

Supporting Information

Time-Resolved Fluorescence Anisotropy of Bicyclo[1.1.1]pentane/Tolane-Based Molecular Rods Included in Tris(*o*-phenylenedioxy)cyclotriphosphazene (TPP)

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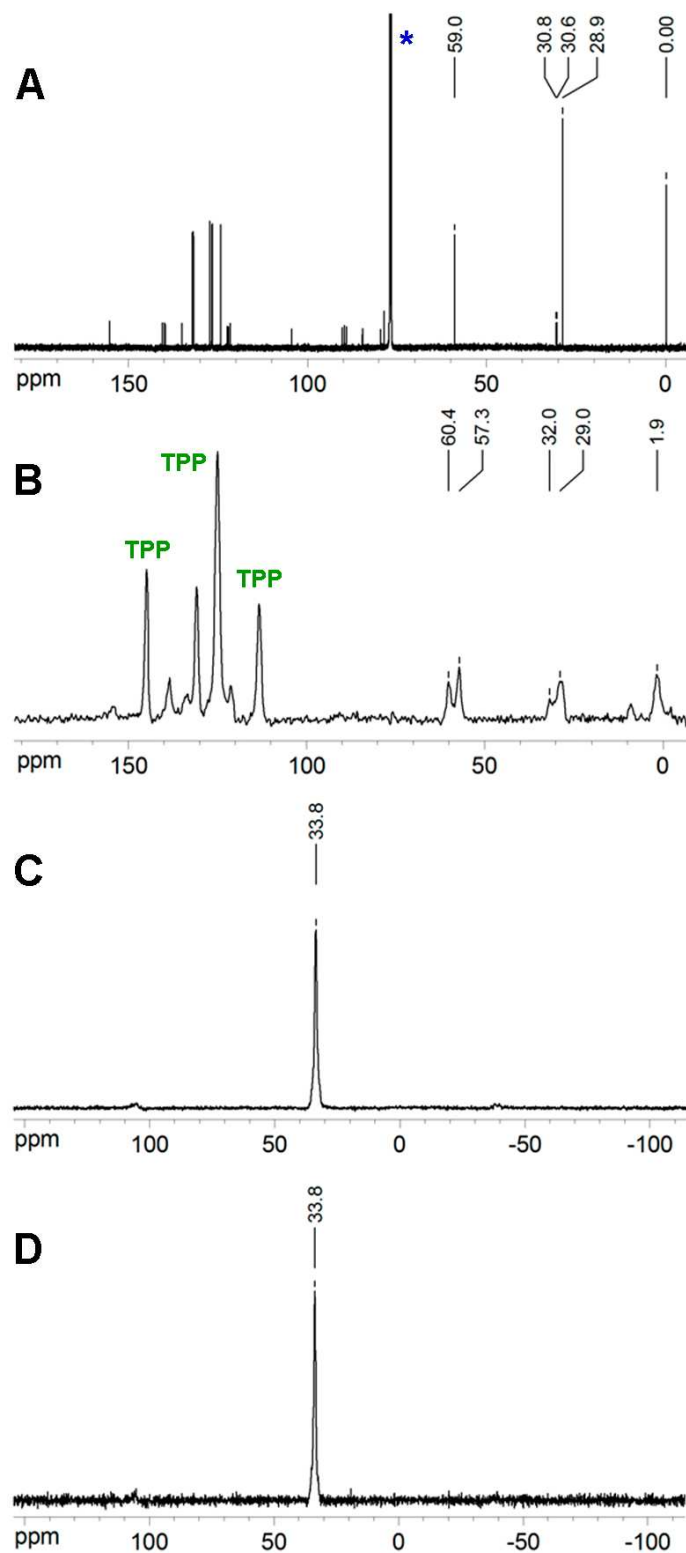


Figure S1: A: **2** ^{13}C NMR in CDCl_3 (*) solution; B: 20% **2**@TPP- d_{12} CP MAS ^{13}C NMR; C: 20% **2**@TPP- d_{12} ^{31}P CP MAS NMR; D: 20% **2**@TPP- d_{12} ^{31}P SPE NMR.

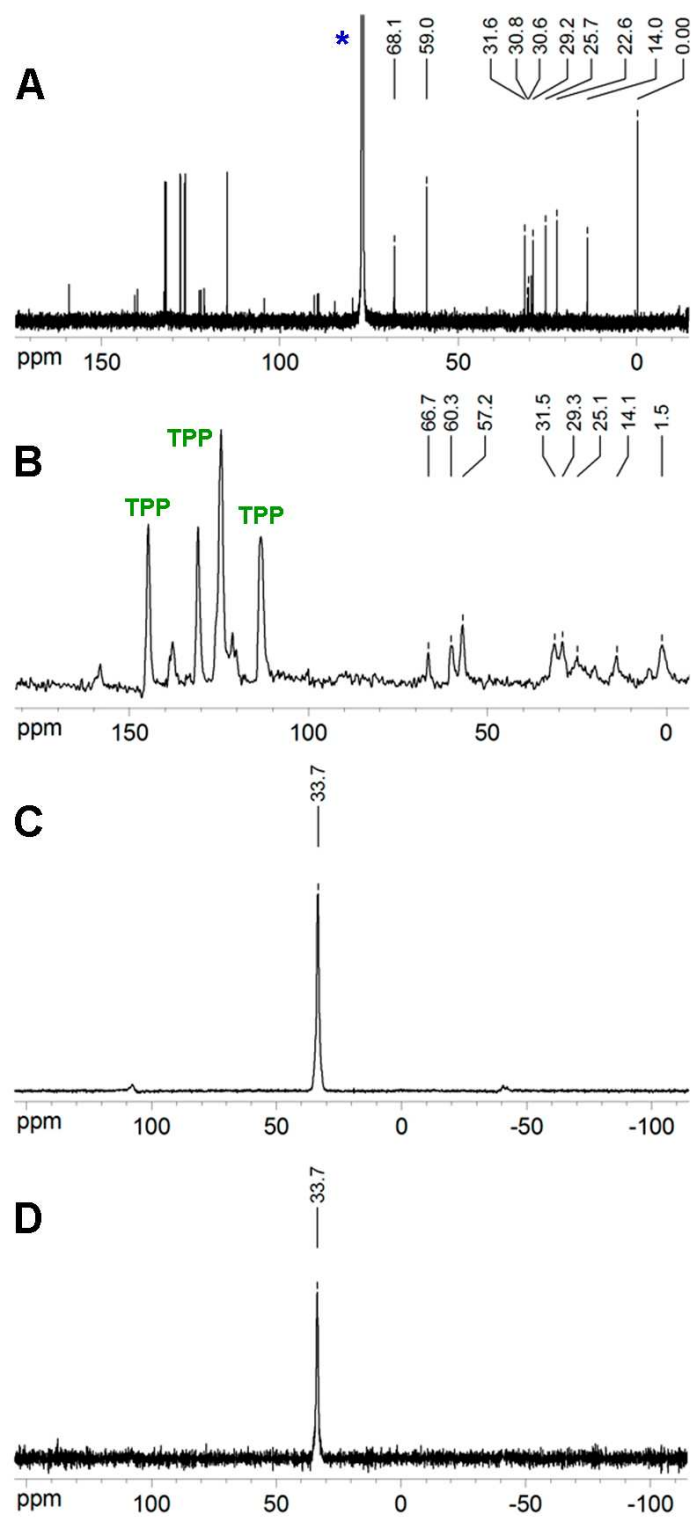


Figure S2: A: **3** ¹³C NMR in CDCl₃ (*) solution; B: 20%**3**@TPP-*d*₁₂ CP MAS ¹³C NMR; C: 20%**3**@TPP-*d*₁₂ ³¹P CP MAS NMR; D: 20%**3**@TPP-*d*₁₂ ³¹P SPE NMR.

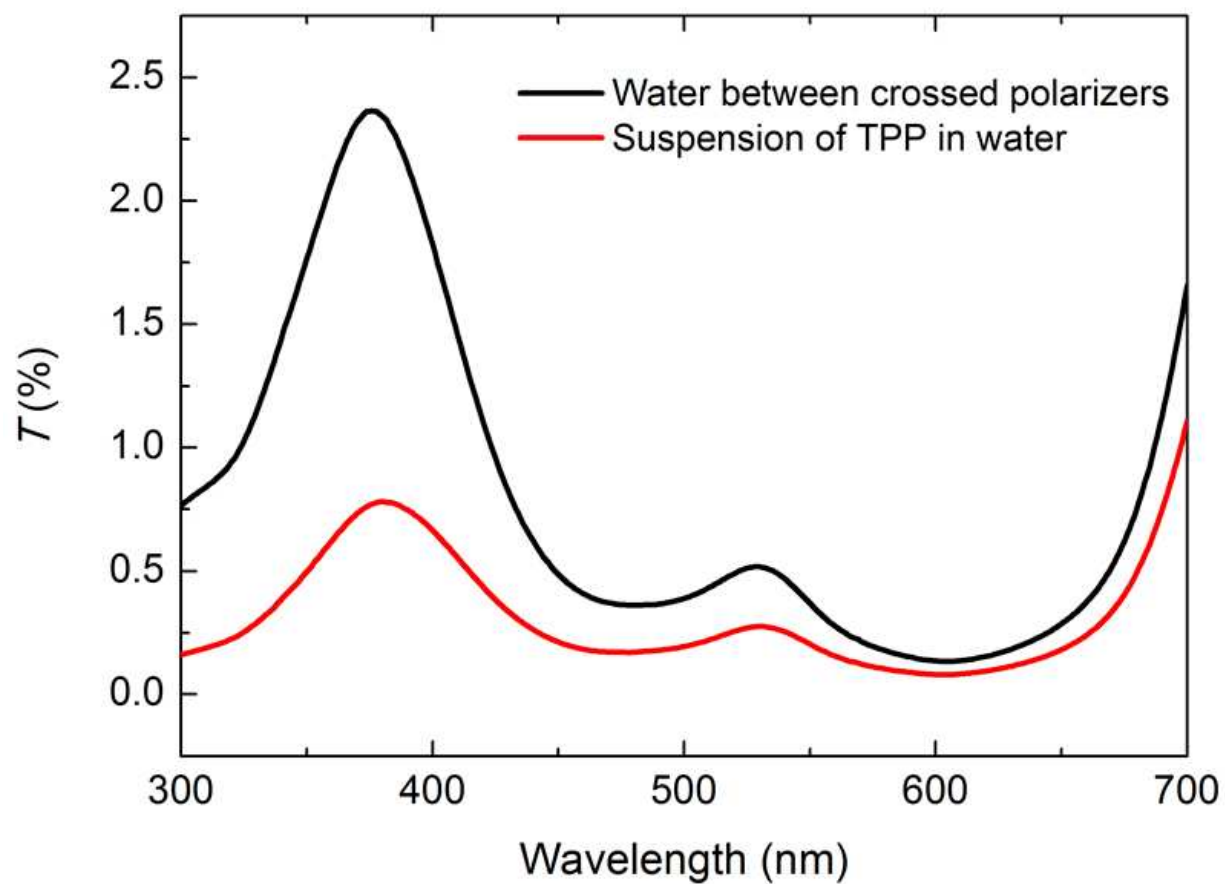
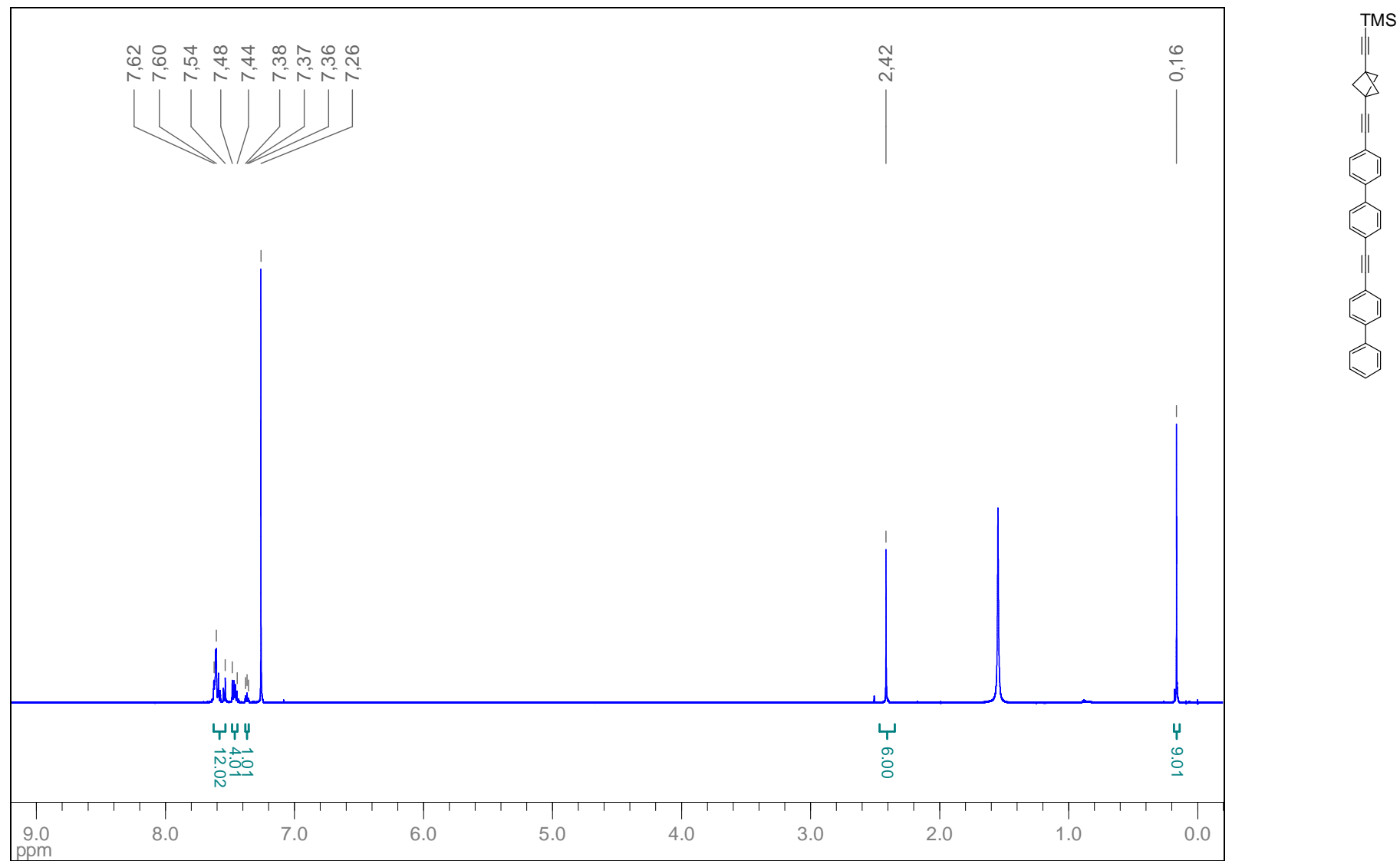
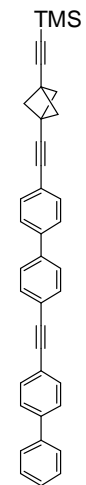
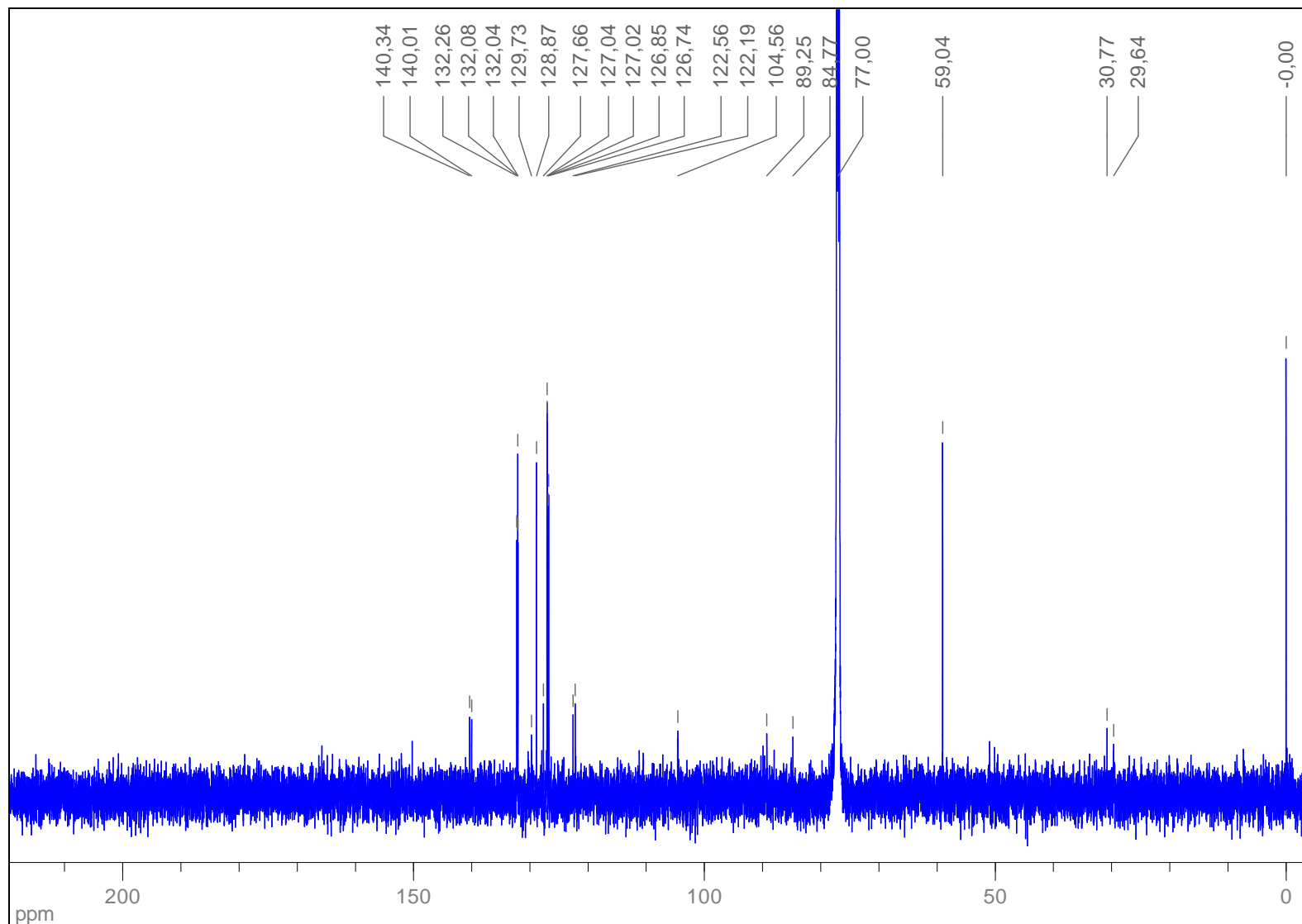


Figure S3: UV-vis transmittance – water (black) and colloidal aqueous suspension of TPP (red) between crossed polarizers.

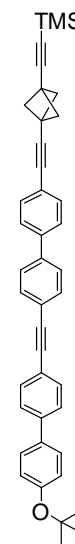
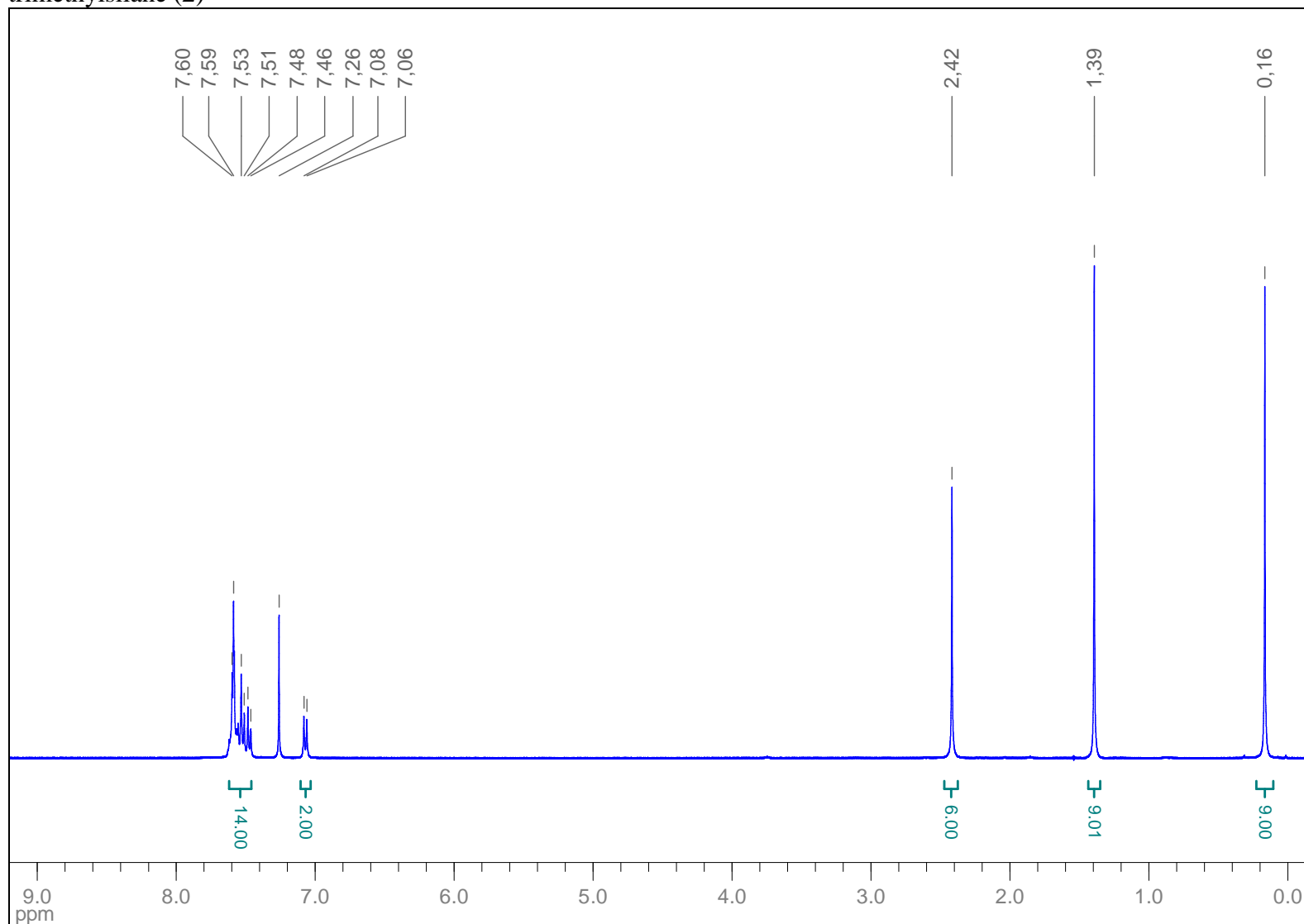
^1H NMR (600 MHz, CDCl_3): ((3-((4'-(Biphenyl-4-ylethynyl)biphenyl-4-yl)ethynyl)bicyclo[1.1.1]pent-1-yl)ethynyl)trimethylsilane (**1**)



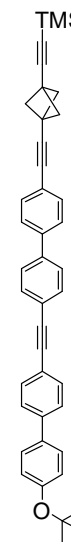
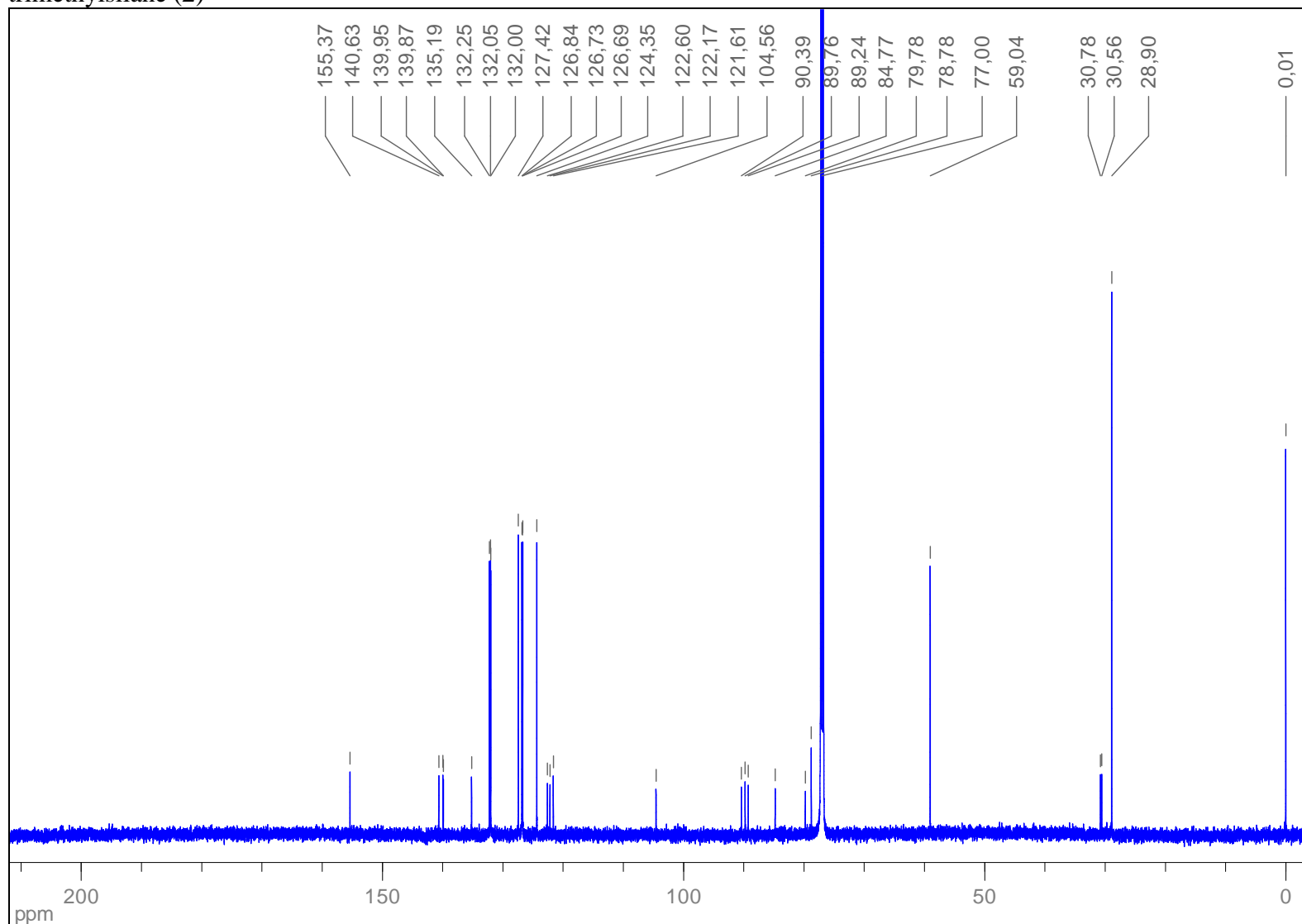
^{13}C NMR (150 MHz, CDCl_3): ((3-((4'-(Biphenyl-4-ylethynyl)biphenyl-4-yl)ethynyl)bicyclo[1.1.1]pent-1-yl)ethynyl)trimethylsilane (**1**)



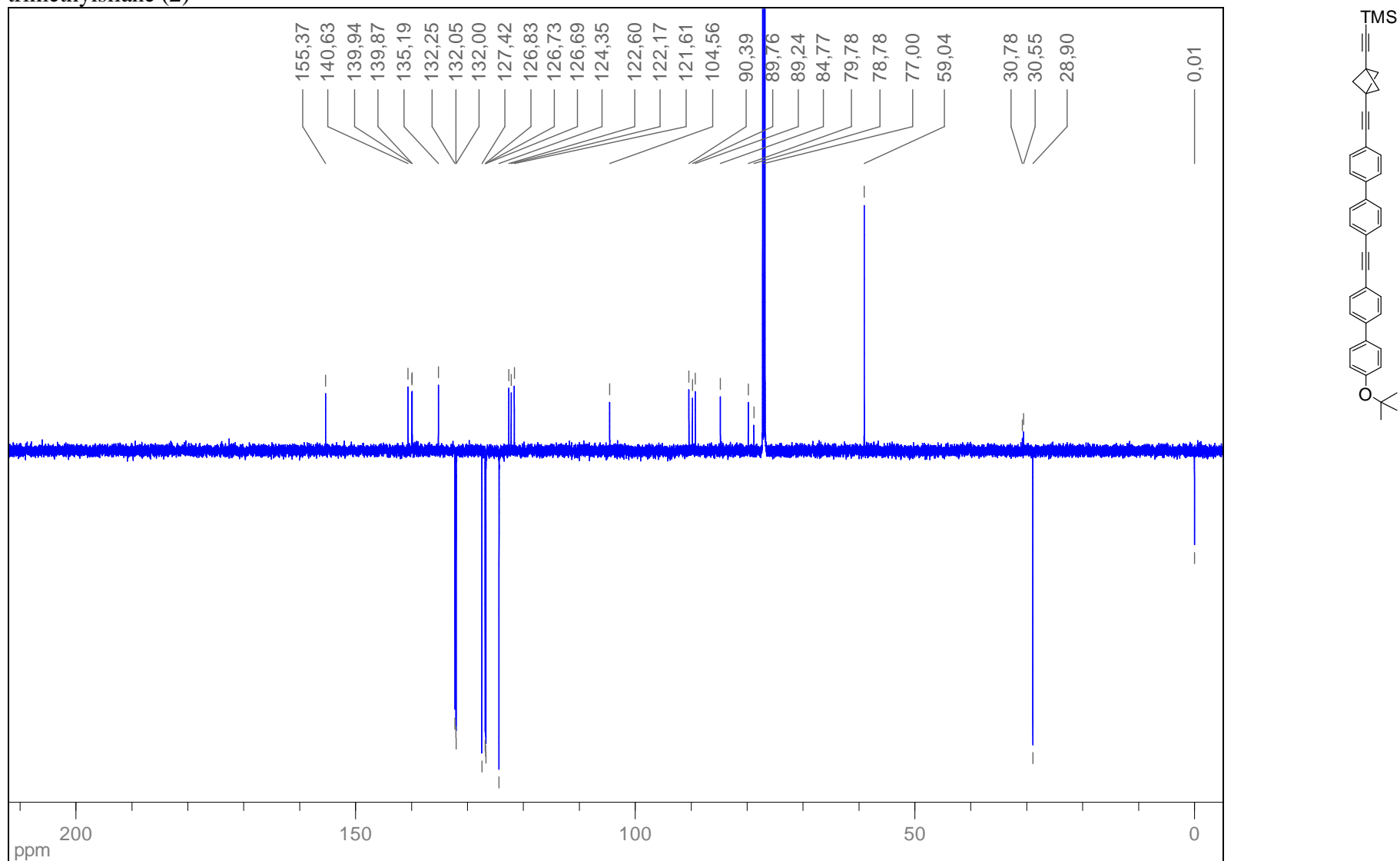
¹H NMR (500 MHz, CDCl₃): ((3-((4'-((4'-*tert*-Butoxybiphenyl-4-yl)ethynyl)biphenyl-4-yl)ethynyl)bicyclo[1.1.1]pent-1-yl)ethynyl)-trimethylsilane (**2**)



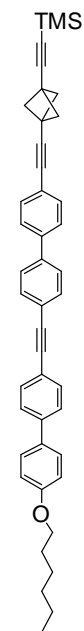
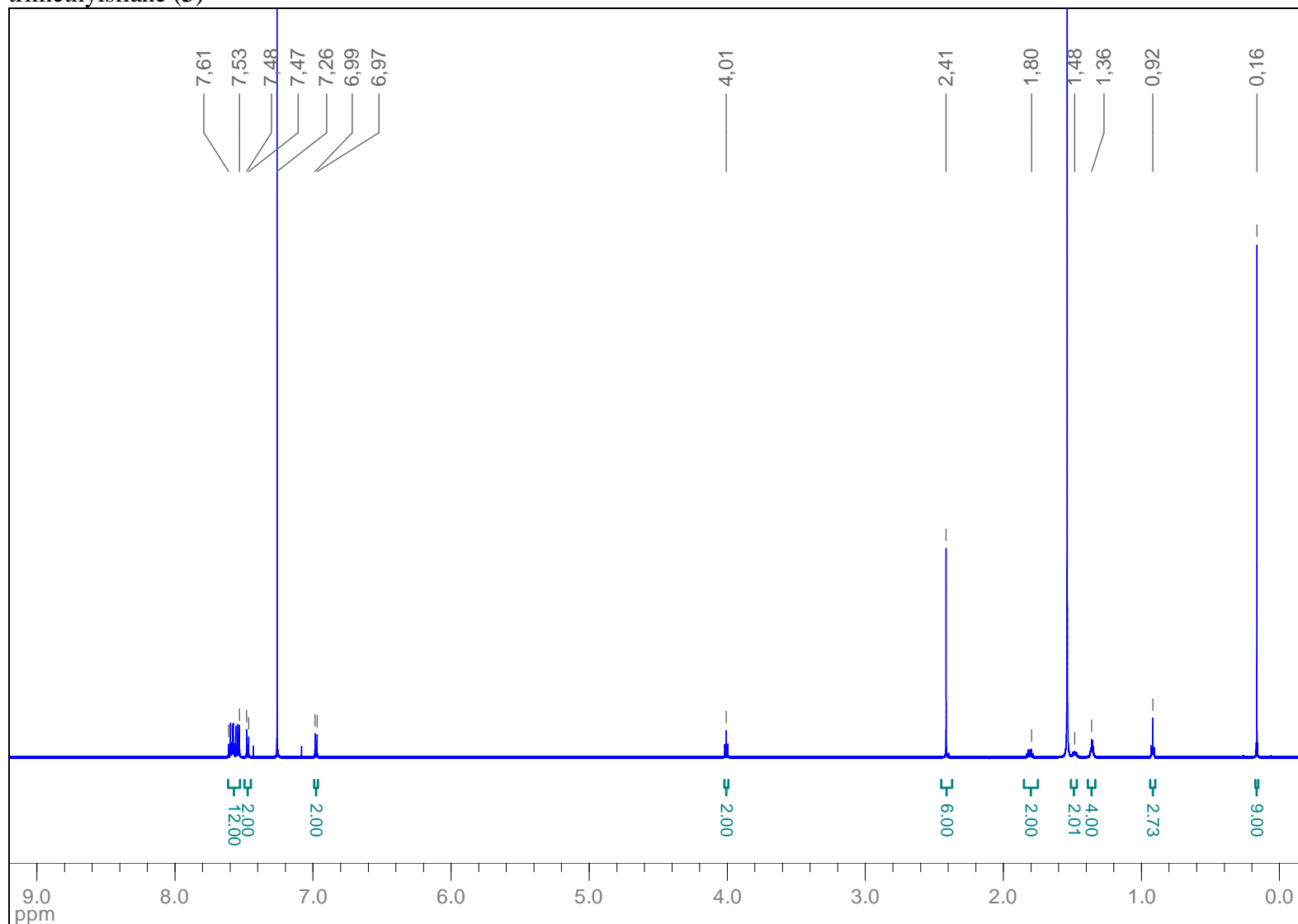
^{13}C NMR (150 MHz, CDCl_3): ((3-((4'-((4'-*tert*-Butoxybiphenyl-4-yl)ethynyl)biphenyl-4-yl)ethynyl)bicyclo[1.1.1]pent-1-yl)ethynyl)-trimethylsilane (**2**)



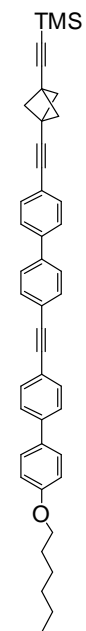
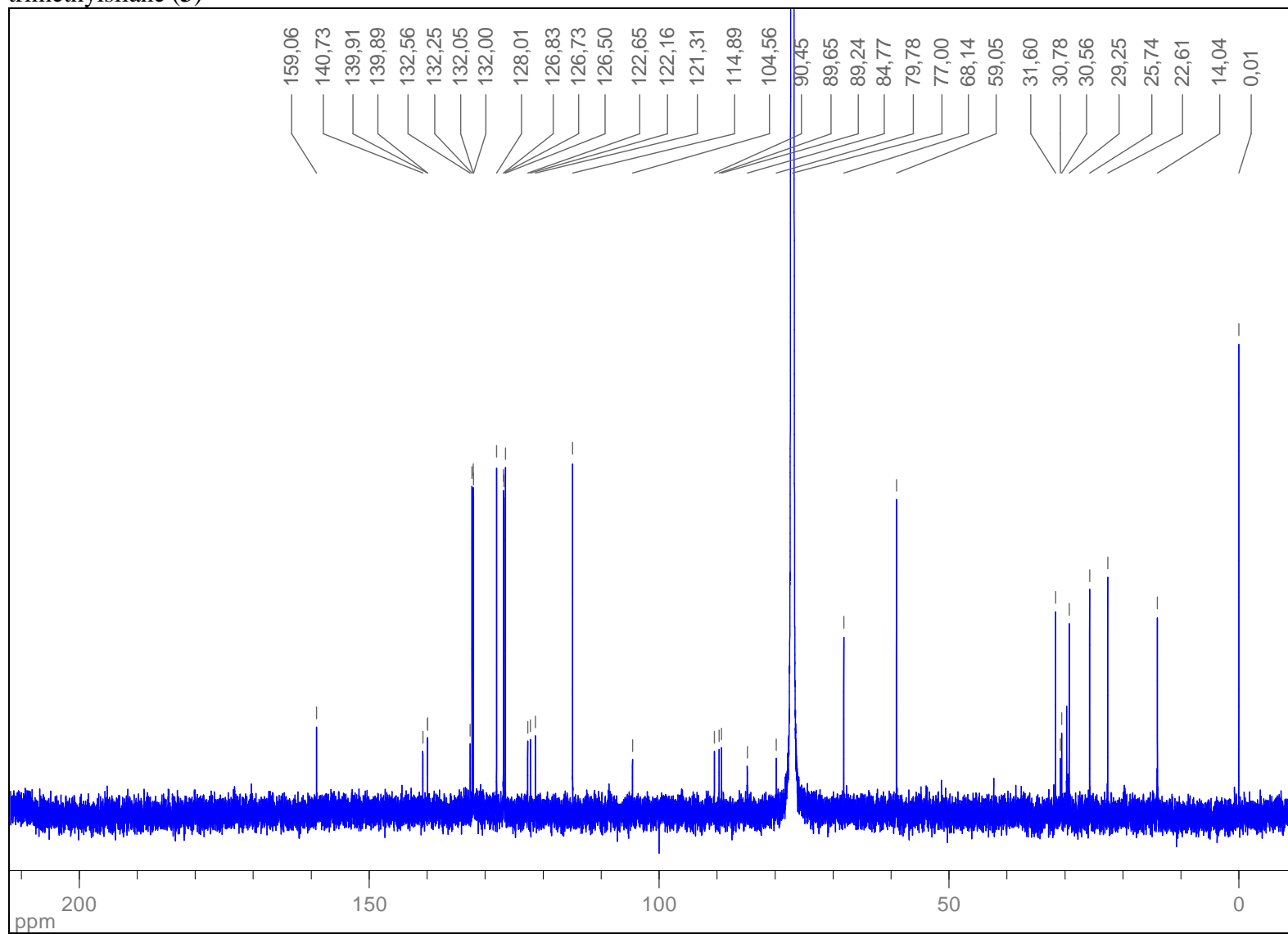
^{13}C APT NMR (125 MHz, CDCl_3): ((3-((4'-*tert*-Butoxybiphenyl-4-yl)ethynyl)biphenyl-4-yl)ethynyl)bicyclo[1.1.1]pent-1-yl)ethynyl)-trimethylsilane (**2**)



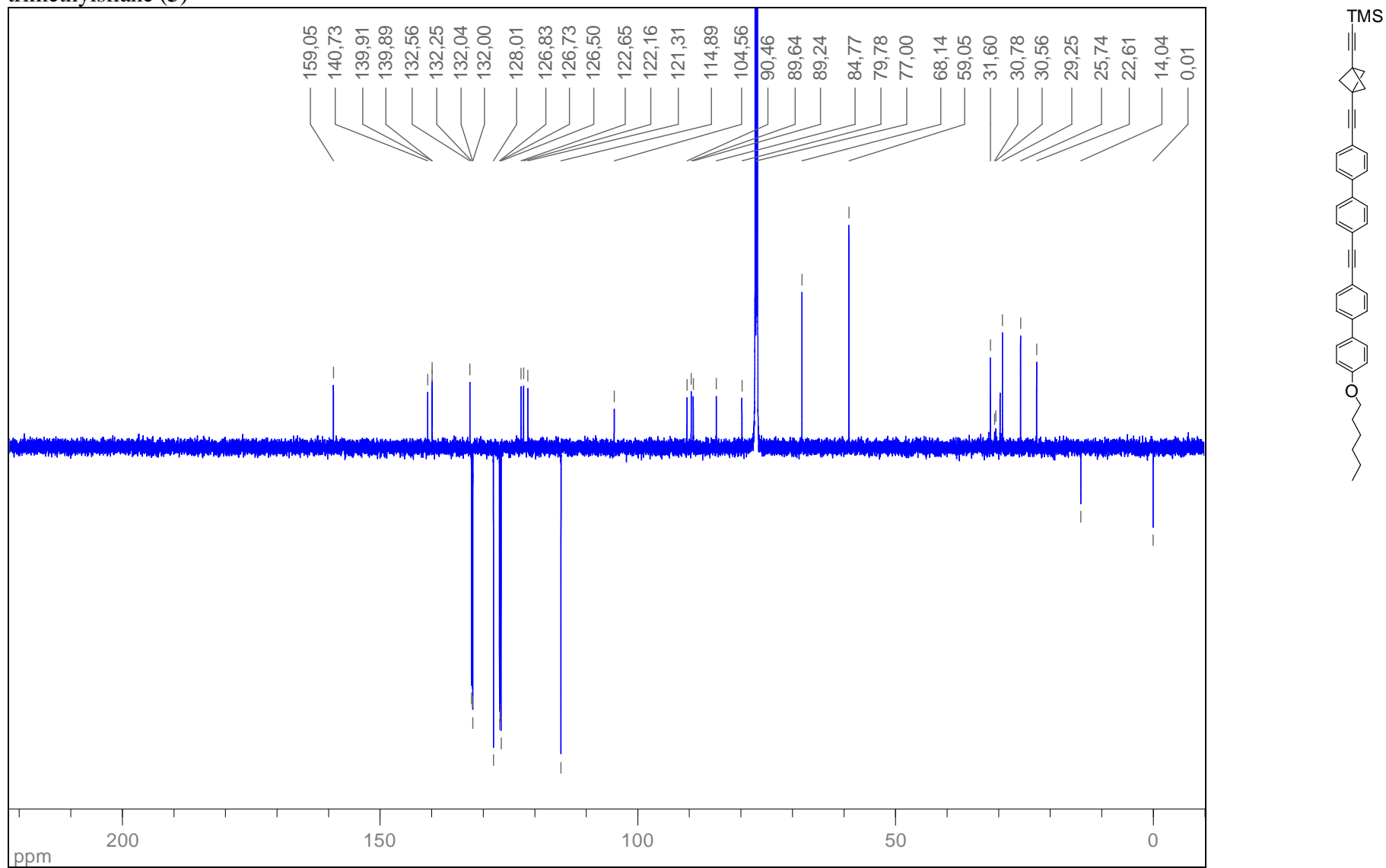
^1H NMR (600 MHz, CDCl_3): ((3-((4'-((4'-(Hexyloxy)biphenyl-4-yl)ethynyl)biphenyl-4-yl)ethynyl)bicyclo[1.1.1]pent-1-yl)ethynyl)-trimethylsilane (**3**)



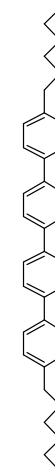
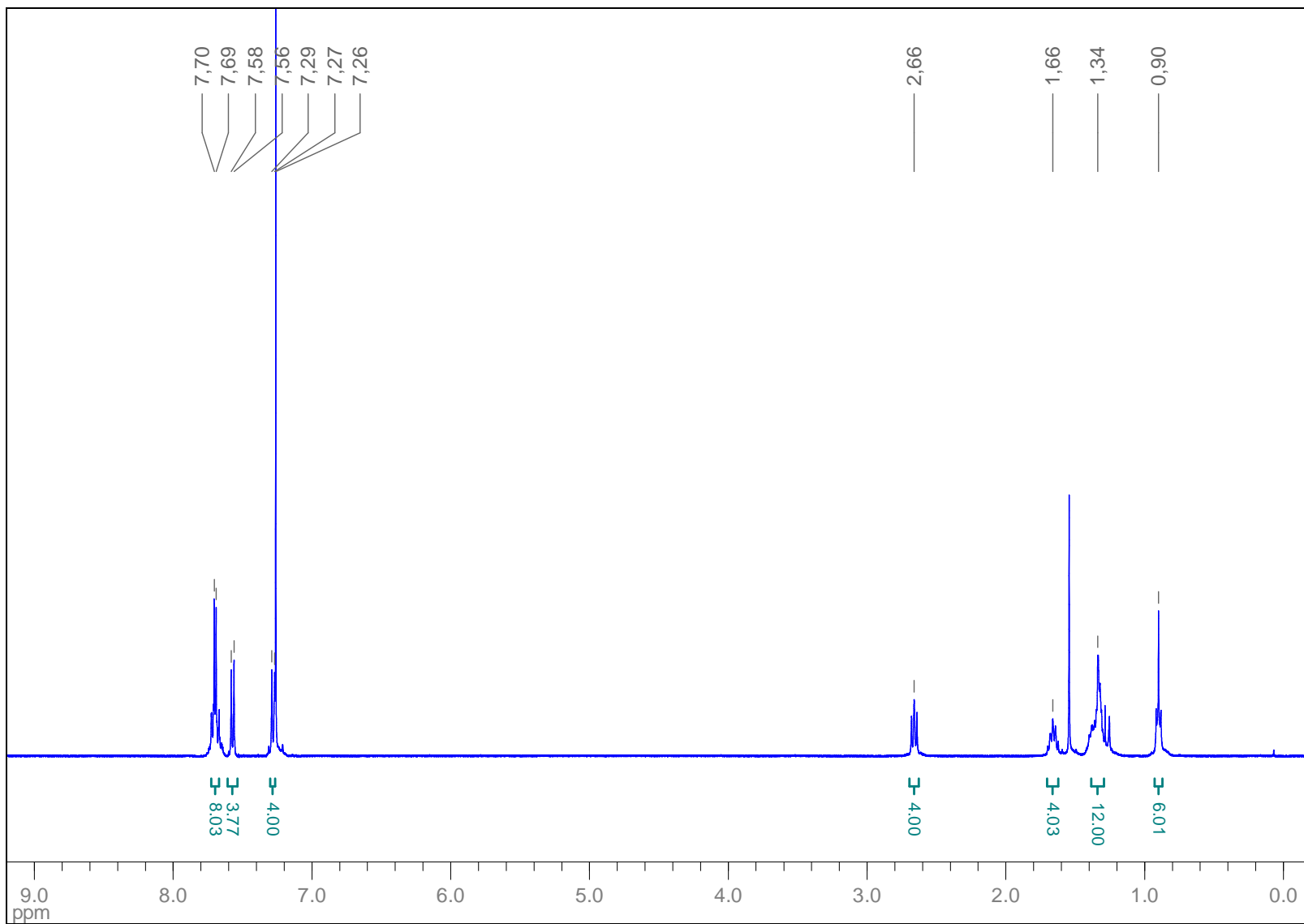
^{13}C NMR (150 MHz, CDCl_3): ((3-((4'-((4'-(Hexyloxy)biphenyl-4-yl)ethynyl)biphenyl-4-yl)ethynyl)bicyclo[1.1.1]pent-1-yl)ethynyl)-trimethylsilane (**3**)



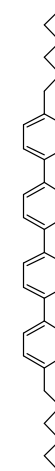
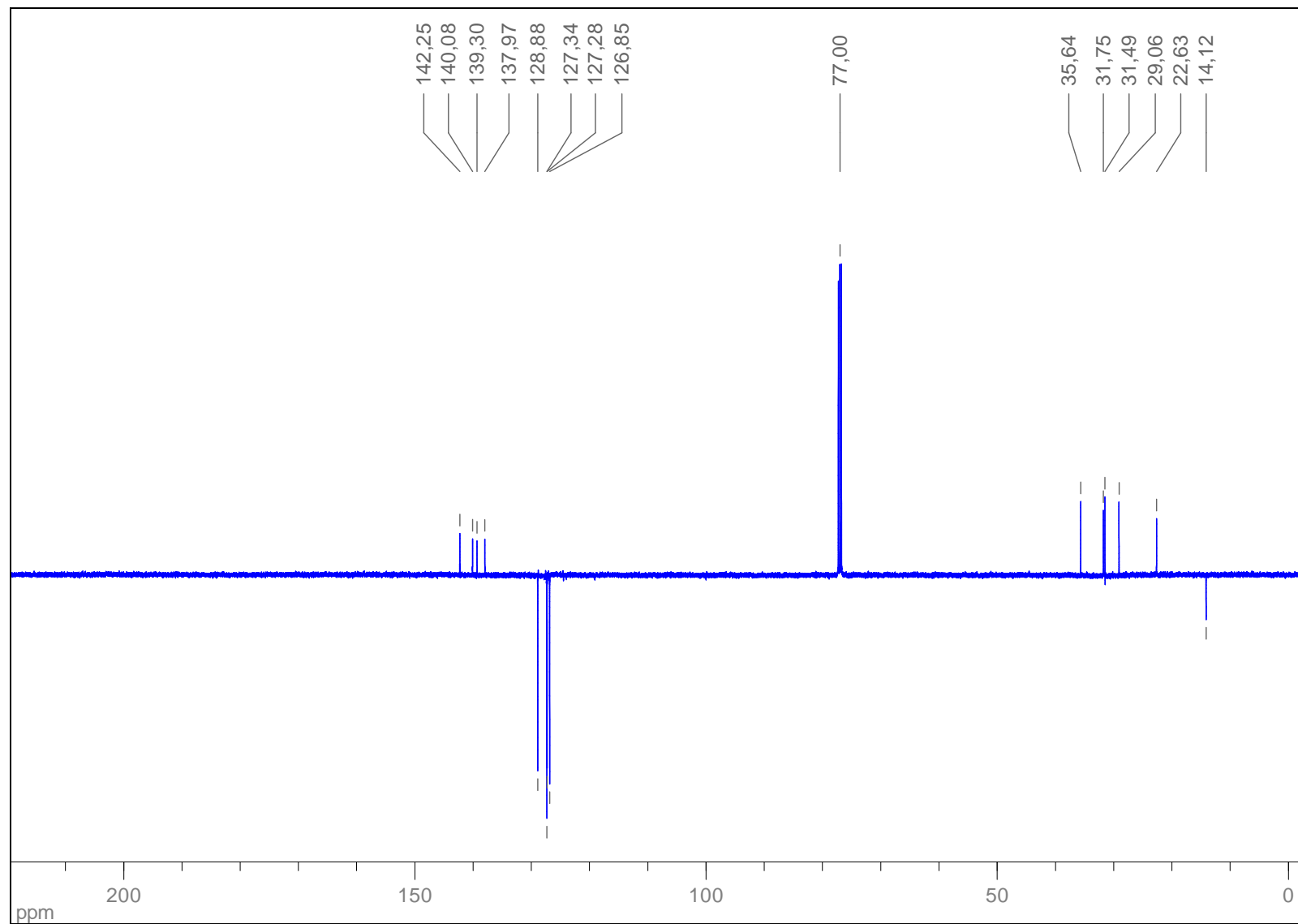
^{13}C APT NMR (150 MHz, CDCl_3): ((3-((4'-((4'-(Hexyloxy)biphenyl-4-yl)ethynyl)biphenyl-4-yl)ethynyl)bicyclo[1.1.1]pent-1-yl)ethynyl)-trimethylsilane (**3**)



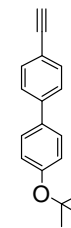
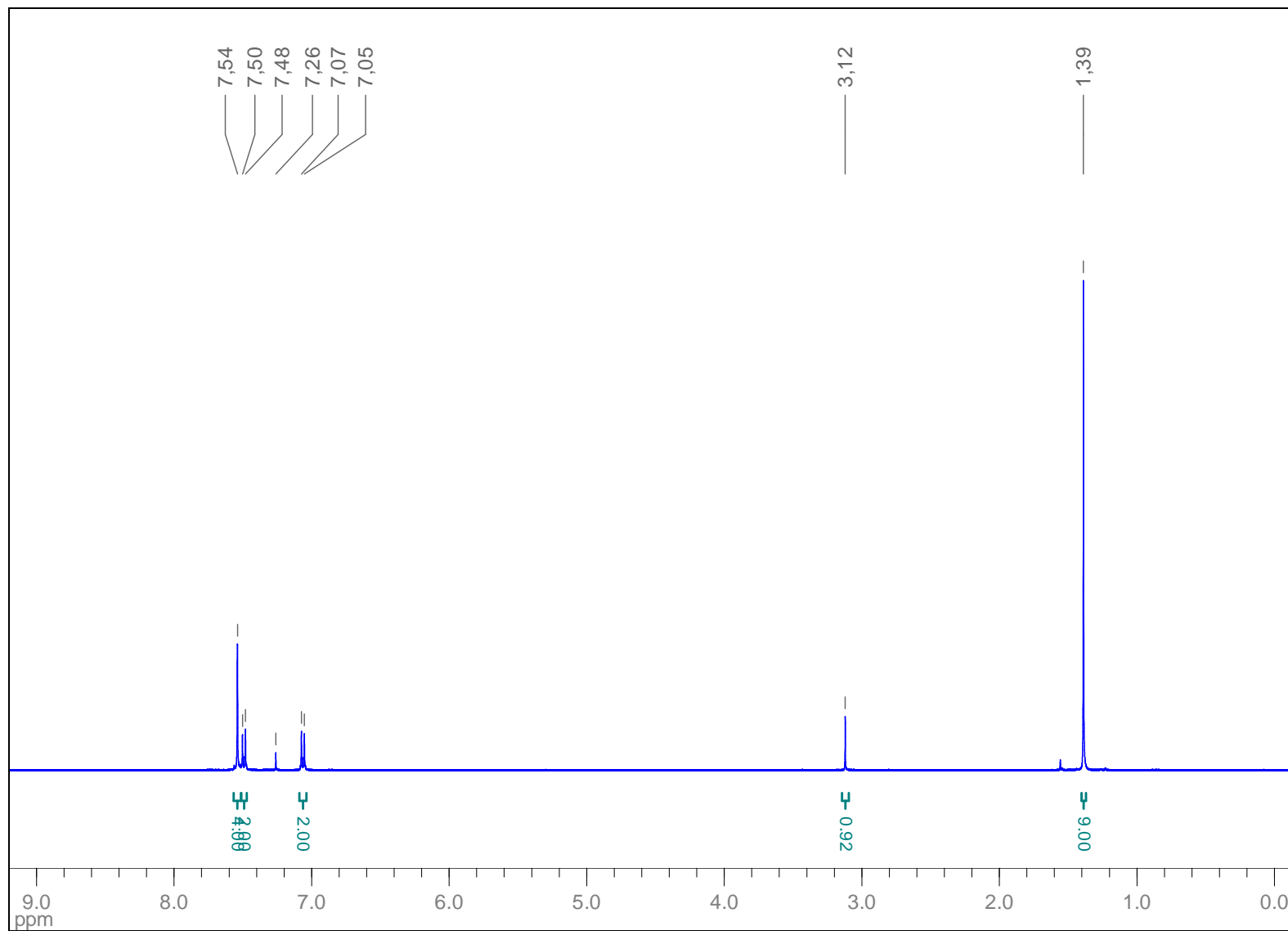
^1H NMR (400 MHz, CDCl_3): 1,4'''-Dihexyl-4,1':4',1'':4'',1''''-quaterphenyl (**4**)



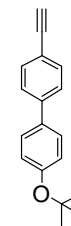
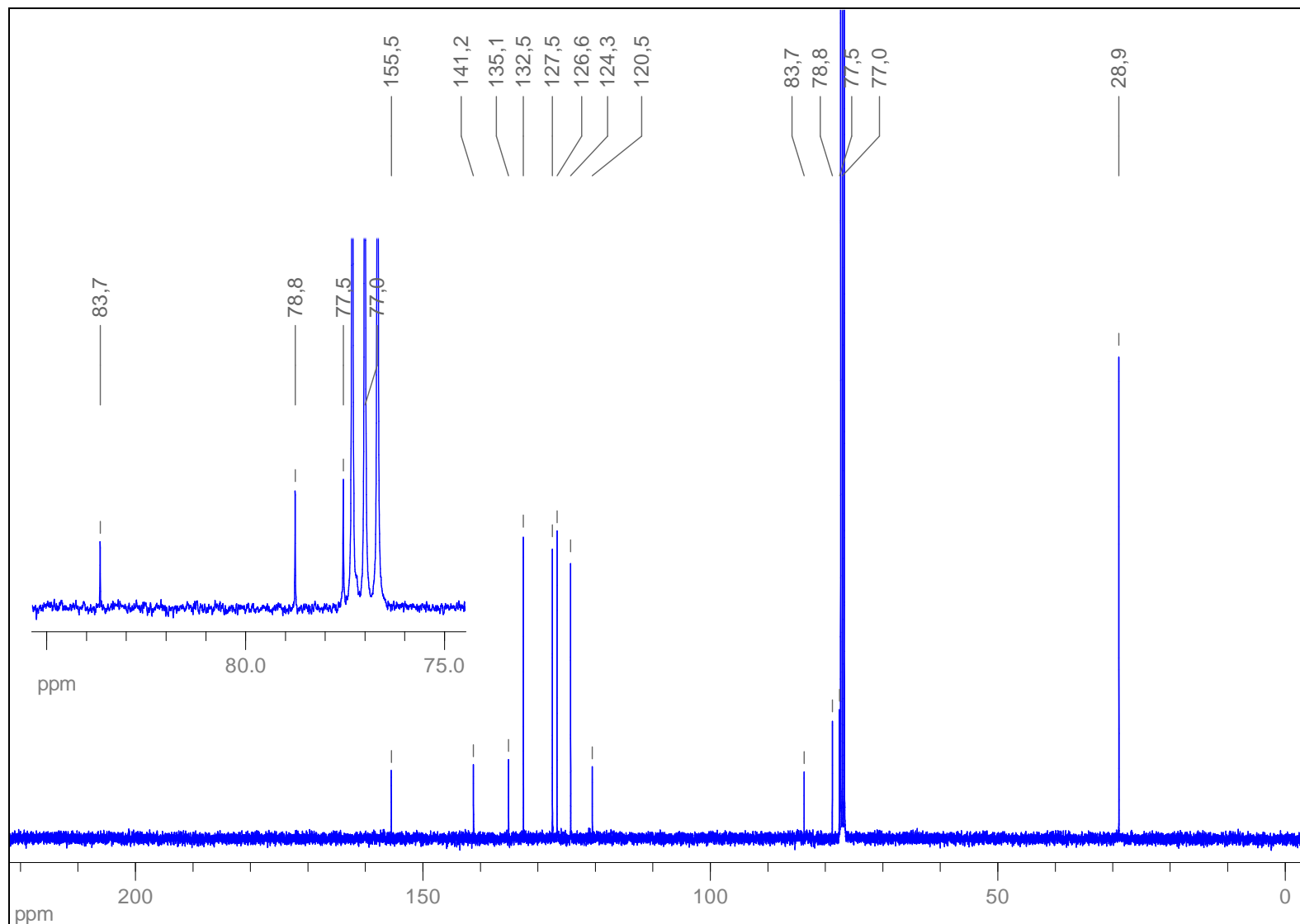
^{13}C APT NMR (125 MHz, CDCl_3): 1,4''''-Diethyl-4,1':4',1'':4'',1''''-quaterphenyl (4)



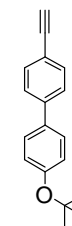
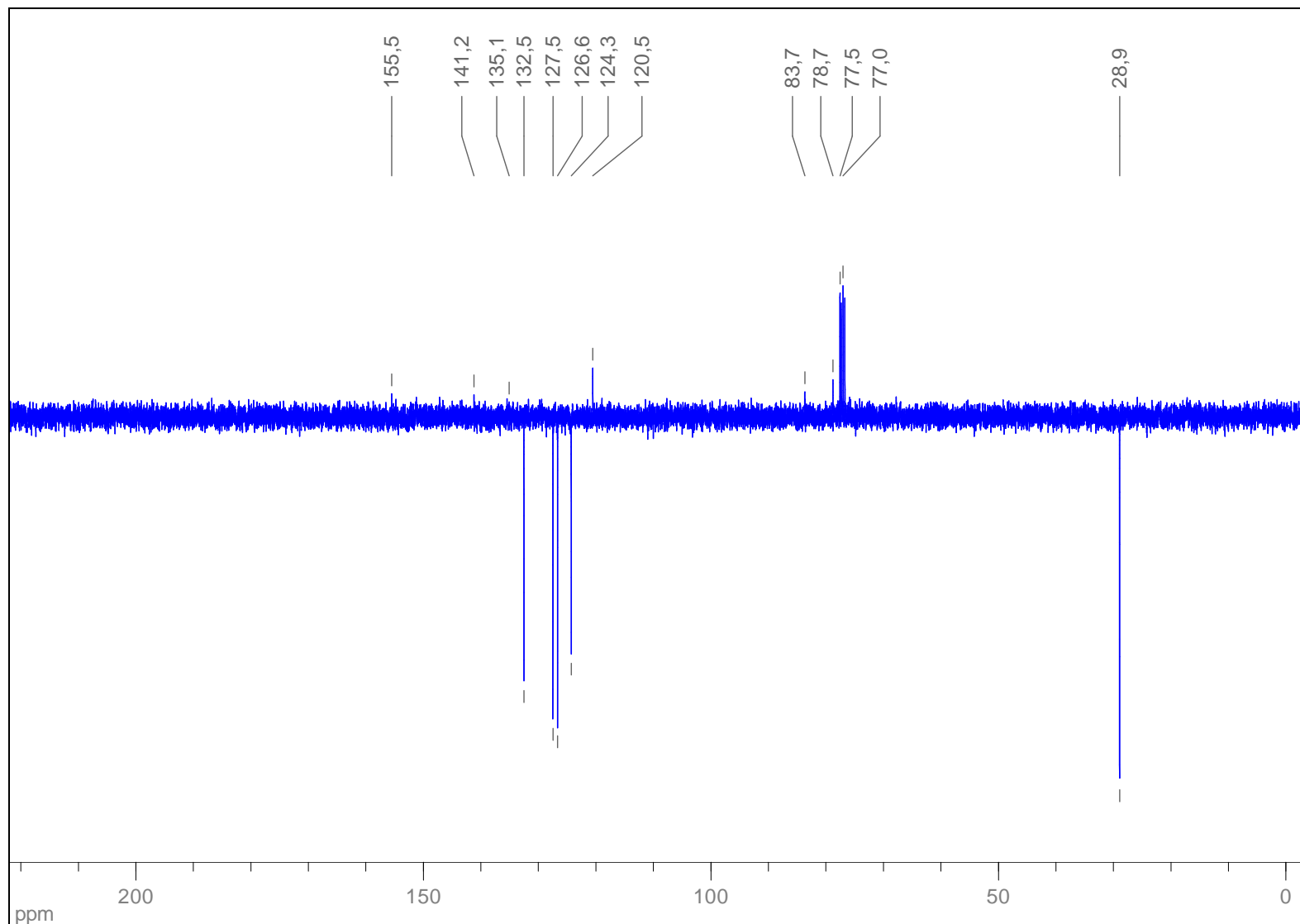
¹H NMR (400 MHz, CDCl₃): 4-*tert*-Butoxy-4'-ethynylbiphenyl (**8**)



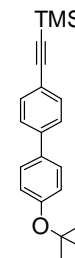
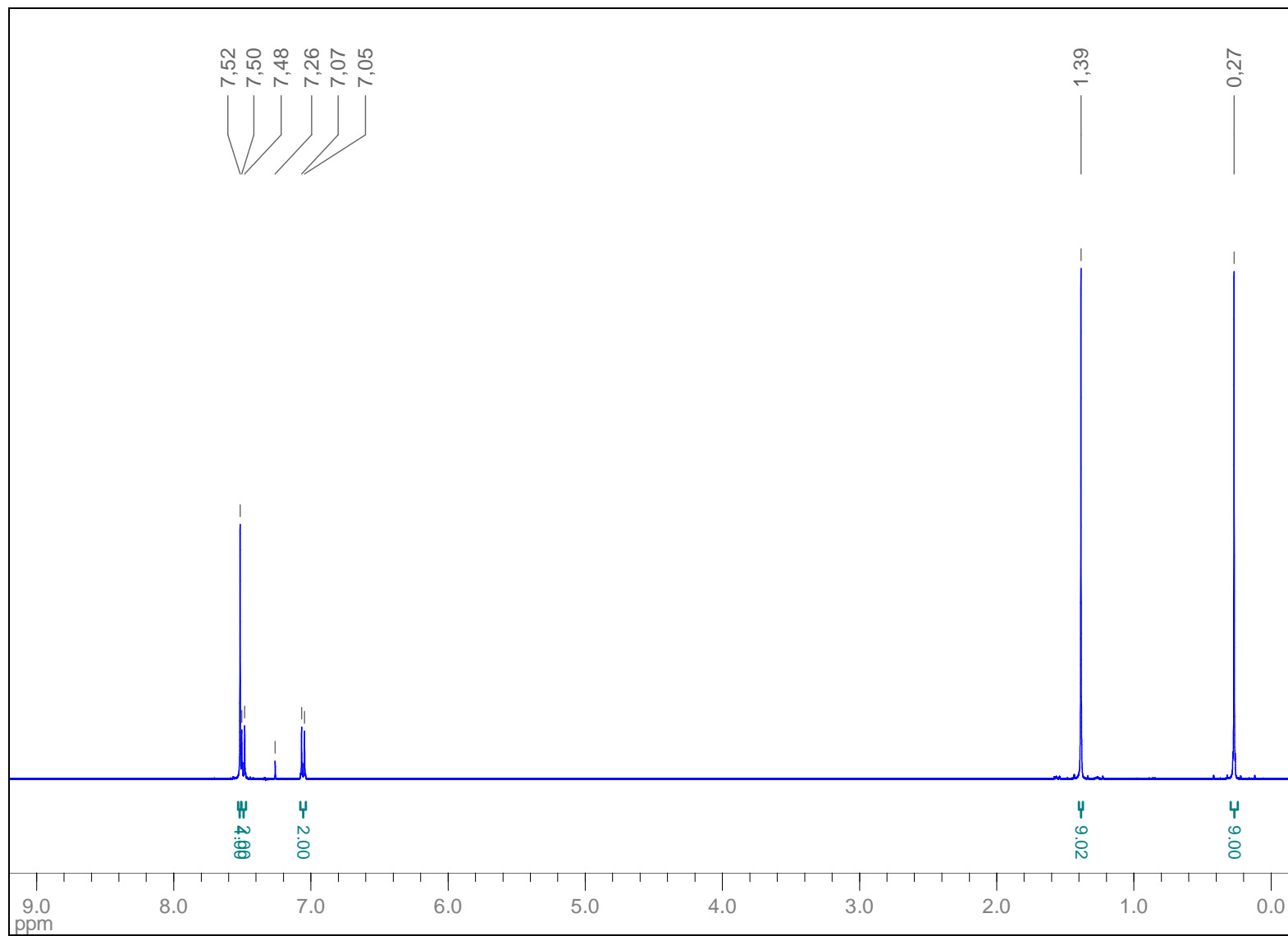
¹³C NMR (100 MHz, CDCl₃): 4-*tert*-Butoxy-4'-ethynylbiphenyl (**8**)



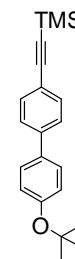
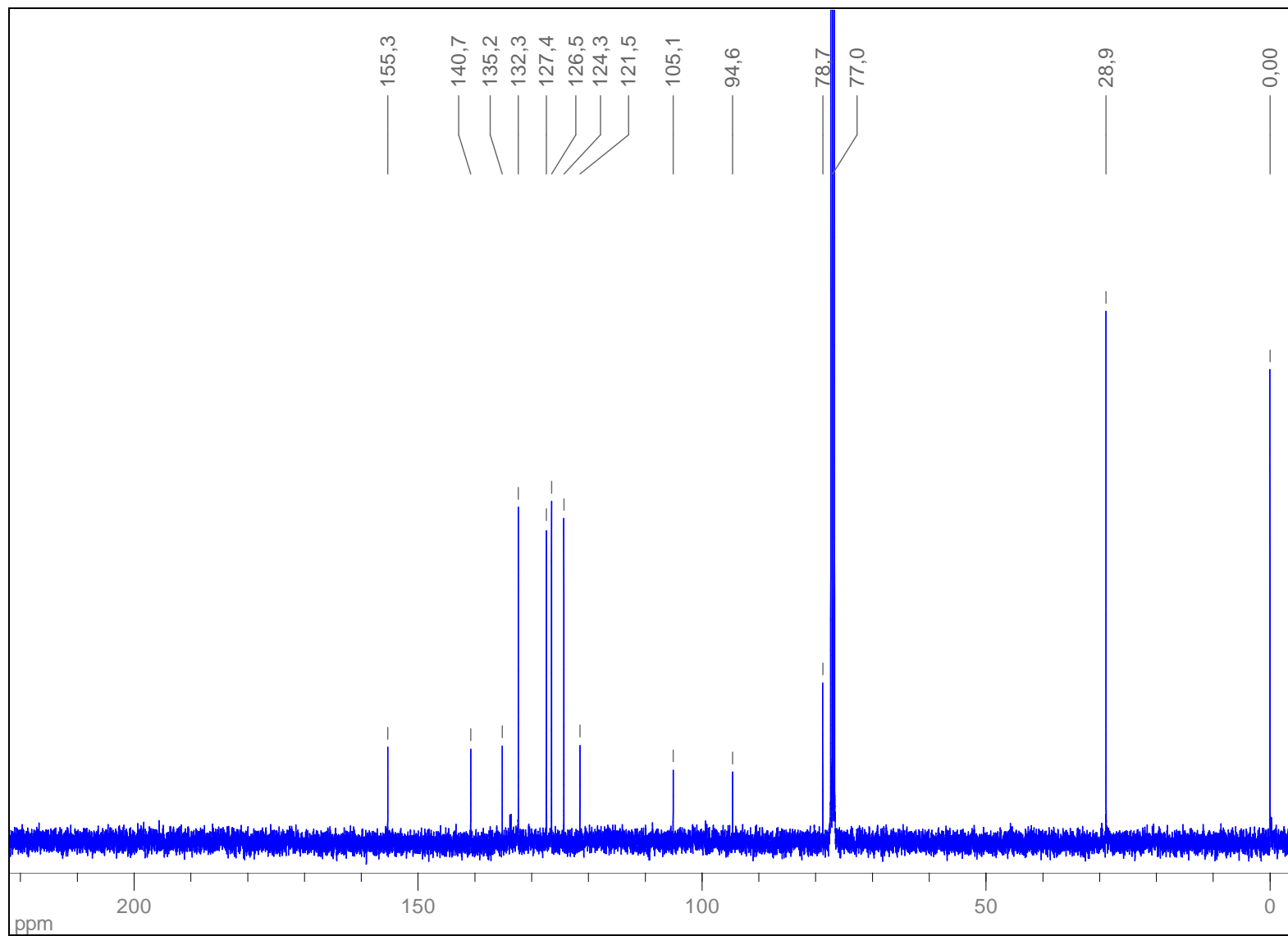
^{13}C APT NMR (100 MHz, CDCl_3): 4-*tert*-Butoxy-4'-ethynylbiphenyl (**8**)



^1H NMR (400 MHz, CDCl_3): ((4'-*tert*-Butoxybiphenyl-4-yl)ethynyl)trimethylsilane (**13**)



^{13}C NMR (100 MHz, CDCl_3): ((4'-*tert*-Butoxybiphenyl-4-yl)ethynyl)trimethylsilane (**13**)



^{13}C APT NMR (100 MHz, CDCl_3): ((4'-*tert*-Butoxybiphenyl-4-yl)ethynyl)trimethylsilane (**13**)

