Direct and Transfer Hydrosilylation Reactions Catalyzed by Fully or Partially Fluorinated Triarylboranes: A Systematic Study

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Supporting Information

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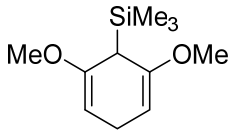
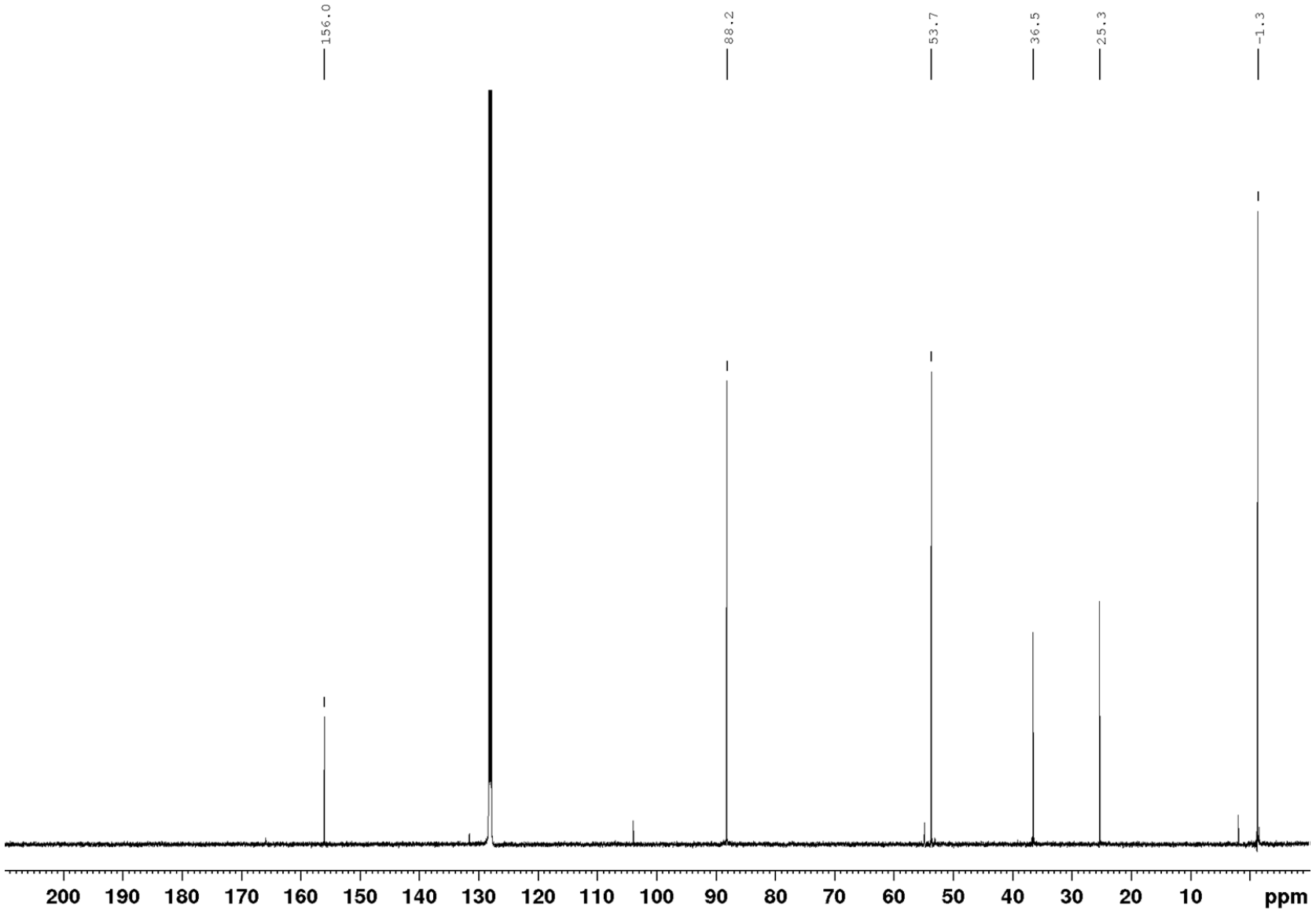
1 NMR Spectra of Cyclohexa-2,5-dien-1-ylsilanes

2,6-Dimethoxycyclohexa-2,5-dien-1-yltrimethylsilane (2b)

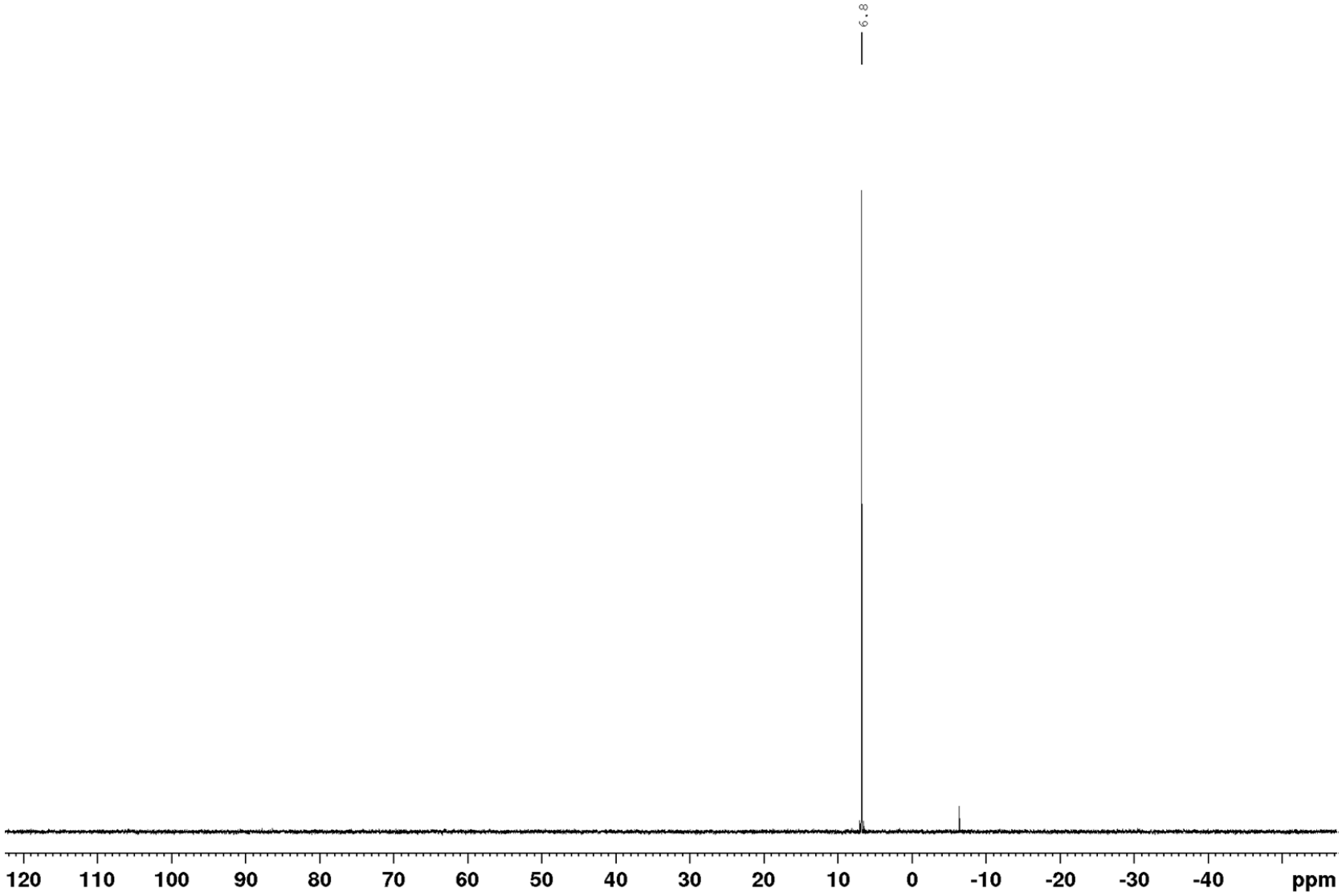
^{1}H NMR (500 MHz, C_6D_6)



^{13}C NMR (126 MHz, C_6D_6)

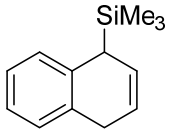


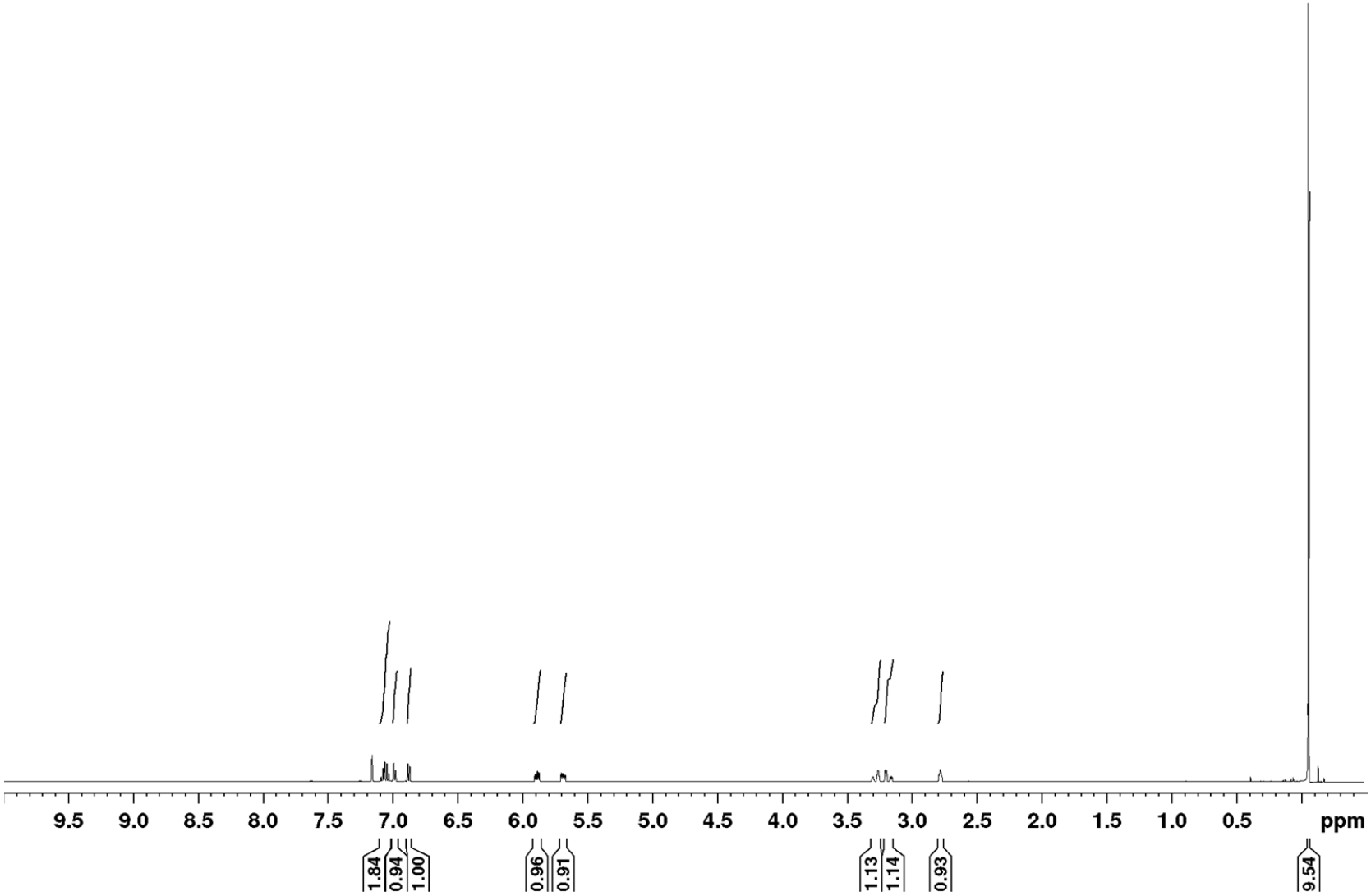
^{29}Si NMR (99 MHz, C_6D_6)



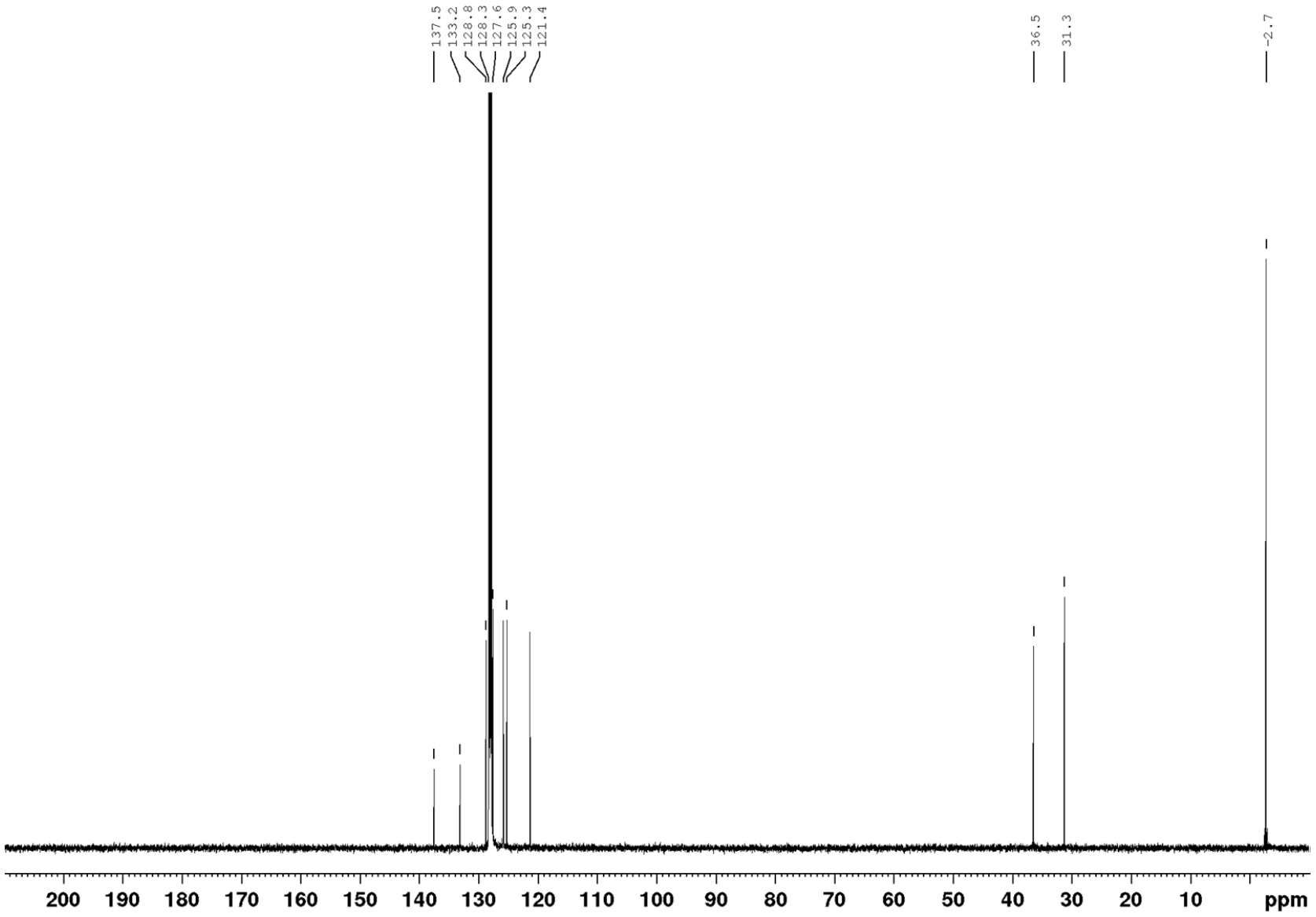
1,4-Dihydronaphthalen-1-yltrimethylsilane (2d)

^{1}H NMR (500 MHz, C_6D_6)

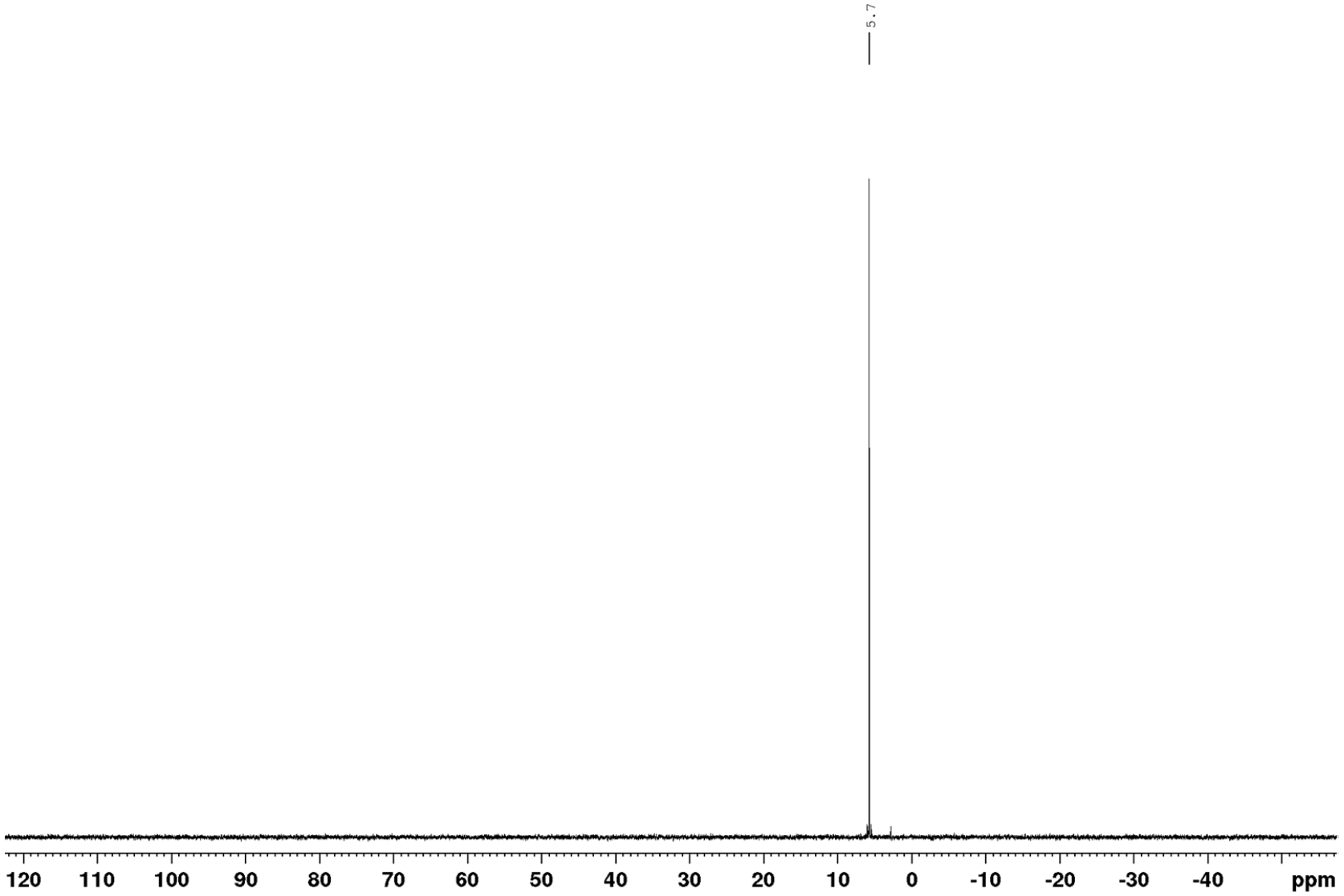




^{13}C NMR (126 MHz, C_6D_6)

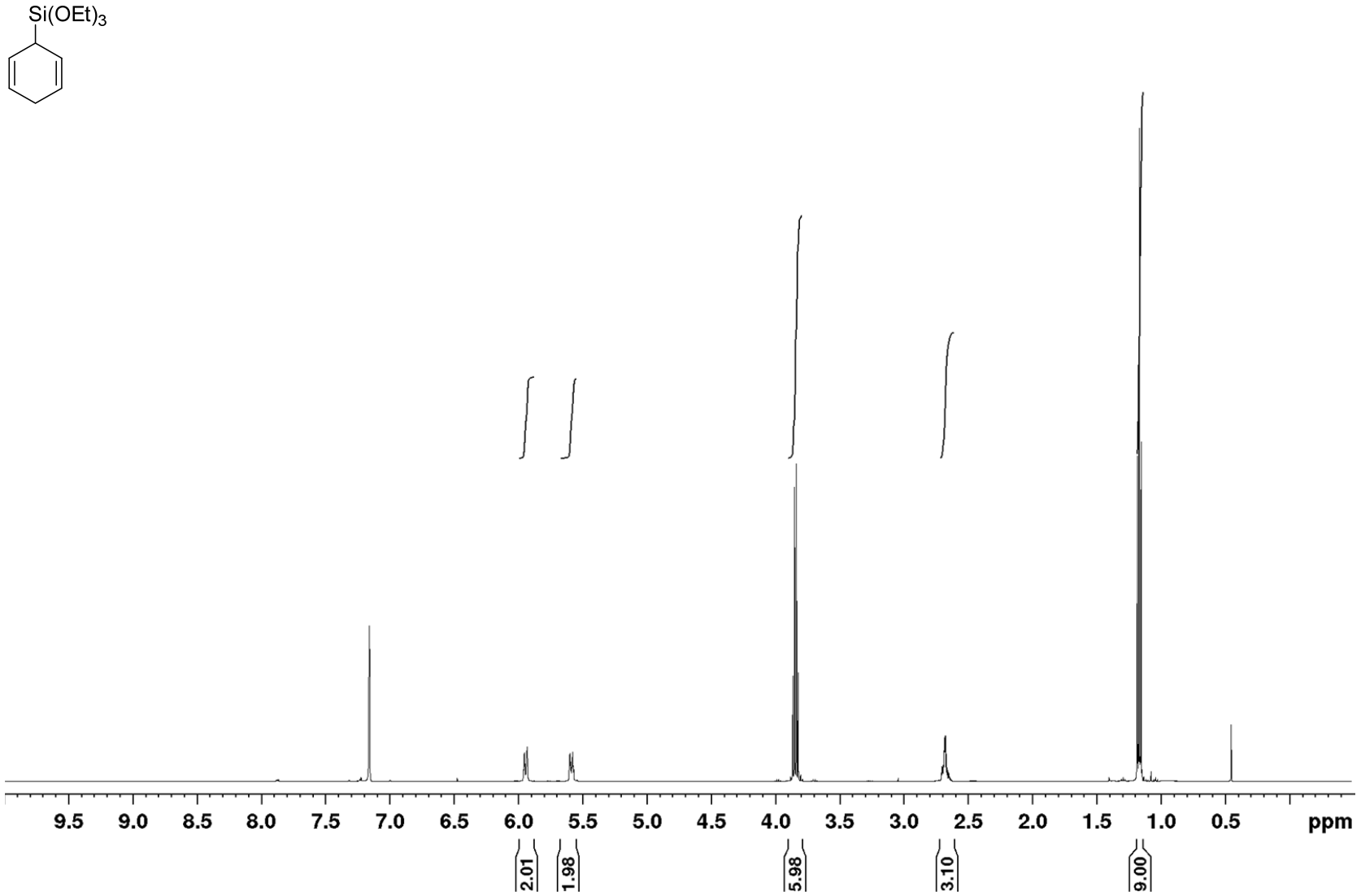


^{29}Si NMR (99 MHz, C_6D_6)

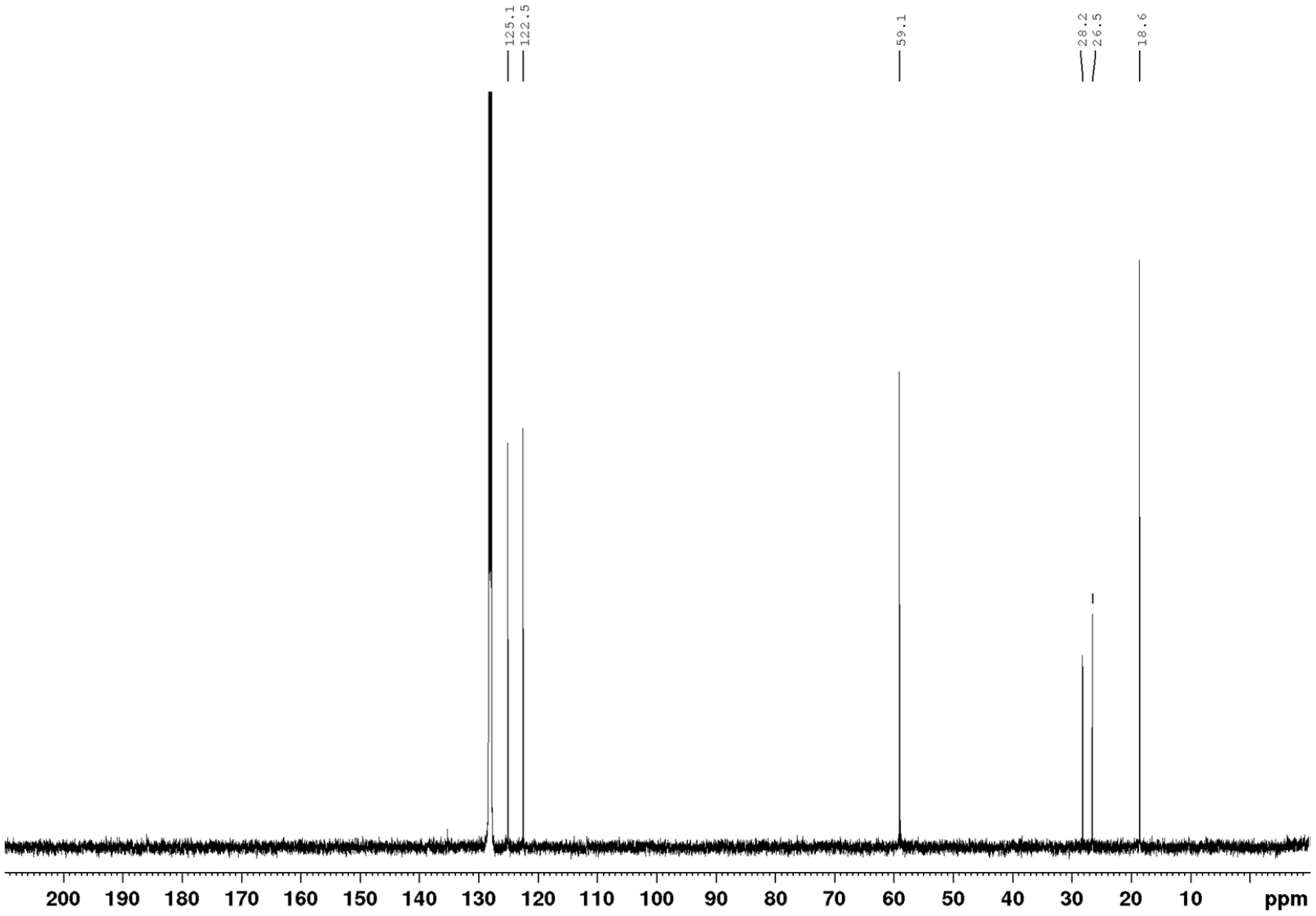


Cyclohexa-2,5-dien-1-yltriethoxysilane (3a)

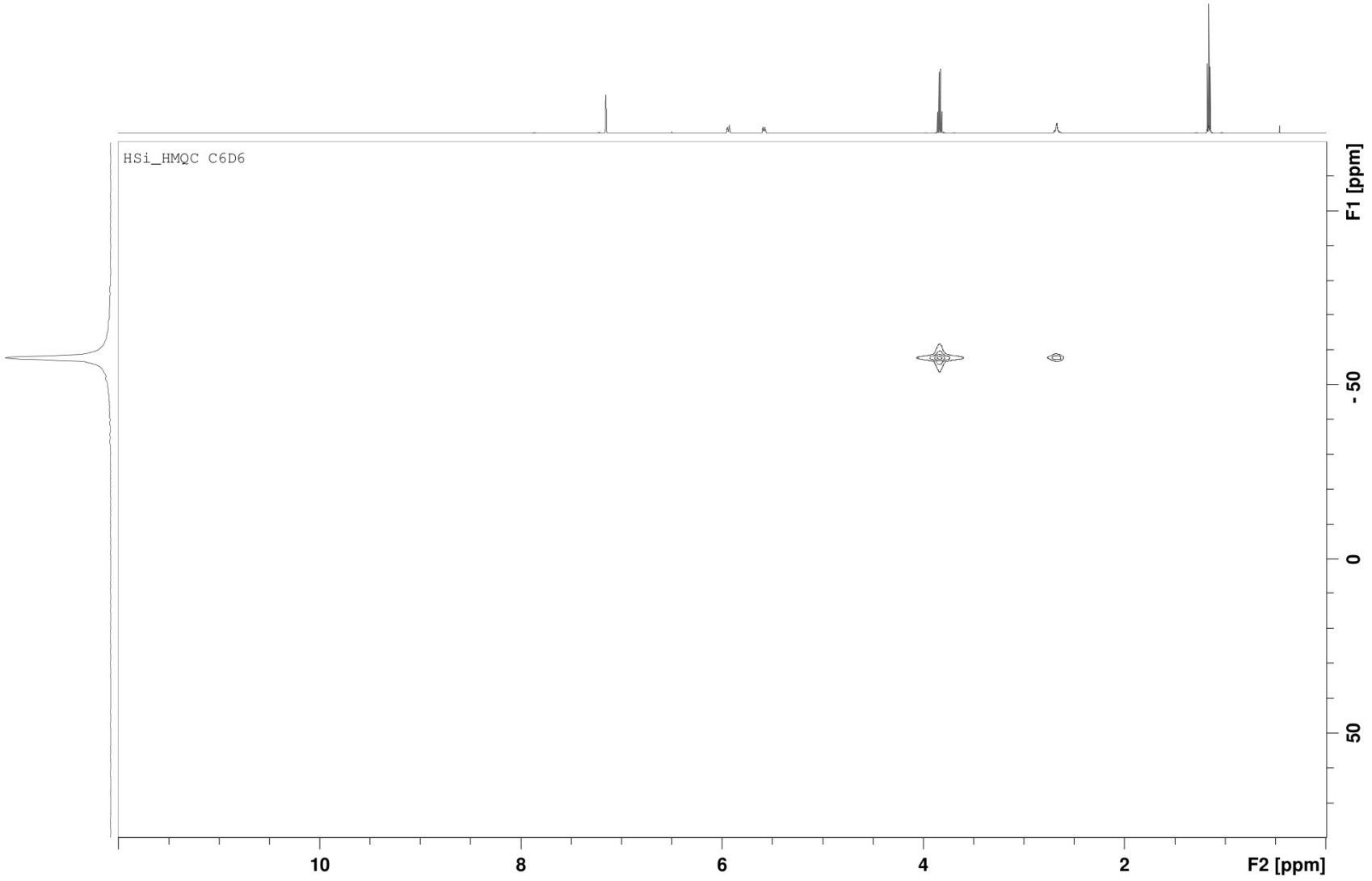
^{1}H NMR (500 MHz, C_6D_6)



^{13}C NMR (126 MHz, C_6D_6)

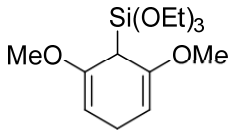


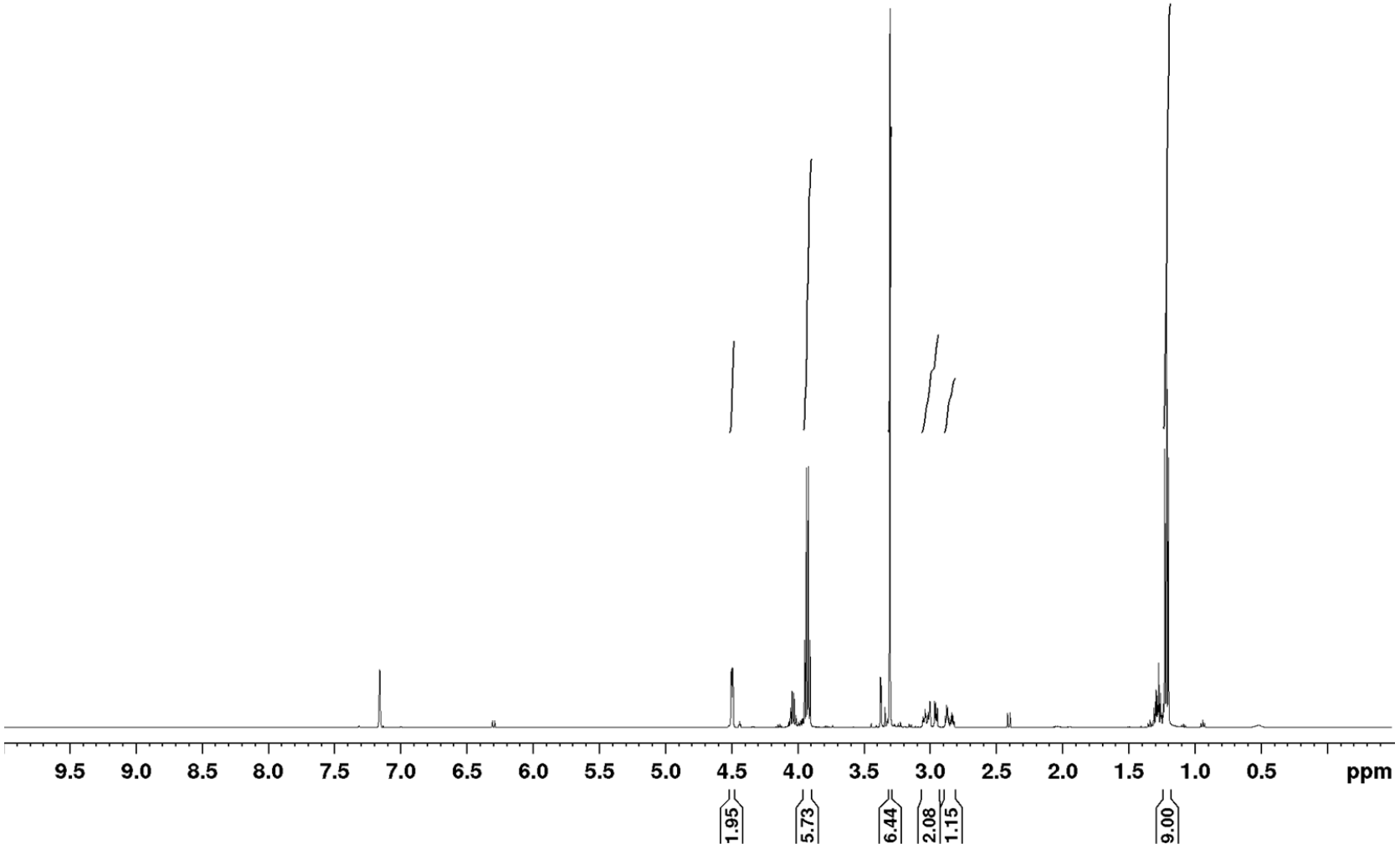
$^{1}H/^{29}Si$ HMQC NMR (500 MHz / 99 MHz, C_6D_6)



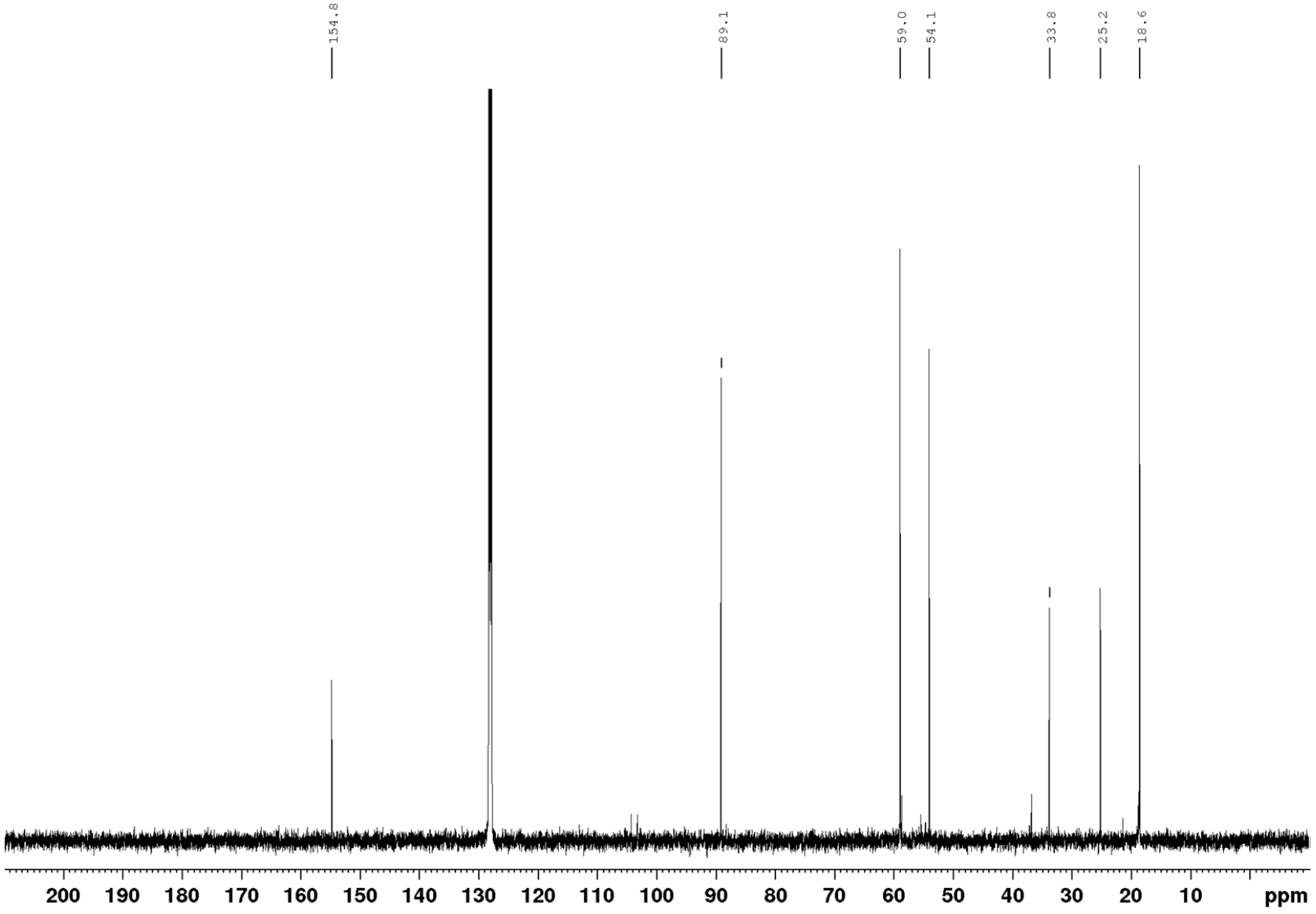
2,6-Dimethoxycyclohexa-2,5-dien-1-yltriethoxysilane (3b)

^{1}H NMR (500 MHz, C_6D_6)

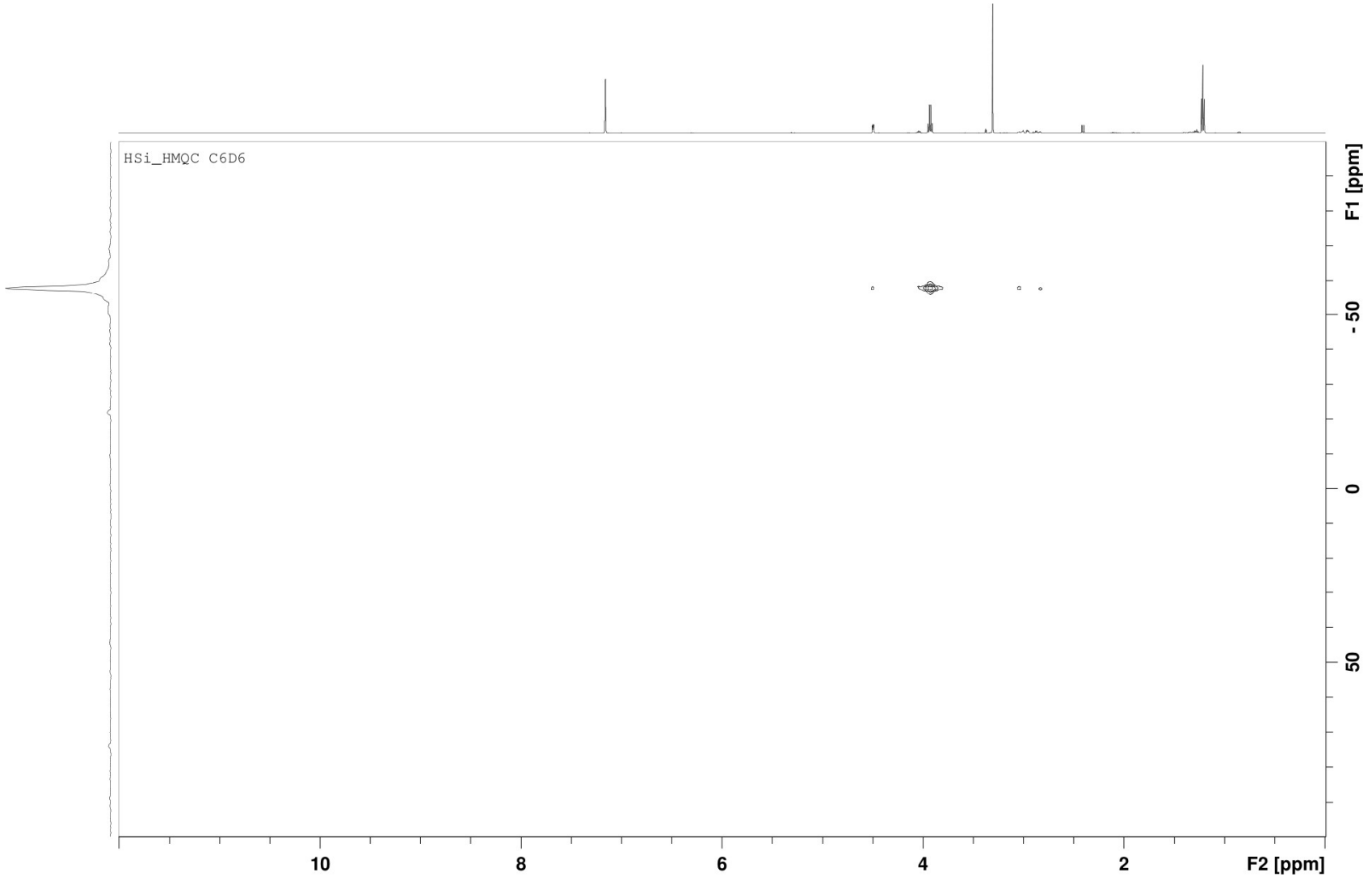




^{13}C NMR (126 MHz, C_6D_6)

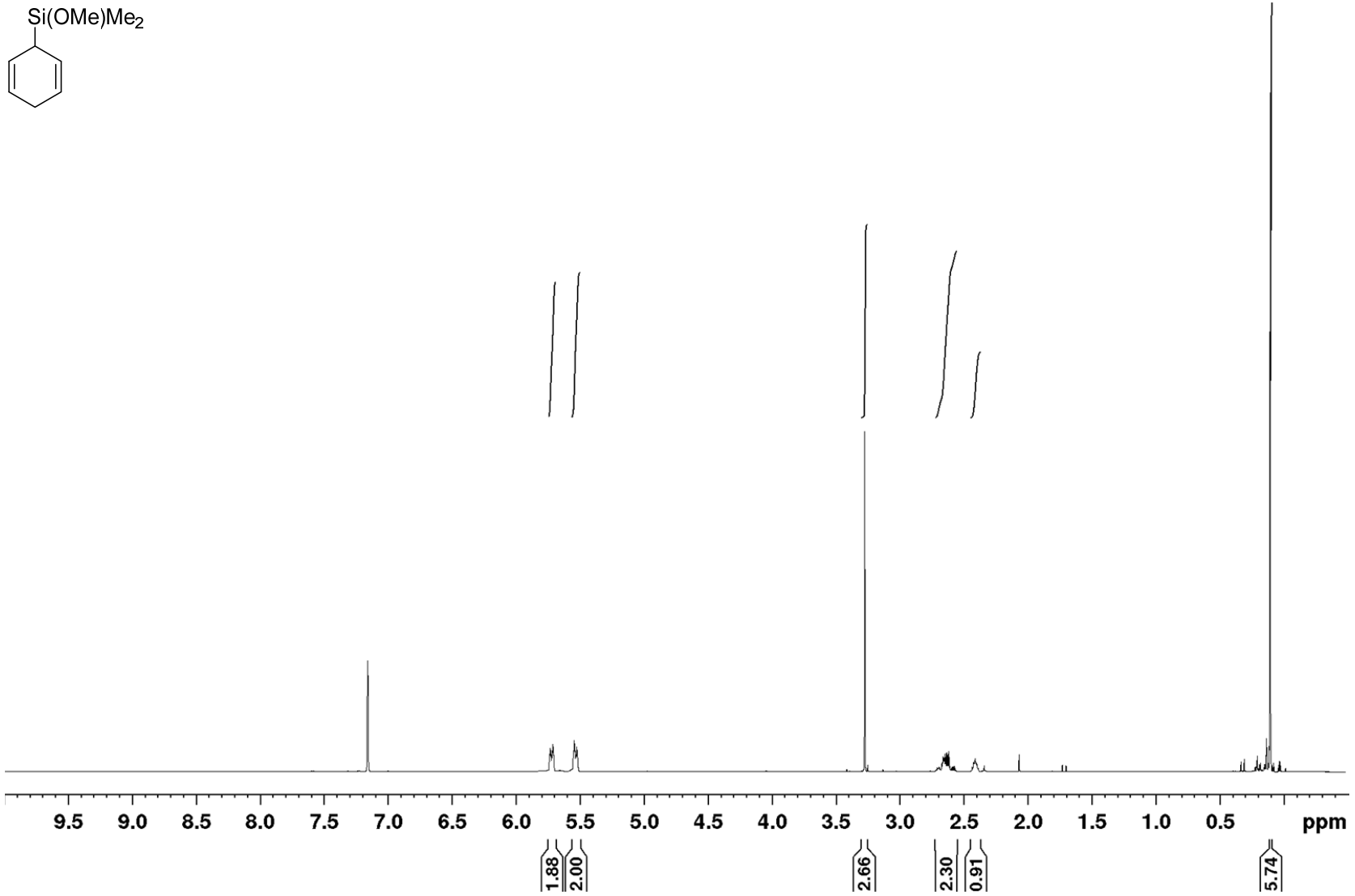


$^{1}H/^{29}Si$ HMQC NMR (500 MHz / 99 MHz, C_6D_6)

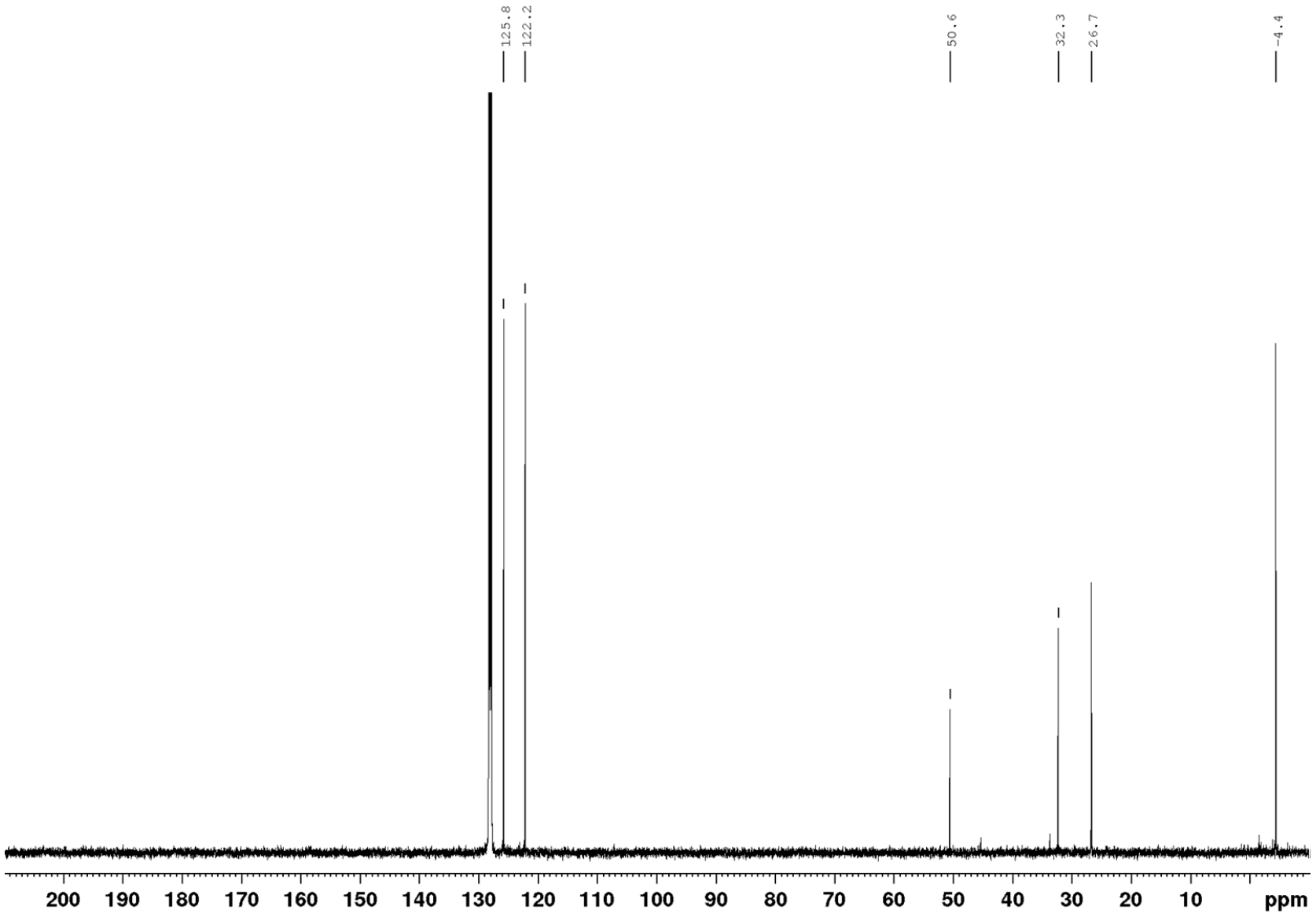


Cyclohexa-2,5-dien-1-yl(methoxy)dimethylsilane (3c)

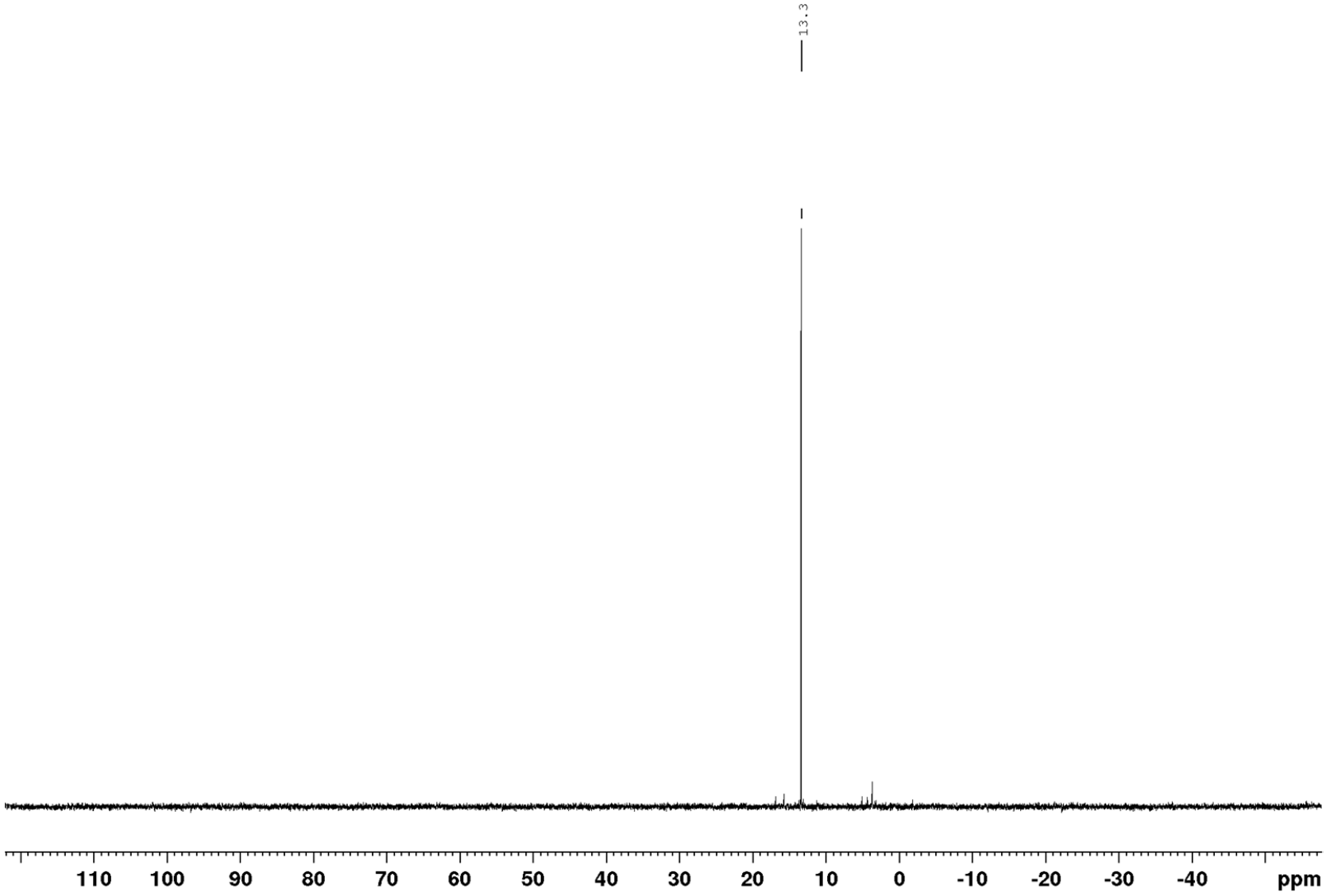
^{1}H NMR (500 MHz, C_6D_6)



^{13}C NMR (126 MHz, C_6D_6)



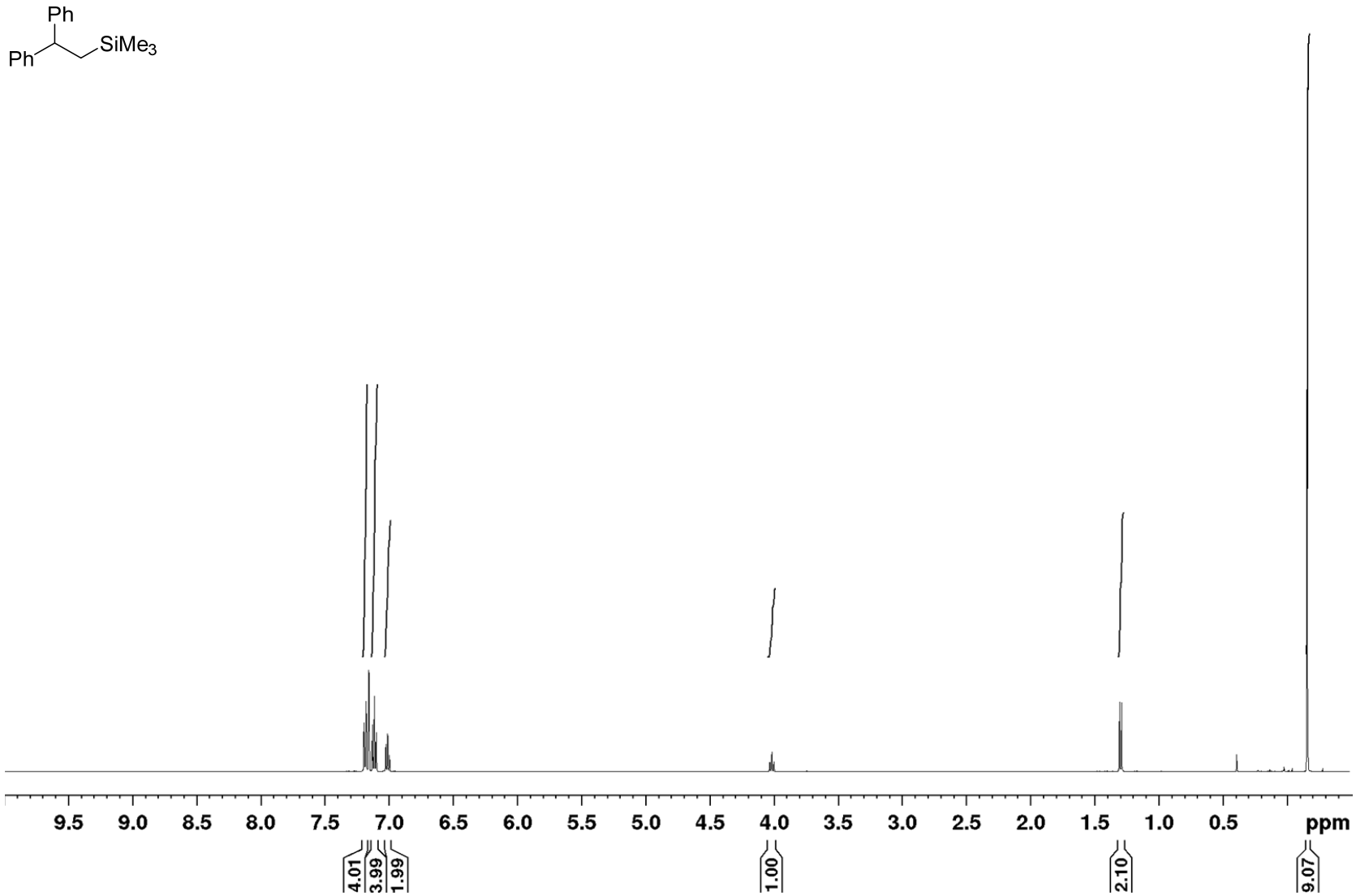
^{29}Si NMR (99 MHz, C_6D_6)



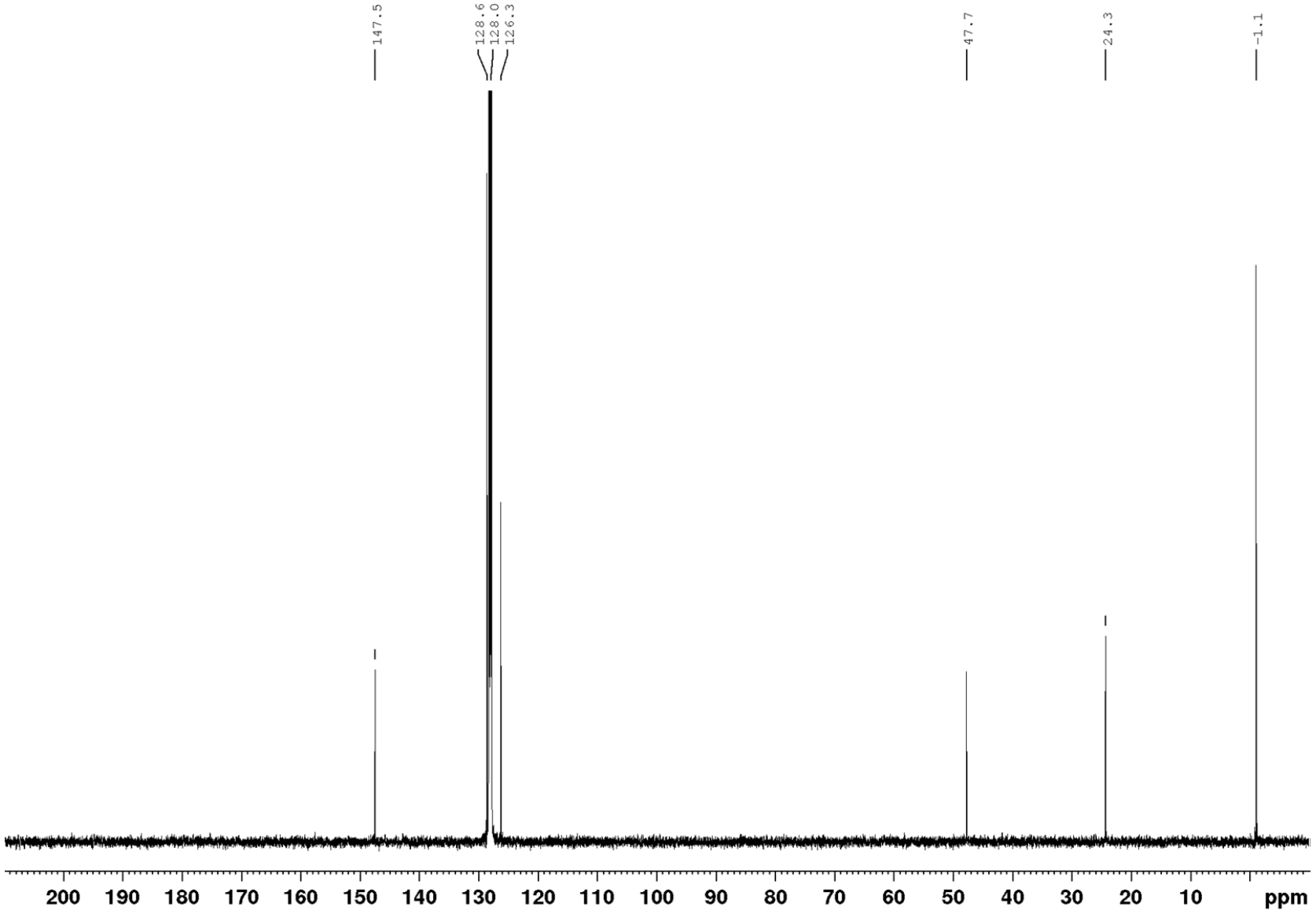
2 NMR Spectra of Compounds after Hydrosilylative Reduction

(2,2-Diphenylethyl)trimethylsilane

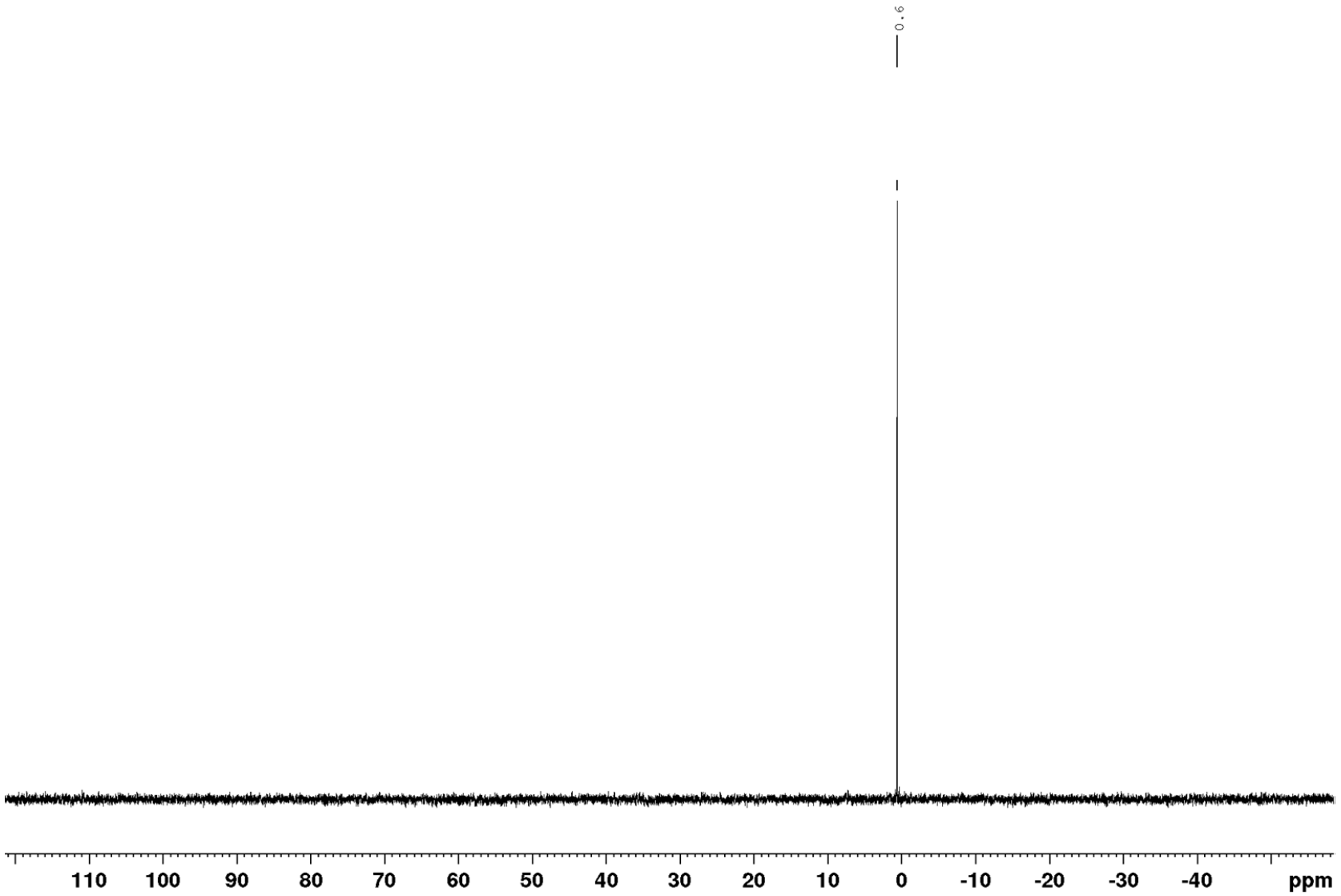
^{1}H NMR (500 MHz, C_6D_6)



^{13}C NMR (126 MHz, C_6D_6)

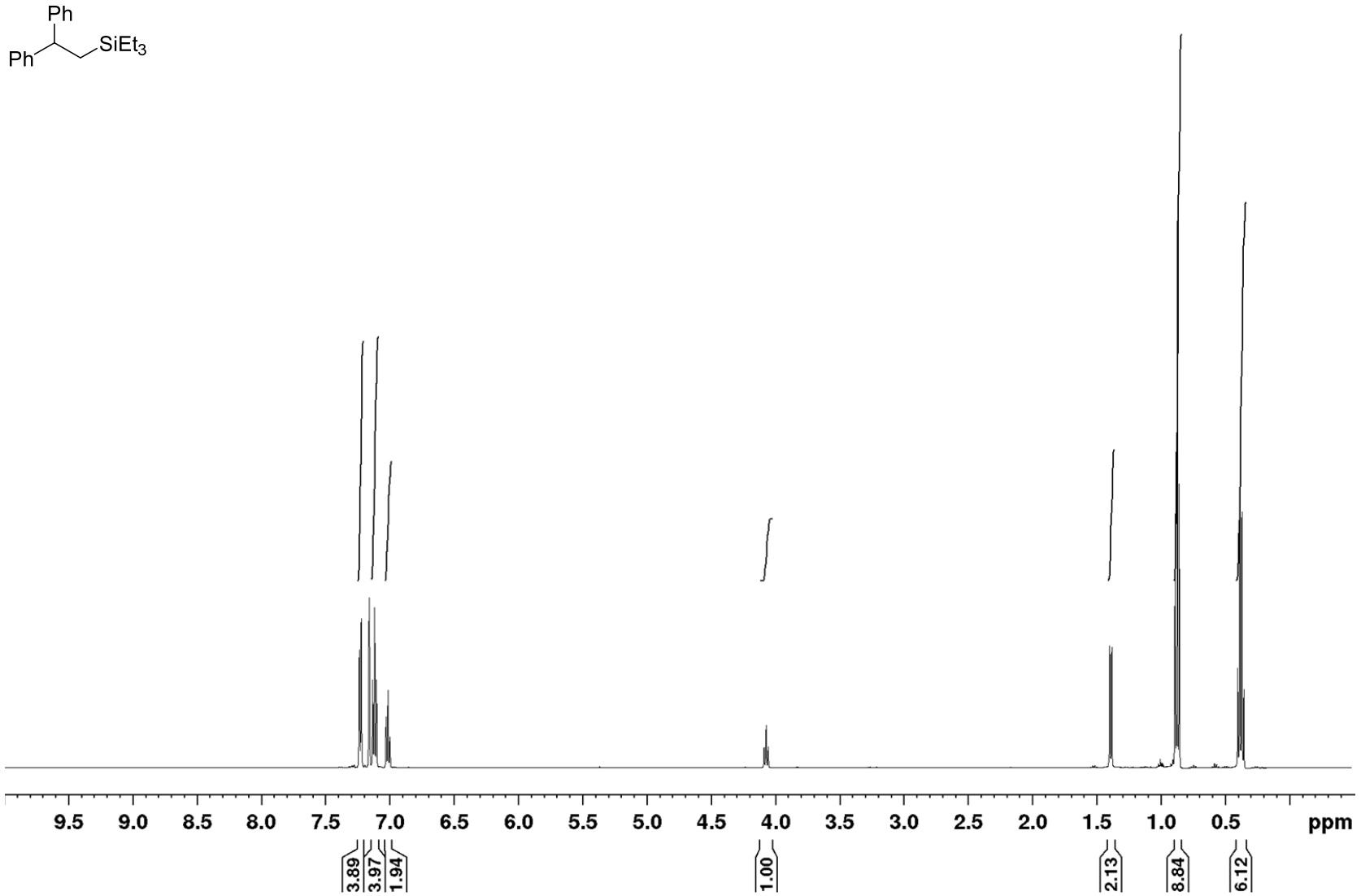


^{29}Si NMR (99 MHz, C_6D_6)

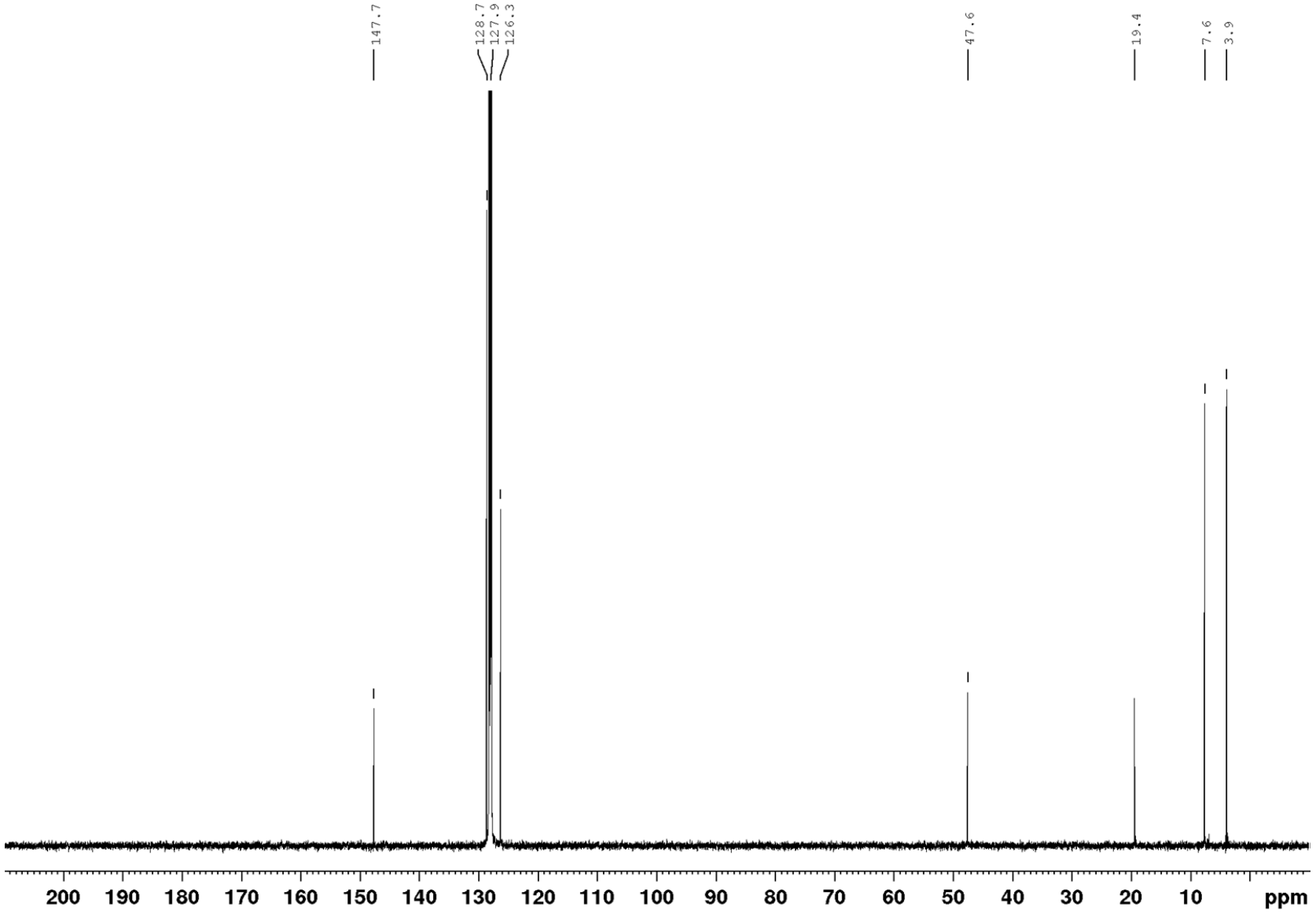


(2,2-Diphenylethyl)triethylsilane

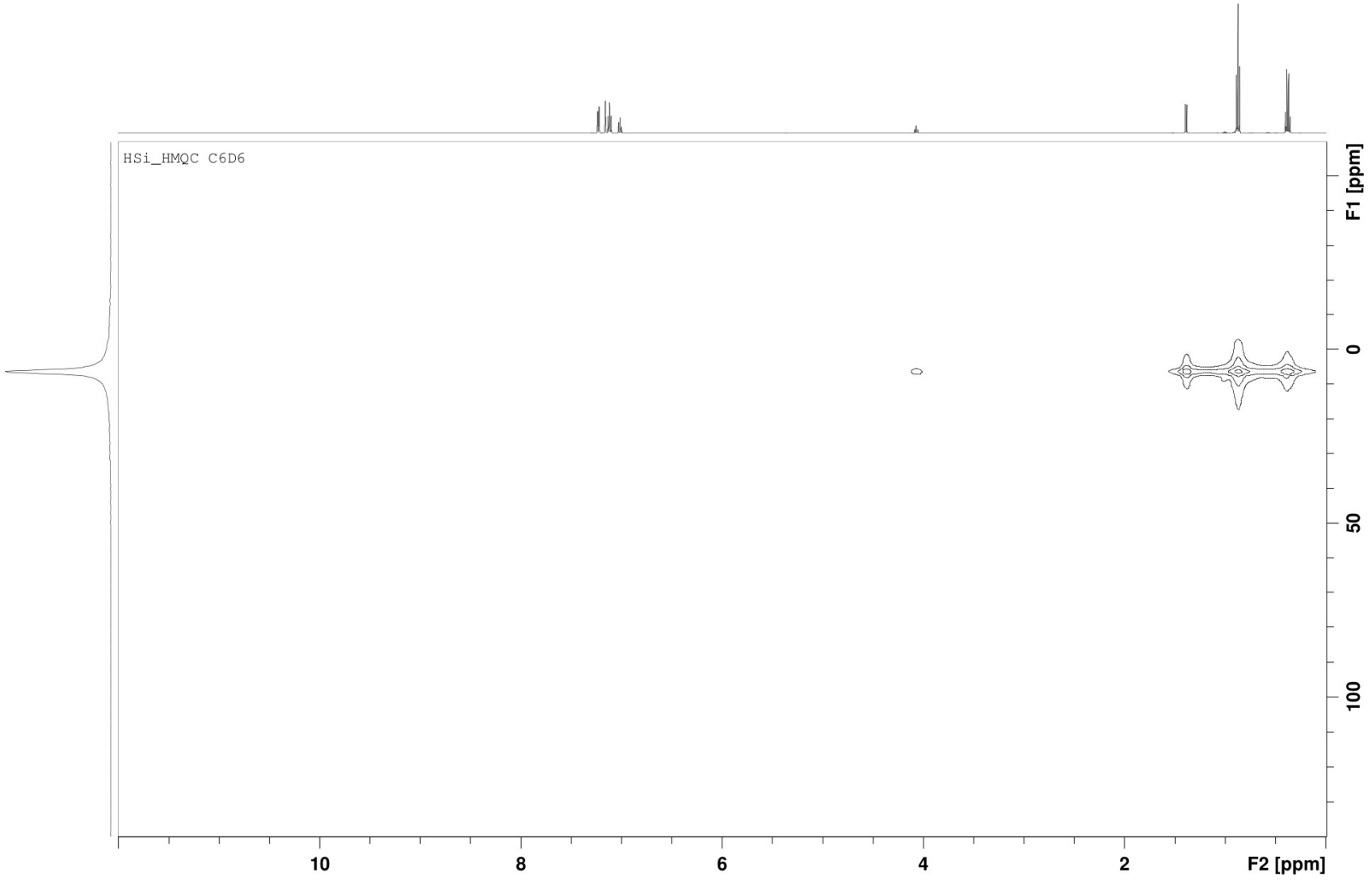
^{1}H NMR (500 MHz, C_6D_6)



^{13}C NMR (126 MHz, C_6D_6)

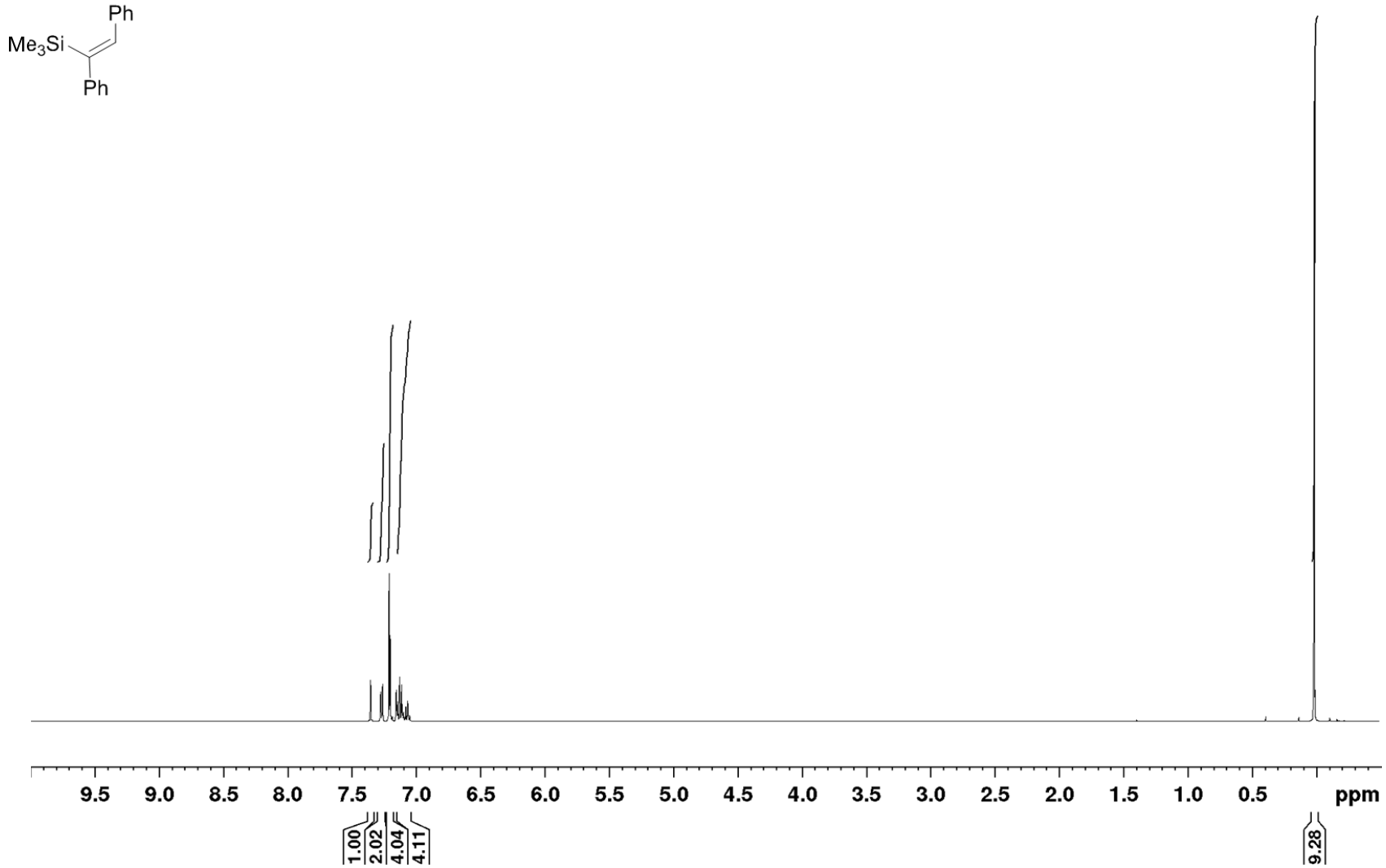


$^{1}H/^{29}Si$ HMQC NMR (500 MHz / 99 MHz, C_6D_6)

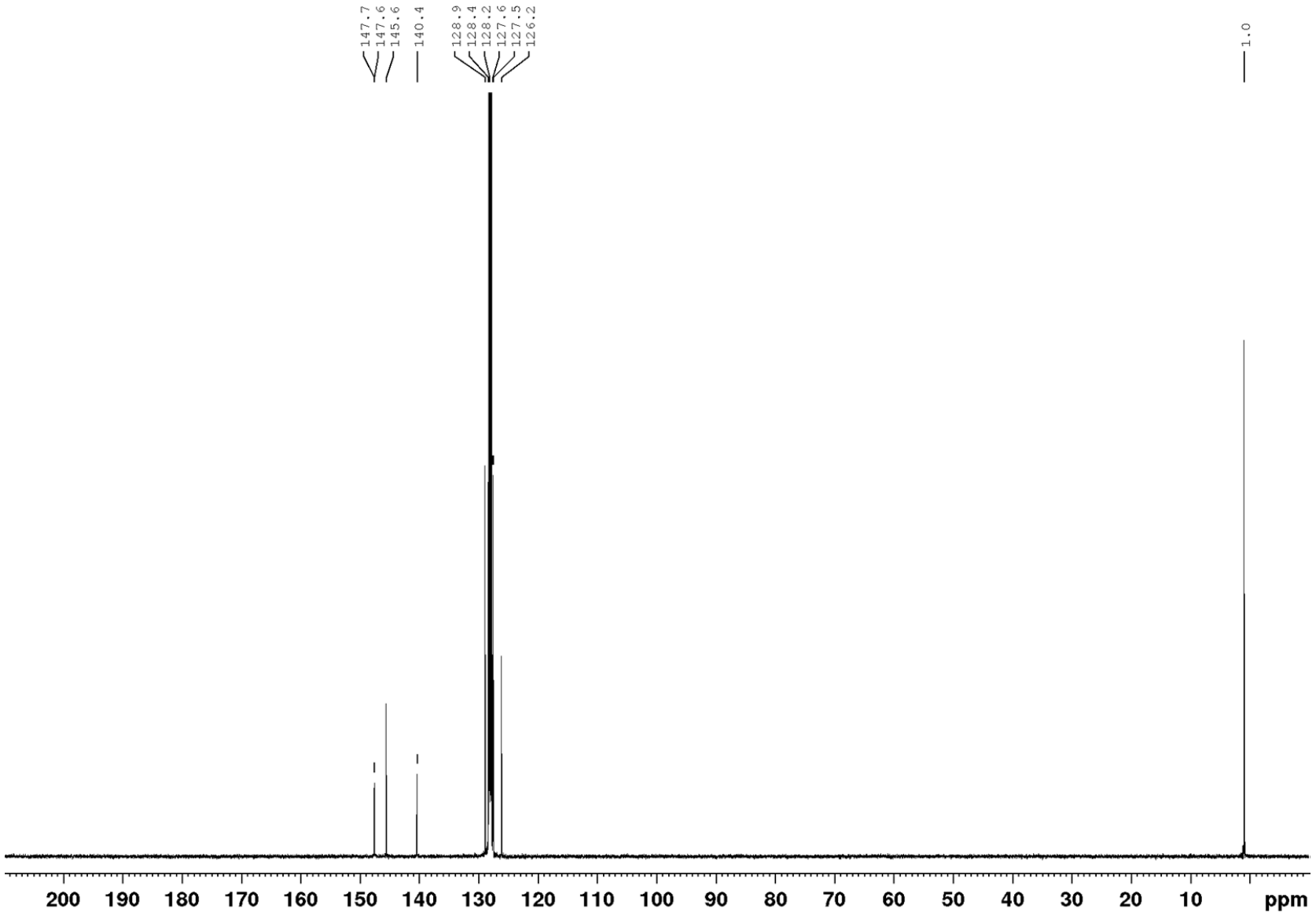


(*Z*)-(1,2-Diphenylvinyl)trimethylsilane

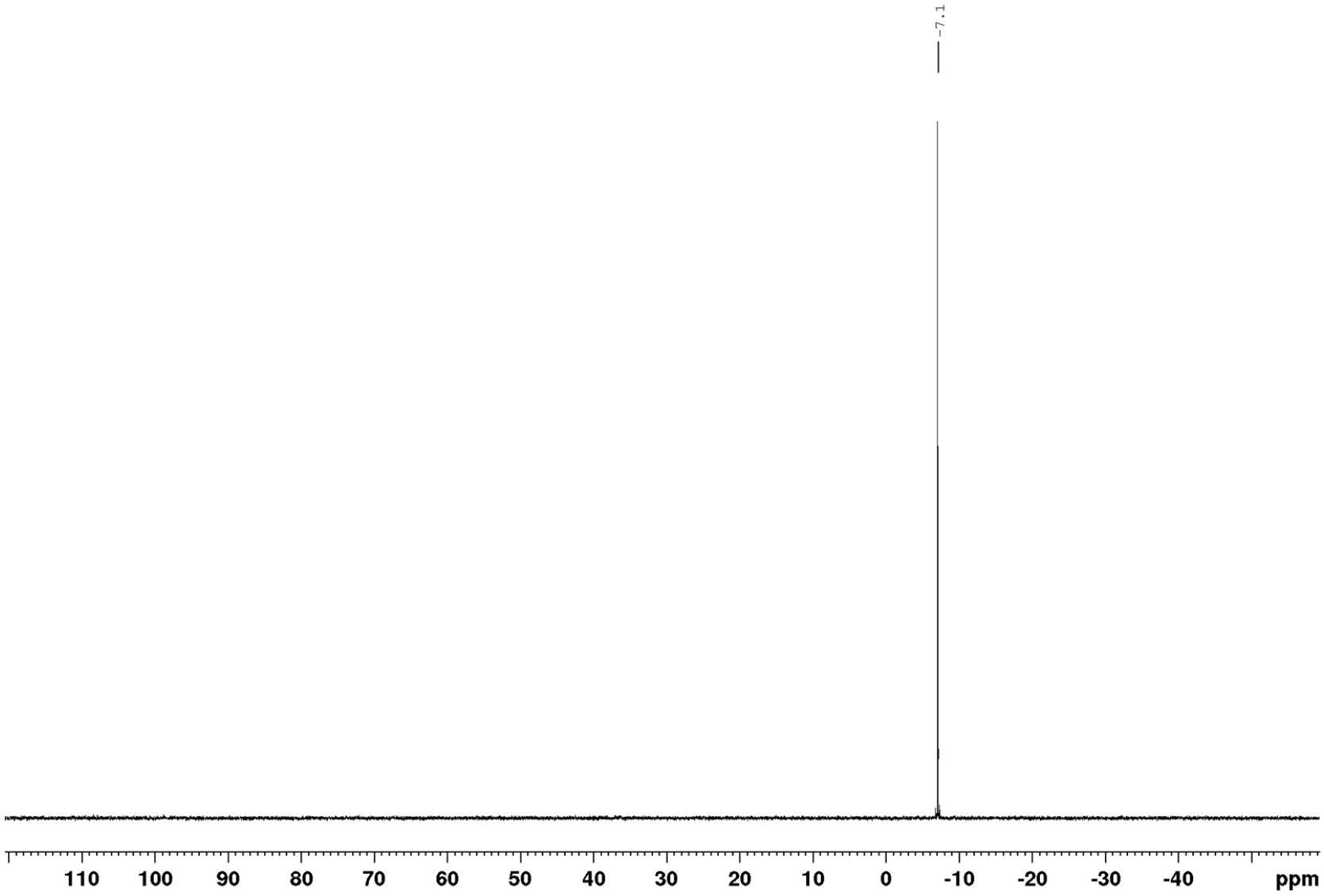
^{1}H NMR (500 MHz, C_6D_6)



^{13}C NMR (126 MHz, C_6D_6)

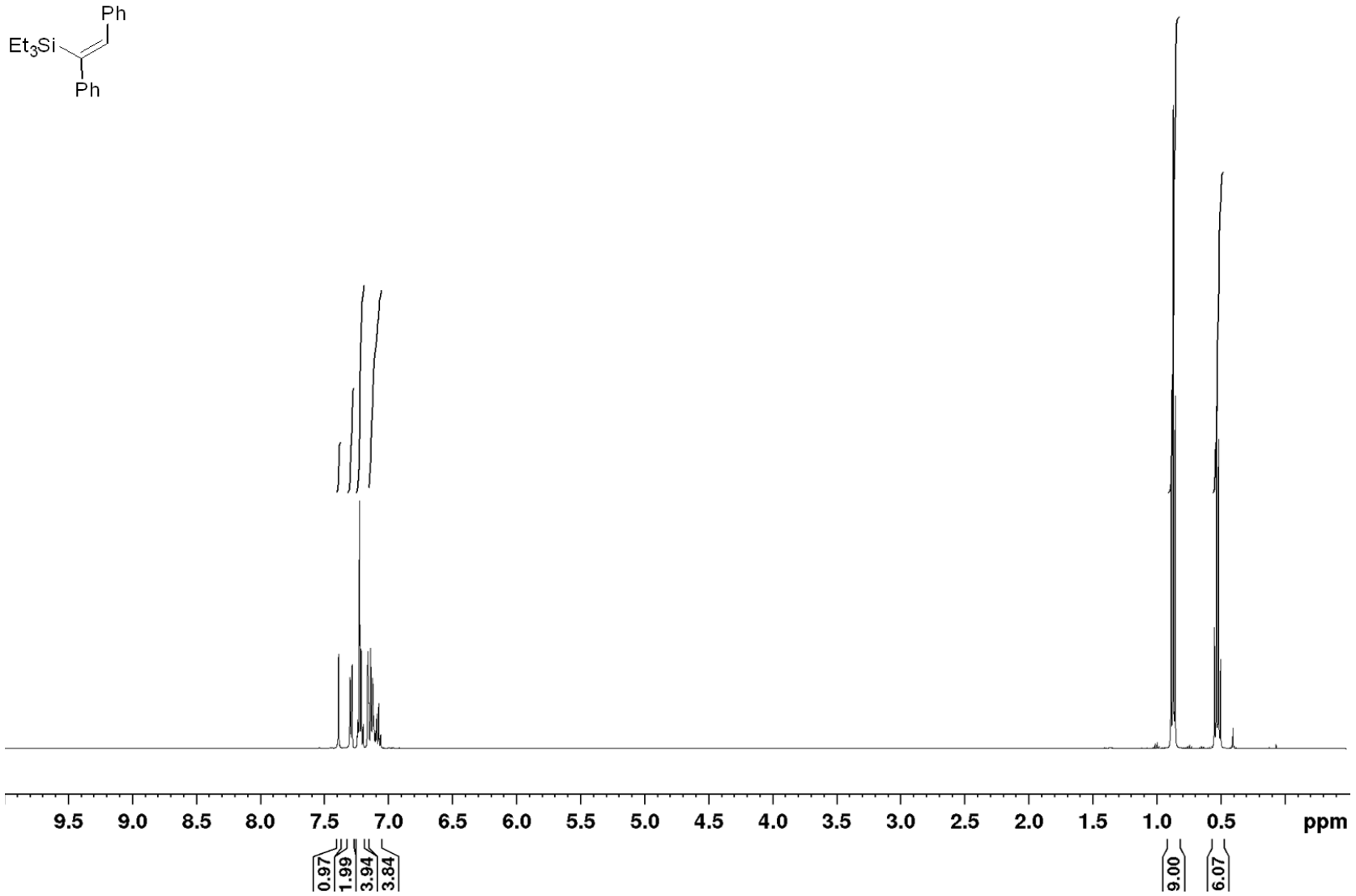


^{29}Si NMR (99 MHz, C_6D_6)

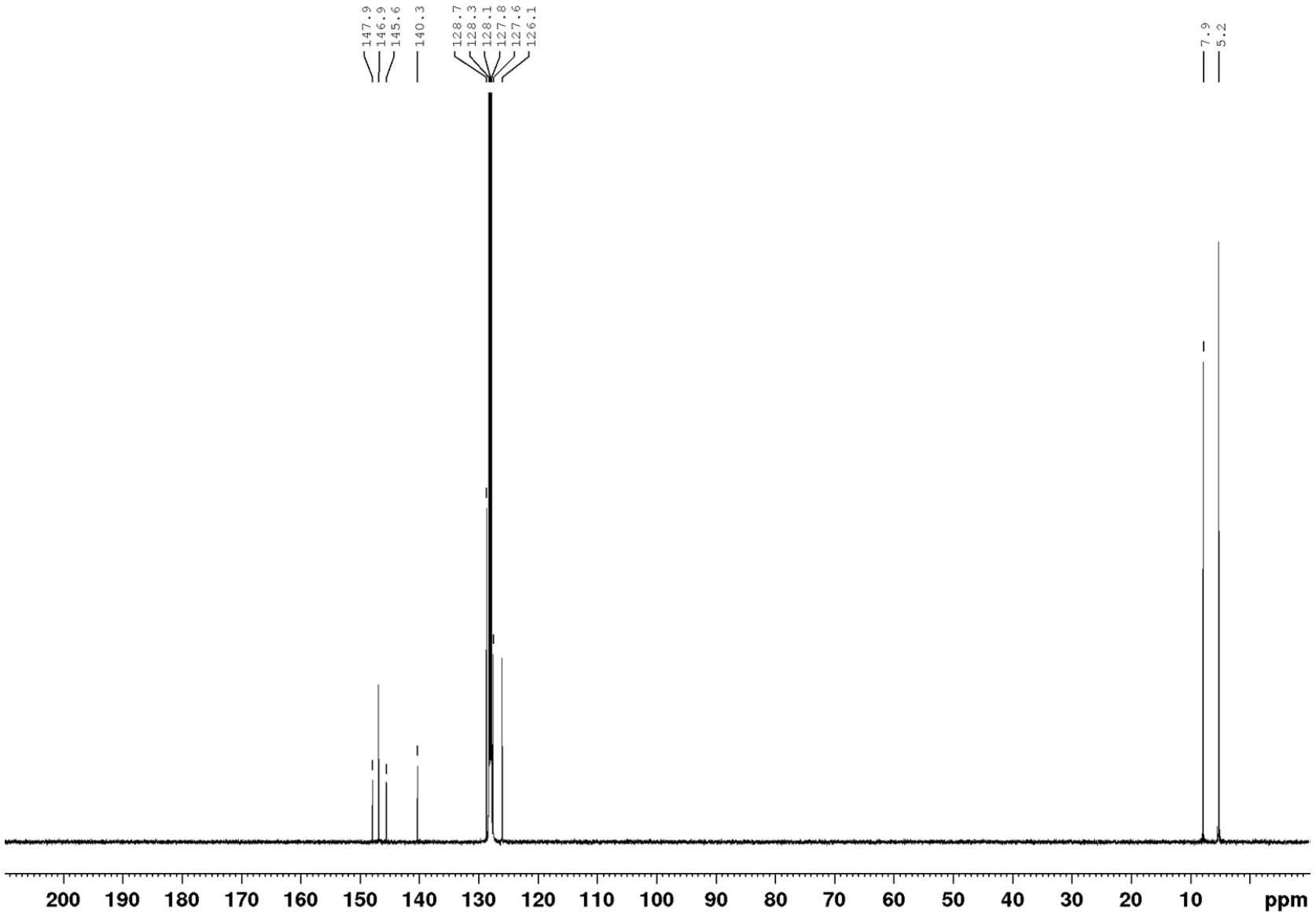


(*Z*)-(1,2-Diphenylvinyl)triethylsilane

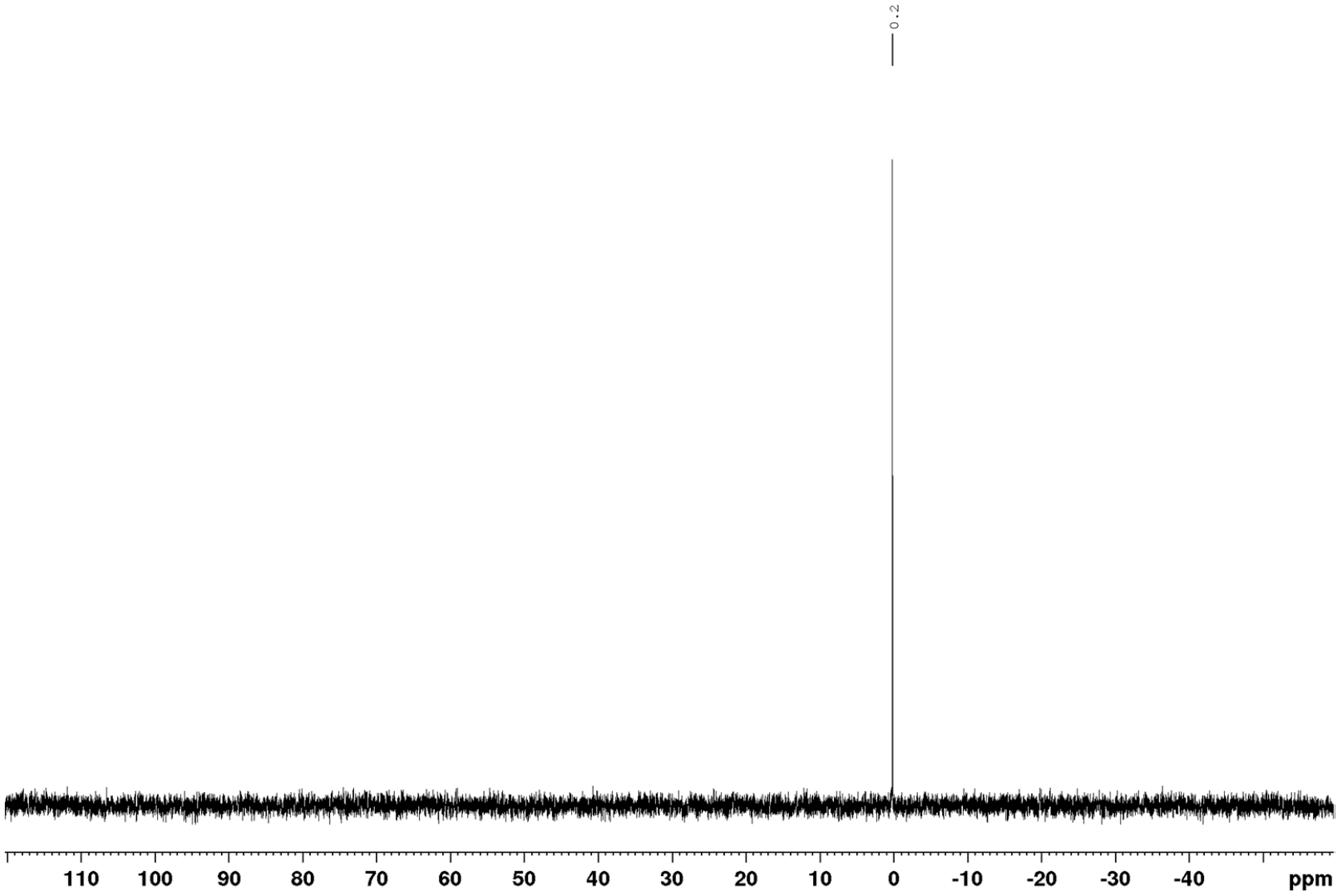
^{1}H NMR (500 MHz, C_6D_6)



^{13}C NMR (126 MHz, C_6D_6)

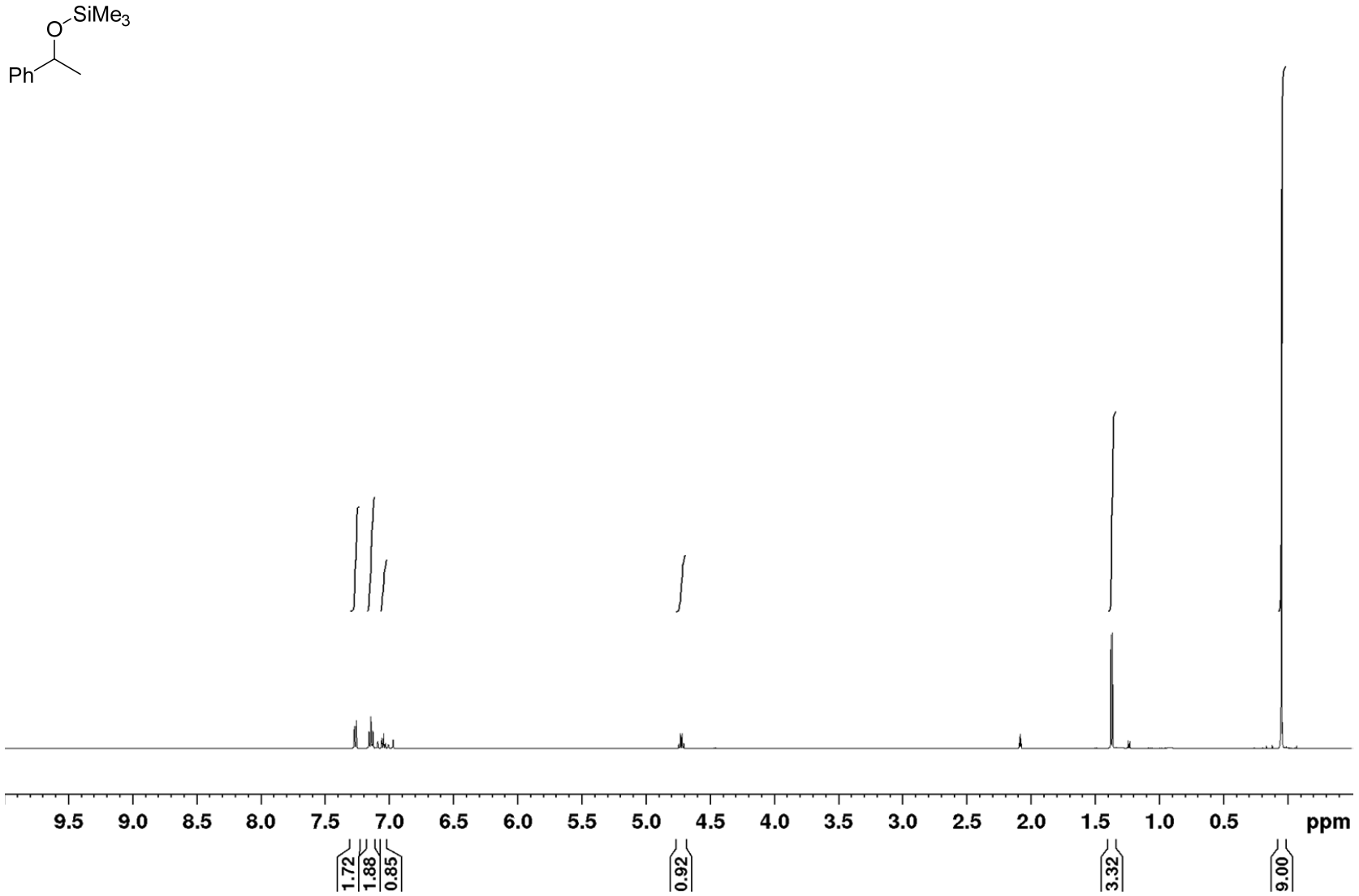


^{29}Si NMR (99 MHz, C_6D_6)

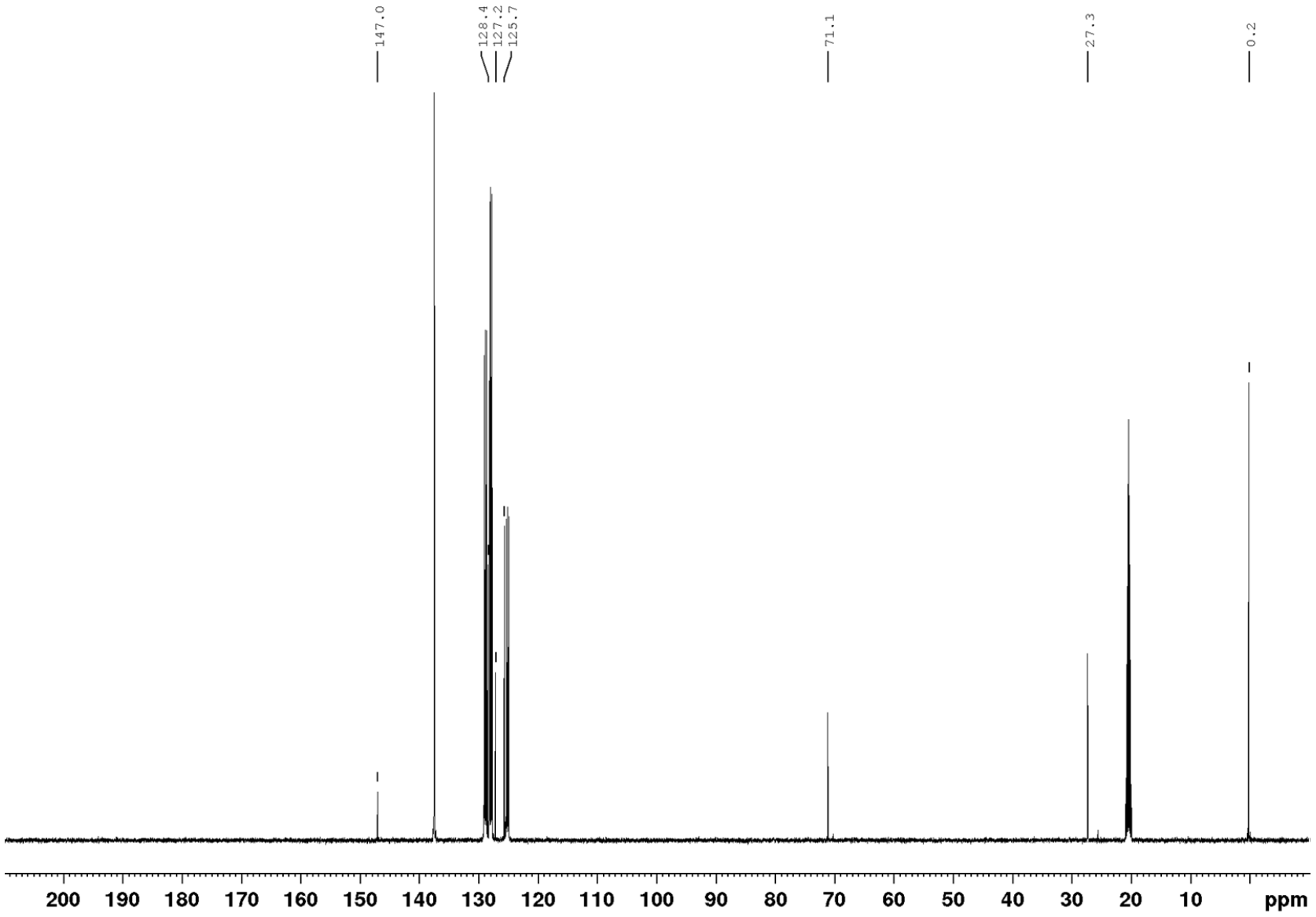


Trimethyl(1-phenylethoxy)silane

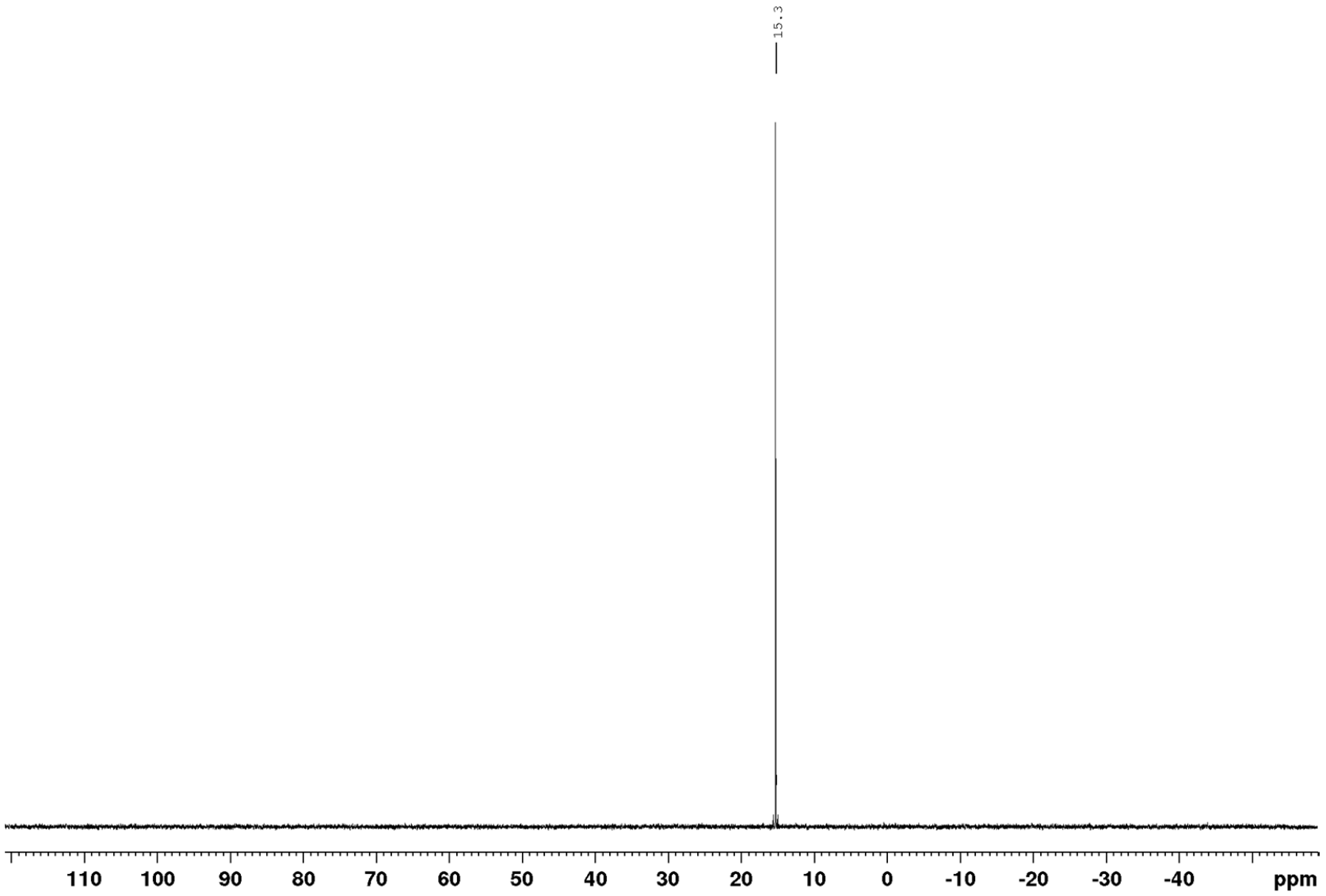
^{1}H NMR (500 MHz, C_7D_8)



^{13}C NMR (126 MHz, C_7D_8)

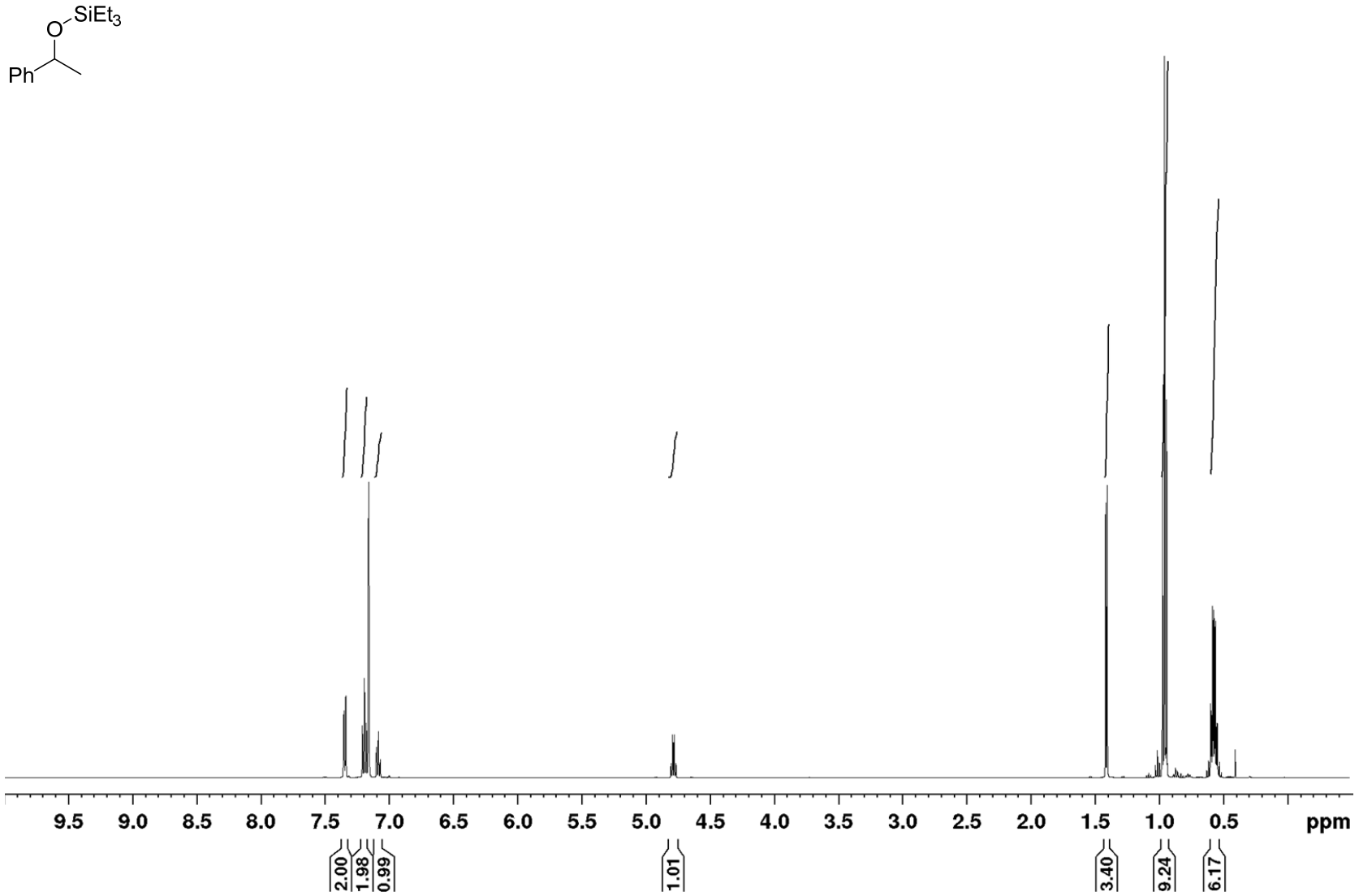


^{29}Si NMR (99 MHz, C_7D_8)

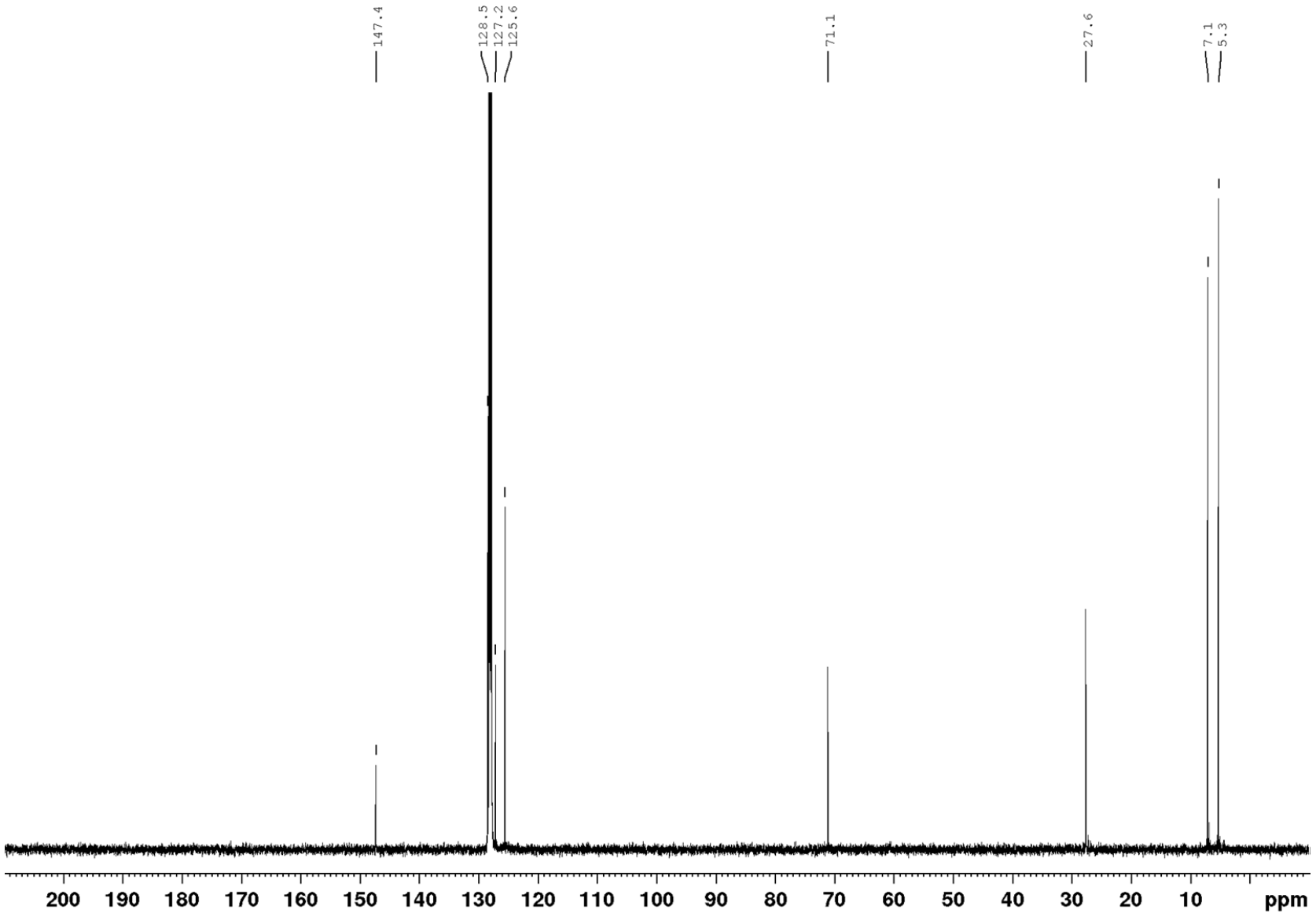


Triethyl(1-phenylethoxy)silane

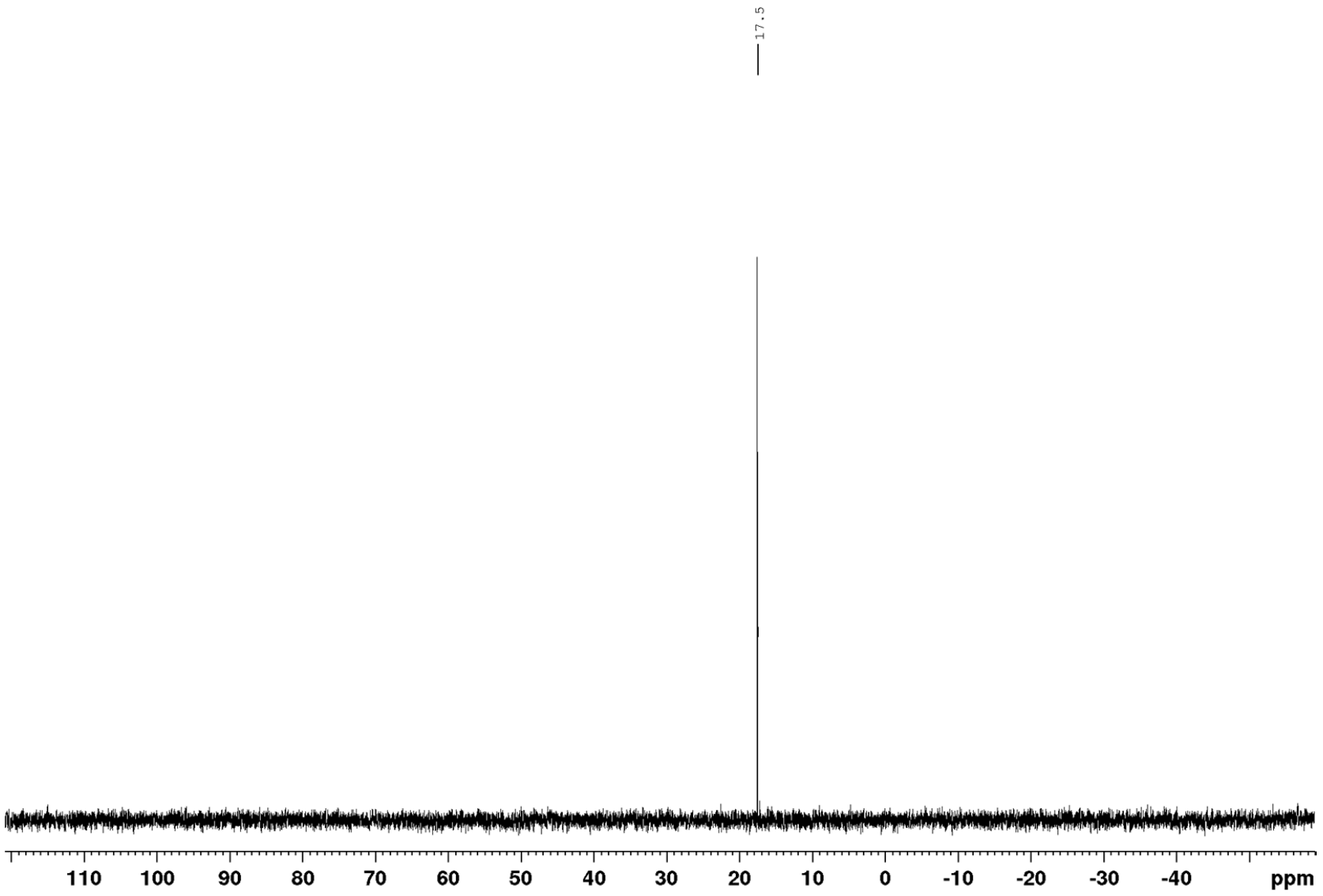
^{1}H NMR (500 MHz, C_6D_6)



^{13}C NMR (126 MHz, C_6D_6)

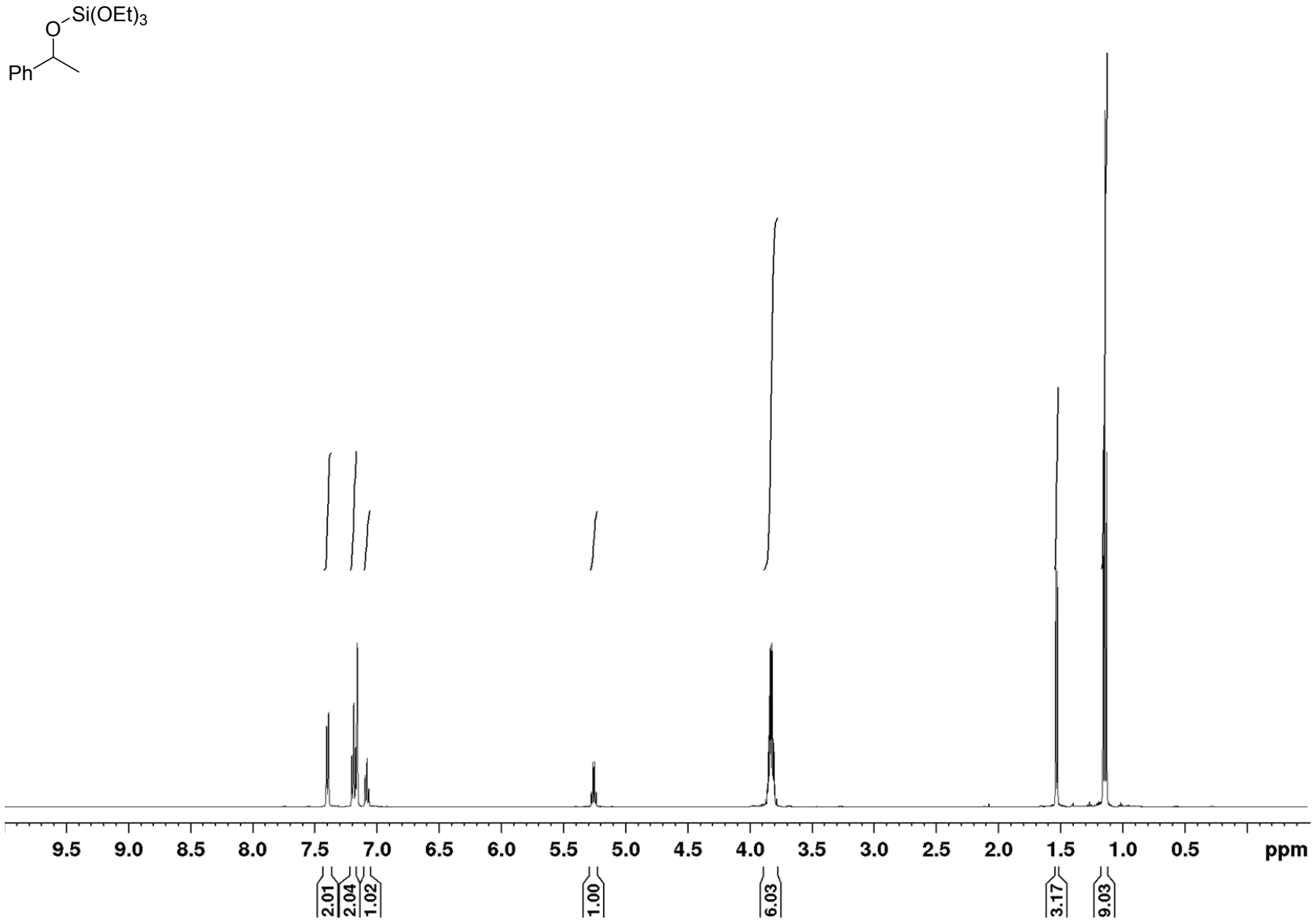


^{29}Si NMR (99 MHz, C_6D_6)

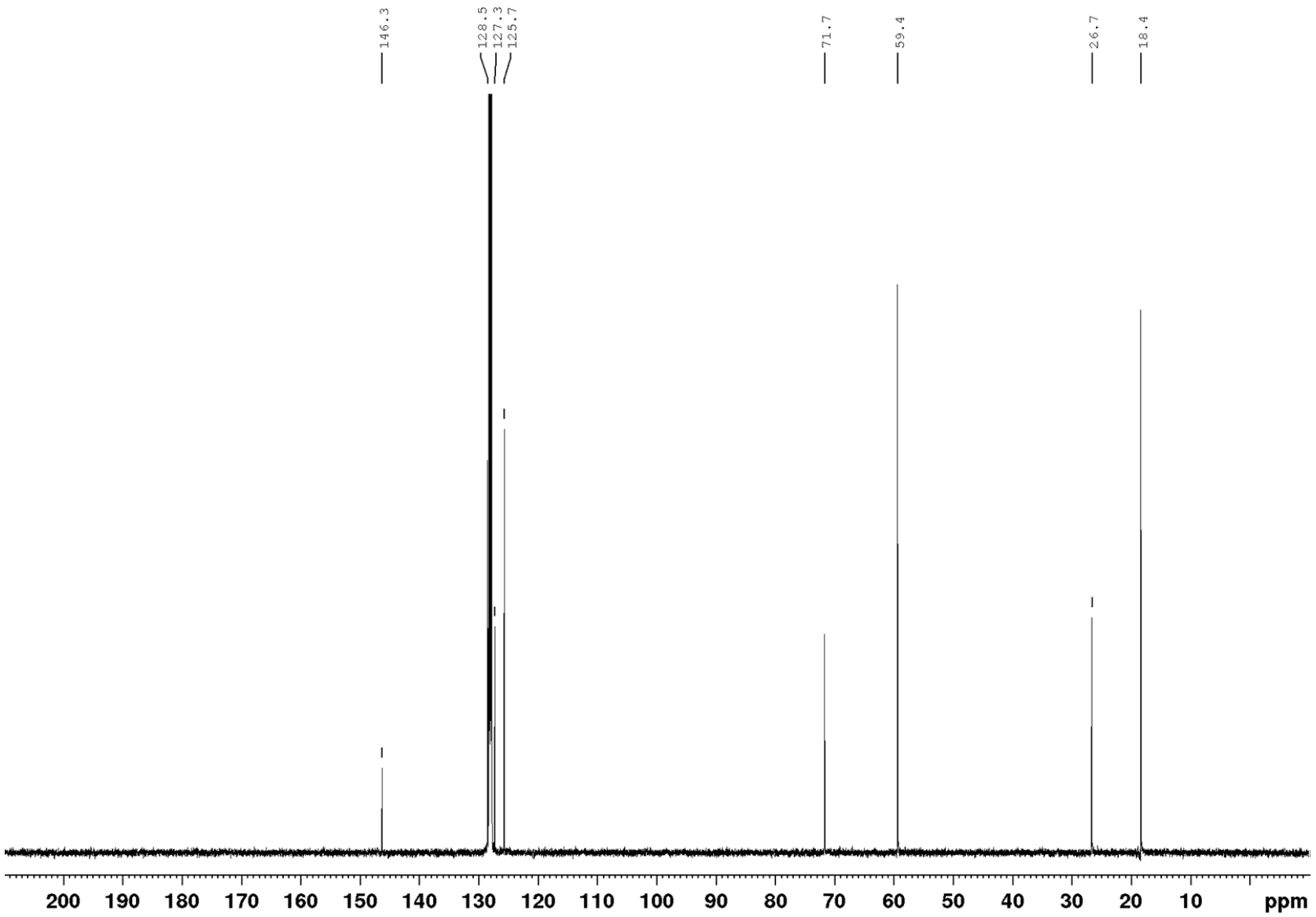


Triethyl(1-phenylethyl)silicate

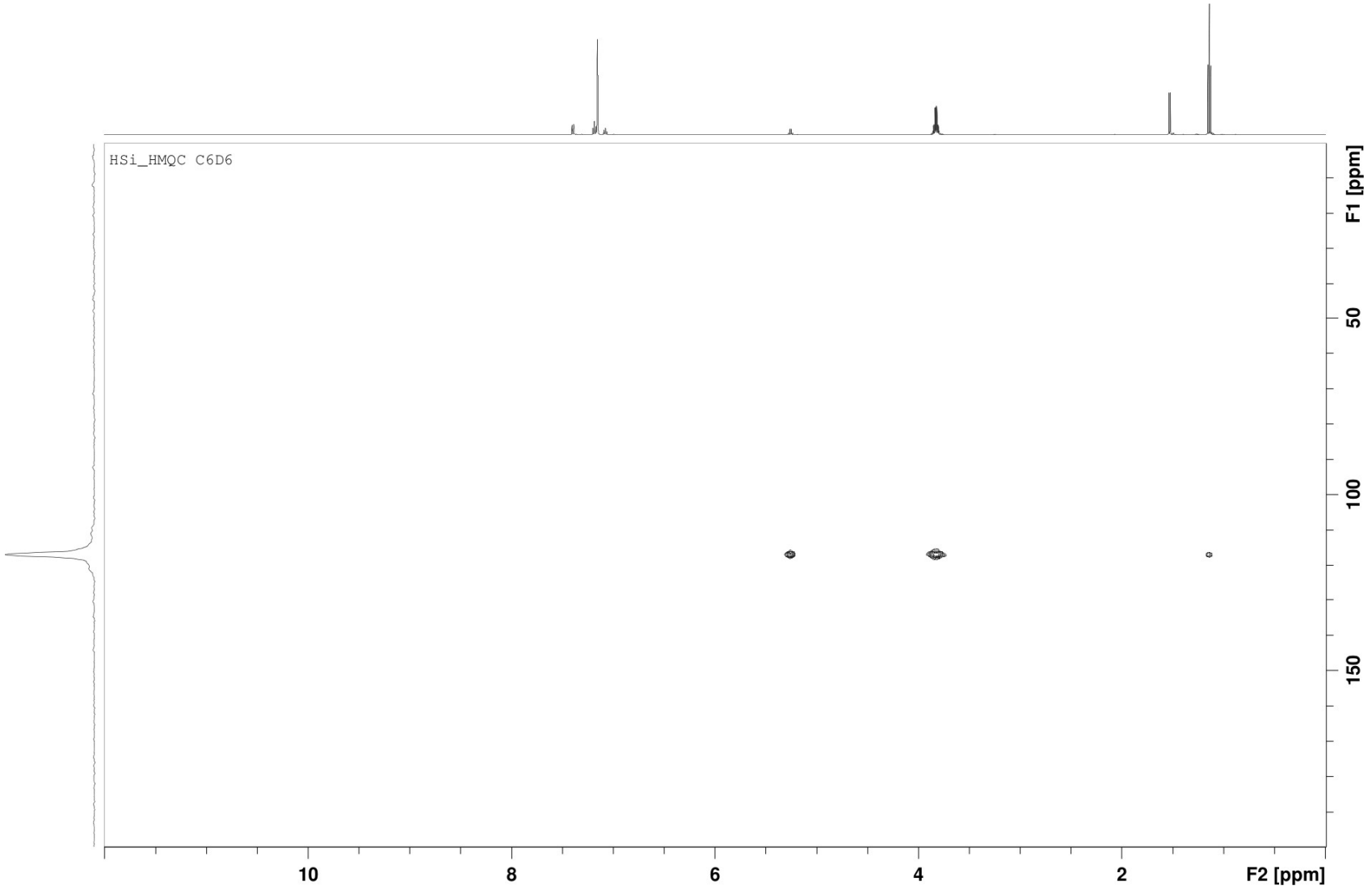
^{1}H NMR (500 MHz, C_6D_6)



^{13}C NMR (126 MHz, C_6D_6)

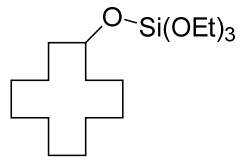


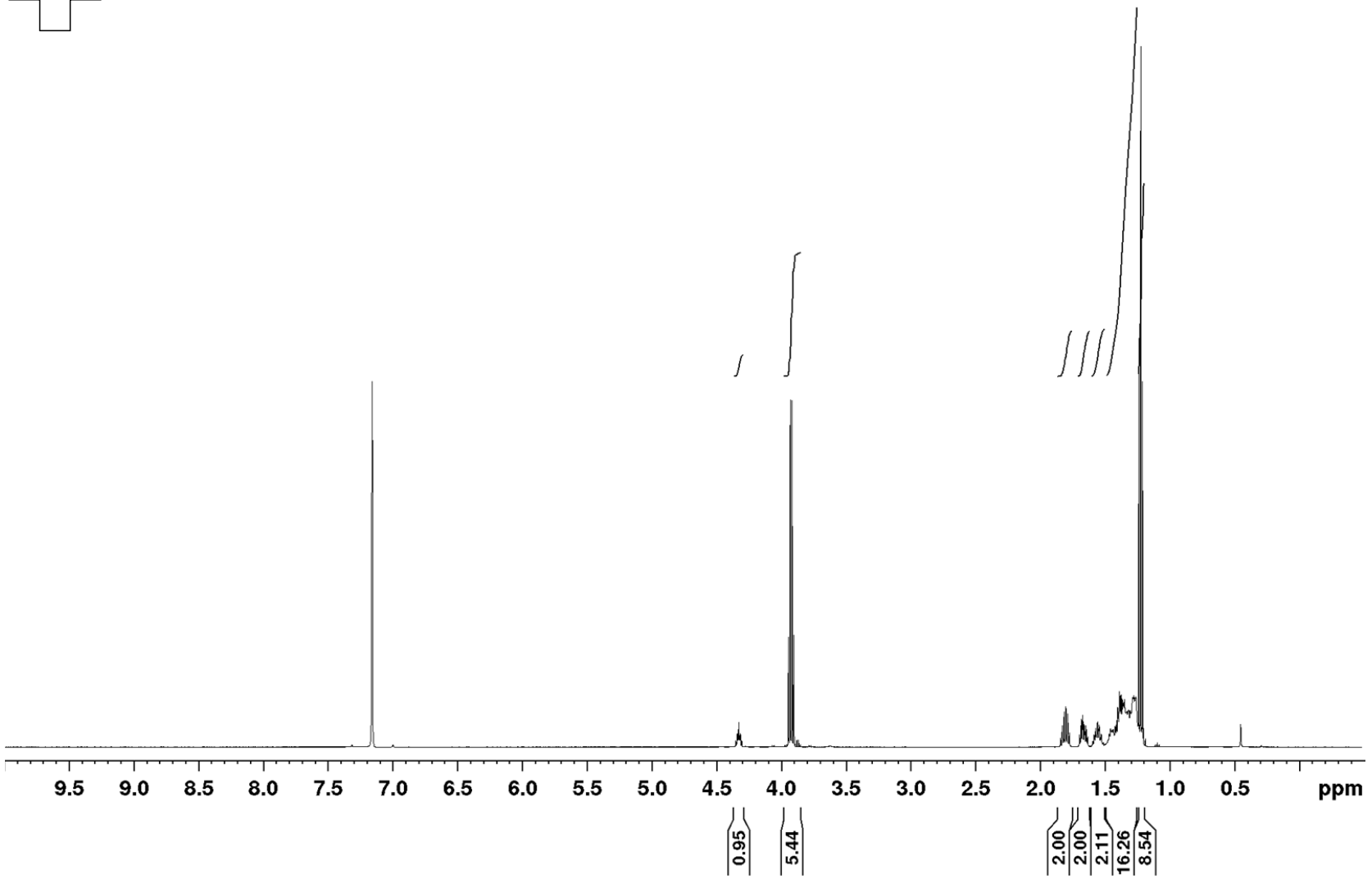
$^{1}H/^{29}Si$ HMQC NMR (500 MHz / 99 MHz, C_6D_6)



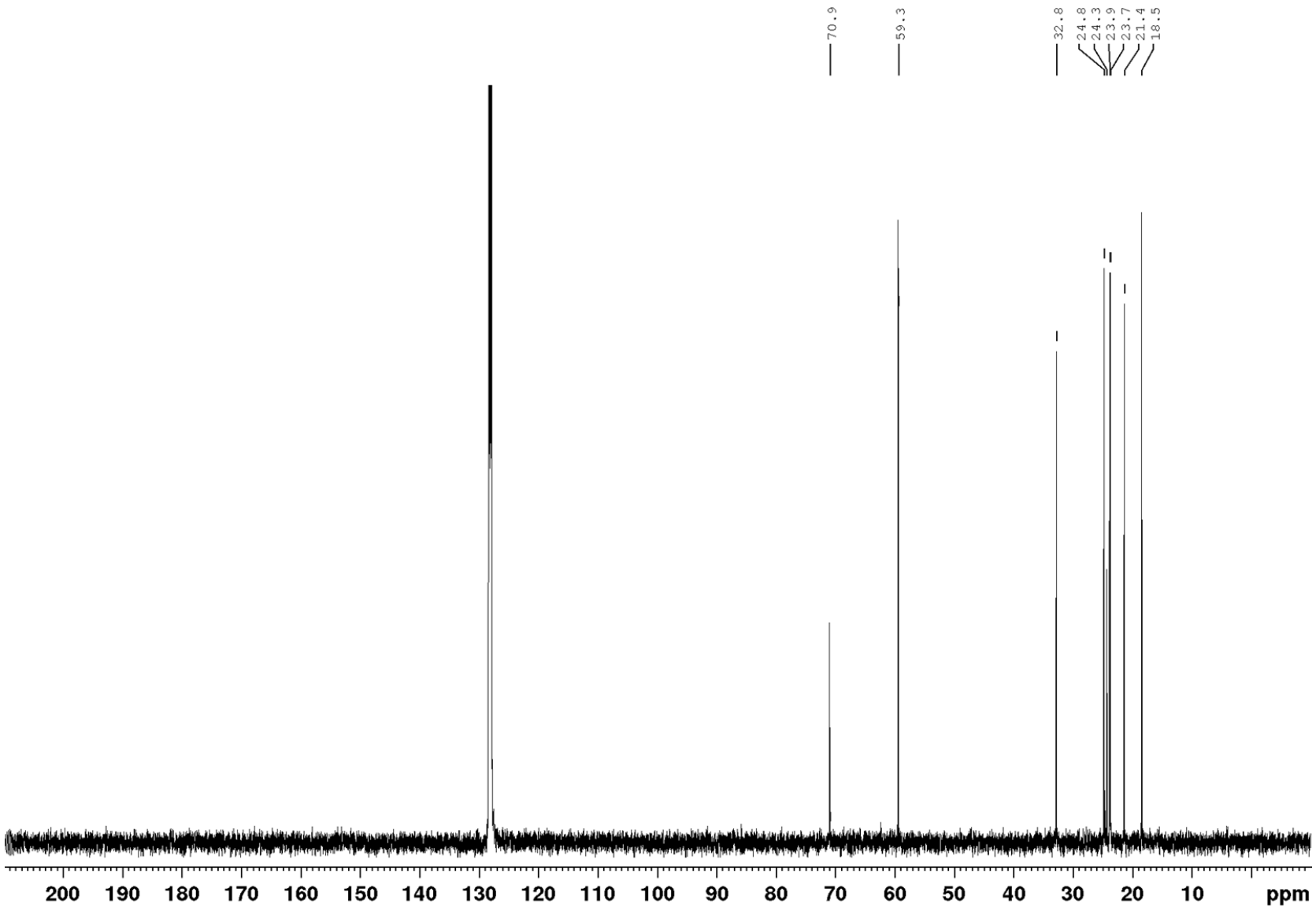
(Cyclododecyl)triethylsilicate

^{1}H NMR (500 MHz, C_6D_6)

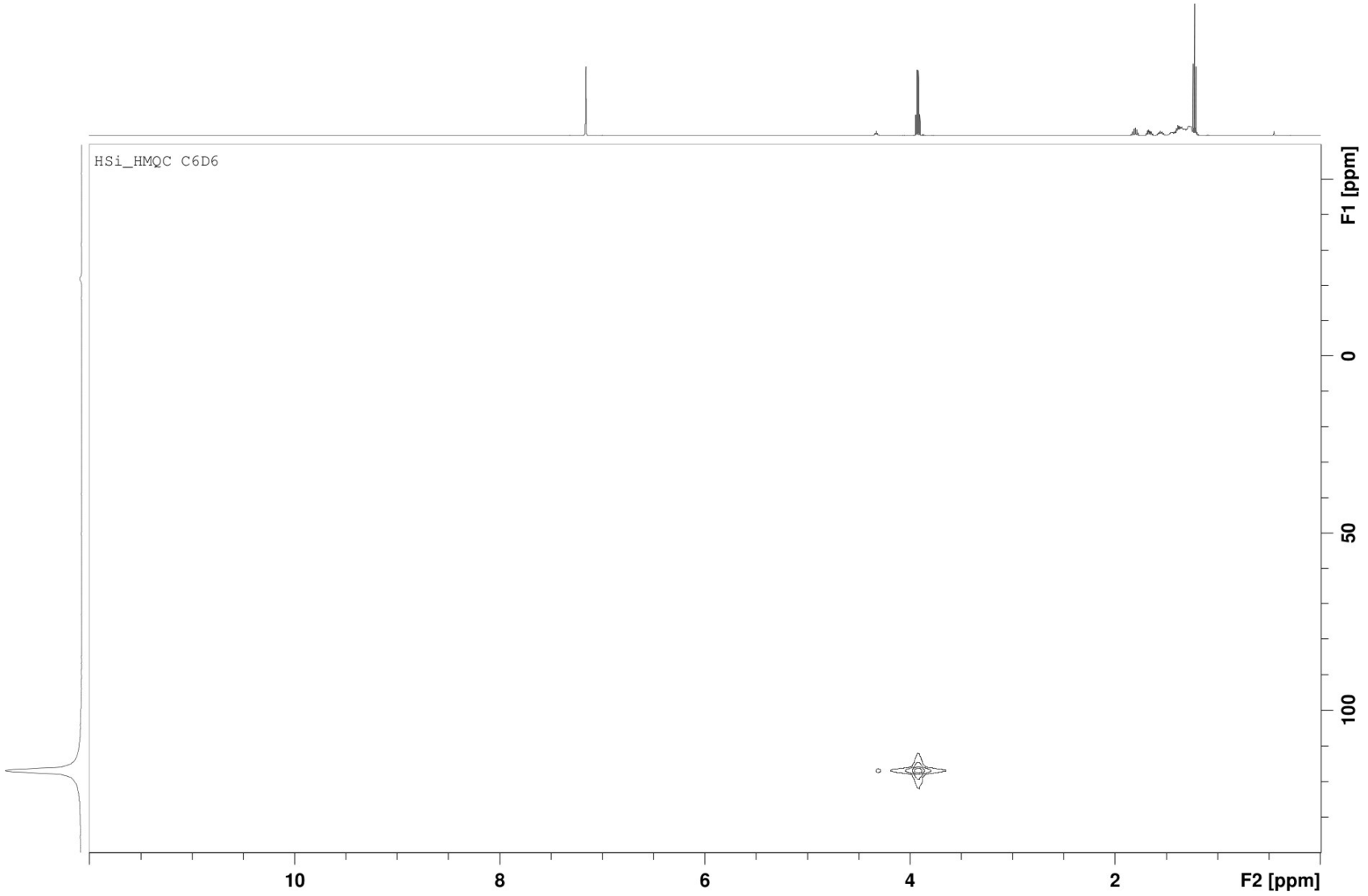




^{13}C NMR (126 MHz, C_6D_6)

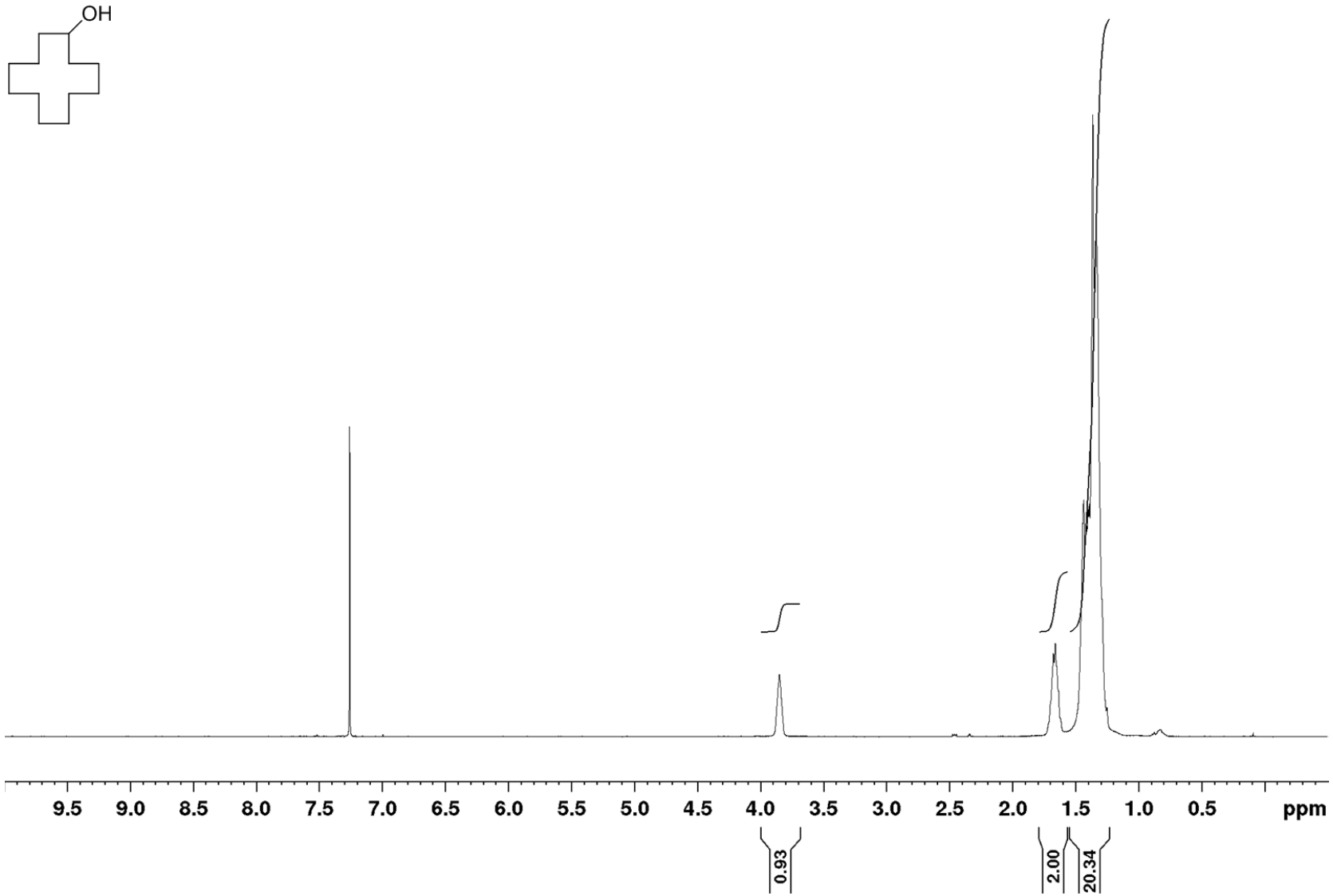


$^{1}H/^{29}Si$ HMQC NMR (500 MHz / 99 MHz, C_6D_6)

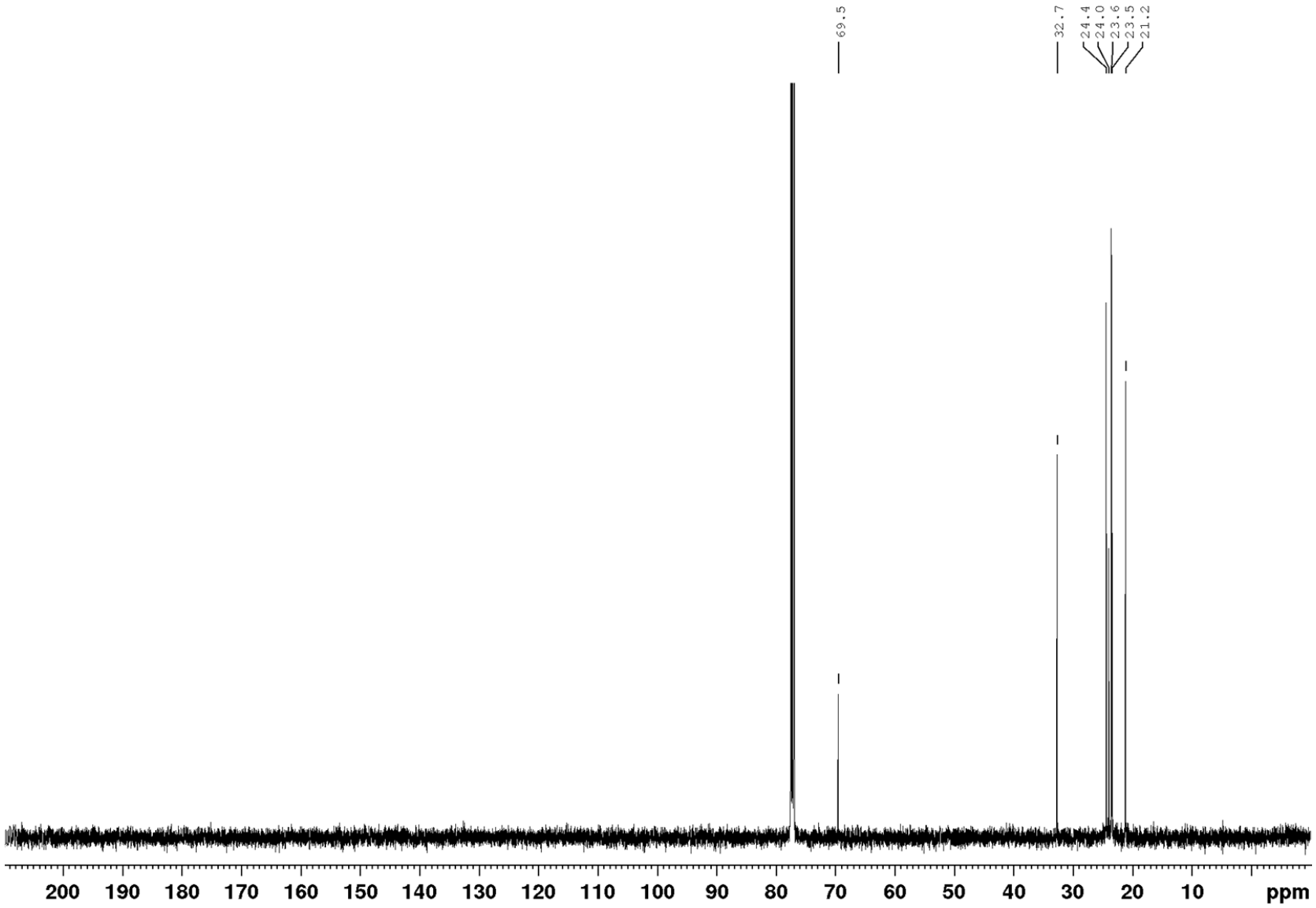


Cyclododecanol

^{1}H NMR (400 MHz, $CDCl_3$)

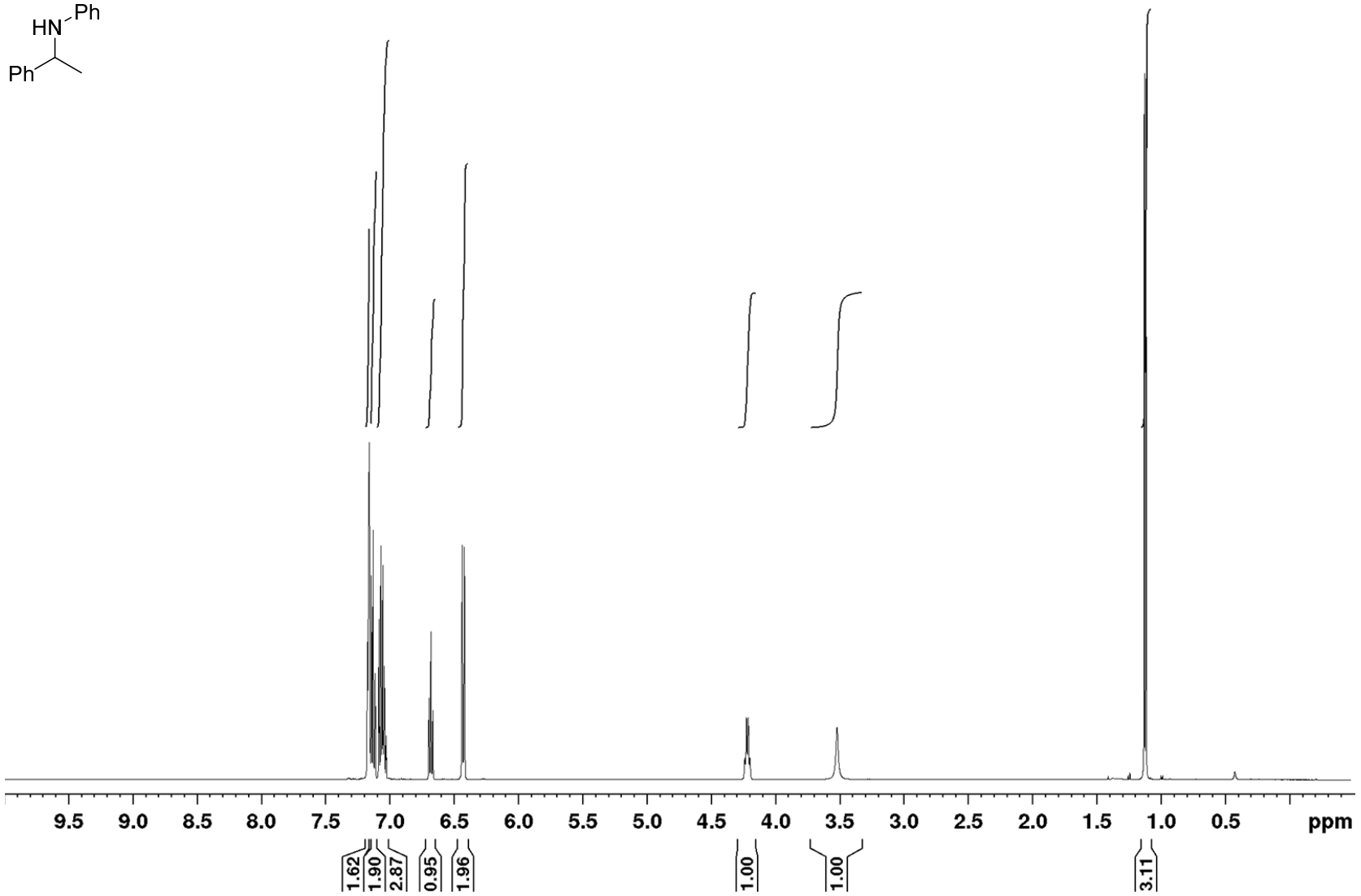


^{13}C NMR (126 MHz, $CDCl_3$)

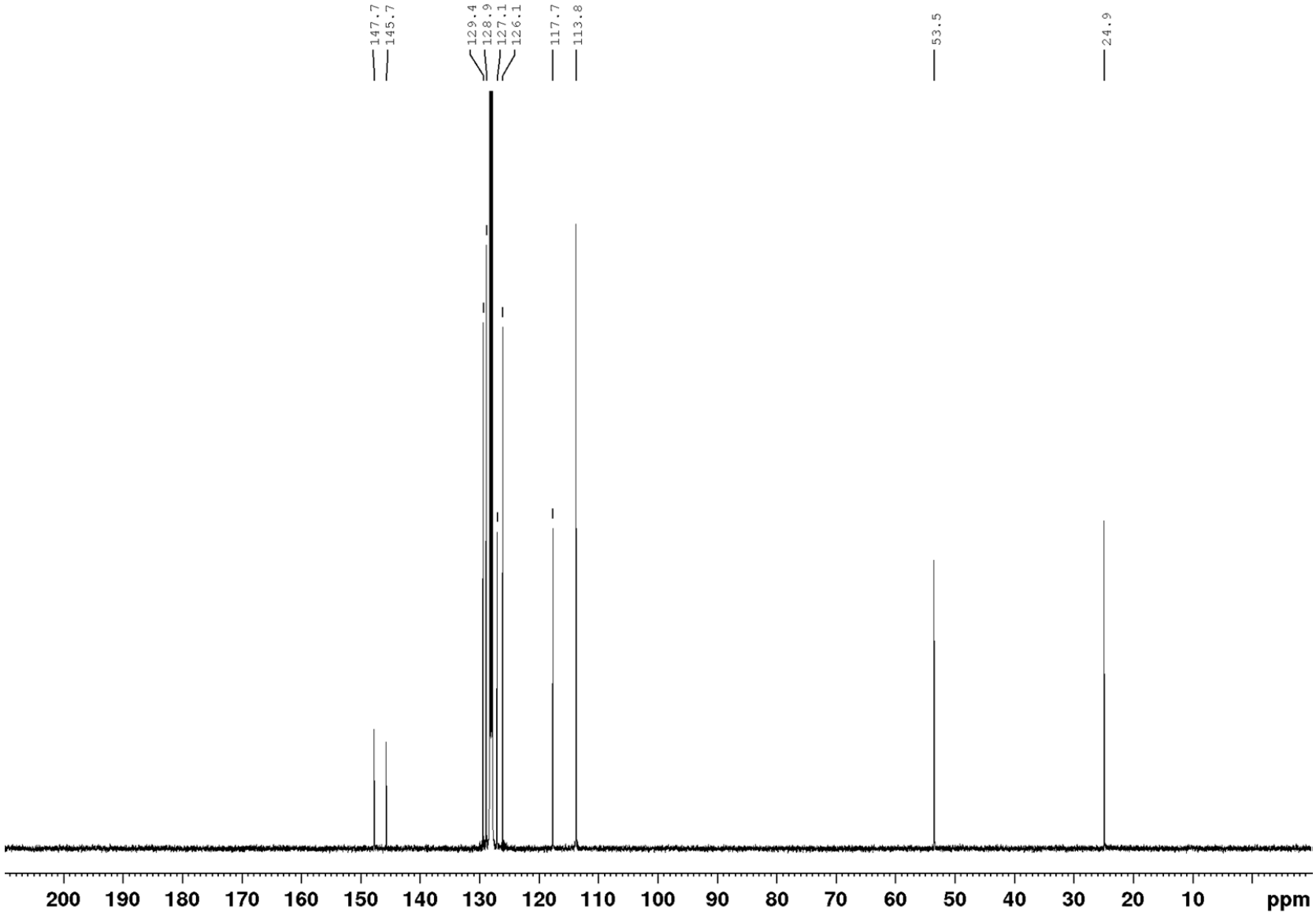


_N_-Phenyl-_N_-(1-phenylethyl)amine

^{1}H NMR (500 MHz, C_6D_6)



^{13}C NMR (126 MHz, C_6D_6)



3 Gutmann–Beckett Analysis of Boranes 1

Borane **1**	$^{31}P\{^{1}H\}$ NMR (δ/ppm) $Et_3PO\cdot$**1**[a]	Relative Lewis Acidity (%)[b]
1a	75.3 (Δδ = 30.0)[S1]	100
1b	79.3 (Δδ = 34.0)	113
1c	74.7 (Δδ = 29.4)[S1]	98
1d	74.4 (Δδ = 29.1)	97
1e	70.7 (Δδ = 25.4)	85
1f	69.9 (Δδ = 24.6)	82
1g	66.4 (Δδ = 21.1)	70
Et_3PO	45.3[S1]	—

[a]Δδ values relative to free Et_3PO. [b]Calculated from (Δδ for **1**)/(Δδ for **1a**).

4 References

[S1] Mohr, J.; Durmaz, M.; Irran, E., Oestreich, M. *Organometallics* **2014**, *33*, 1108−1111.