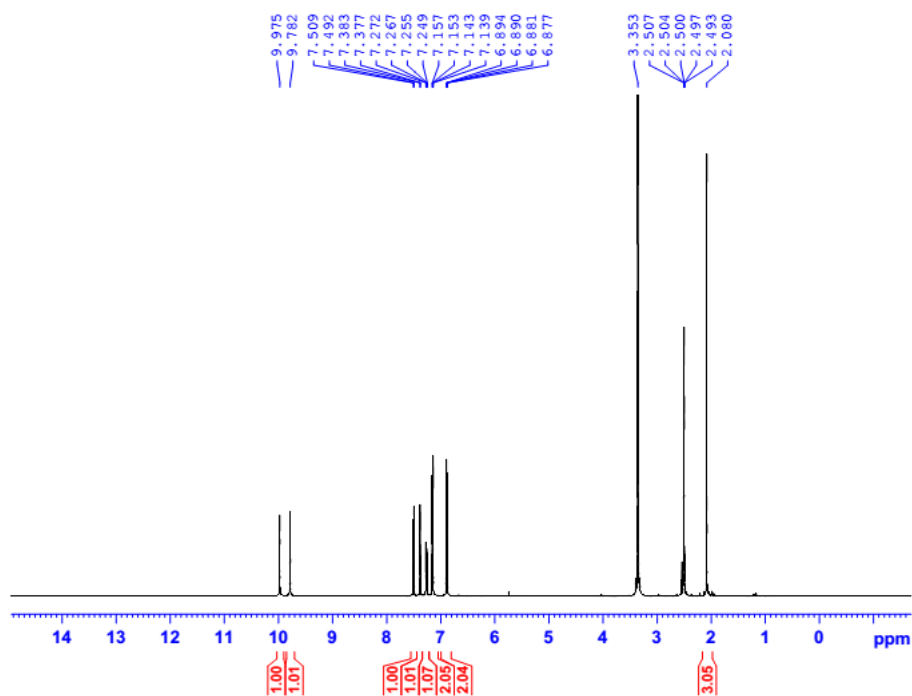


T11-DMSO-1H



Current Data Parameters
NAME VU_T11
EXPNO 10
PROCNO 1

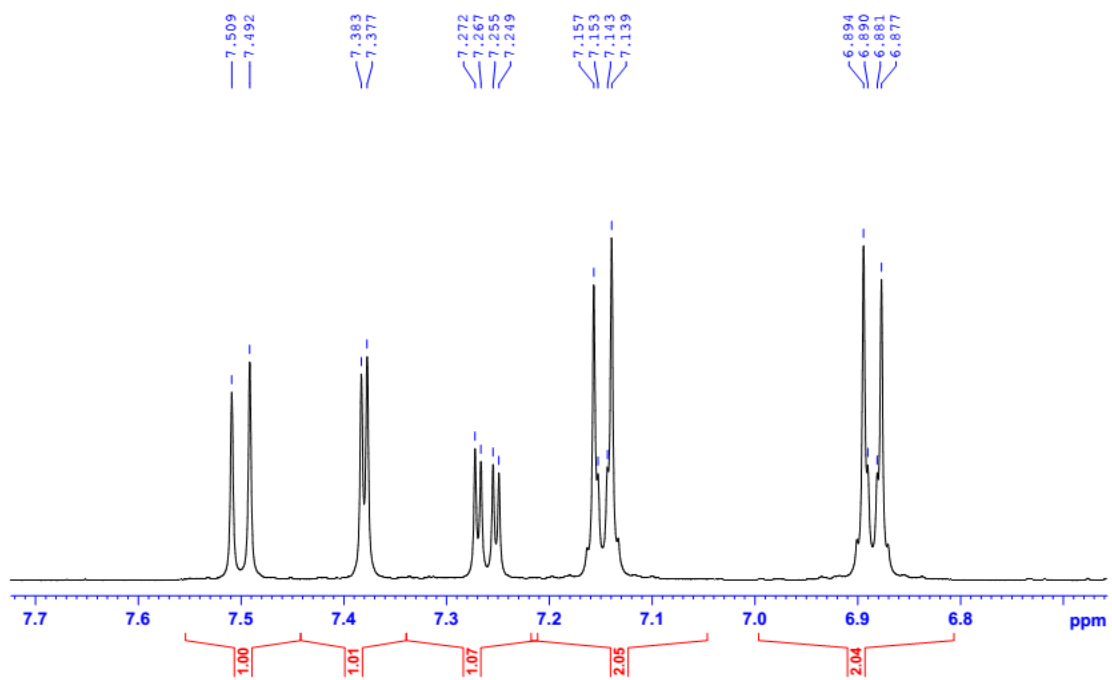
F2 - Acquisition Parameters
Date_ 20191107
Time 17.00
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 16
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767999 sec
RG 89.63
DW 50.000 usec
DE 6.50 usec
TE 303.9 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
SF01 500.1920889 MHz
NUC1 1H
P1 10.20 usec
PLW1 22.00000000 W

F2 - Processing parameters
SI 65536
SF 500.1890049 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

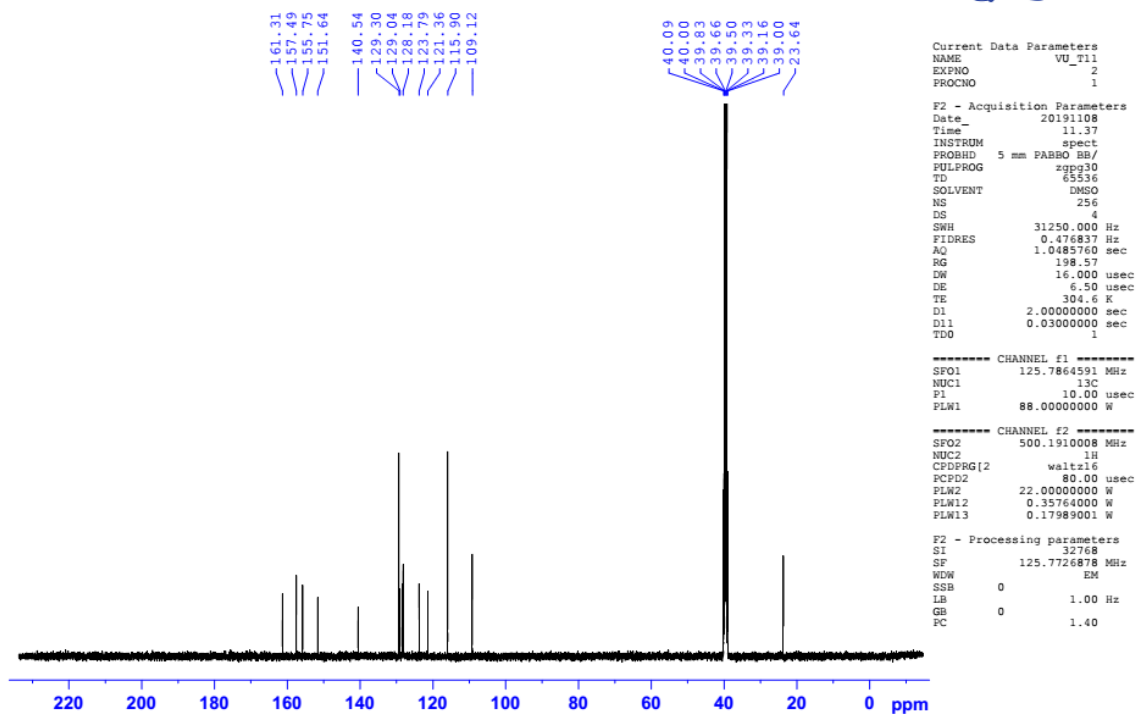
S1: ¹H NMR of compound 3

T11-DMSO-1H



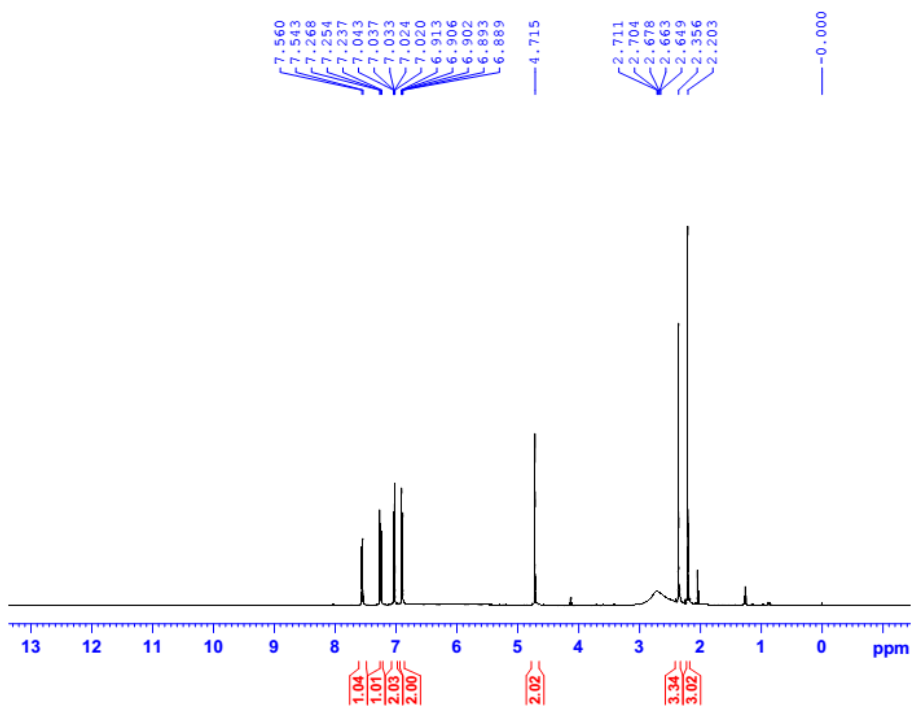
S2. The expanded 1H NMR of compound 3

T11-DMSO-C13CPD



S3. ¹³C NMR of compound 3

T23-CDC13-1H



Current Data Parameters
NAME VU_T23
EXPNO 10
PROCNO 1

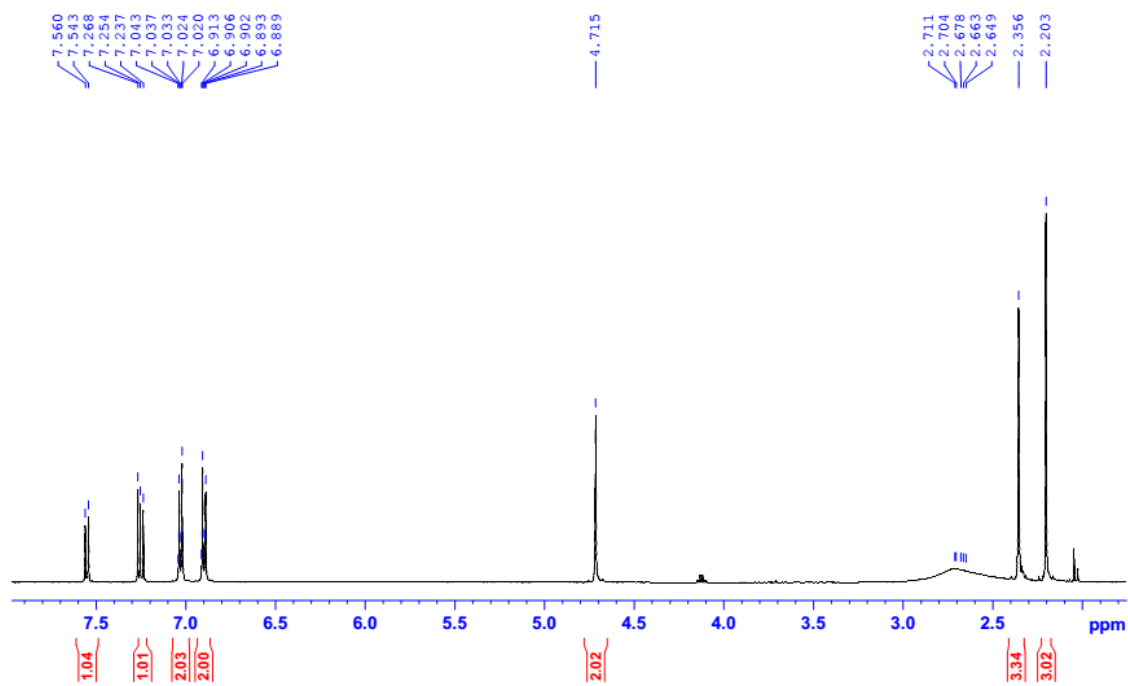
F2 - Acquisition Parameters
Date_ 20191217
Time 16.55
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDC13
NS 16
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767999 sec
RG 111.09
DW 50.000 usec
DE 6.50 usec
TE 303.0 K
D1 1.0000000 sec
TDO 1

===== CHANNEL f1 =====
SFO1 500.1920889 MHz
NUC1 1H
P1 10.20 usec
PLW1 22.00000000 W

F2 - Processing parameters
SI 65536
SF 500.1890093 MHz
WFW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

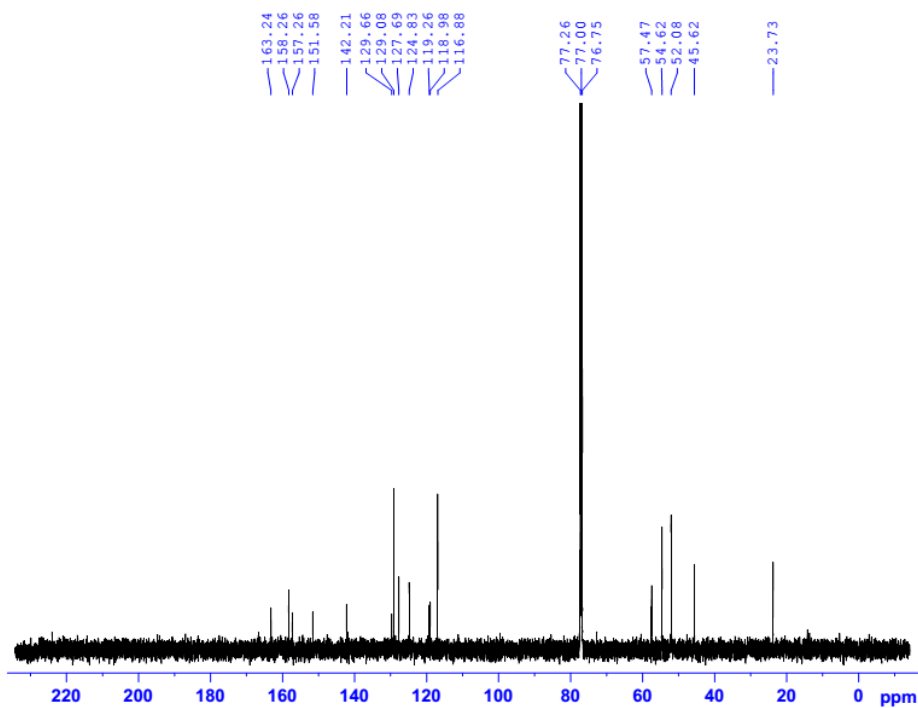
S4. ¹H NMR of compound 4a

T23-CDC13-1H



S5. ^1H NMR of compound **4a**

T23-CDC13-C13CPD



```
Current Data Parameters
NAME      VU_T23
EXPNO    2
PROCNO   1

F2 - Acquisition Parameters
Date_    20191218
Time     15.35
INSTRUM  spect
PROBHD   5 mm PABBO BB/
PULPROG  zgpg30
TD       65536
SOLVENT  CDCl3
NS       1024
DS       4
SWH      31250.000 Hz
FIDRES   0.476837 Hz
AQ       1.0485760 sec
RG       198.57
DW       16.000 usec
DE       6.50 usec
TE       305.4 K
D1       2.0000000 sec
D11      0.03000000 sec
TDD      1

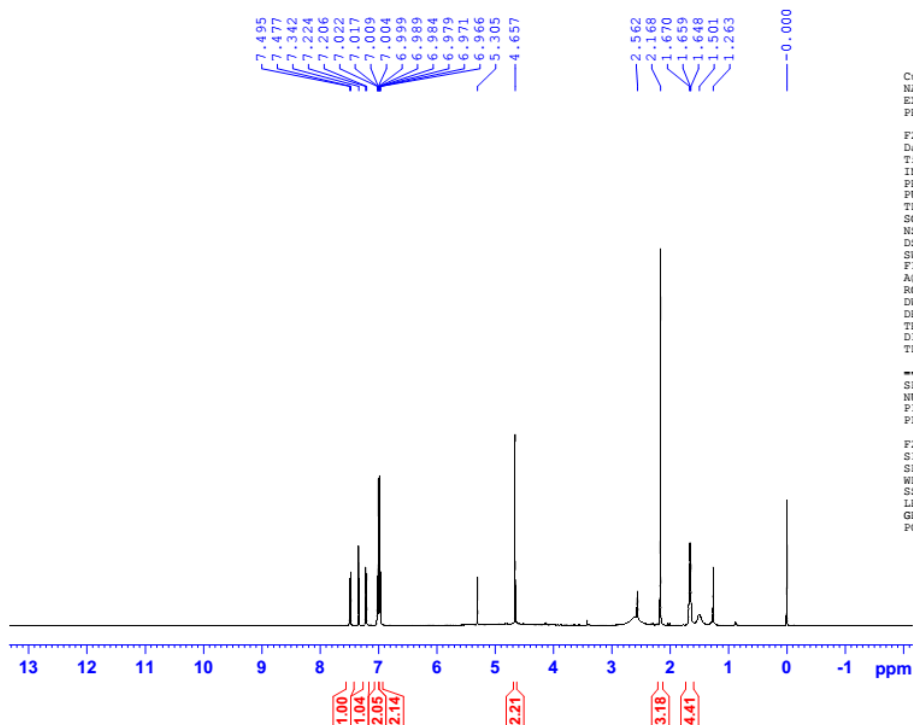
----- CHANNEL f1 -----
SFO1    125.7864591 MHz
NUC1     13C
PI      10.00 usec
PLW1    88.00000000 W

----- CHANNEL f2 -----
SFO2    500.1910008 MHz
NUC2     1H
CPDPRG2  waltz16
PCPD2    80.00 usec
PLW2    22.00000000 W
PLW12   0.35764000 W
PLW13   0.17989001 W

F2 - Processing parameters
SI       32768
SF       125.7726241 MHz
WDW      EM
SSB      0
LB       1.00 Hz
GB       0
FC       1.40
```

S6. ¹³C NMR of compound 4a

T6.32-CDC13-1H



Current Data Parameters
NAME VU_T6.32
EXPNO 1
PROCNO 1

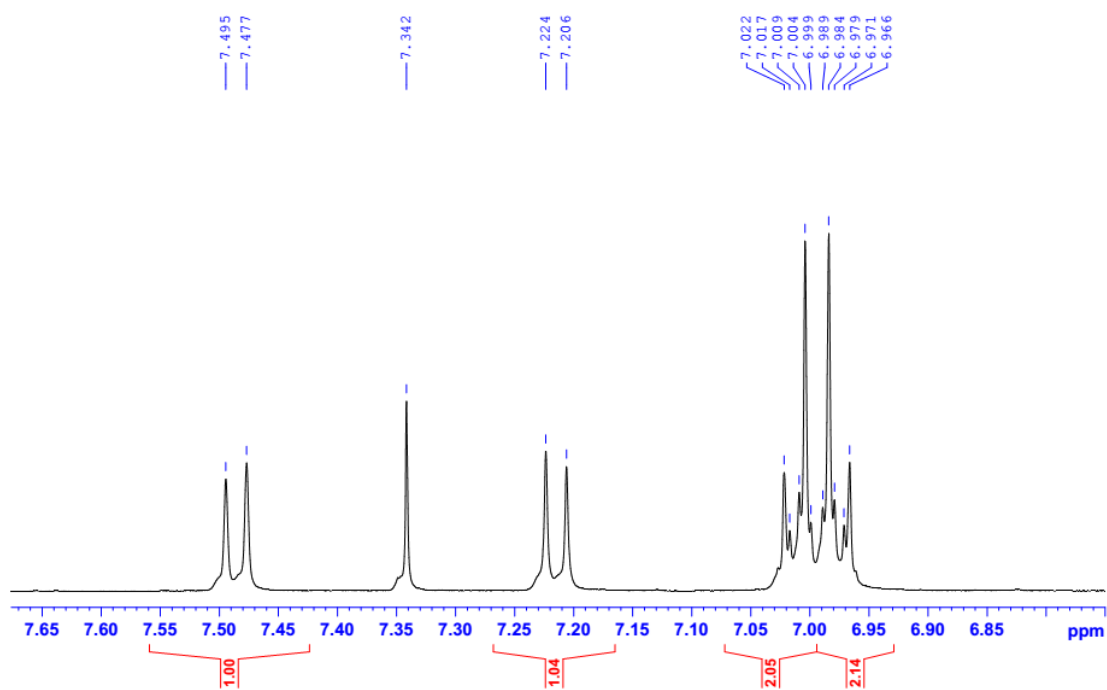
F2 - Acquisition Parameters
Date_ 20200212
Time_ 10.41
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDC13
NS 16
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.276799 sec
RG 157.35
DW 50.000 usec
DE 6.50 usec
TE 328.0 K
D1 1.00000000 sec
TDO 1

----- CHANNEL f1 -----
SFO1 500.1920889 MHz
NUC1 1H
P1 10.20 usec
PLW1 22.00000000 W

F2 - Processing parameters
SI 65536
SF 500.1889708 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

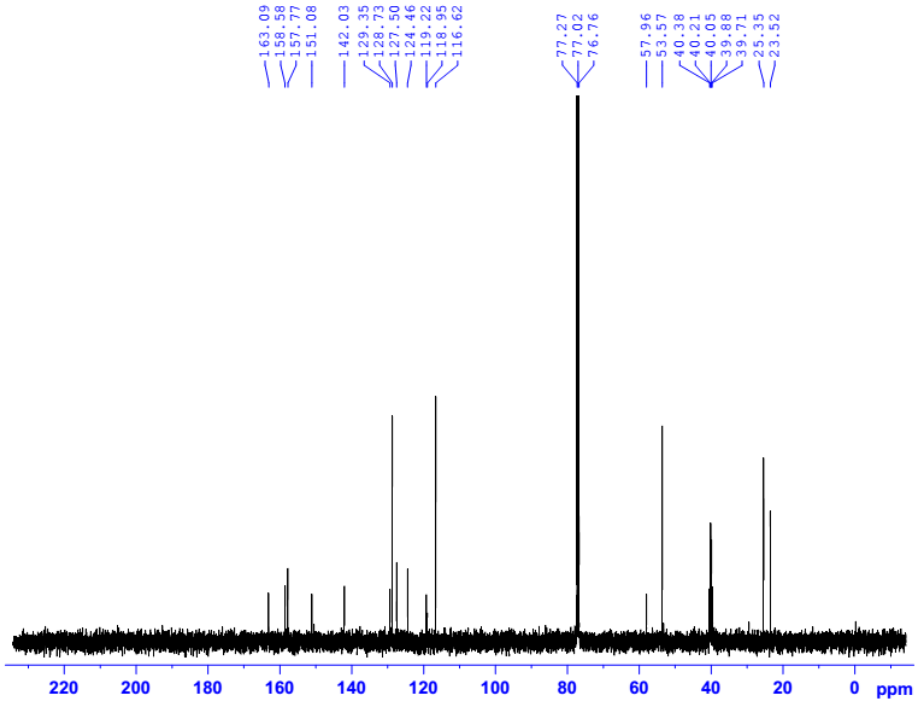
S7. ¹H NMR of compound 4b

T6.32-CDC13-1H



S8. ^1H NMR of compound **4b**

T6.32-CDCl3-C13CPD



```
Current Data Parameters
NAME      VU_T6.32
EXFNO    2
PROCNO   1

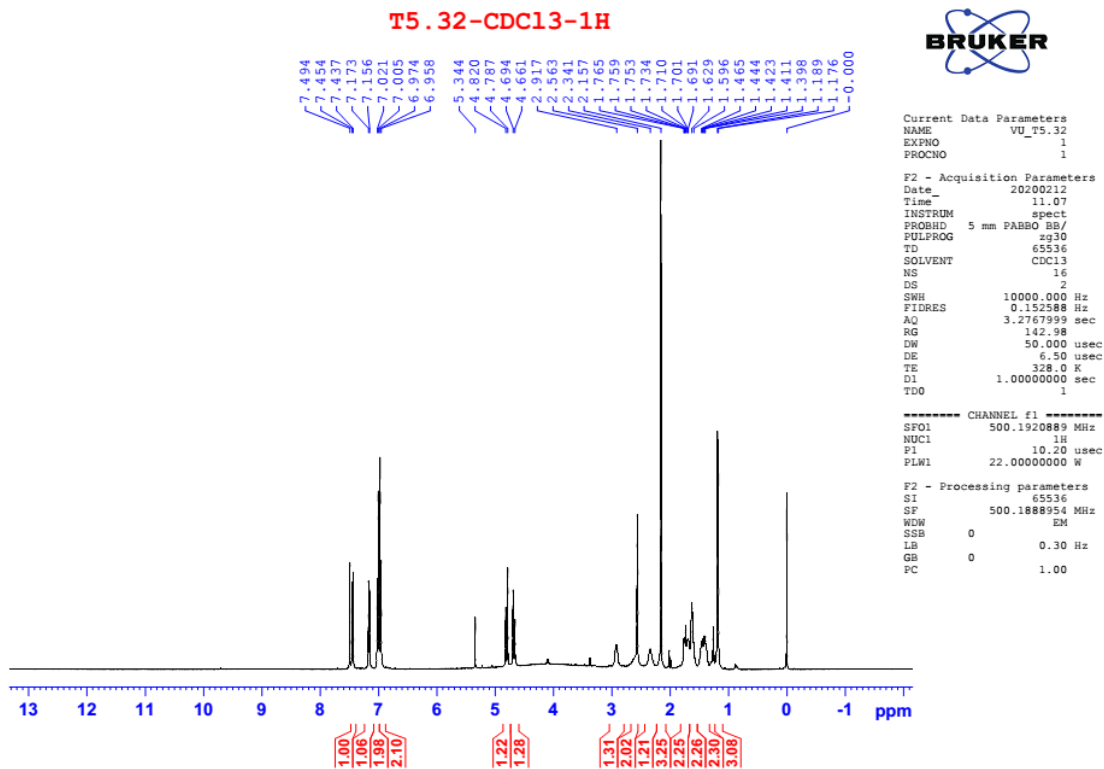
F2 - Acquisition Parameters
Date_    20200212
Time     8.53
INSTRUM  spect
PROBHD   5 mm PABBO BB/
PULPROG  zgpg30
TD       65536
SOLVENT  CDCl3
NS       2048
DS       4
SWH      31250.000 Hz
FIDRES   0.476837 Hz
AQ       1.0485760 sec
RG       198.57
DW       16.000 usec
DE       6.50 usec
TE       328.0 K
D1       2.00000000 sec
D11      0.03000000 sec
TDO     1

----- CHANNEL f1 -----
SFO1    125.7864591 MHz
NUC1    13C
P1      10.00 usec
PLW1    88.00000000 W

----- CHANNEL f2 -----
SFO2    500.1910008 MHz
NUC2    1H
CPDPRG2 waltz16
PCPD2   80.00 usec
PLW2    22.00000000 W
PLW12   0.35764000 W
PLW13   0.17989001 W

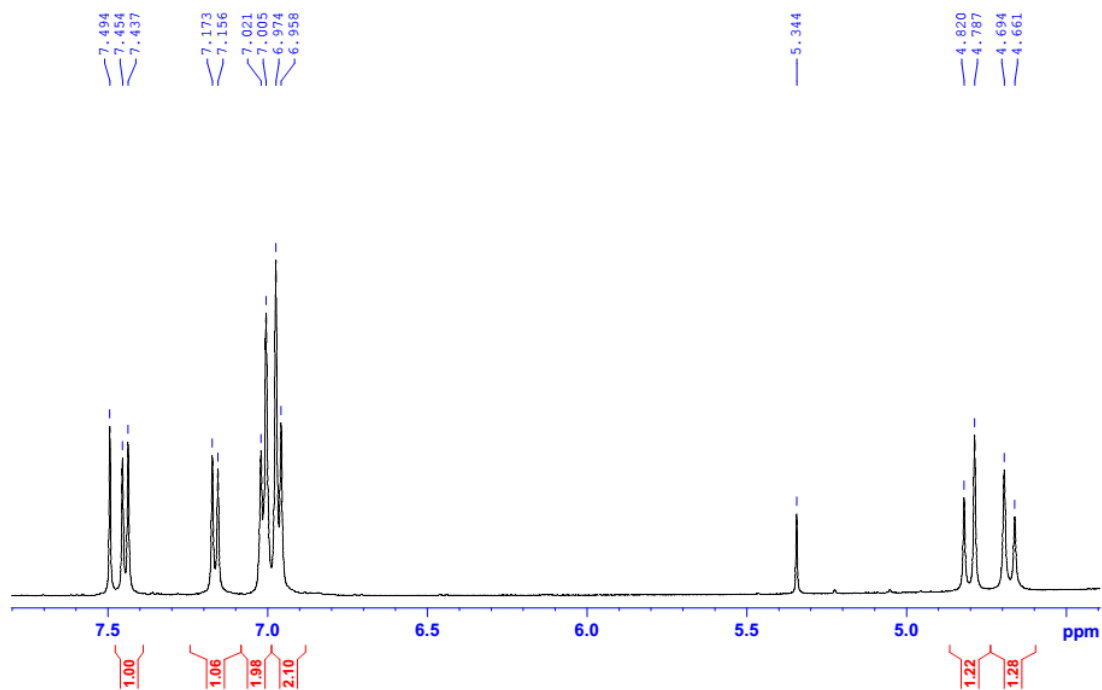
F2 - Processing parameters
SI      32768
SF      125.7726346 MHz
WDW     EM
SSB     0
LB      1.00 Hz
GB      0
PC      1.40
```

S9. ¹³C NMR of compound 4b



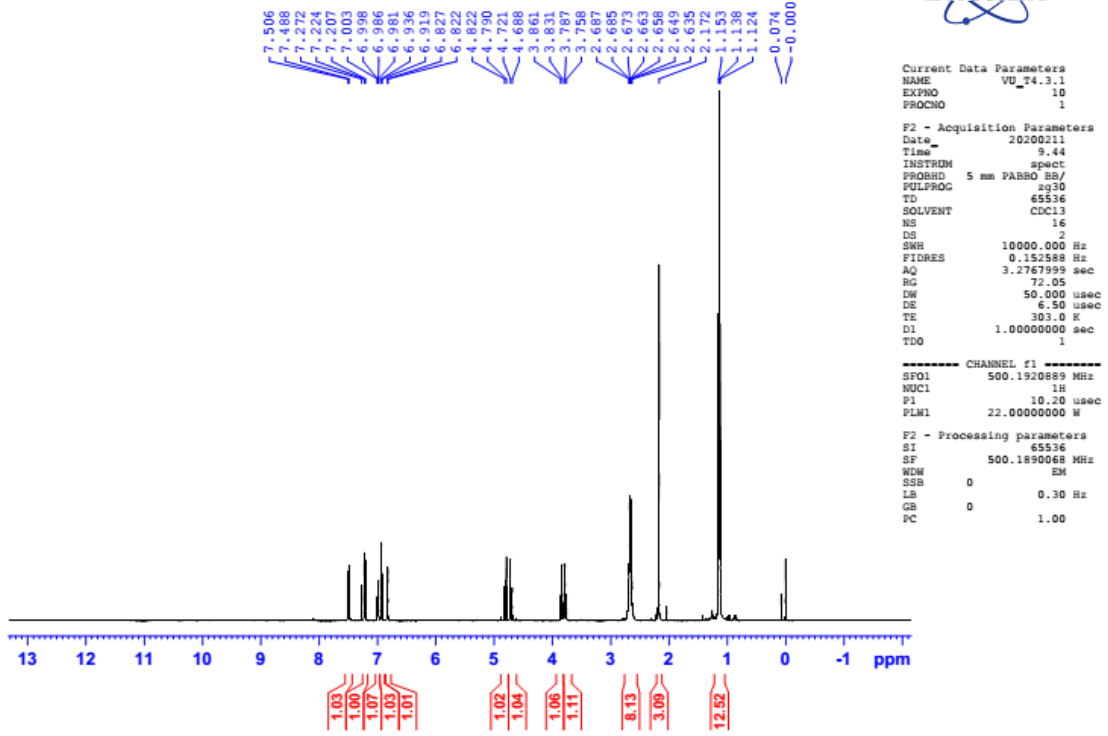
S10. ¹H NMR of compound 4c

T5.32-CDC13-1H



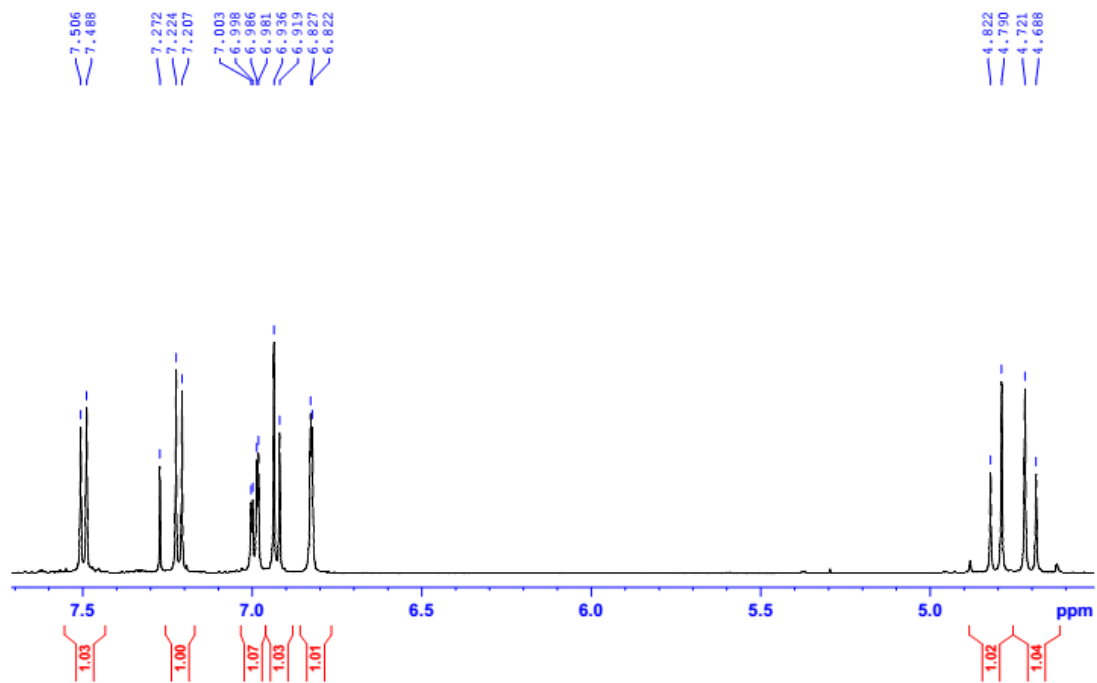
S11. ^1H NMR of compound **4c**

T4.3.1-CDCl3-1H

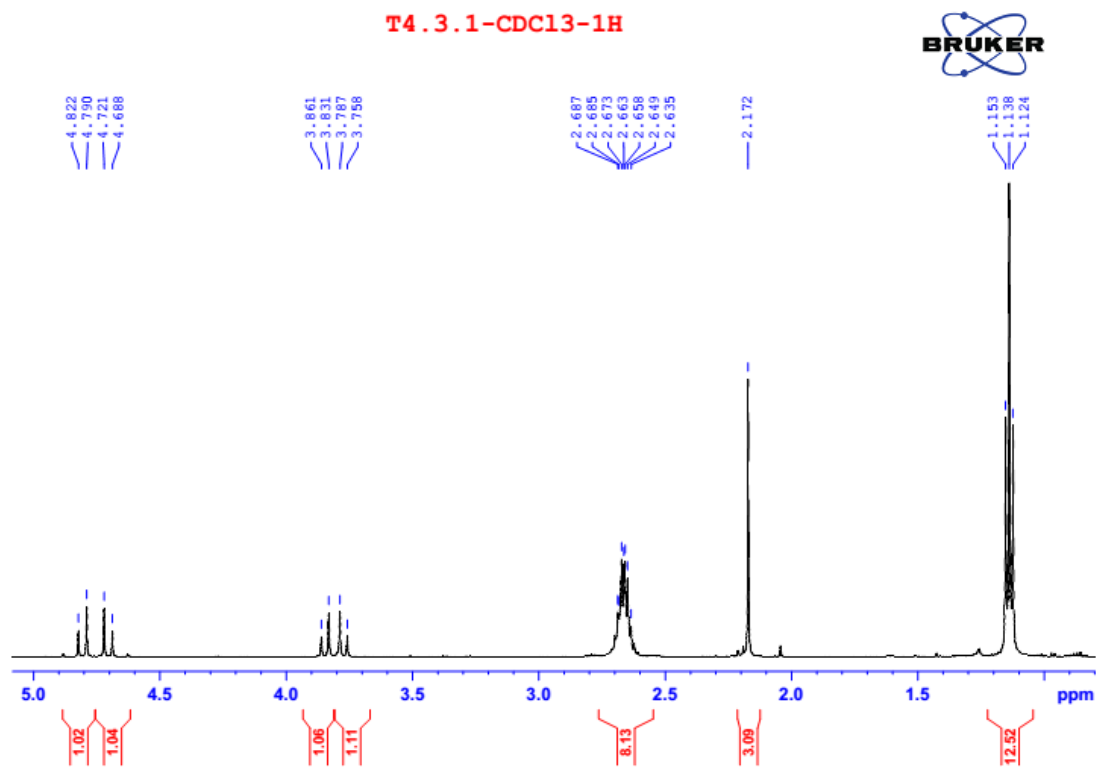


S12. ¹H NMR of compound 5a

T4.3.1-CDCl3-1H

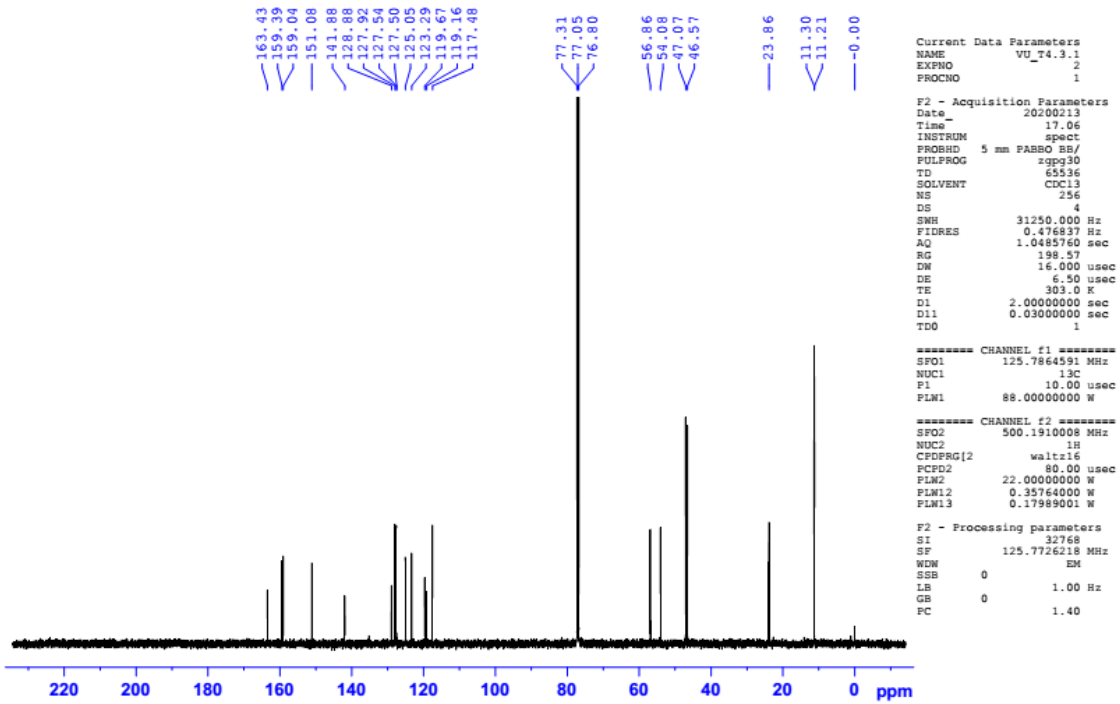


S13. ^1H NMR of compound 5a



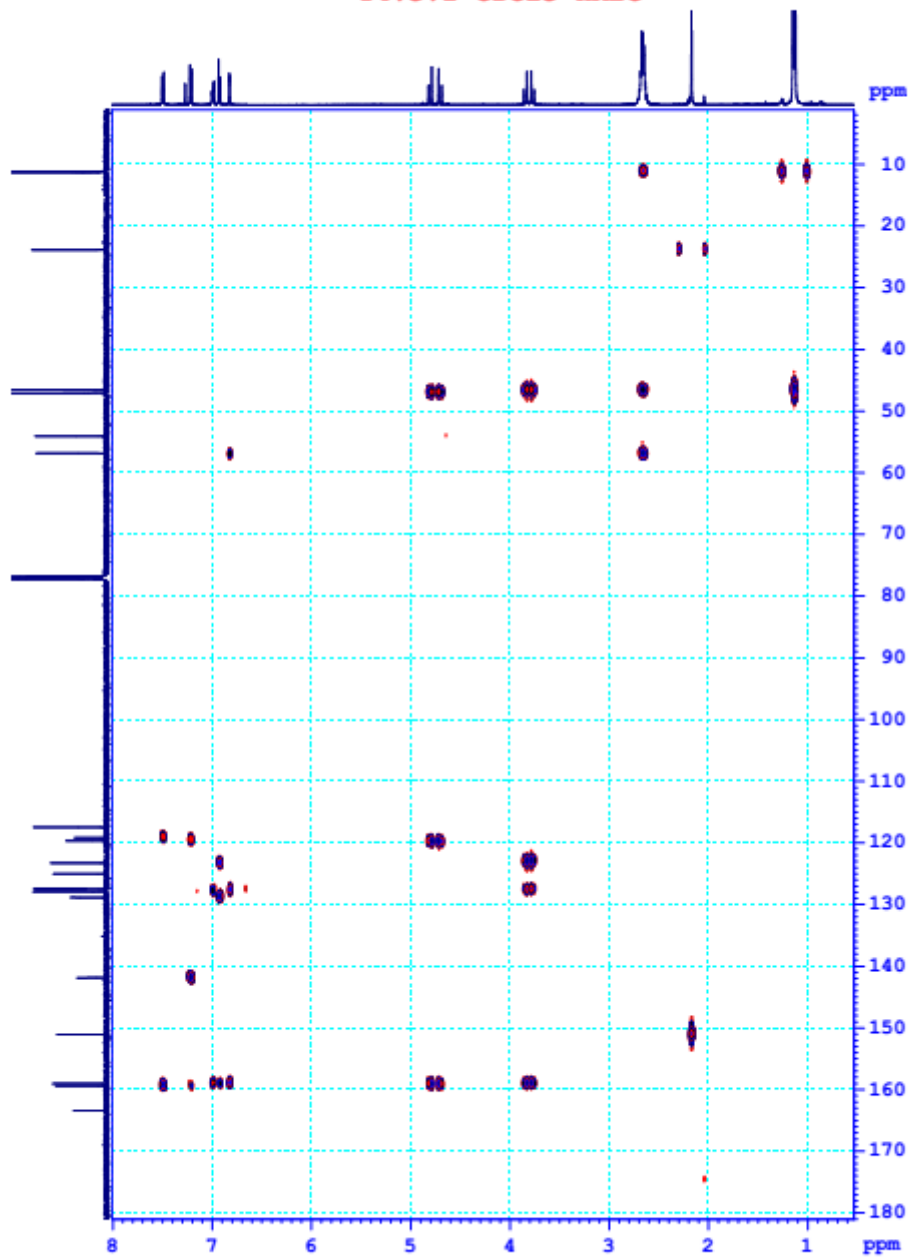
S14. ^1H NMR of compound **5a**

T4.3.1-CDCl3-C13CPD



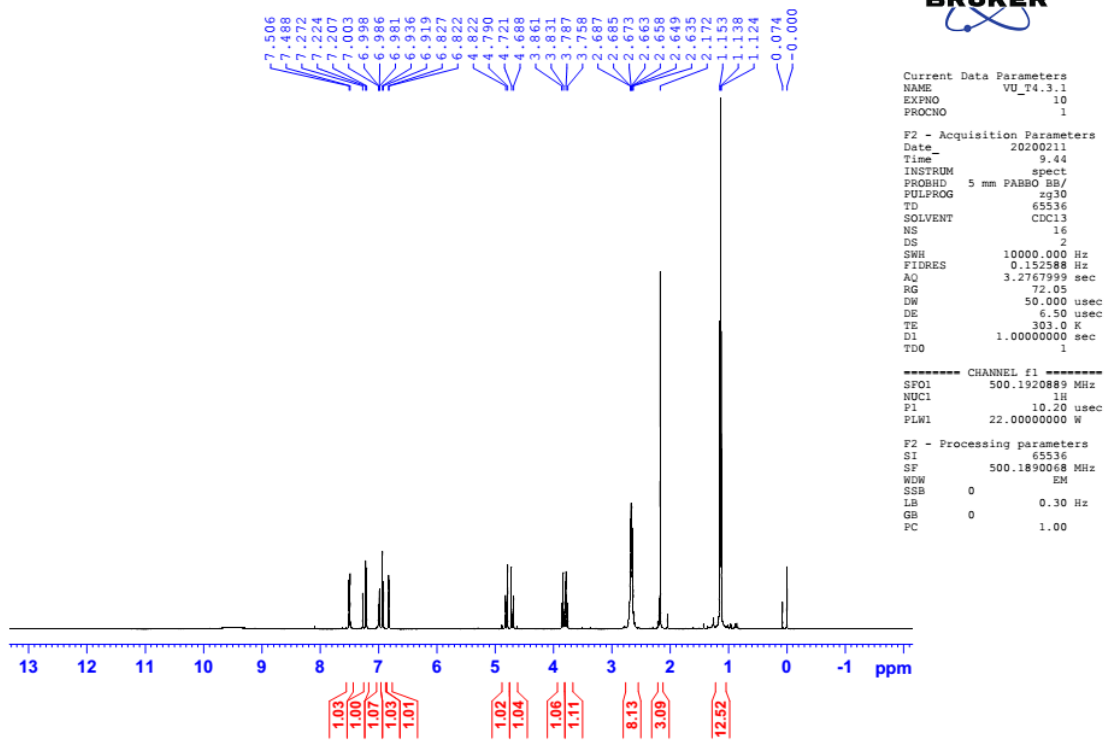
S15. ¹H NMR of compound 5a

T4.3.1-CDC13-HMBC



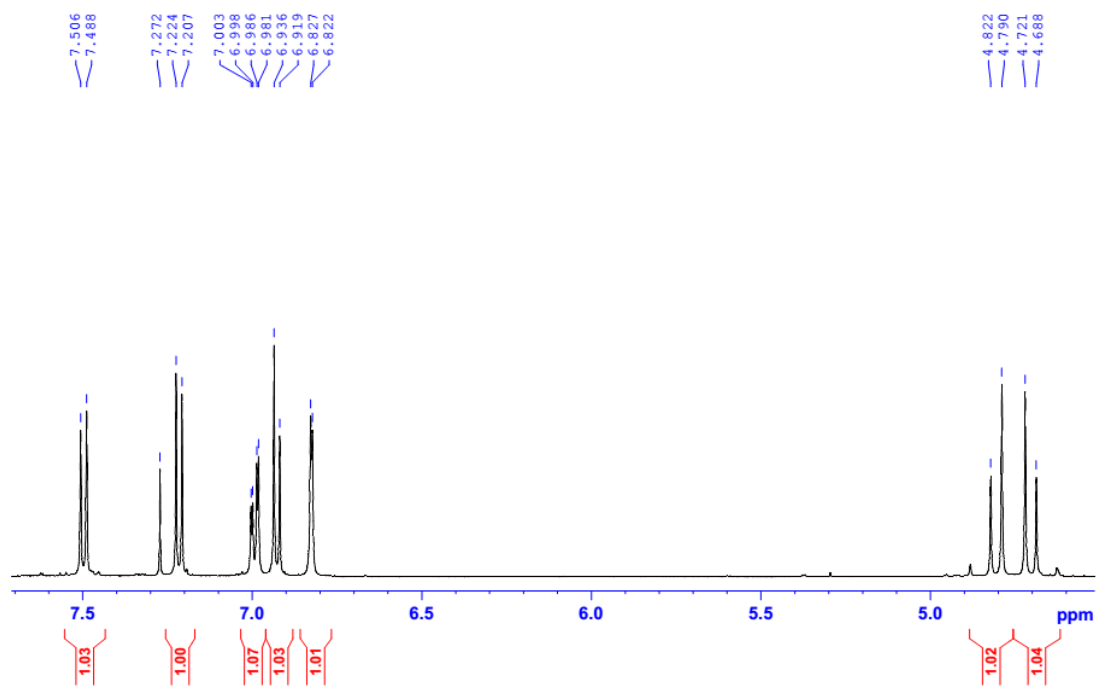
S16. HMBC of compound 5a

T4.3.1-CDC13-1H



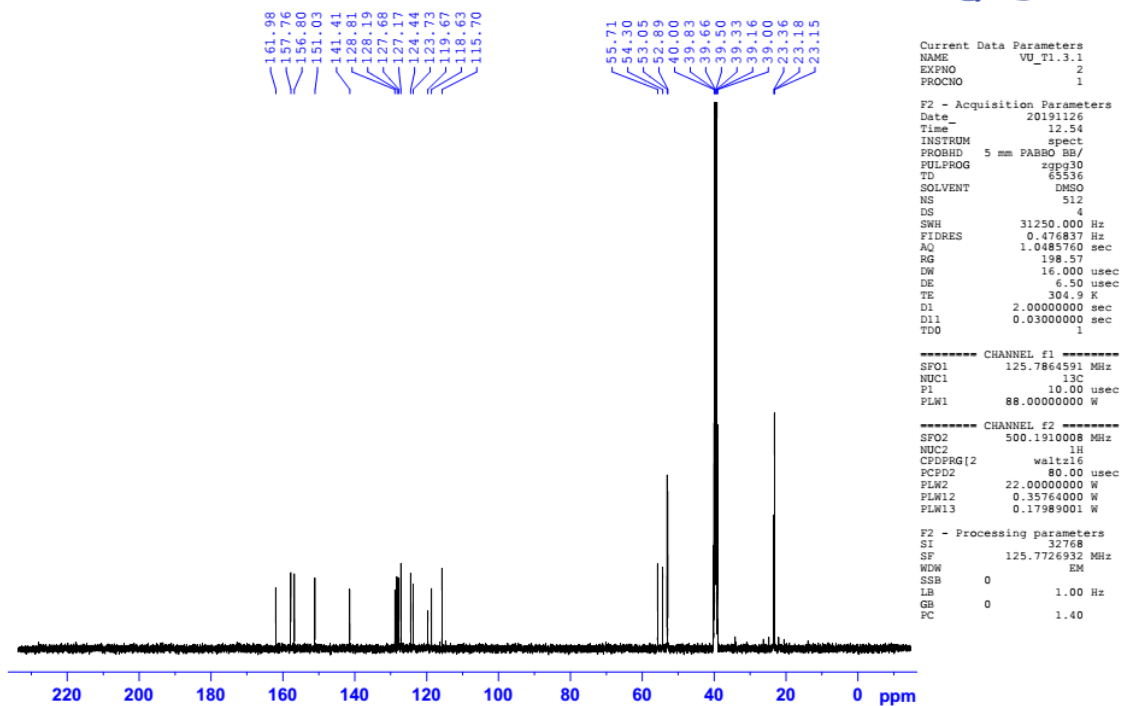
S17. ¹H NMR of compound 5b

T4.3.1-CDC13-1H



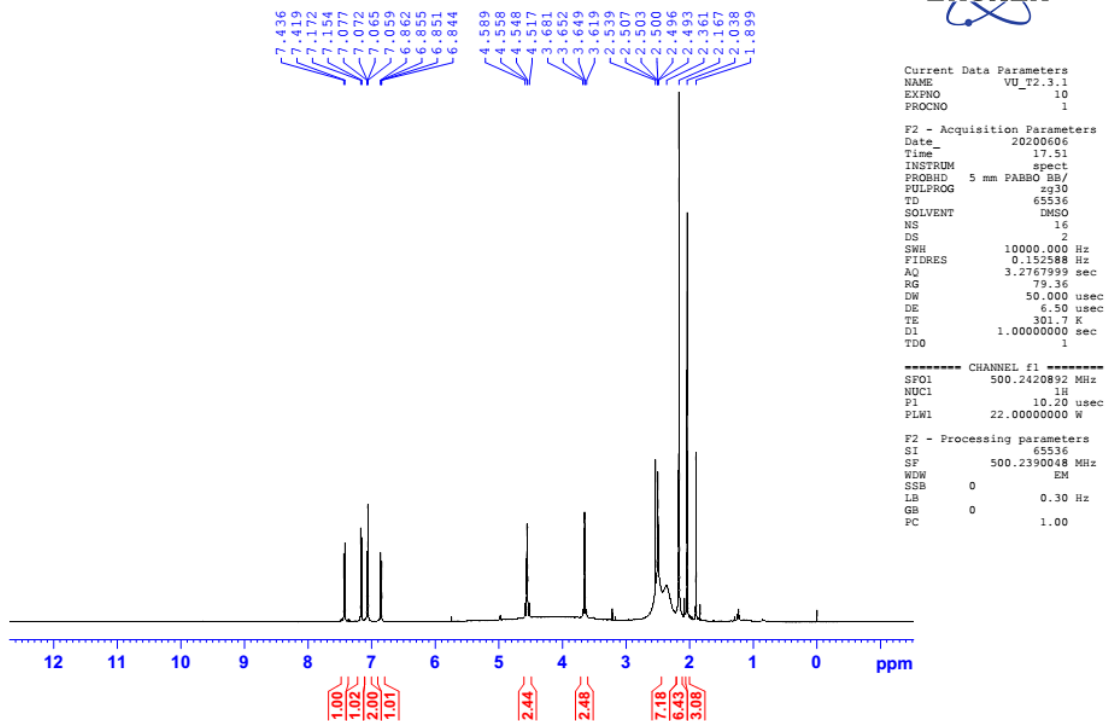
S18. ^1H NMR of compound **5b**

T1.3.1-DMSO-C13CPD



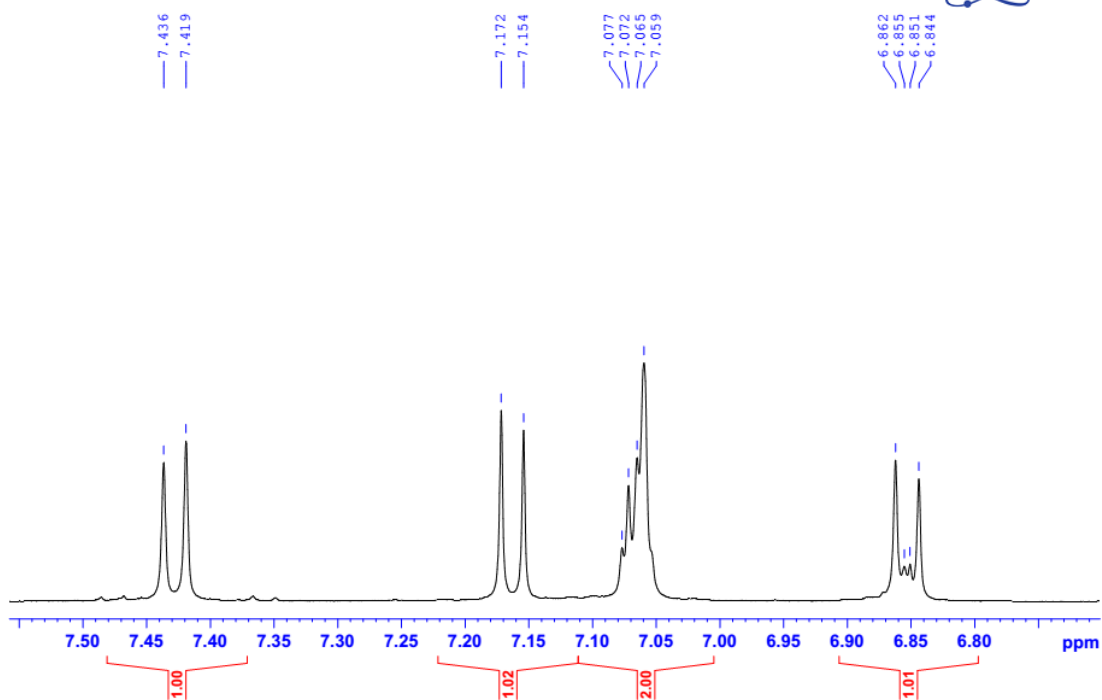
S19. ¹³C NMR of compound 5b

T2.3.1-DMSO-1H



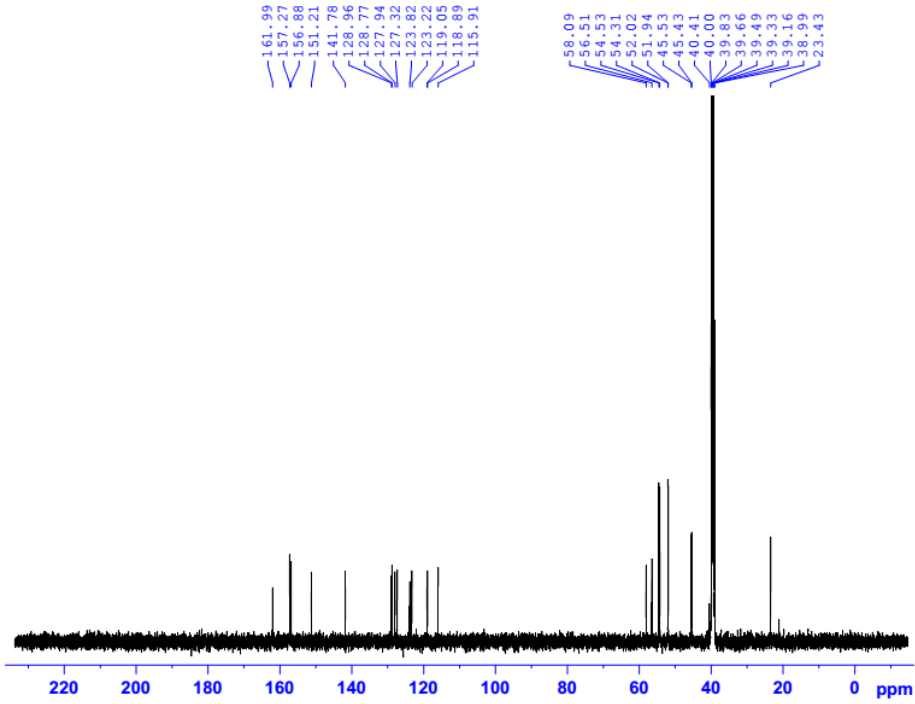
S20. ¹H NMR of compound 5c

T2.3.1-DMSO-1H



S21. ^1H NMR of compound 5c

T2.3.1-DMSO-C13CPD



```
Current Data Parameters
NAME          VU_T2.3.1
EXFNO        2
PROCNO       1

F2 - Acquisition Parameters
Date_        20200609
Time         9.08
INSTRUM      spect
PROBHD       5 mm PABBO BB/
PULPROG      zgpg30
TD           65536
SOLVENT      DMSO
NS           256
DS           4
SWH          31250.000 Hz
FIDRES       0.476837 Hz
AQ           1.0485760 sec
RG           198.57
WDW          16.000 usec
DE           6.50 usec
TE           302.3 K
D1           2.00000000 sec
D11          0.03000000 sec
TDO         1

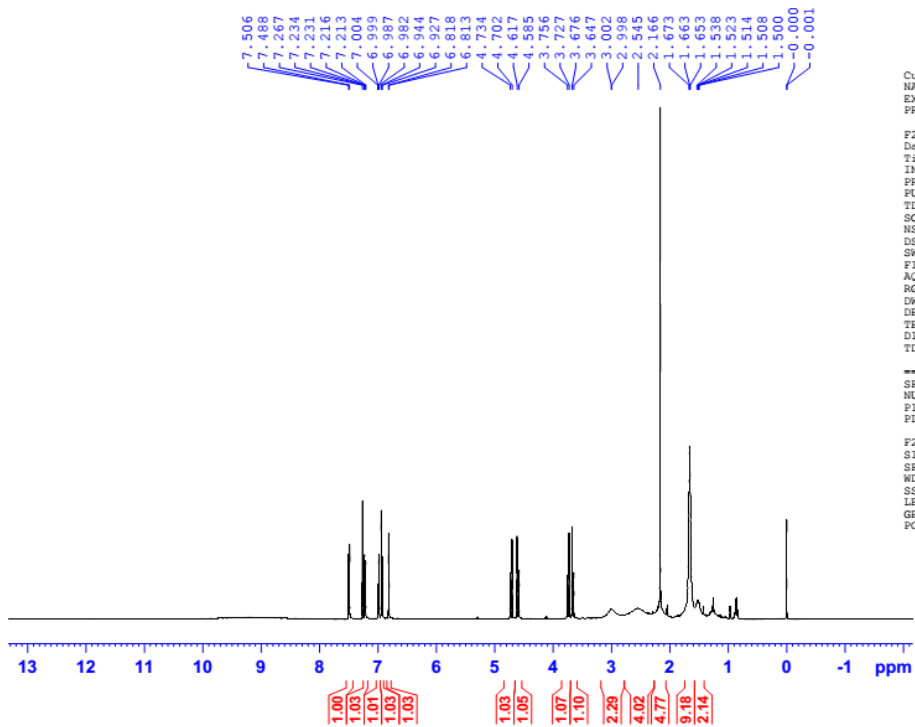
----- CHANNEL f1 -----
SFO1        125.7990329 MHz
NUC1         13C
P1           10.00 usec
PLW1         88.00000000 W

----- CHANNEL f2 -----
SFO2        500.2410010 MHz
NUC2         1H
CPDPRG[2]   waltzi6
PCPD2       80.00 usec
PLW2        22.00000000 W
PLW12       0.35764000 W
PLW13       0.17989001 W

F2 - Processing parameters
SI           32768
SF           125.7852610 MHz
WDW          EM
SSB          0
LB           1.00 Hz
GB           0
PC           1.40
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S22. ¹³C NMR of compound 5c

T6.31-CDC13-1H



Current Data Parameters
NAME VU_T6.31
EXPNO 10
PROCNO 1

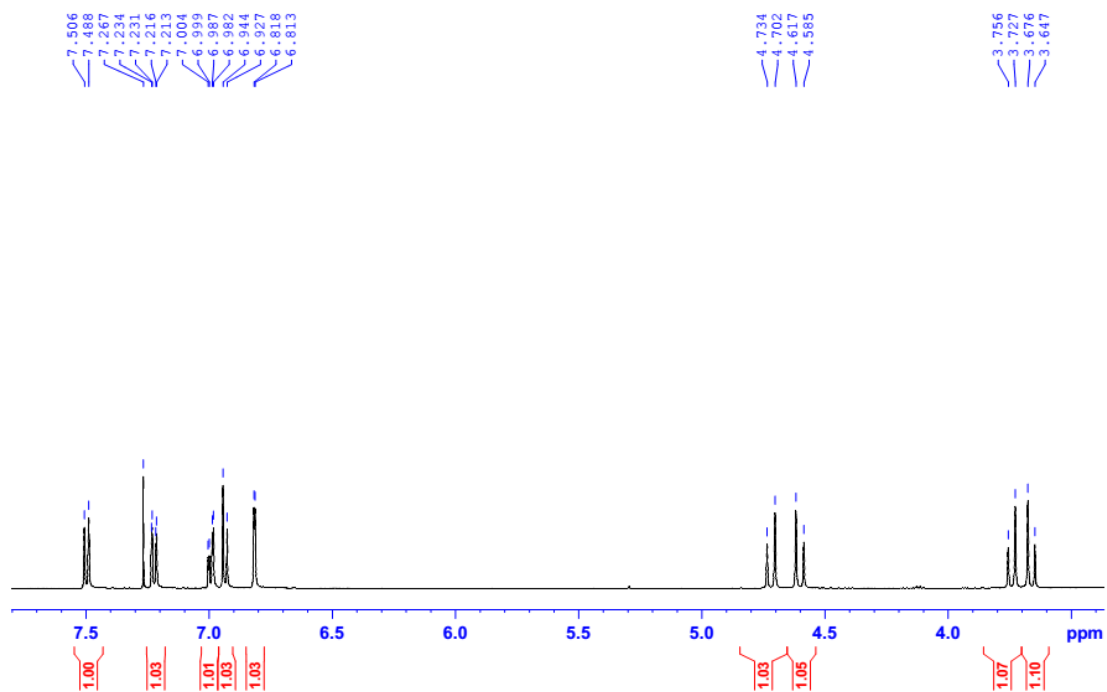
F2 - Acquisition Parameters
Date 20200211
Time 9.53
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDC13
NS 16
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.276799 sec
RG 89.63
DW 50.000 usec
DE 6.50 usec
TE 303.0 K
D1 1.00000000 sec
TDO 1

----- CHANNEL f1 -----
SFO1 500.1920889 MHz
NUC1 1H
P1 10.20 usec
PLW1 22.00000000 W

F2 - Processing parameters
SI 65536
SF 500.1890092 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

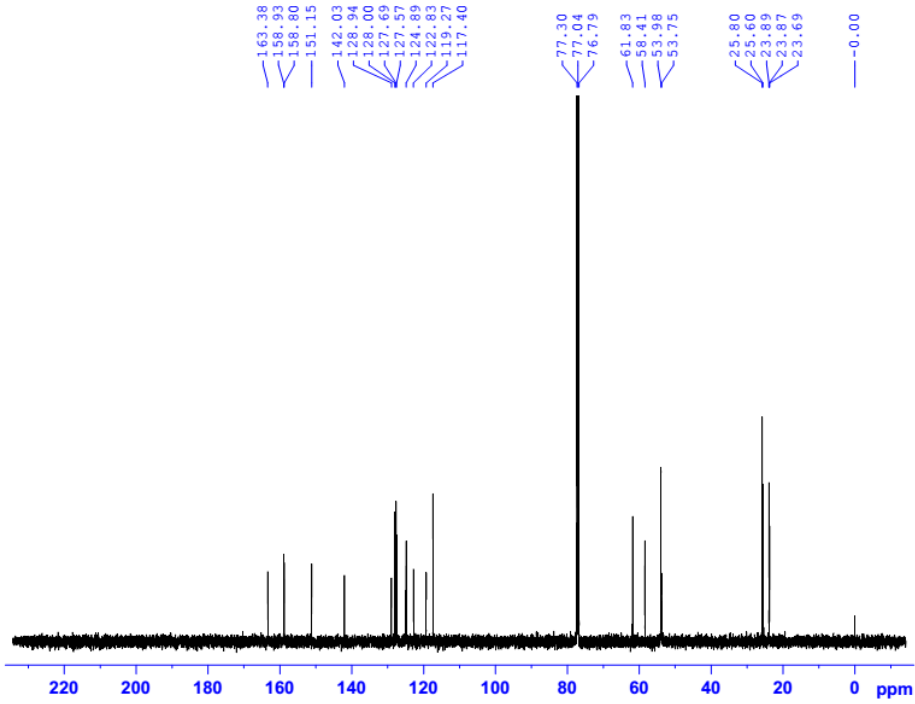
S23. ¹H NMR of compound 5e

T6.31-CDC13-1H



S24. ^1H NMR of compound **5e**

T6.31-CDCl3-C13CPD



Current Data Parameters
NAME VU_T6.31
EXFNO 2
PROCNO 1

F2 - Acquisition Parameters
Date_ 20200213
Time 17.28
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 256
DS 4
SWH 31250.000 Hz
FIDRES 0.476837 Hz
AQ 1.0485760 sec
RG 198.57
DW 16.000 usec
DE 6.50 usec
TE 303.0 K
D1 2.00000000 sec
D11 0.03000000 sec
TDD 1

----- CHANNEL f1 -----
SFO1 125.7864591 MHz
NUC1 13C
P1 10.00 usec
PLW1 88.00000000 W

----- CHANNEL f2 -----
SFO2 500.1910008 MHz
NUC2 1H
CPDPRG[2] waltzi6
PCPD2 80.00 usec
PLW2 22.00000000 W
PLW12 0.35764000 W
PLW13 0.17989001 W

F2 - Processing parameters
SI 32768
SF 125.7726222 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

S25. ¹³C NMR of compound 5e