

Supplementary Materials

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

Page S1–S29

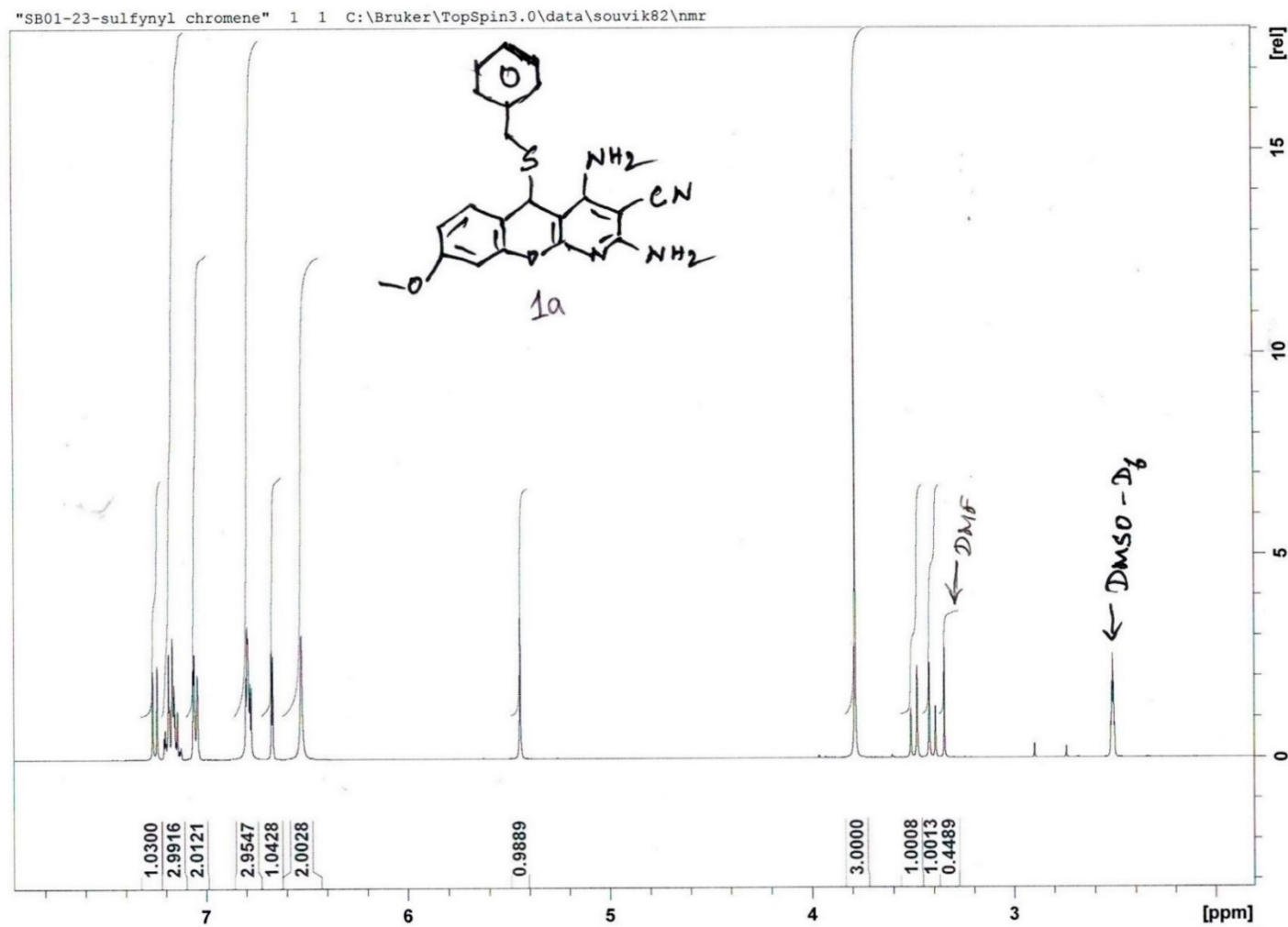


Figure S1. ^1H -NMR of 1a.

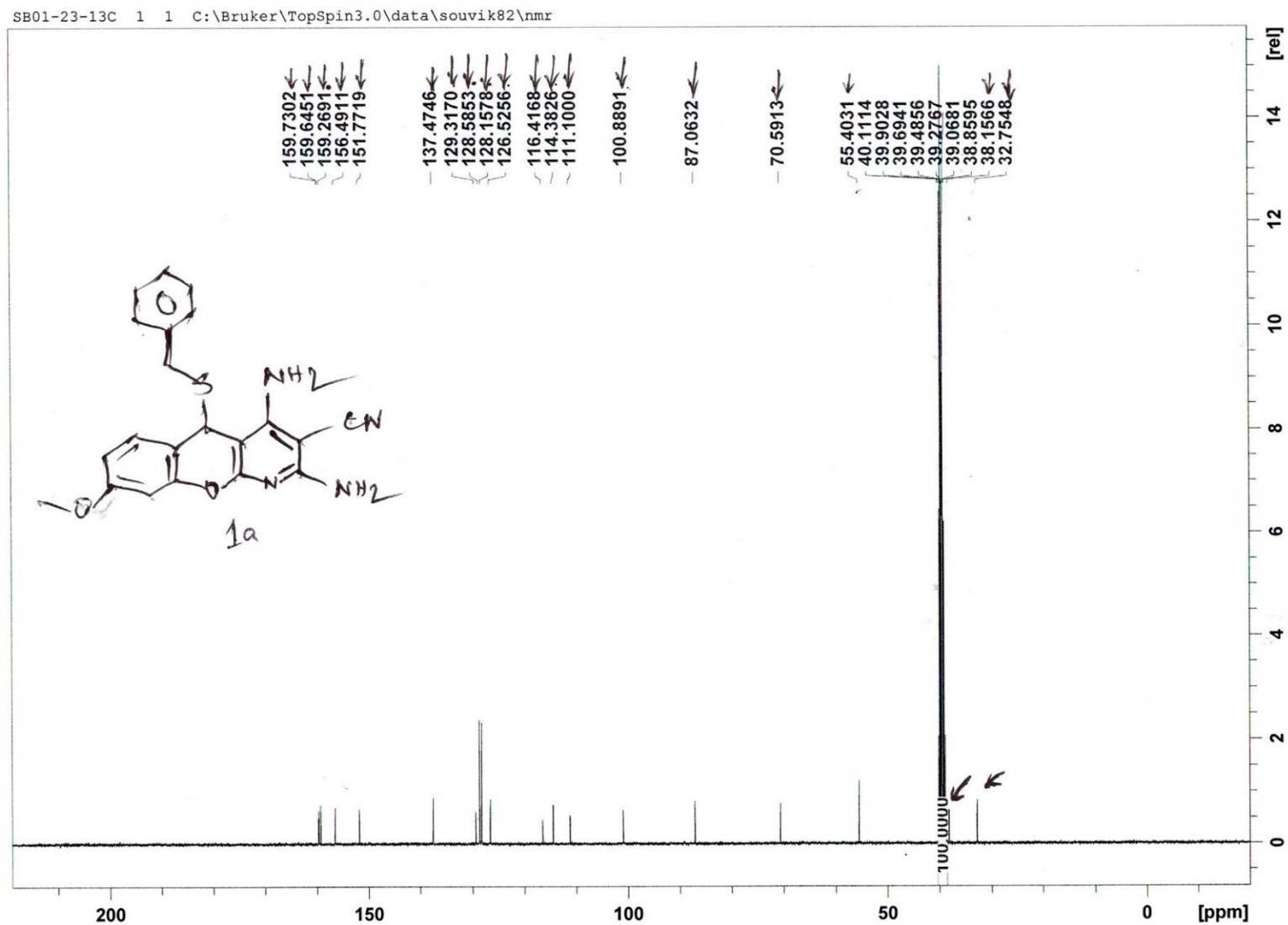
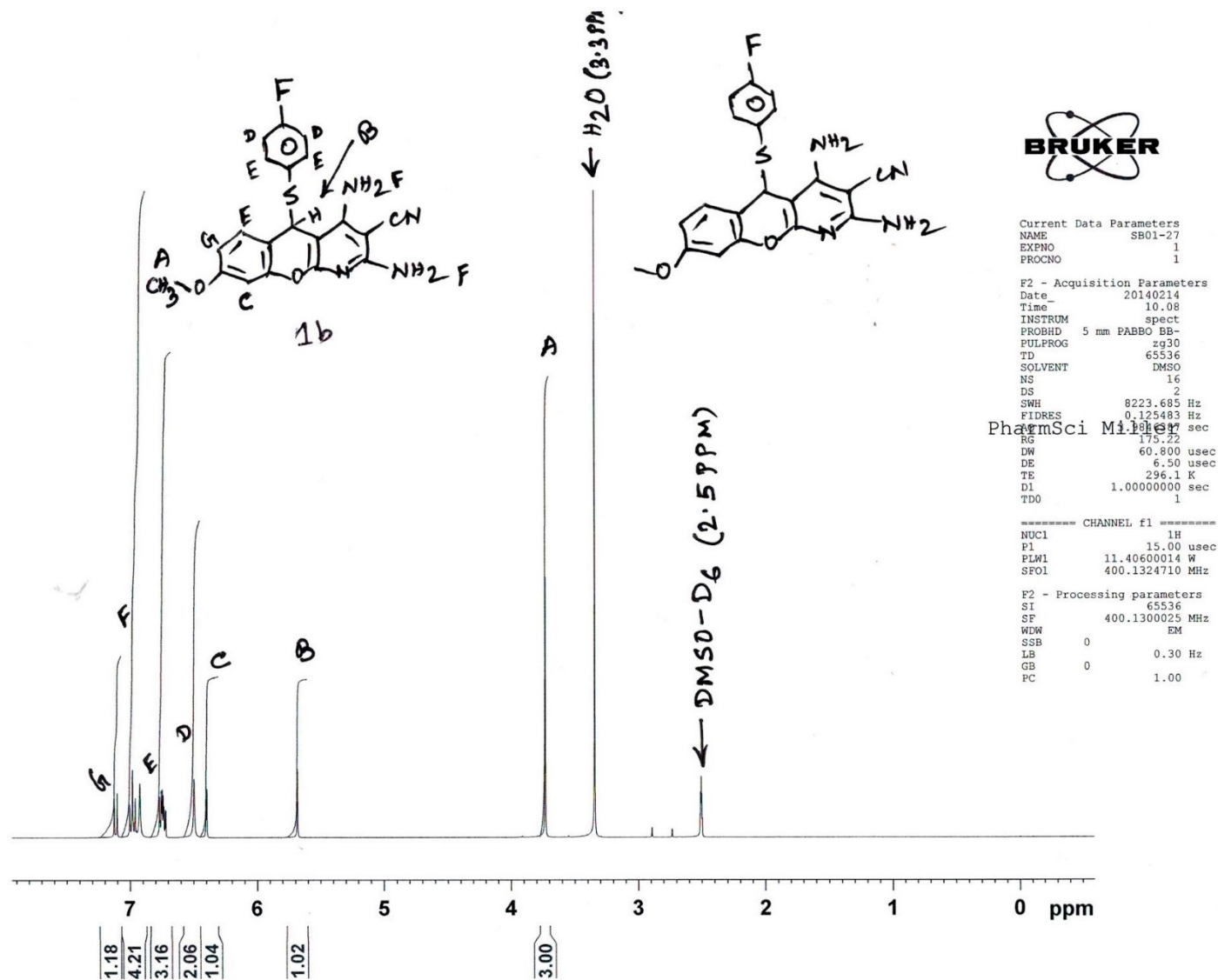
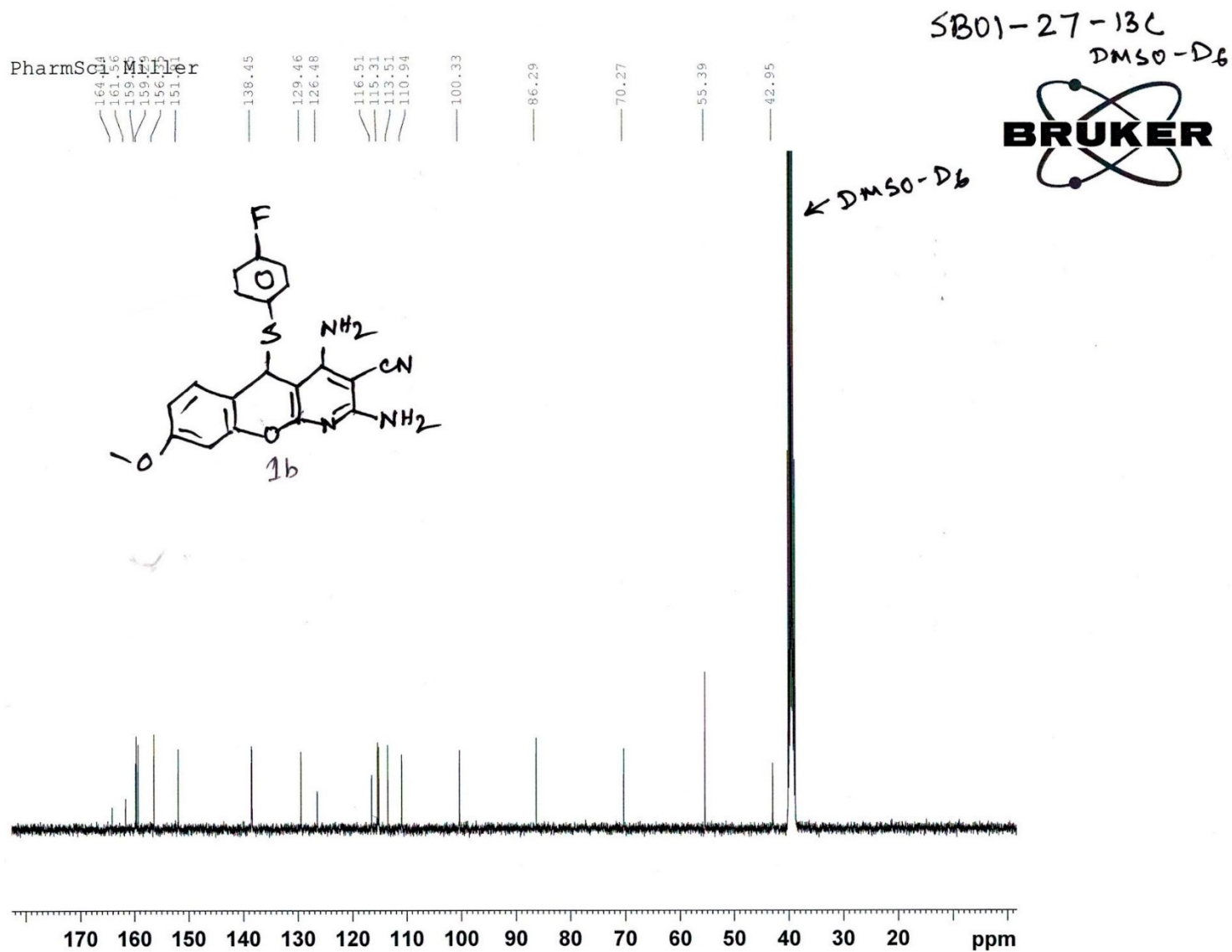
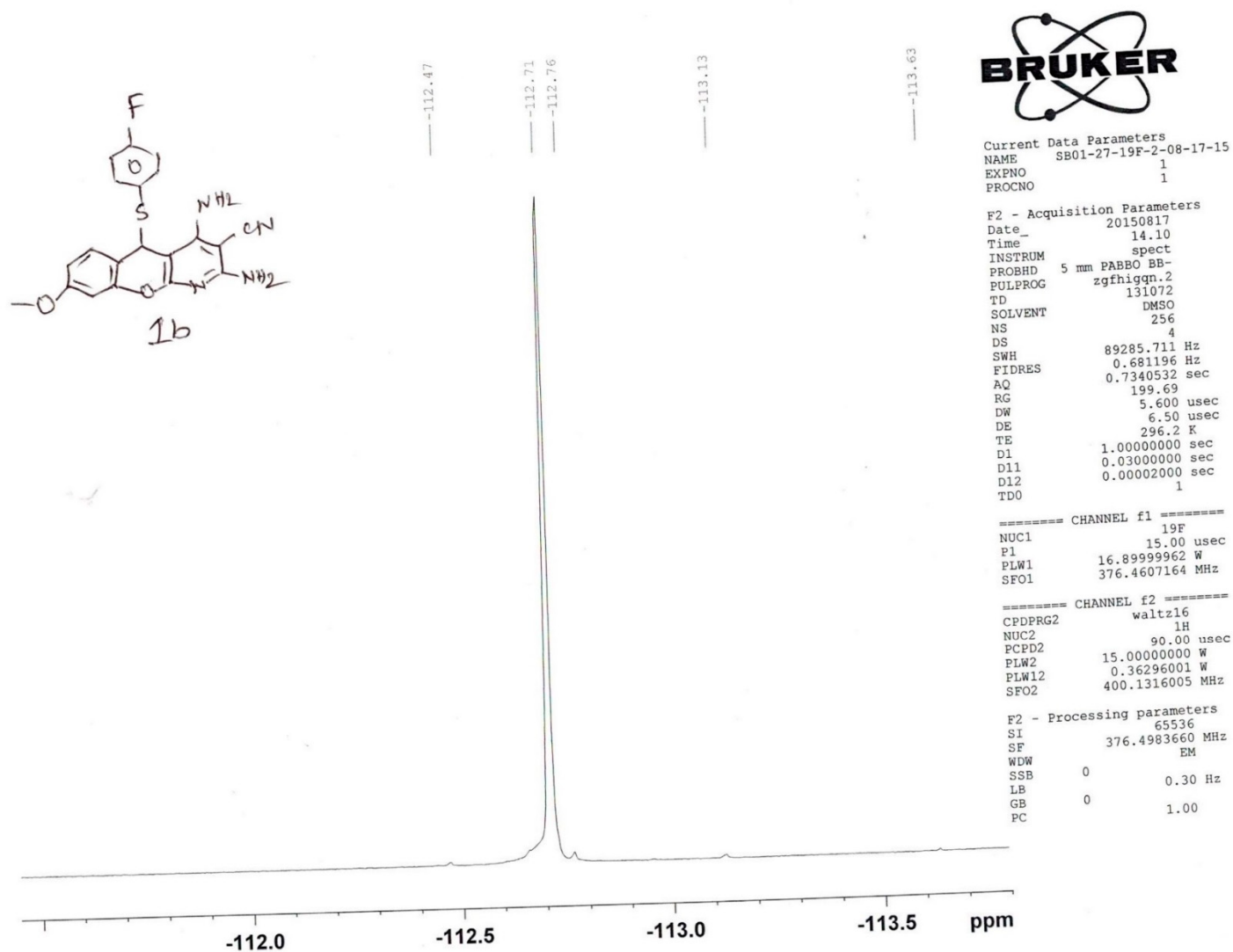
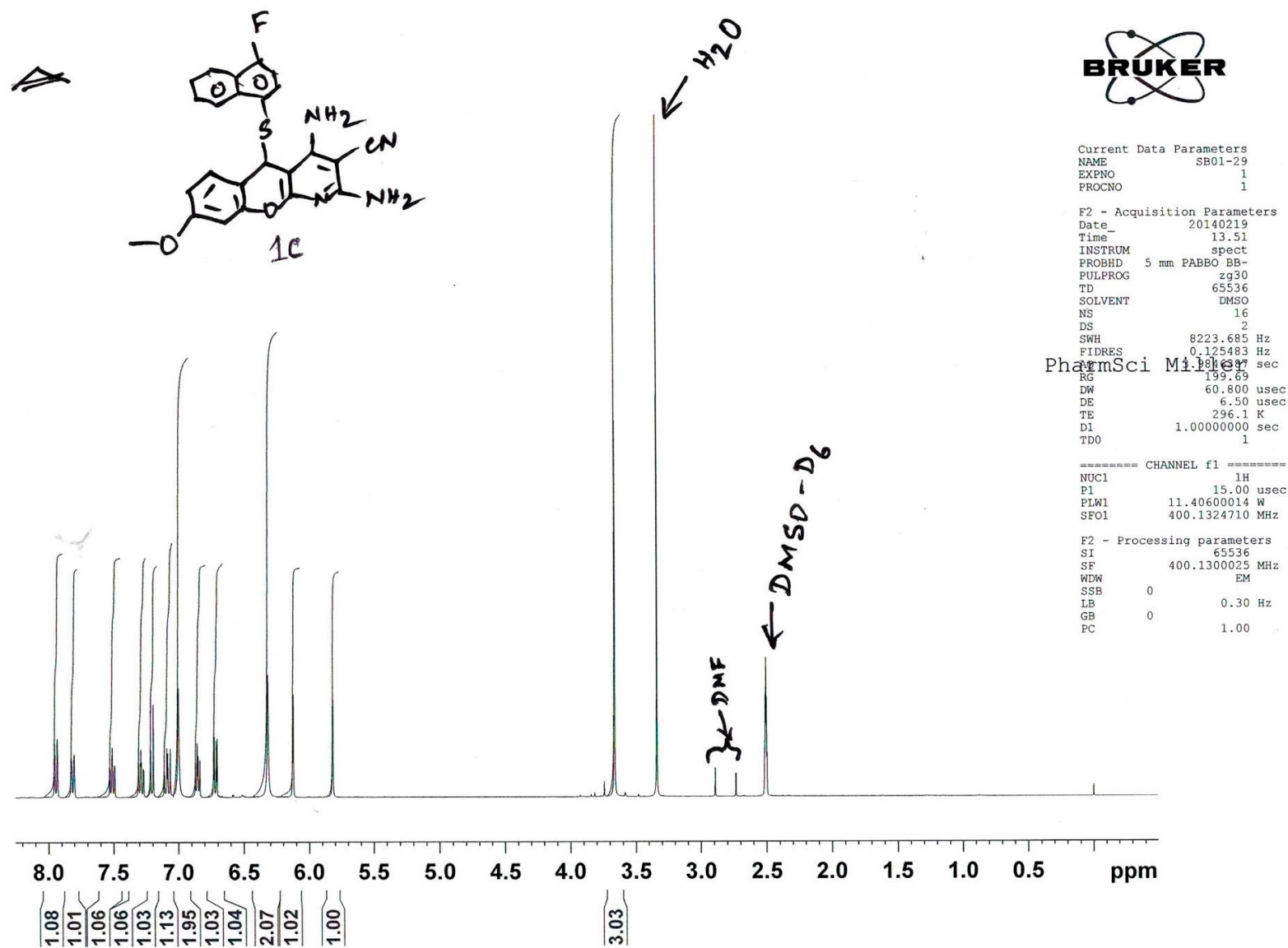


Figure S2. ^{13}C -NMR of **1a**.

Figure S3. ¹H-NMR of 1b.

Figure S4. ¹³C-NMR of 1b.

Figure S5. ^{19}F -NMR of **1b**.

Figure S6. ¹H-NMR of 1c.

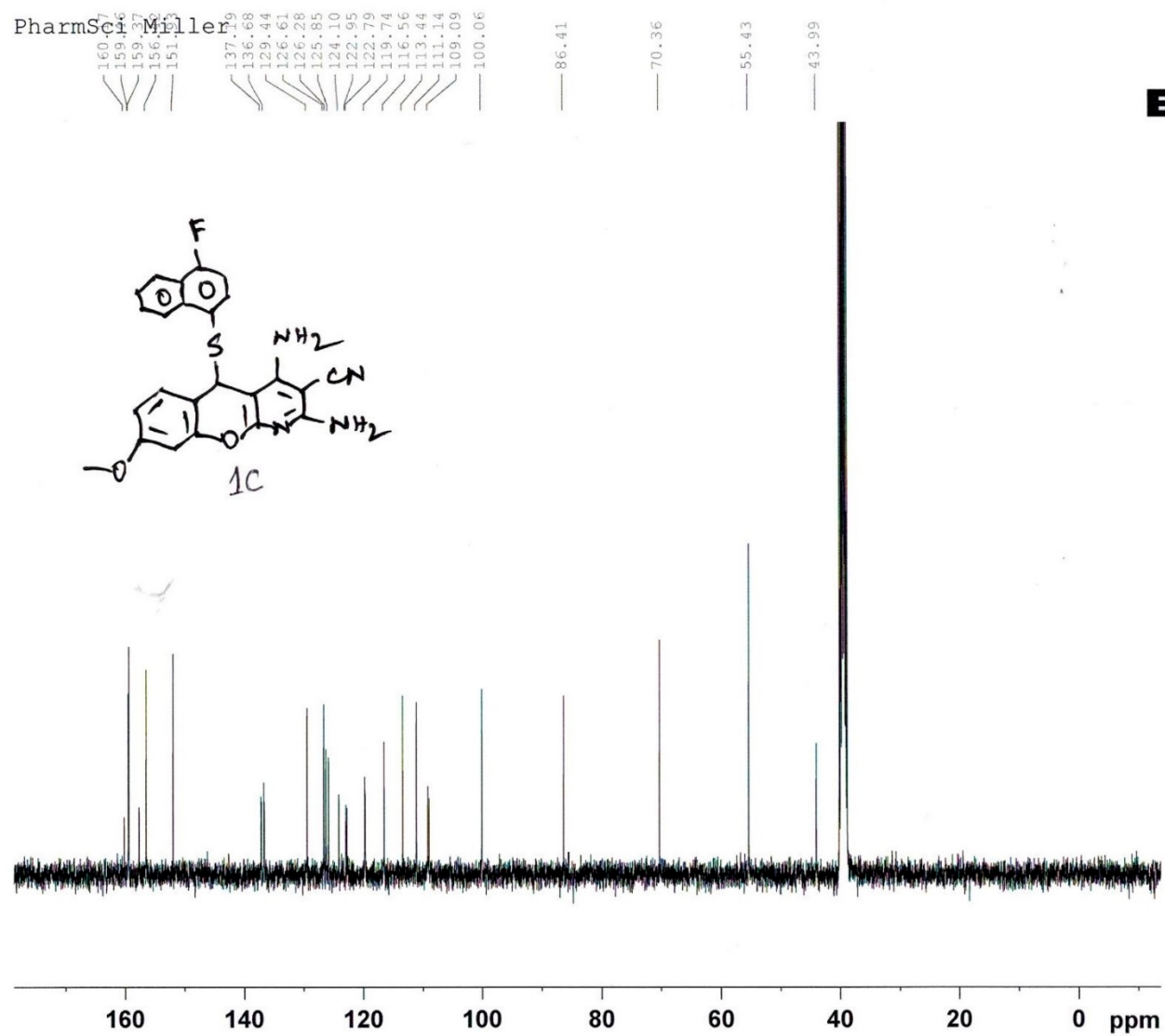
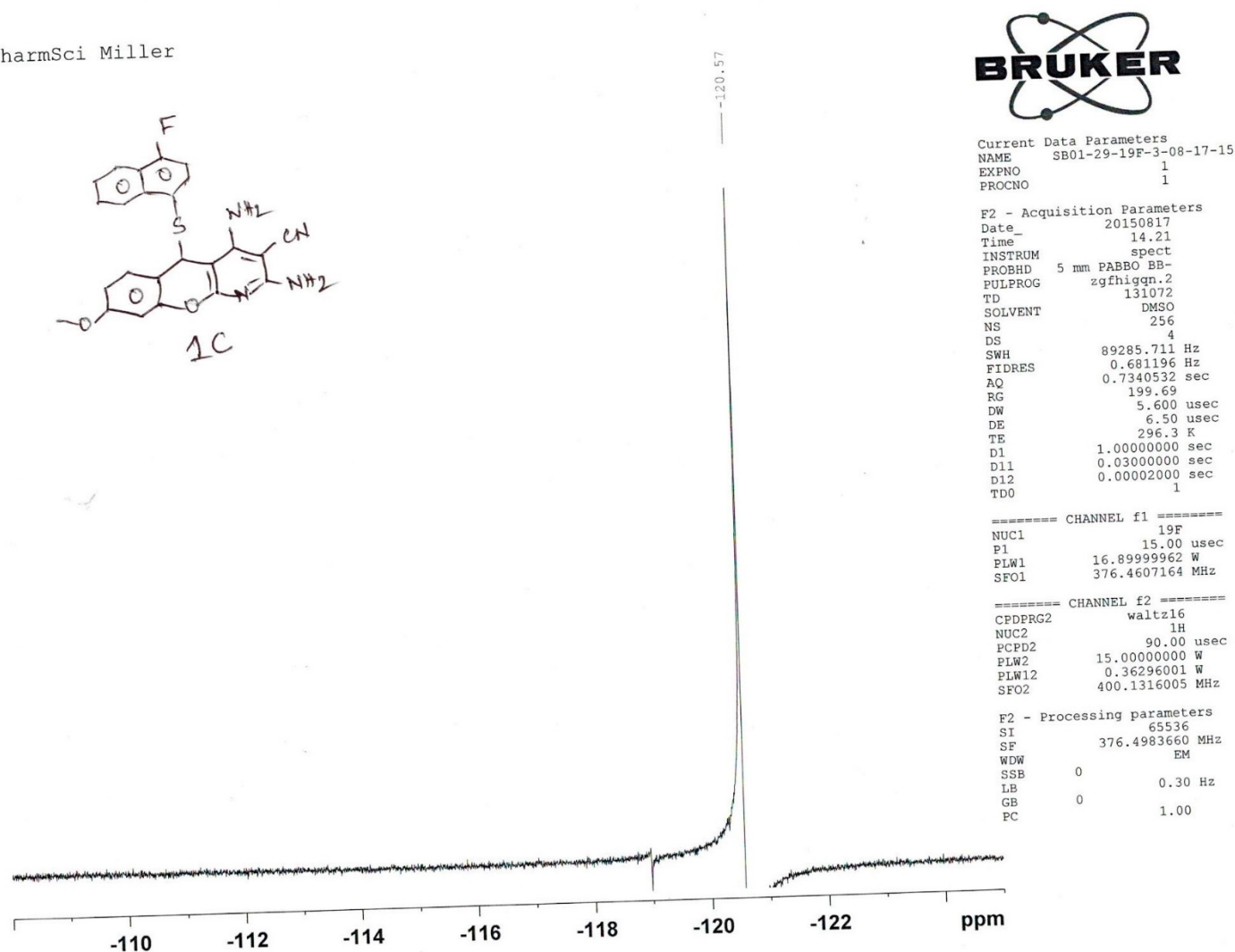
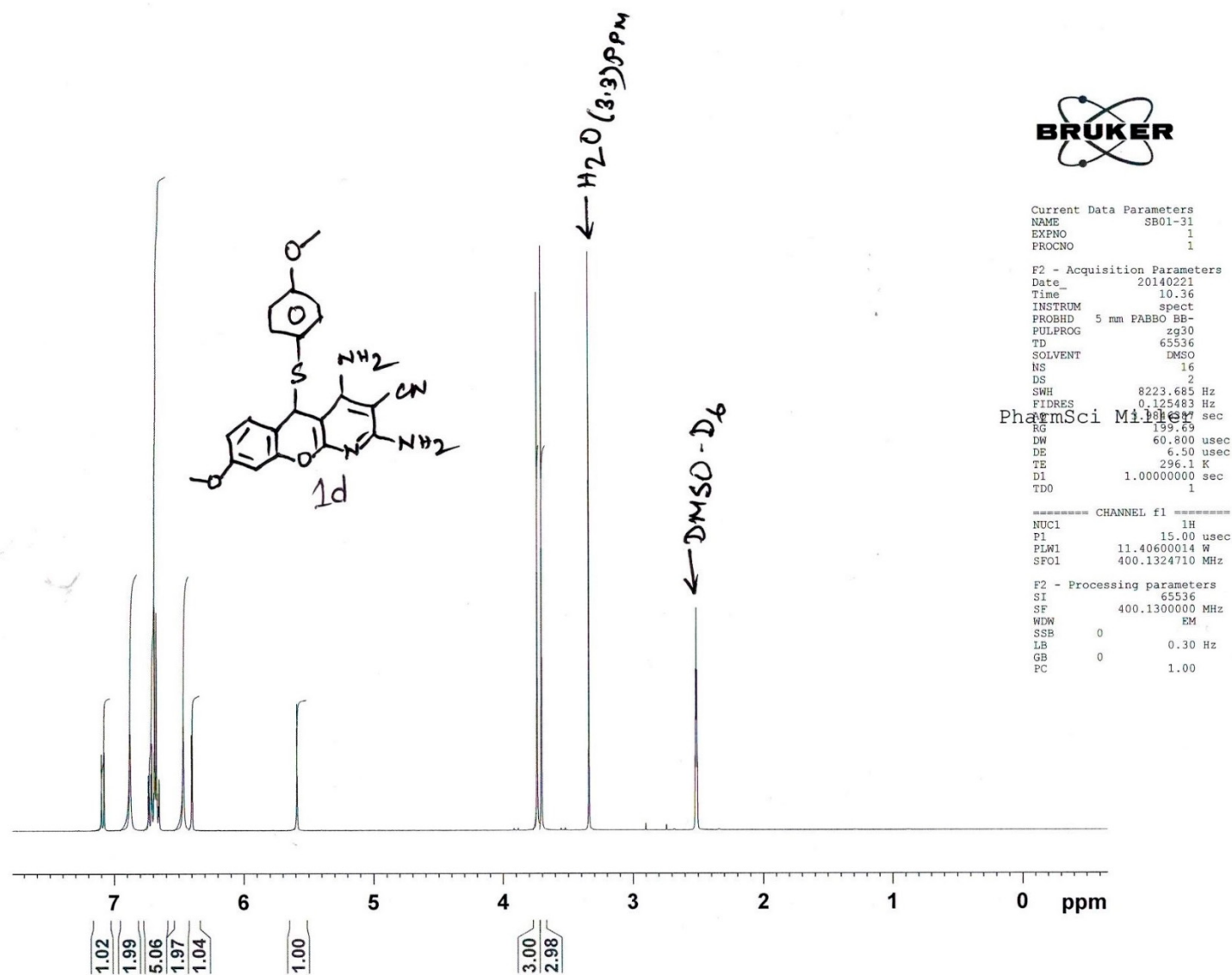
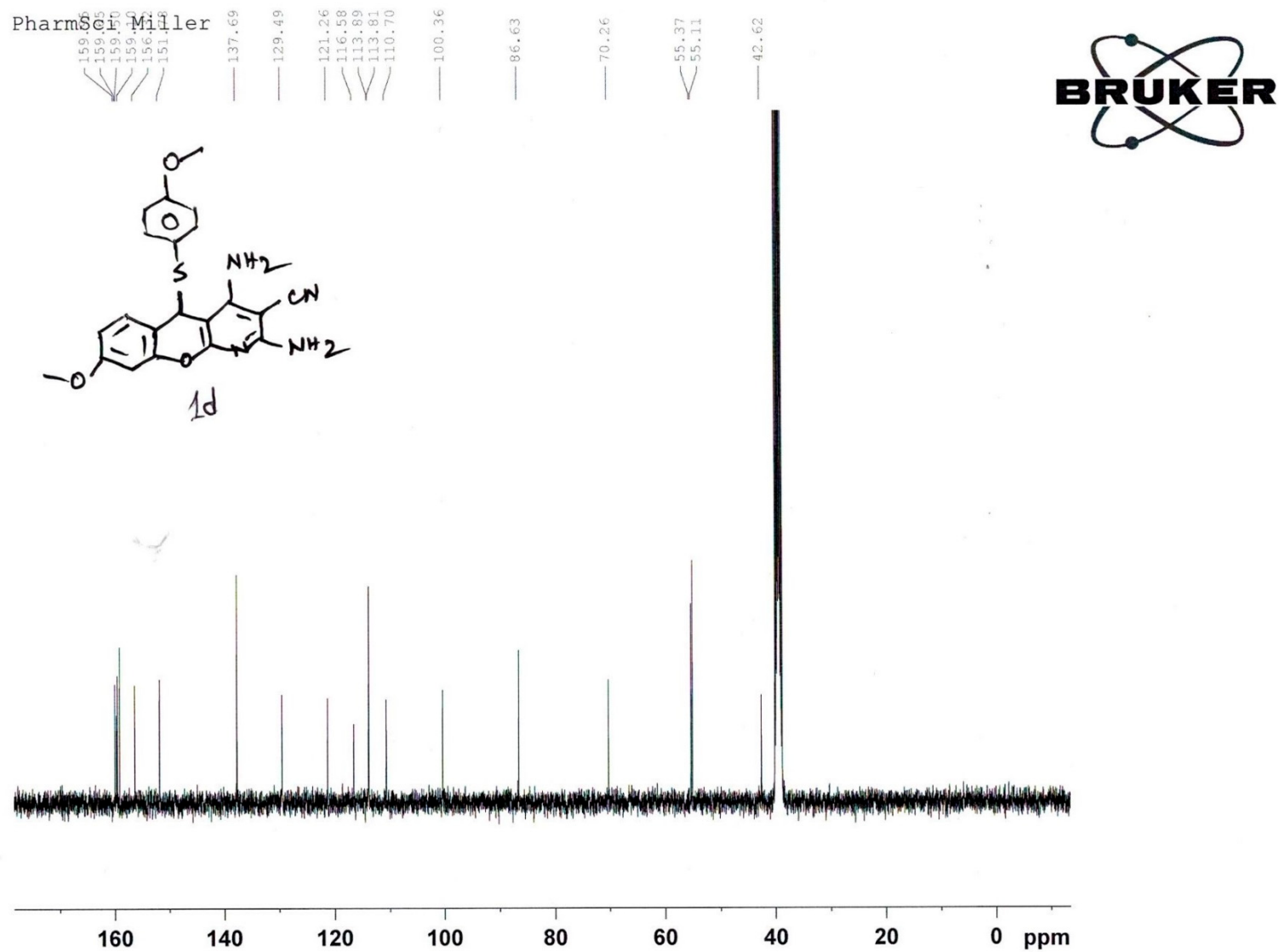


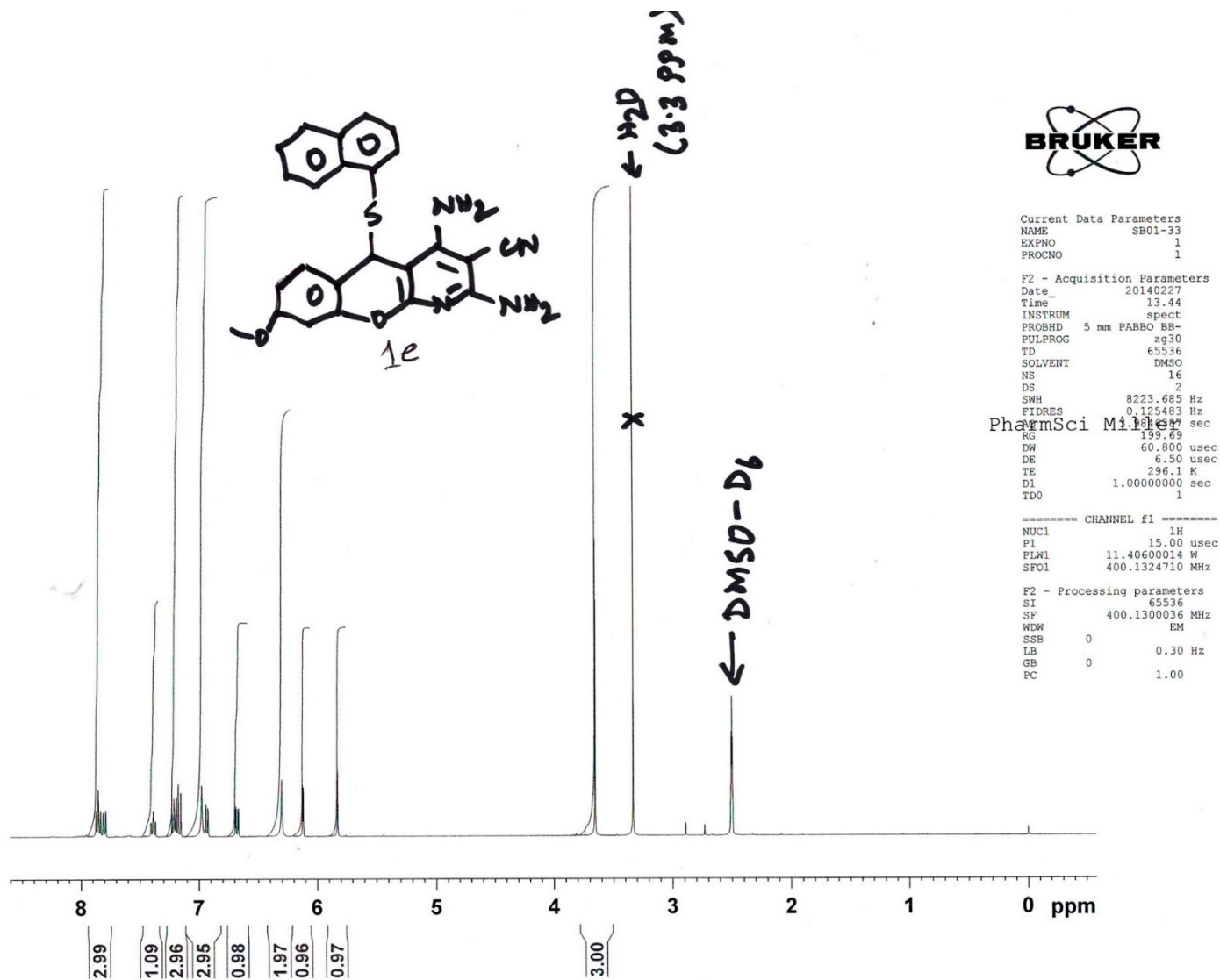
Figure S7. ^{13}C -NMR of **1c**.

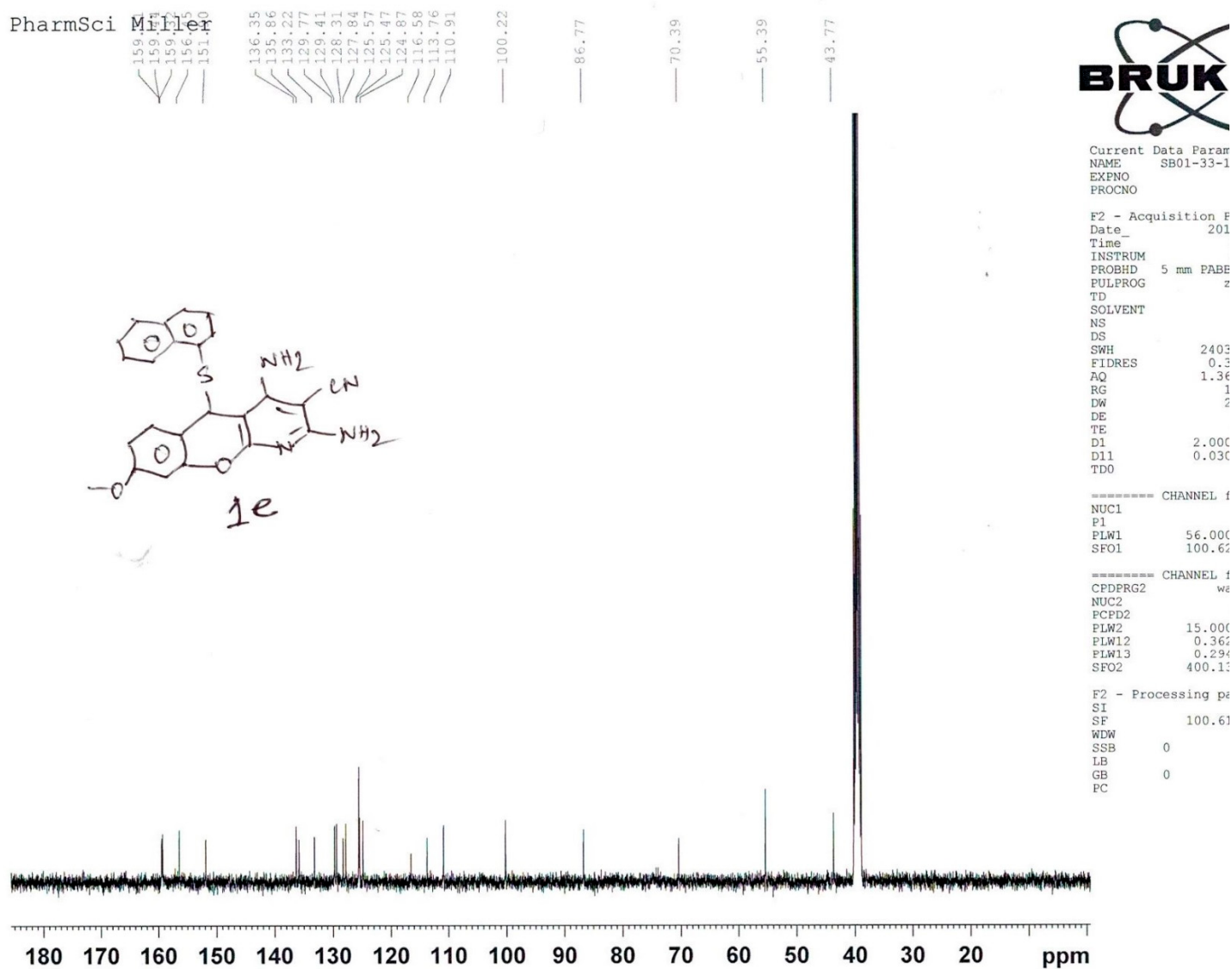
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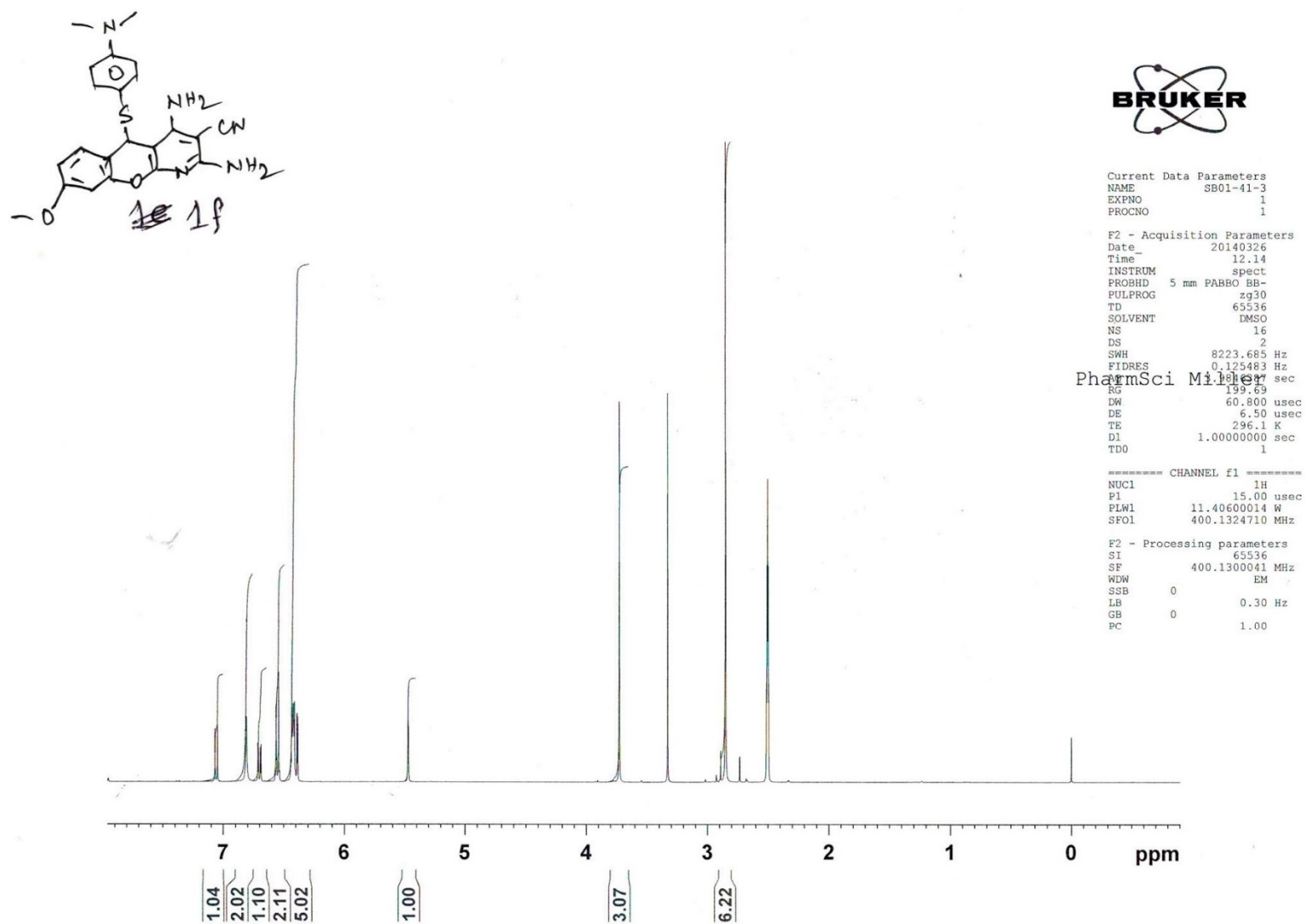
Figure S8. ^{19}F -NMR of **1c**.

Figure S9. ¹H-NMR of **1d**.

Figure S10. ^{13}C -NMR of 1d.

Figure S11. ¹H-NMR of **1e**.

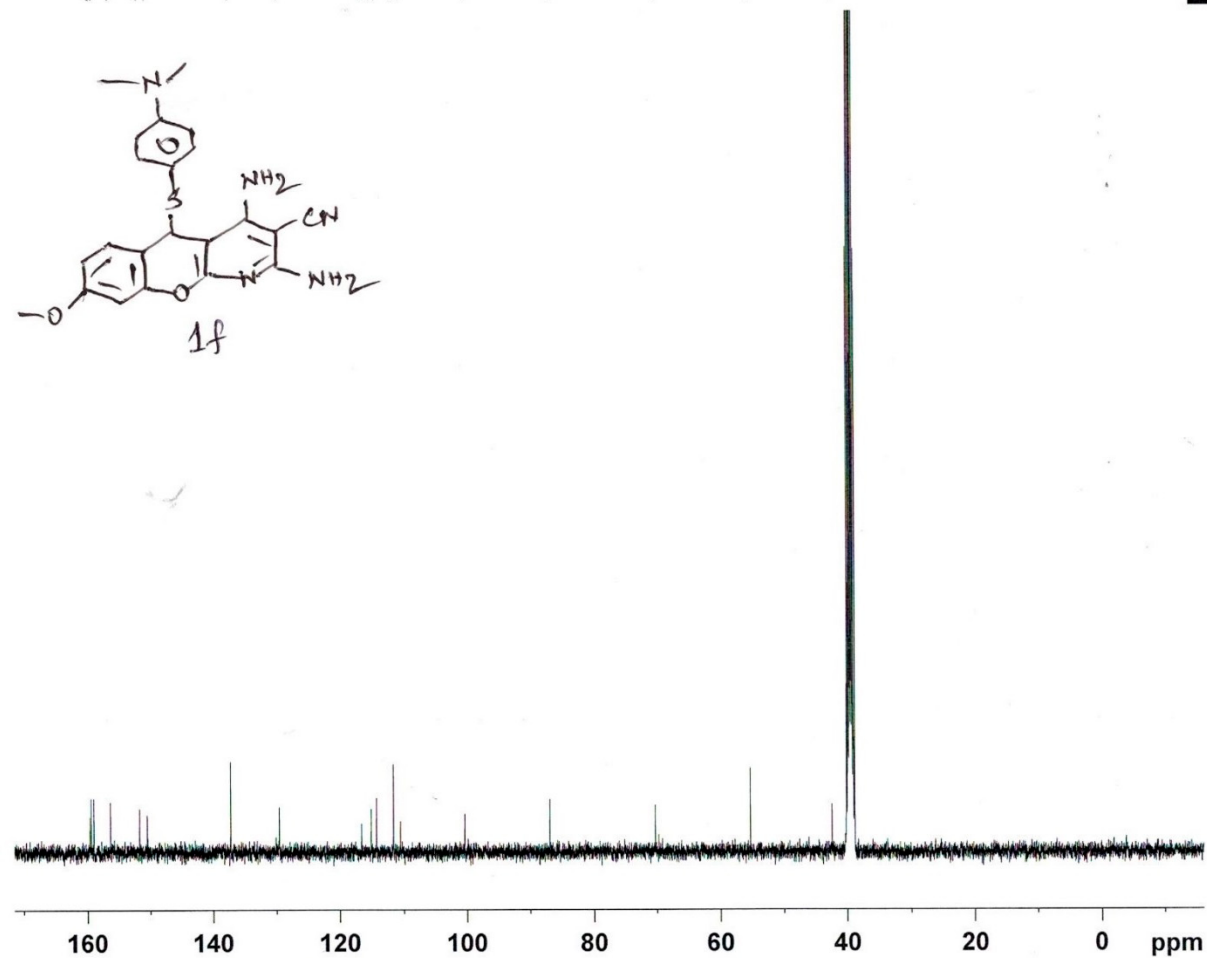
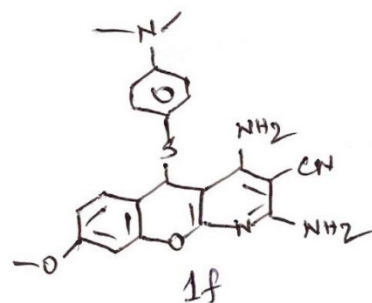
Figure S12. ¹³C-NMR of 1e.

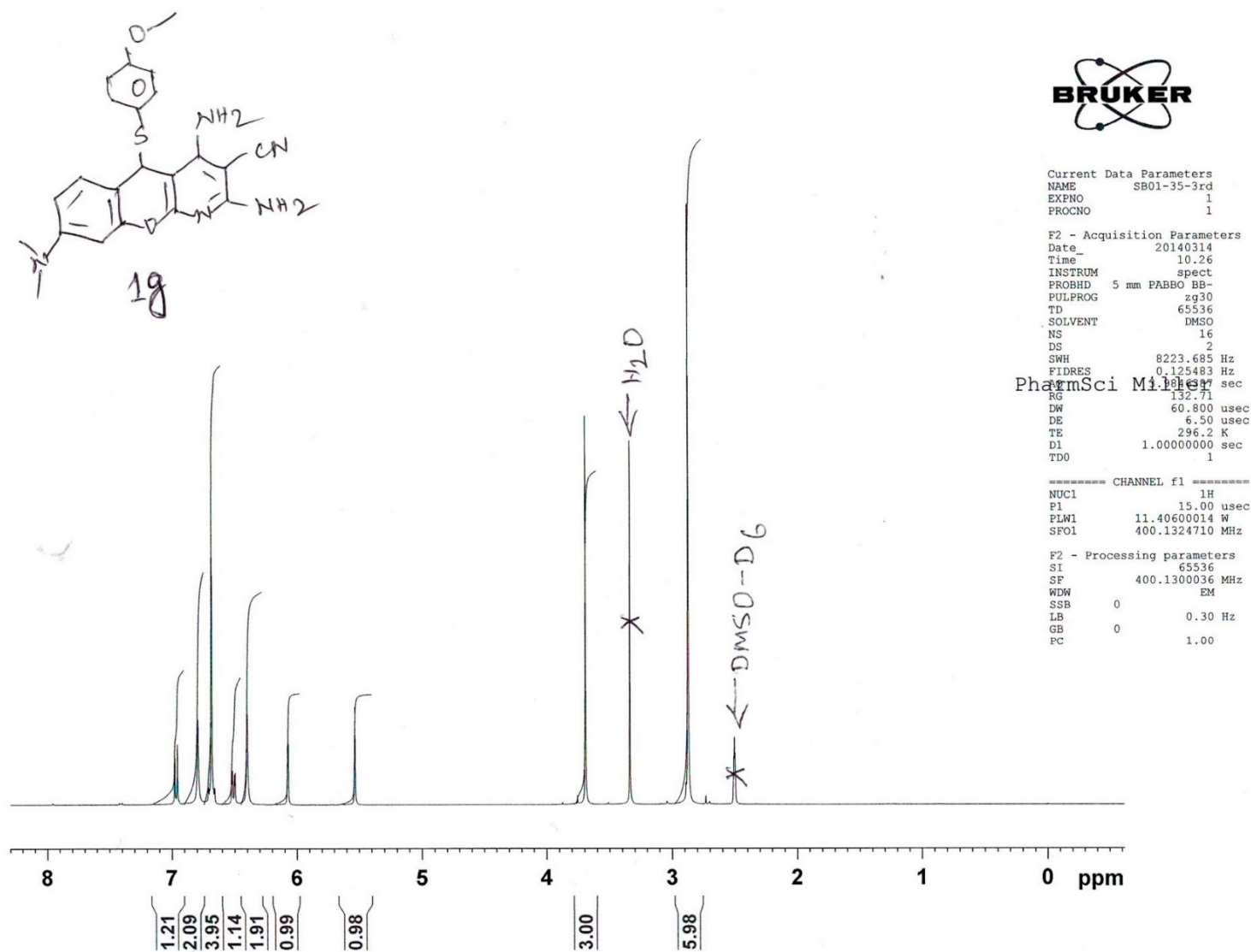
Figure S13. ¹H-NMR of **1f**.

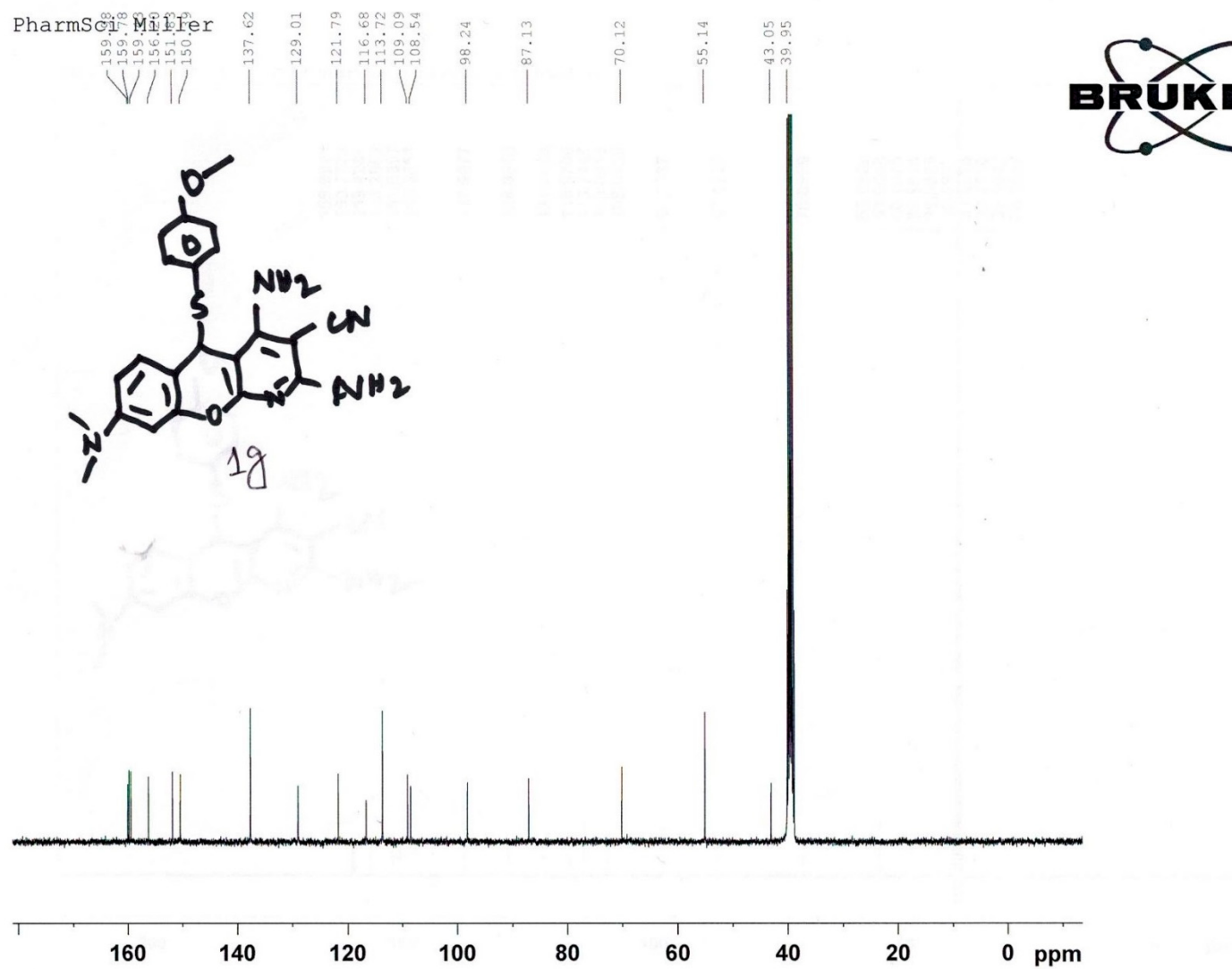
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159.9
159.2
158.7
156.7
151.70
150.7
137.3
129.53
116.62
115.10
114.25
111.61
110.50
100.35
86.96
70.28
55.34
42.44

Figure S14. ¹³C-NMR of 1f.

Figure S15. ¹H-NMR of **1g**.

Figure S16. ^{13}C -NMR of 1g.

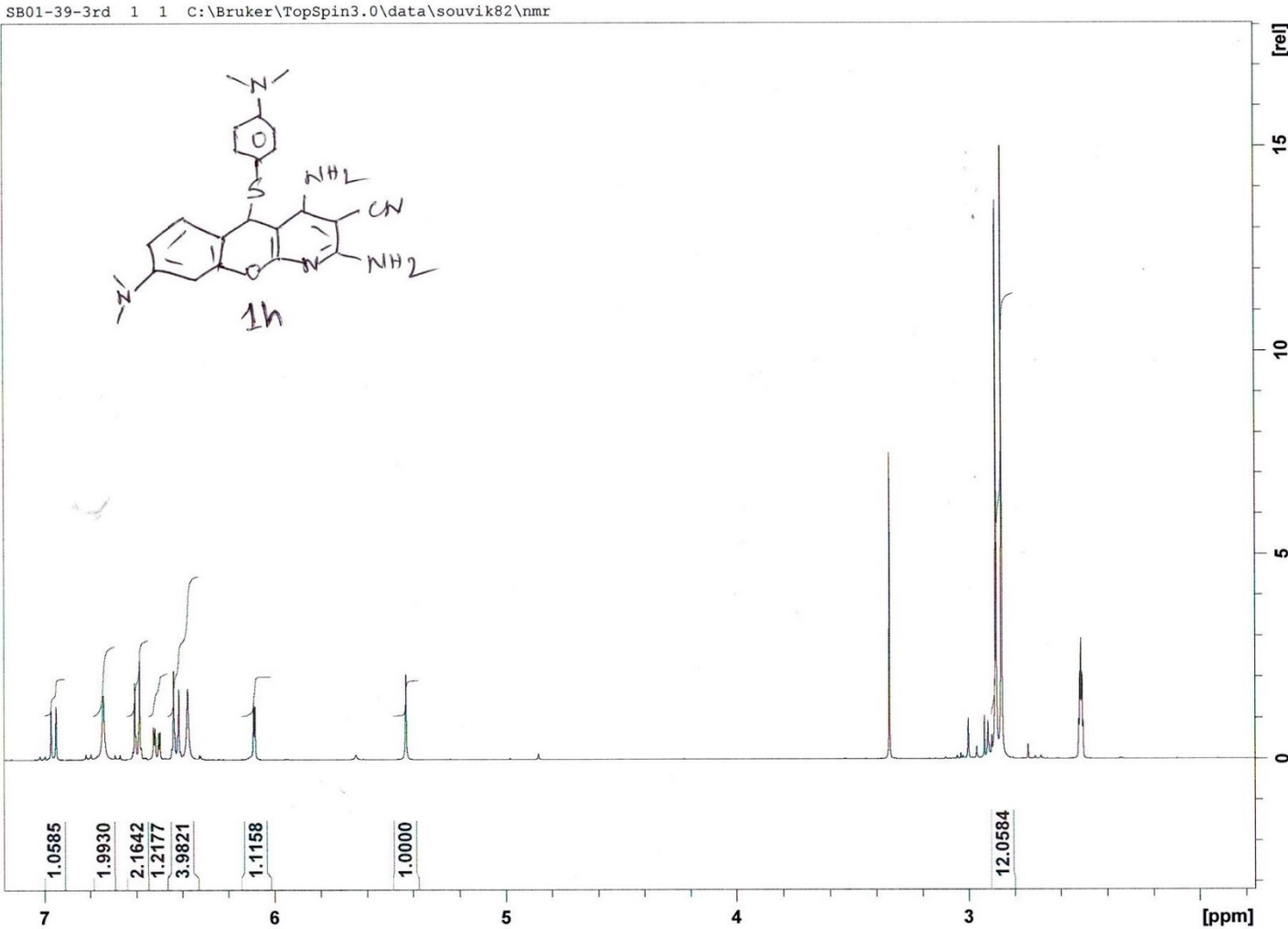
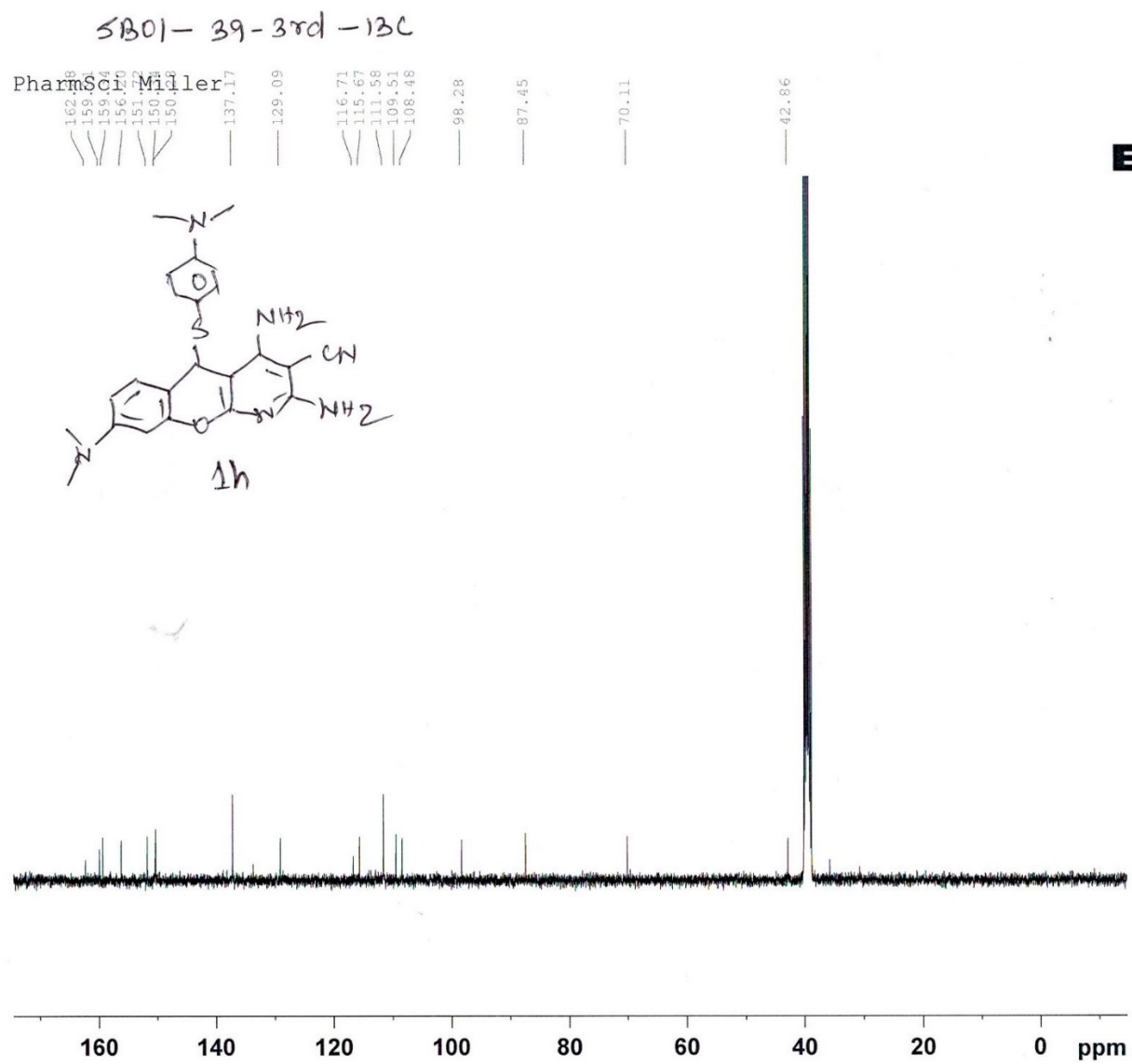
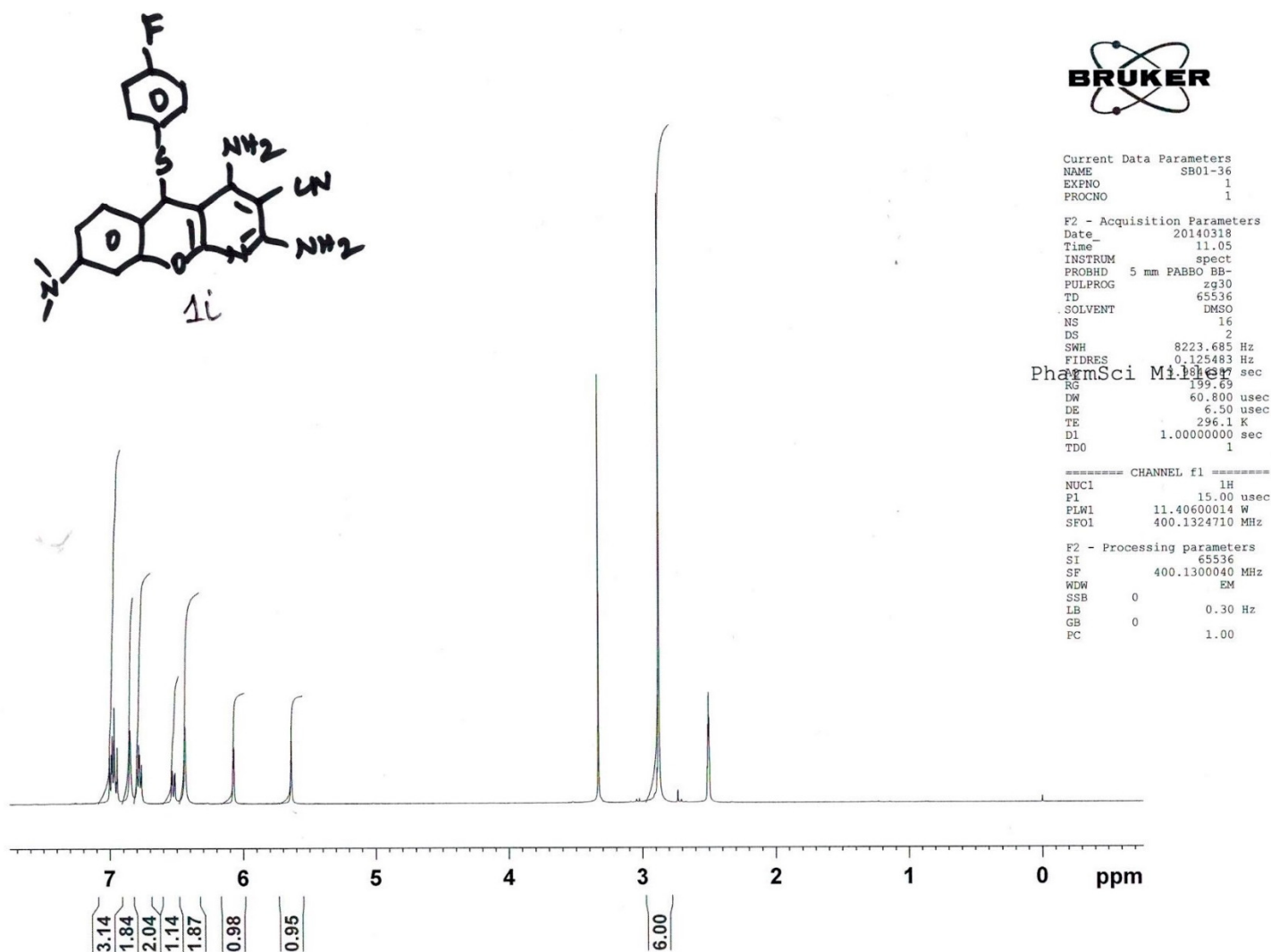


Figure S17. ^1H -NMR of **1h**.

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

Figure S19. ¹H-NMR of **1i**.

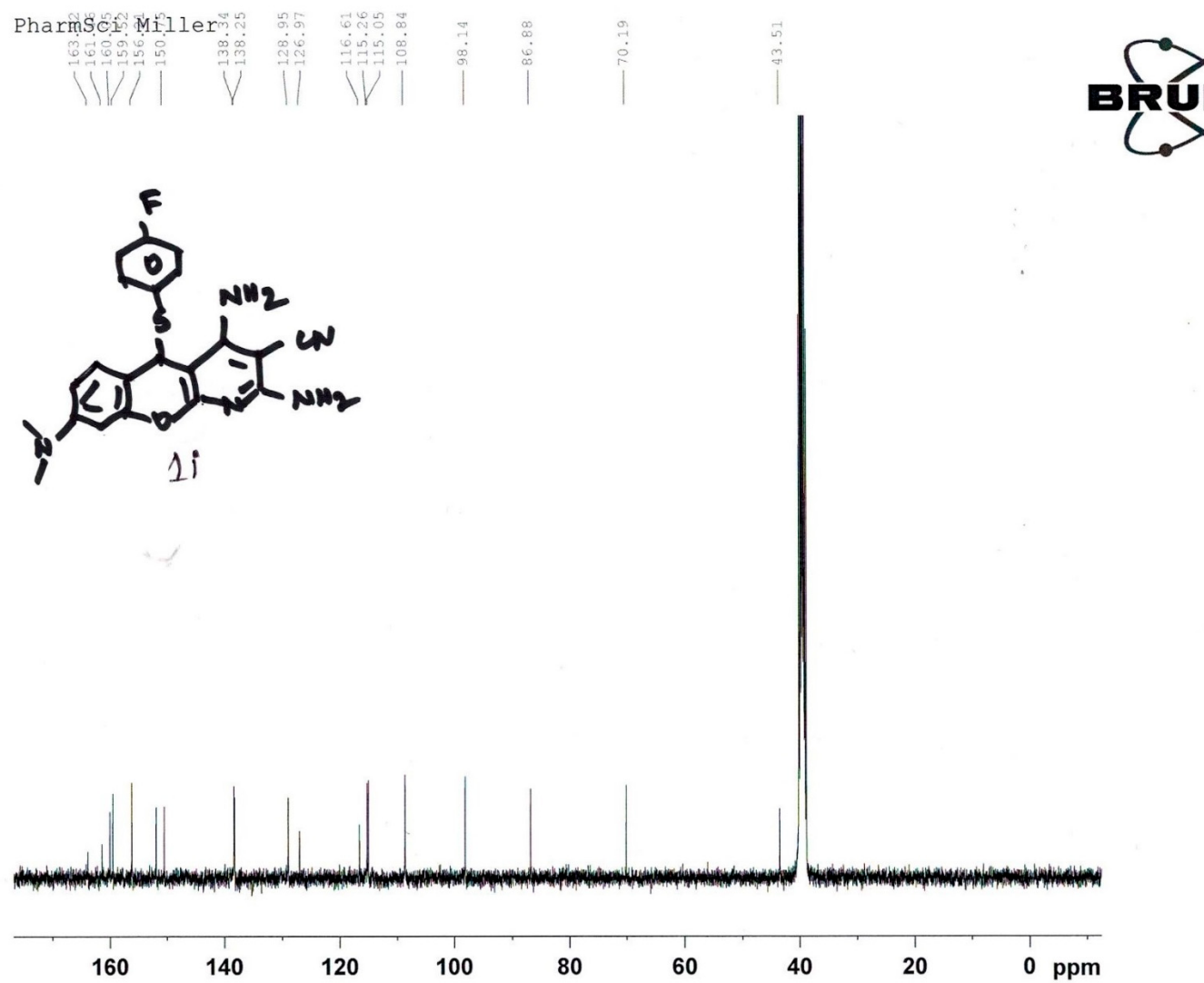
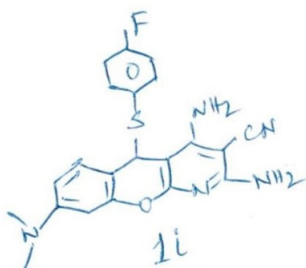
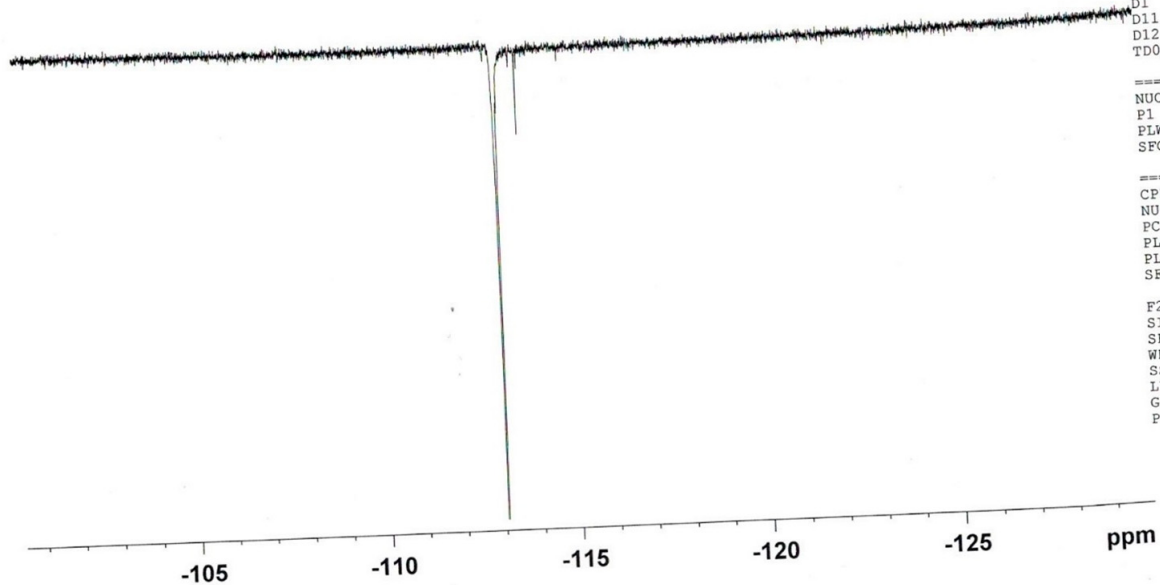


Figure S20. ^{13}C -NMR of **1i**.

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— -113.05
— -113.63



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PROCNO 1

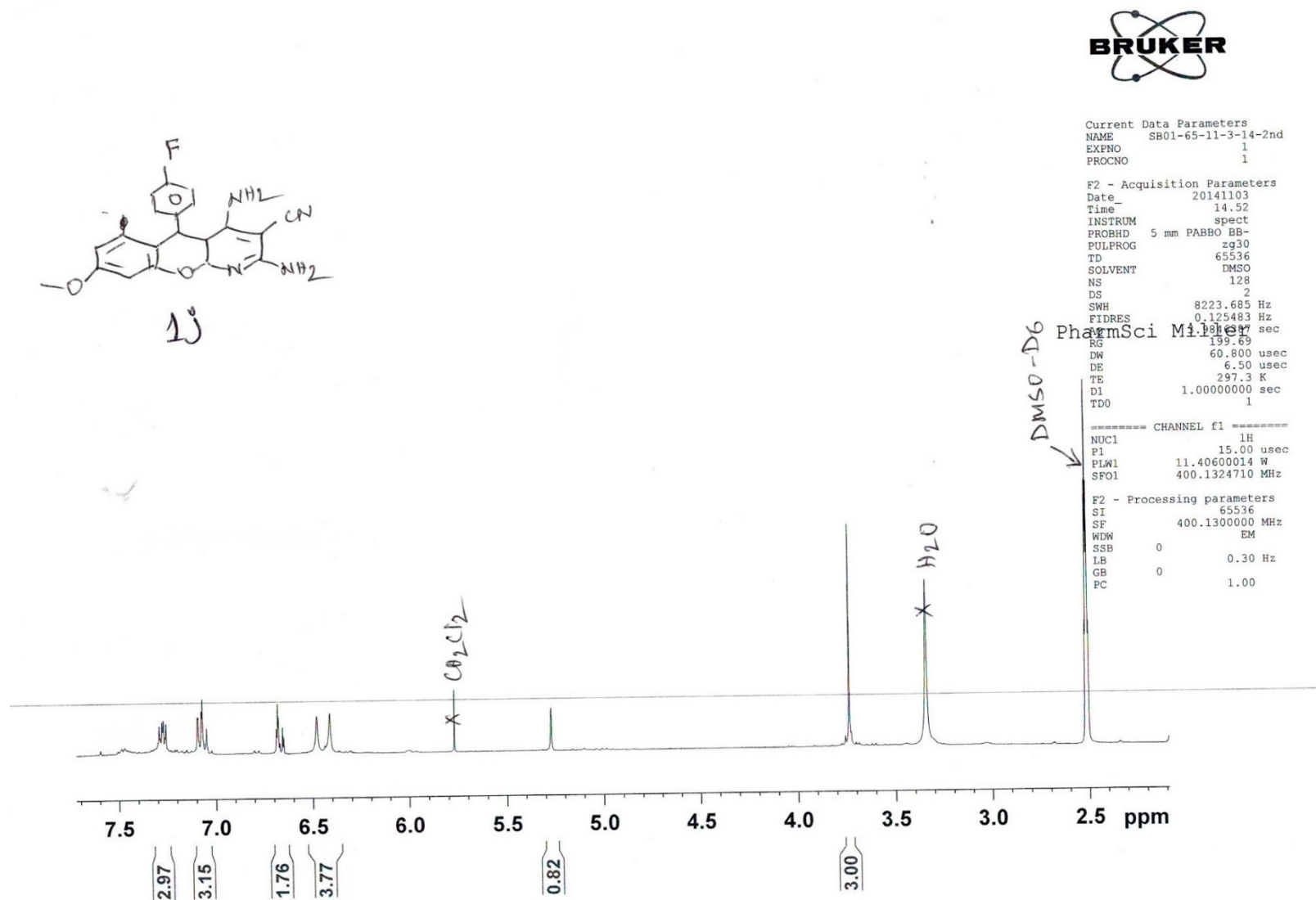
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NS 256
DS 4
SWH 89285.711 Hz
FIDRES 0.681196 Hz
AQ 0.7340532 sec
RG 199.69
DW 5.600 usec
DE 6.50 usec
TE 296.3 K
D1 1.00000000 sec
D11 0.03000000 sec
D12 0.00002000 sec
TD0 1

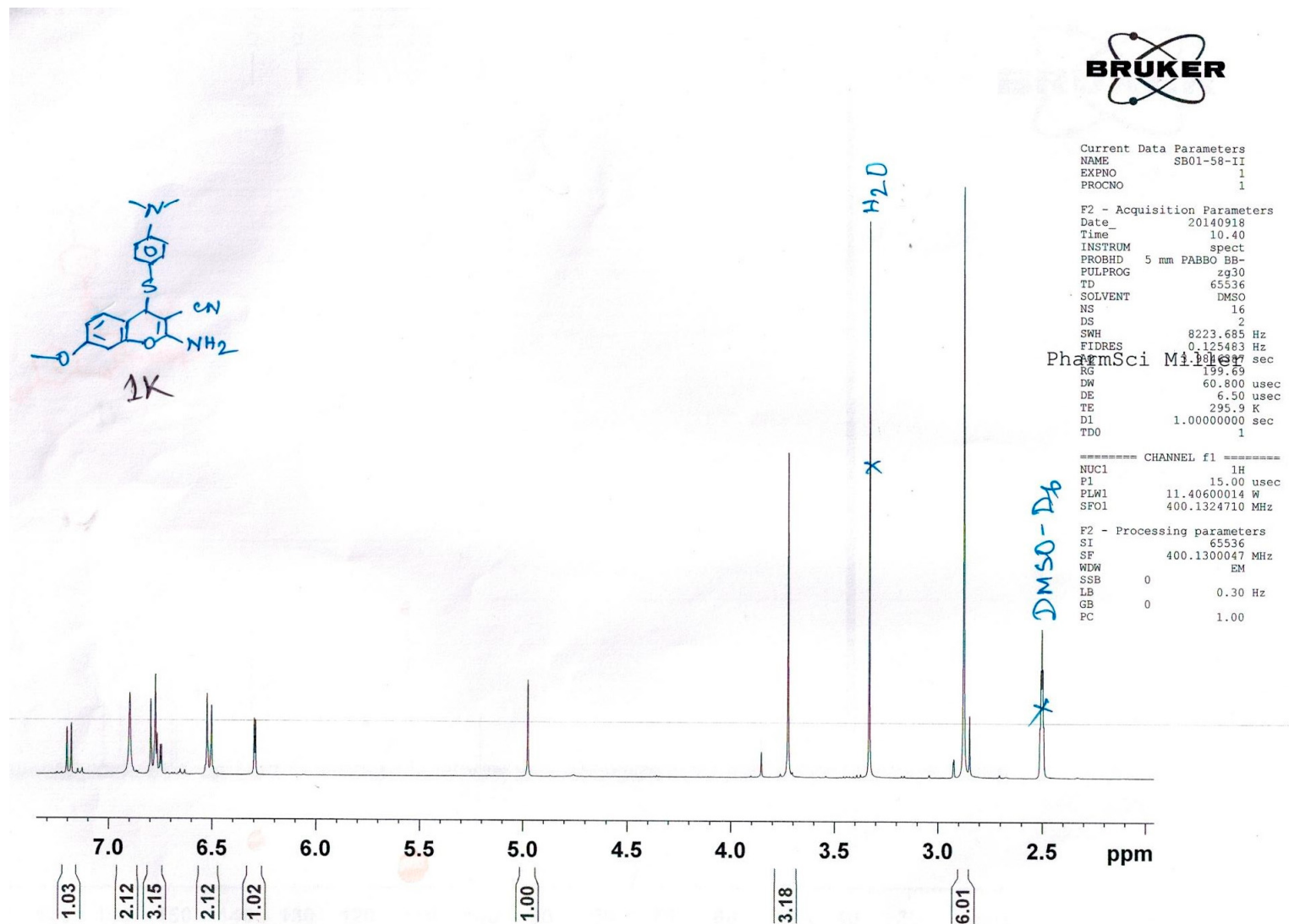
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P1 15.00 usec
PLW1 16.89999962 W
SFO1 376.4607164 MHz

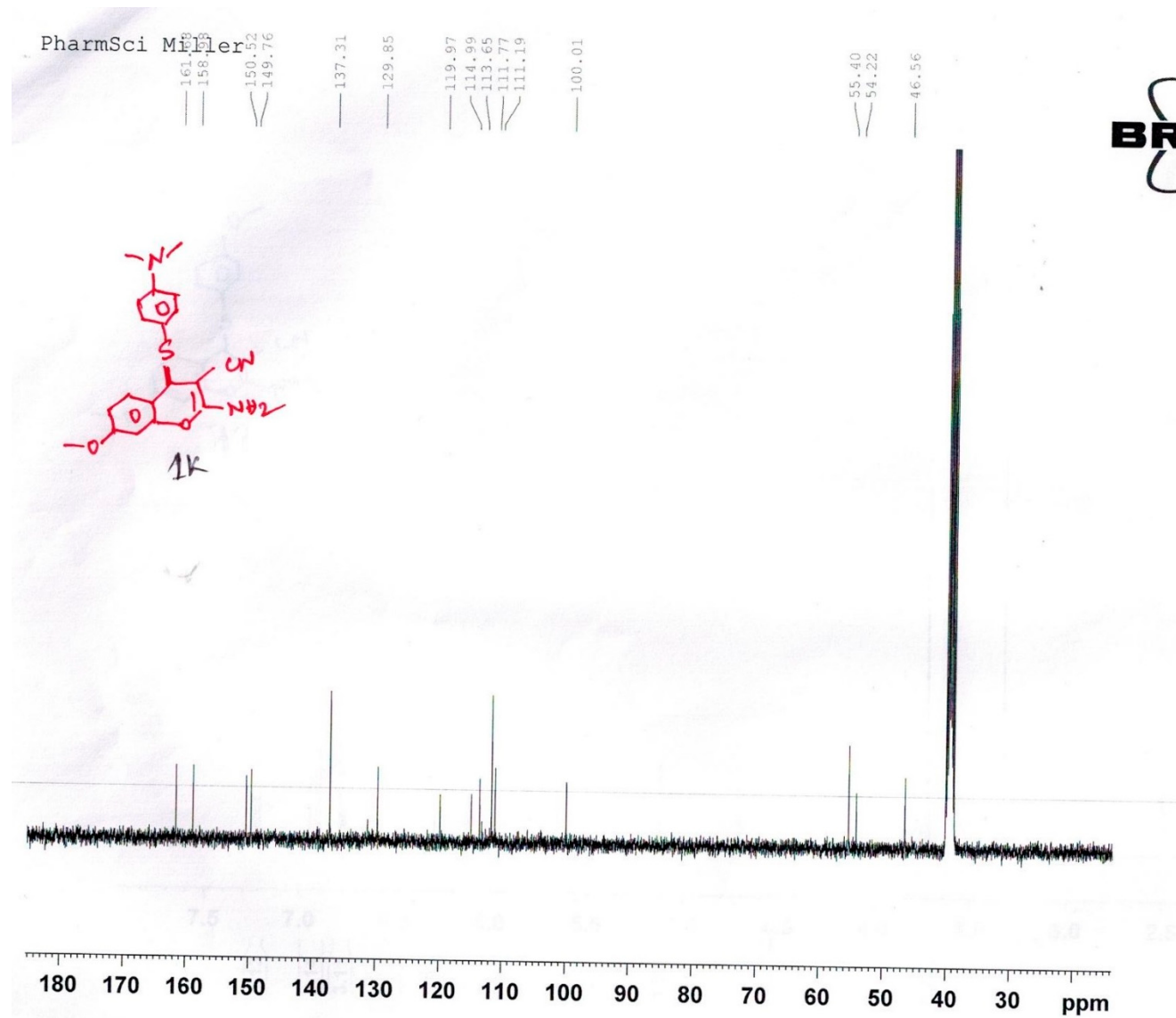
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SFO2 400.1316005 MHz

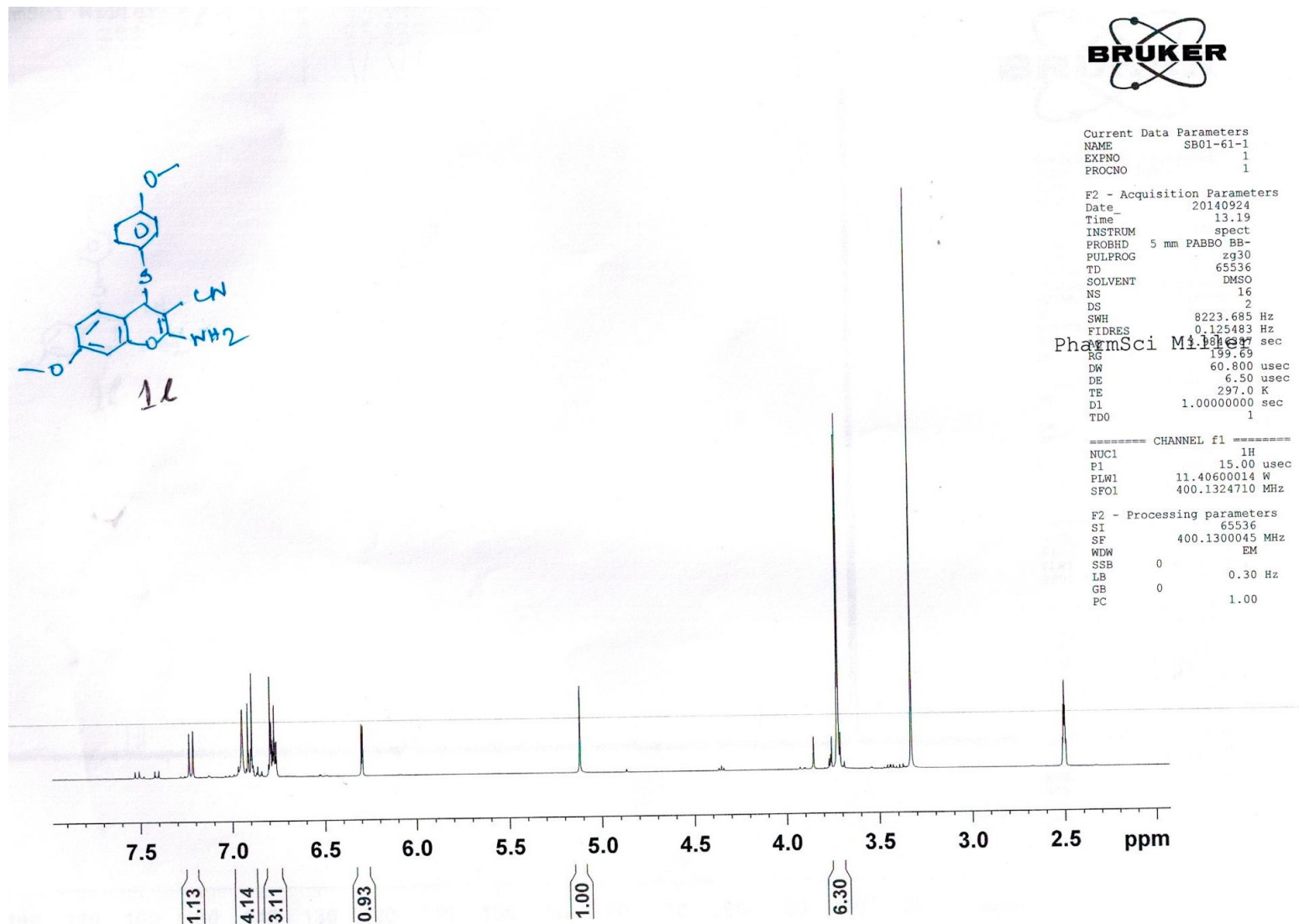
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LB 0
GB 1.00
PC

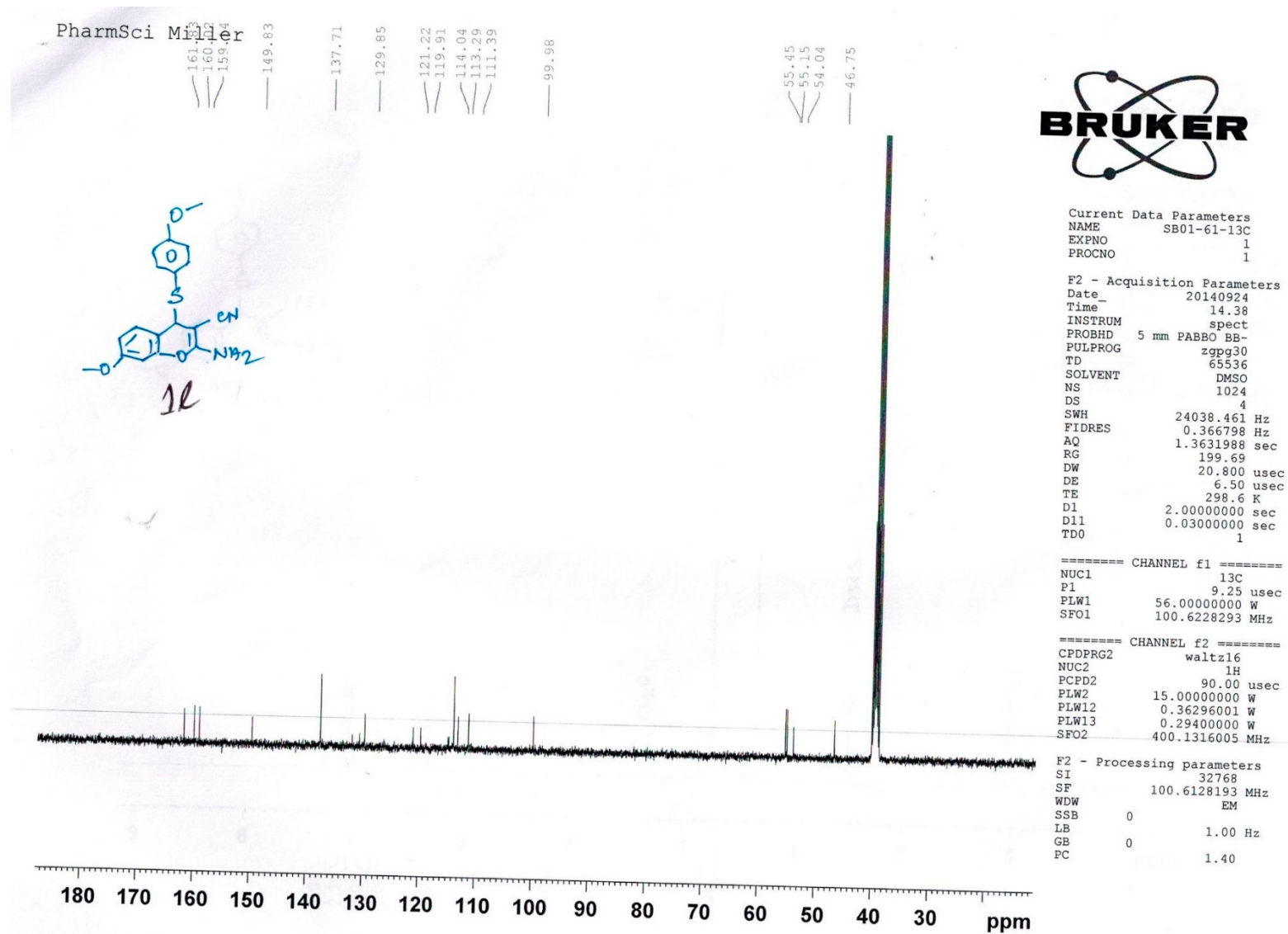
Figure S21. ^{19}F -NMR of 1i.

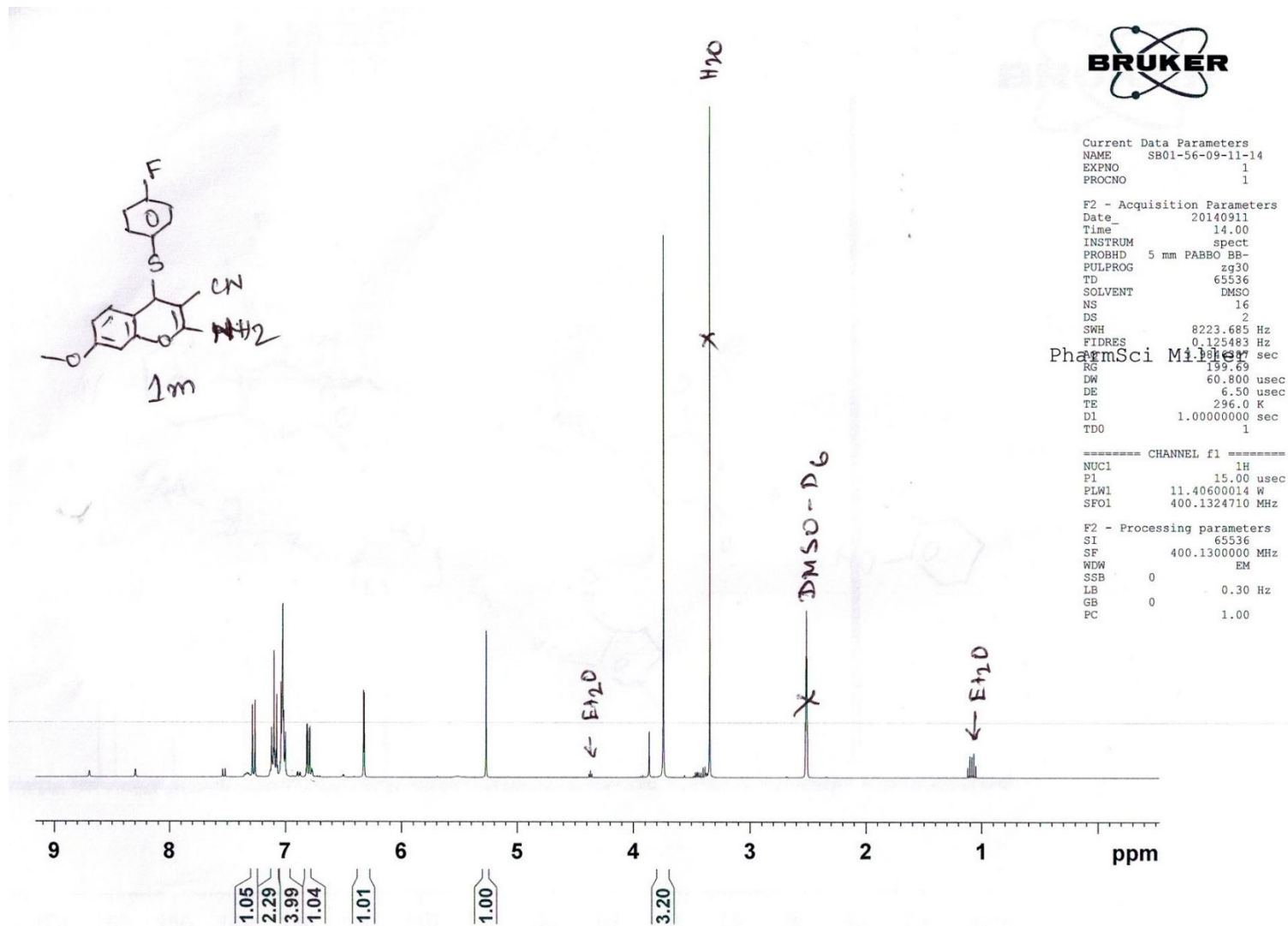
Figure S22. ¹H-NMR of 1j.

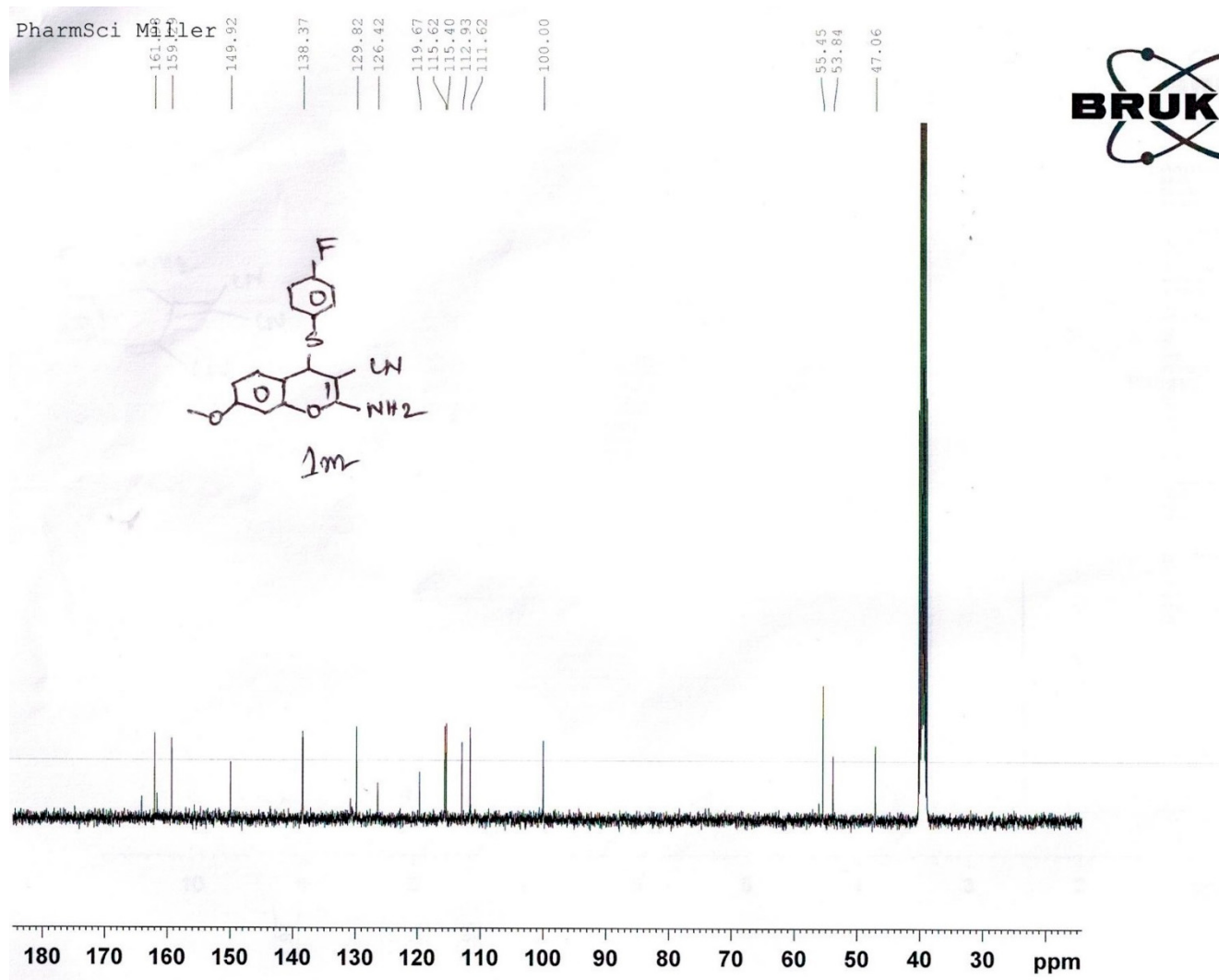
Figure S23. ¹H-NMR of 1k.

Figure S24. ^{13}C -NMR of 1k.

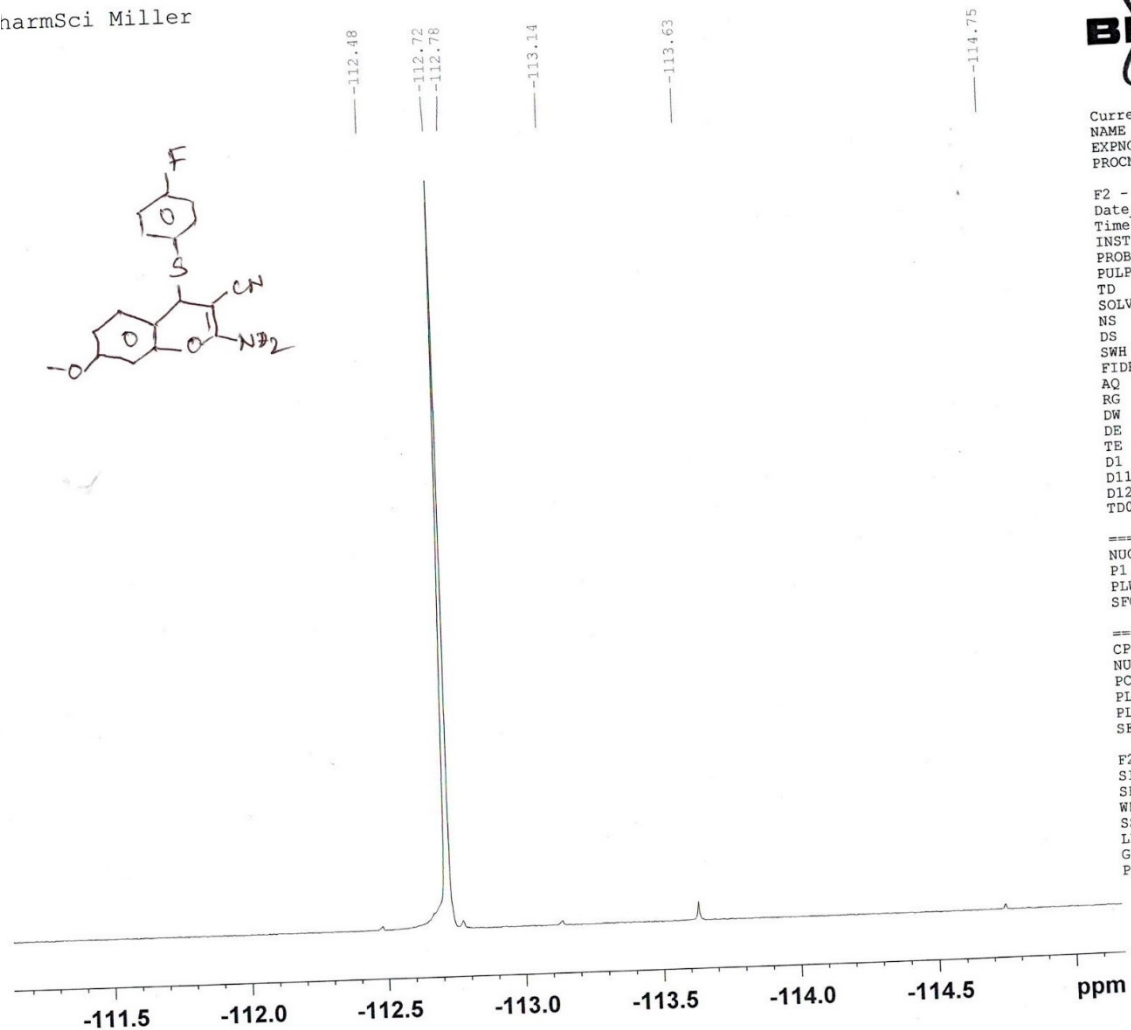
Figure S25. ¹H-NMR of 11.

Figure S26. ^{13}C -NMR of 11.

Figure S27. ¹H-NMR of **1m**.

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

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 PROCNO 1

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 SOLVENT DMSO
 NS 256
 DS 4
 SWH 89285.711 Hz
 FIDRES 0.681196 Hz
 AQ 0.7340532 sec
 RG 199.69
 DW 5.600 usec
 DE 6.50 usec
 TE 296.3 K
 D1 1.00000000 sec
 D11 0.03000000 sec
 D12 0.00002000 sec
 TD0 1

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

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

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

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