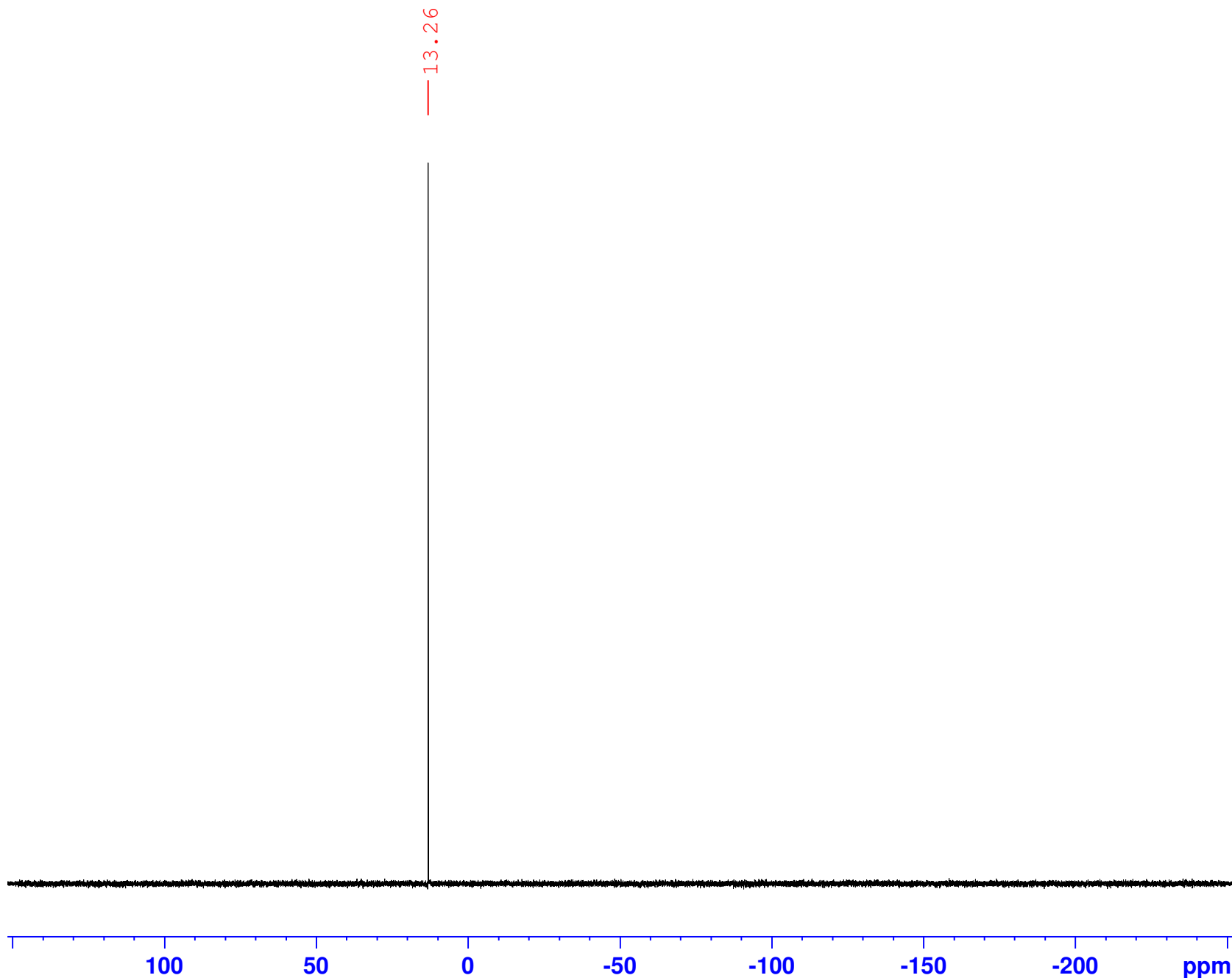


Supplementary Materials: Diethyl (4-((9H-carbazol-9-yl)methyl)-1H-1,2,3-triazol-1-yl)(benzamido)methyl phosphonate (3)



Current Data Parameters  
NAME SF 54  
EXPNO 5  
PROCNO 1

F2 - Acquisition Parameters  
Date\_ 20200225  
Time 10.08  
INSTRUM spect  
PROBHD 5 mm PABBO BB/  
PULPROG zgpg30  
TD 65536  
SOLVENT CDCl3  
NS 16  
DS 4  
SWH 49019.609 Hz  
FIDRES 0.747980 Hz  
AQ 0.6684672 sec  
RG 2050  
DW 10.200 usec  
DE 6.50 usec  
TE 293.4 K  
D1 2.00000000 sec  
D11 0.03000000 sec  
TD0 1

===== CHANNEL f1 =====  
SFO1 121.4887762 MHz  
NUC1 31P  
P1 8.55 usec  
PLW1 22.00000000 W

===== CHANNEL f2 =====  
SFO2 300.1312005 MHz  
NUC2 1H  
CPDPRG[2] waltz16  
PCPD2 90.00 usec  
PLW2 19.00000000 W  
PLW12 0.25861001 W  
PLW13 0.13008000 W

F2 - Processing parameters  
SI 32768  
SF 121.4948510 MHz  
WDW EM  
SSB 0  
LB 1.00 Hz  
GB 0  
PC 1.40

Figure S1: Decoupled  $^{31}\text{P}$  NMR spectrum of (3)



Current Data Parameters  
NAME SF 54  
EXPNO 4  
PROCNO 1

F2 - Acquisition Parameters  
Date\_ 20200225  
Time 9.59  
INSTRUM spect  
PROBHD 5 mm PABBO BB/  
PULPROG zg30  
TD 65536  
SOLVENT CDCl3  
NS 32  
DS 4  
SWH 49019.609 Hz  
FIDRES 0.747980 Hz  
AQ 0.6684672 sec  
RG 2050  
DW 10.200 usec  
DE 6.50 usec  
TE 293.5 K  
D1 2.00000000 sec  
TD0 1

===== CHANNEL f1 =====  
SFO1 121.4887762 MHz  
NUC1 31P  
P1 8.55 usec  
PLW1 22.00000000 W

F2 - Processing parameters  
SI 32768  
SF 121.4948510 MHz  
WDW EM  
SSB 0  
LB 1.00 Hz  
GB 0  
PC 1.40

13.41  
13.34  
13.29  
13.23  
13.17  
13.11

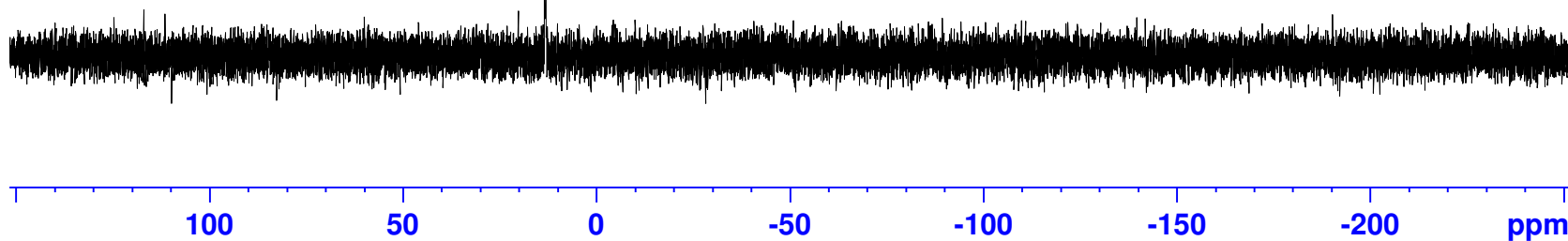
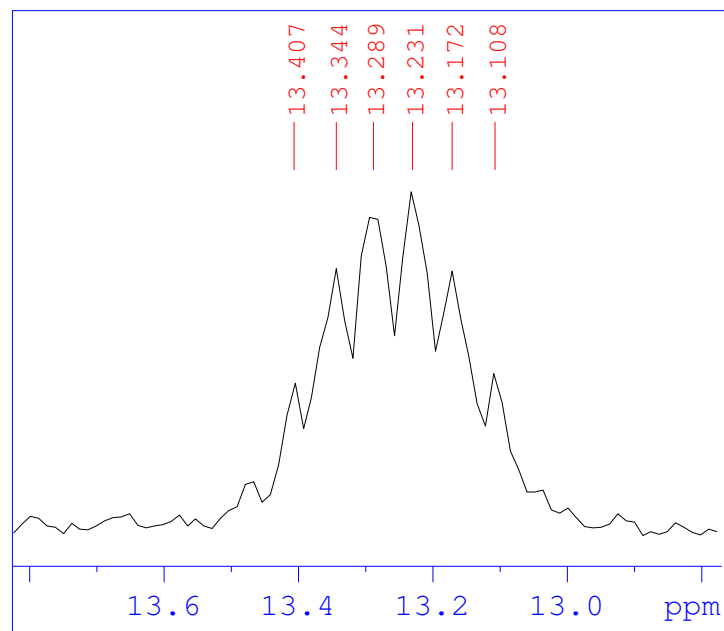
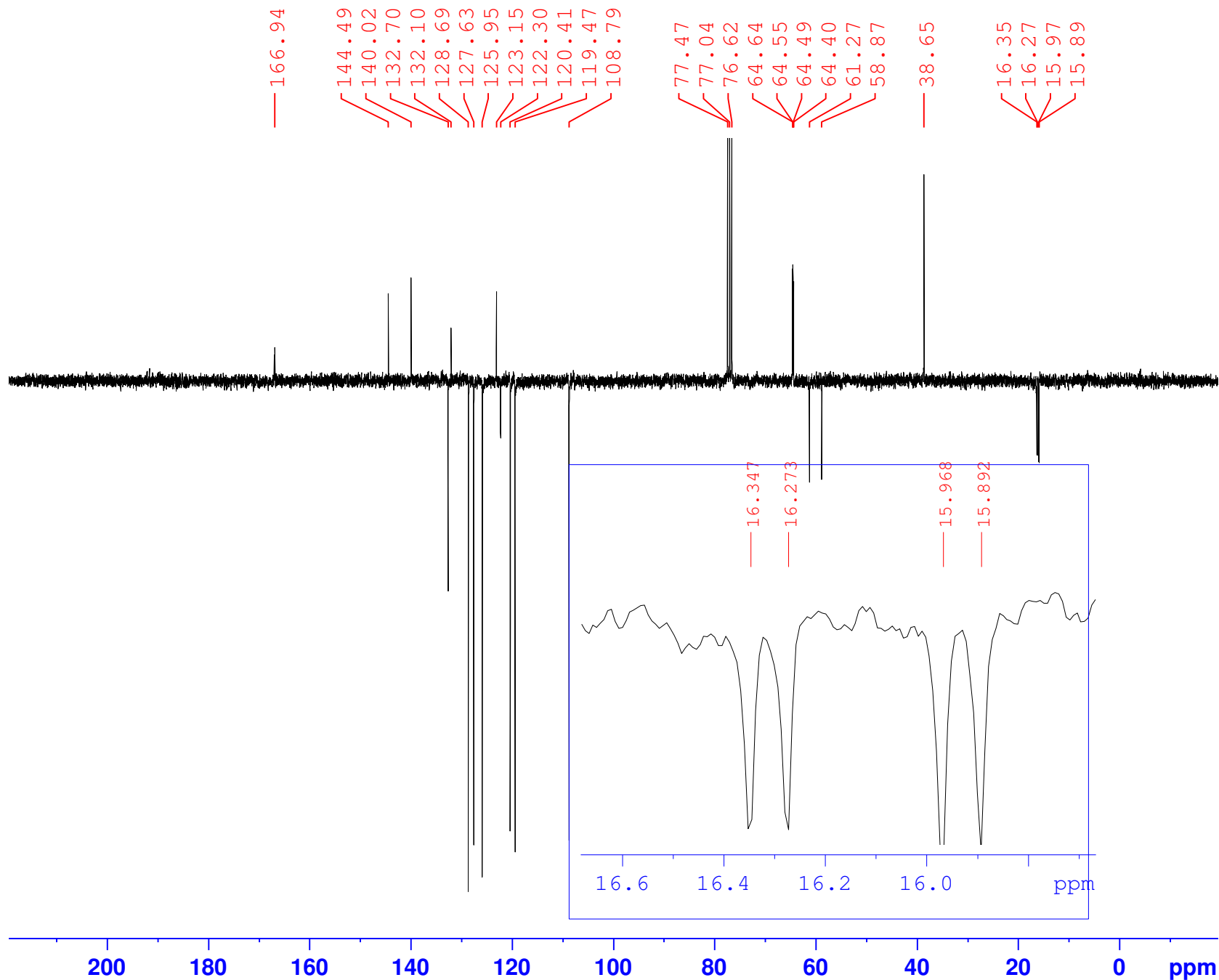


Figure S2: Coupled  $^{31}\text{P}$  NMR spectrum of (3)



Current Data Parameters  
NAME SF 54 BIS  
EXPNO 2  
PROCNO 1

F2 - Acquisition Parameters  
Date\_ 20201005  
Time 10.16  
INSTRUM spect  
PROBHD 5 mm PABBO BB/  
PULPROG jmod  
TD 65536  
SOLVENT CDCl3  
NS 1024  
DS 4  
SWH 18028.846 Hz  
FIDRES 0.275098 Hz  
AQ 1.8175317 sec  
RG 1150  
DW 27.733 usec  
DE 6.50 usec  
TE 297.7 K  
CNST2 145.000000  
CNST11 1.000000  
D1 2.00000000 sec  
D20 0.00689655 sec  
TD0 1

===== CHANNEL f1 =====  
SFO1 75.4752953 MHz  
NUC1 13C  
P1 8.50 usec  
P2 17.00 usec  
PLW1 41.00000000 W

===== CHANNEL f2 =====  
SFO2 300.1312005 MHz  
NUC2 1H  
CPDPRG[2] waltz16  
PCPD2 90.00 usec  
PLW2 19.00000000 W  
PLW12 0.25861001 W

F2 - Processing parameters  
SI 32768  
SF 75.4677485 MHz  
WDW EM  
SSB 0  
LB 1.00 Hz  
GB 0  
PC 1.40

Figure S3: <sup>13</sup>C-NMR spectrum of compound (3)

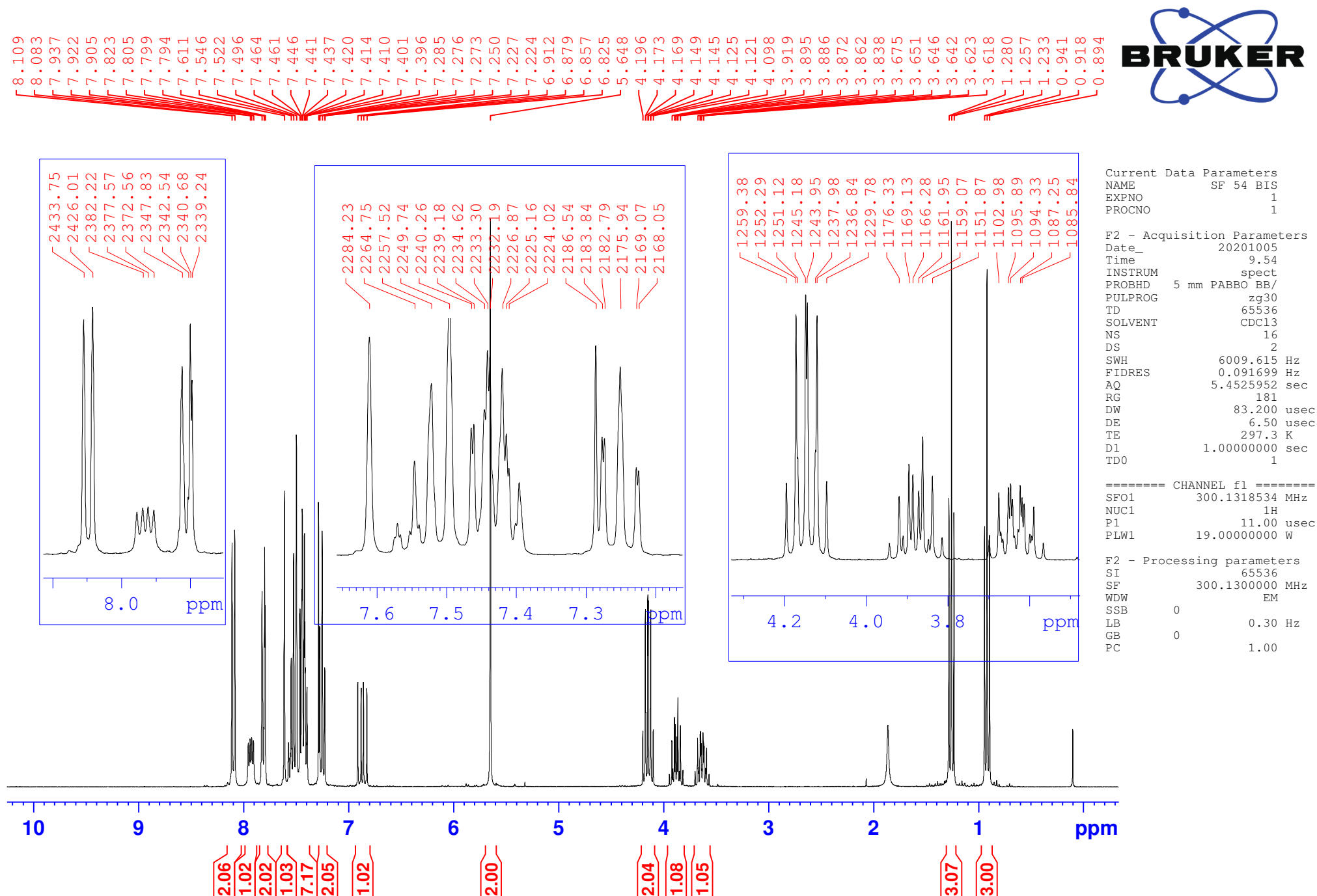


Figure S4: <sup>1</sup>H-NMR spectrum of compound (3)

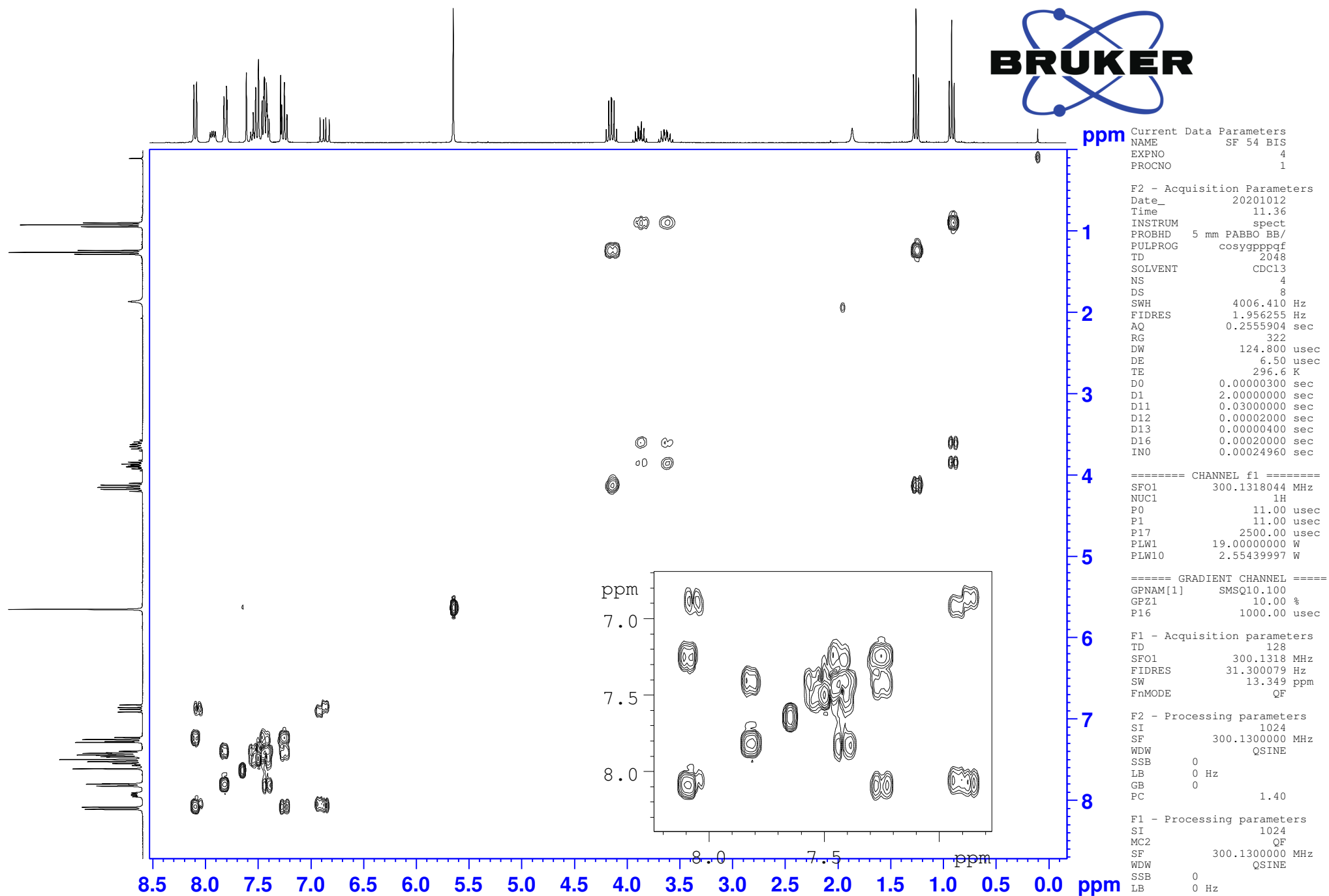


Figure S5: Homonuclear  $^1\text{H}$ - $^1\text{H}$  spectrum of compound (3)



Current Data Parameters  
NAME SF 54 BIS  
EXPNO 3  
PROCNO 1

F2 - Acquisition Parameters  
Date\_ 20201012  
Time 10.50  
INSTRUM spect  
PROBHD 5 mm PABBO BB/  
PULPROG hsqcetgps12  
TD 1024  
SOLVENT CDCl3  
NS 4  
DS 16  
SWH 4000.000 Hz  
FIDRES 3.906250 Hz  
AQ 0.1280000 sec  
RG 2050  
DW 125.000 usec  
DE 6.50 usec  
TE 297.0 K  
CNST2 145.0000000  
D0 0.00000300 sec  
D1 1.500000000 sec  
D4 0.00172414 sec  
D11 0.03000000 sec  
D16 0.00020000 sec  
D24 0.00086207 sec  
INO 0.00004000 sec  
ZGPGTNS

===== CHANNEL f1 =====  
SFO1 300.1318044 MHz  
NUC1 1H  
P1 11.00 usec  
P2 22.00 usec  
P28 1000.00 usec  
PLW1 19.00000000 W

===== CHANNEL f2 =====  
SFO2 75.4734070 MHz  
NUC2 13C  
CPDPRG2 garp  
P3 9.00 usec  
P4 18.00 usec  
PCPD2 80.00 usec  
PLW2 41.00000000 W  
PLW12 0.51890999 W

===== GRADIENT CHANNEL =====  
GPNAM[1] SMSQ10.100  
GPNAM[2] SMSQ10.100  
GPNAM[3] SMSQ10.100  
GPNAM[4] SMSQ10.100  
GPZ1 80.00 %  
GPZ2 20.10 %  
GPZ3 11.00 %  
GPZ4 -5.00 %  
P16 1000.00 usec  
P19 600.00 usec

F1 - Acquisition parameters  
TD 256  
SFO1 75.47341 MHz  
FIDRES 48.828125 Hz  
SW 165.621 ppm  
FnMODE Echo-Antiecho

F2 - Processing parameters  
SI 1024  
SF 300.1300000 MHz  
WDW QSINE  
SSB 2  
LB 0 Hz  
GB 0  
PC 1.40

F1 - Processing parameters  
SI 1024  
MC2 echo-antiecho  
SF 75.4677485 MHz  
WDW QSINE  
SSB 2  
LB 0 Hz  
GB 0

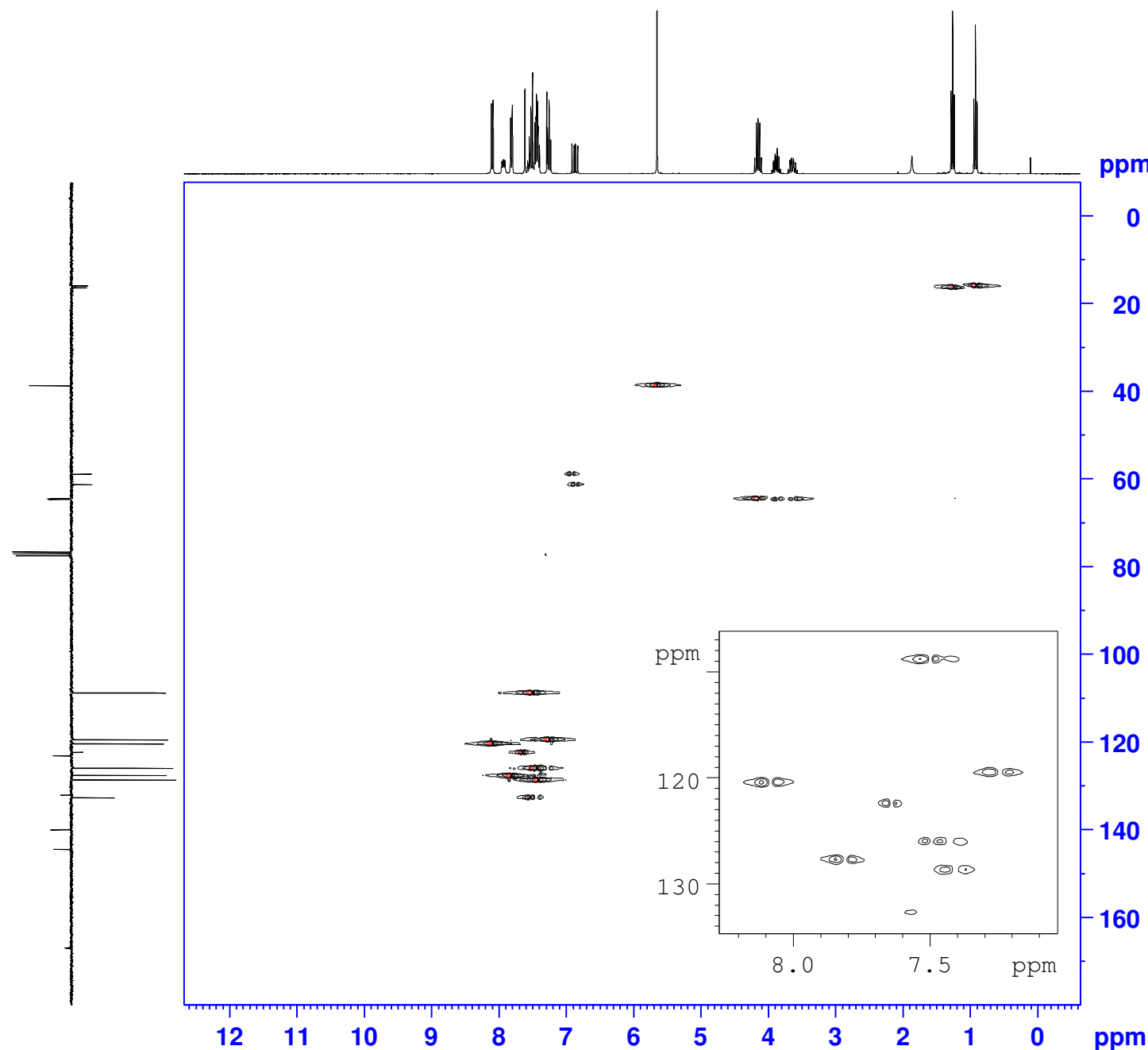
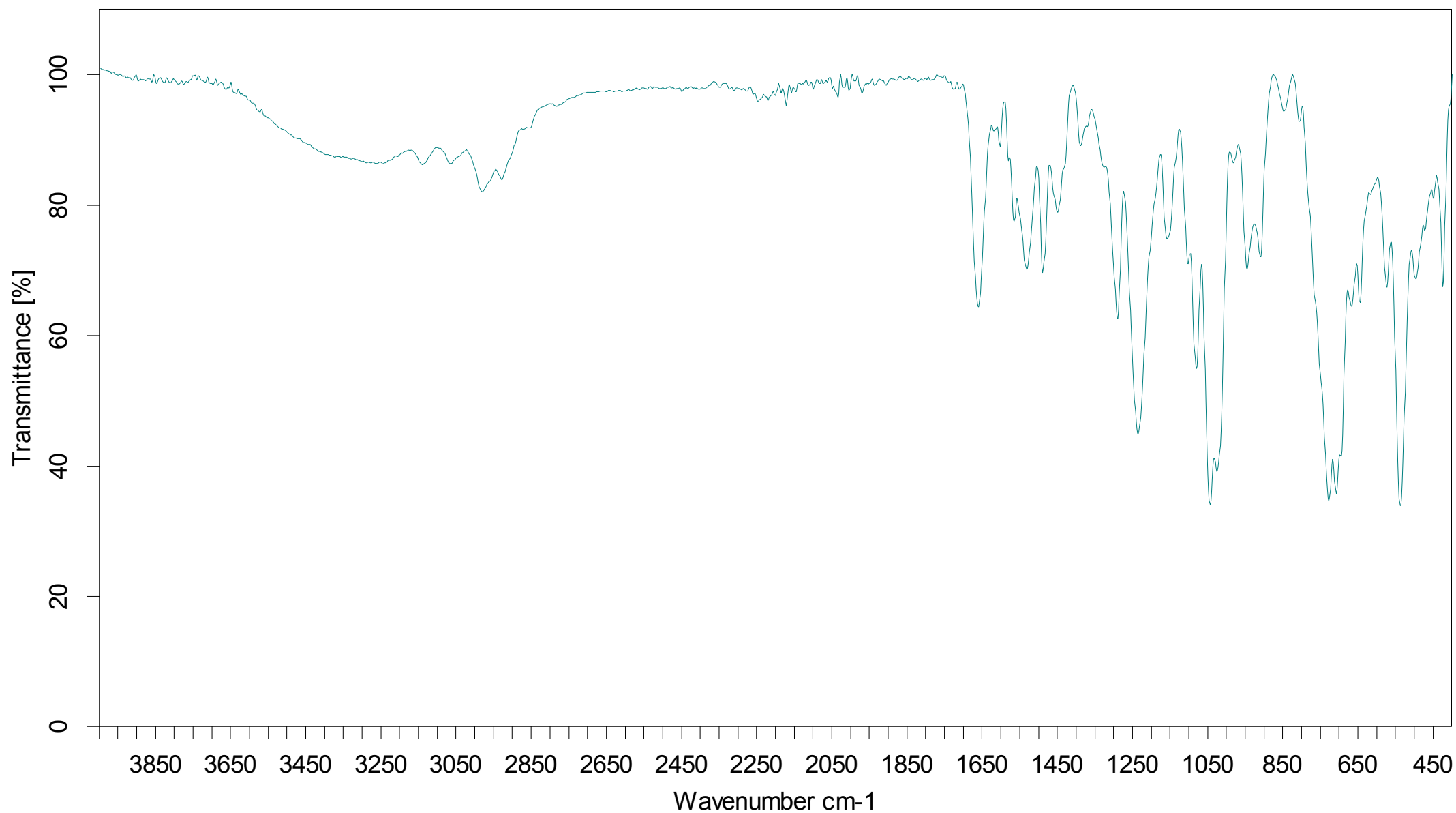


Figure S6: Heteronuclear  $^1\text{H}$ - $^{13}\text{C}$  spectrum of compound (3)



Résolution : 4 cm<sup>-1</sup> (16 scans)

Echantillon : SF54

Spectre : G:\OPUS\Analyses\2019-2020\FSDMLCO\ALAMI ANOUAR\02-07-2020)

Technique : FTIR - VERTEX 70 - BRUKER

Figure S7: IR spectrum of compound (3)