

Supplementary Materials

^1H -, ^{13}C -, and ^{19}F -NMR Spectra

Page S1–S29

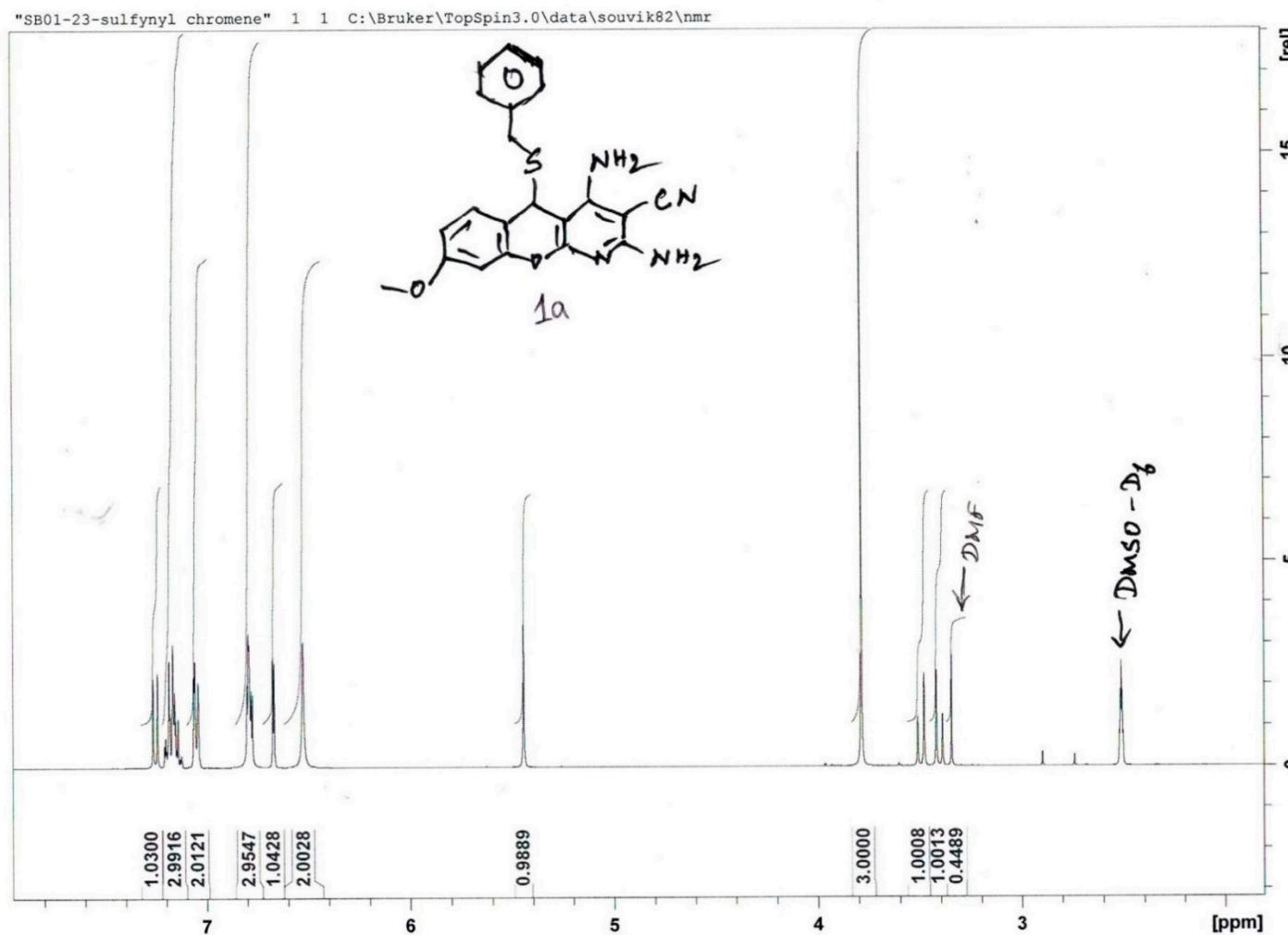


Figure S1. ^1H -NMR of **1a**.

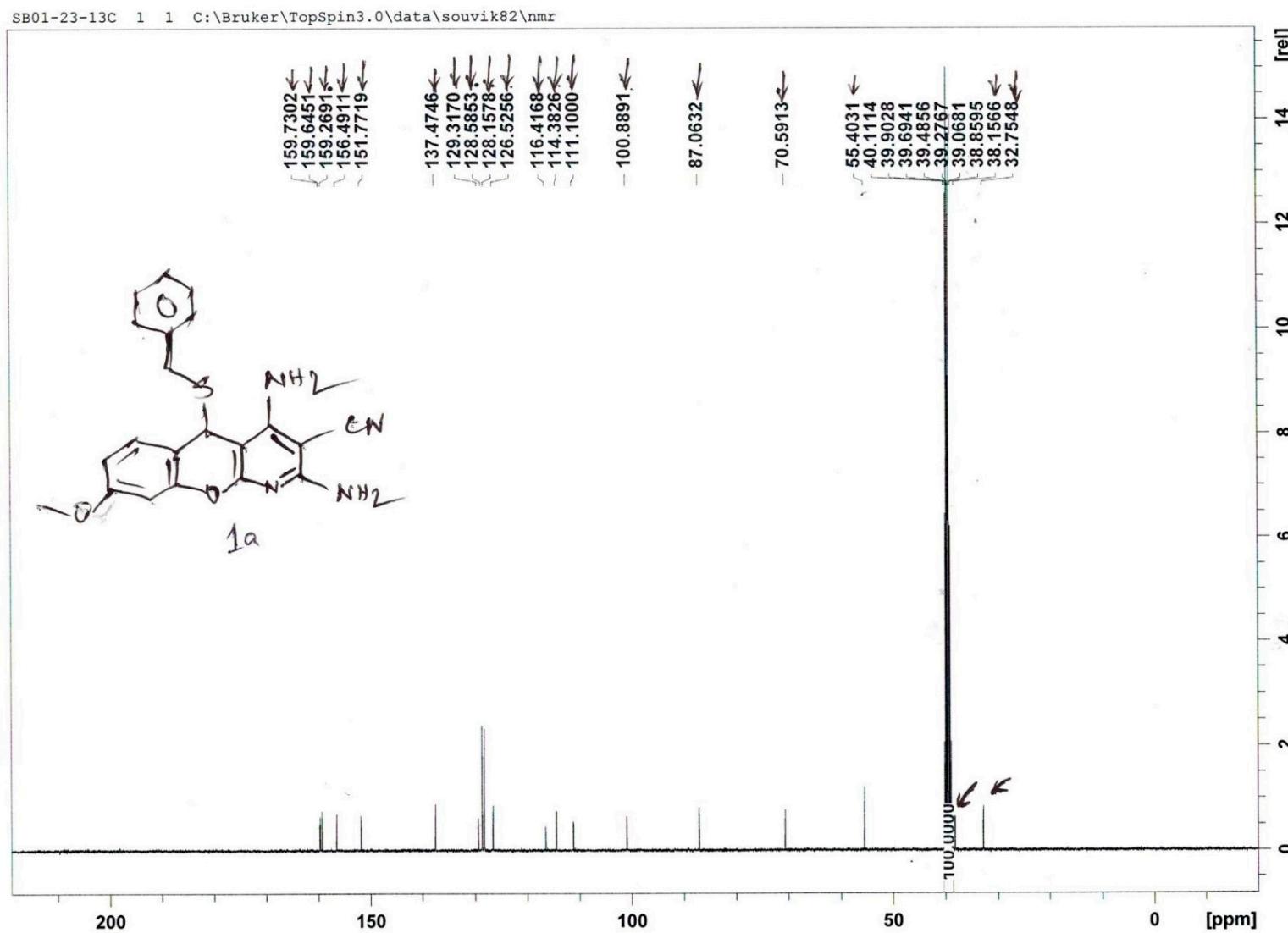


Figure S2. ¹³C-NMR of 1a.

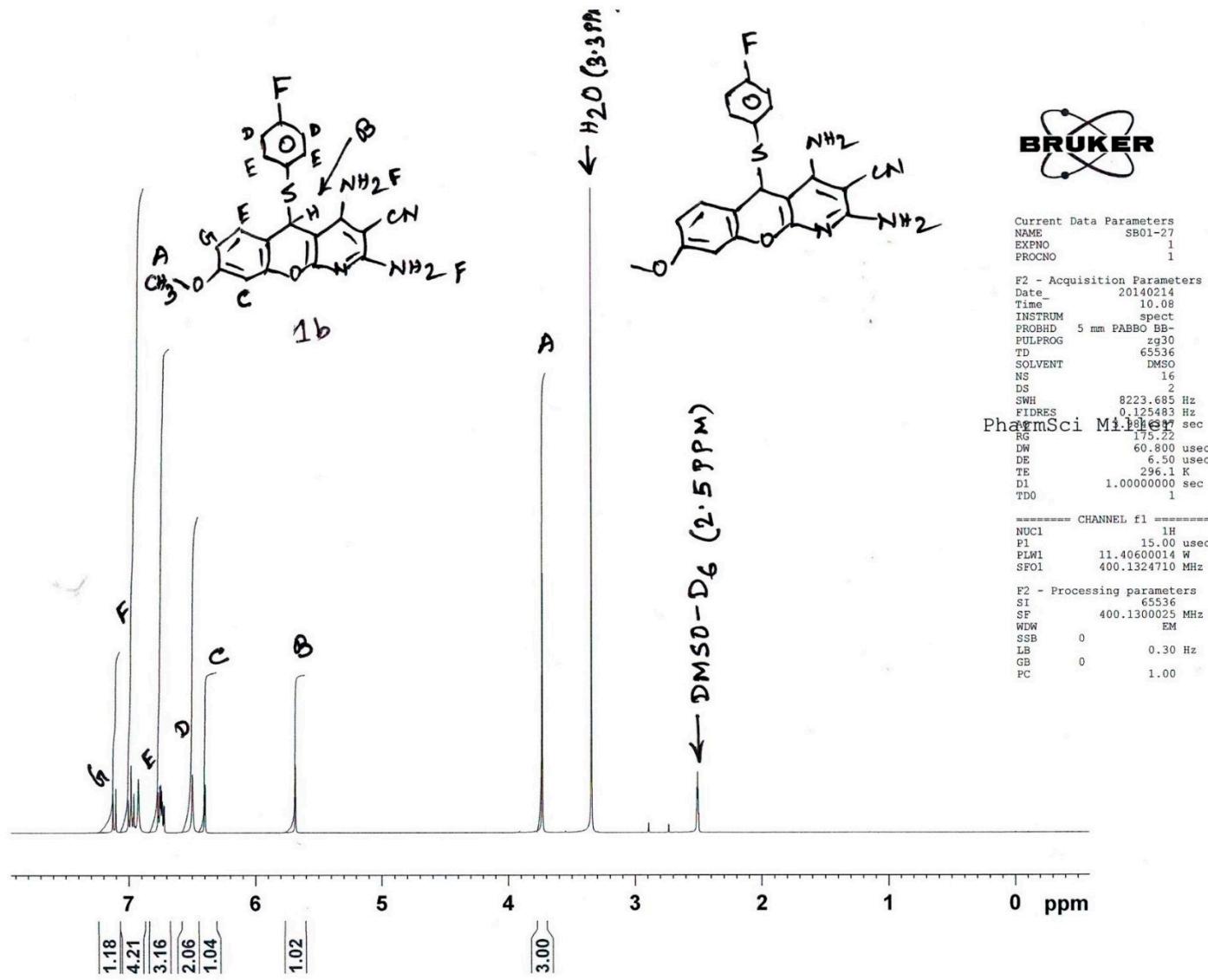


Figure S3. ¹H-NMR of 1b.

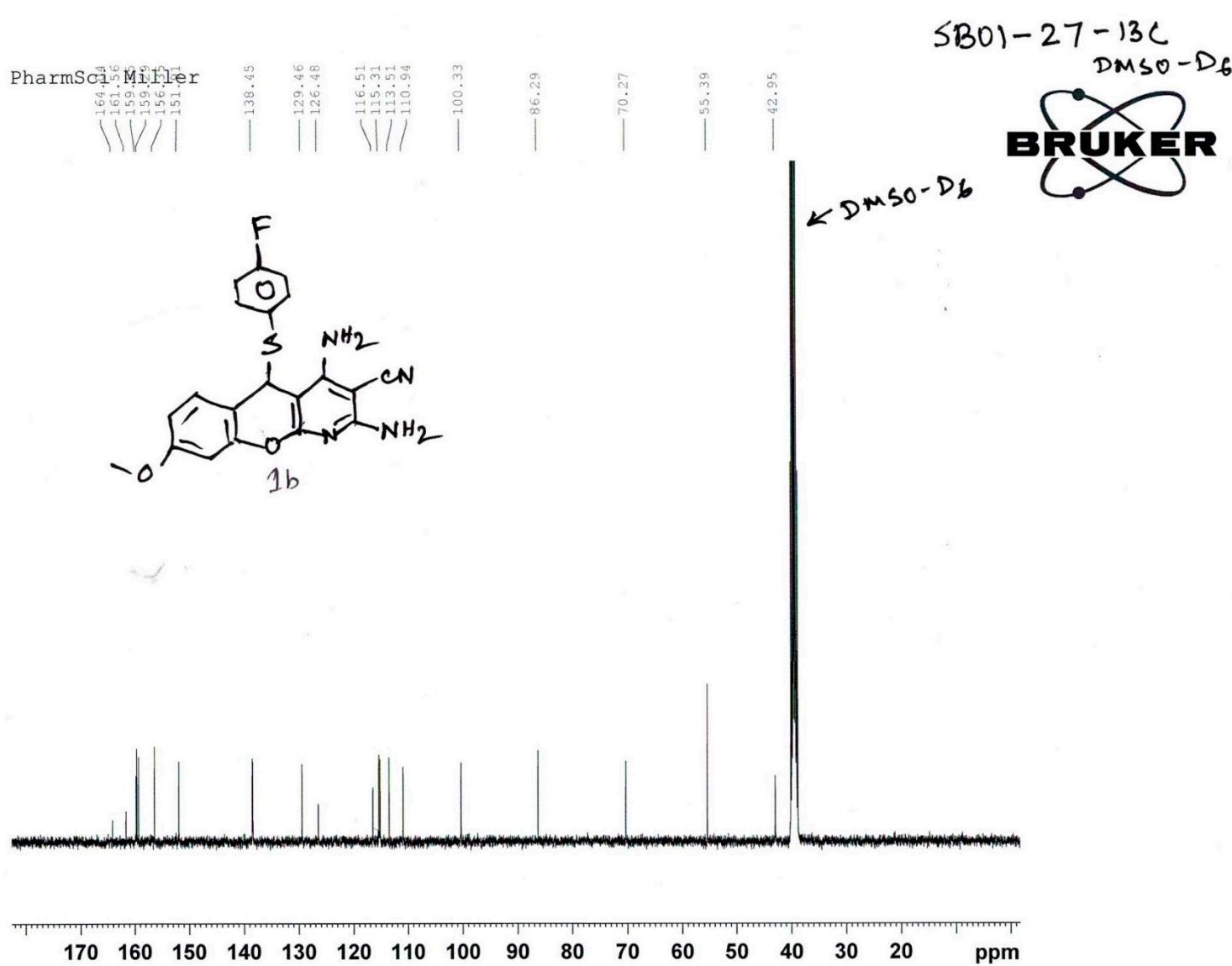


Figure S4. ¹³C-NMR of 1b.

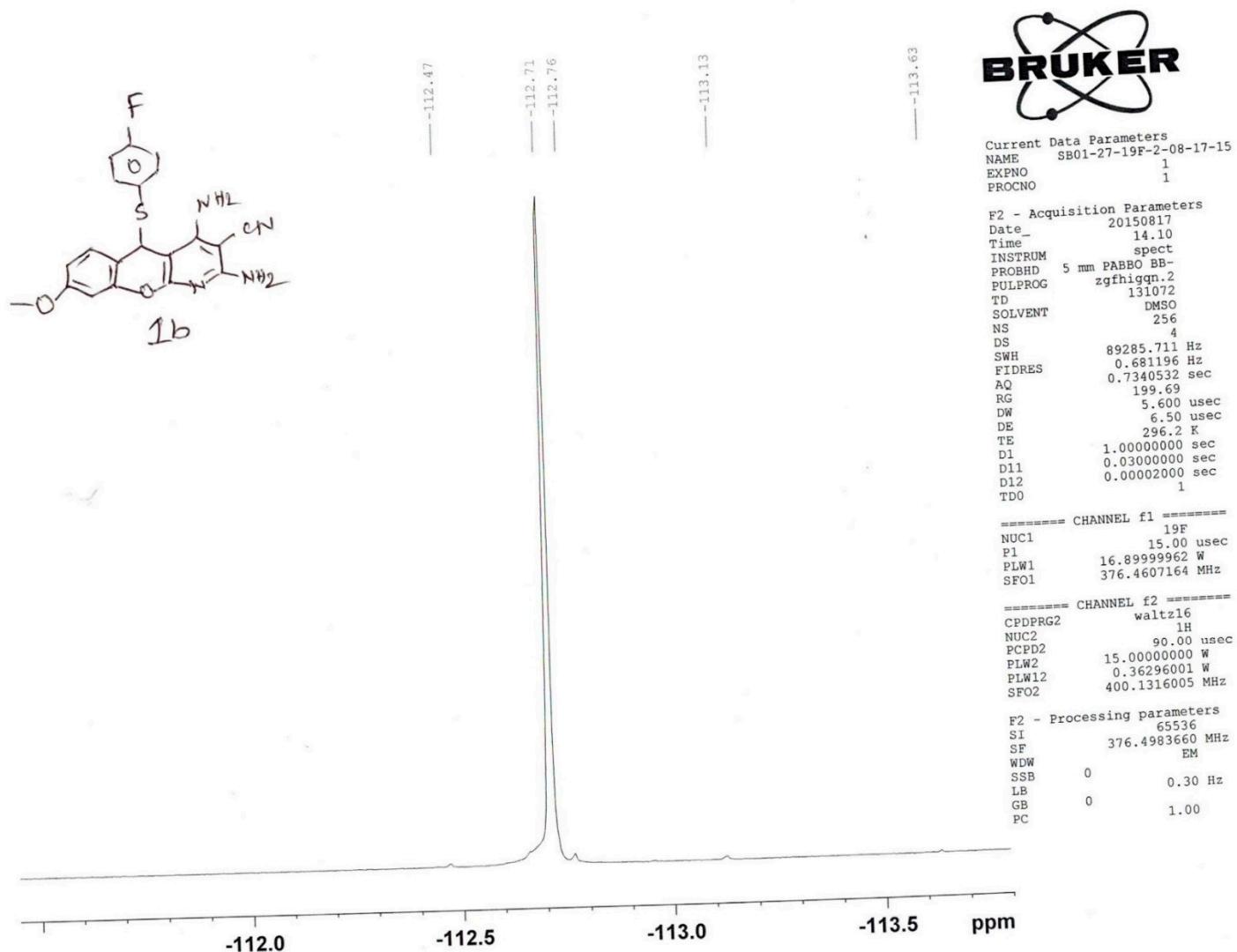
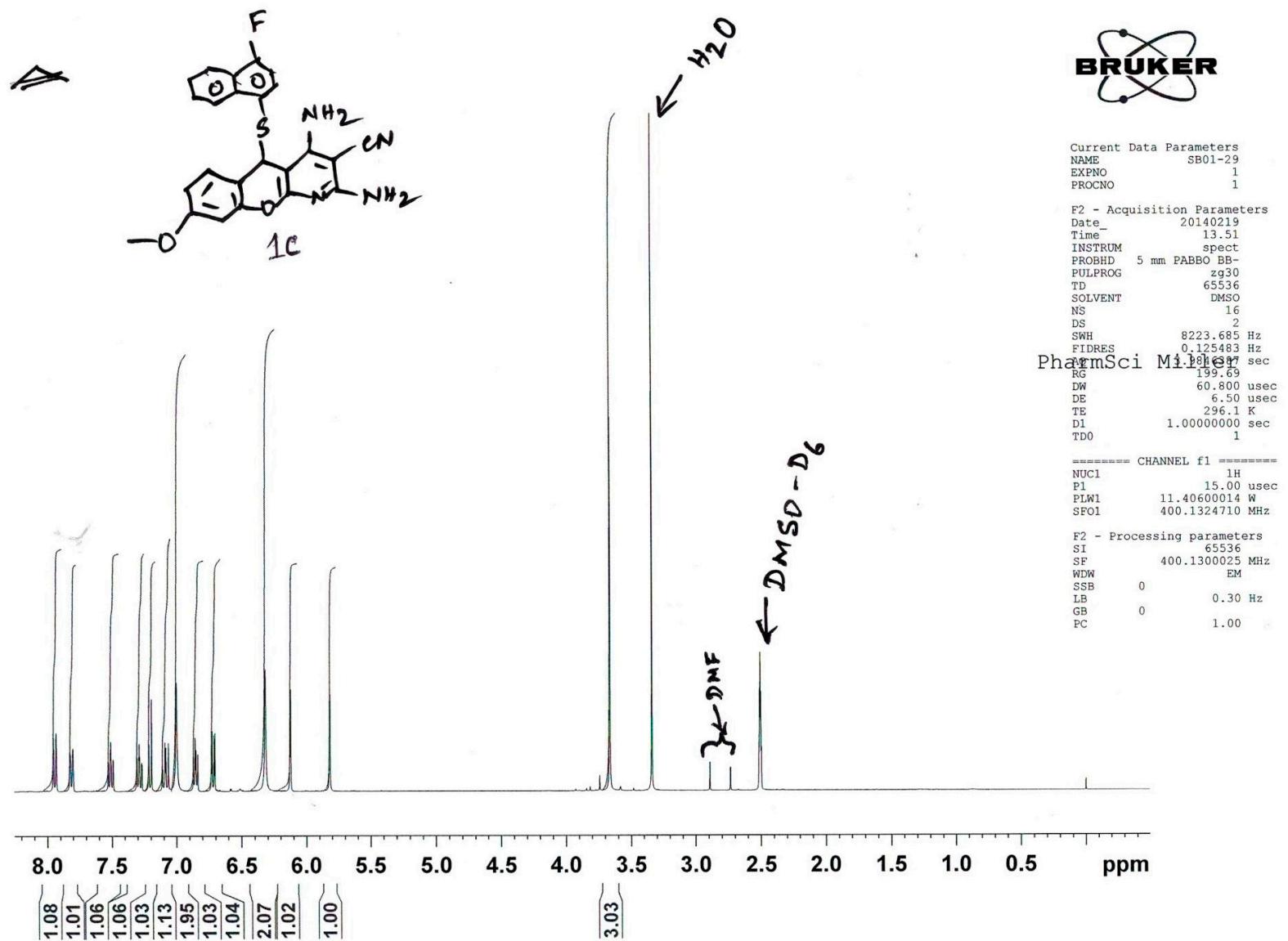


Figure S5. ¹⁹F-NMR of **1b**.

Figure S6. ¹H-NMR of 1c.

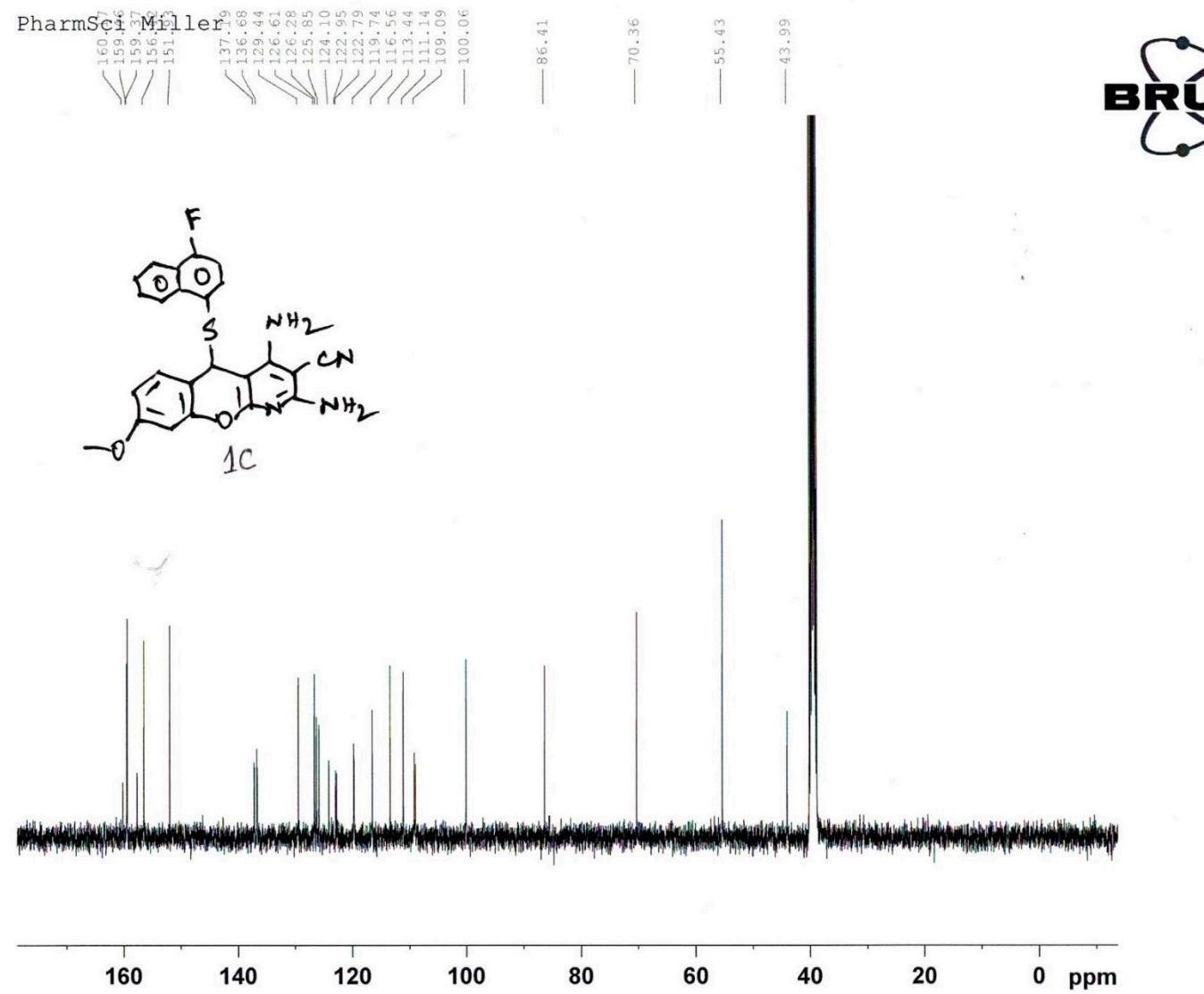
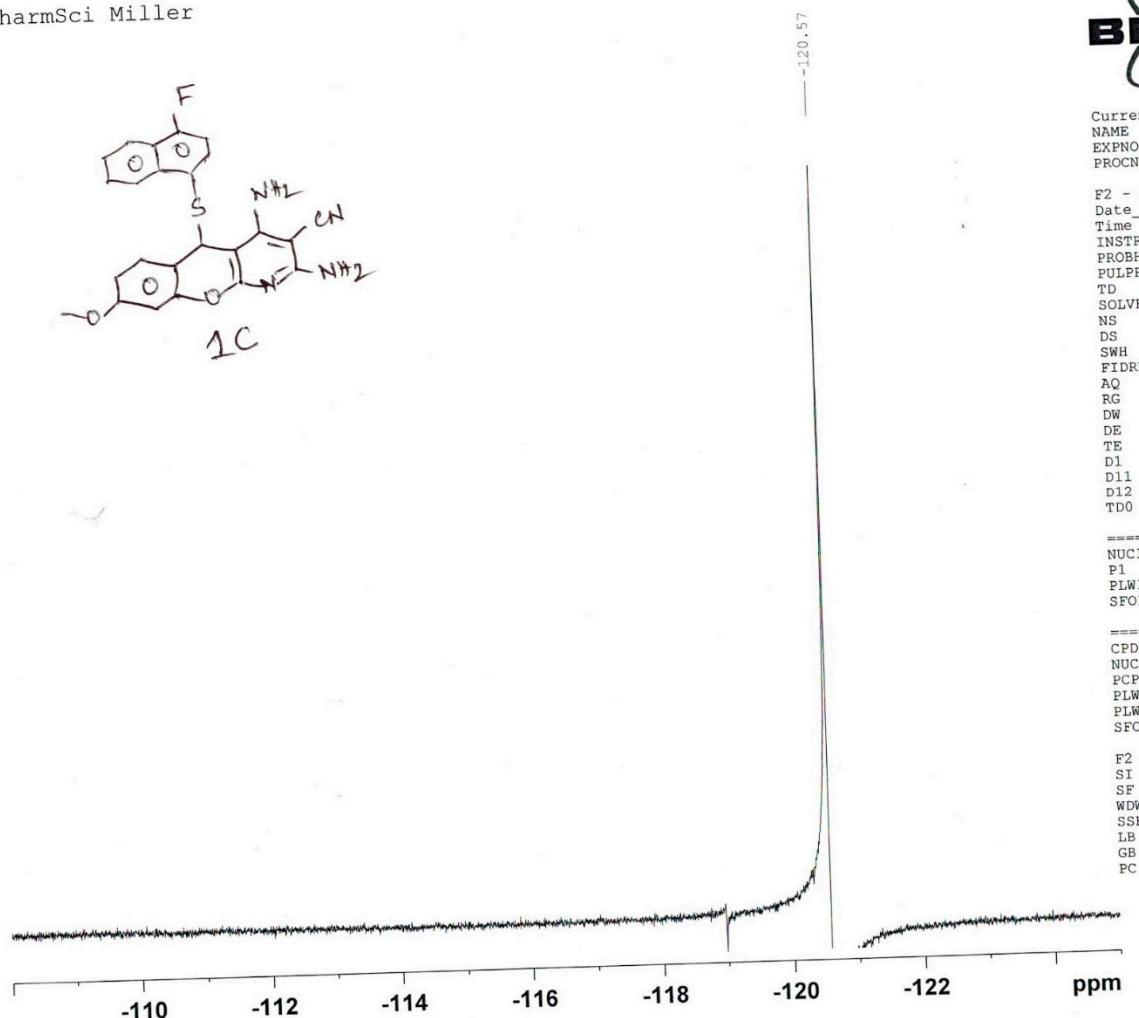
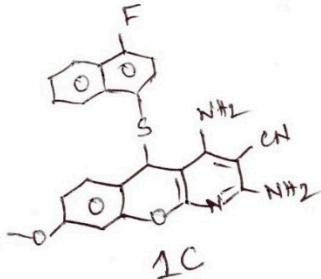


Figure S7. ¹³C-NMR of **1c**.

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 PROCNO 1

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 Time 14.21
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 PULPROG zgfhqgn.2
 TD 131072
 SOLVENT DMSO
 NS 256
 DS 4
 SWH 89285.711 Hz
 FIDRES 0.681196 Hz
 AQ 0.7340532 sec
 RG 199.69
 DE 6.50 usec
 DW 5.600 usec
 DE 6.50 usec
 TE 296.3 K
 D1 1.0000000 sec
 D11 0.03000000 sec
 D12 0.00002000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 19F
 P1 15.00 usec
 PLW1 16.8999962 W
 SF01 376.4607164 MHz

===== CHANNEL f2 =====
 CPDPRG2 waltz16
 NUC2 1H
 PCPD2 90.00 usec
 PLW2 15.0000000 W
 PLW12 0.36296001 W
 SF02 400.1316005 MHz

F2 - Processing parameters
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 WDW EM
 SSB 0 0.30 Hz
 LB 0
 GB 0 1.00
 PC

Figure S8. ^{19}F -NMR of **1c**.

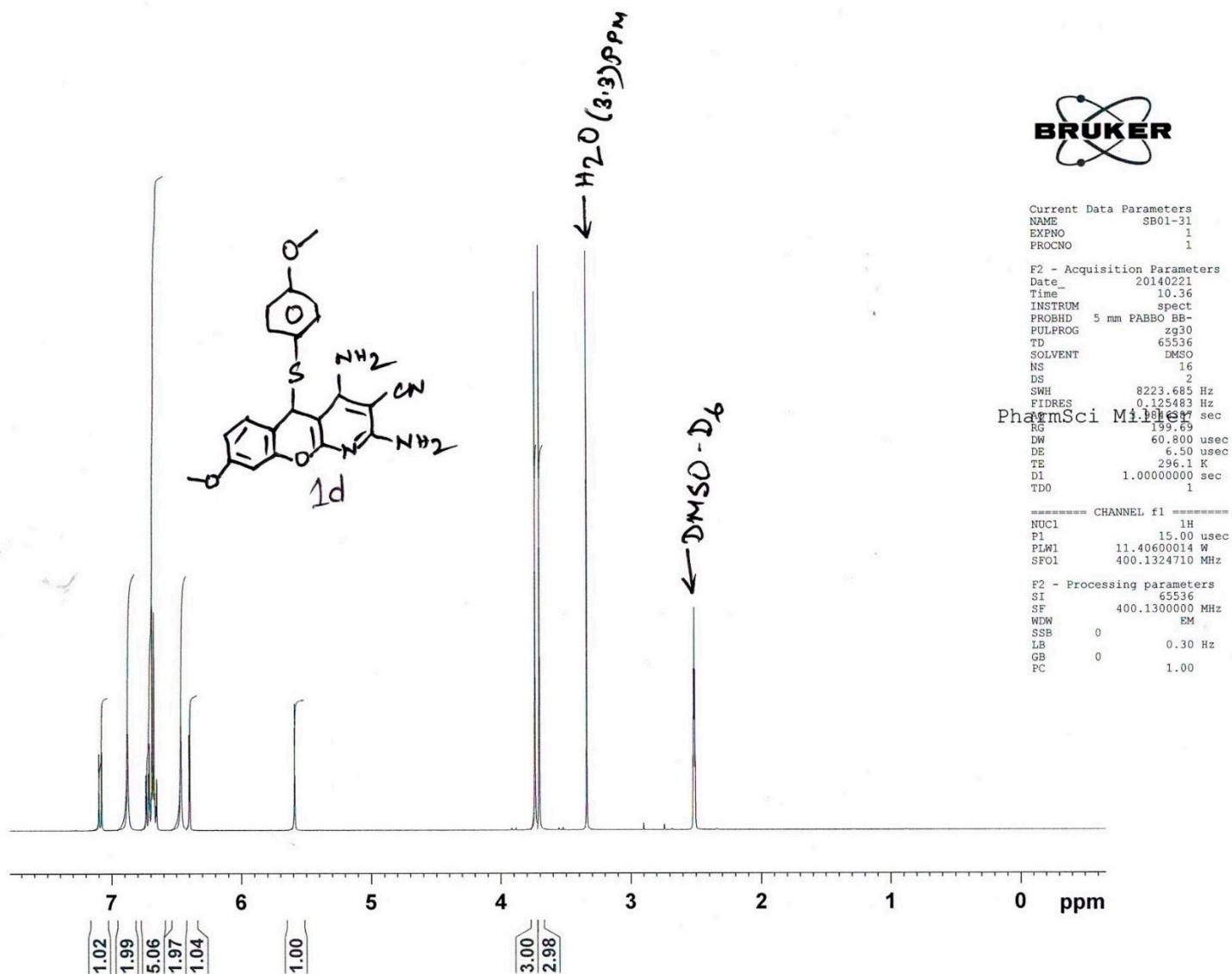


Figure S9. ^1H -NMR of **1d**.

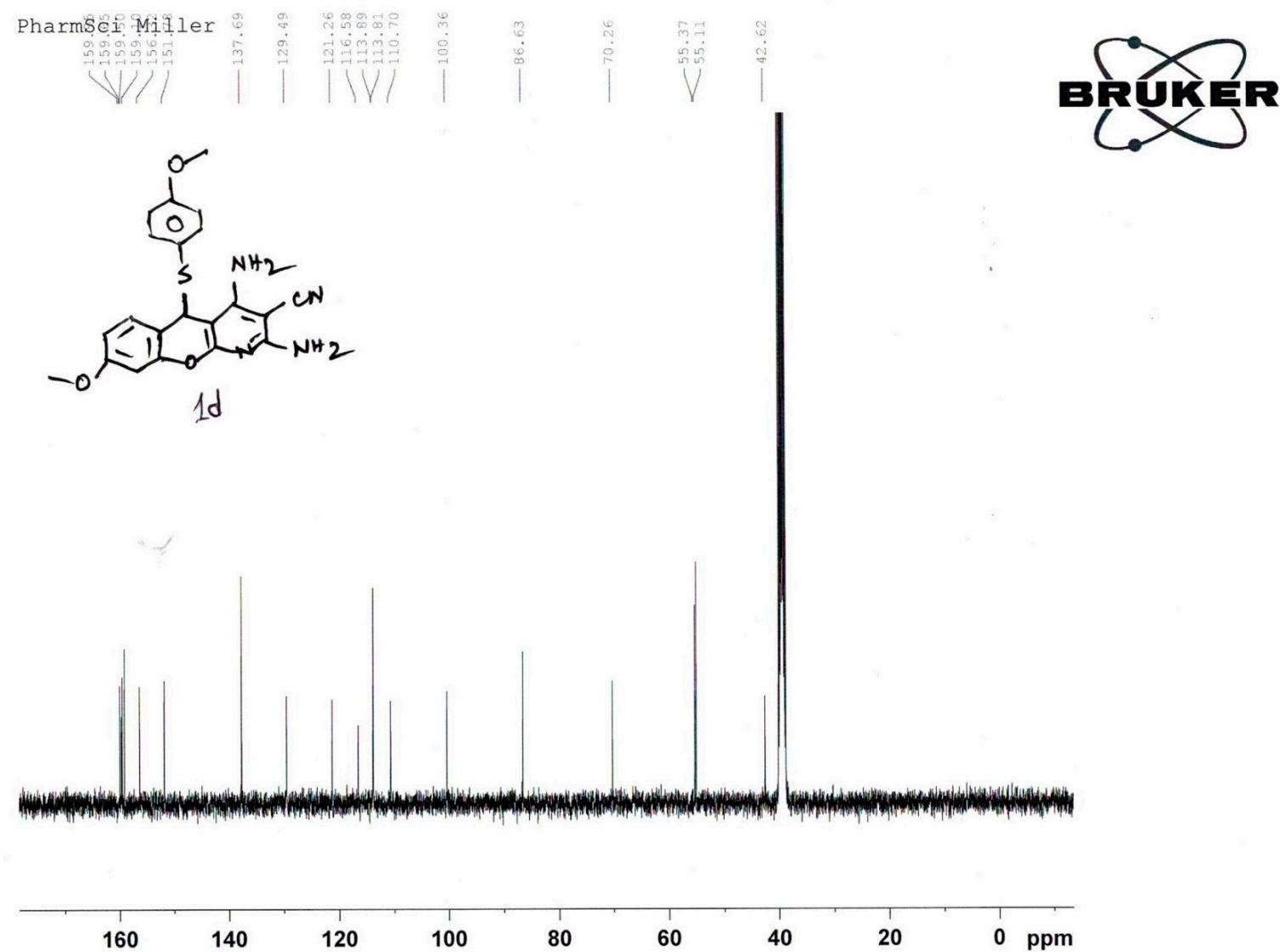


Figure S10. ¹³C-NMR of **1d**.



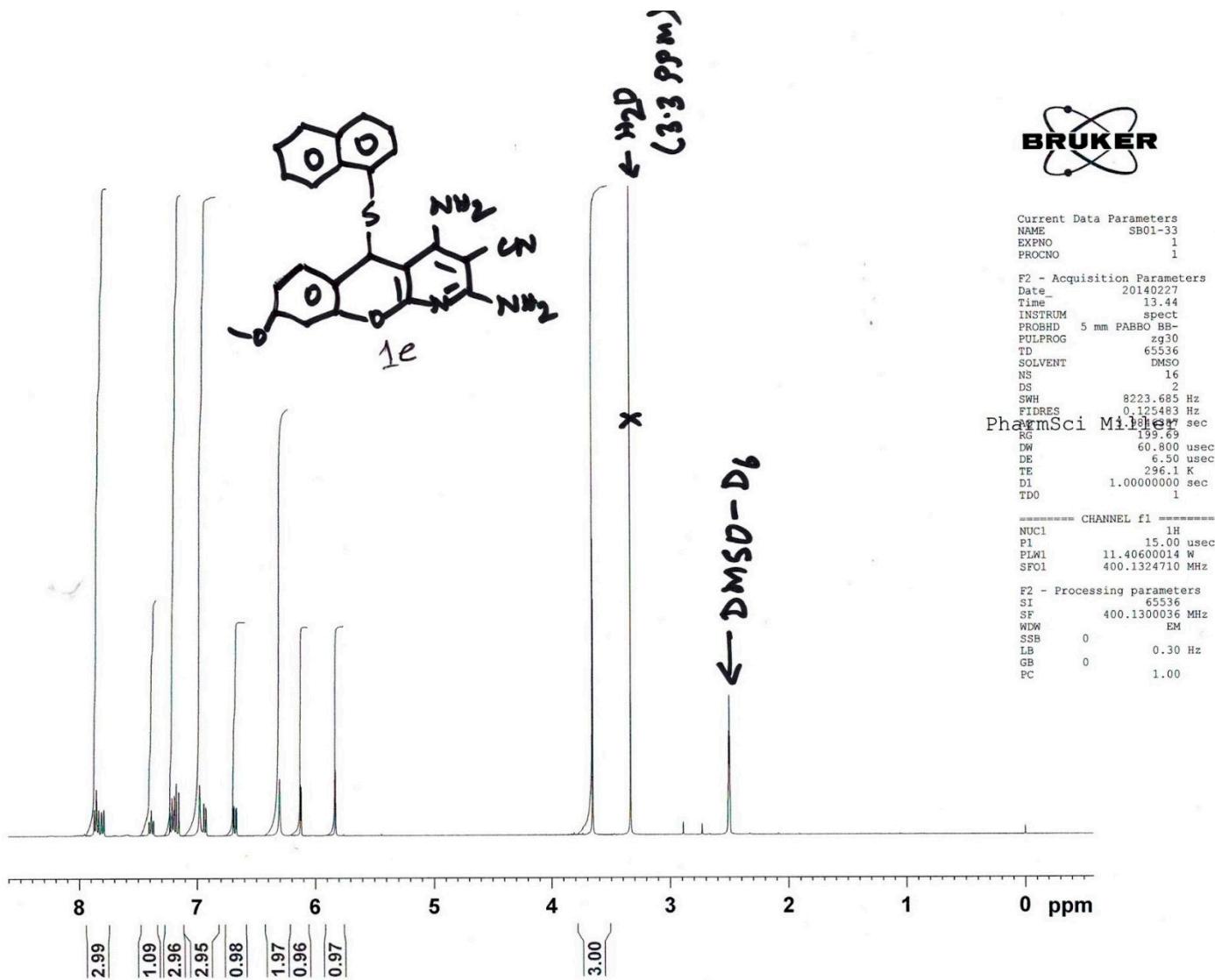
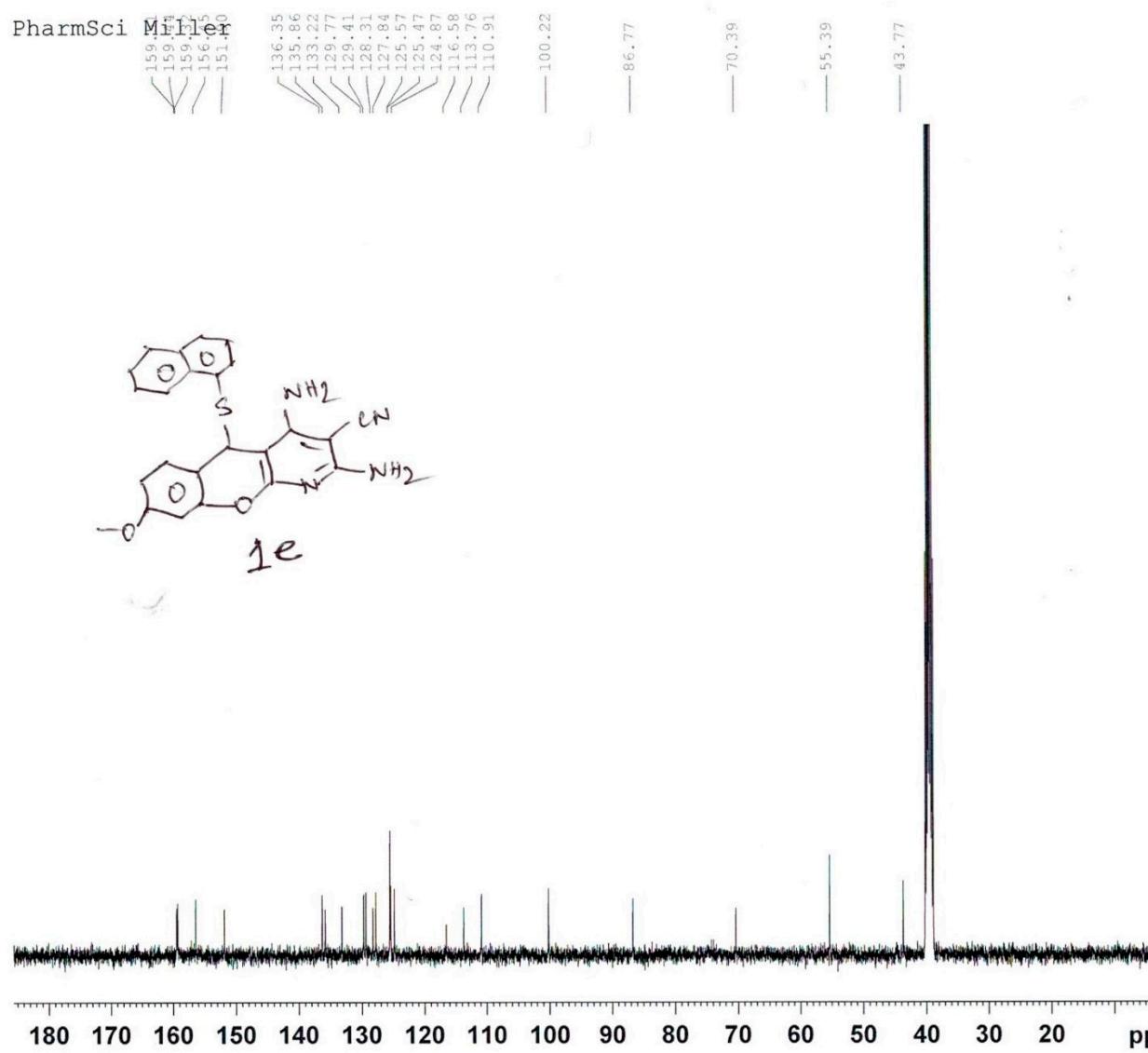


Figure S11. ^1H -NMR of **1e**.

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PROCNO

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Time_
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PULPROG
TD
SOLVENT
NS
DS
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FIDRES 0.3
AQ 1.36
RG 1
DW 1
DE 1
TE 1
D1 2.000
D11 0.030
TDO

CHANNEL f
NUC1
P1
PLW1 56.000
SFO1 100.62

CHANNEL f
CPDPRG2
NUC2
PCPD2
PLW2 15.000
PLW12 0.362
PLW13 0.294
SFO2 400.10

F2 - Processing pa
SI 100.61
SF
WDW
SSB 0
LB 0
GB 0
PC

Figure S12. ¹³C-NMR of 1e.

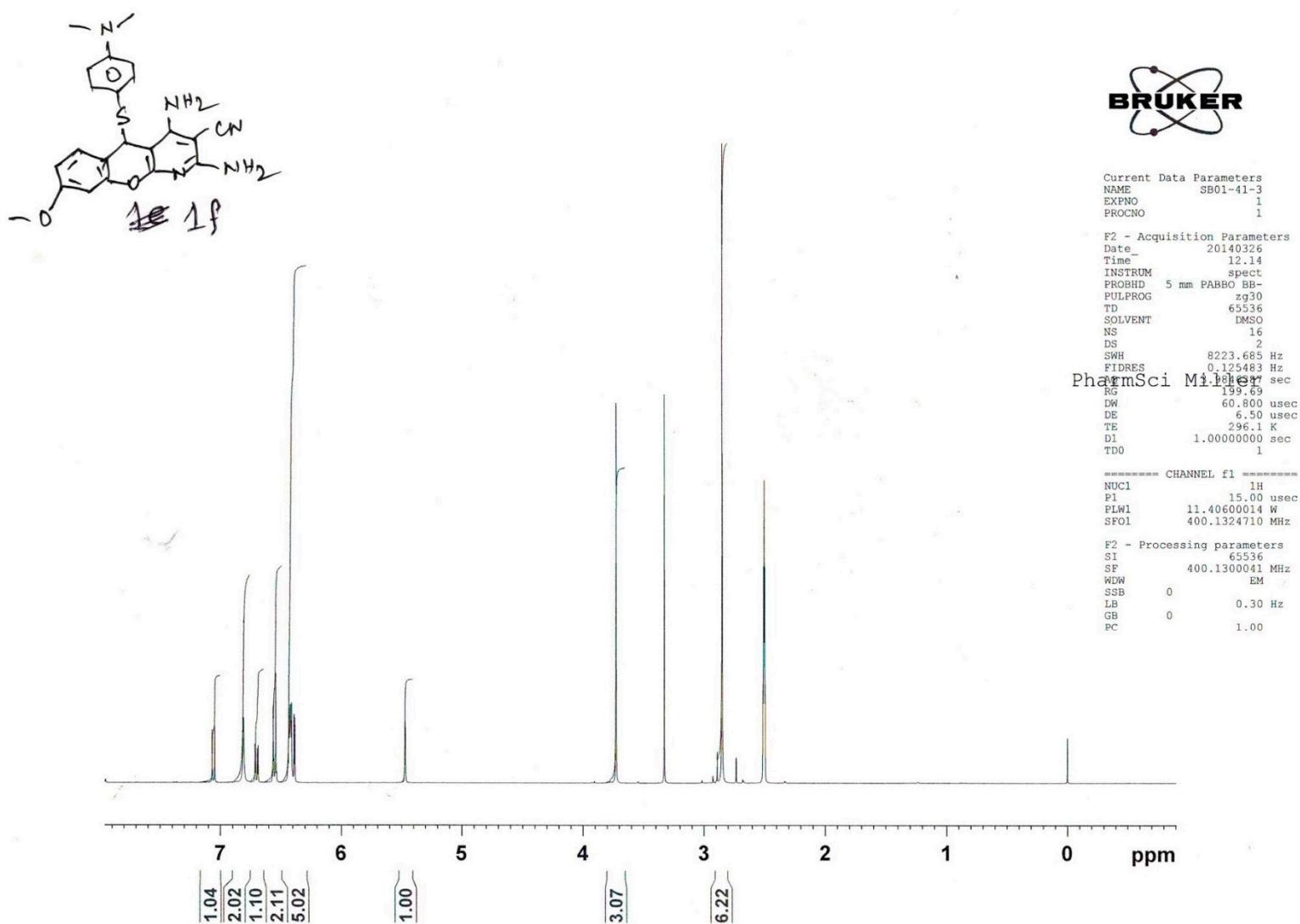


Figure S13. ^1H -NMR of **1f**.

SB01-40-13c

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159.27
159.12
158.77
156.10
151.10
150.00Miller³

137.53

129.53

116.62

115.10

114.25

111.61

110.50

100.35

86.96

70.28

55.34

42.44

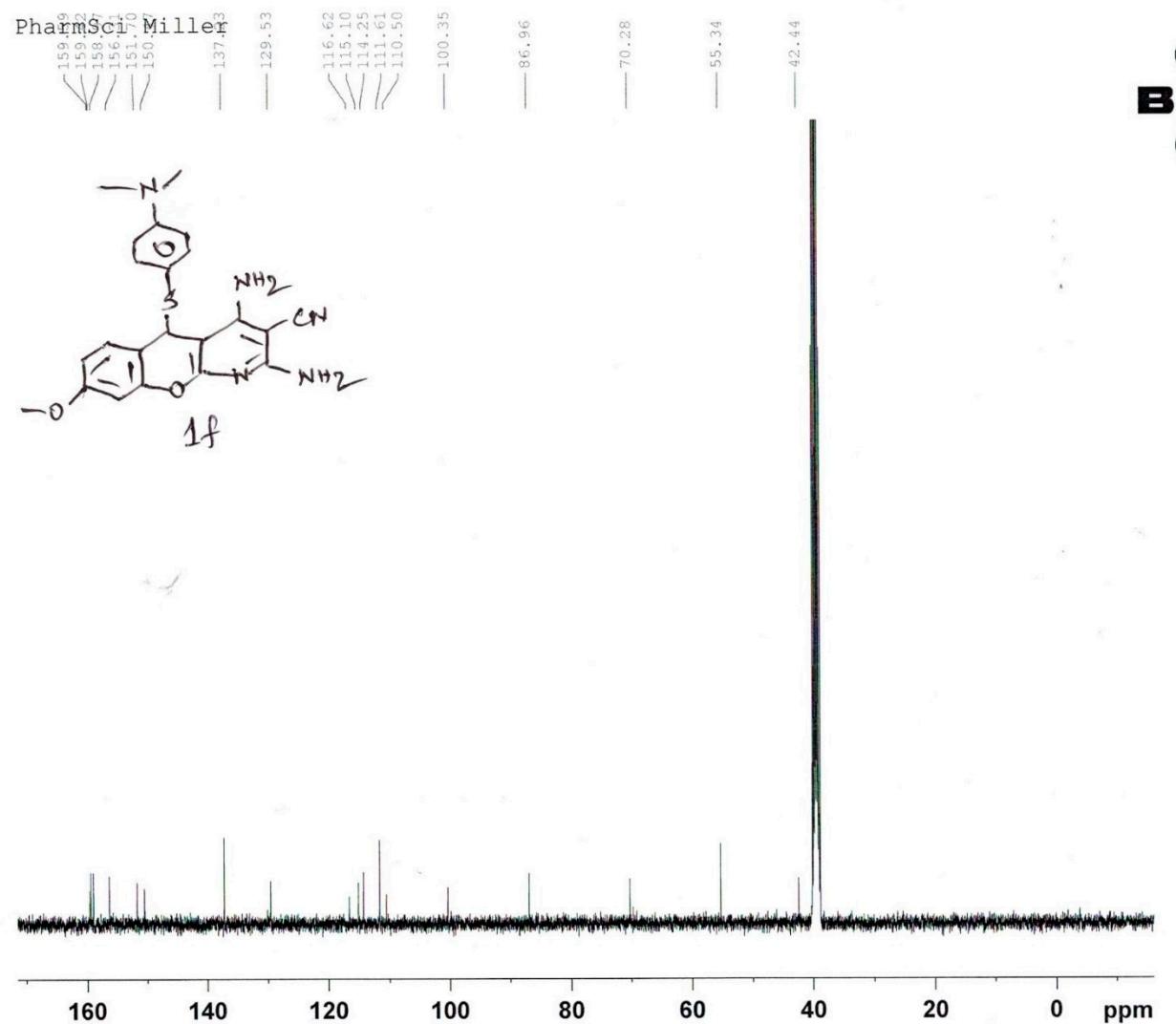
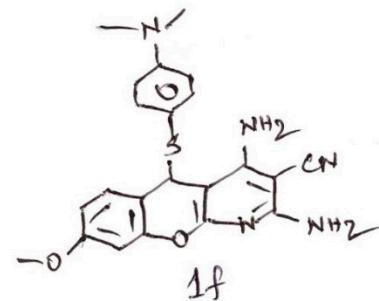


Figure S14. ¹³C-NMR of **1f**.

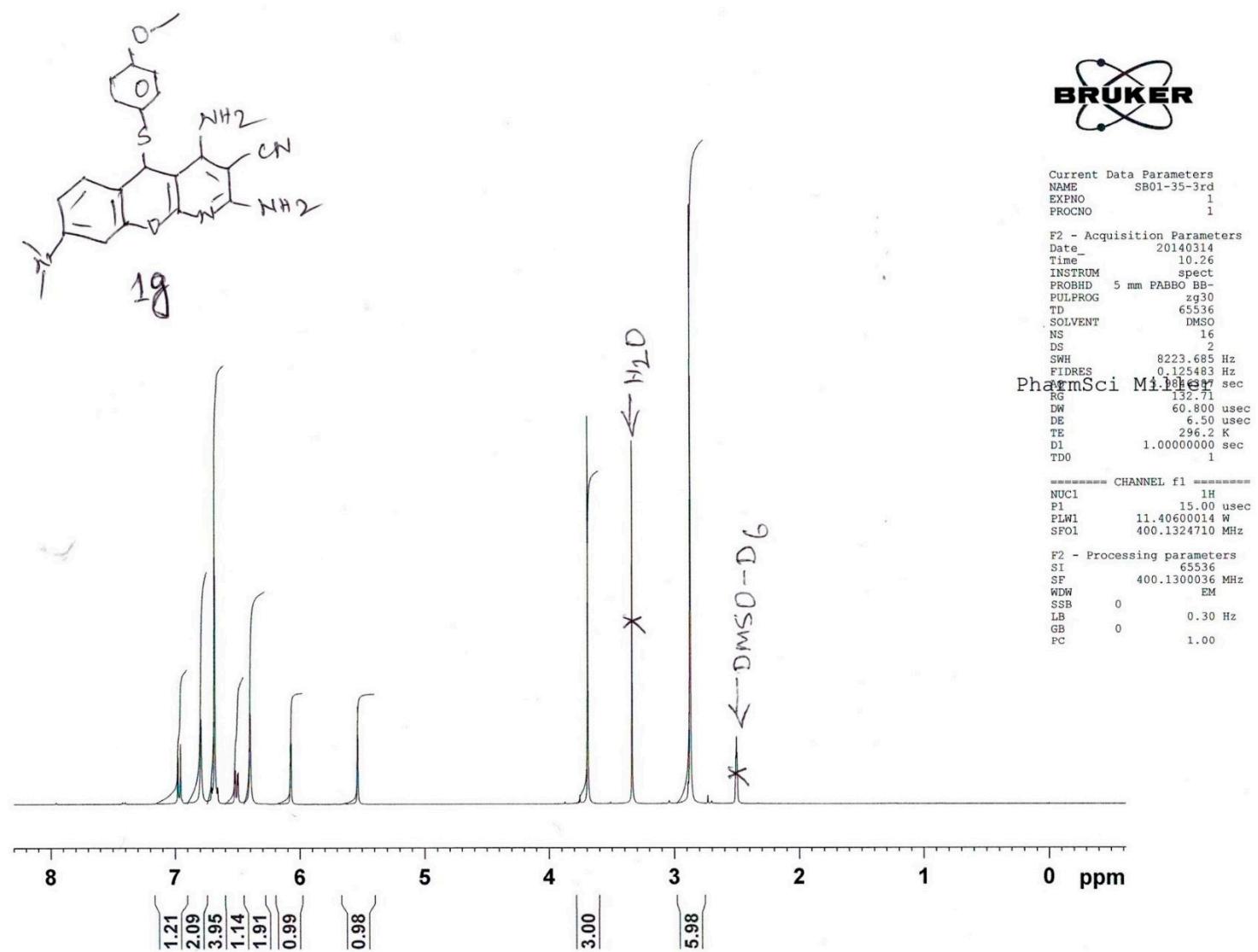


Figure S15. ^1H -NMR of **1g**.

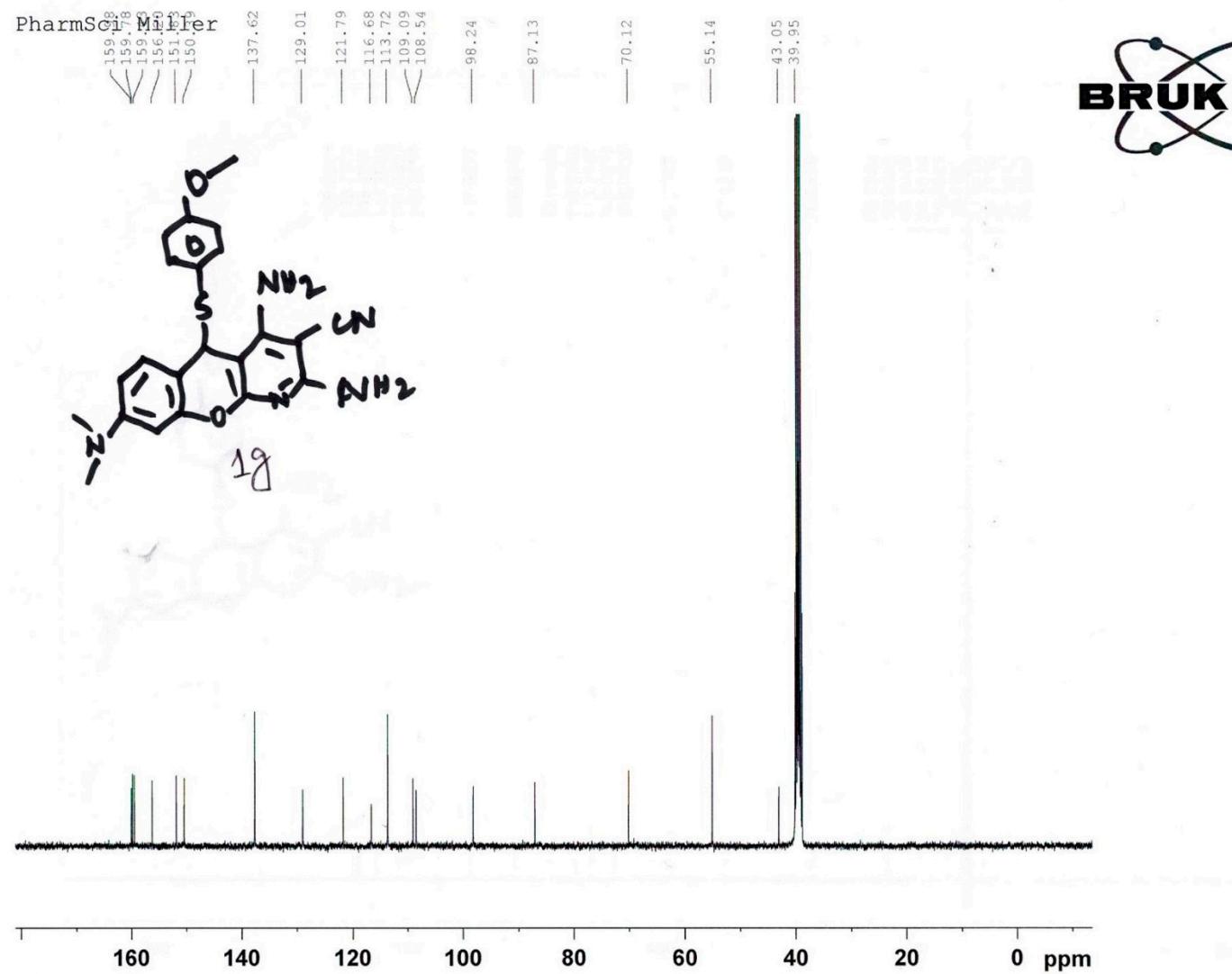


Figure S16. ¹³C-NMR of 1g.

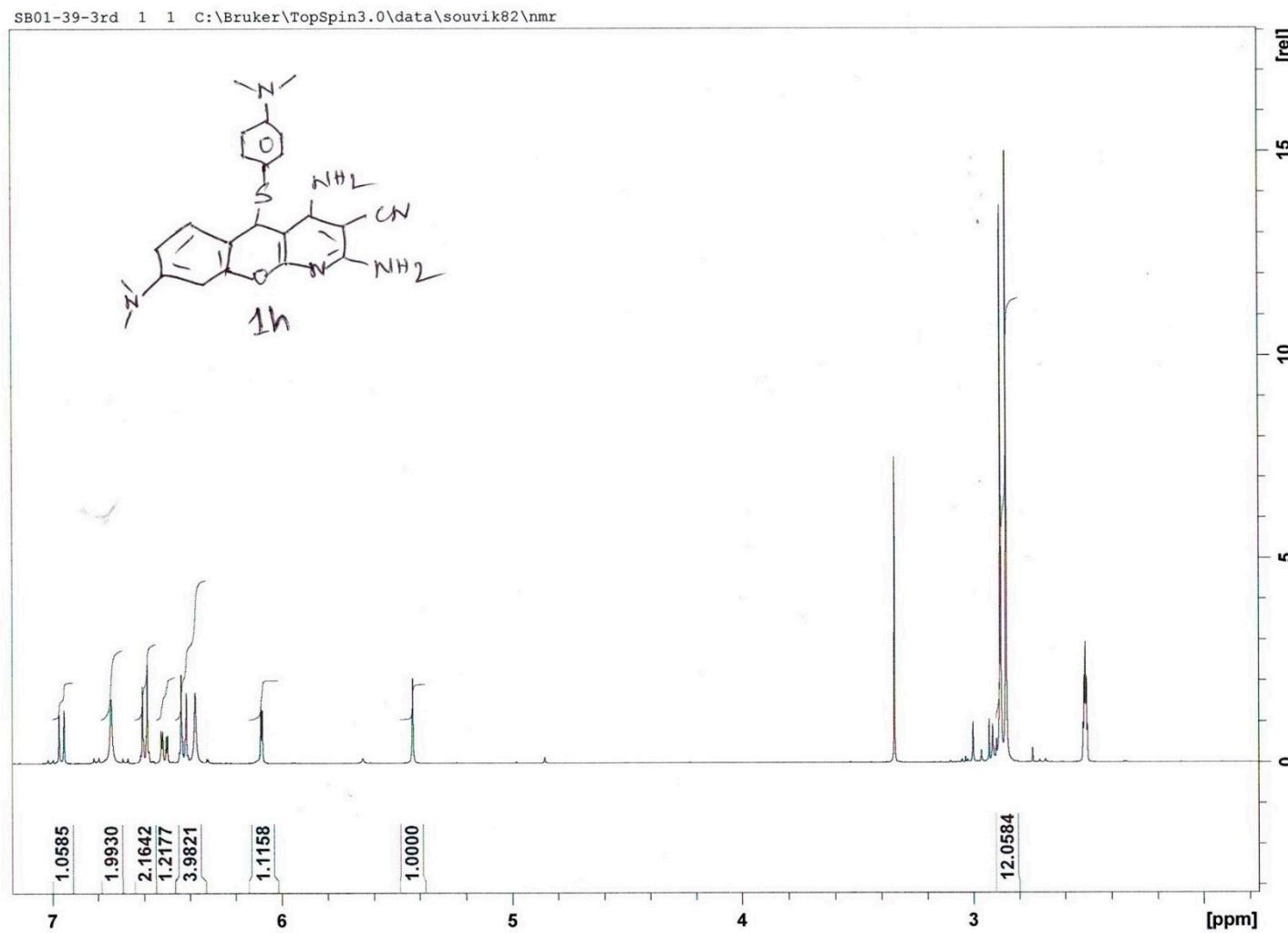


Figure S17. ¹H-NMR of **1h**.

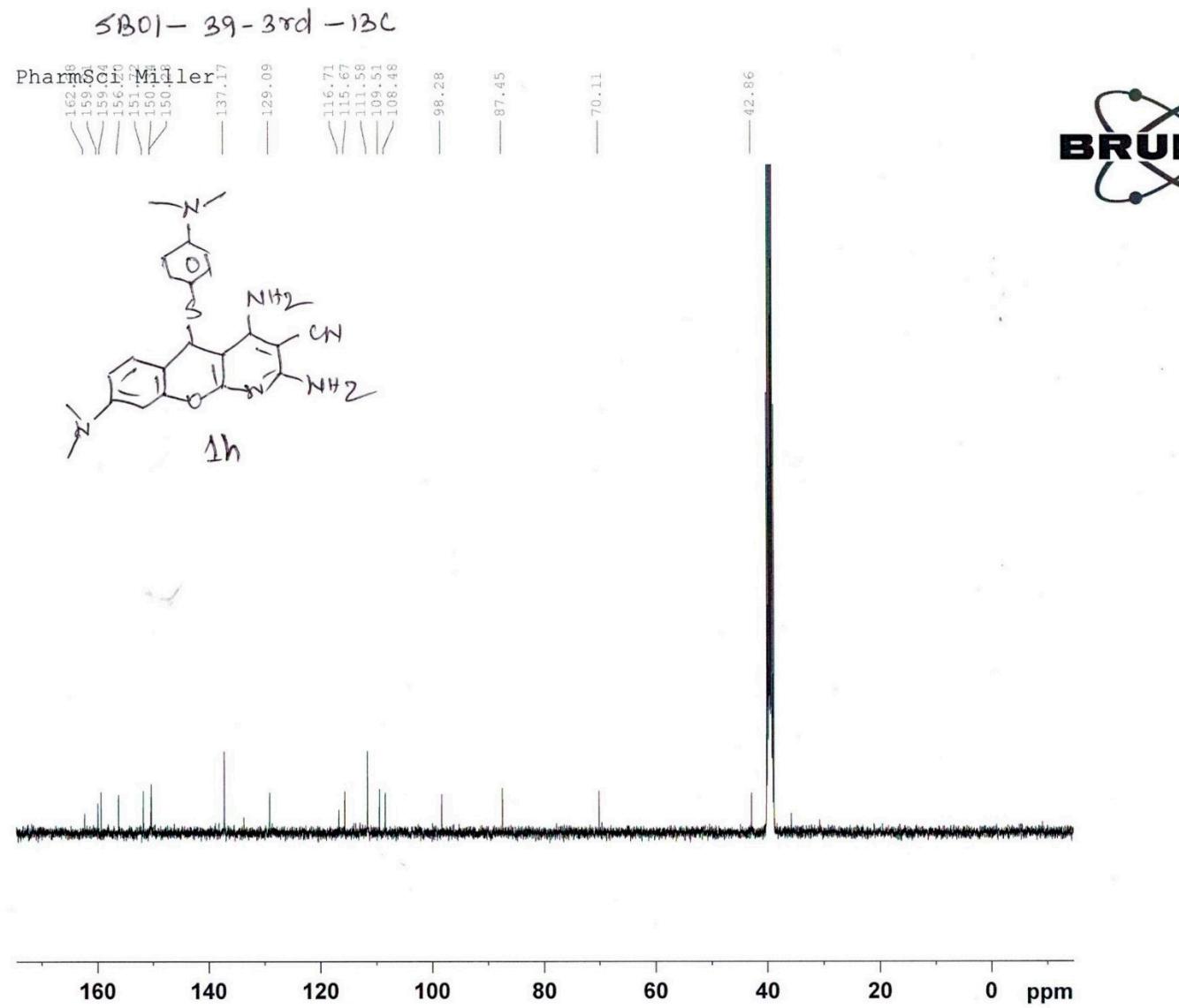


Figure S18. ^{13}C -NMR of **1h**.



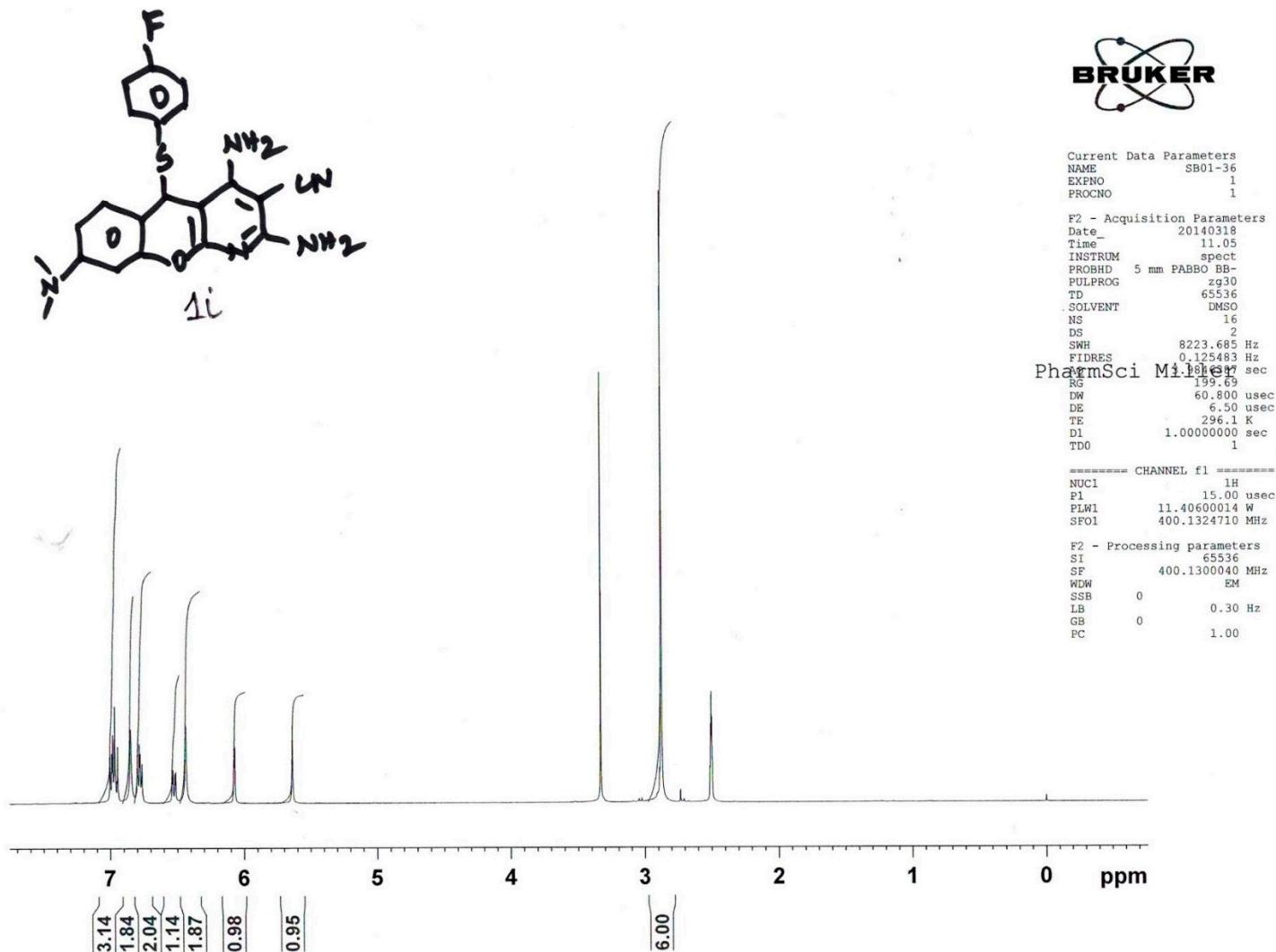


Figure S19. ^1H -NMR of **1i**.

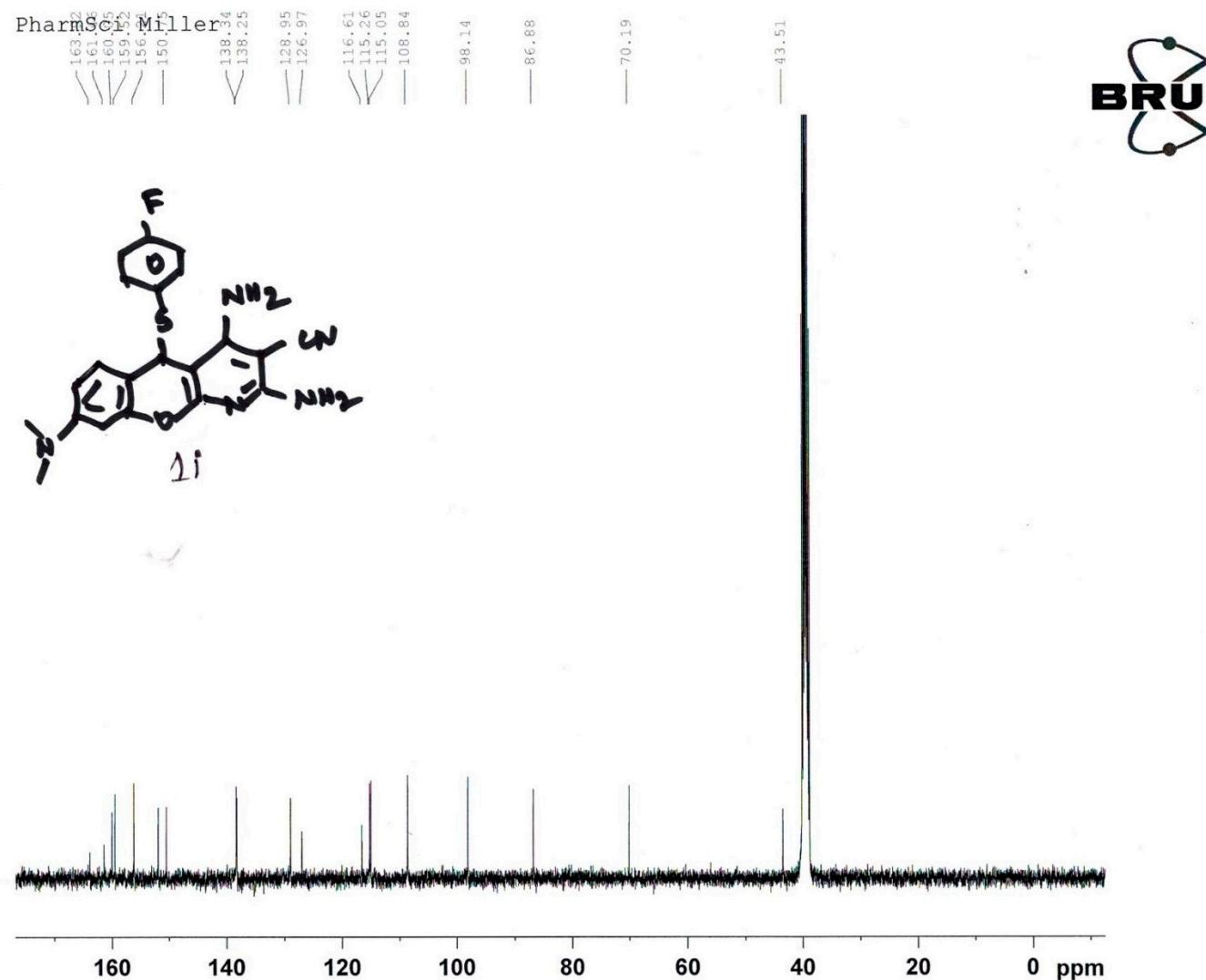
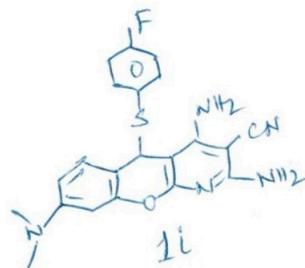


Figure S20. ¹³C-NMR of **1i**.

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-113.05
-113.63**BRÜKÉR**

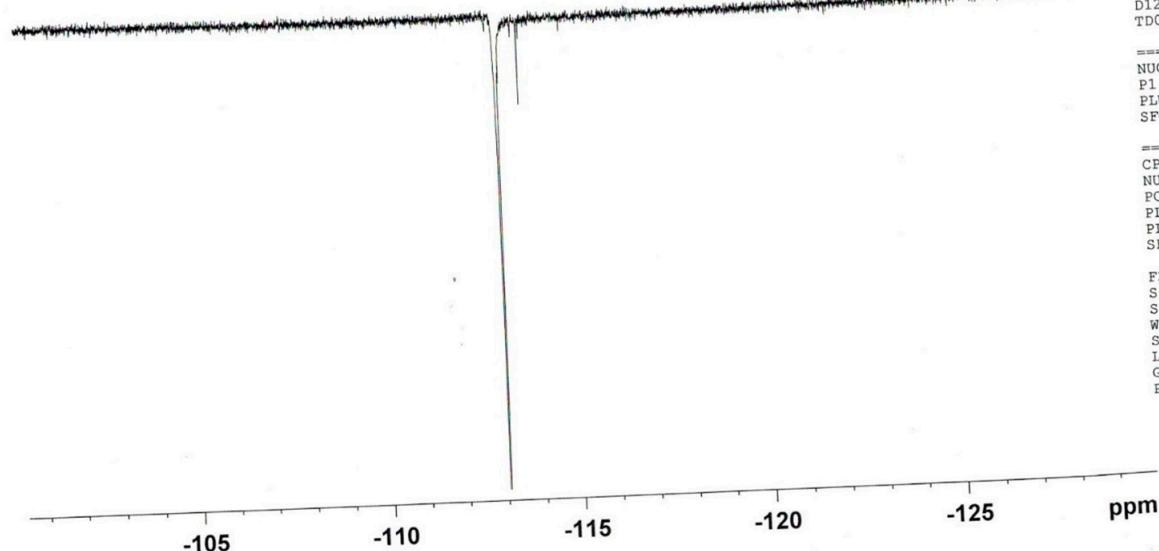
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 TD DMSO
 SOLVENT 256
 NS 4
 DS 89285.711 Hz
 SWH 0.681196 Hz
 FIDRES 0.7340532 sec
 AQ 199.69
 RG 5.600 usec
 DW 6.50 usec
 DE 296.3 K
 TE 1.0000000 sec
 D1 0.03000000 sec
 D11 0.00002000 sec
 D12 1
 TDO

===== CHANNEL f1 ====== 19F
 NUC1 19F
 P1 15.00 usec
 PLW1 16.89999962 W
 SFO1 376.4607164 MHz

===== CHANNEL f2 ====== waltz16
 CPDPRG2 1H
 NUC2 90.00 usec
 PCPD2 15.00000000 W
 PLW2 0.36296001 W
 PLW12 400.1316005 MHz
 SFO2

F2 - Processing parameters
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 SF EM
 WDW 0 0.30 Hz
 SSB LB
 LB 0 1.00
 GB PC

Figure S21. ¹⁹F-NMR of **1i**.

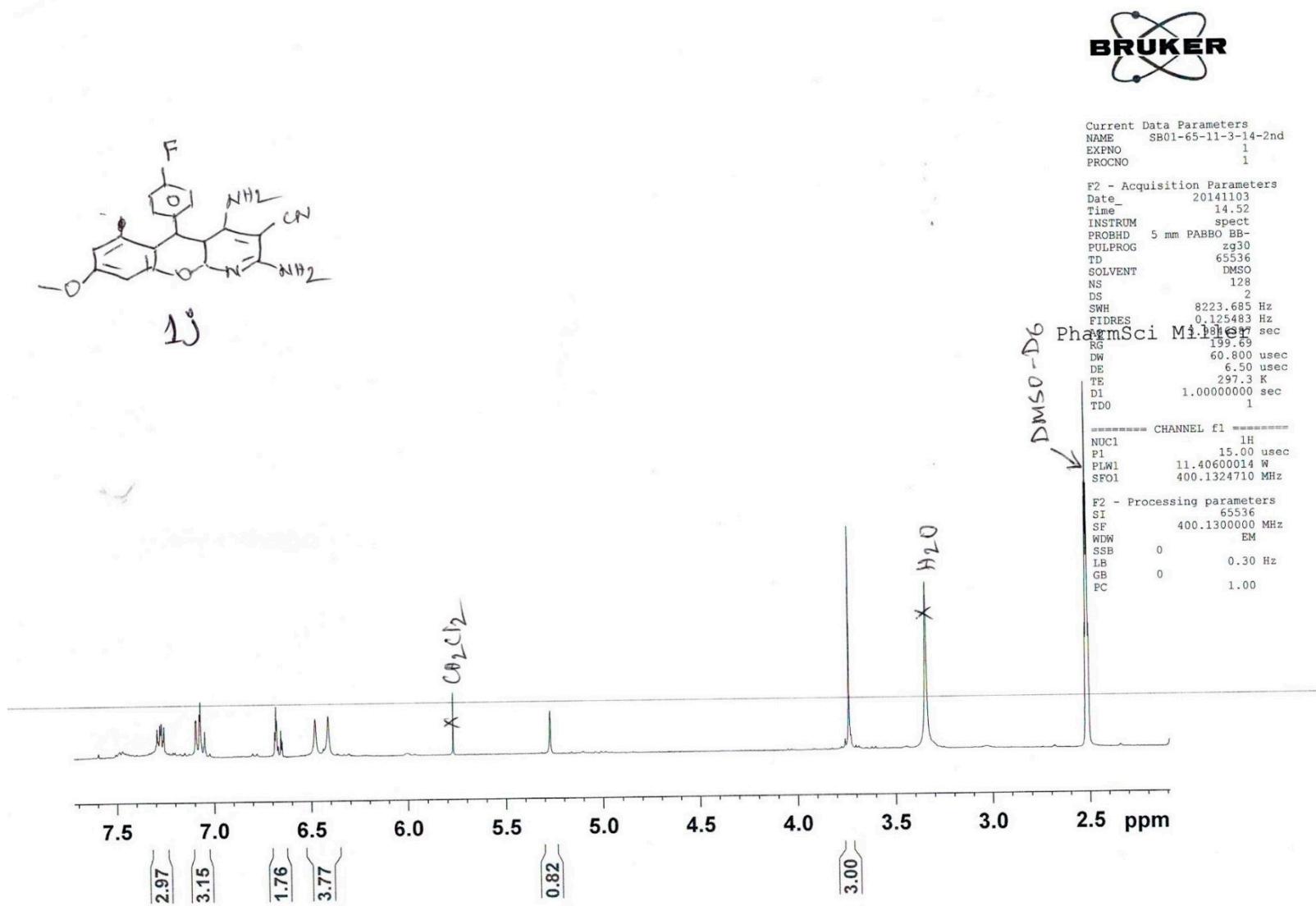


Figure S22. ¹H-NMR of **1j**.

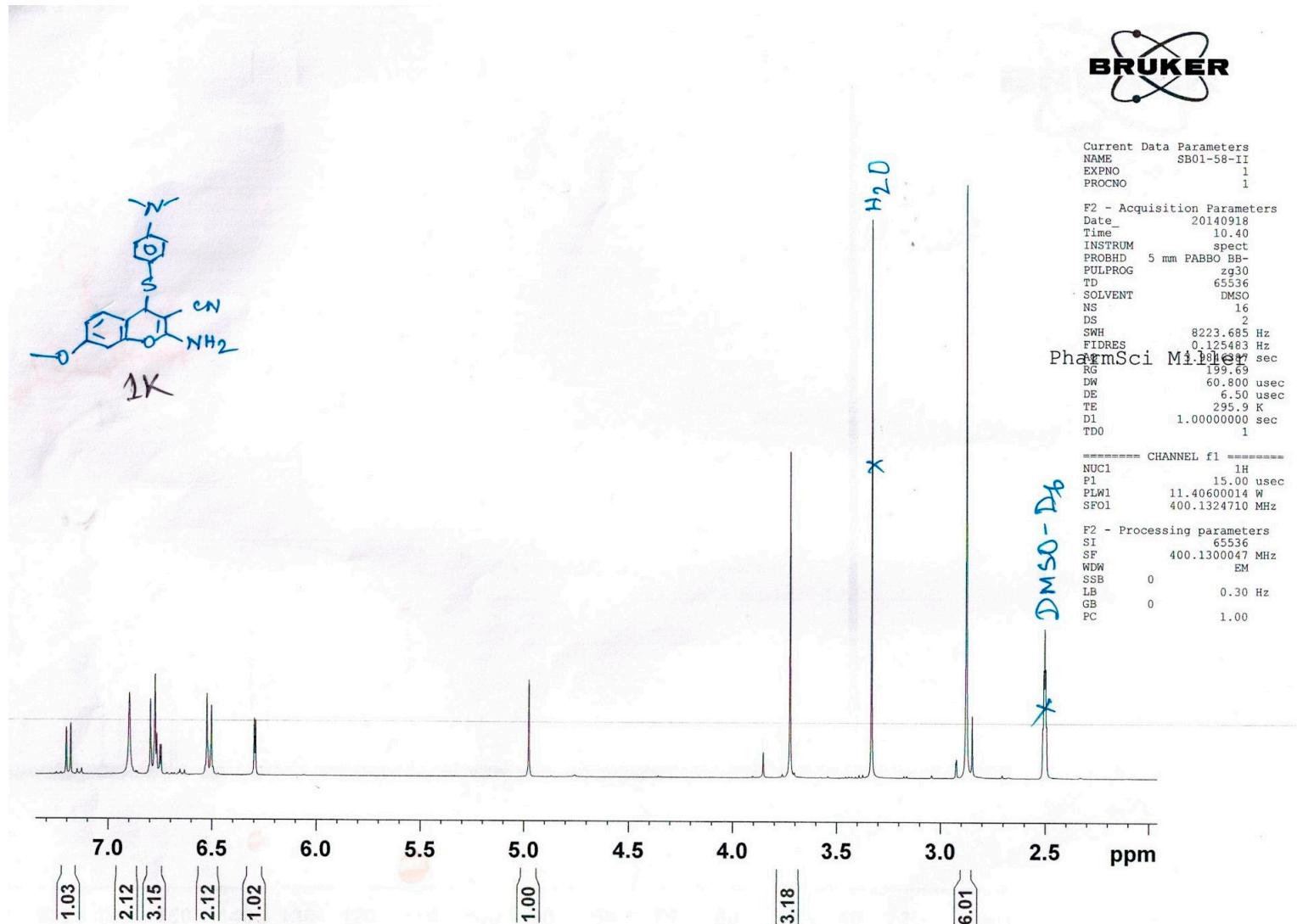


Figure S23. ^1H -NMR of **1k**.

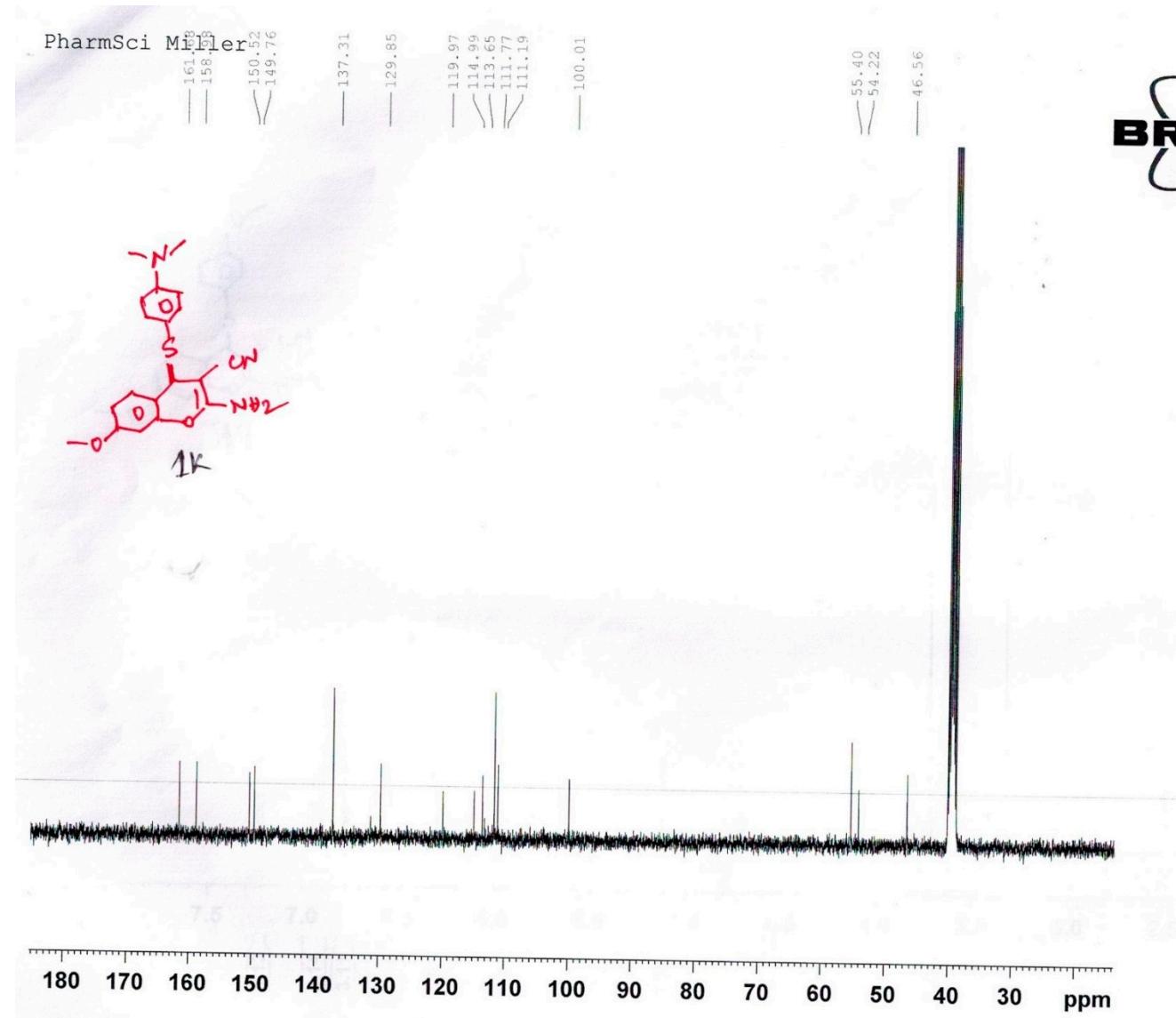


Figure S24. ¹³C-NMR of **1k**.

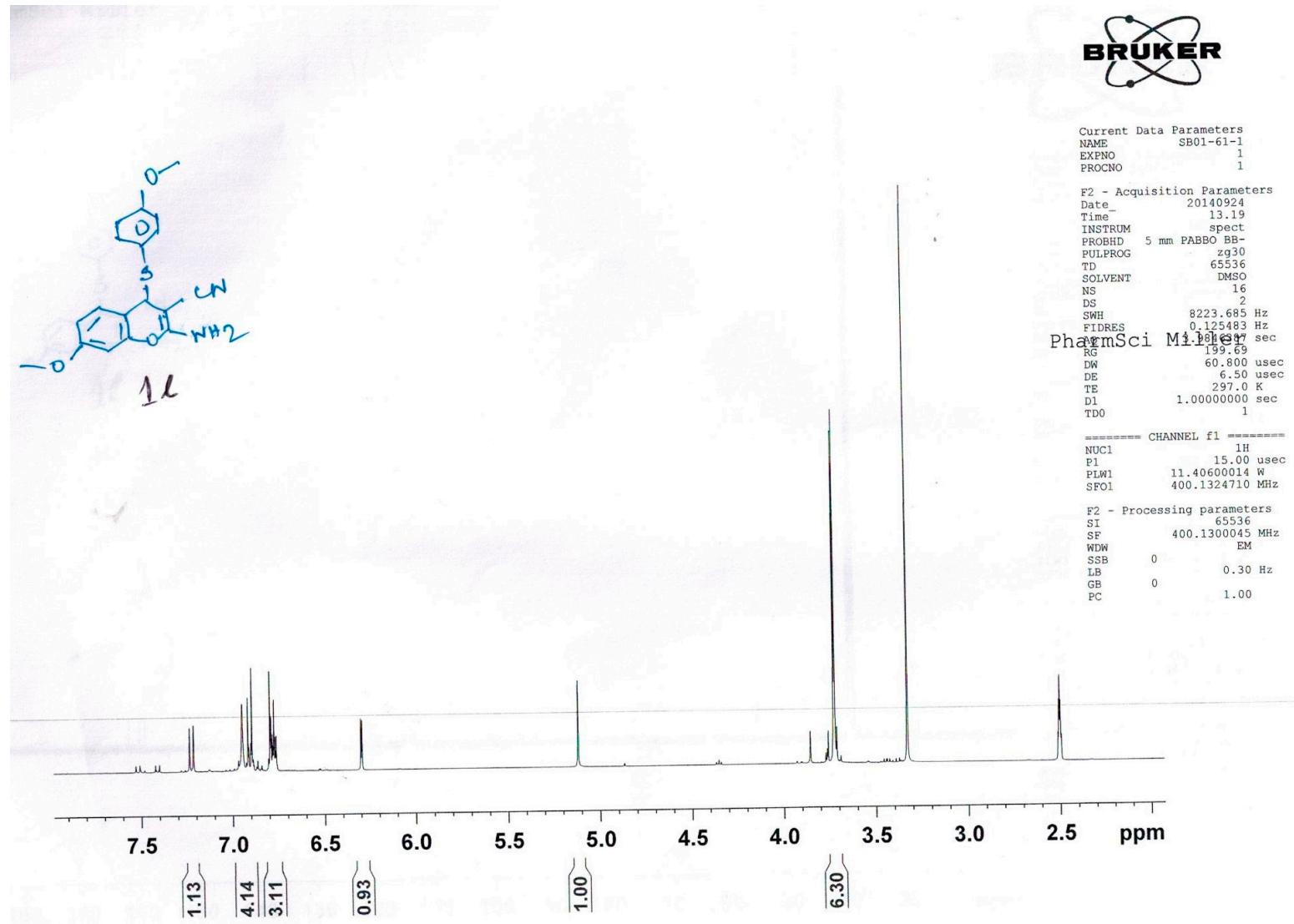


Figure S25. ^1H -NMR of **1l**.

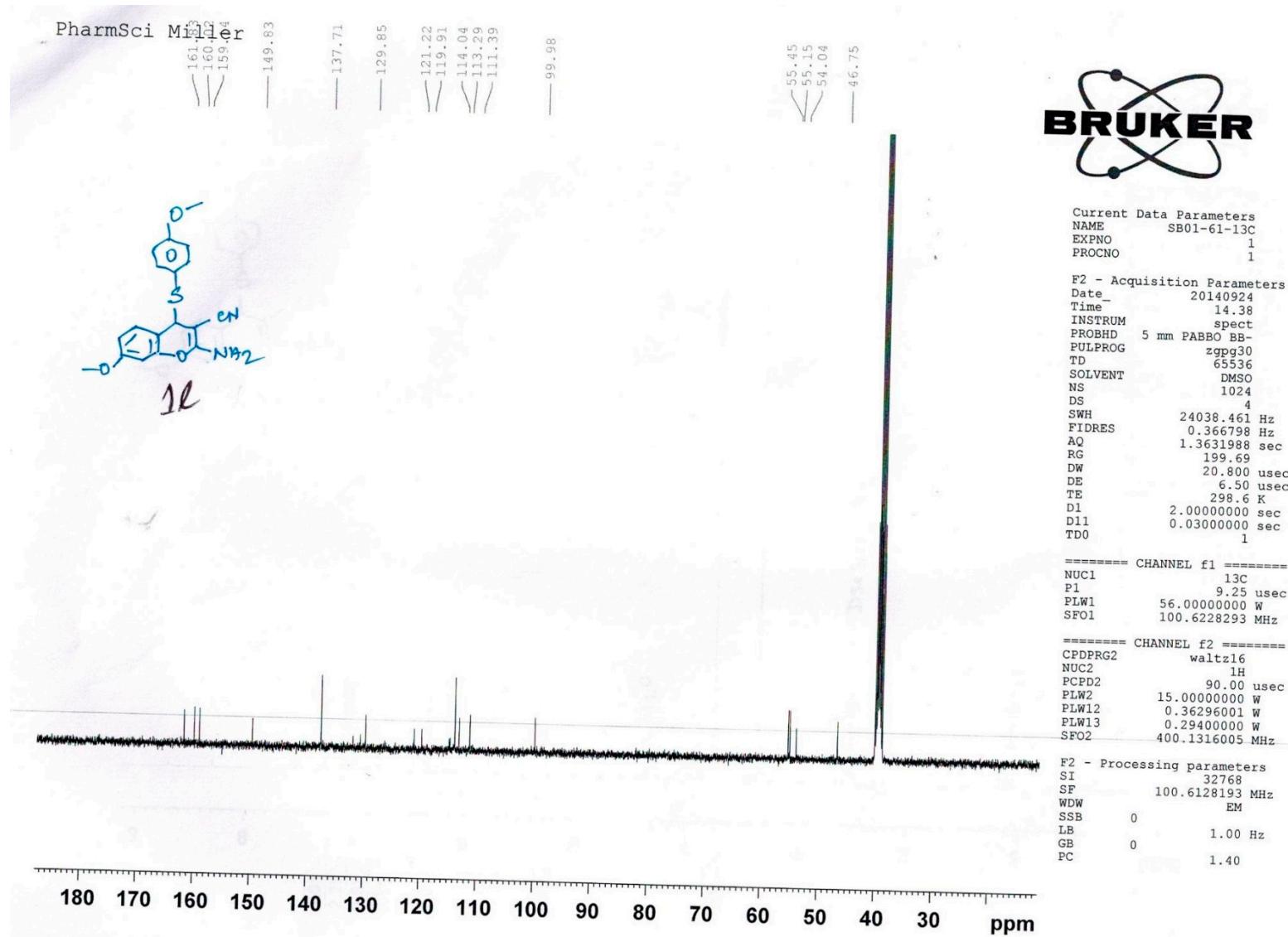
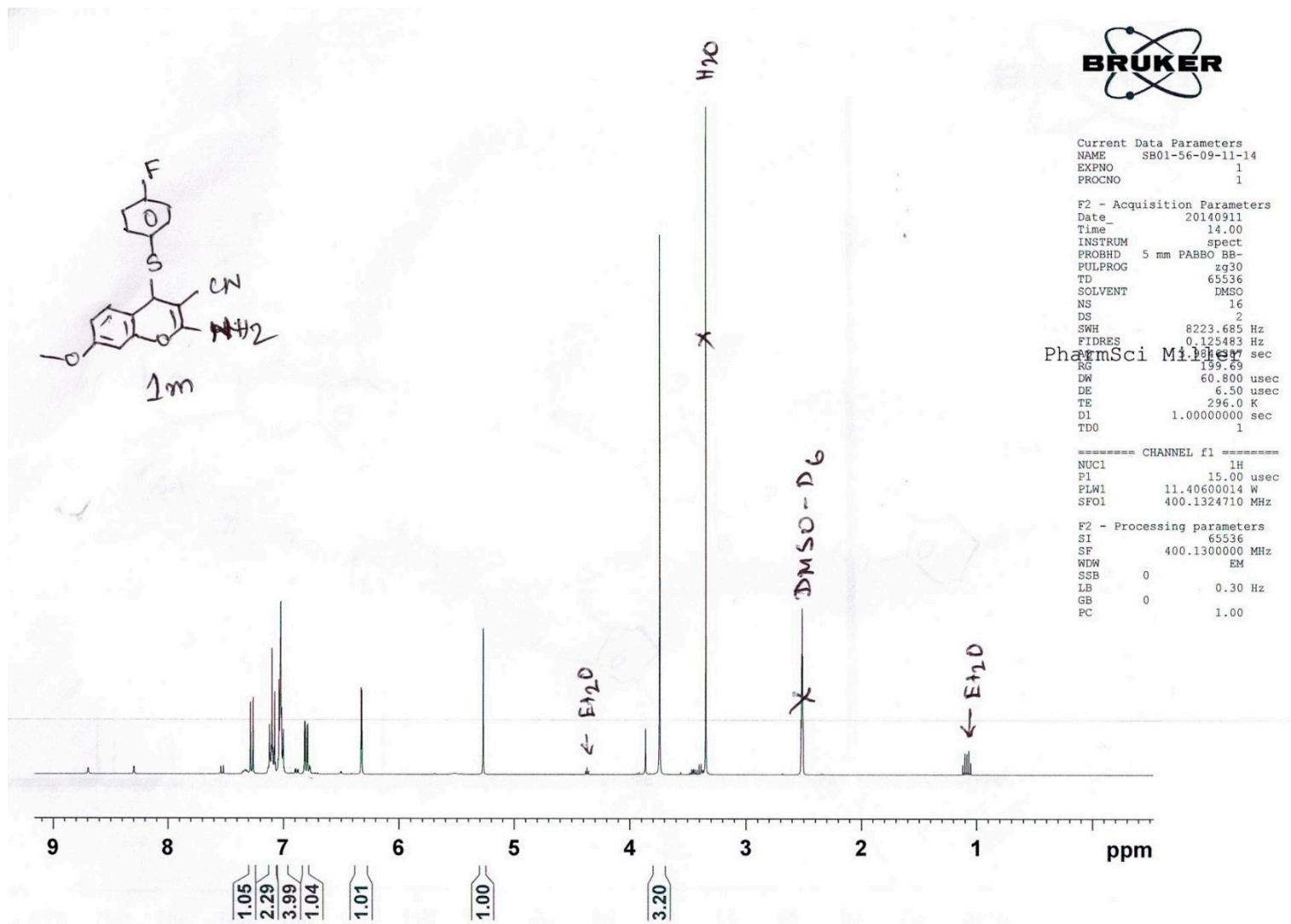


Figure S26. ^{13}C -NMR of **1l**.

Figure S27. ^1H -NMR of 1m.

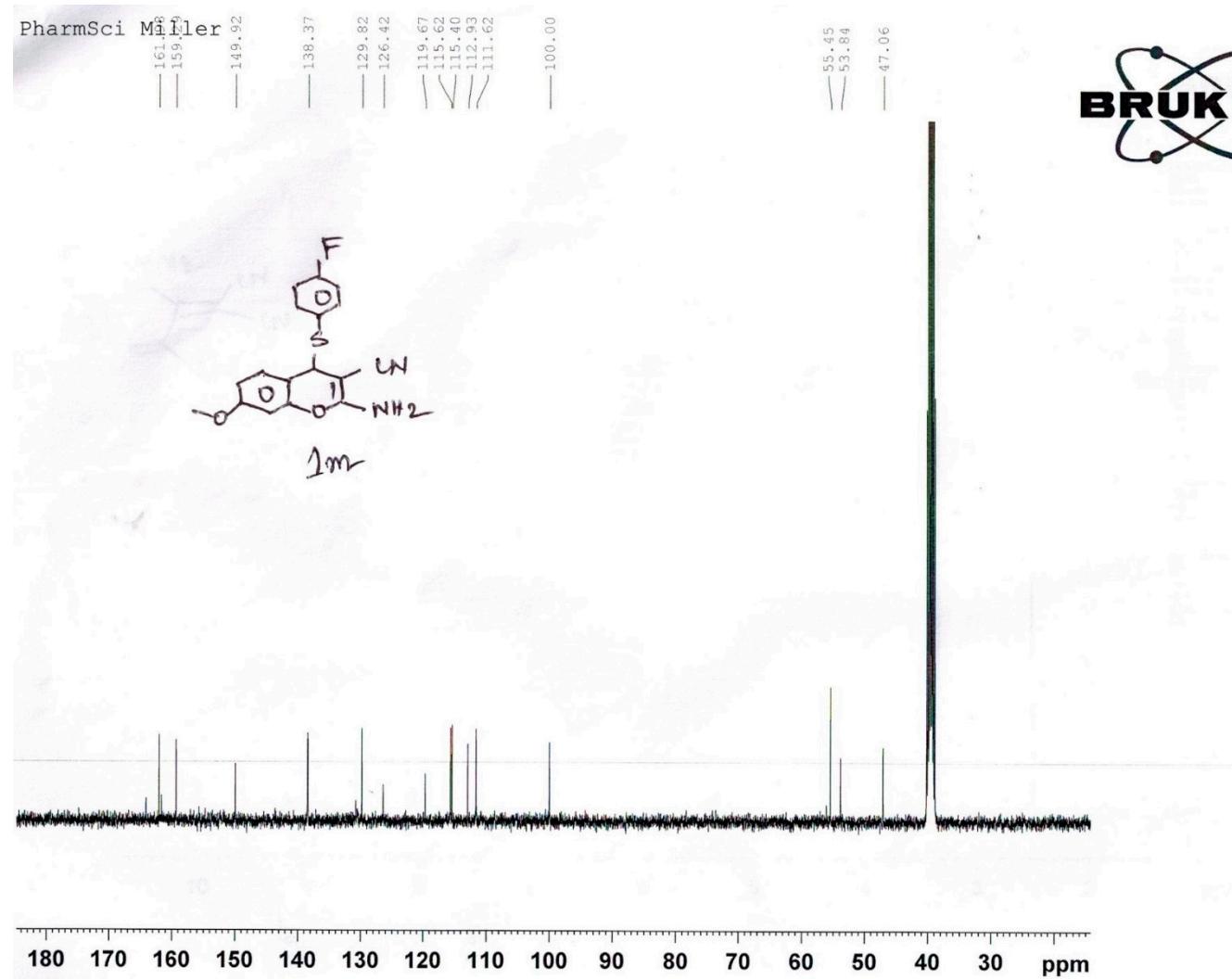
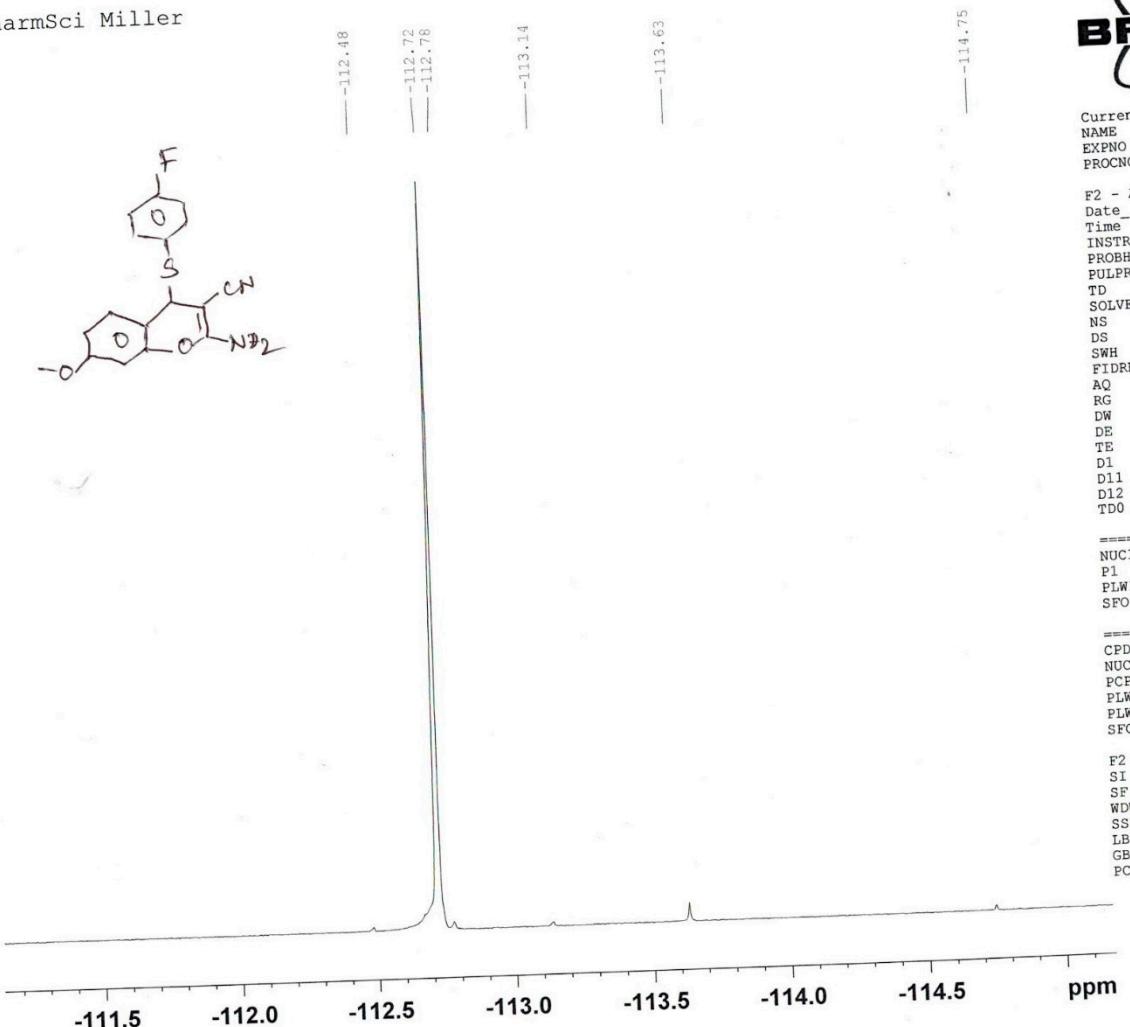


Figure S28. ^{13}C -NMR of **1m**.

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Figure S29. ^{19}F -NMR of **1m**.