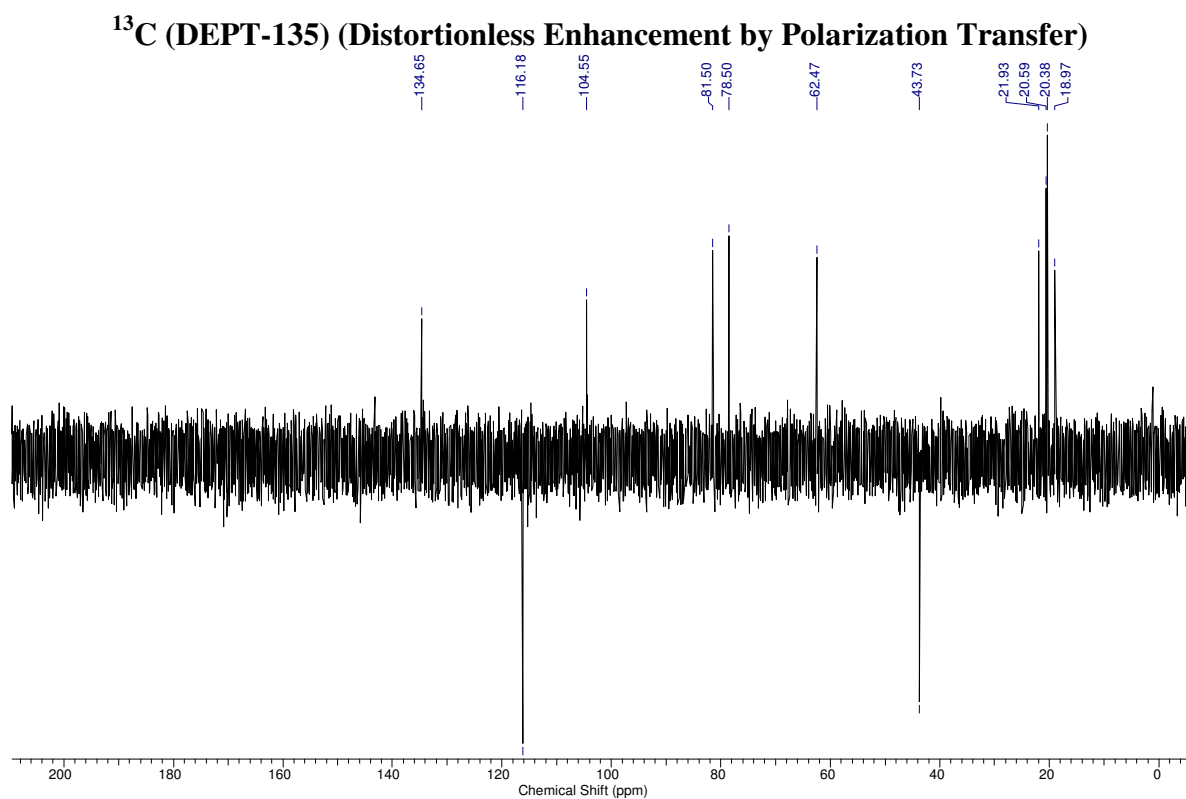
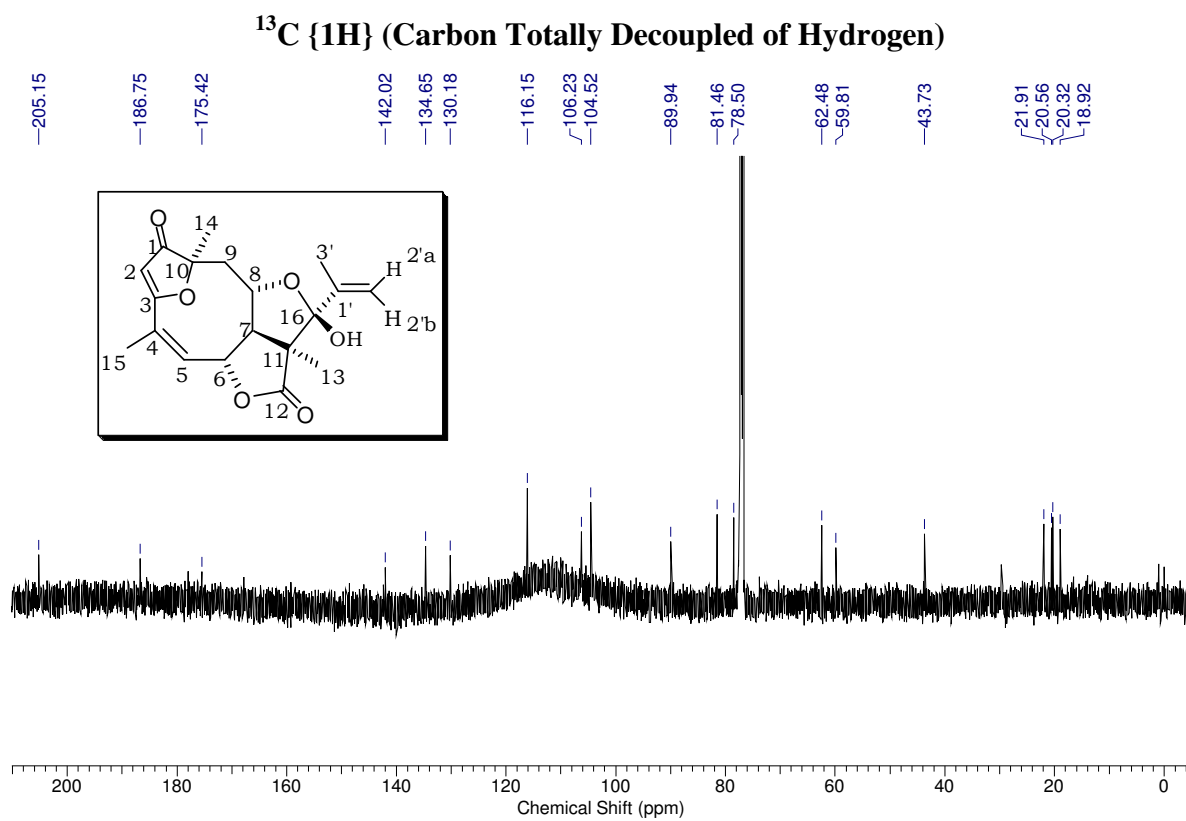
General Information

The NMR spectra were recorded using a Bruker DPX-500 instrument (500 MHz ^1H NMR and 125 MHz ^{13}C NMR); CDCl_3 and mixtures of CDCl_3 and DMSO-d_6 were used as solvent with TMS as internal standard. IR spectra were measured with a Perkin-Elmer Spectrum RX IFTIR System. High resolution mass spectra (HRMS) were obtained on an ESI-TOF Mass Spectrometer.

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Temperature (degree C)	27.000			Sweep Width (Hz)	4844.96

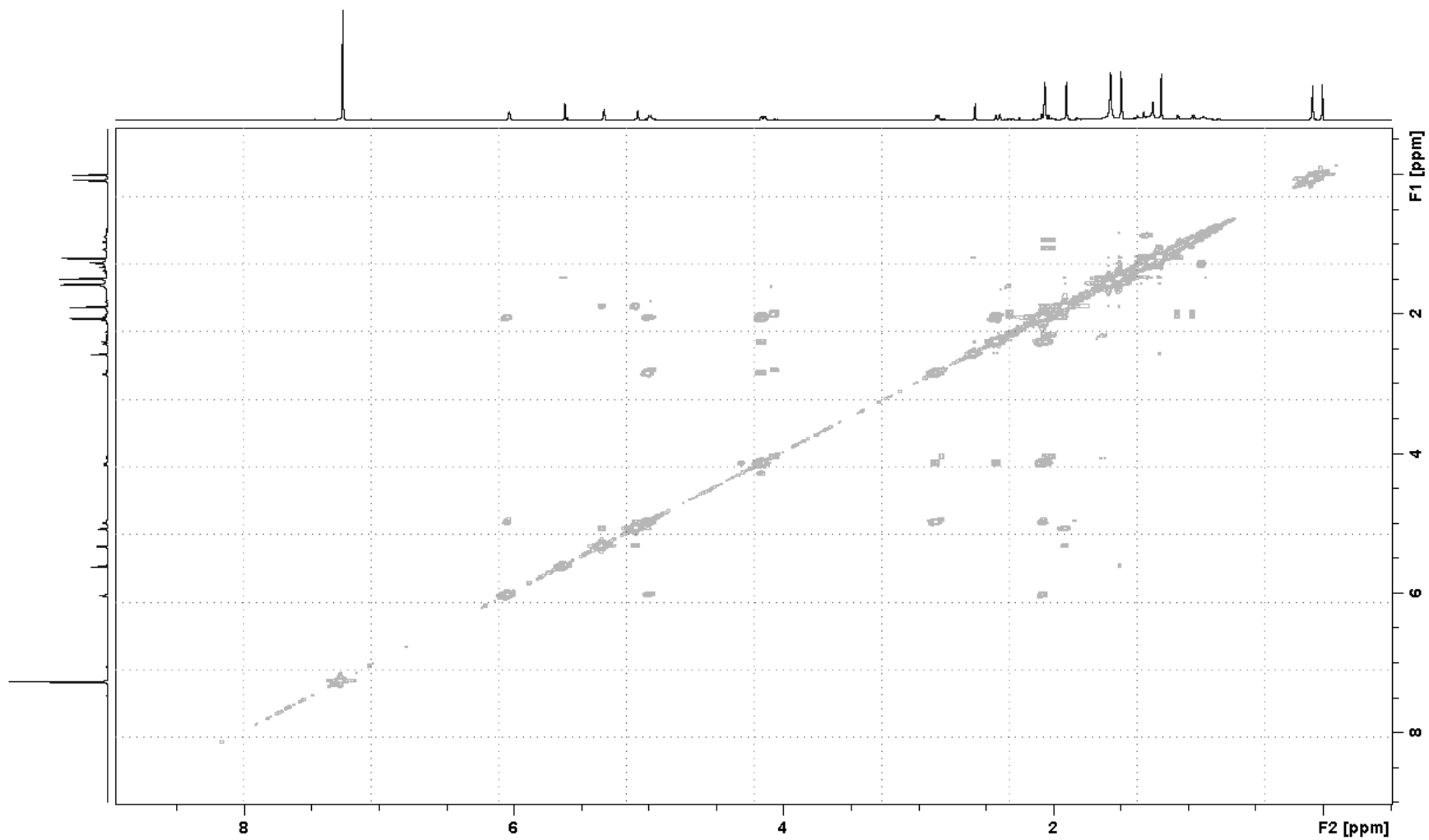


¹H NMR (500 MHz) in CDCl₃ of compound **1**.

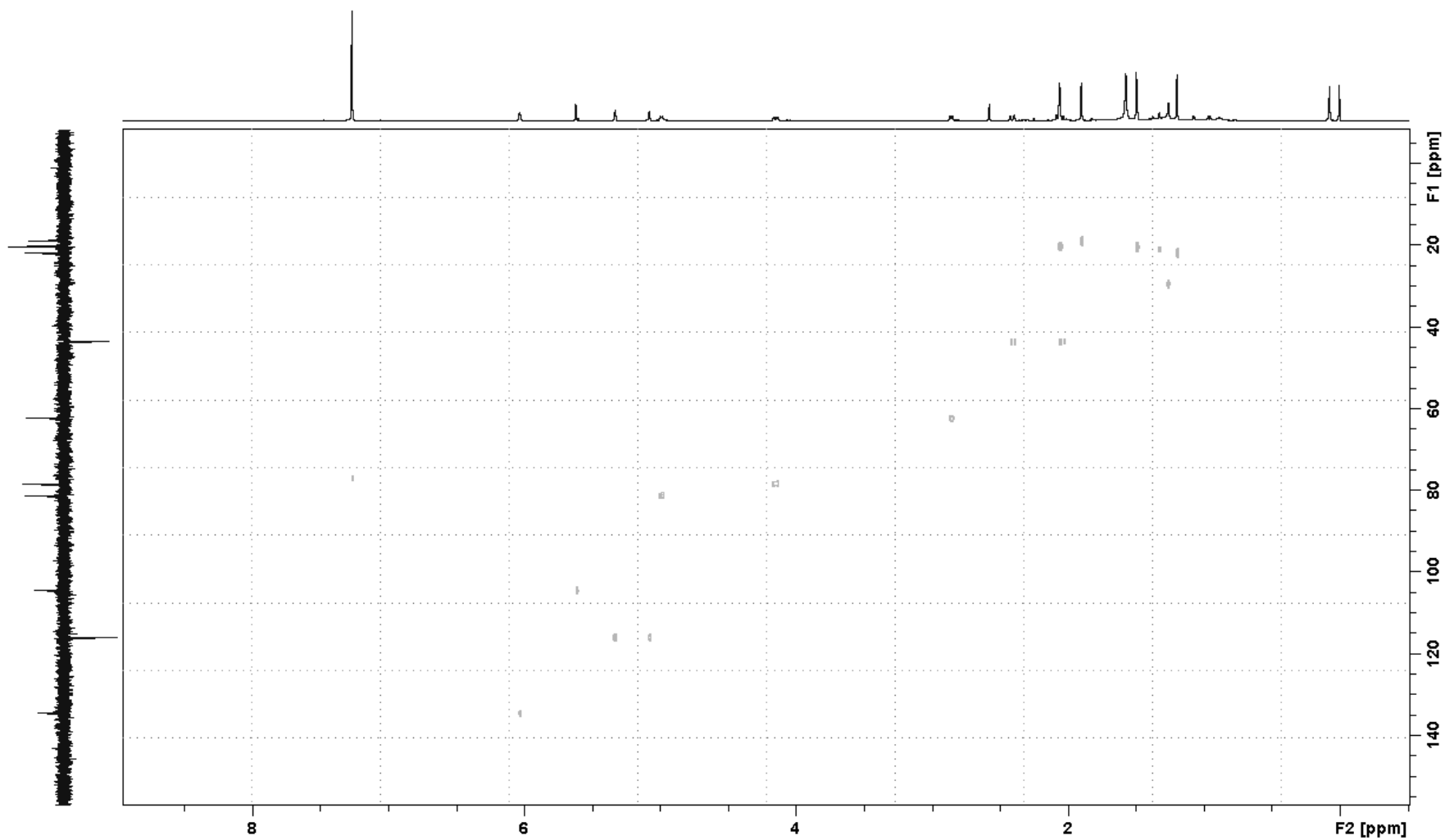


^{13}C NMR (125 MHz) in CDCl_3 of compound **1**

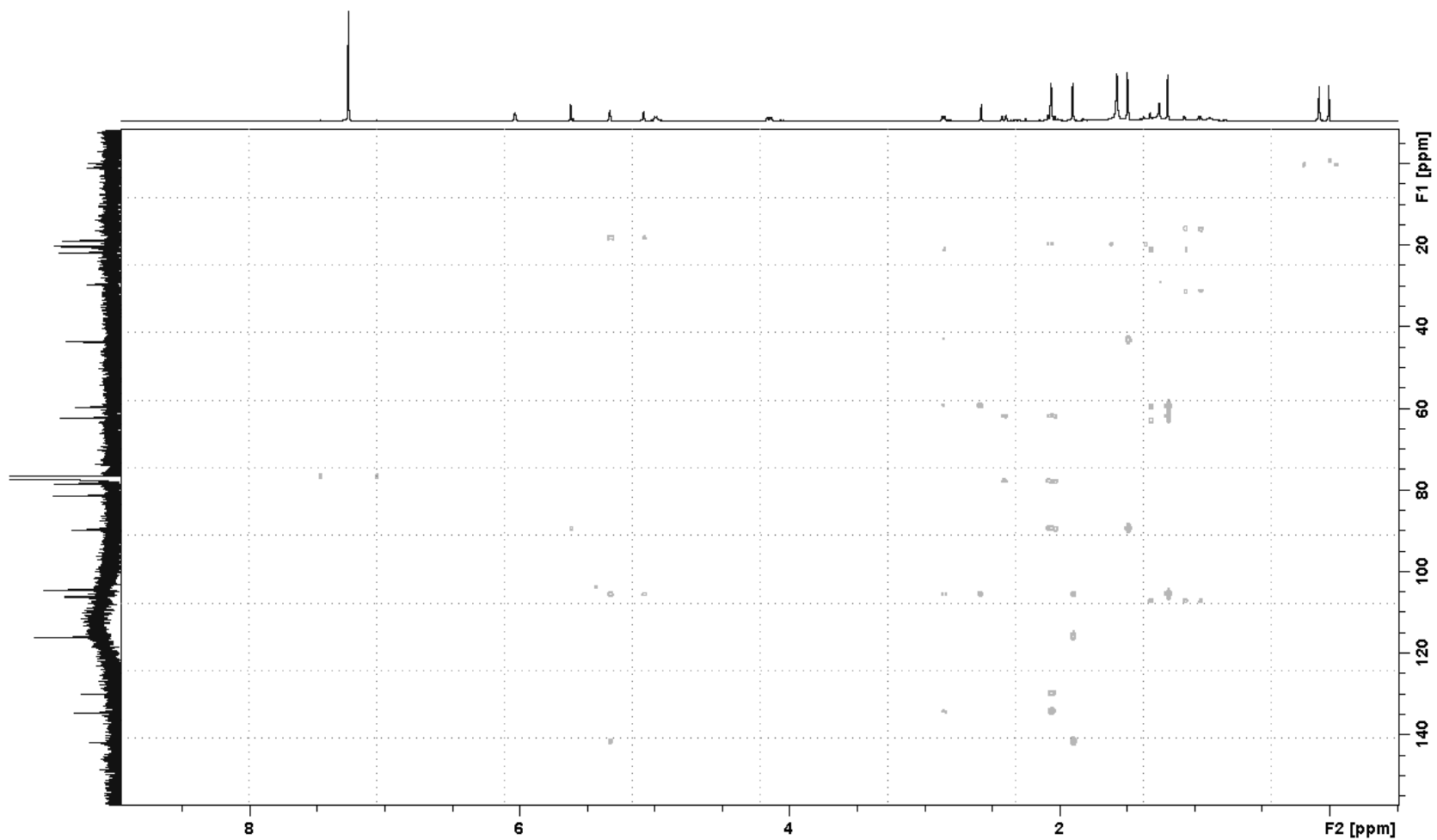
gCOSY – Compound 1



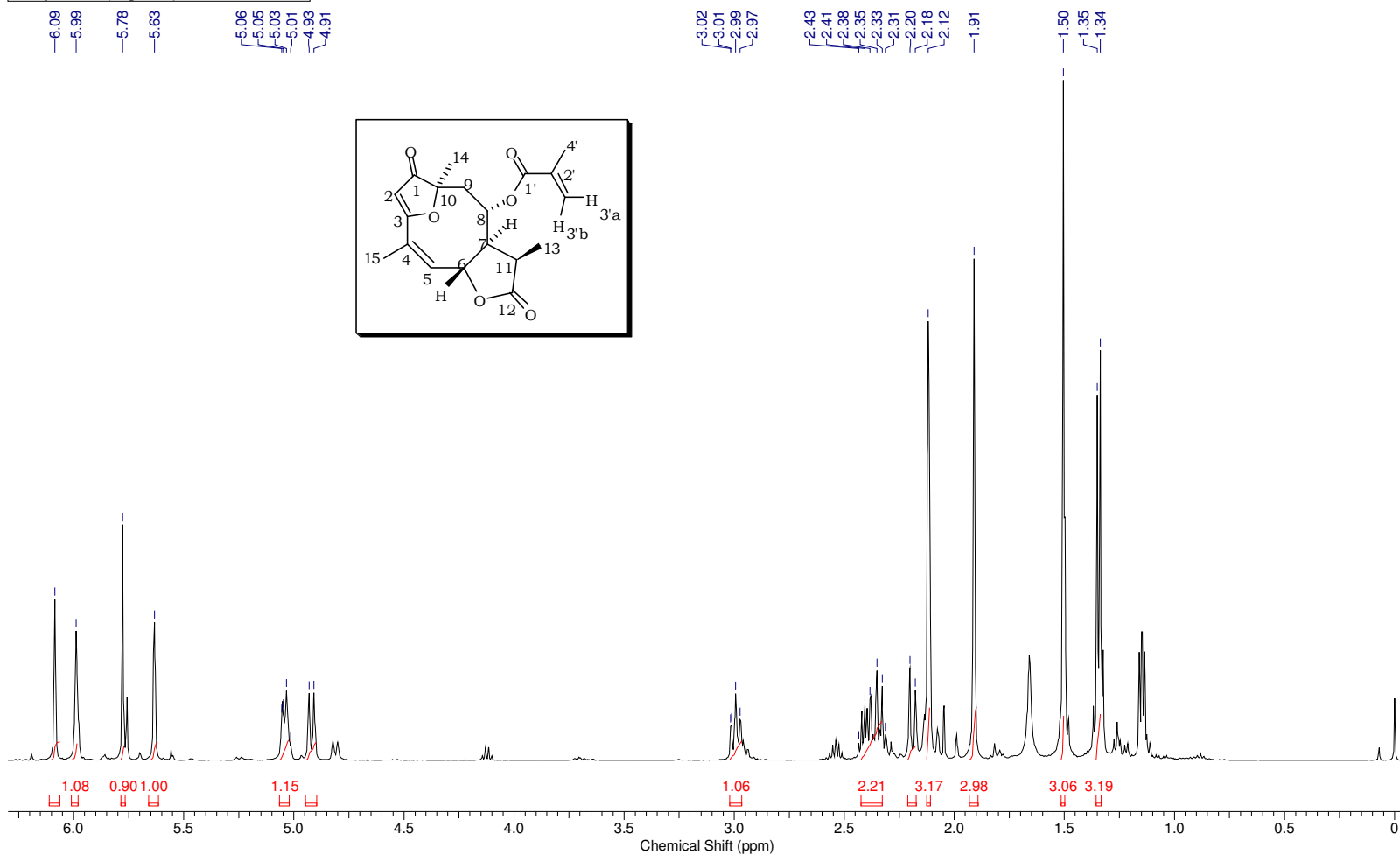
gHMQC – Compound 1



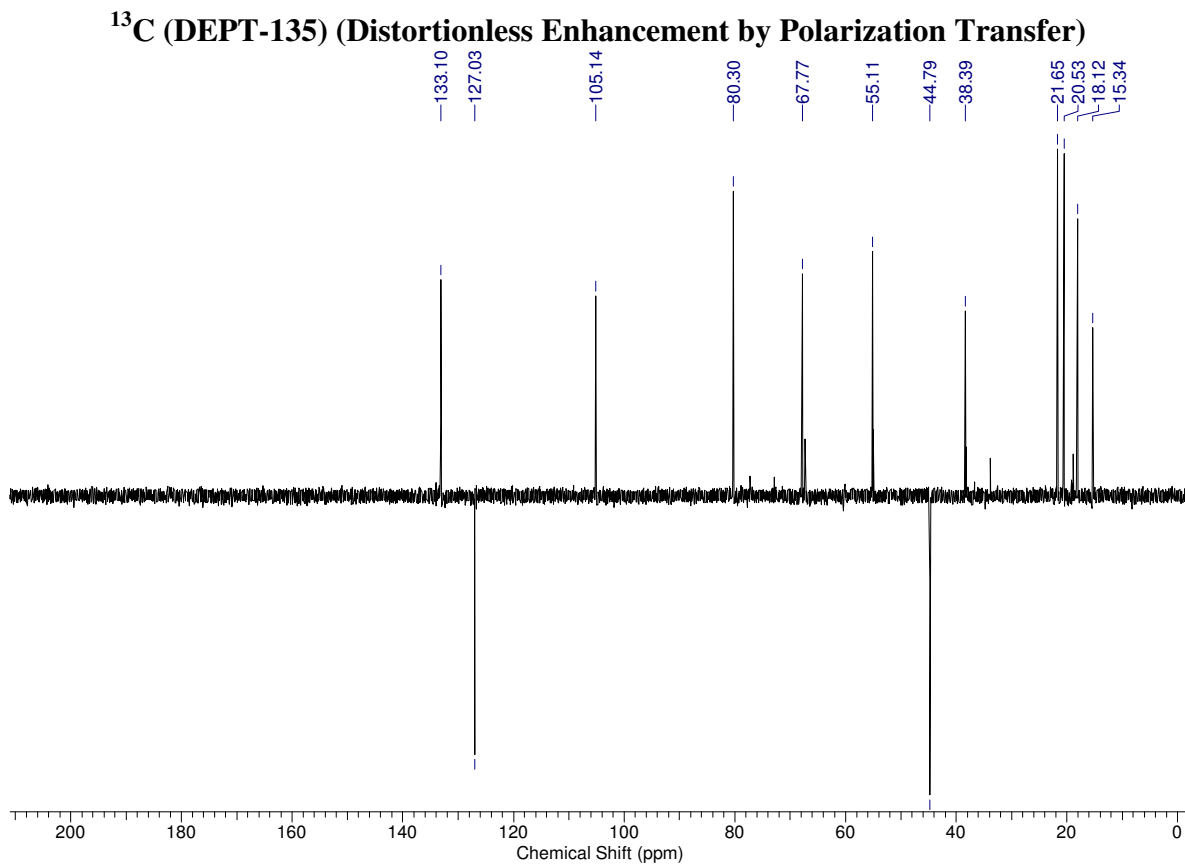
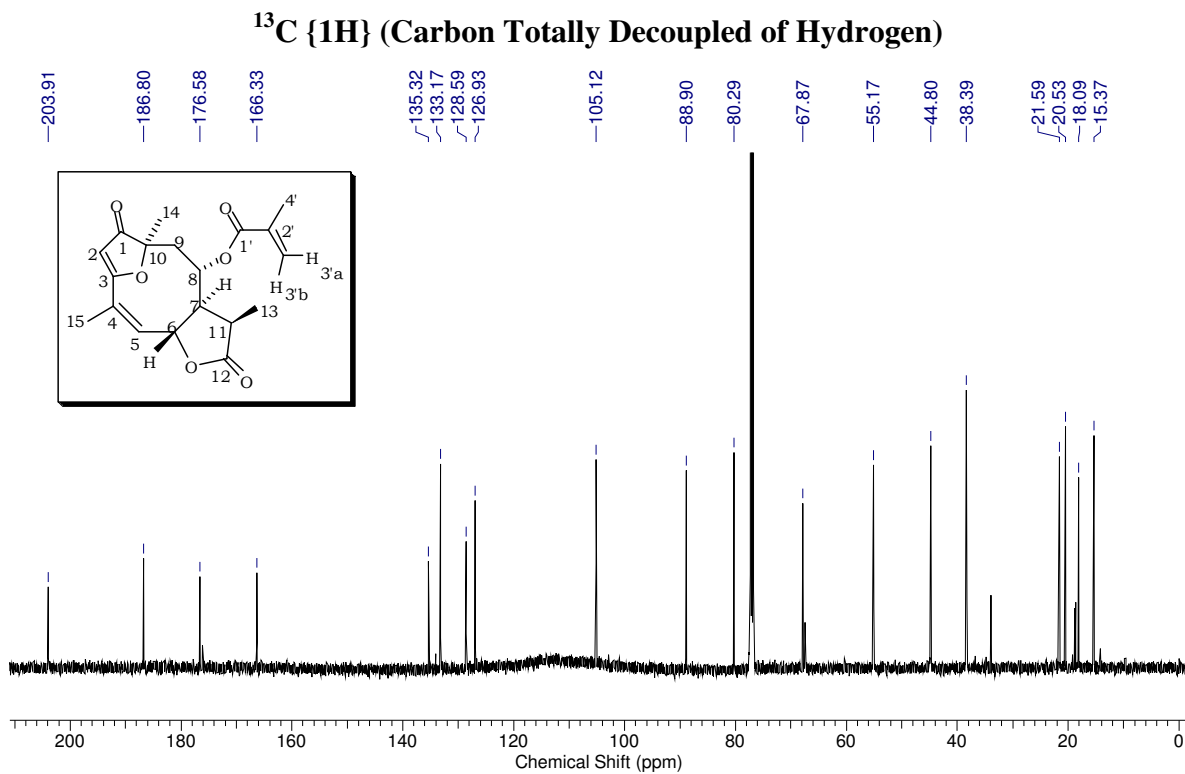
gHMBC – Compound 1



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Temperature (degree C)	27.000				

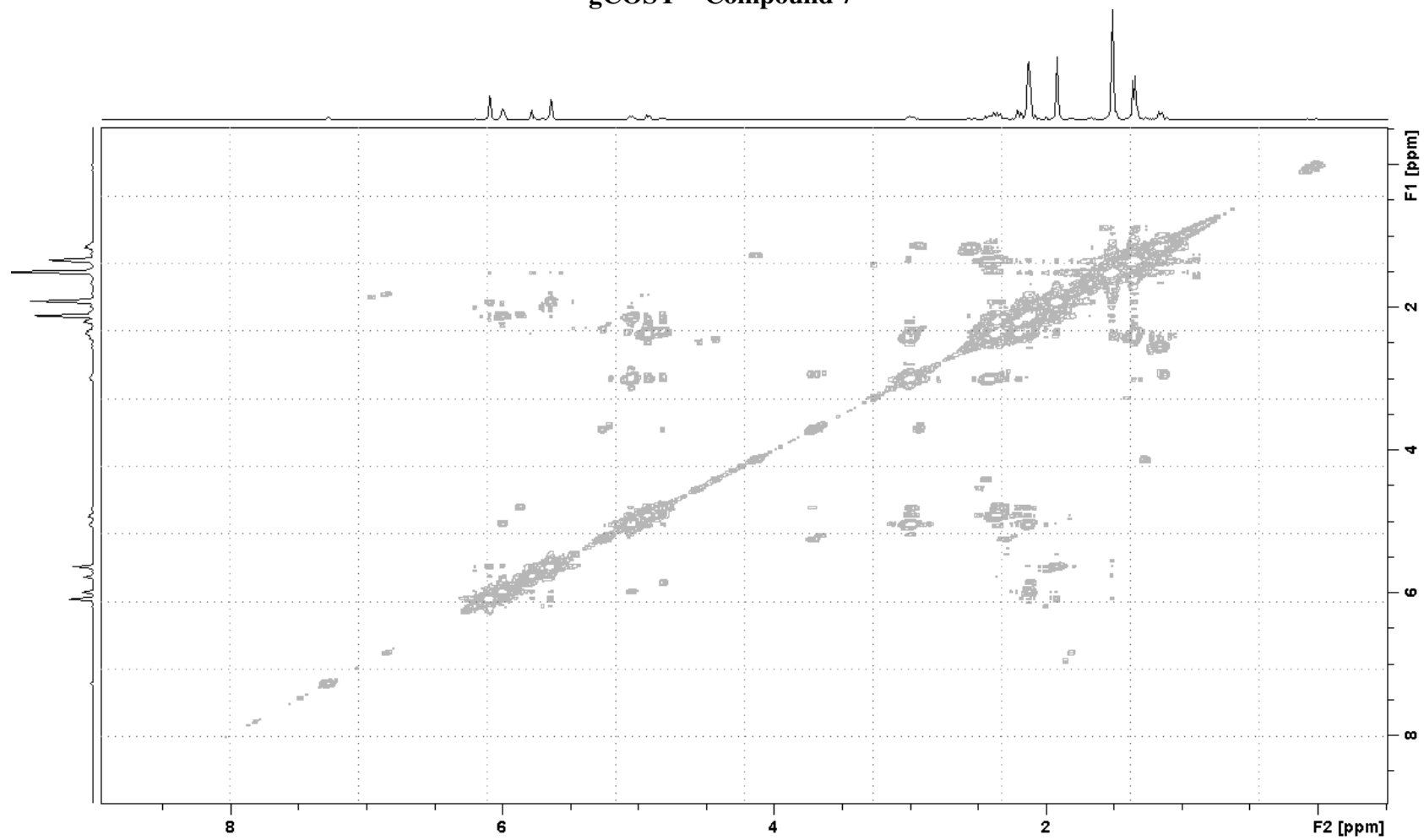


^1H NMR (500 MHz) in CDCl_3 of compound **7**.

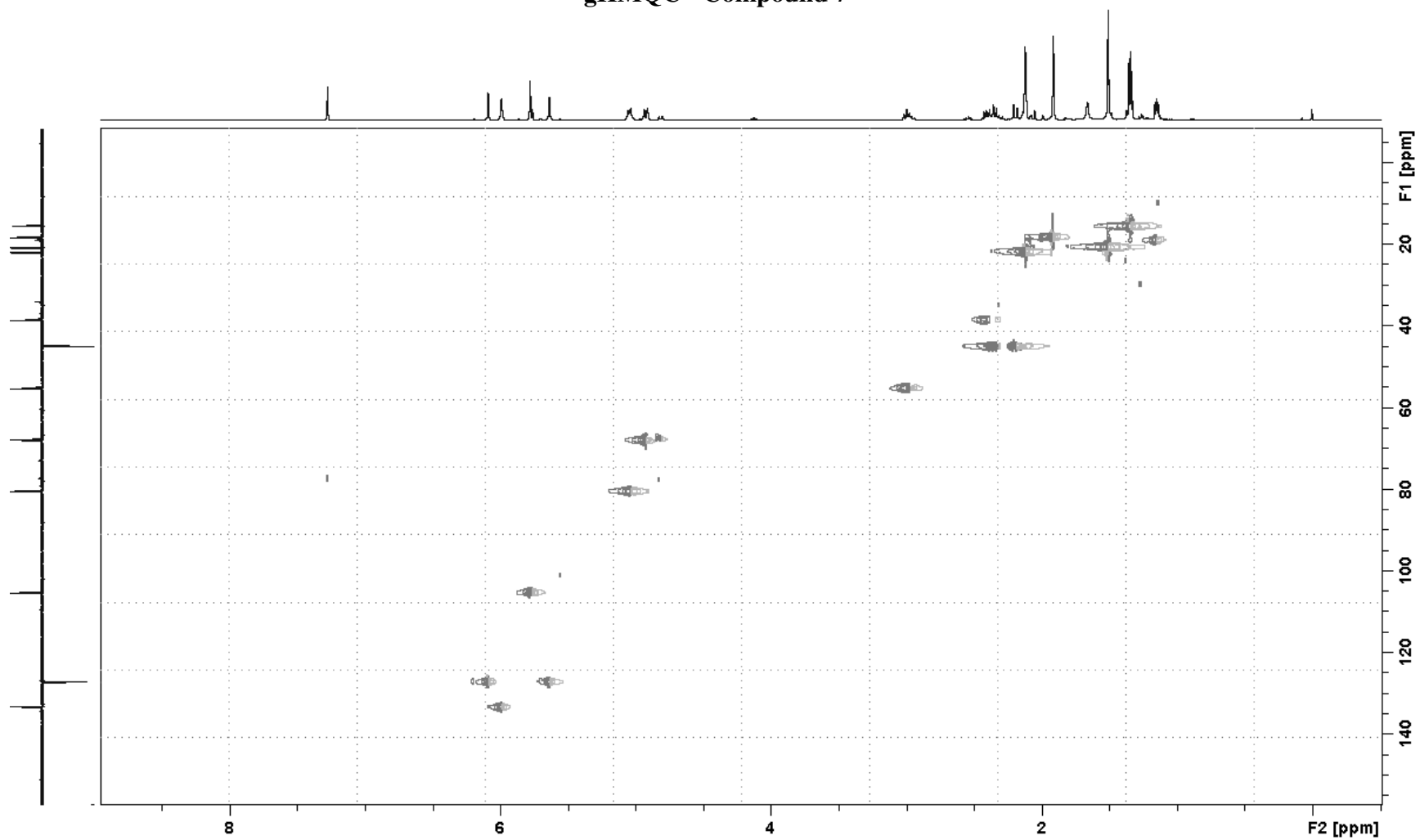


^{13}C NMR (125 MHz) in CDCl_3 of compound 7.

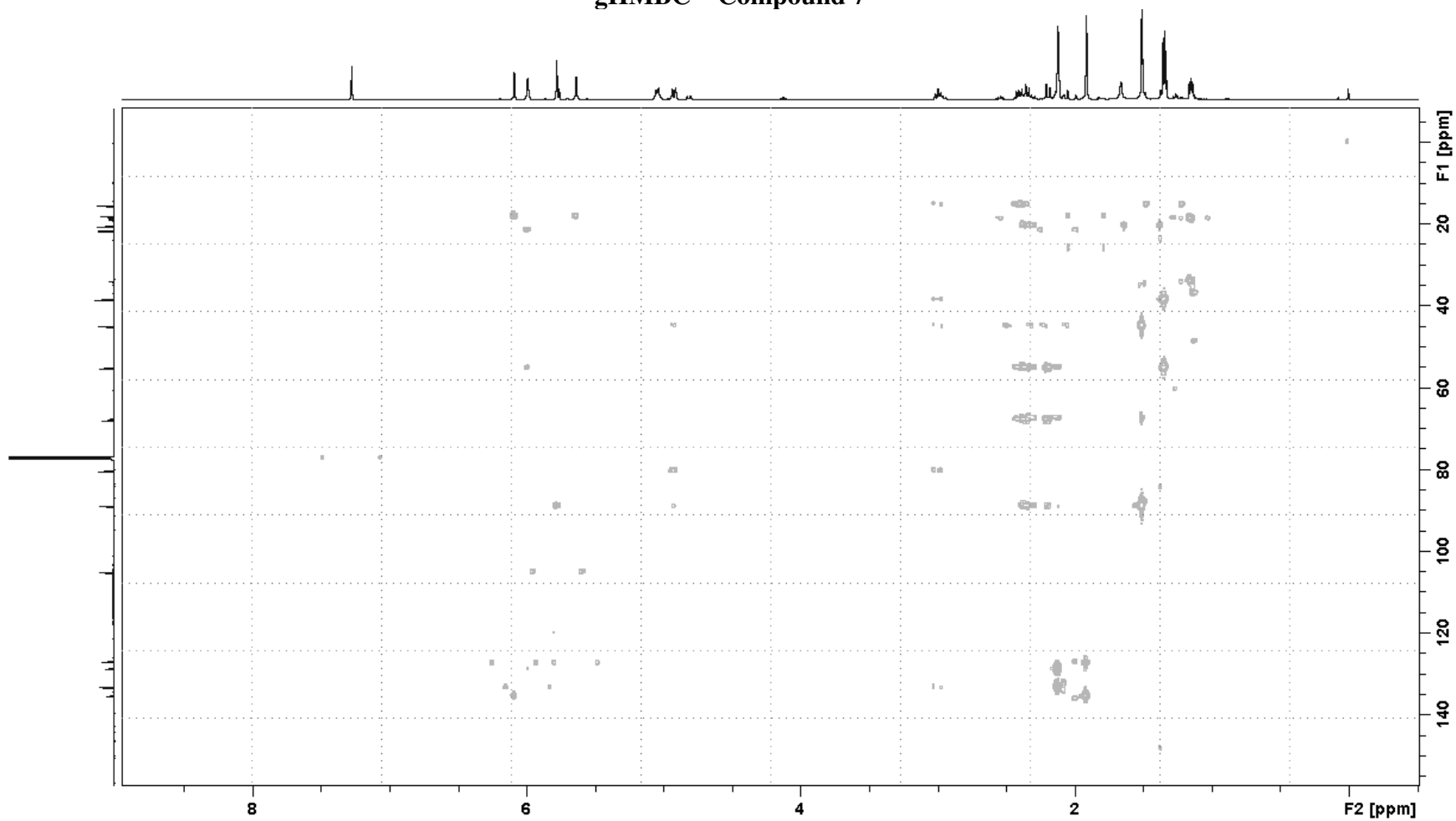
gCOSY – Compound 7



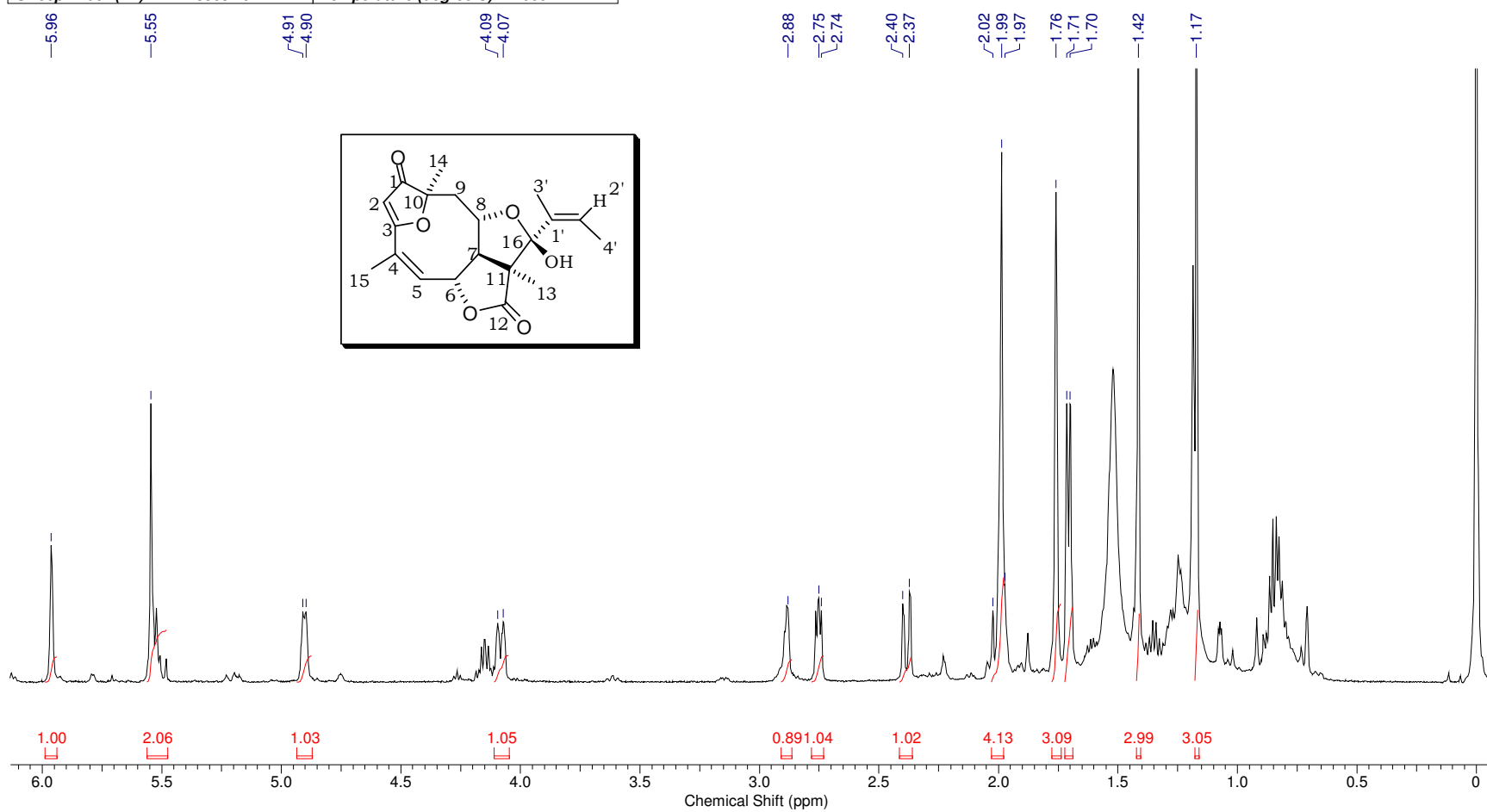
gHMQC - Compound 7



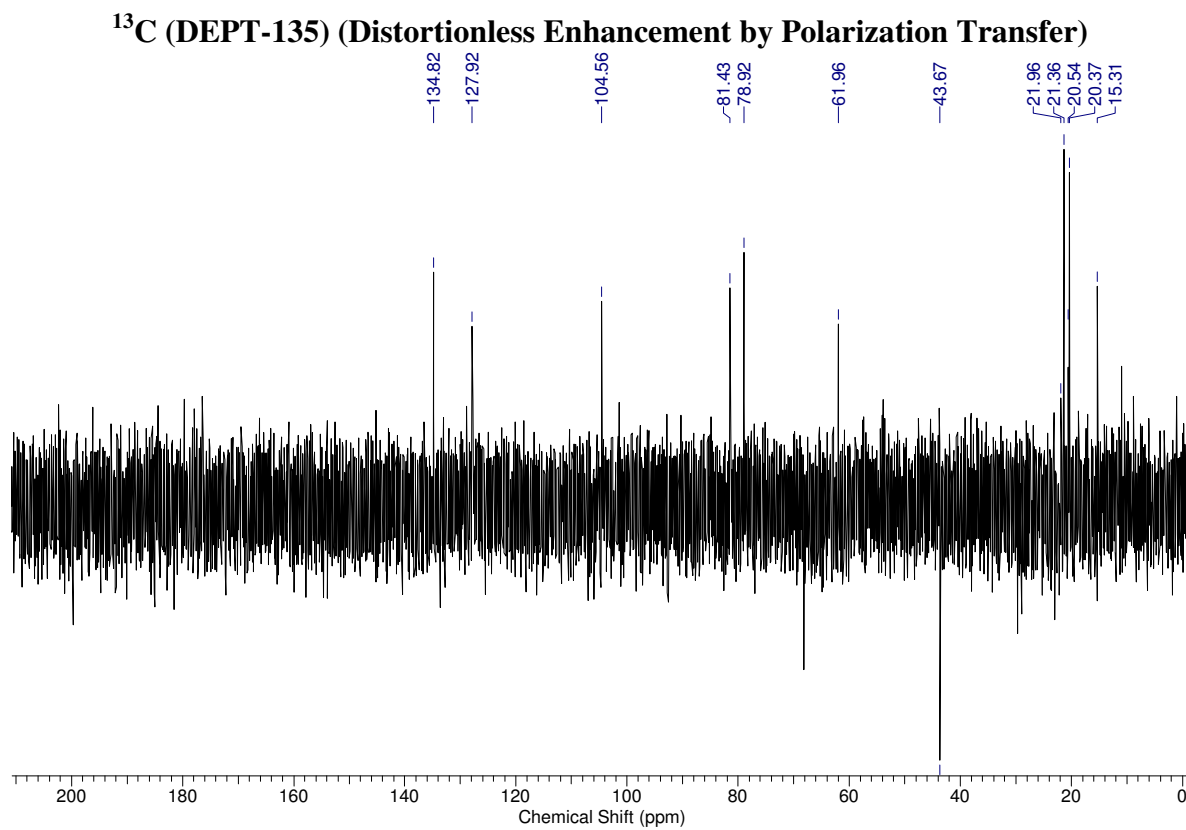
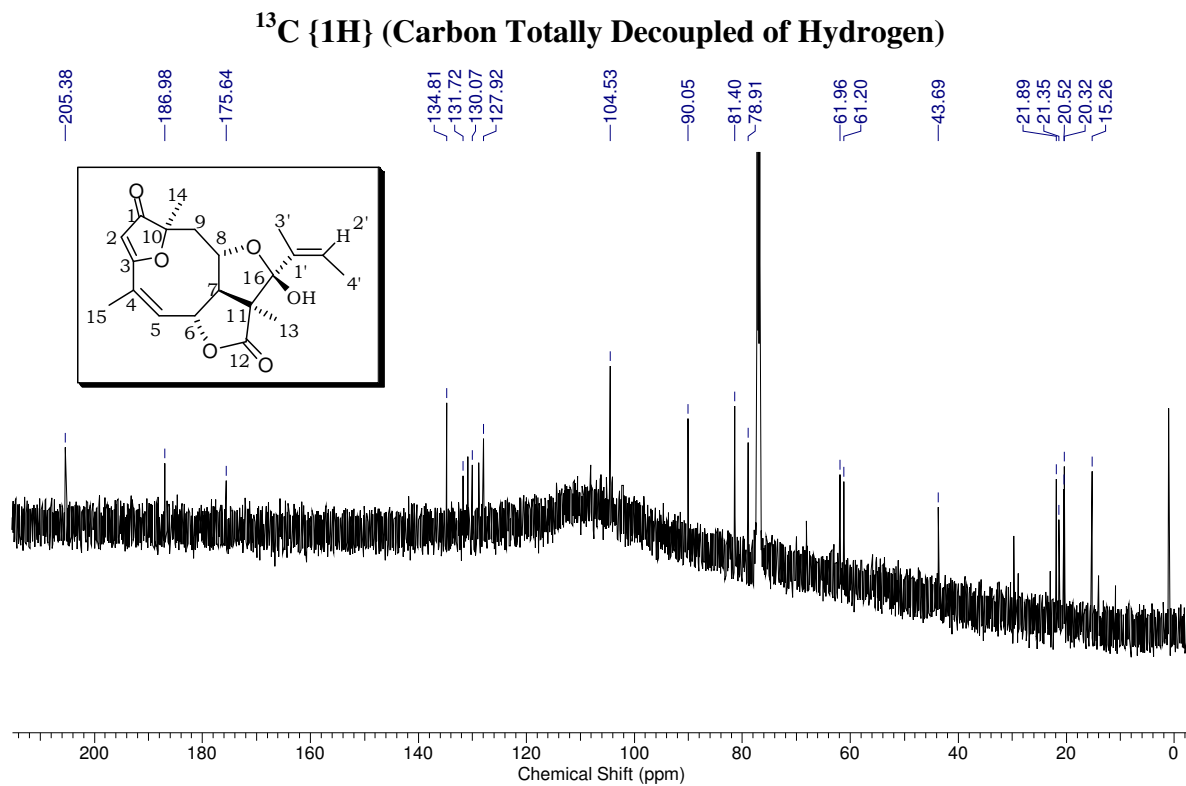
gHMBC – Compound 7



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Points Count	32768	Pulse Sequence	zg30	Solvent	CHLOROFORM-D
Sweep Width (Hz)	8503.40	Temperature (degree C)	27.000		

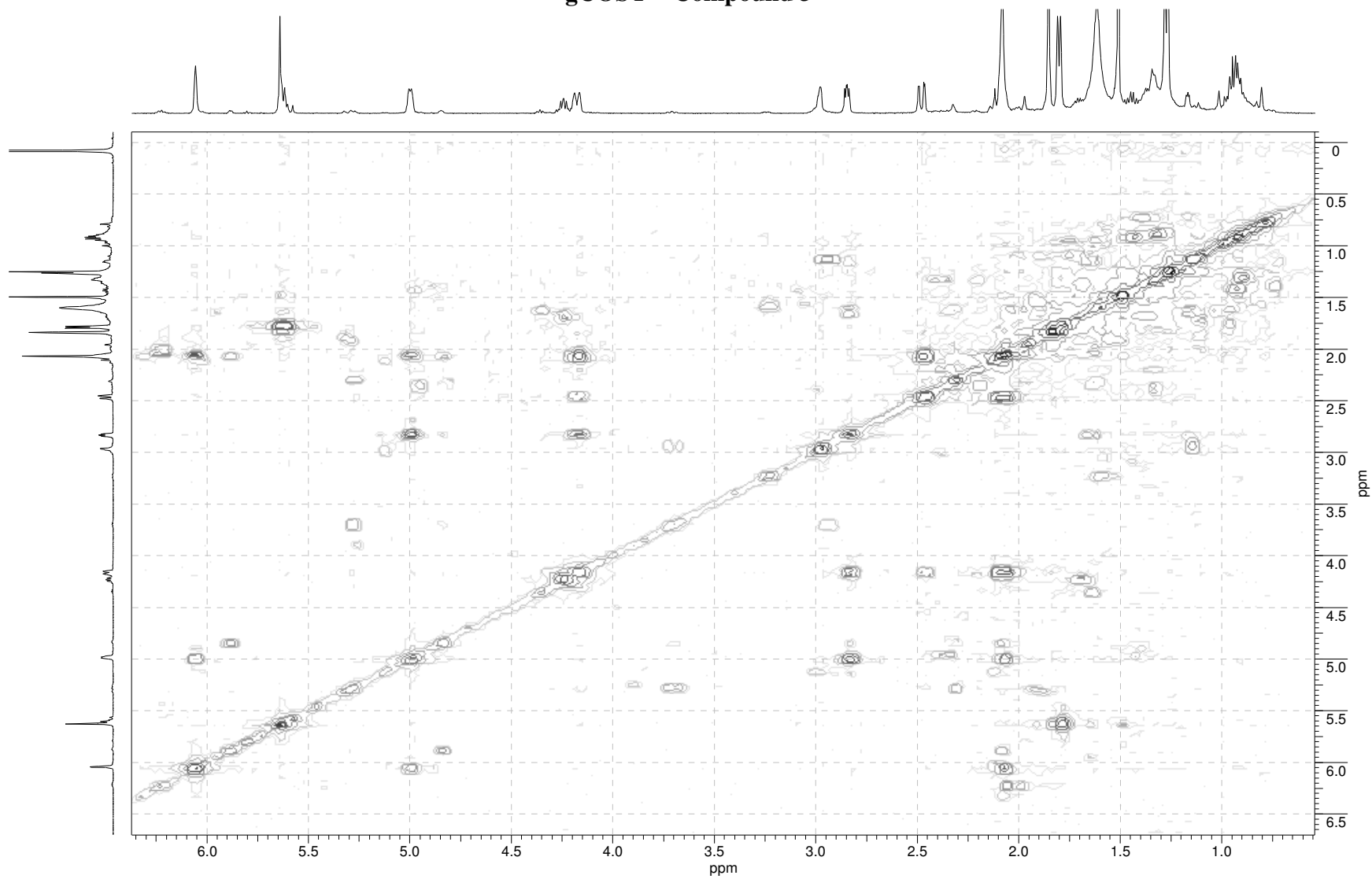


¹H NMR (500 MHz) in CDCl₃ of compound 3.

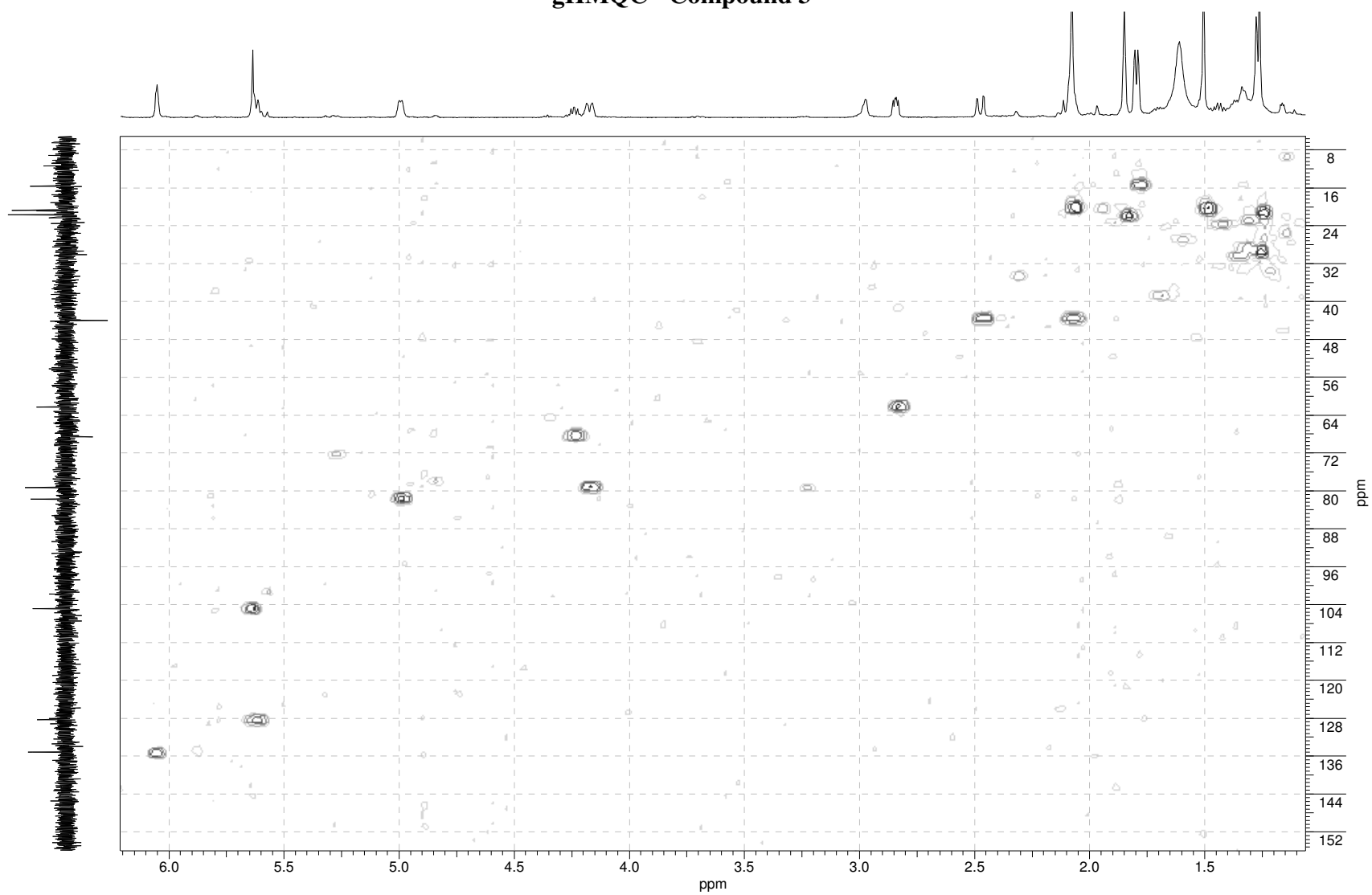


^{13}C NMR (125 MHz) in CDCl_3 of compound **3**

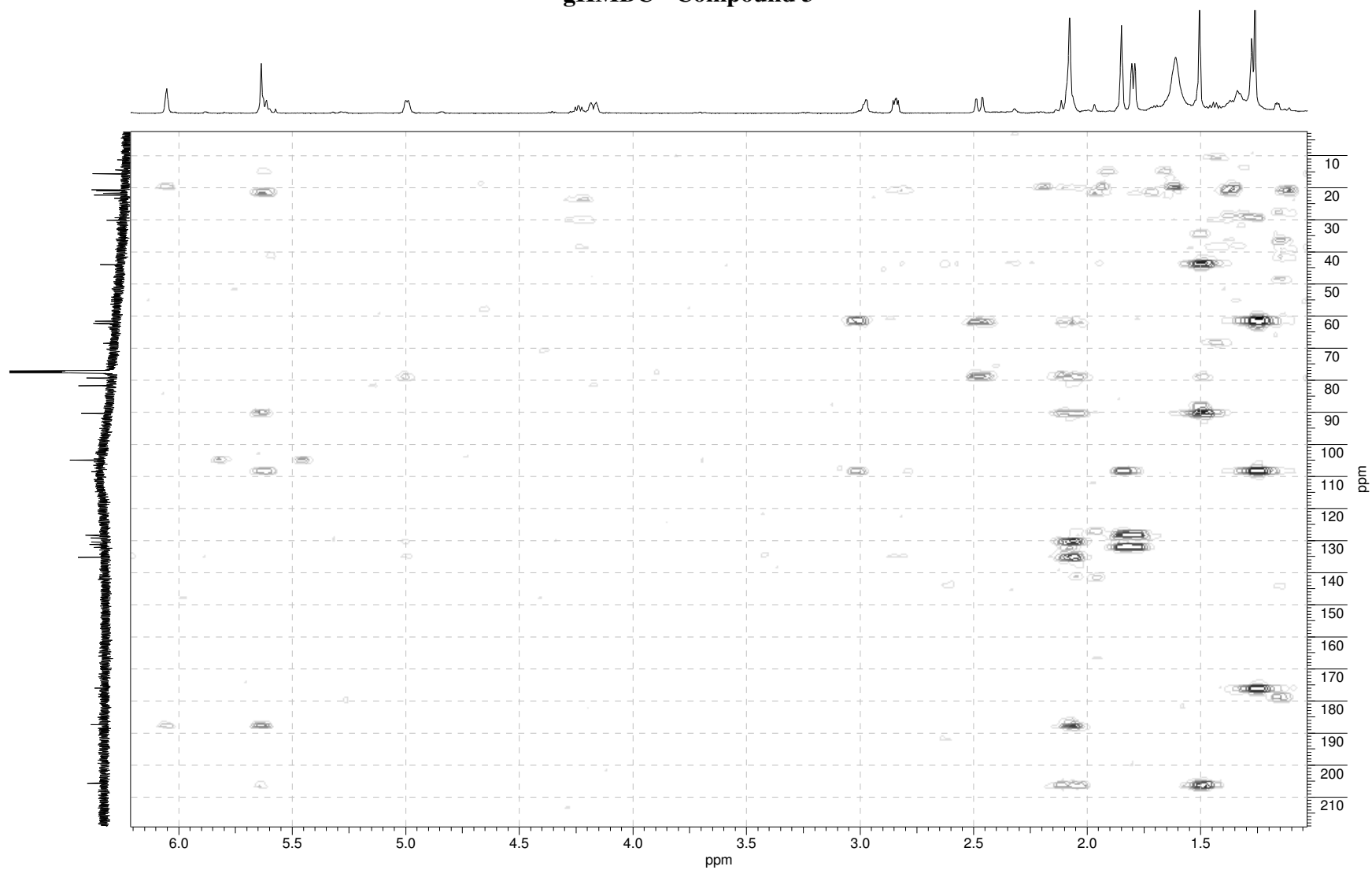
gCOSY – Compound 3



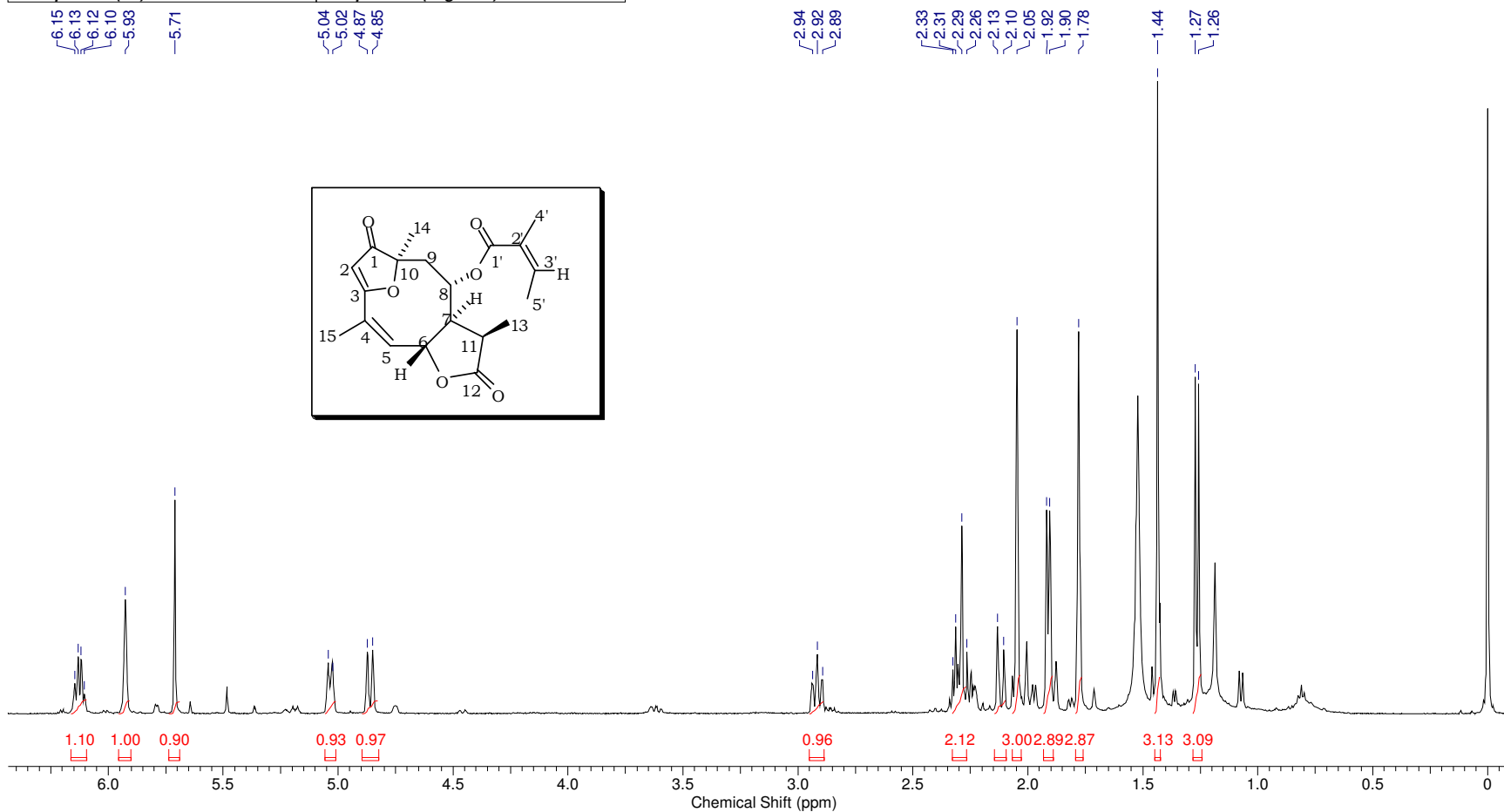
gHMQC - Compound 3



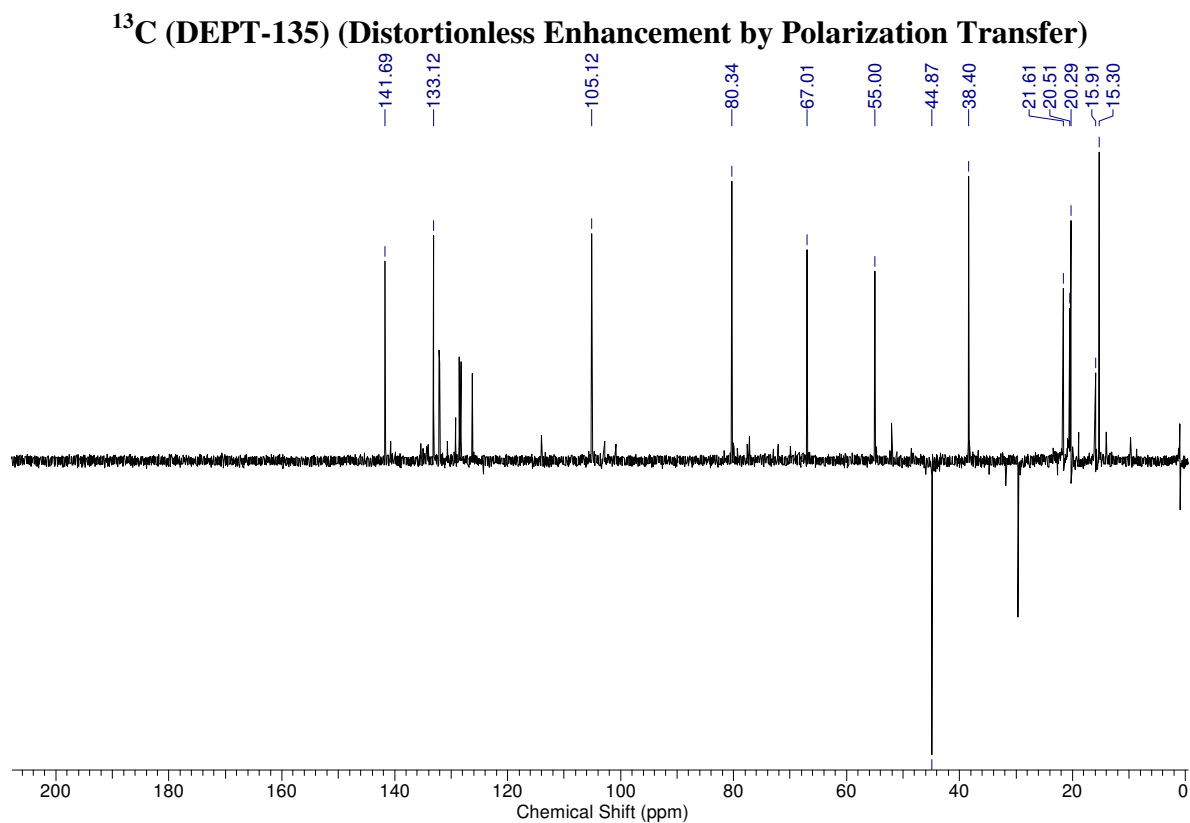
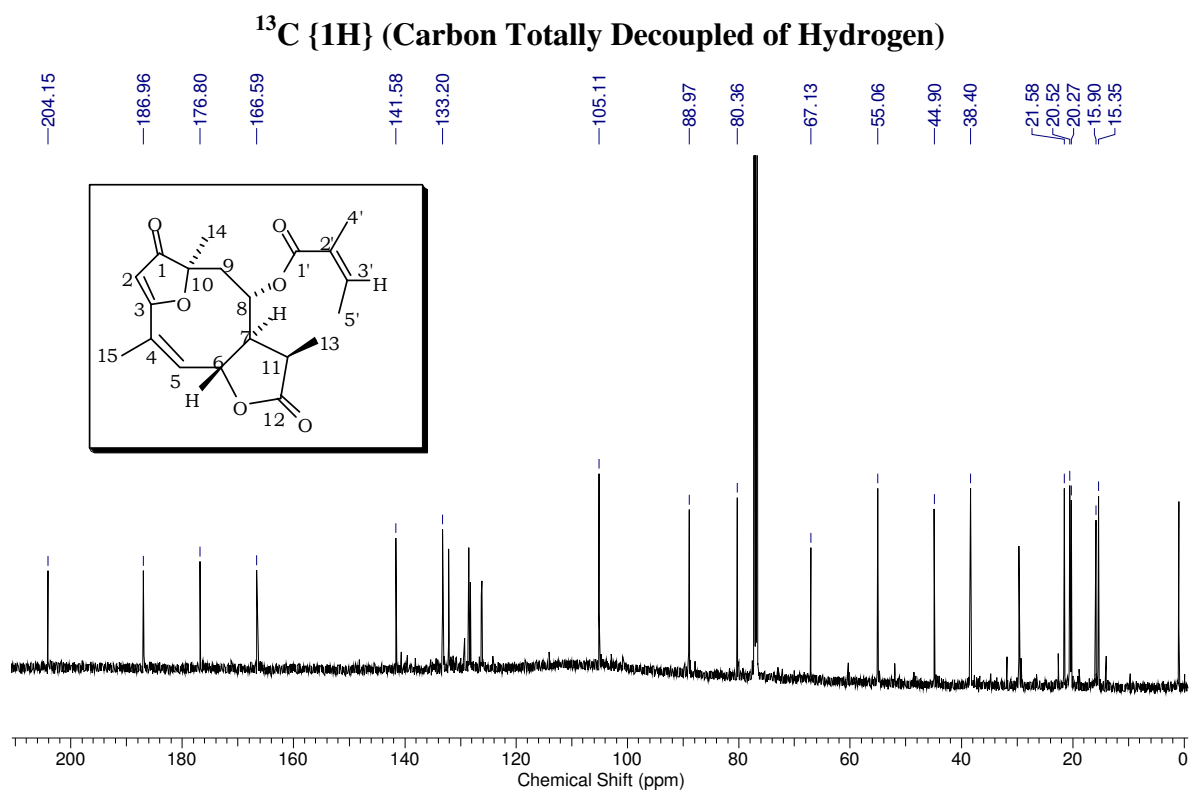
gHMBC - Compound 3



Acquisition Time (sec)	3.8535	Comment	Imported from UXMNR.		
Frequency (MHz)	500.13				
Nucleus	1H	Number of Transients	16	Original Points Count	32768
Points Count	32768	Pulse Sequence	zg30	Solvent	CHLOROFORM-D
Sweep Width (Hz)	8503.40	Temperature (degree C)	27.000		

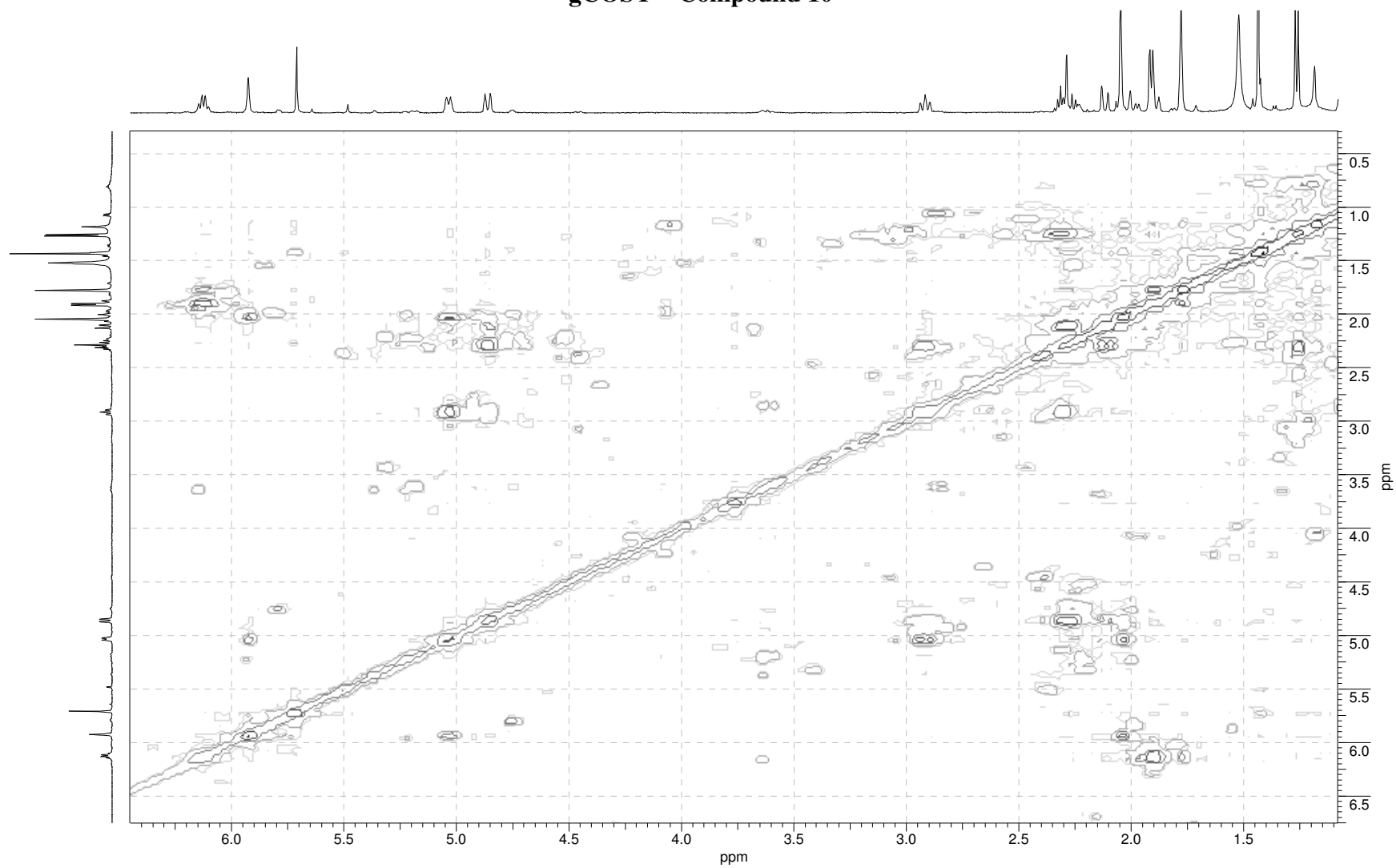


^1H NMR (500 MHz) in CDCl_3 of compound **10**.

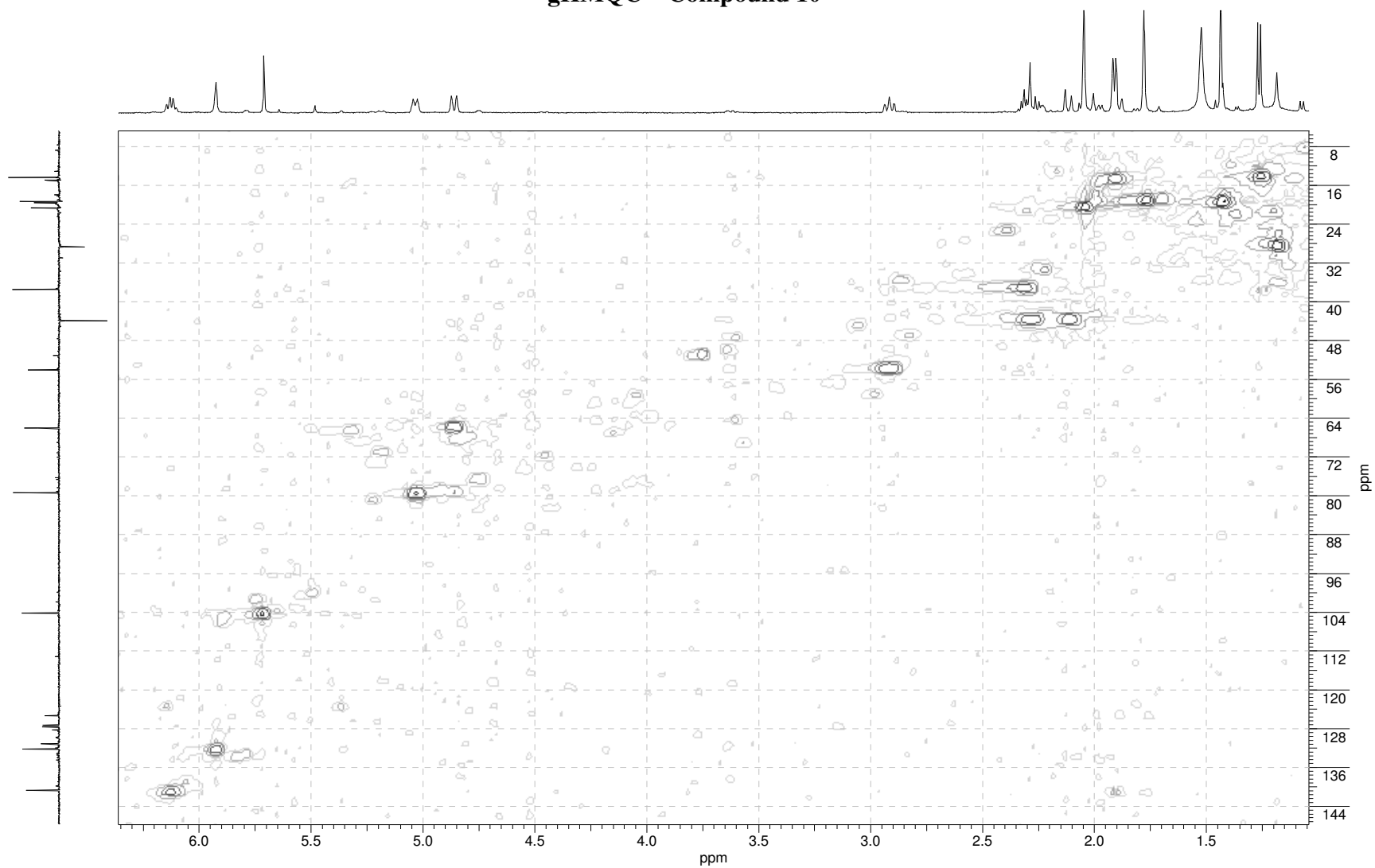


^{13}C NMR (125 MHz) in CDCl_3 of compound **10**.

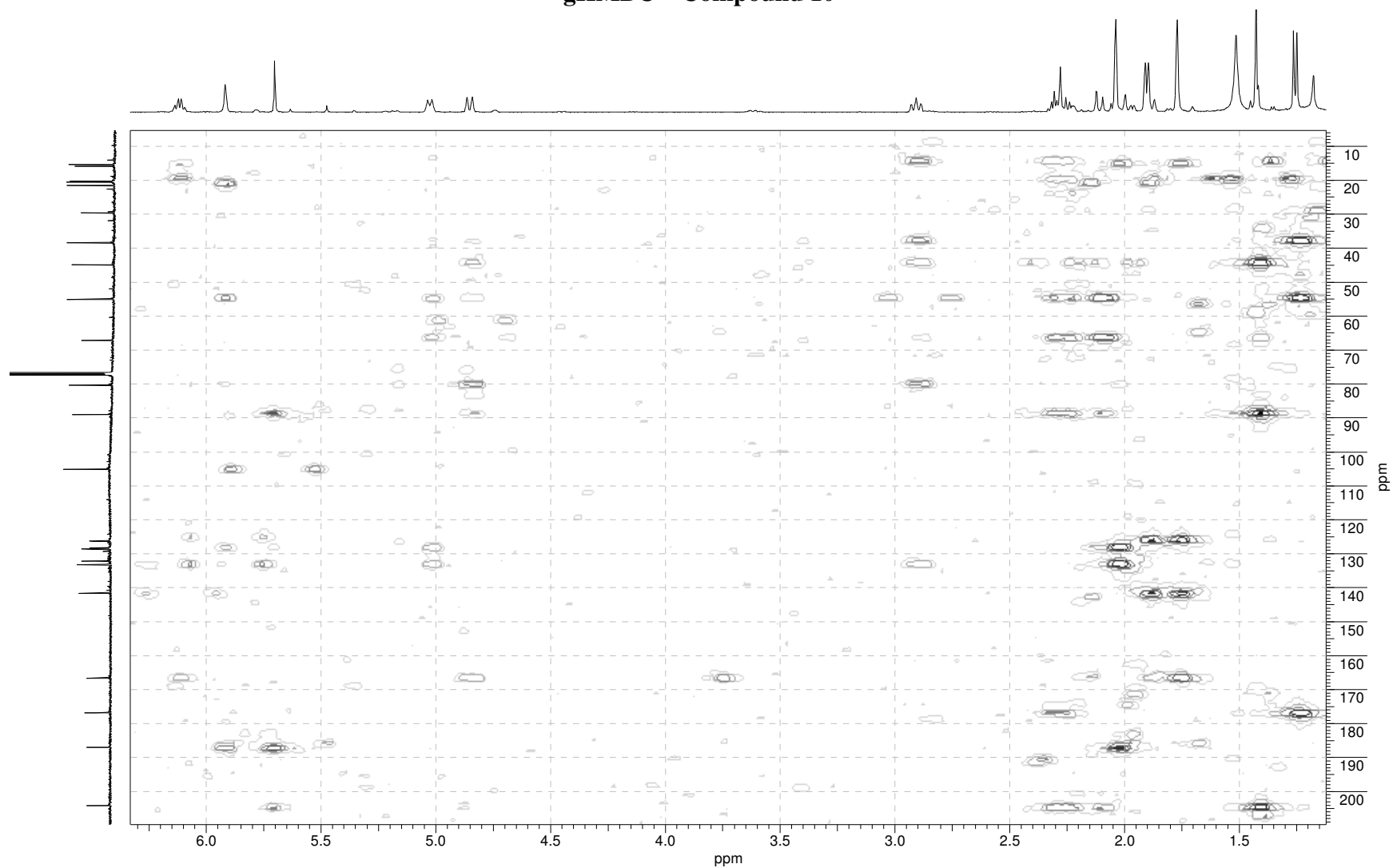
gCOSY – Compound 10



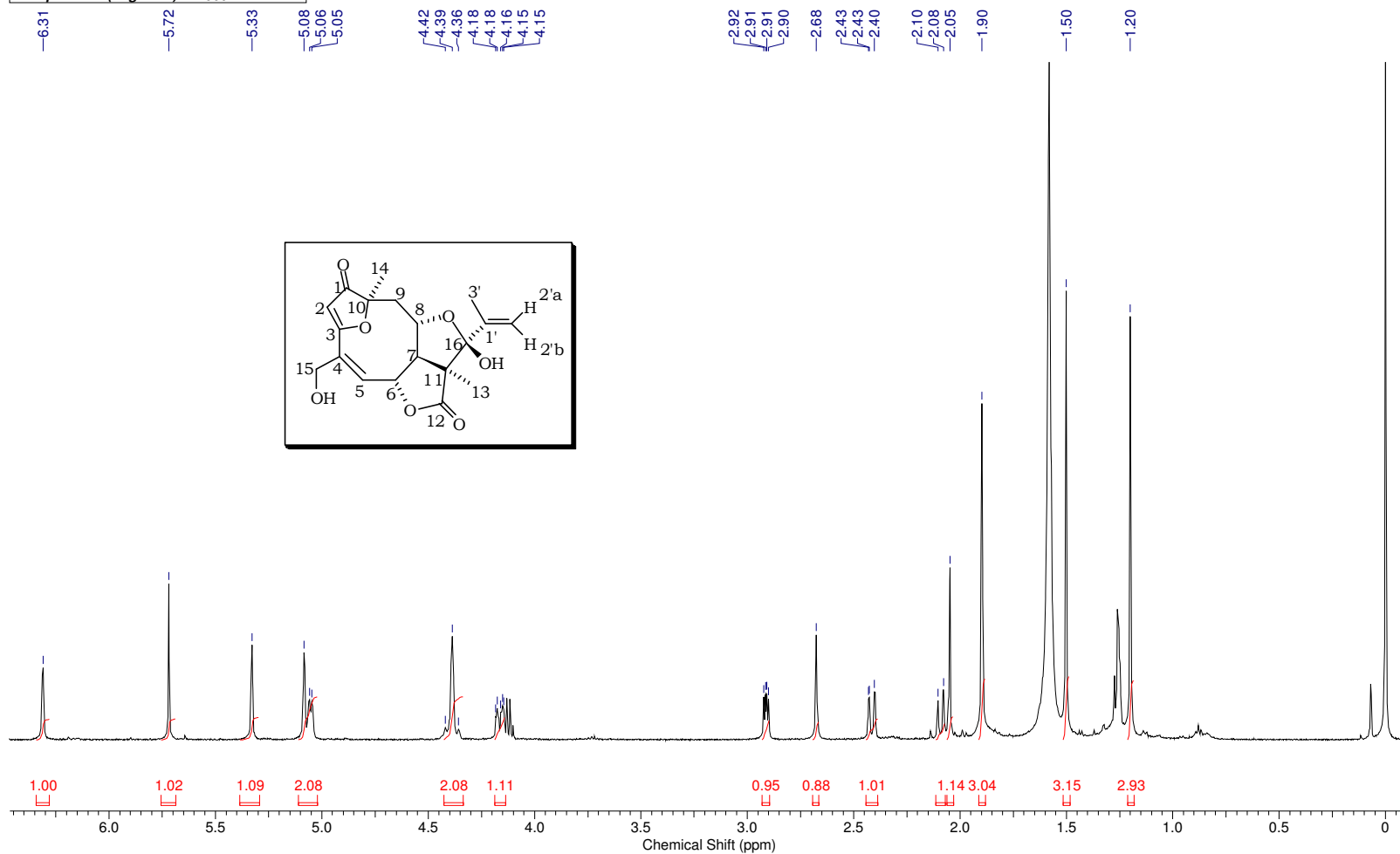
gHMQC – Compound 10



gHMBC – Compound 10

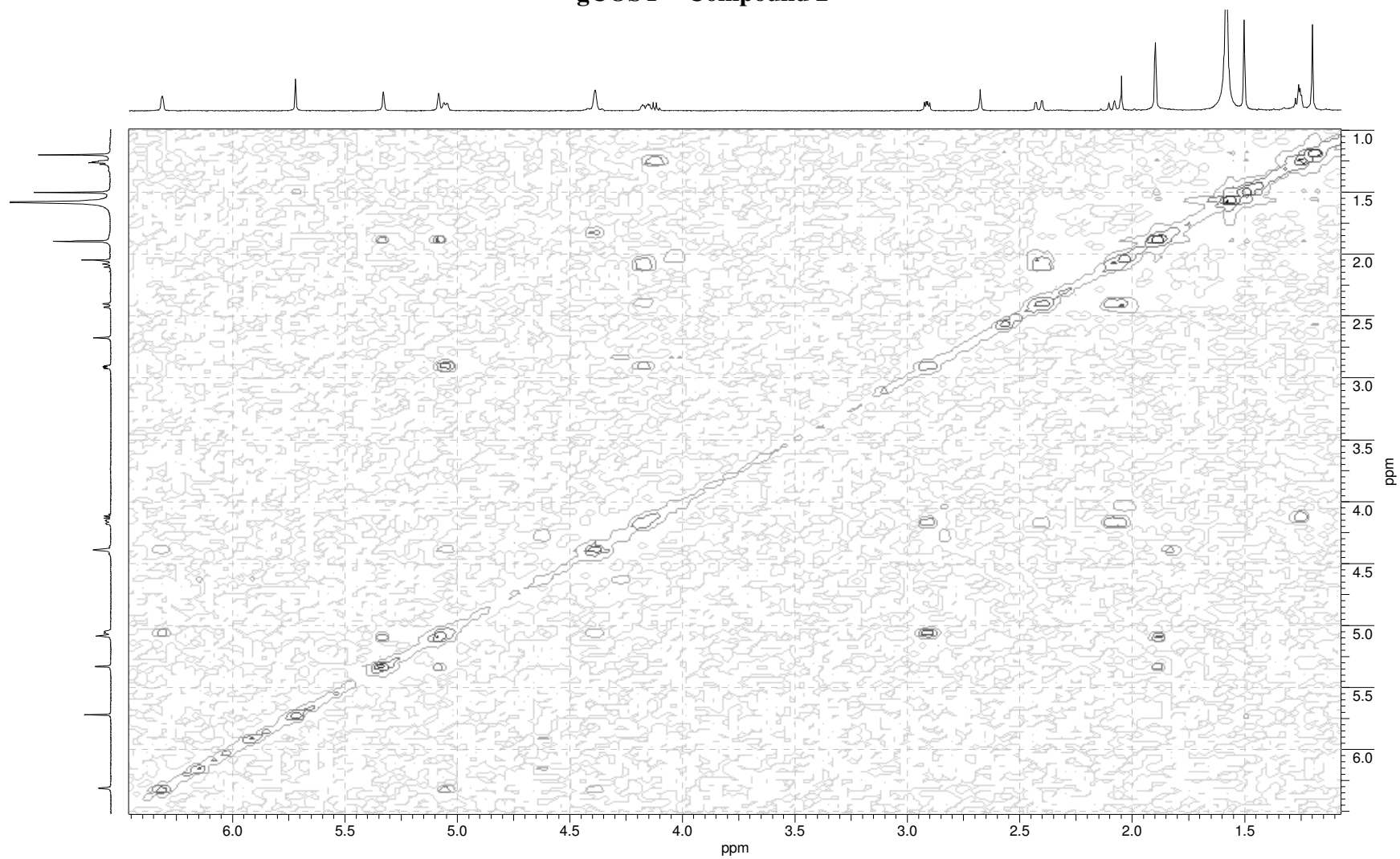


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Solvent	CHLOROFORM-D	Sweep Width (Hz)	7936.51	
Temperature (degree C)	27.000			

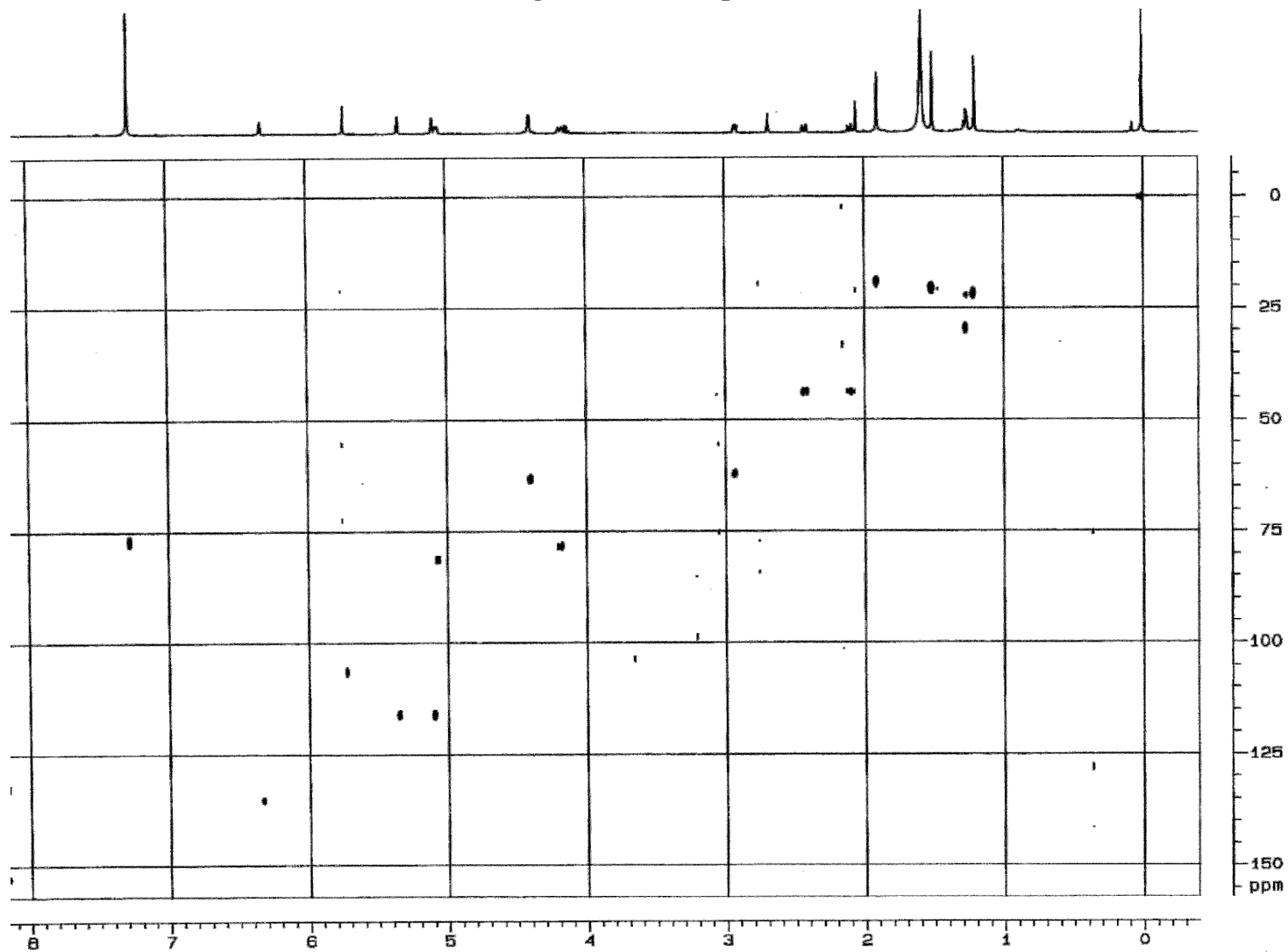


^1H NMR (500 MHz) in CDCl_3 of compound **2**.

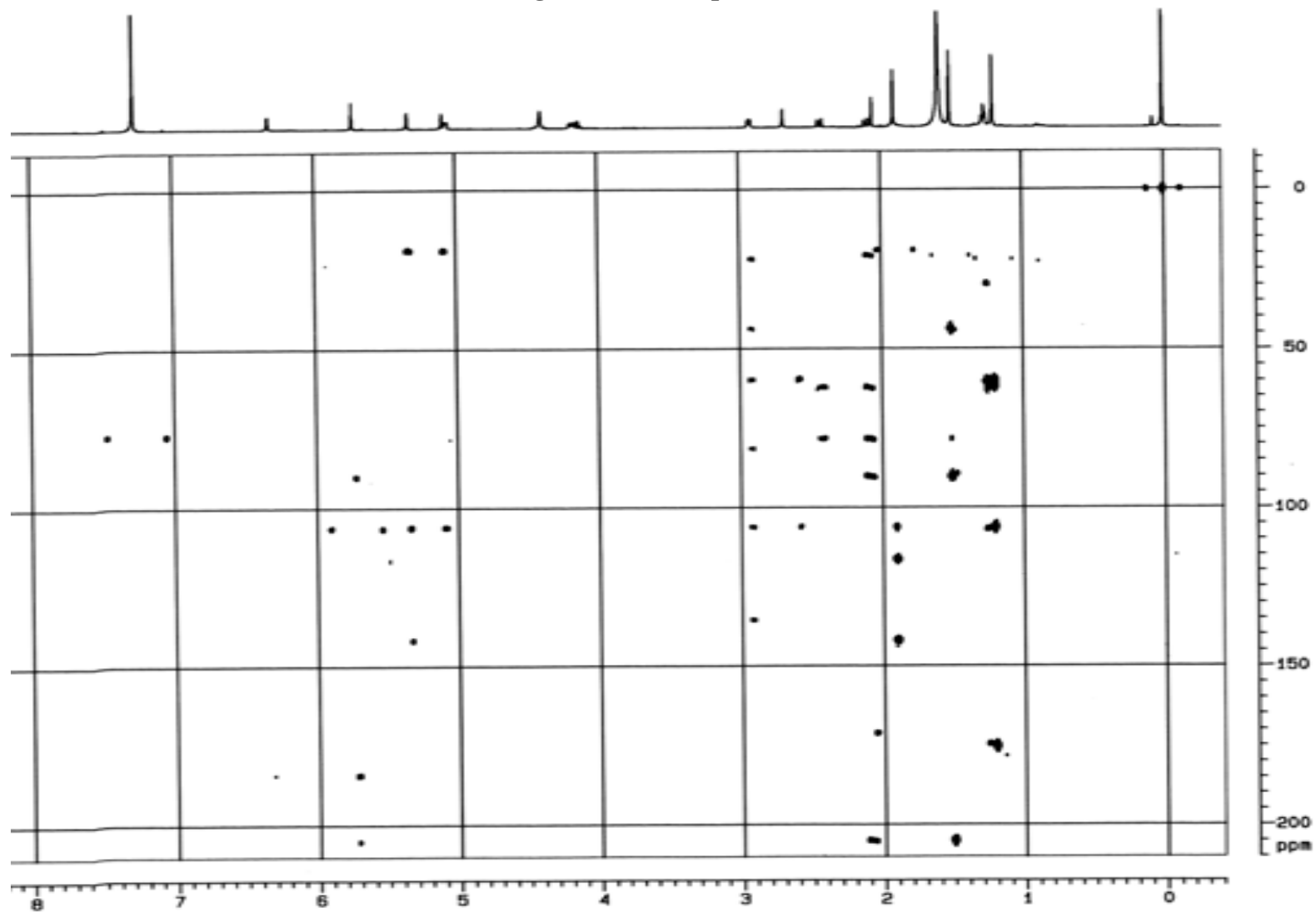
gCOSY – Compound 2



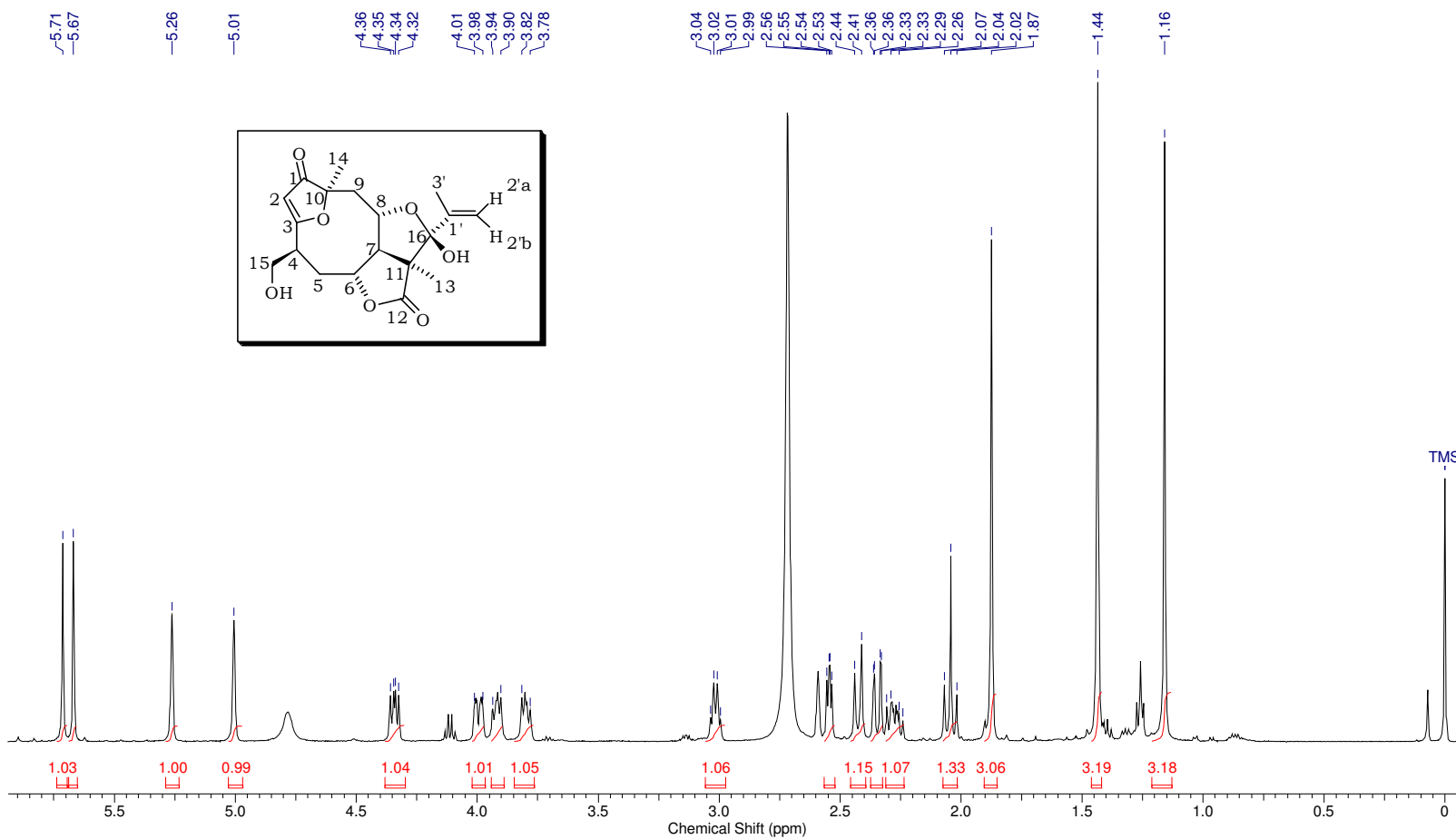
gHMQC – Compound 2



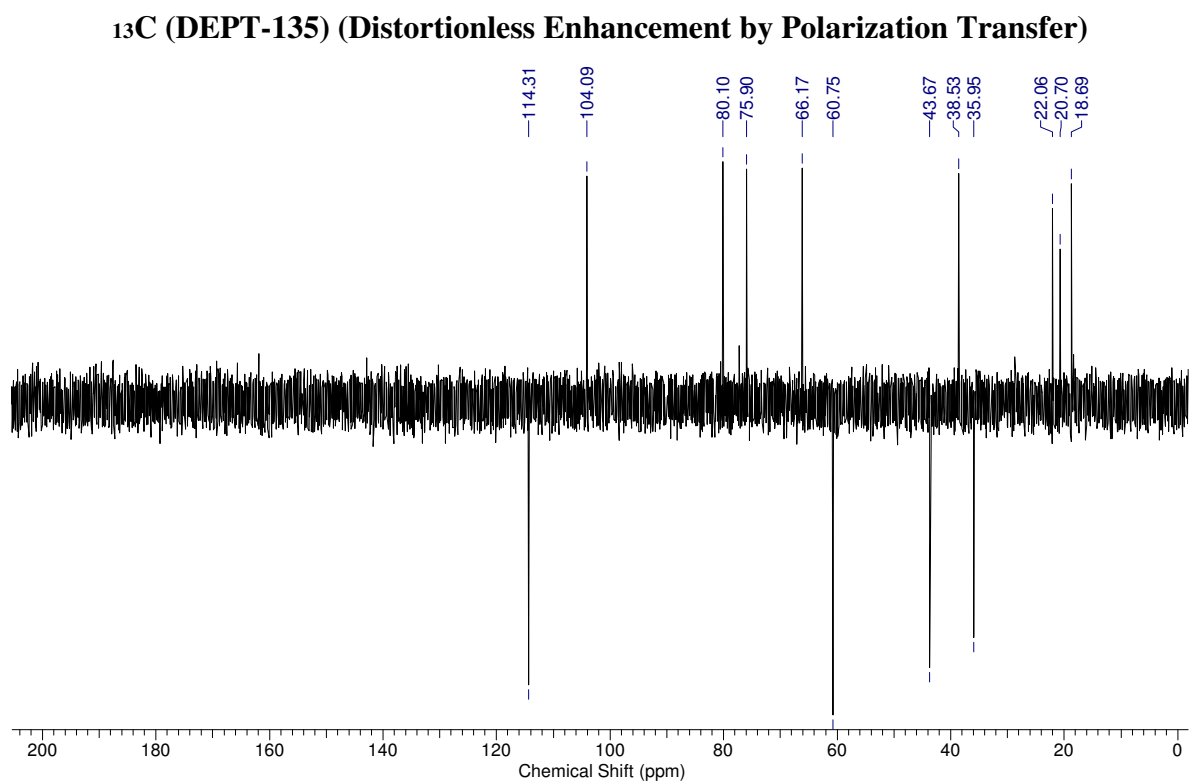
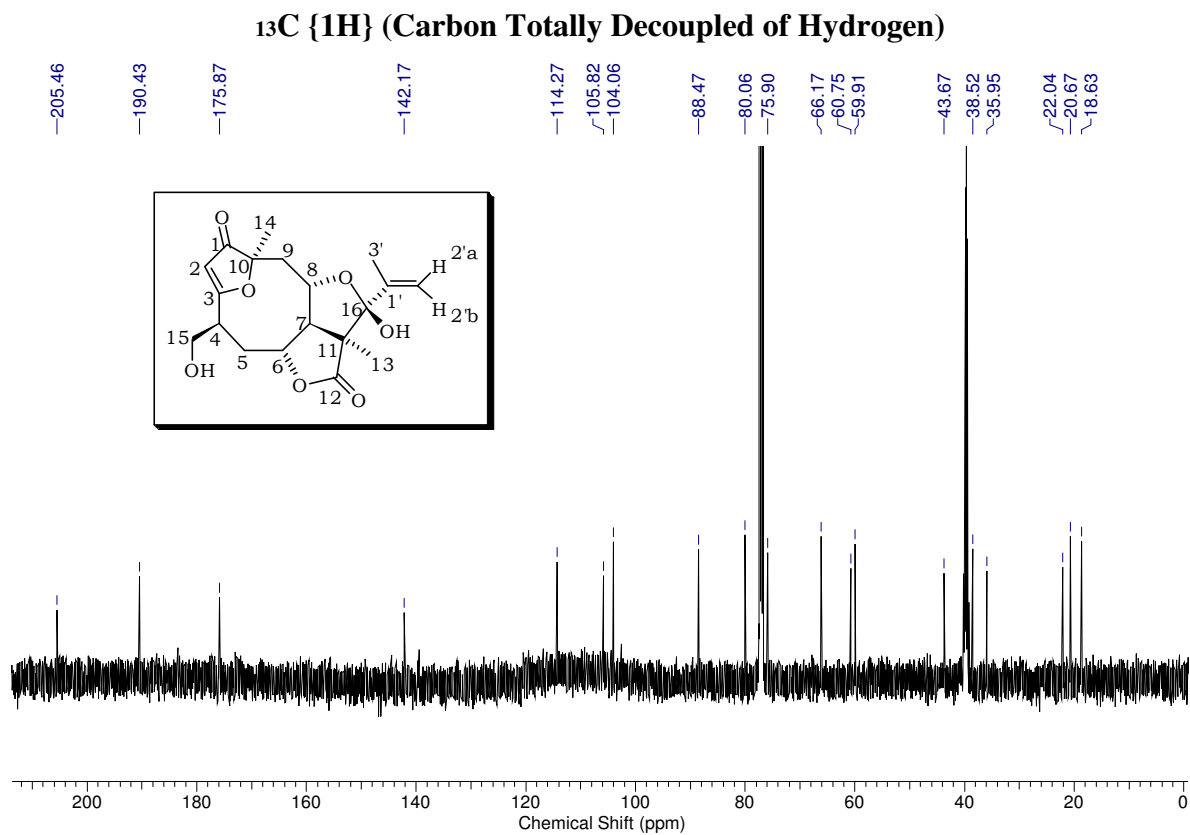
gHMBC – Compound 2



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Temperature (degree C)	27.000				

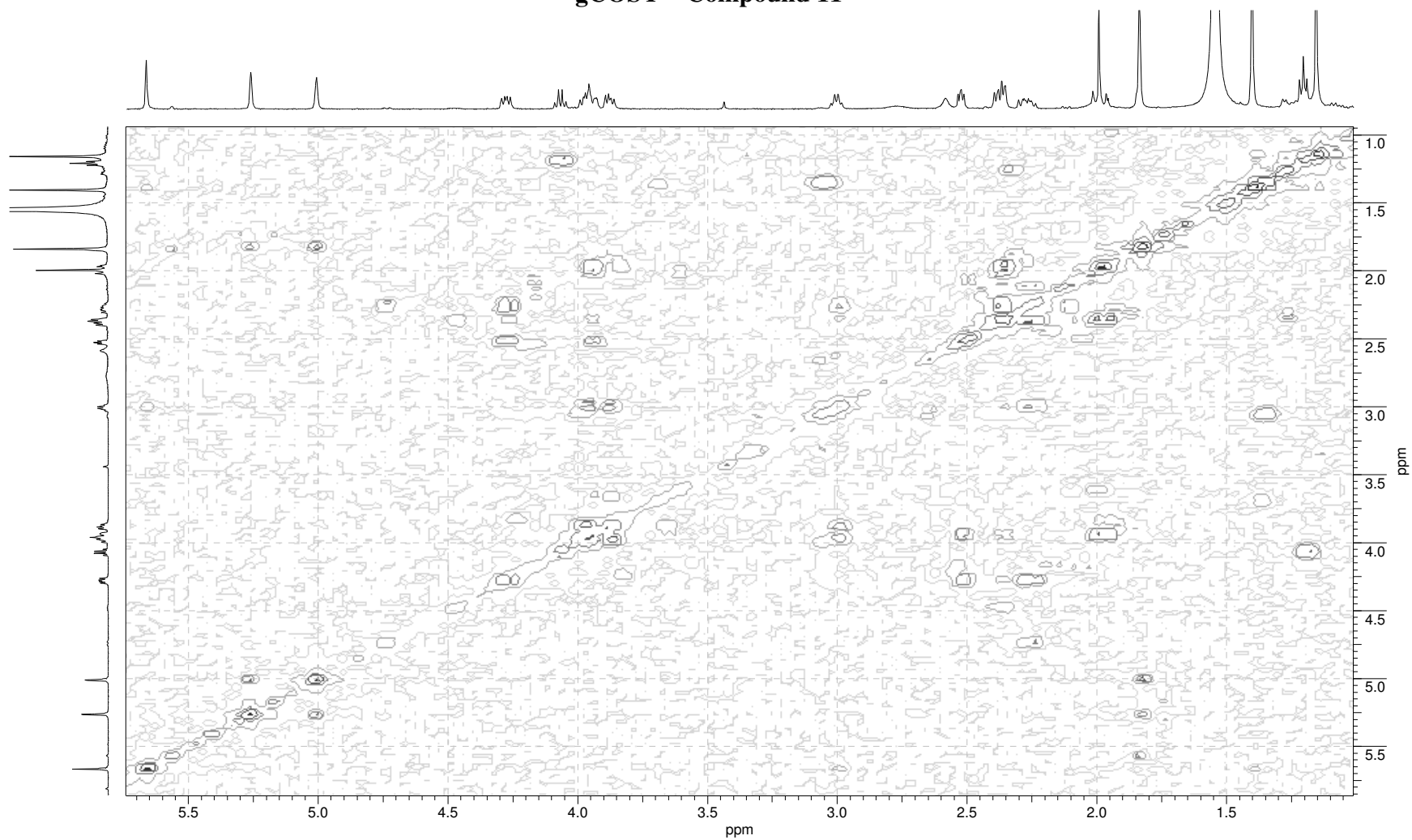


¹H NMR (500 MHz) in CDCl₃ with 10% DMSO-d₆ of compound **11**.

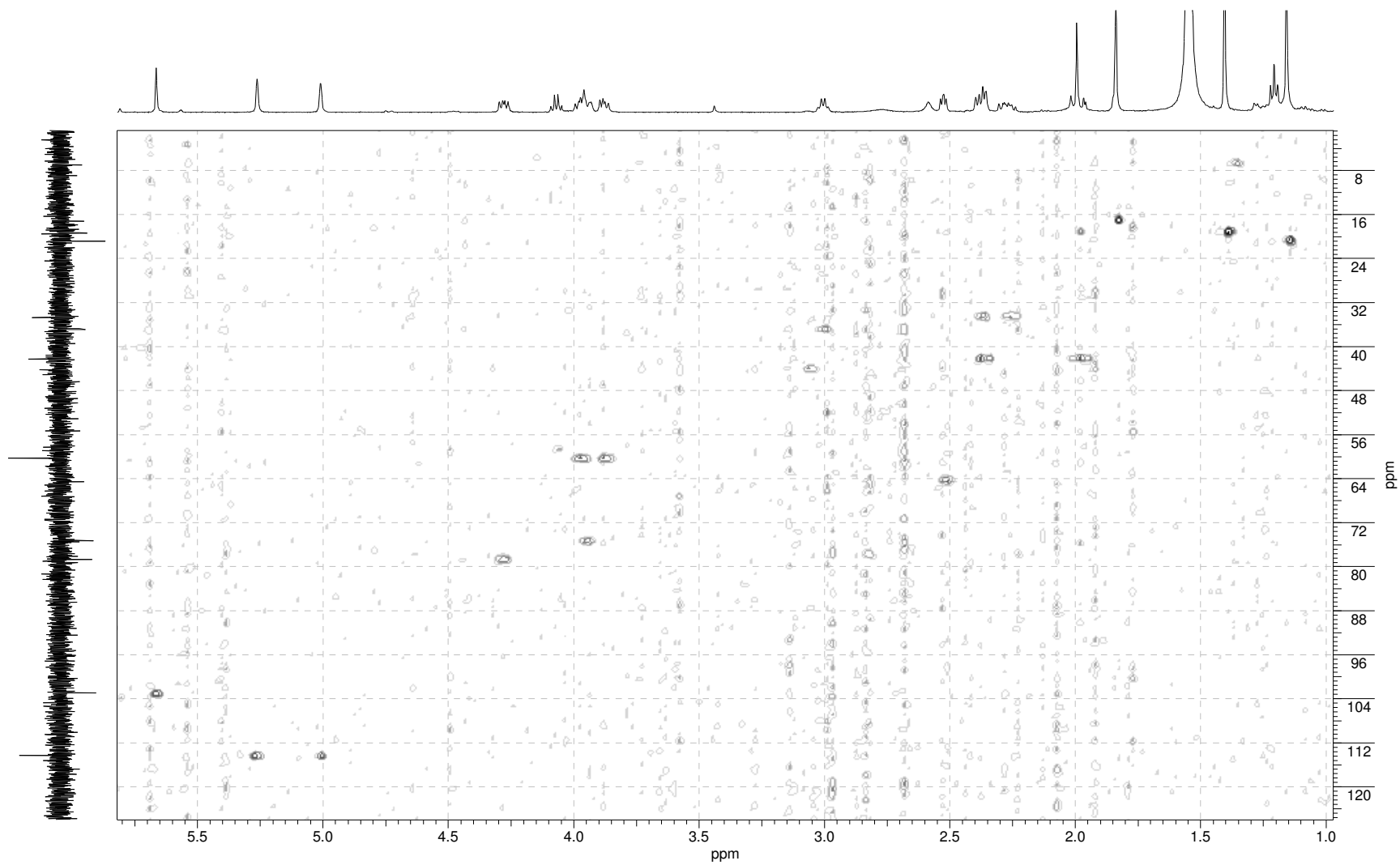


^{13}C NMR (125 MHz) in CDCl_3 with 10% DMSO-d_6 of compound **11**.

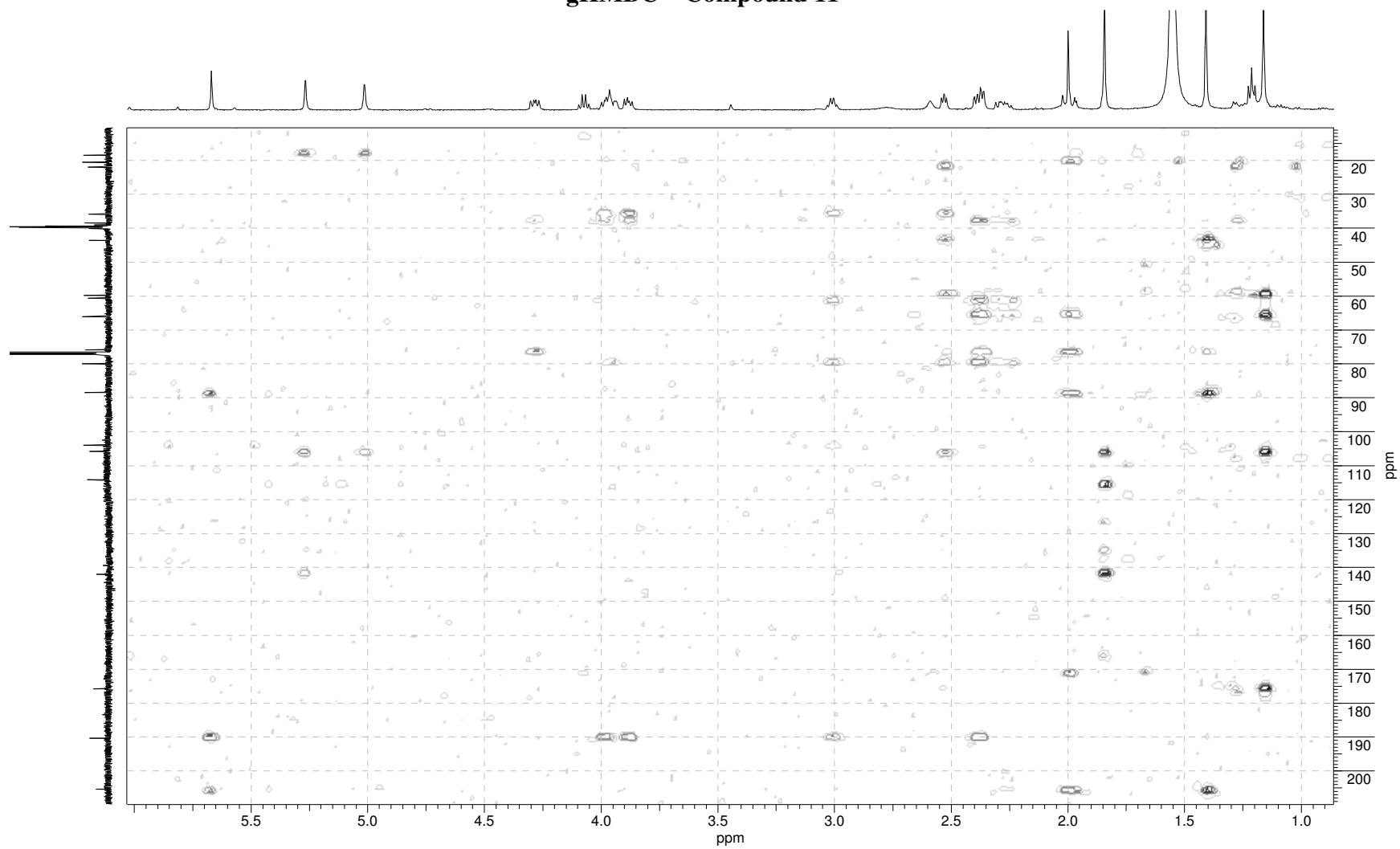
gCOSY – Compound 11



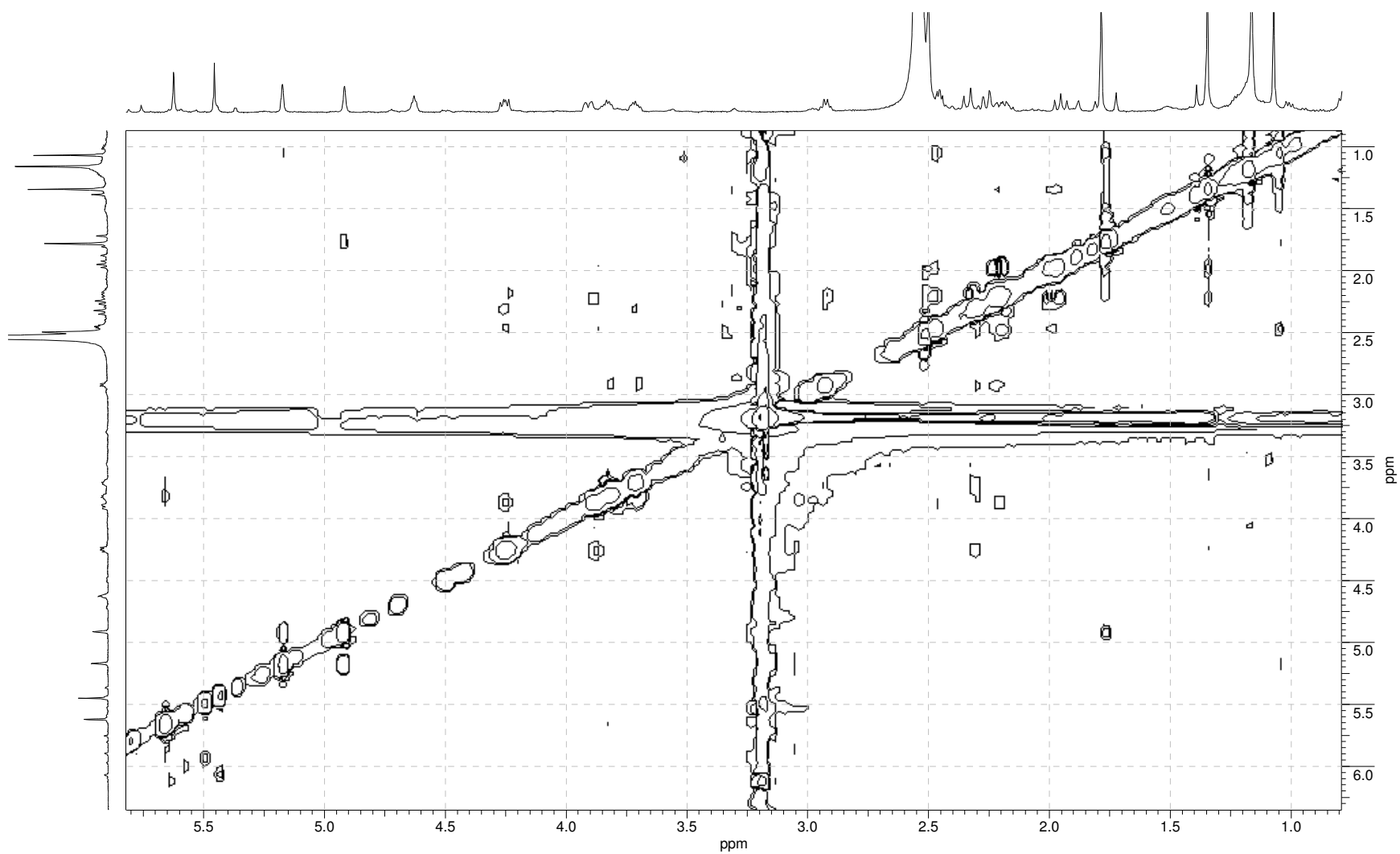
gHMQC – Compound 11



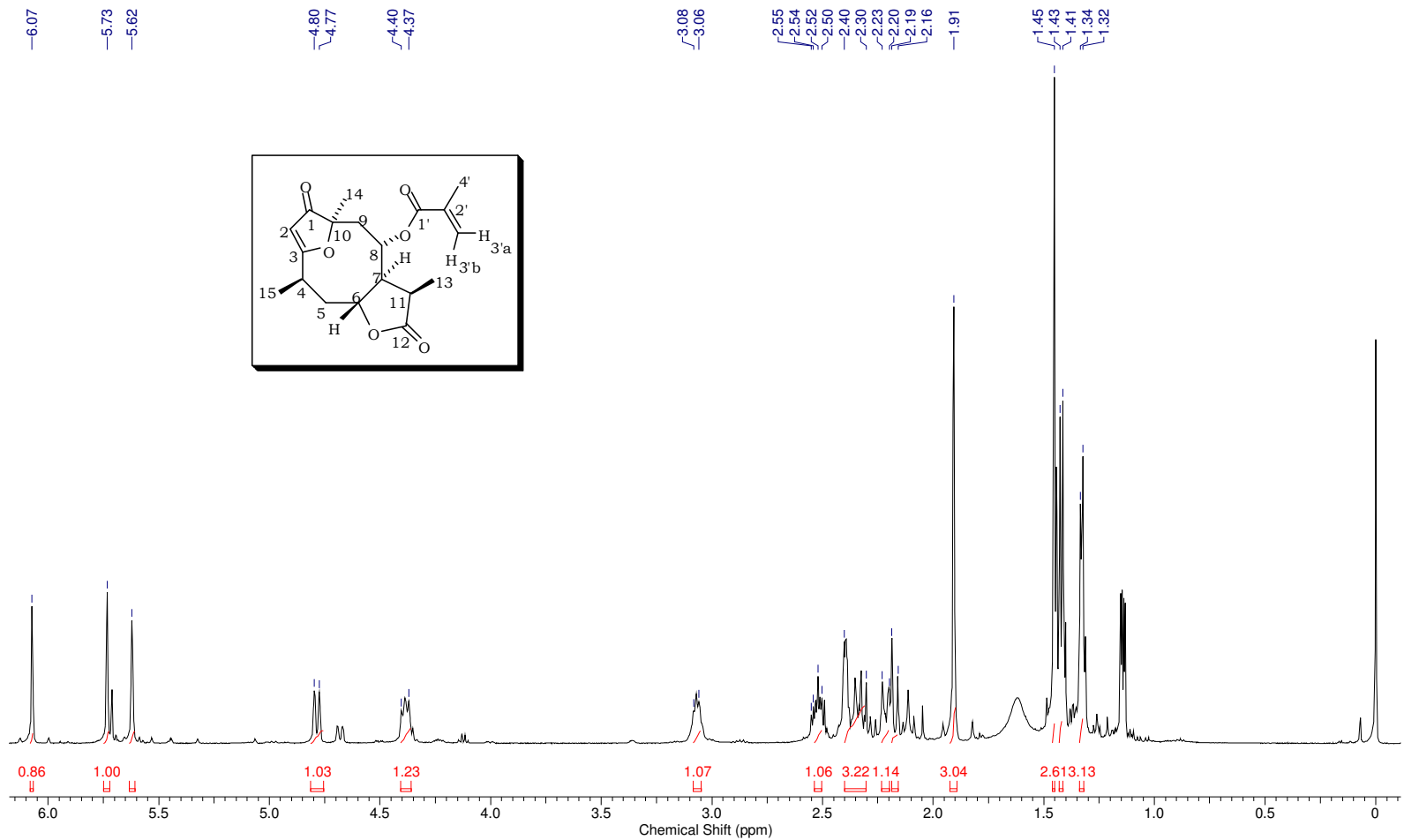
gHMBC – Compound 11



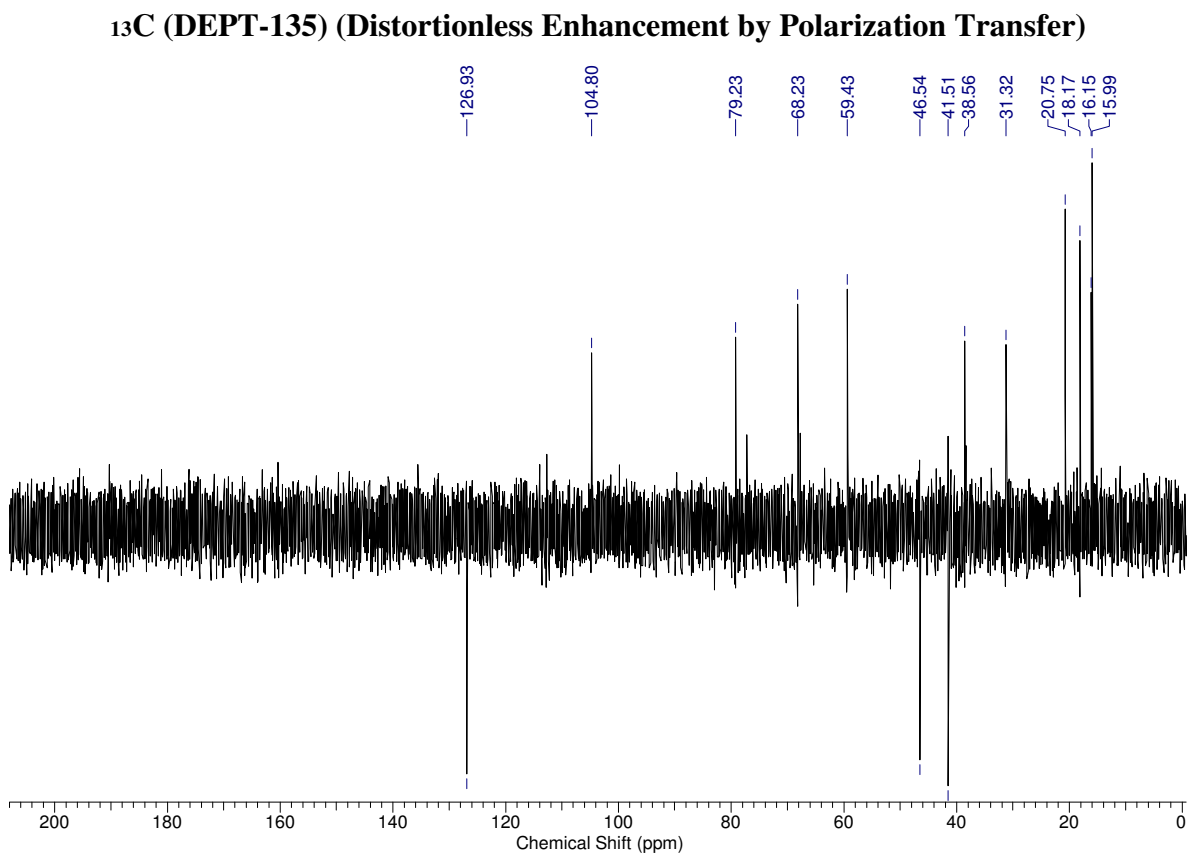
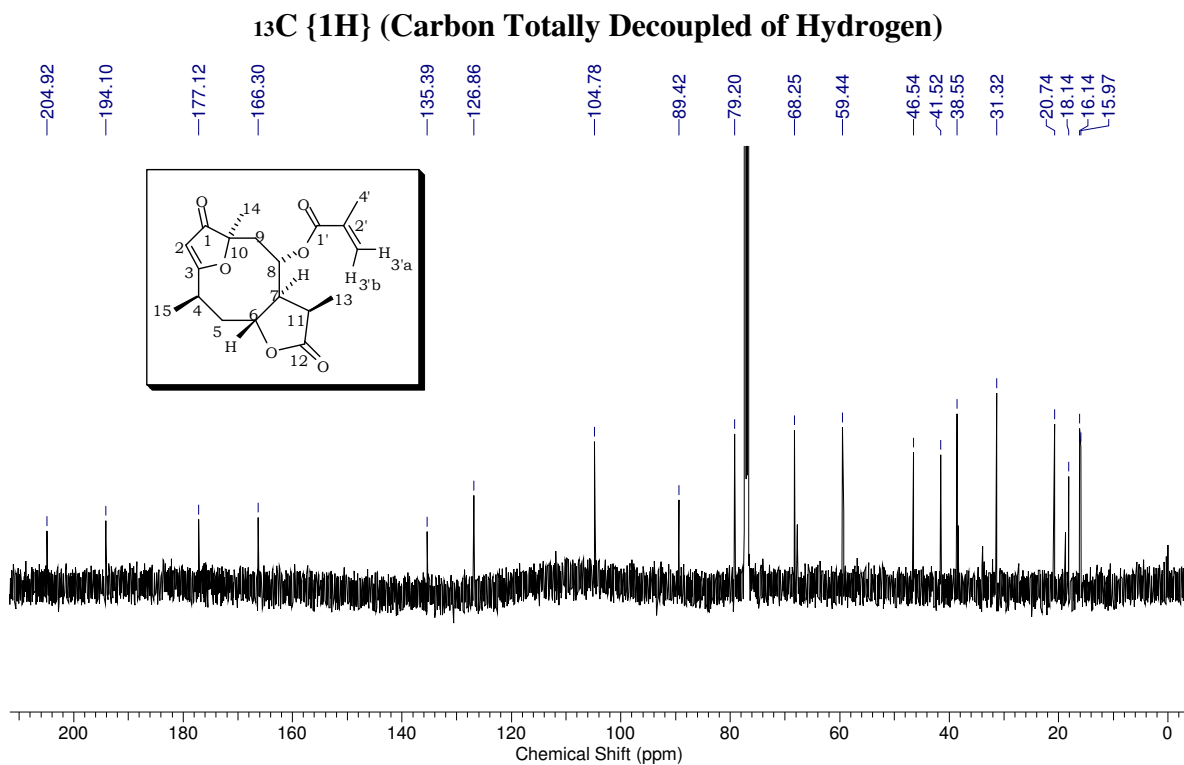
gNOESY – Compound 11



Acquisition Time (sec)	4.0108	Comment	Imported from UXNMR.		
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Solvent	CHLOROFORM-D	Sweep Width (Hz)	8169.93		
Temperature (degree C)	27.000				

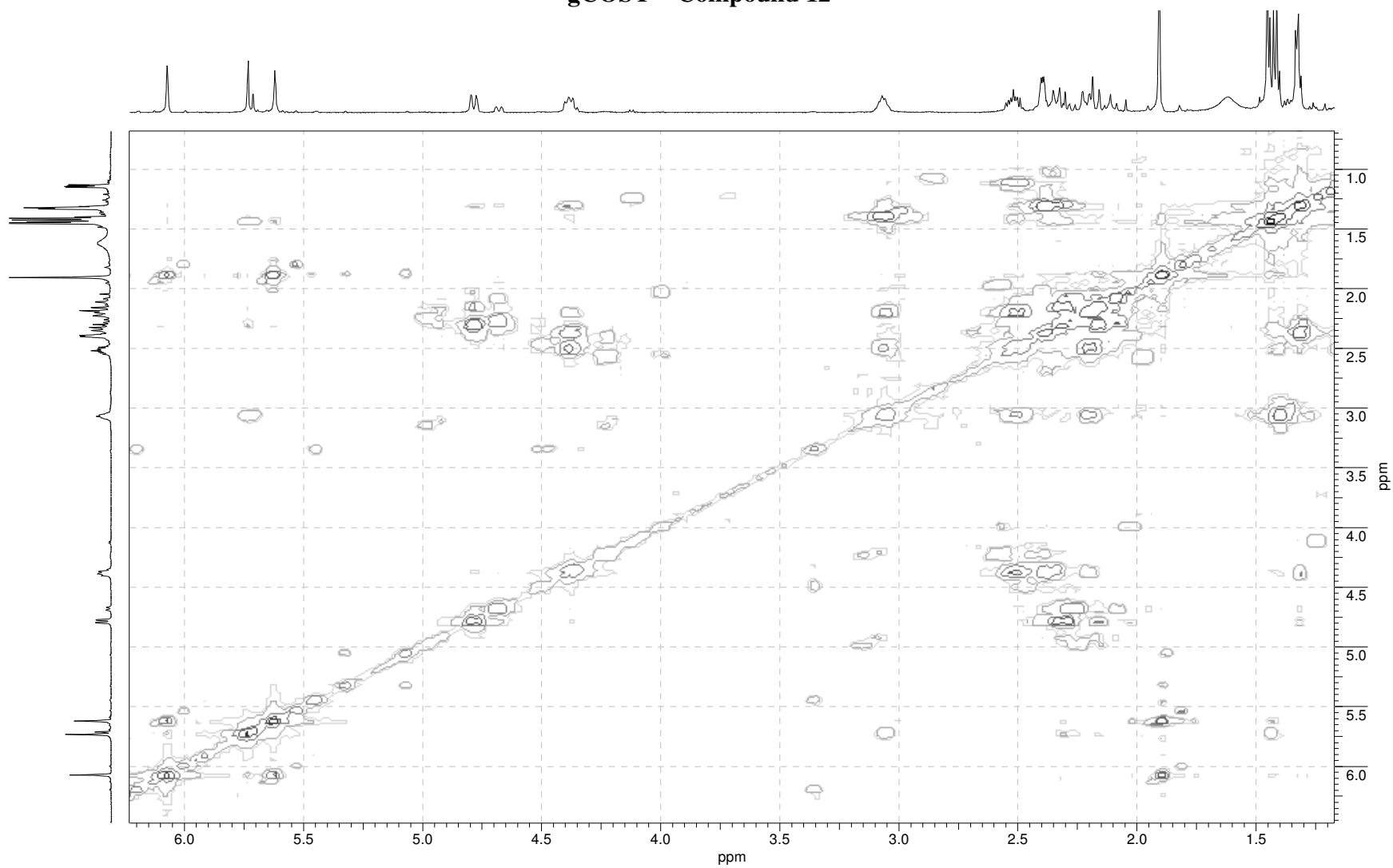


¹H NMR (500 MHz) in CDCl₃ of compound 12.

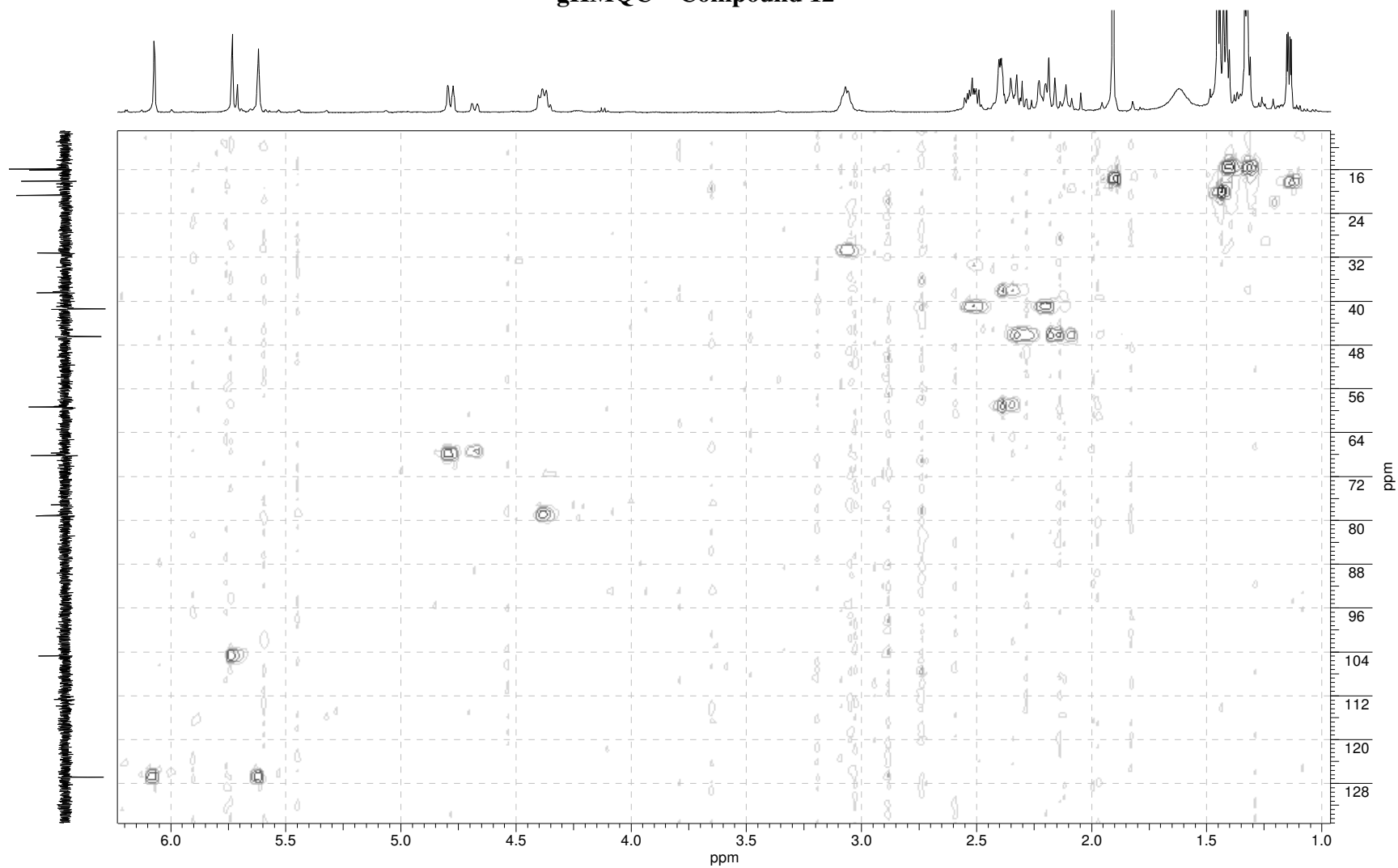


^{13}C NMR (125 MHz) in CDCl_3 of compound **12**.

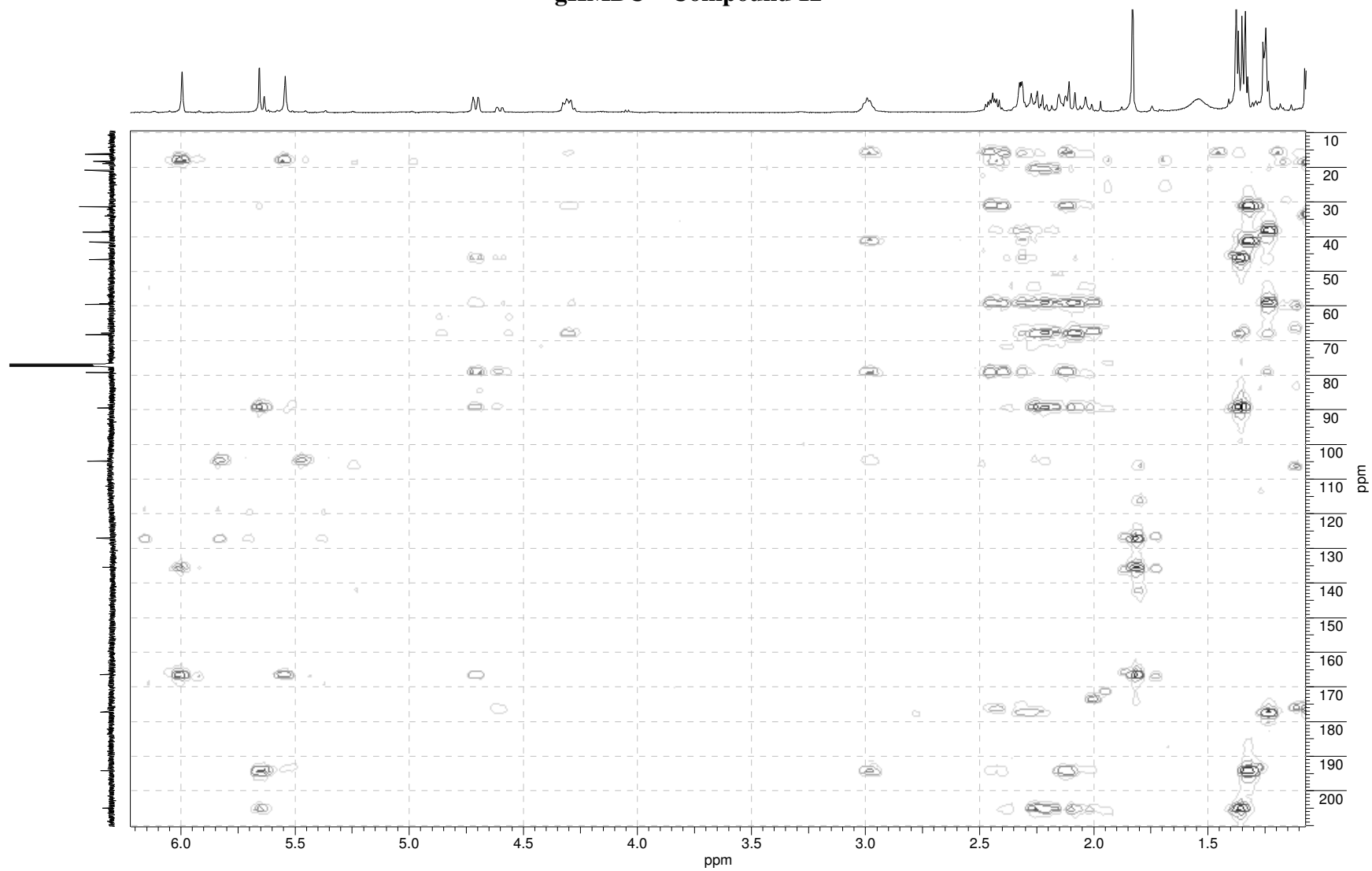
gCOSY – Compound 12



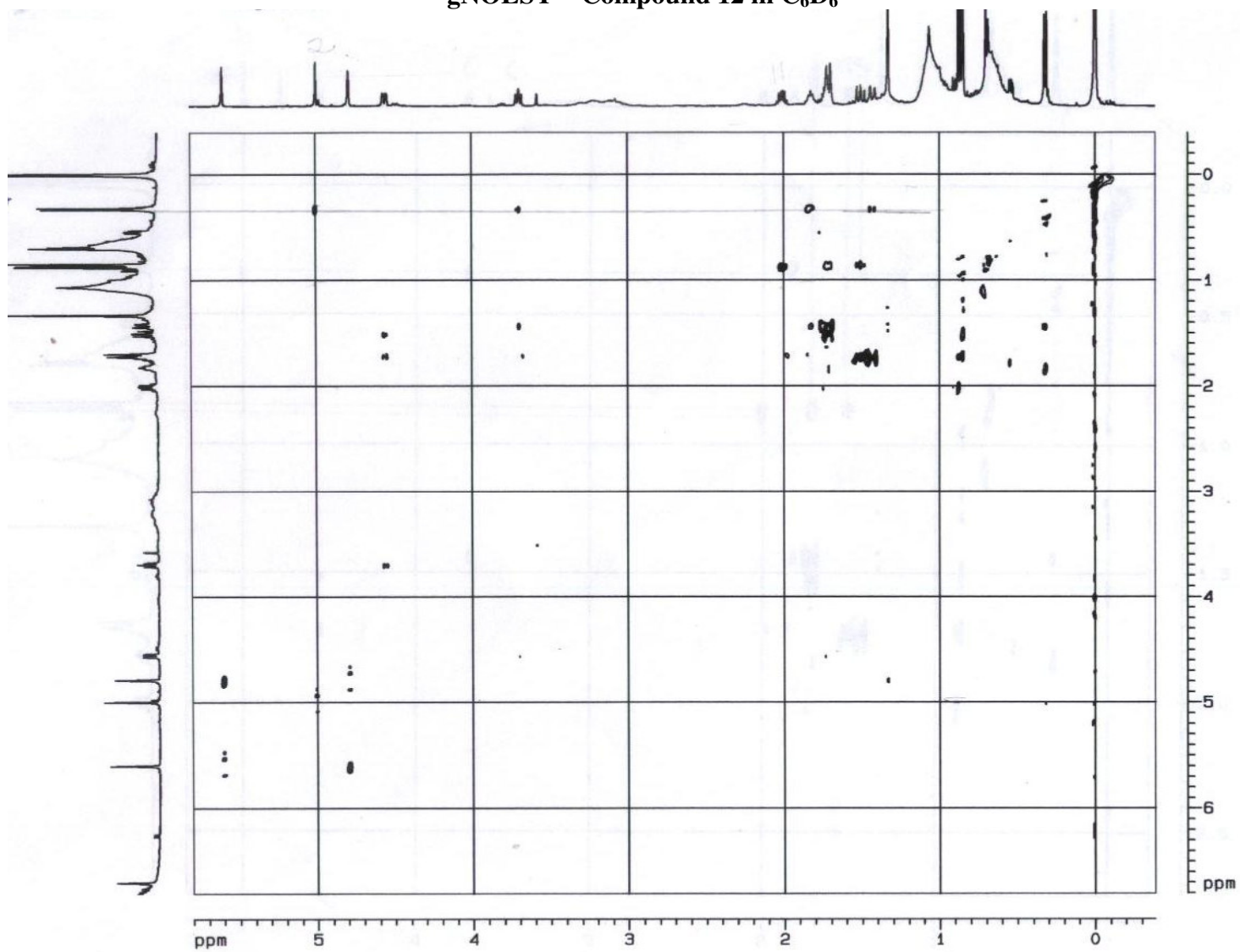
gHMQC – Compound 12



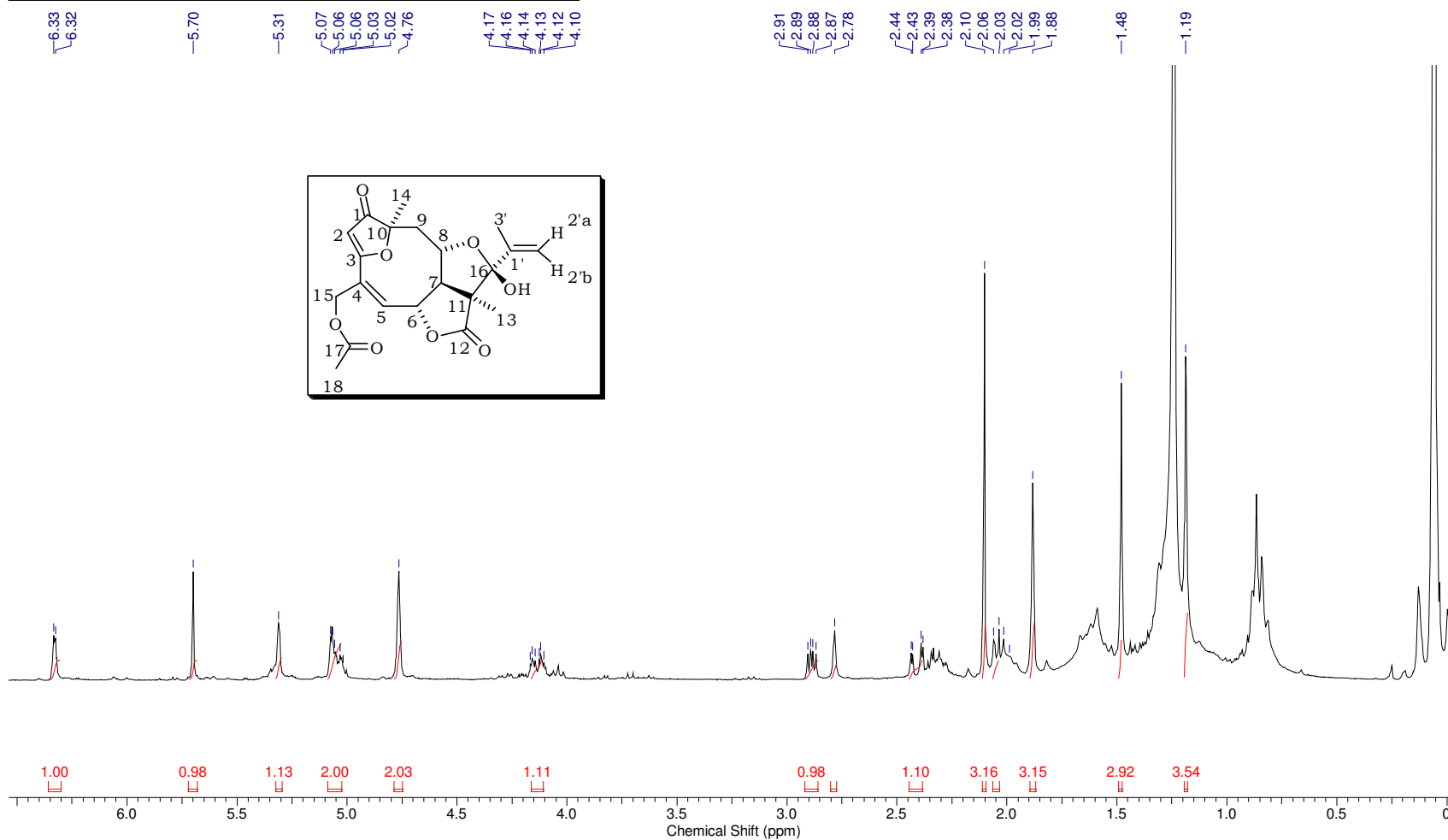
gHMBC – Compound 12



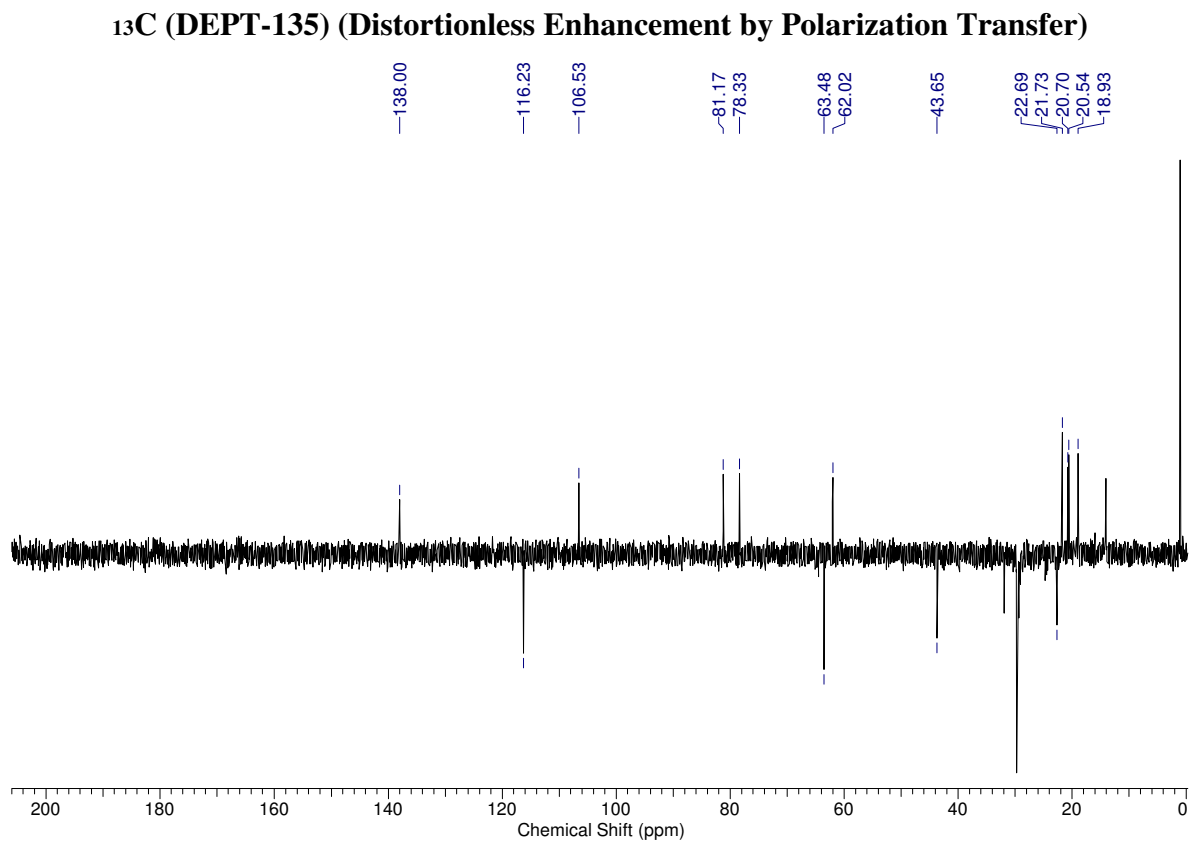
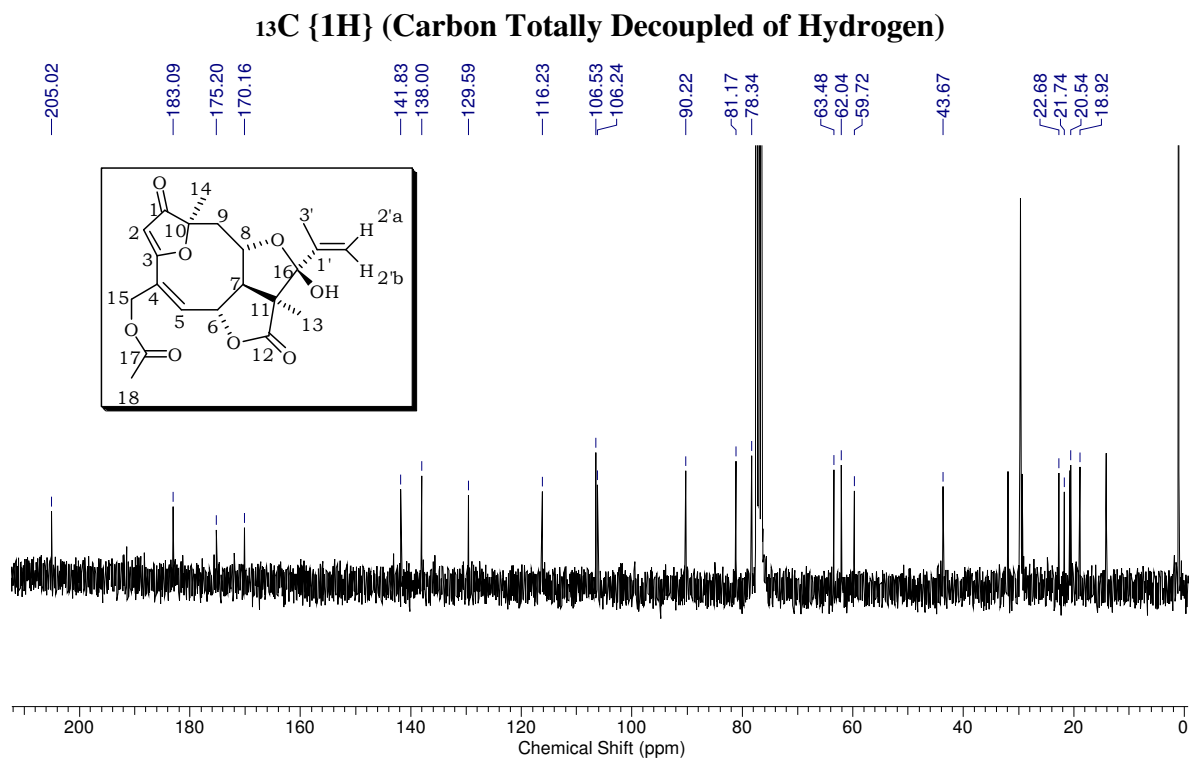
gNOESY – Compound 12 in C₆D₆



Acquisition Time (sec)	5.4657	Comment	1H						
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Sweep Width (Hz)	5995.20	Temperature (degree C)	19.200						

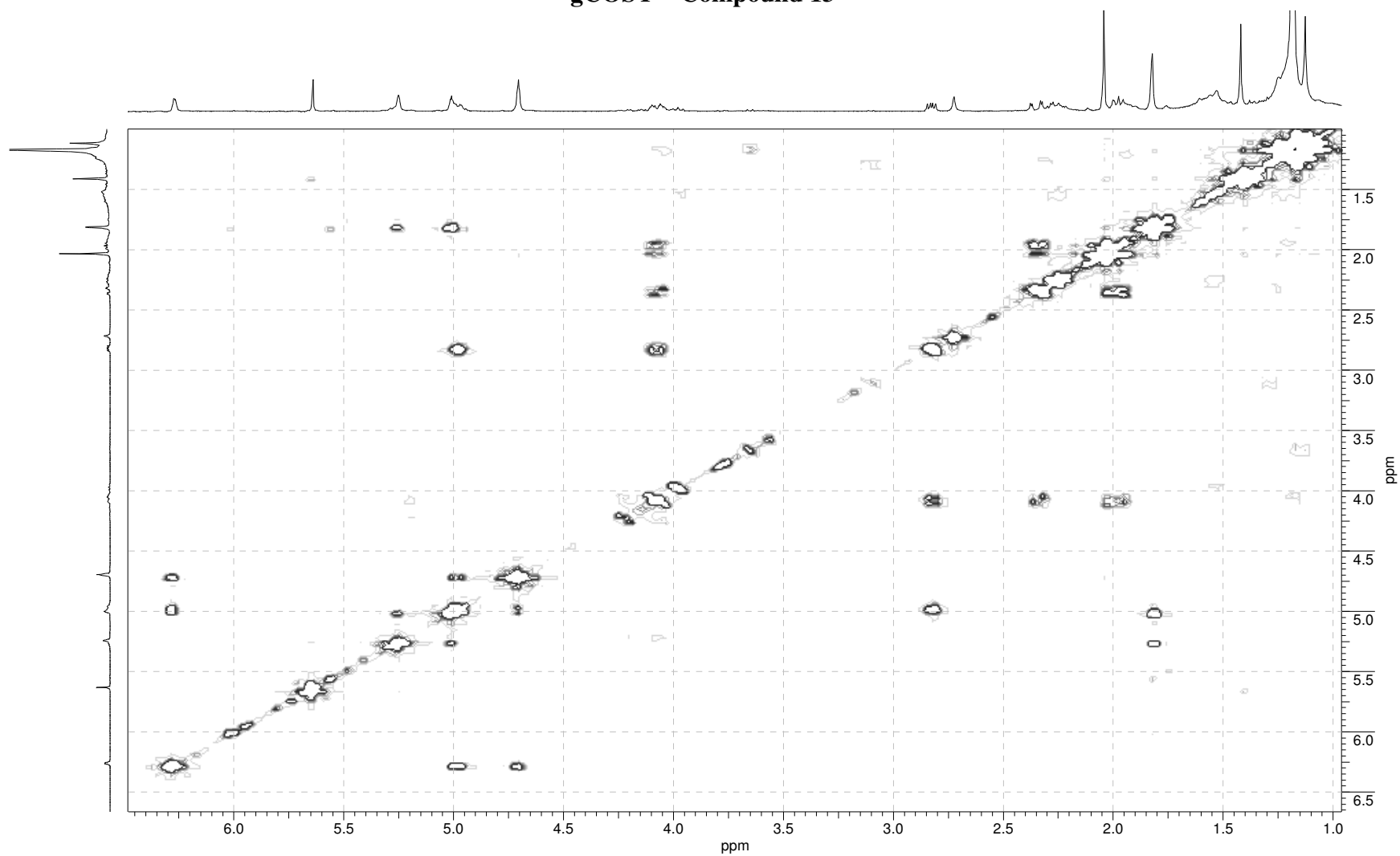


^1H NMR (500 MHz) in CDCl_3 of compound **13**.

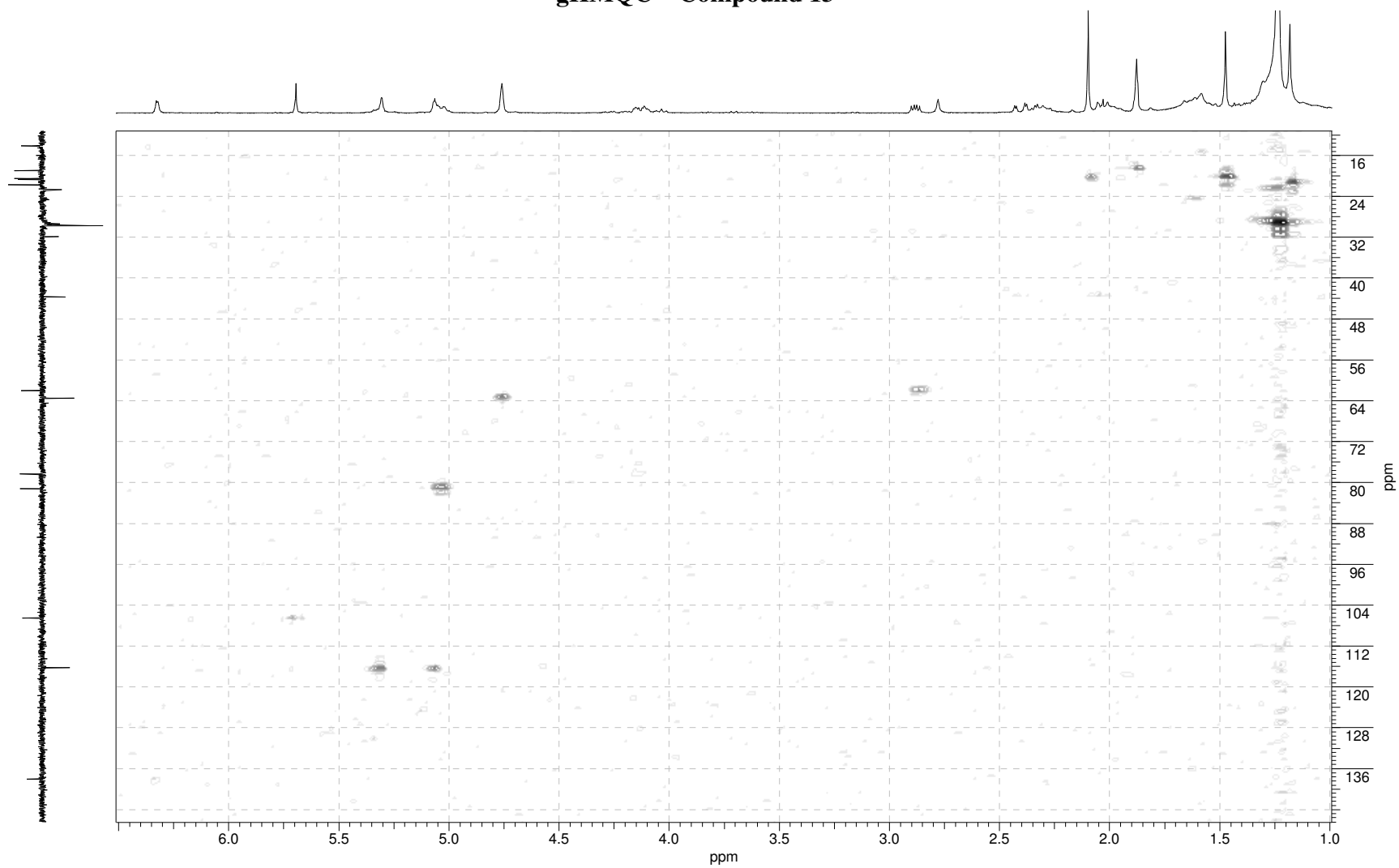


^{13}C NMR (125 MHz) in CDCl_3 of compound **13**.

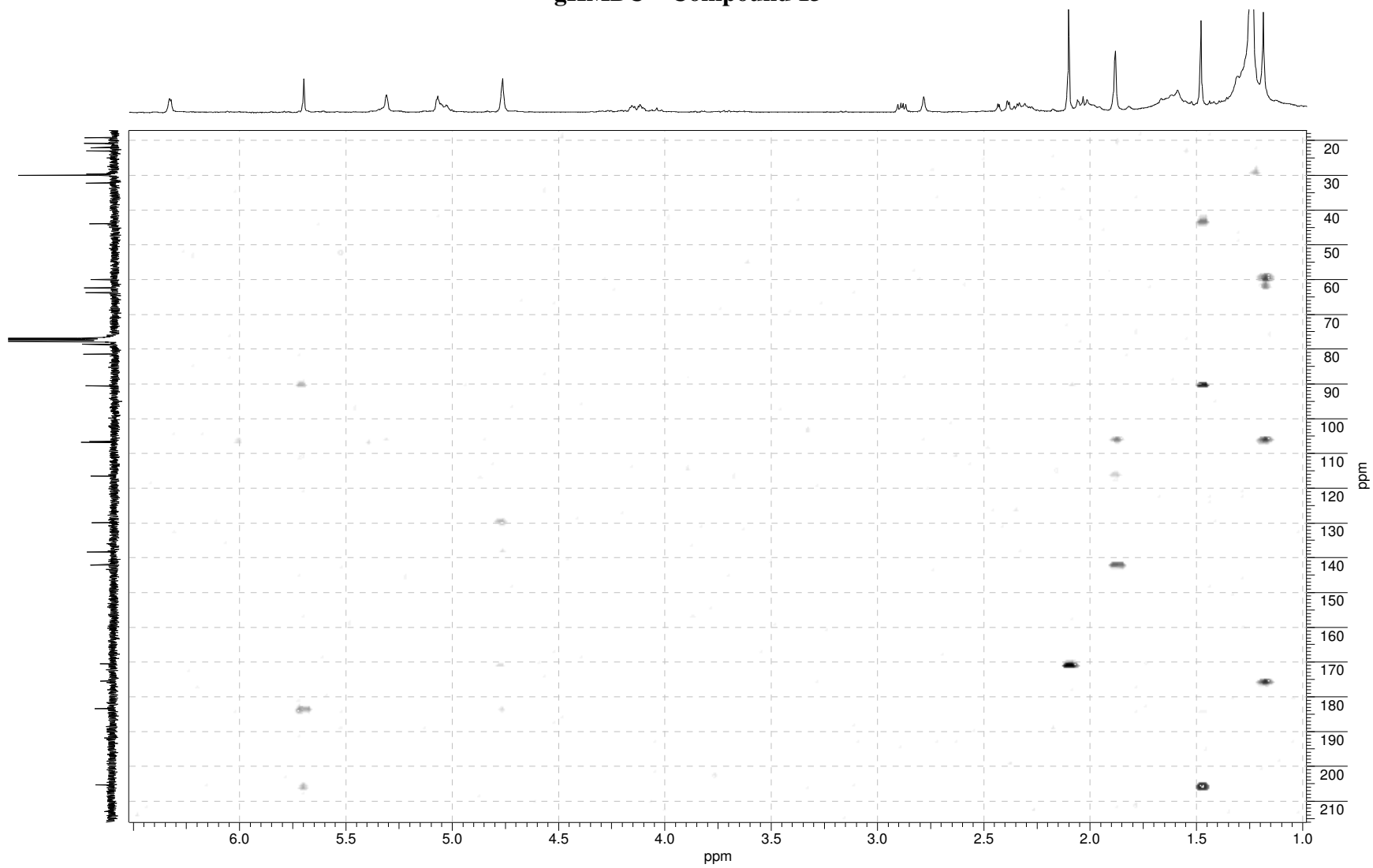
gCOSY – Compound 13



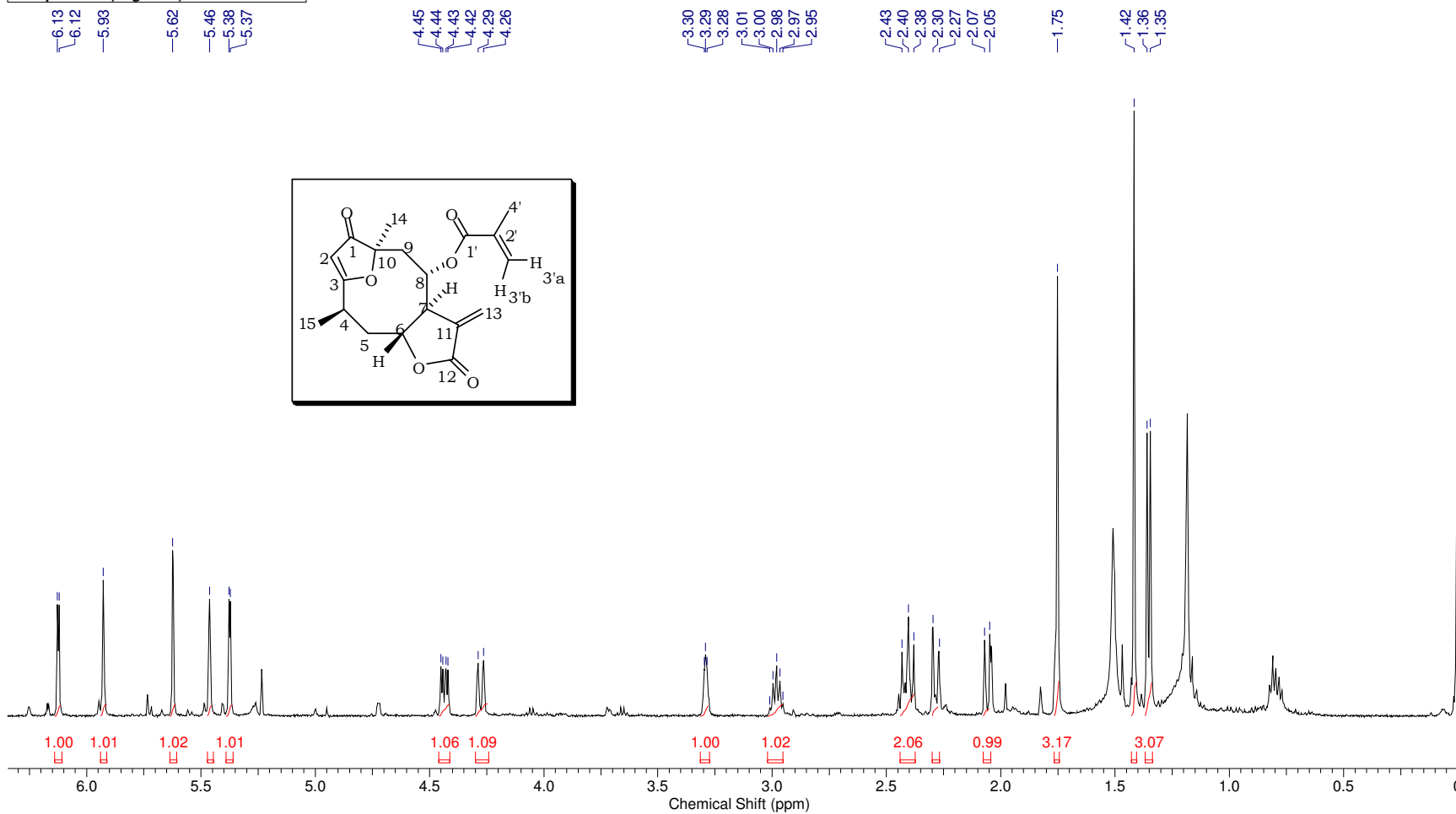
gHMQC – Compound 13



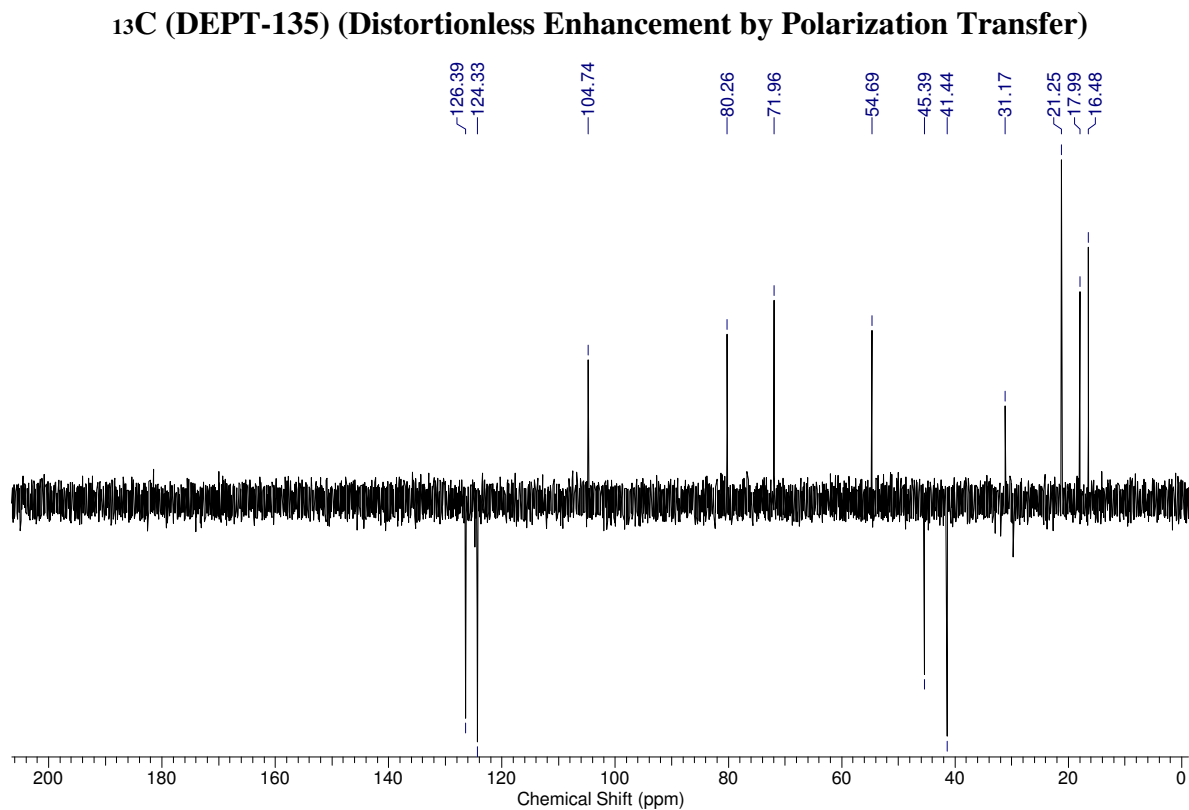
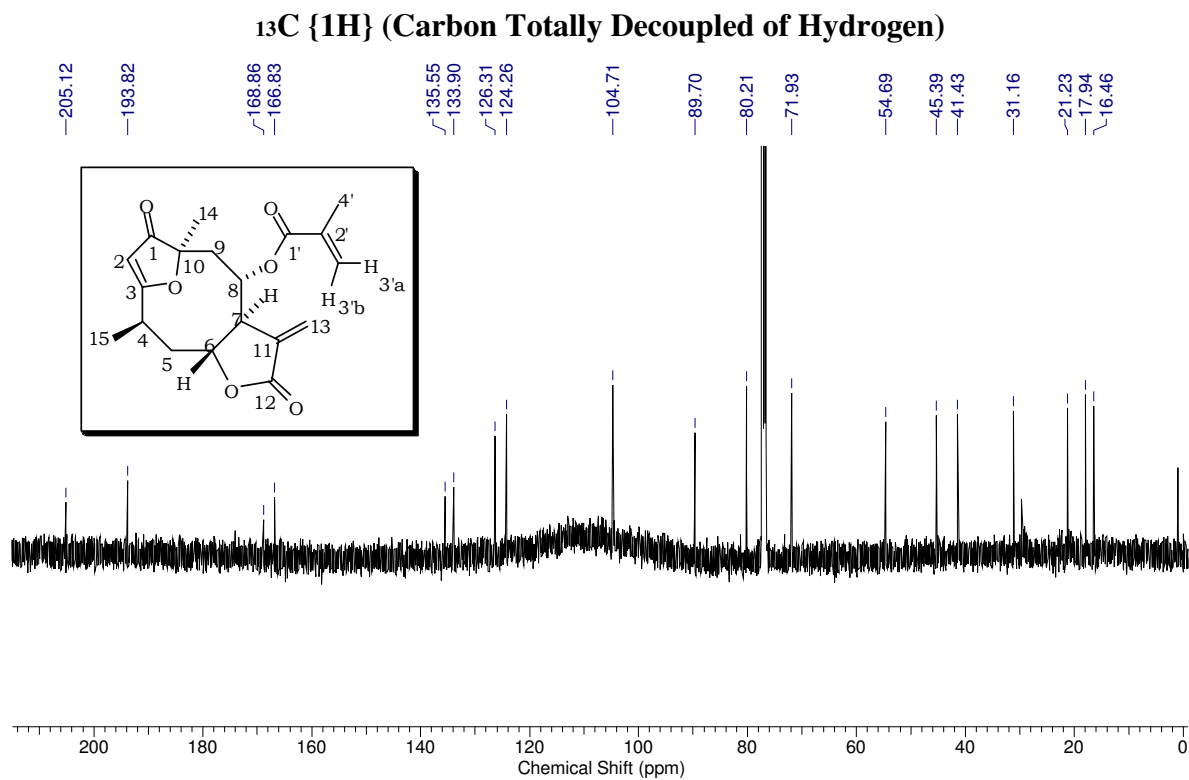
gHMBC – Compound 13



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Solvent	CHLOROFORM-D	Sweep Width (Hz)	8503.40		
Temperature (degree C)	27.000				

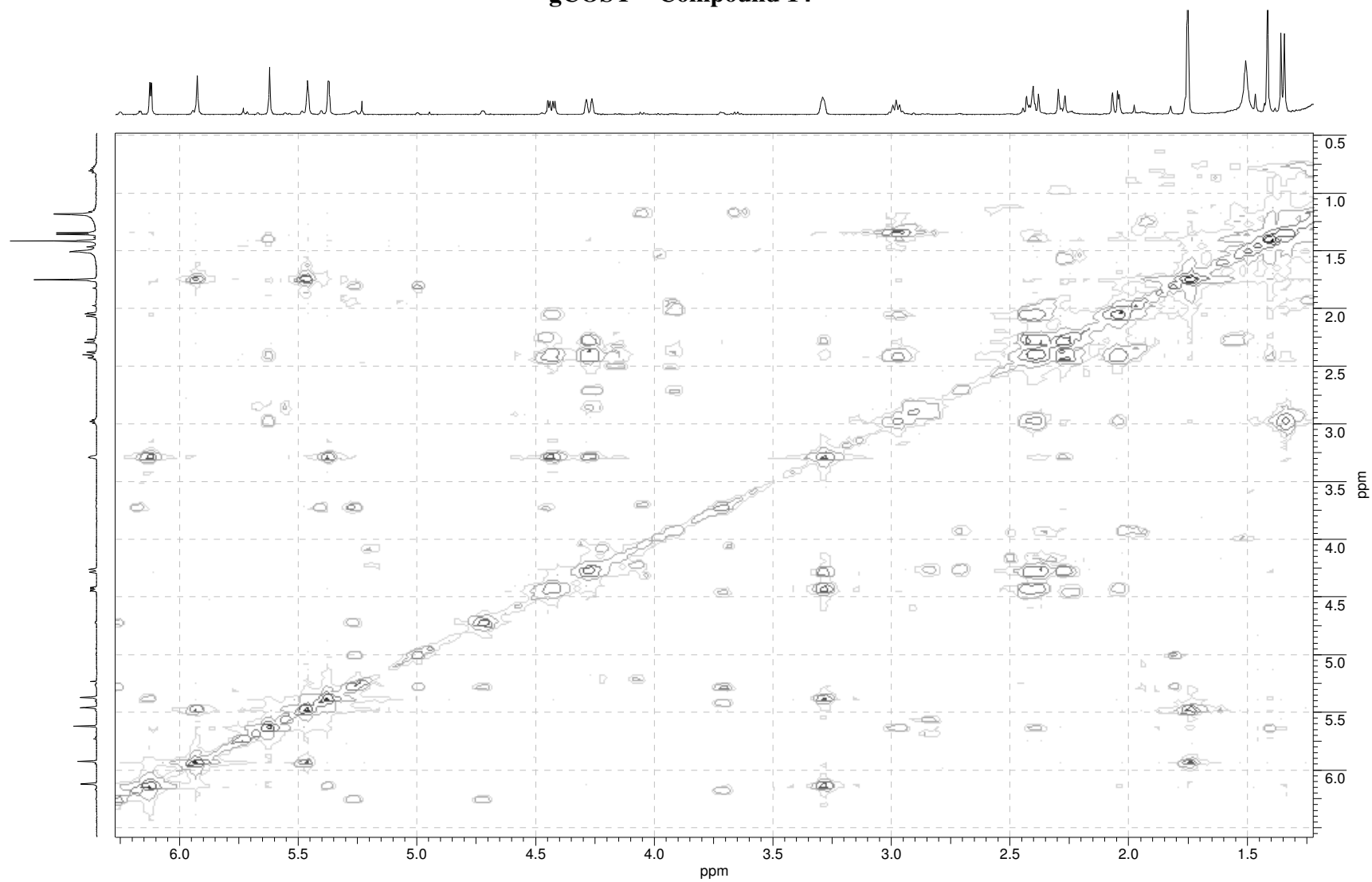


¹H NMR (500 MHz) in CDCl₃ of compound **14**.

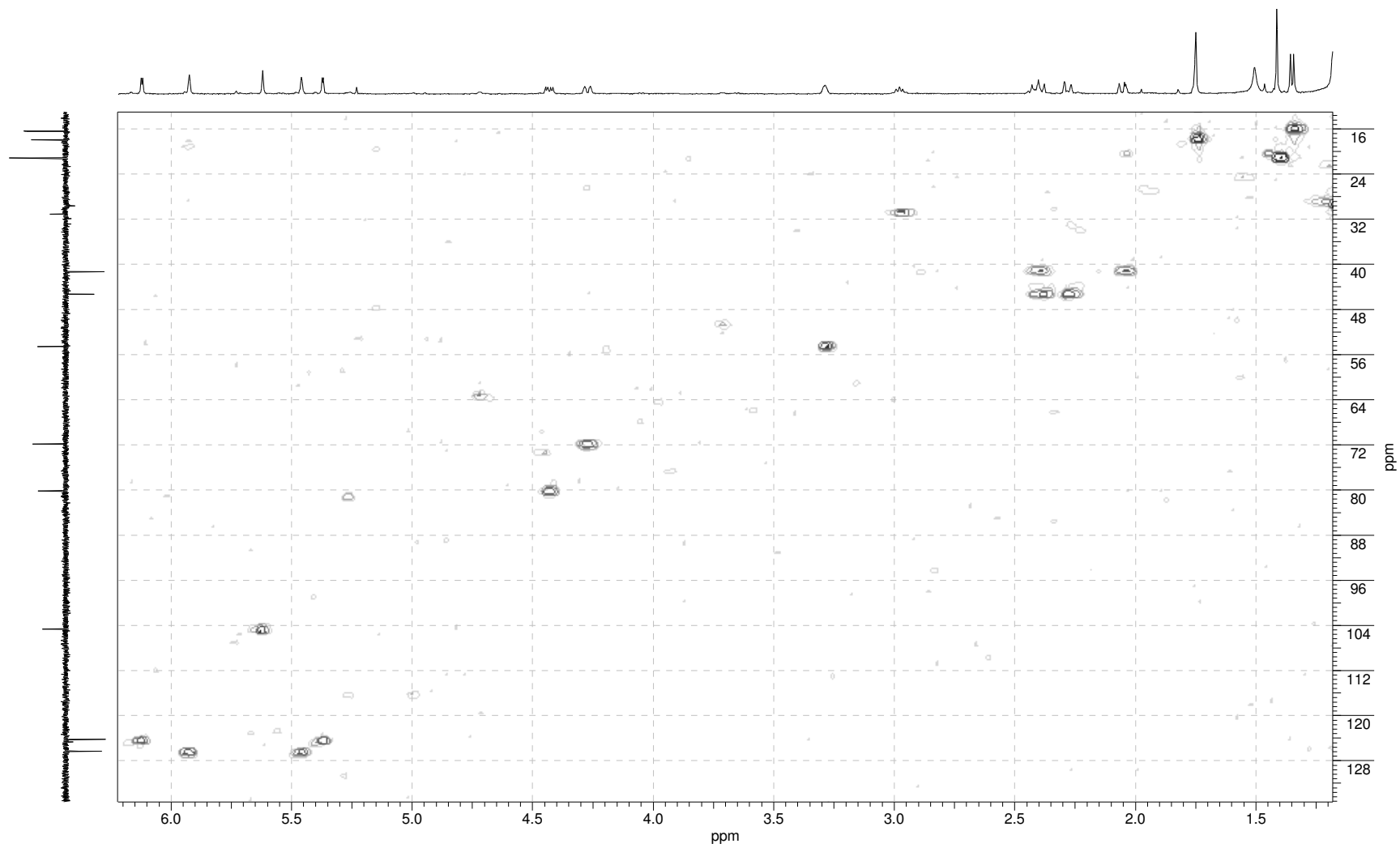


^{13}C NMR (125 MHz) in CDCl_3 of compound **14**.

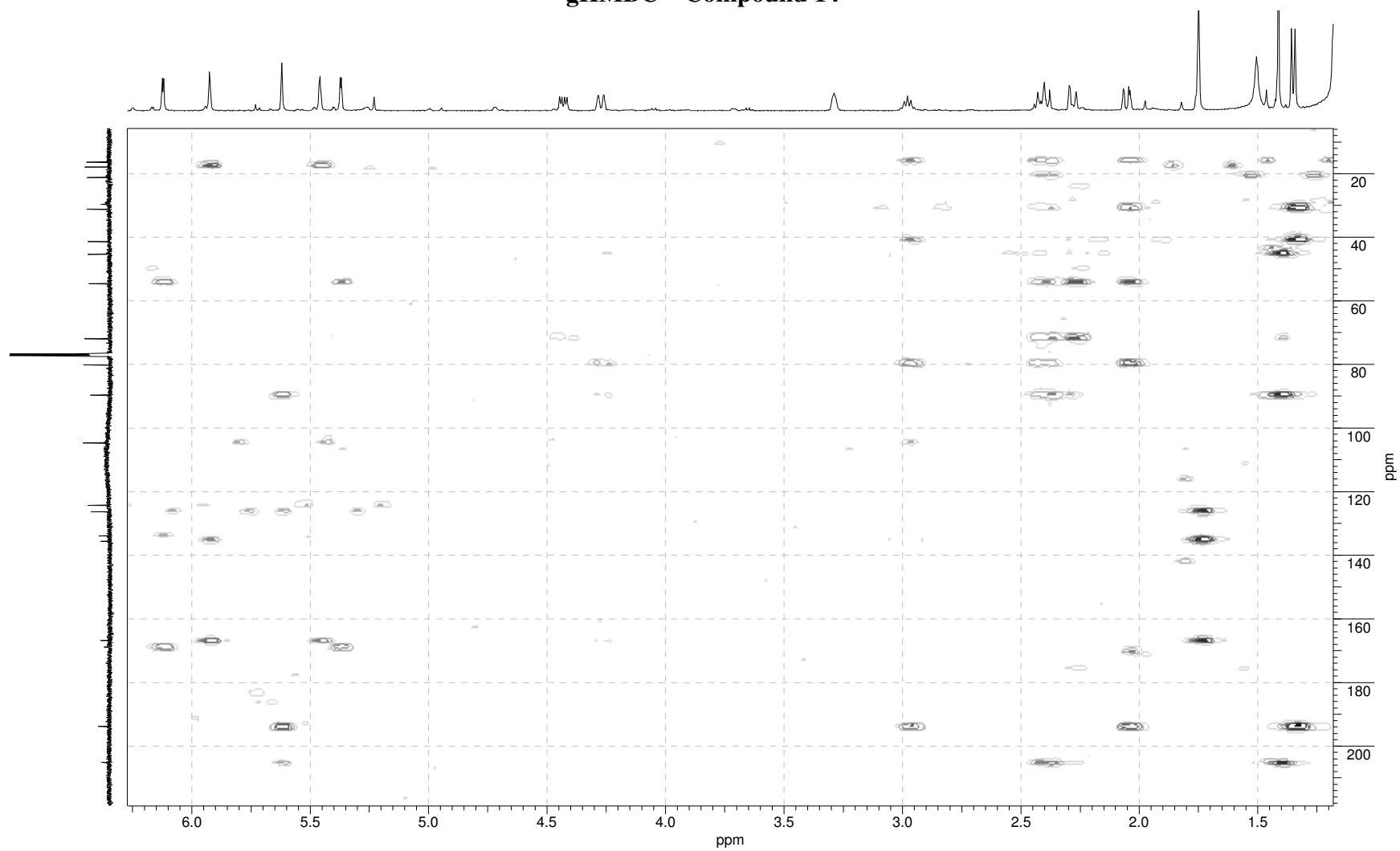
gCOSY – Compound 14



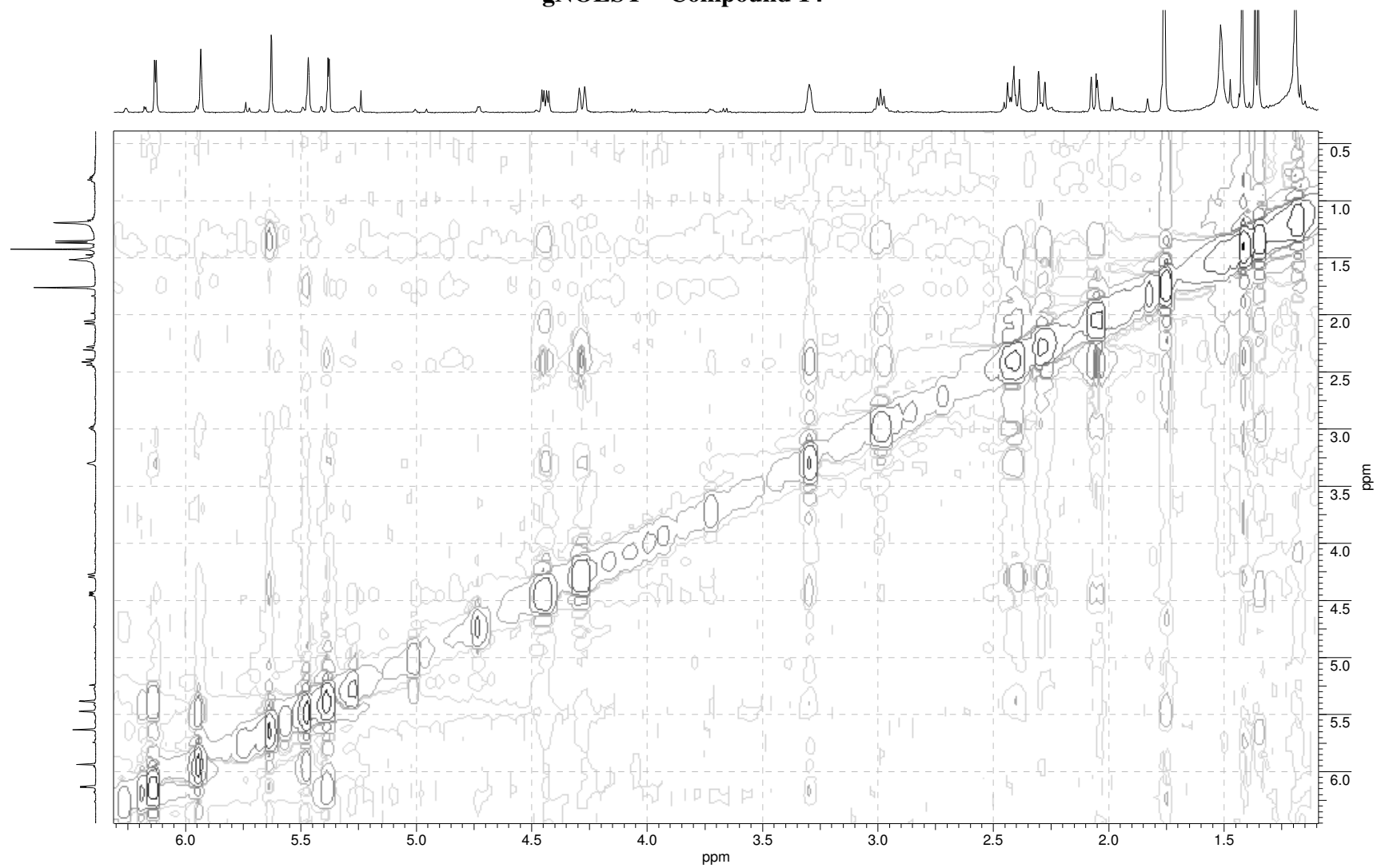
gHMQC – Compound 14



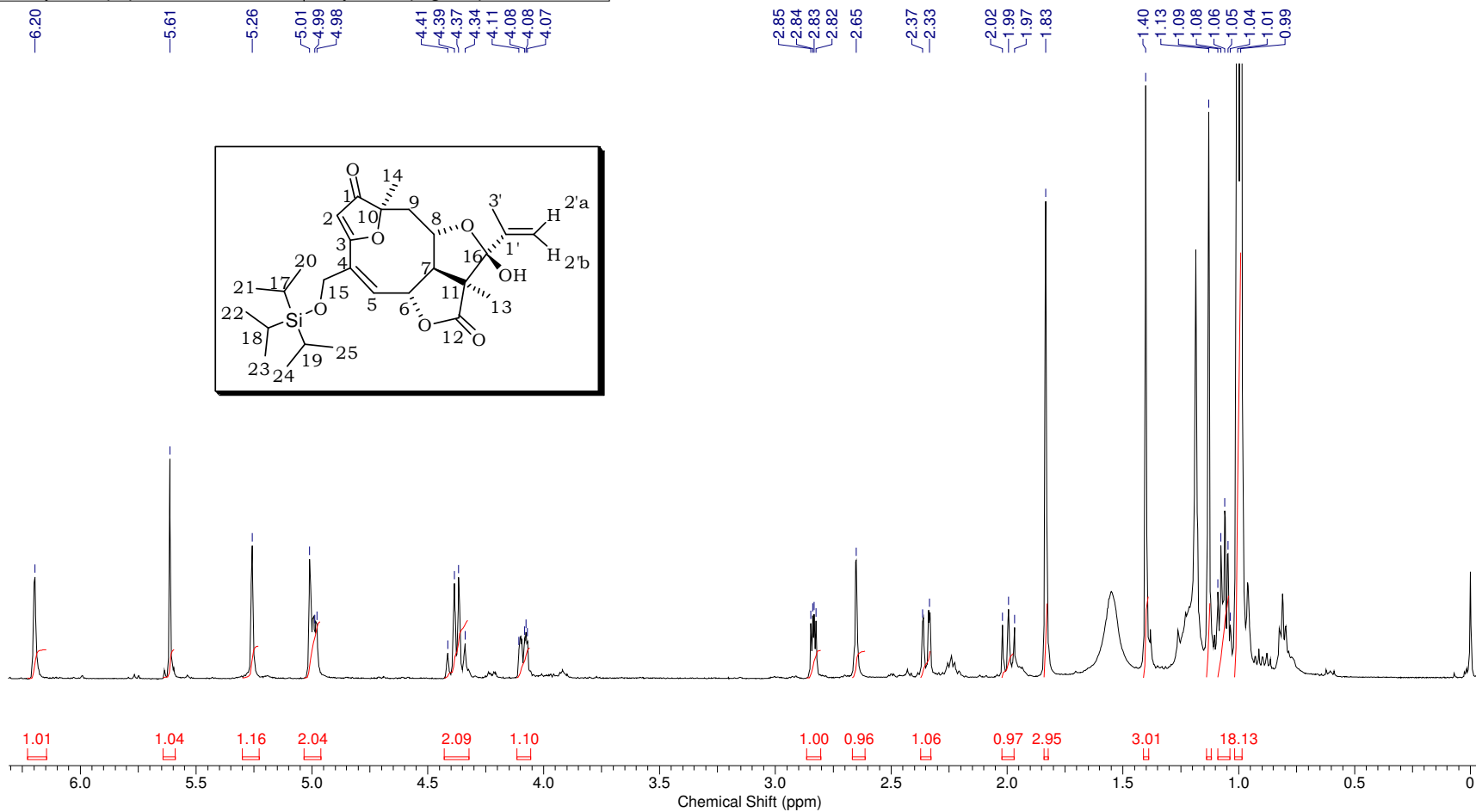
gHMBC – Compound 14



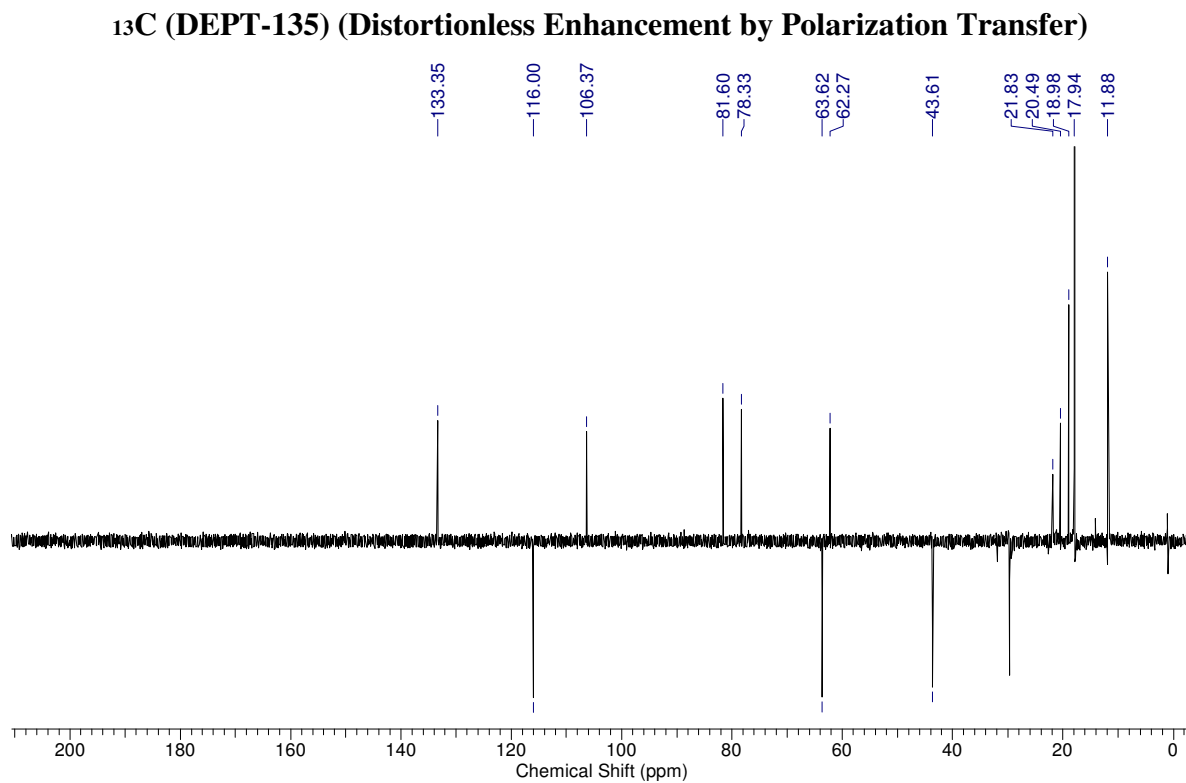
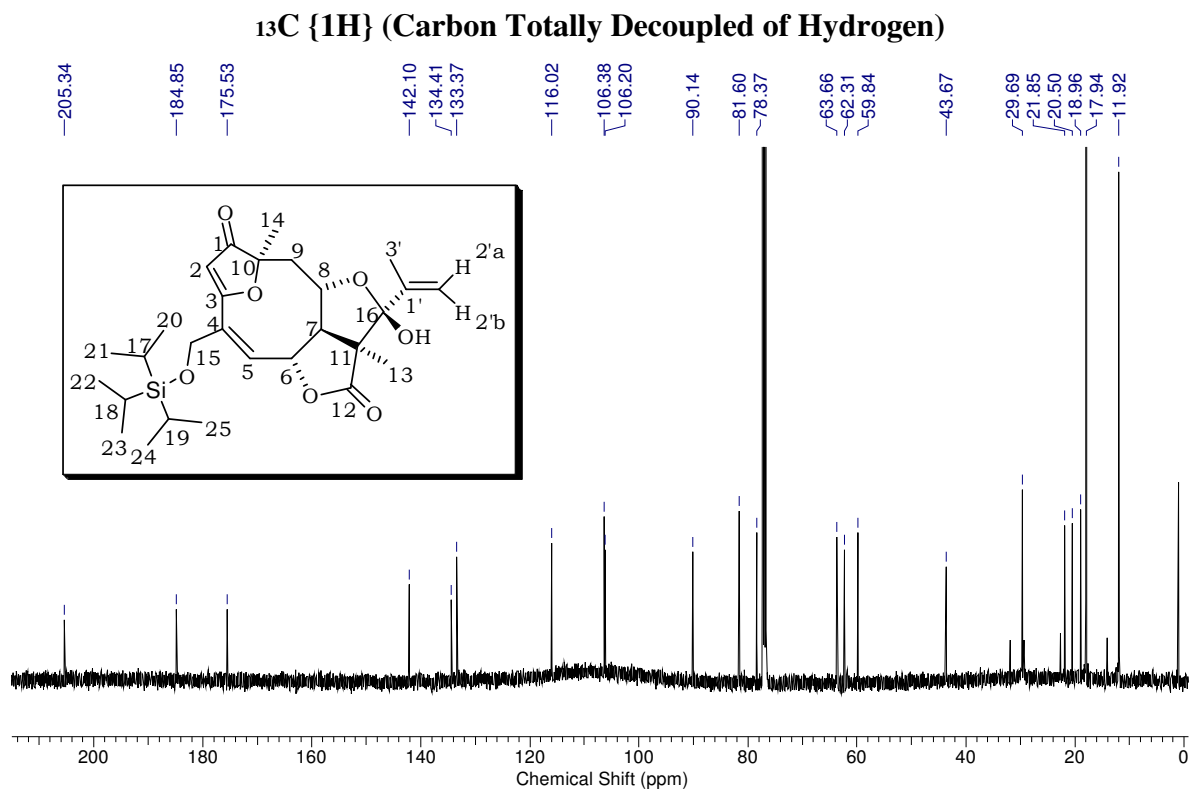
gNOESY – Compound 14



Acquisition Time (sec)	7.7070	Comment	Imported from UXMNR.		
Frequency (MHz)	500.13				
Nucleus	1H	Number of Transients	16	Original Points Count	65536
Points Count	32768	Pulse Sequence	zg30	Solvent	CHLOROFORM-D
Sweep Width (Hz)	8503.40	Temperature (degree C)	27.000		

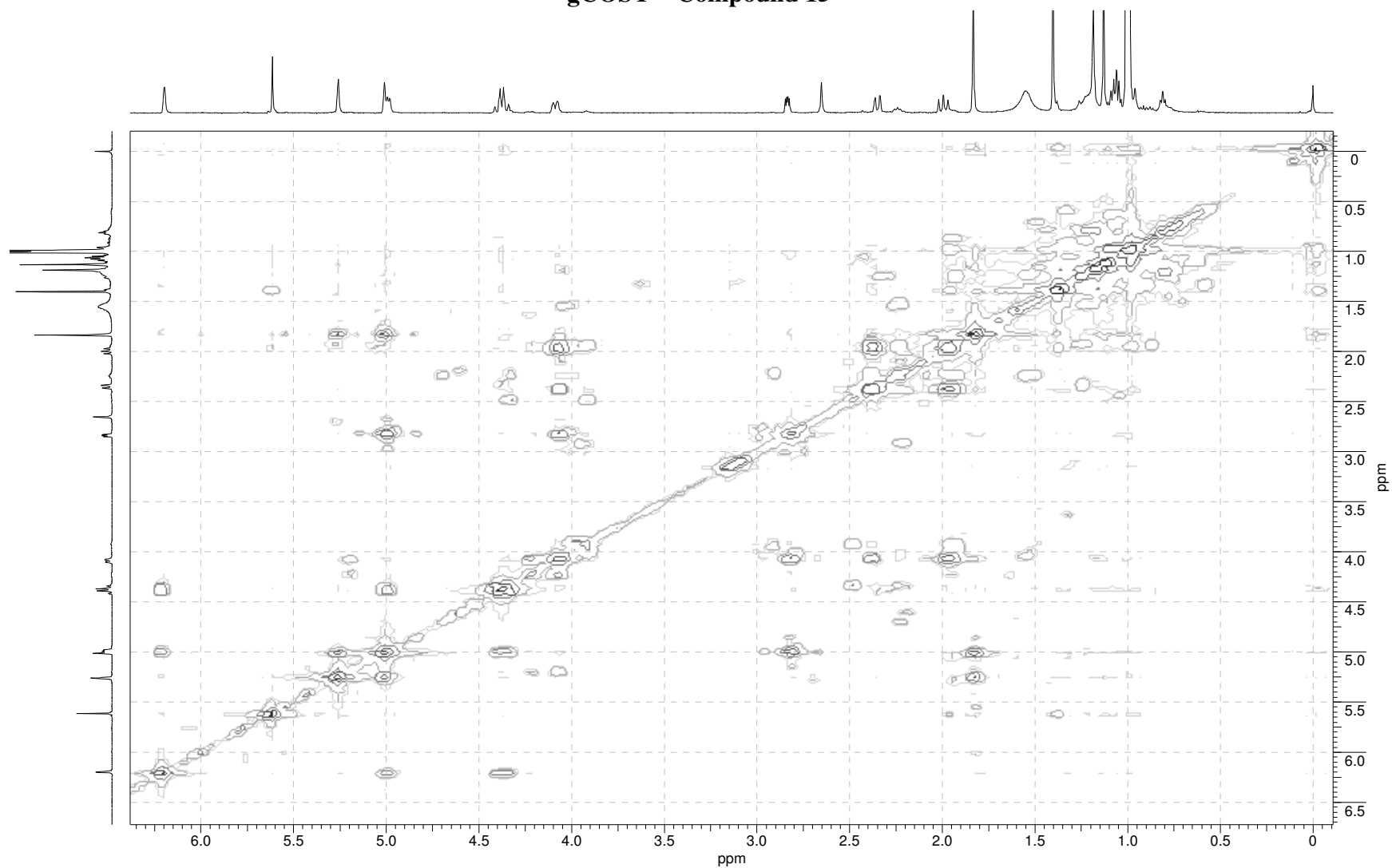


^1H NMR (500 MHz) in CDCl_3 of compound **15**.

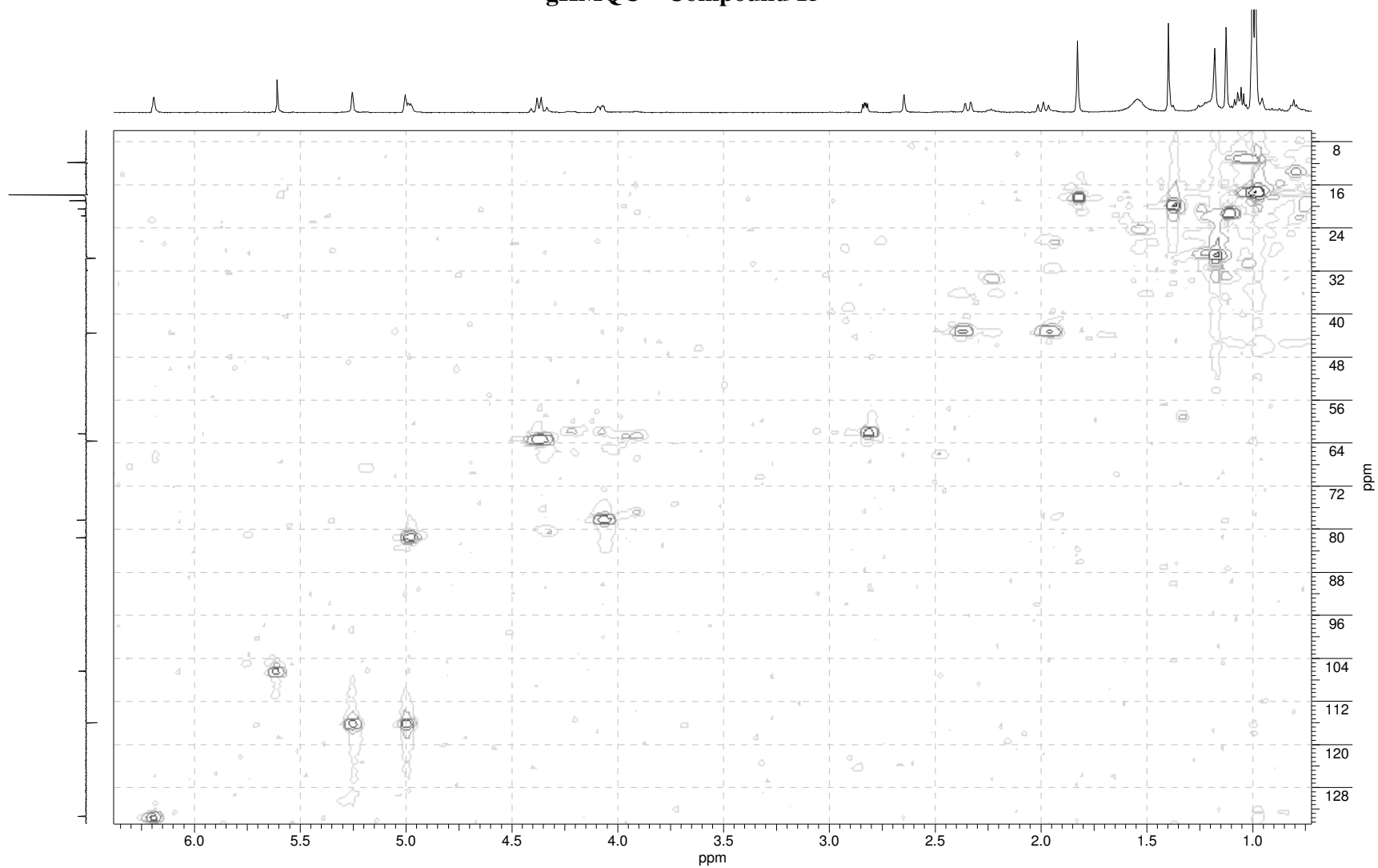


^{13}C NMR (125 MHz) in CDCl_3 of compound **15**.

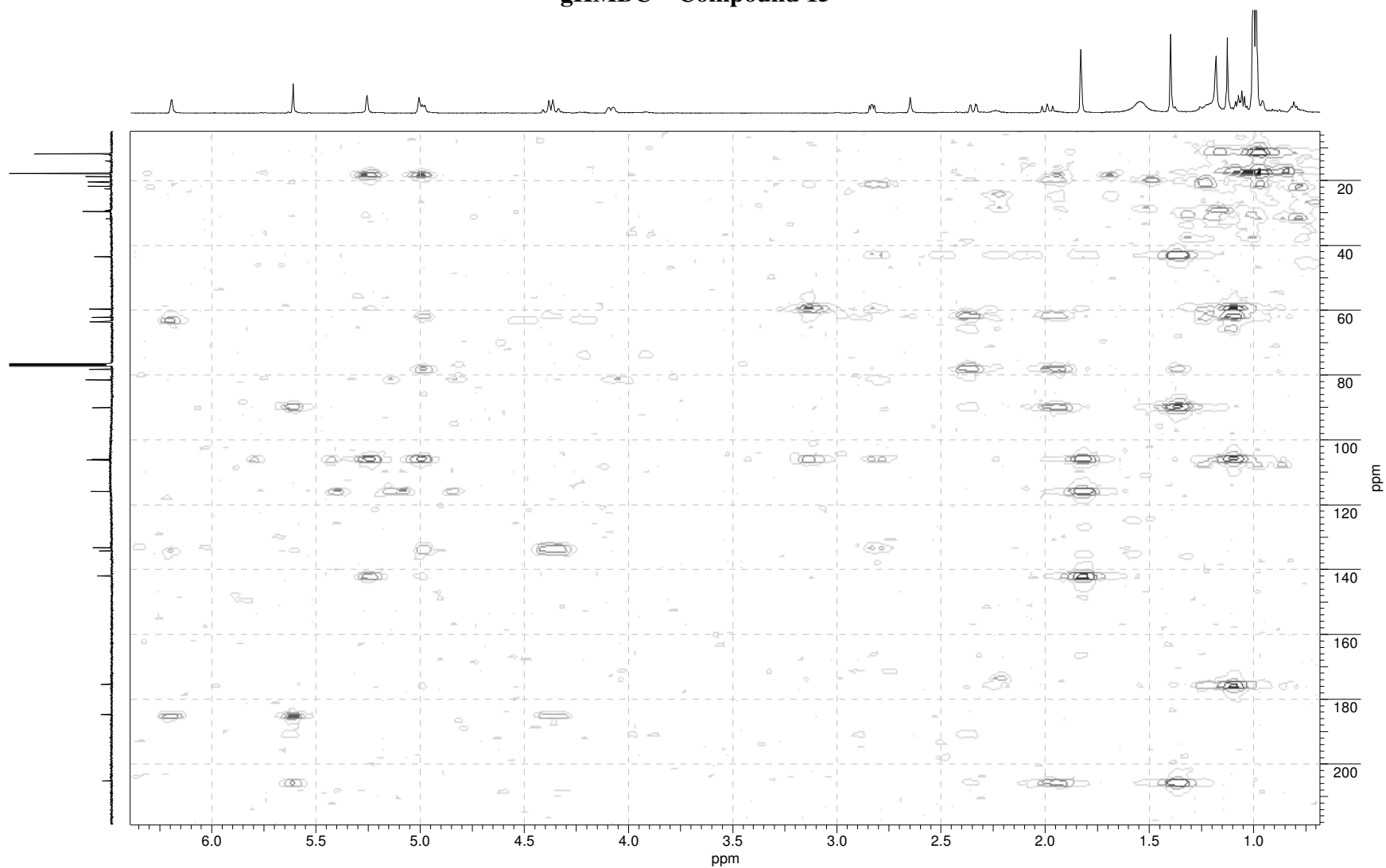
gCOSY – Compound 15



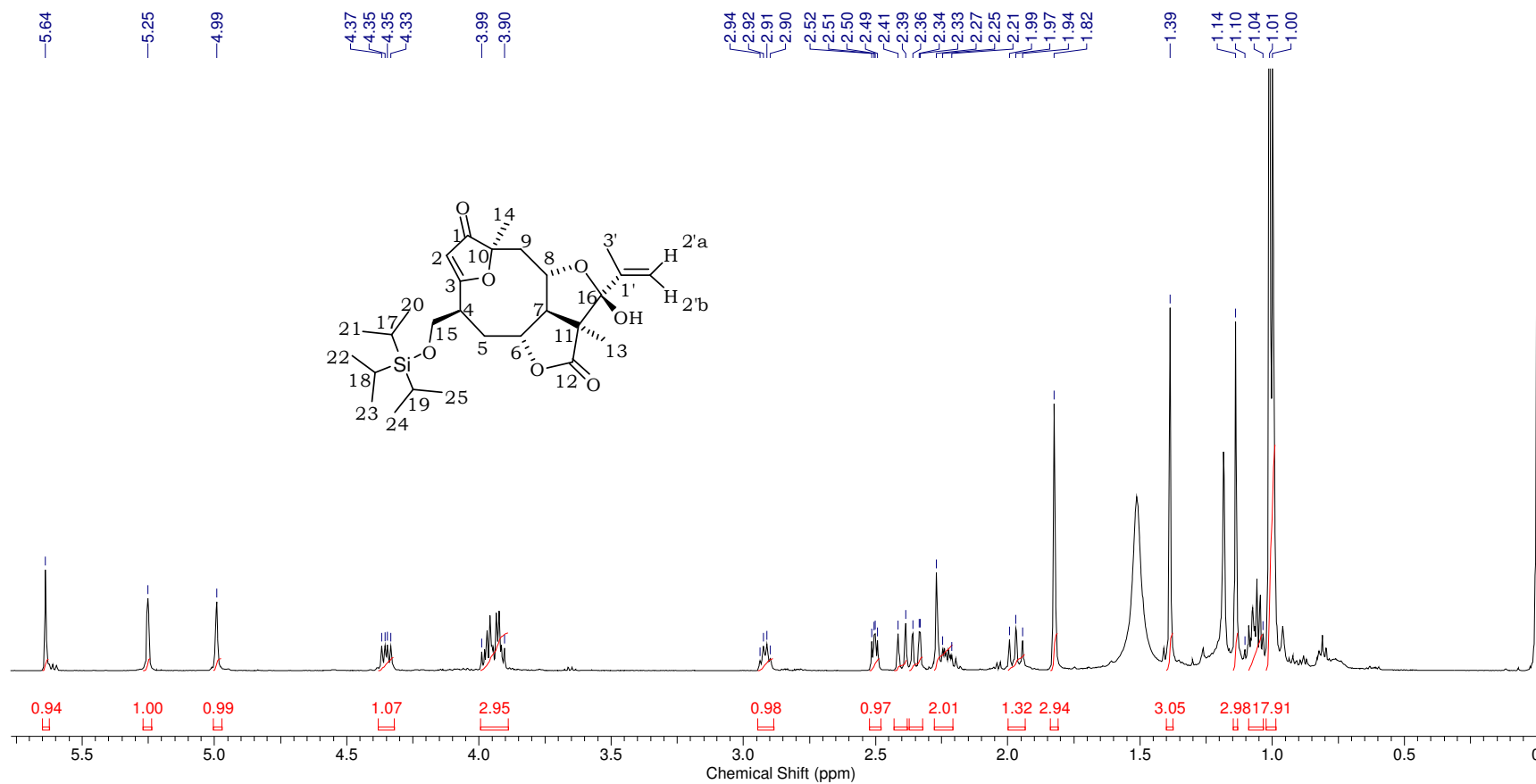
gHMQC – Compound 15



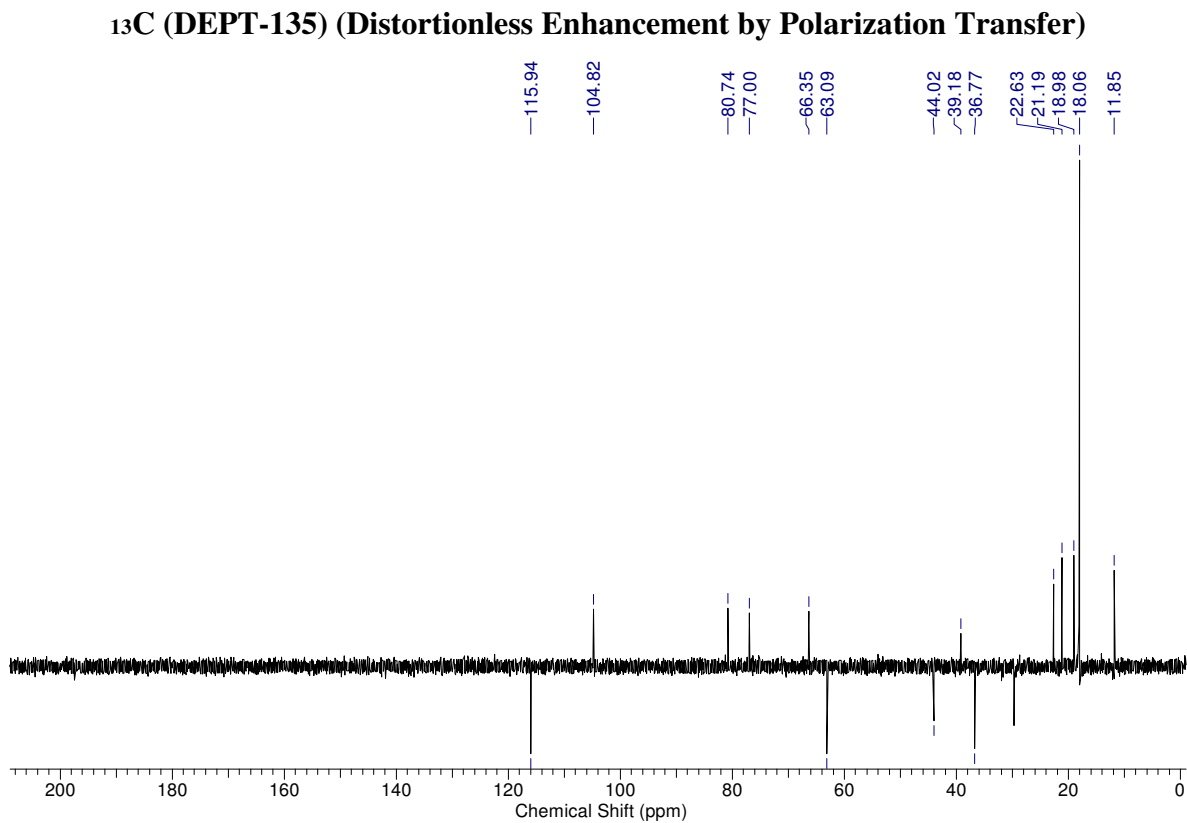
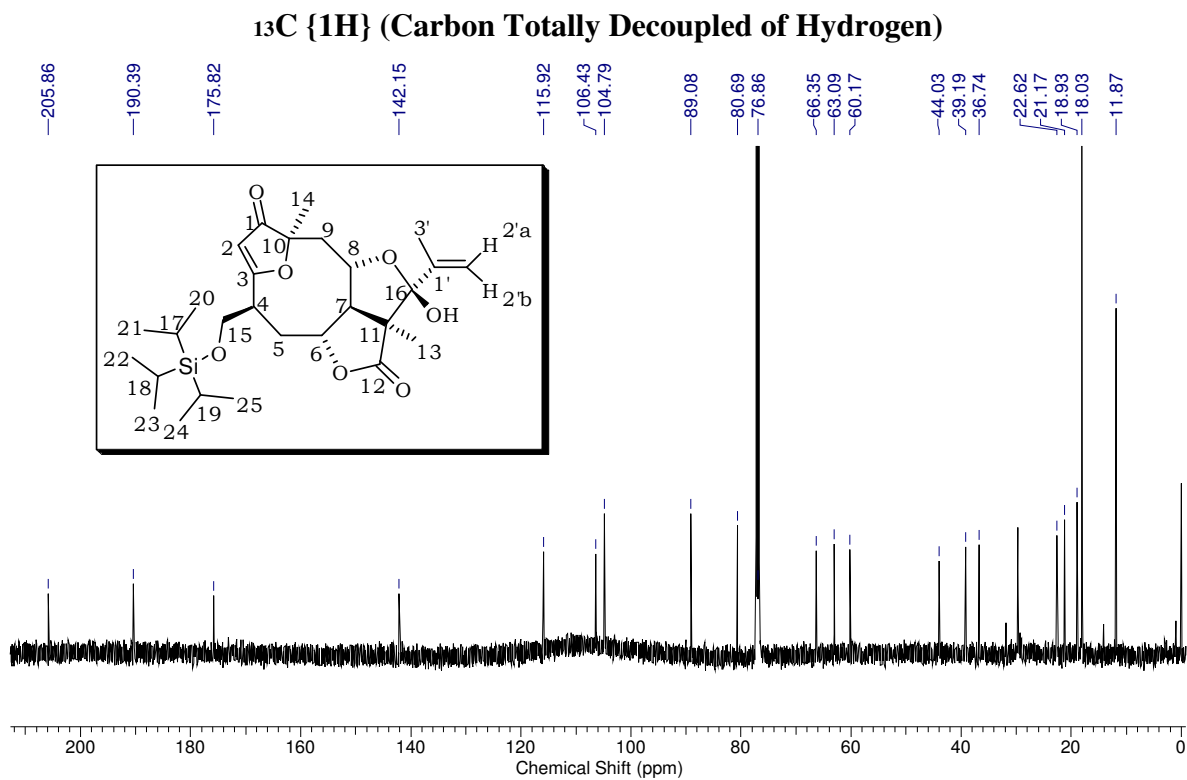
gHMBC – Compound 15



Acquisition Time (sec)	7.7070	Comment	Imported from UXMNR.		
Frequency (MHz)	500.13				
Nucleus	1H	Number of Transients	128	Original Points Count	65536
Points Count	32768	Pulse Sequence	zg30	Solvent	CHLOROFORM-D
Sweep Width (Hz)	8503.40	Temperature (degree C)	27.000		

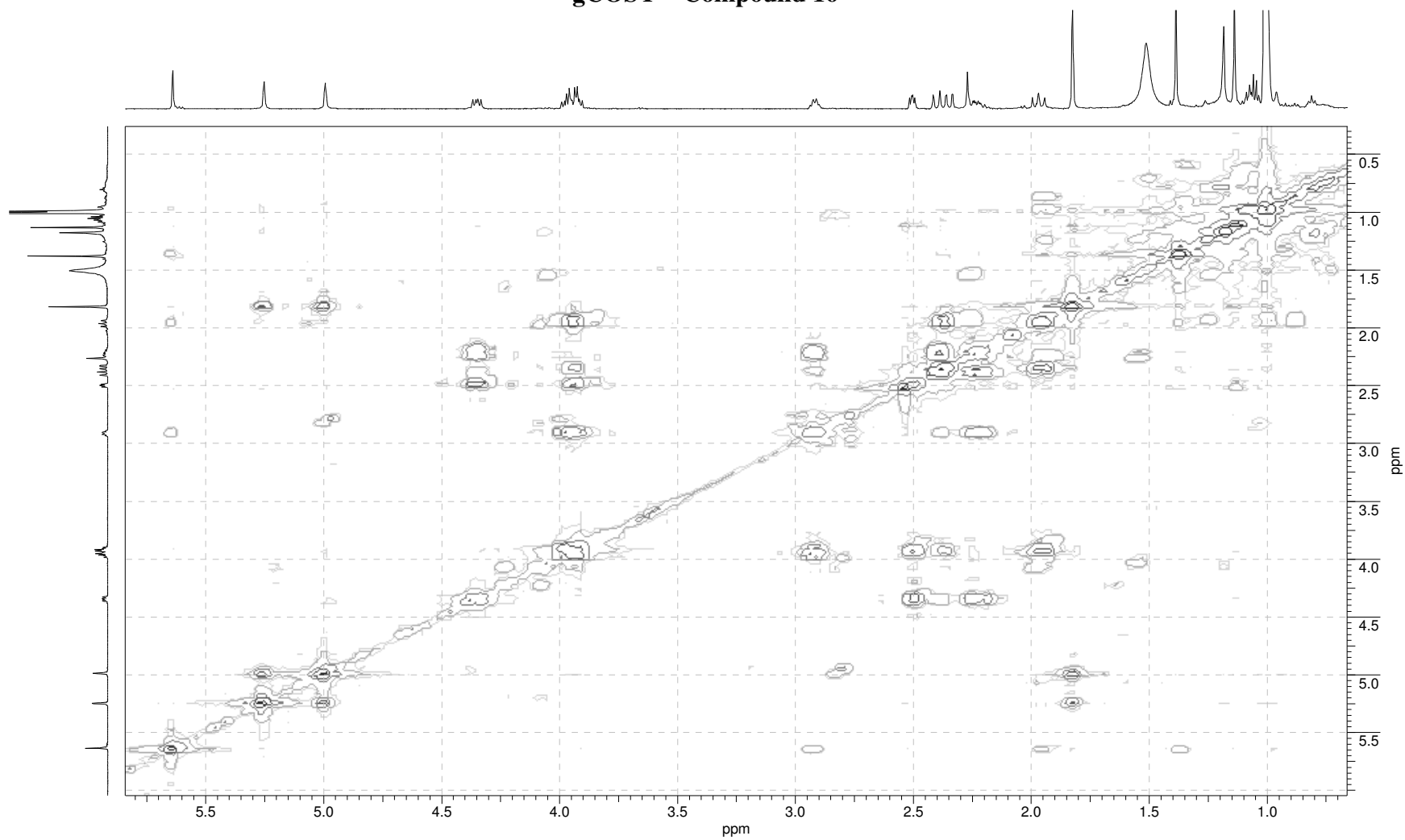


^1H NMR (500 MHz) in CDCl_3 of compound **16**.

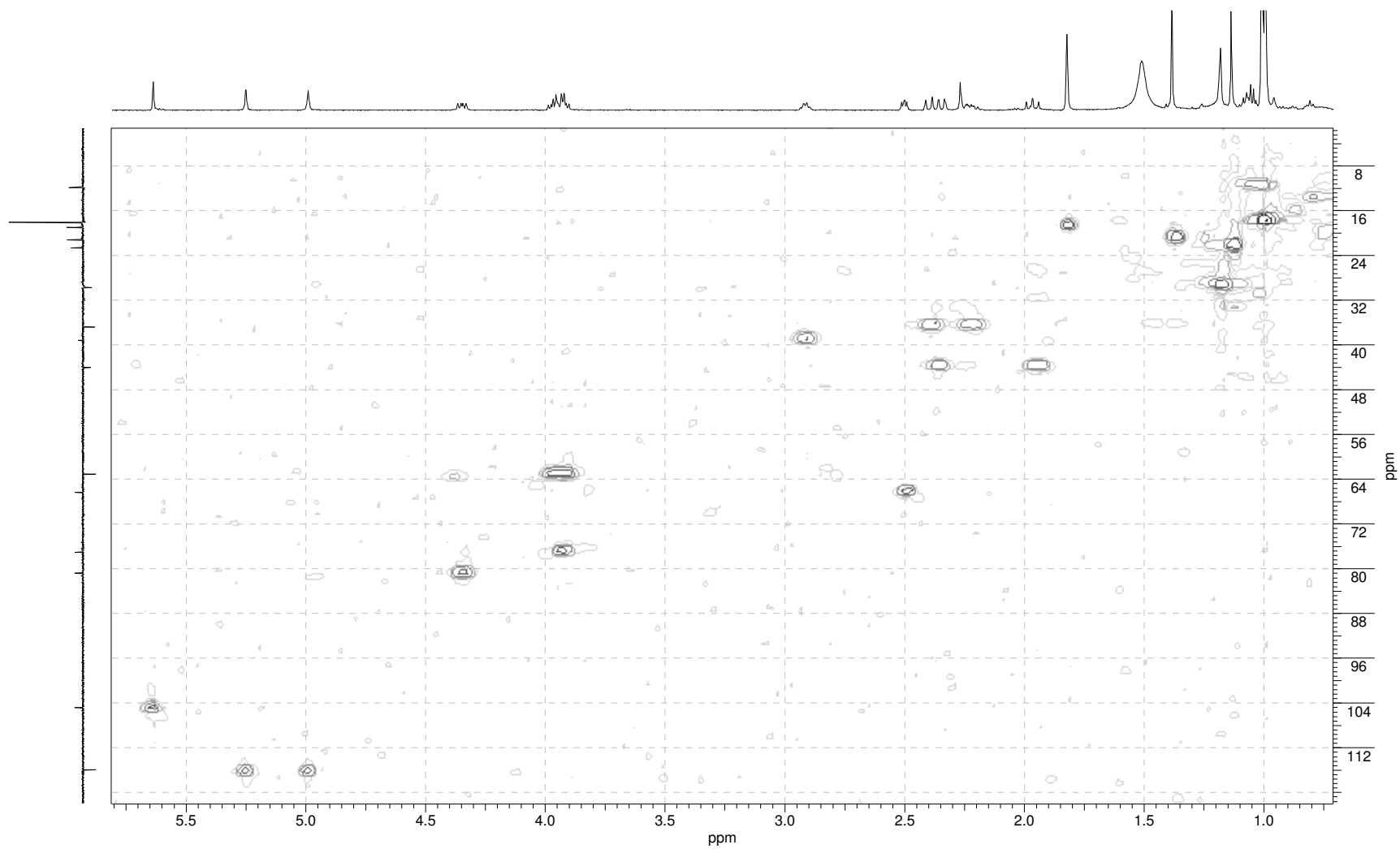


^{13}C NMR (125 MHz) in CDCl_3 of compound **16**.

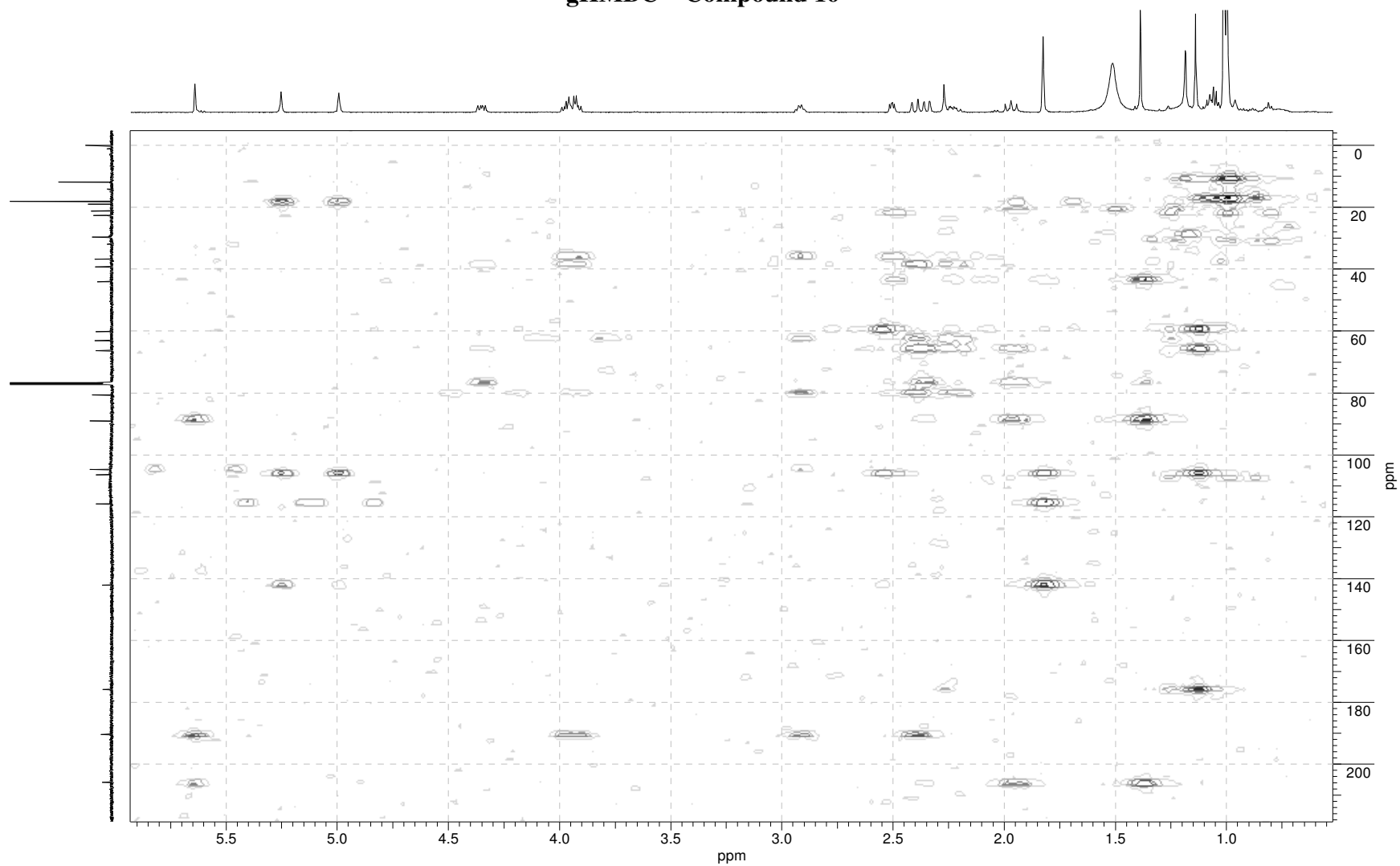
gCOSY – Compound 16



gHMQC – Compound 16



gHMBC – Compound 16



gNOESY – Compound 16

