

Synthesis of novel pyridine and pyrazolyl pyridine conjugates with potent cytotoxicity against HepG2 cancer cells as PIM-1 kinase inhibitors and caspase activators

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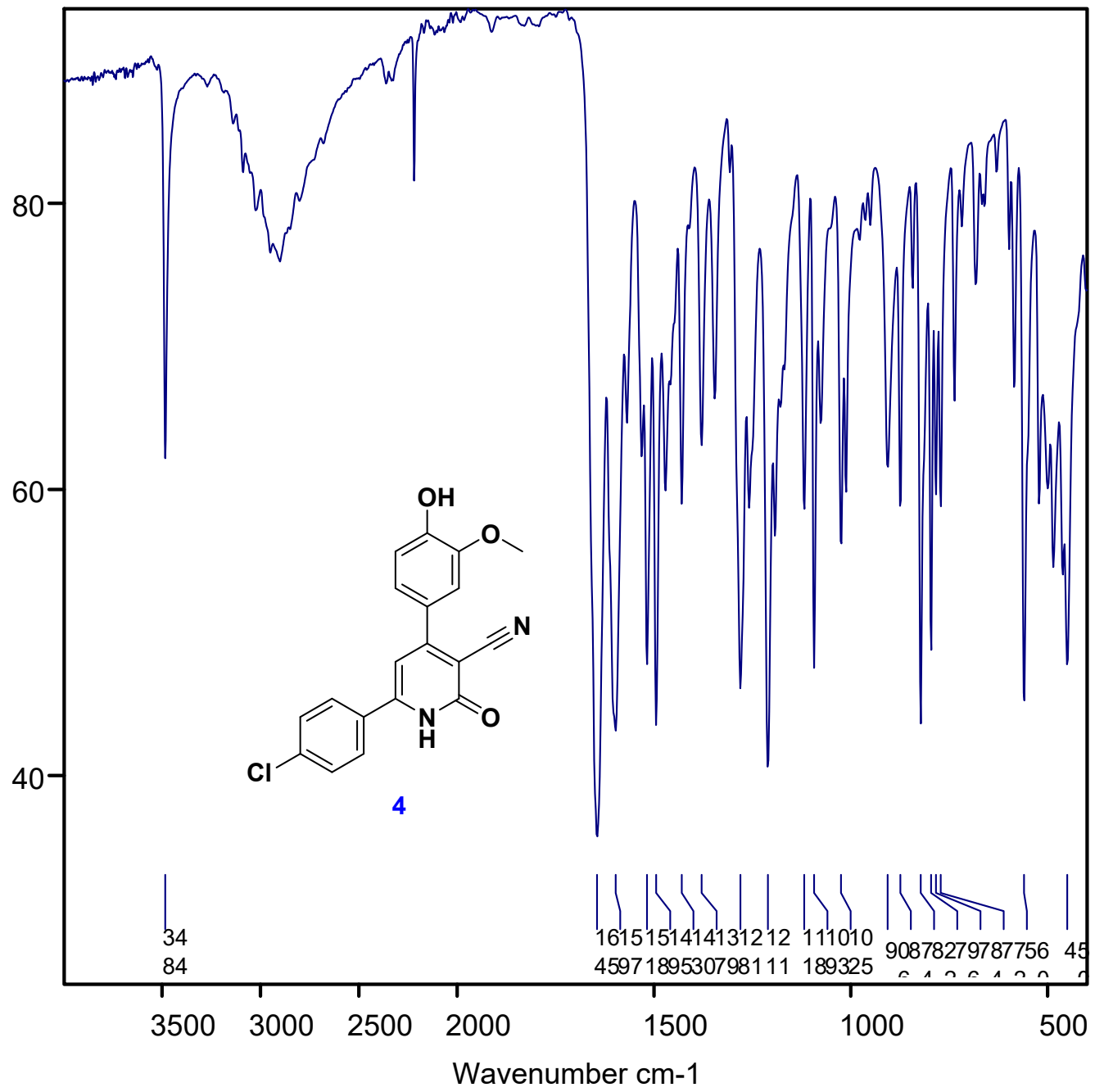
⁵ Alzahrawi university college, Karbala, Iraq

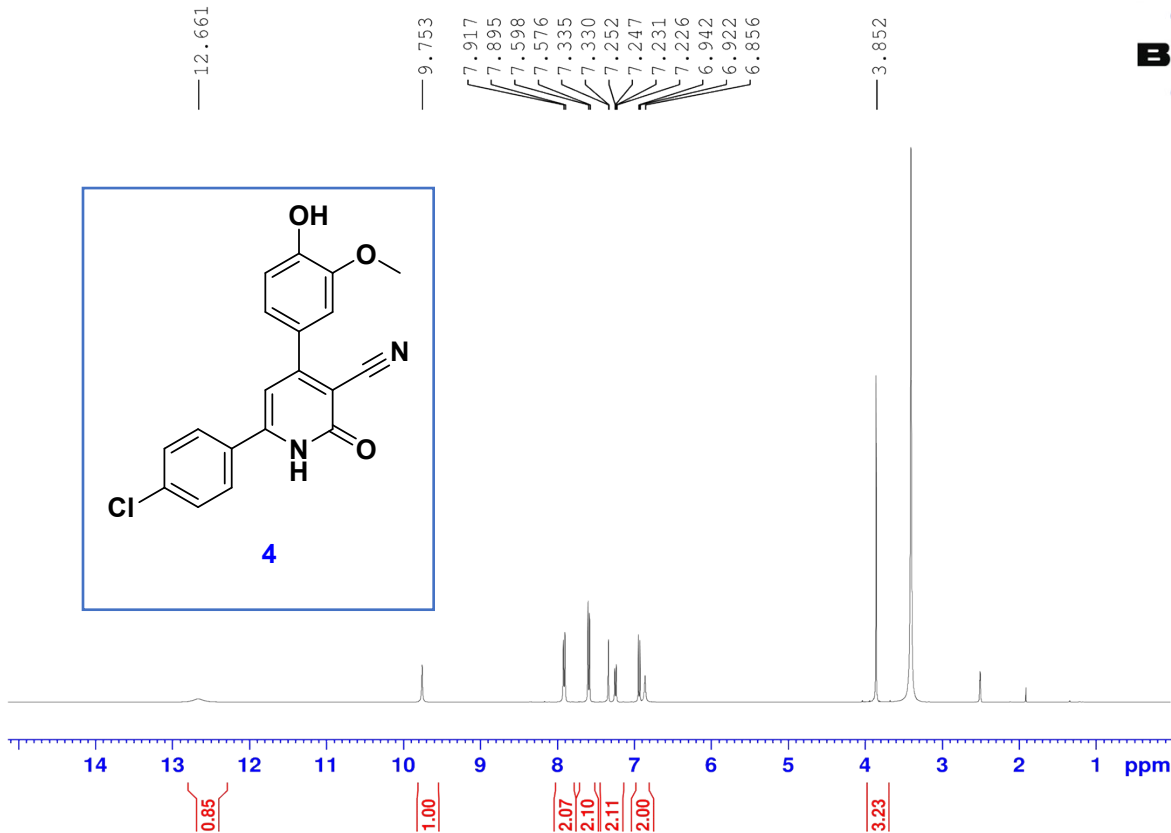
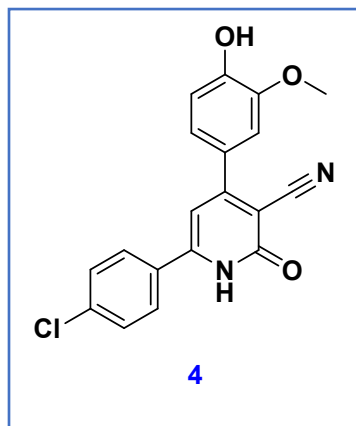
⁶Higher Institution of Engineering & Modern Technology, Elmag, Cairo, Egypt

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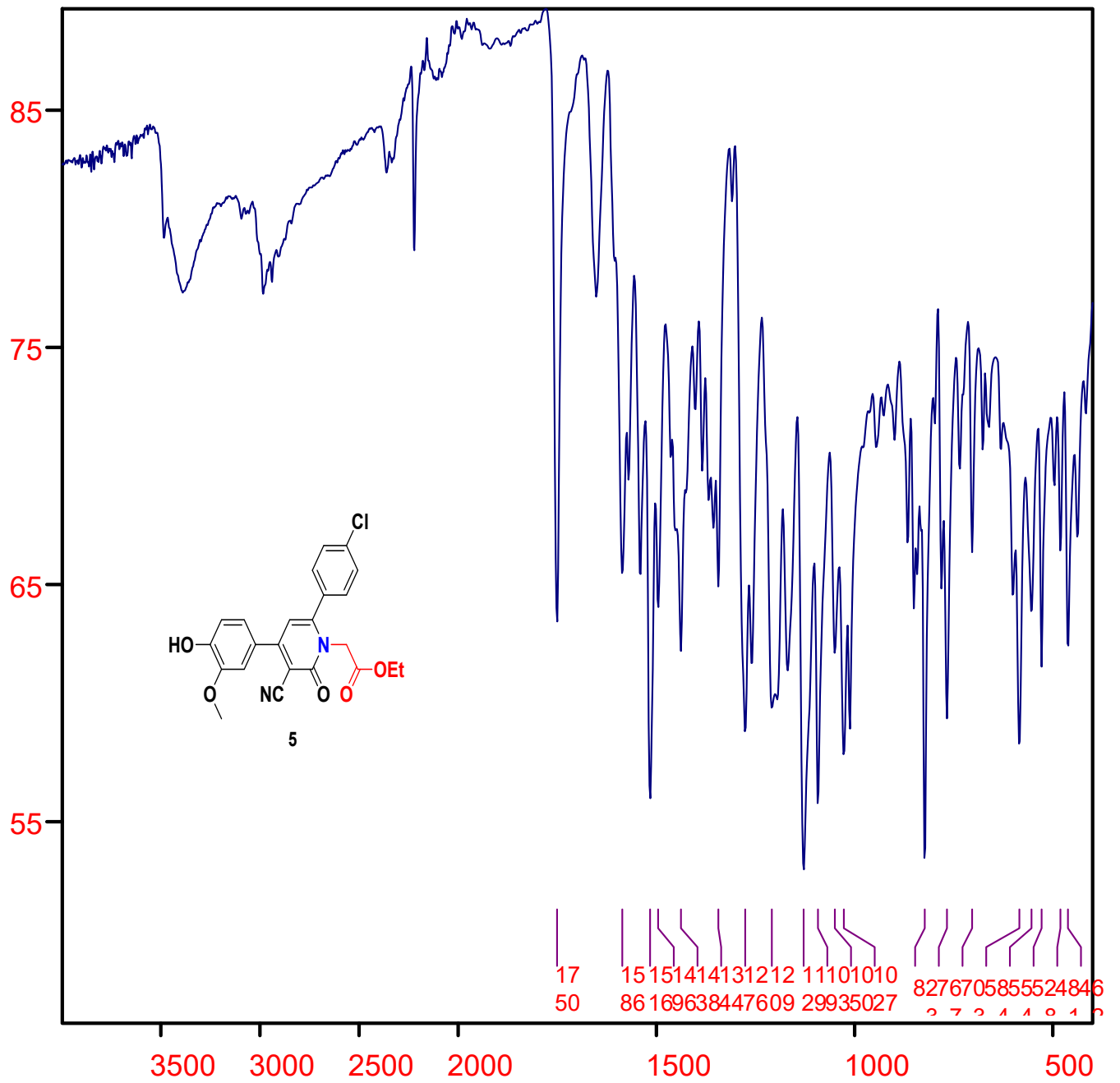
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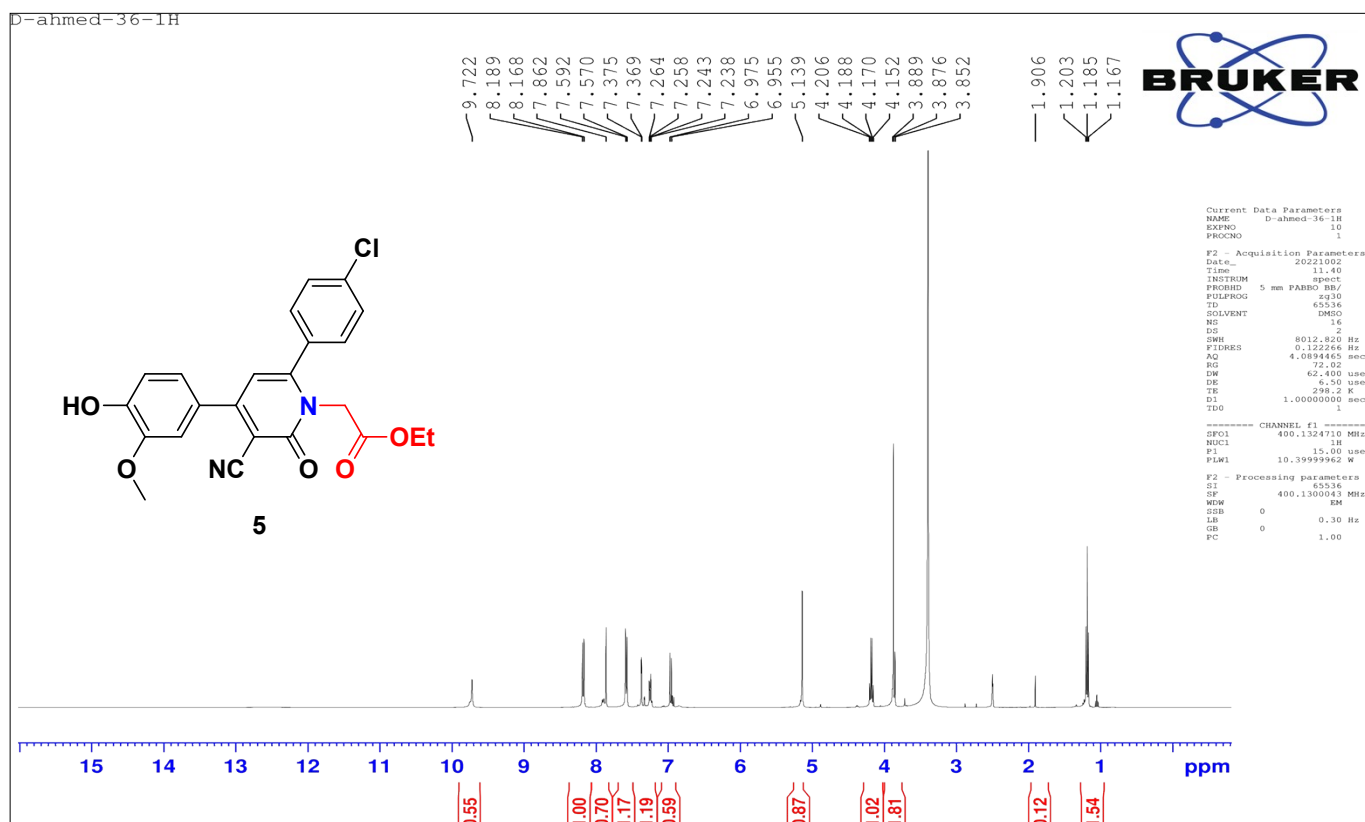
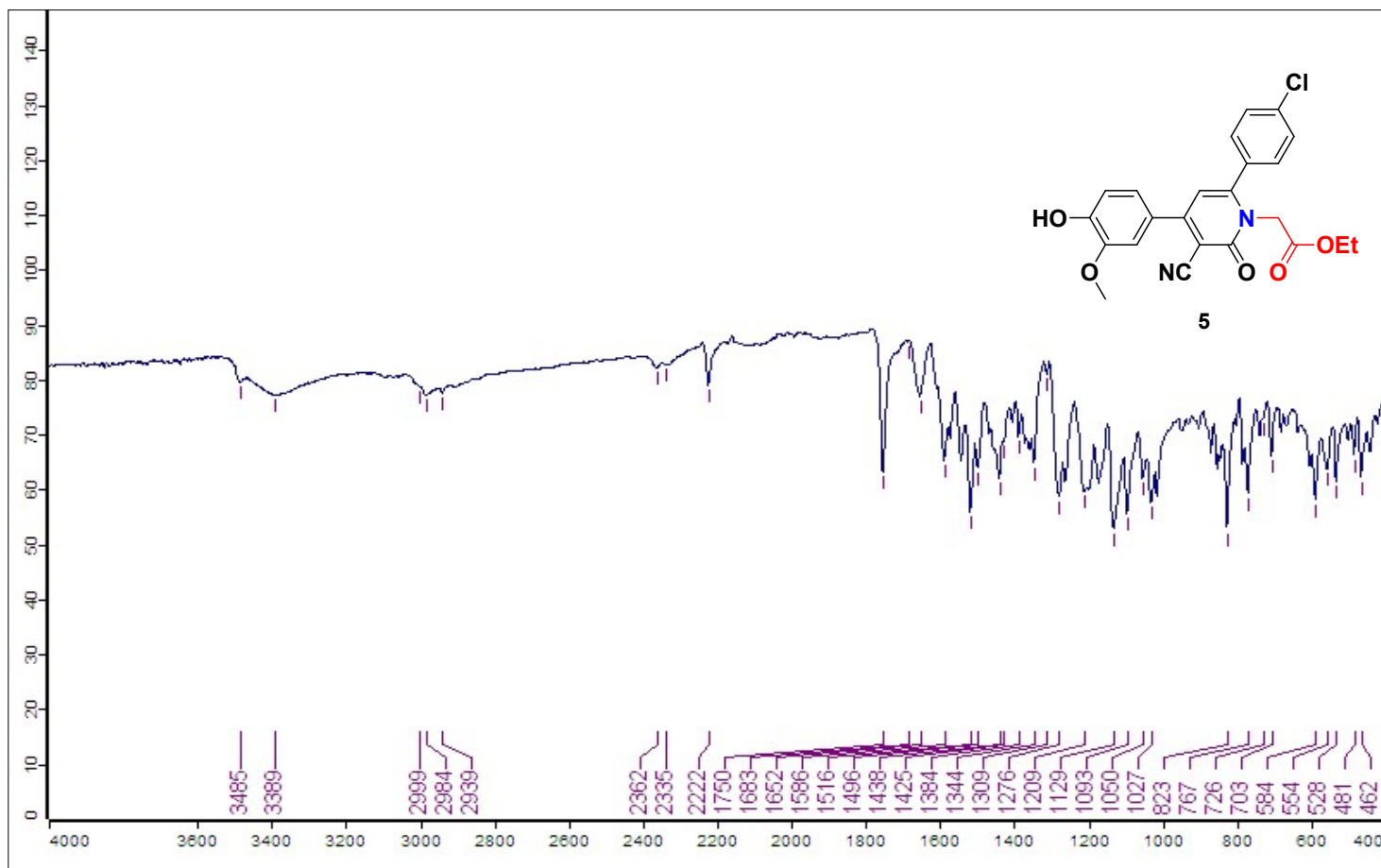
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PULPROG zg30
TD       65536
SOLVENT  DMSO
NS       16
DS       2
SWH      8012.820 Hz
FIDRES   0.122266 Hz
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TE       298.2 K
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TDO      1

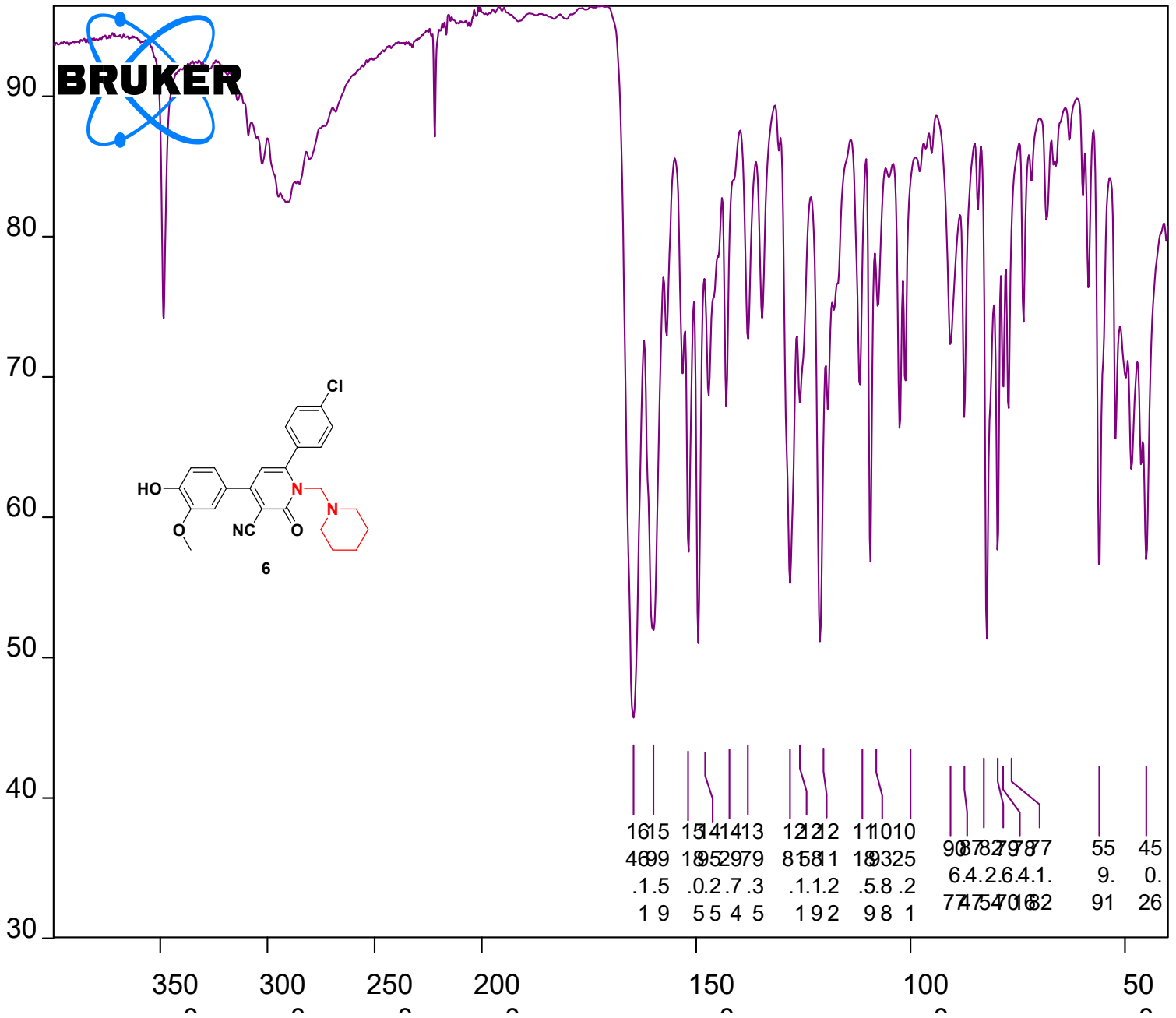
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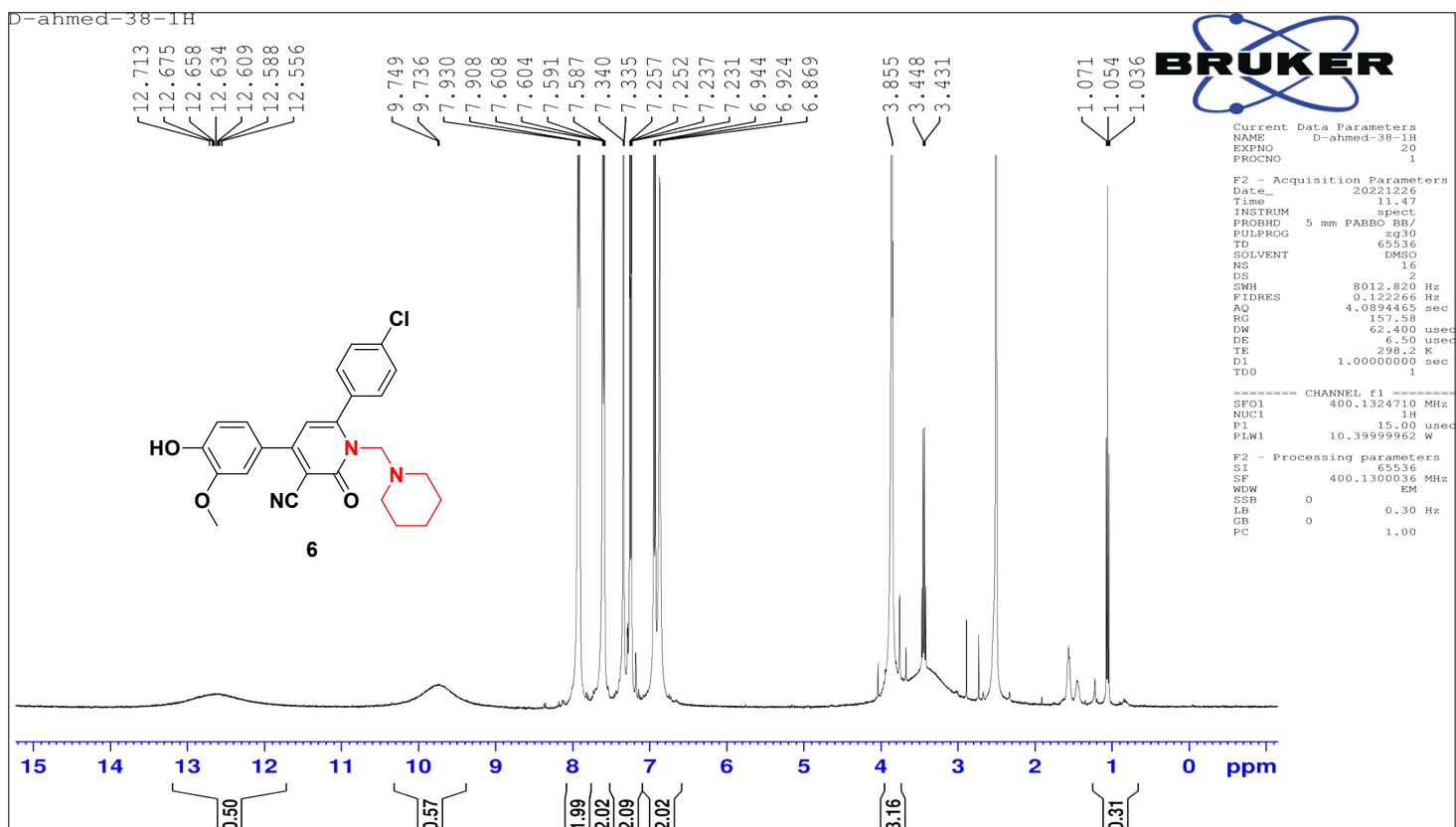
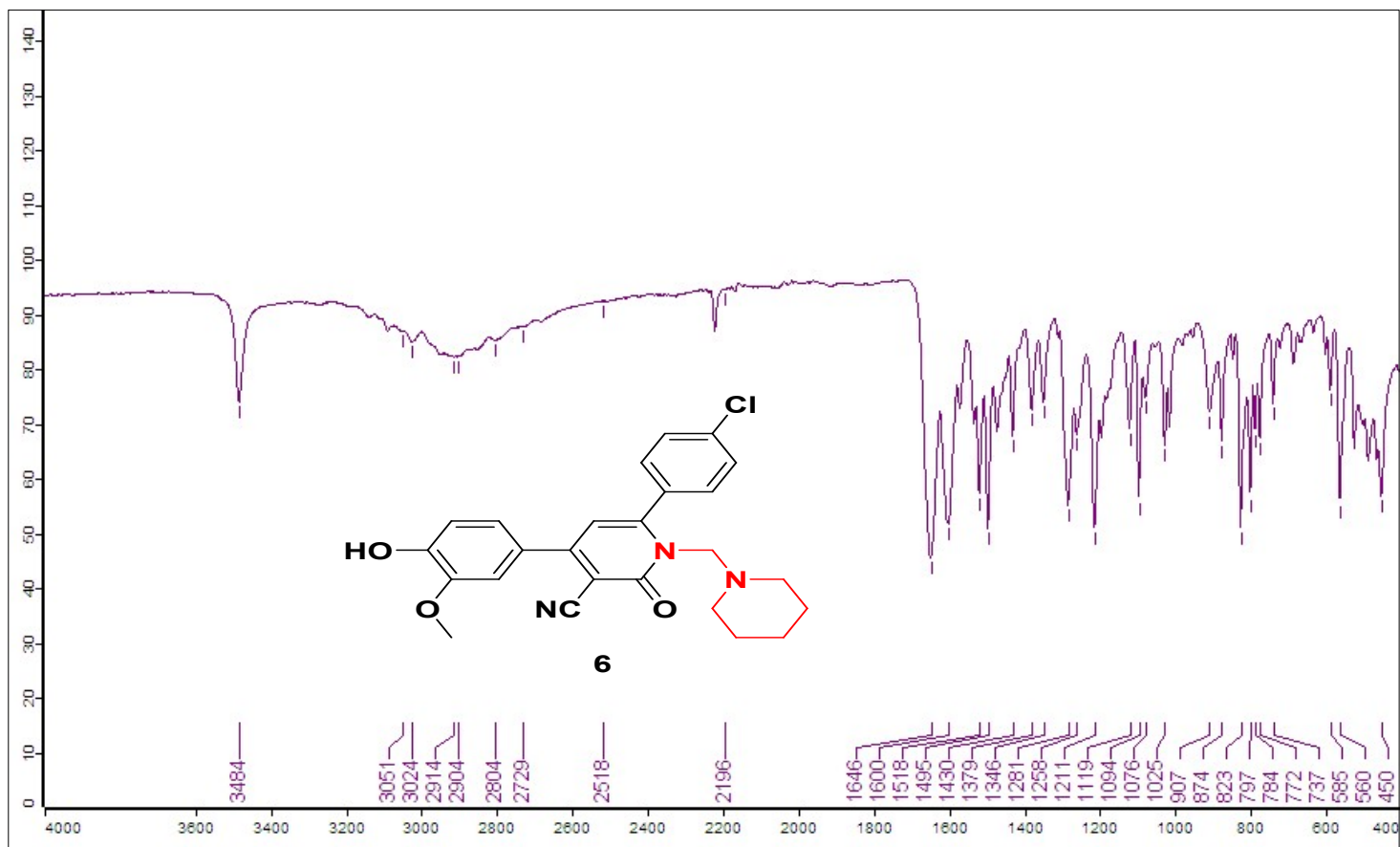


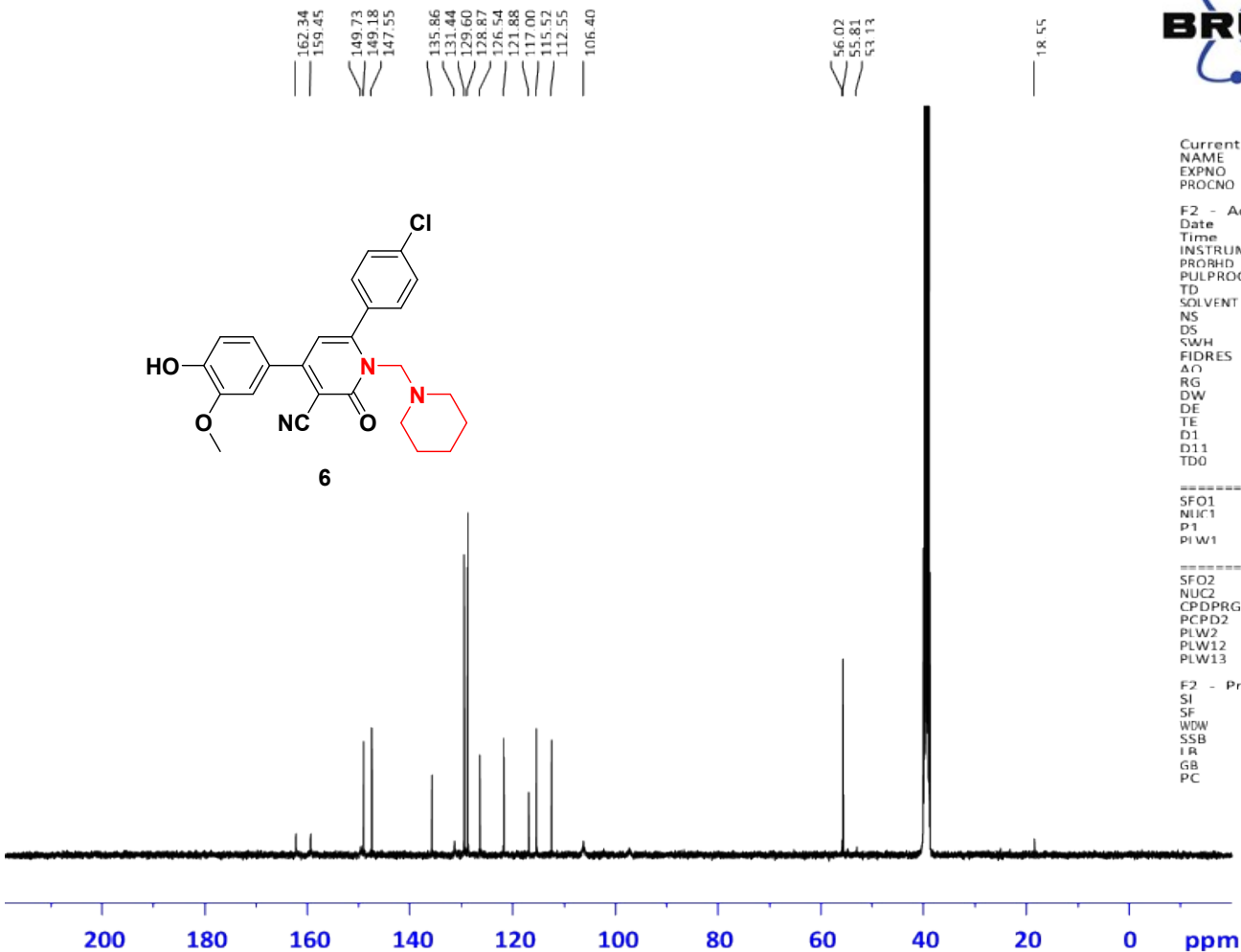
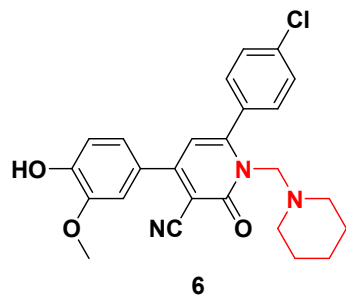


BRUKER



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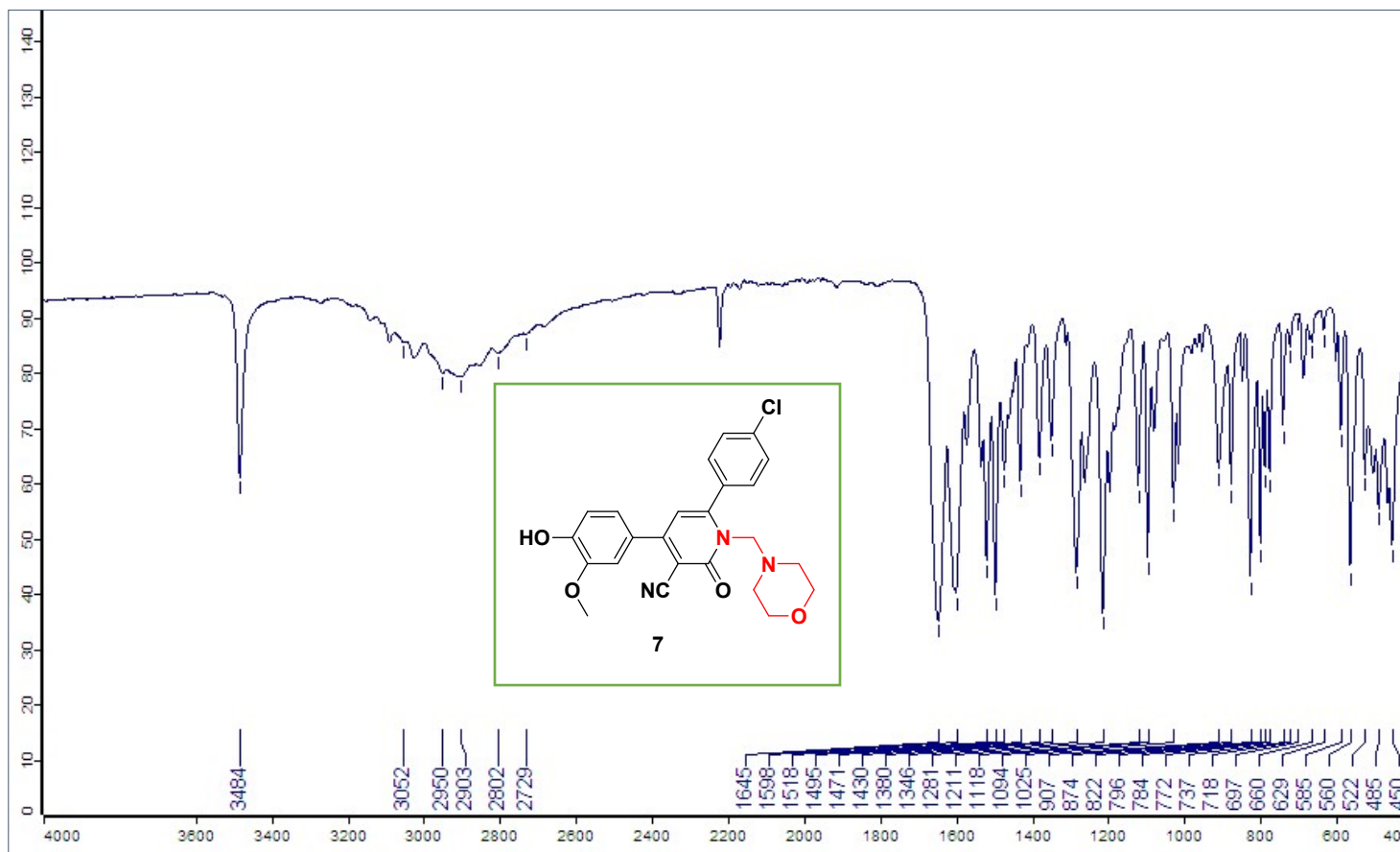
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 SOLVENT DMSO
 NS 2000
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 FIDRES 0.366798 Hz
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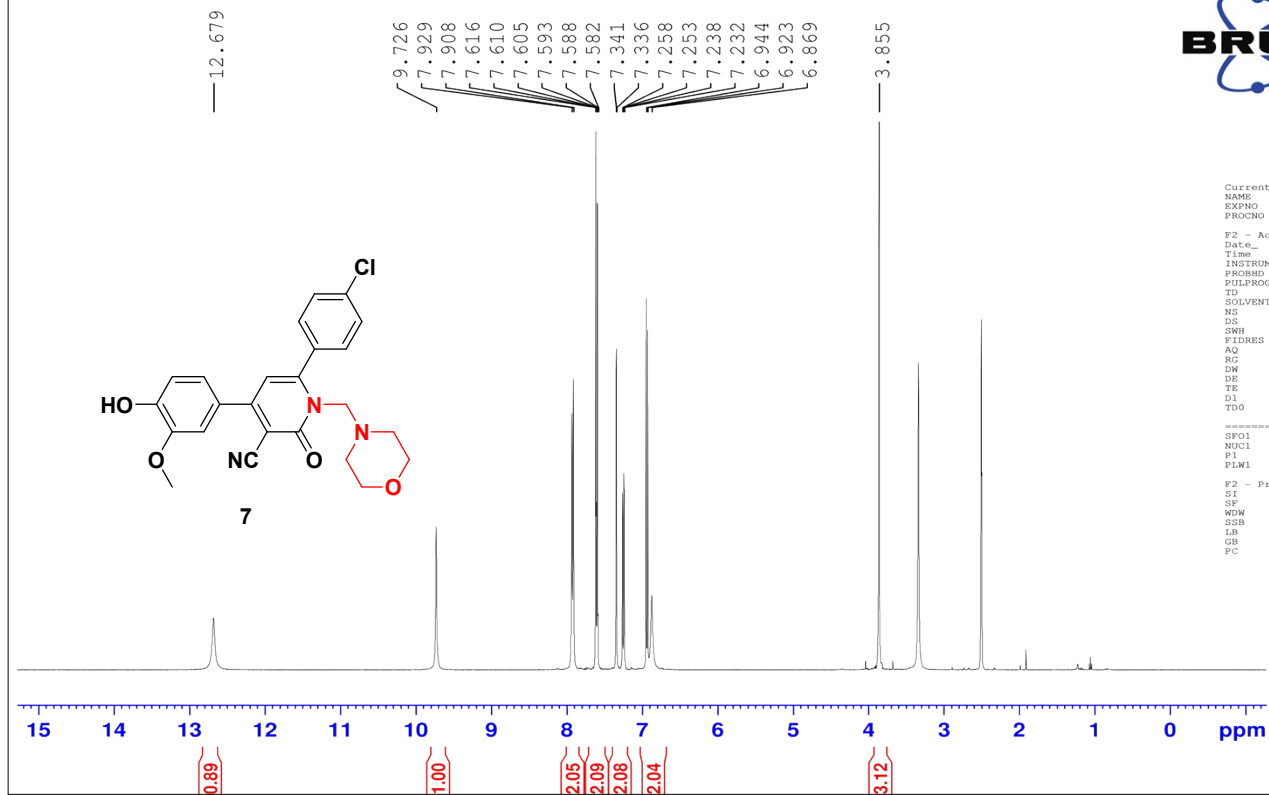
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 PLW12 0.28889000 W
 PLW13 0.23400000 W

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 SSB 0
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D-ahmed-39-1H



```

Current Data Parameters
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PROCNO   1

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Time     11.42
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PULPROG  zg30
TD       65536
SOLVENT  DMSO
NS       16
DS       2
SWH      8012.820 Hz
FIDRES   0.122266 Hz
AQ       4.0894465 sec
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DW       62.400 usec
DE       6.50 usec
TE       298.1 K
D1       1.00000000 sec
TD0      1

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NUC1    1H
P1      15.00 usec
PLW1    10.39999962 W

F2 - Processing parameters
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WDW     EM
SSB     0
LB      0.30 Hz
GB      0
PC      1.00
  
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D-ahmed-39

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Time
INSTRUM
PROBHD 5 mm BARR
PULPROG
TD
SOLVENT
NS

PC SW/H 24032 461
FIDRES 0.366708
AQ 1.3621488

RG 20.800
RF 6.50

D1 2.00000000
D11 0.02000000
TD0

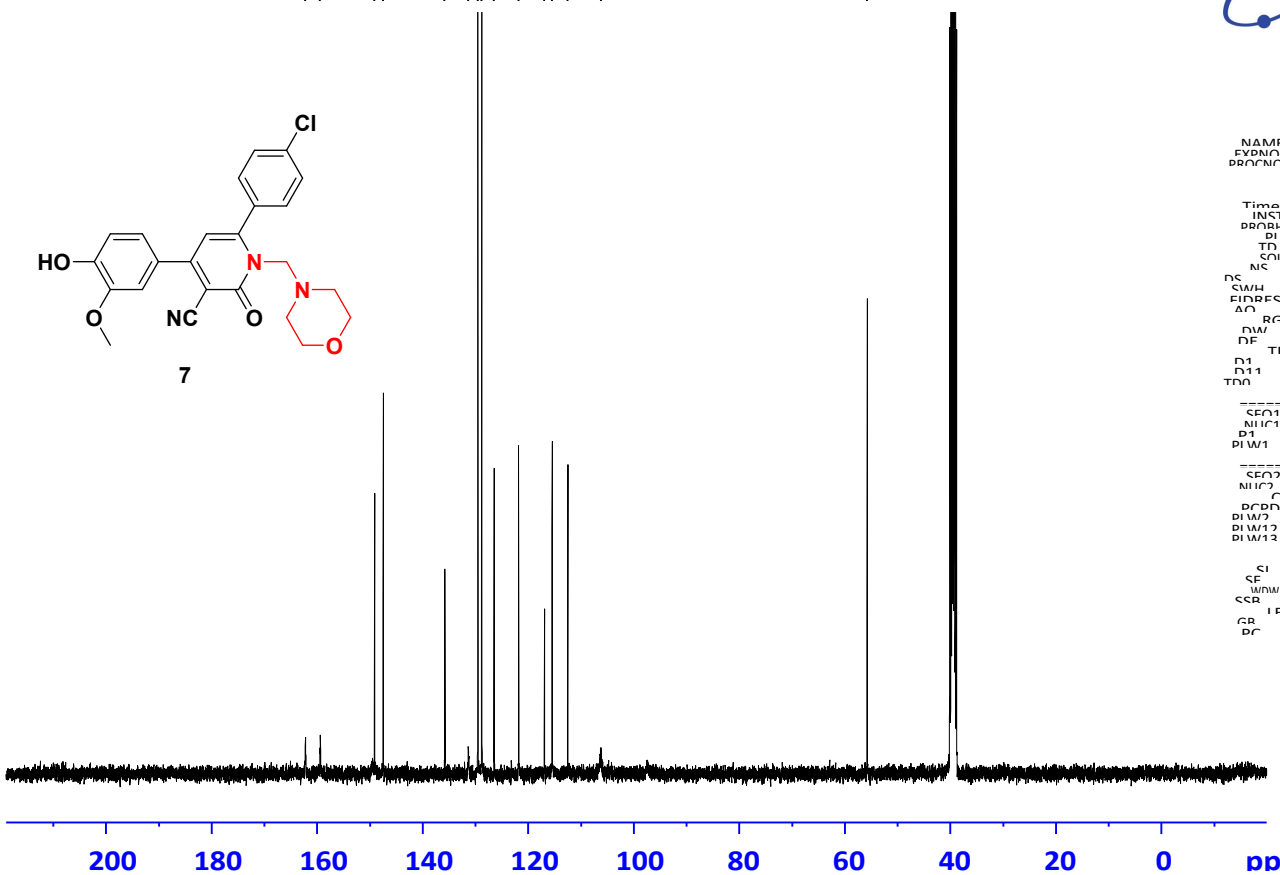
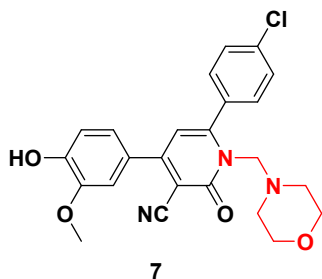
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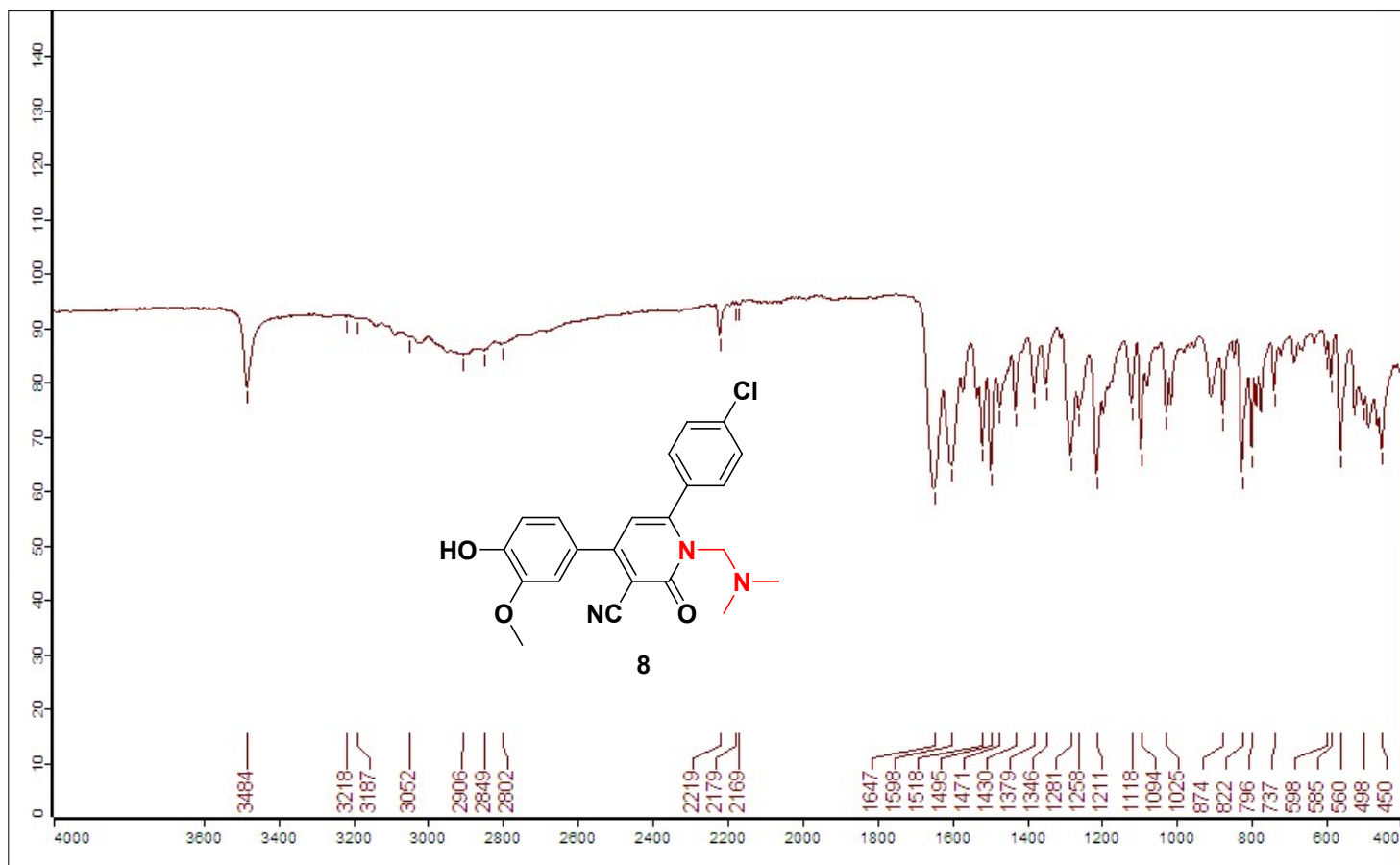
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PLW13 0.72400000

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S1
SF 100.6178167
WDW
SSB
GB
PC

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65 44 332222111 0
29 97 519861657 6

5
5





3484

3218

3187

3052

2906

2849

2802

2219

2179

2169

1647

1598

1518

1495

1471

1430

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1211

1118

1094

1025

874

822

796

737

598

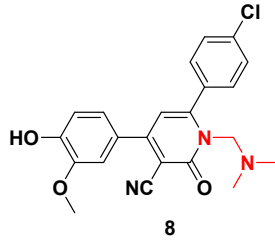
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560

498

450

D-ahmed-40-1H



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12.625
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12.599
12.538

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9.731
9.692
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7.911
7.614
7.609
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7.592
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7.336
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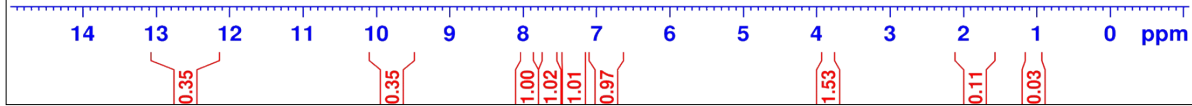
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Time 11.33
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 16
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894465 sec
RG 201.61
DW 62.400 usec
DE 6.50 usec
TE 298.2 K
D1 1.0000000 sec
TDO 1

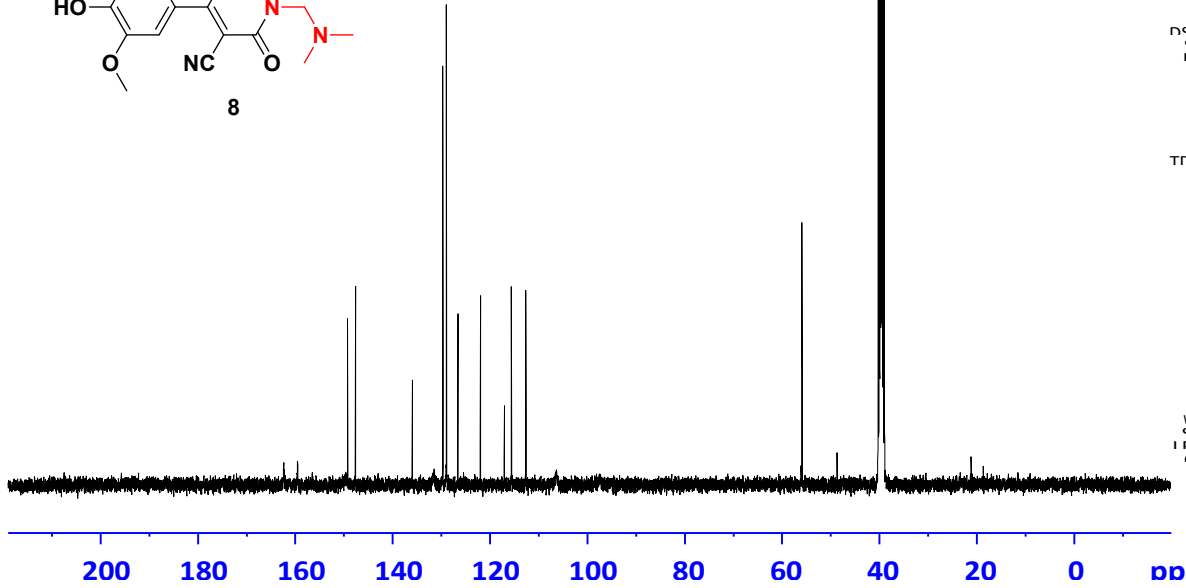
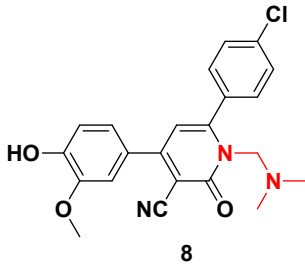
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P1 15.00 usec
PLW1 10.39999962 W

F2 - Processing parameters
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SF 400.1300034 MHz
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SSB 0
LB 0.30 Hz
GB 0
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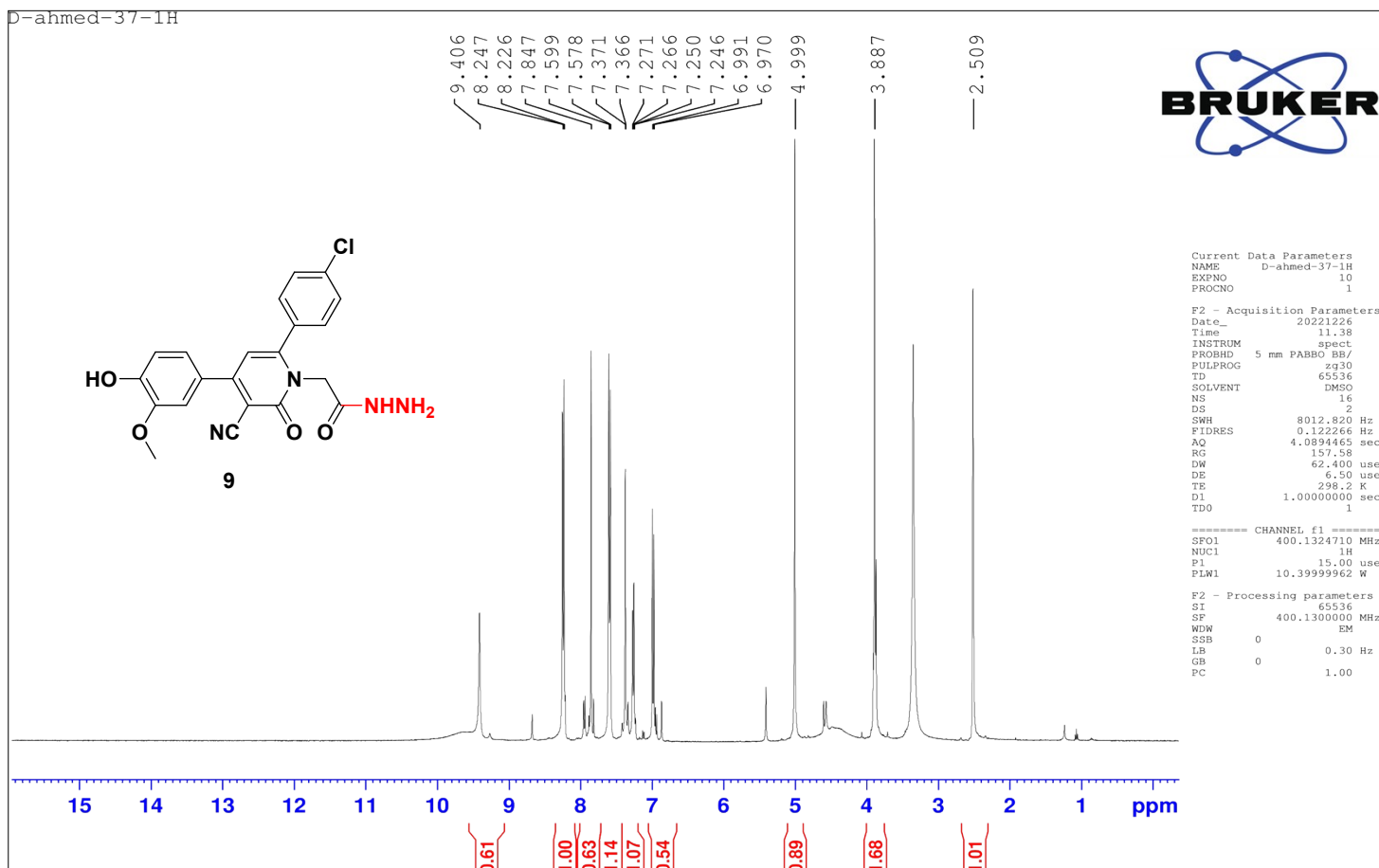
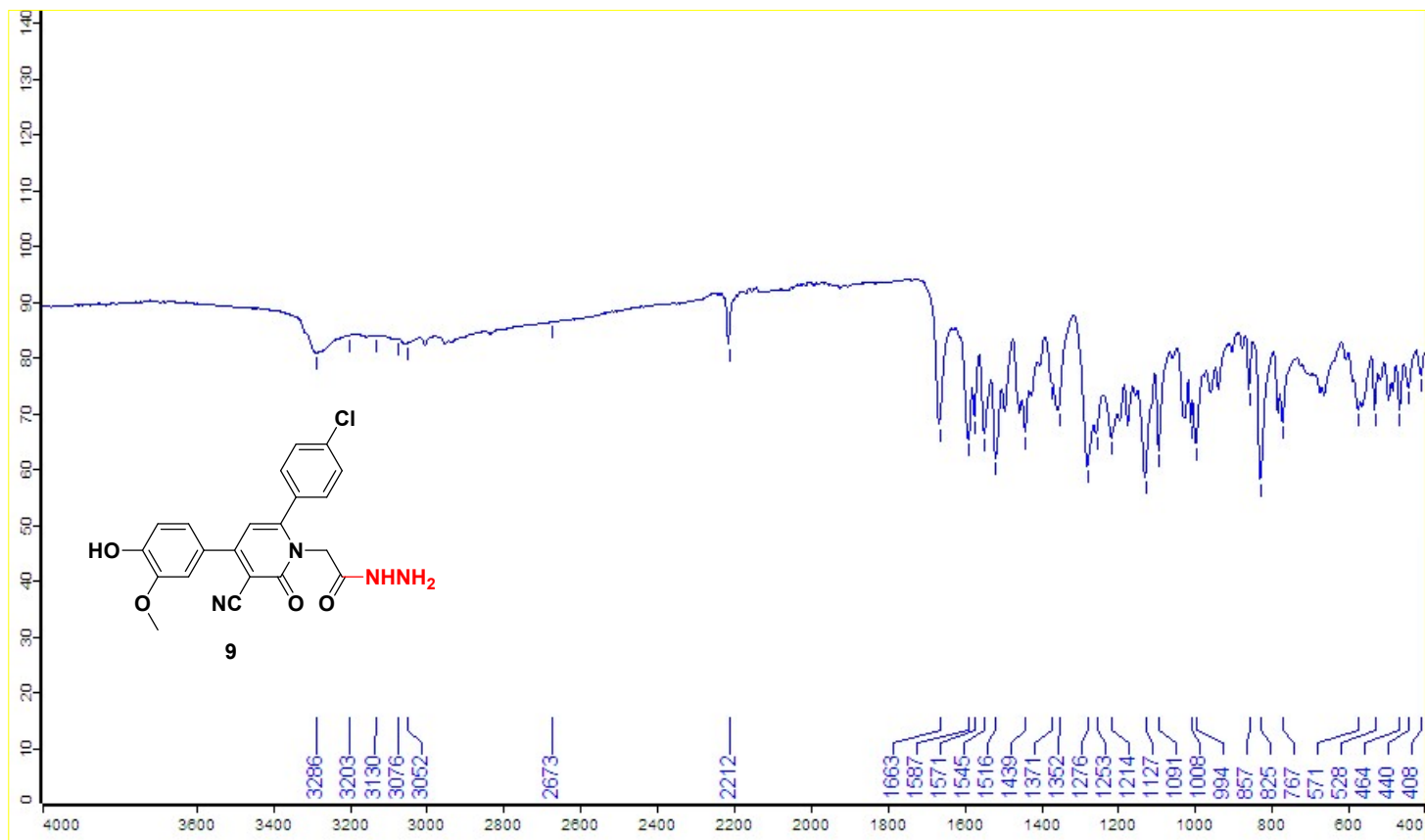


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 65 44 3 2222111
 70 07 5 0861657

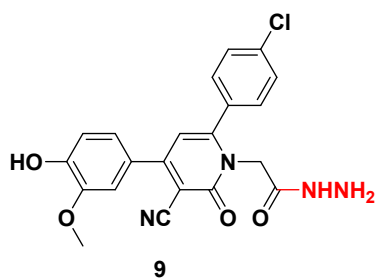
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 65 8 18
 V | V



Current Data
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 EXPNO
 PROCNO
 F2 - Acquisition
 Date
 Time
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 PRORHD
 P111 PROG
 TD
 SOLVENT
 NS
 DC
 SWH 24038.461
 FIDRES 0.366798
 ΔC 1.3631488
 RG
 DW 20.800
 DE 6.50
 TE
 D1 2.00000000
 D11 0.03000000
 TD0
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 SF01 100.6228293
 NU1C1
 P1 1.00000000
 PI W1 50.00000000
 =====CHANNEL2
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 NU2C2
 CPDPRG12
 PRD02
 PI W2 10.39999967
 PI W12 0.28889000
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 SSB
 I R 1.00
 CR
 PC



D-Ahmed-37-d2o

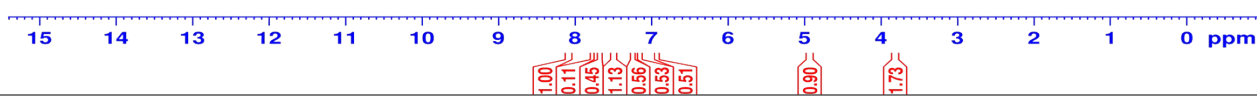


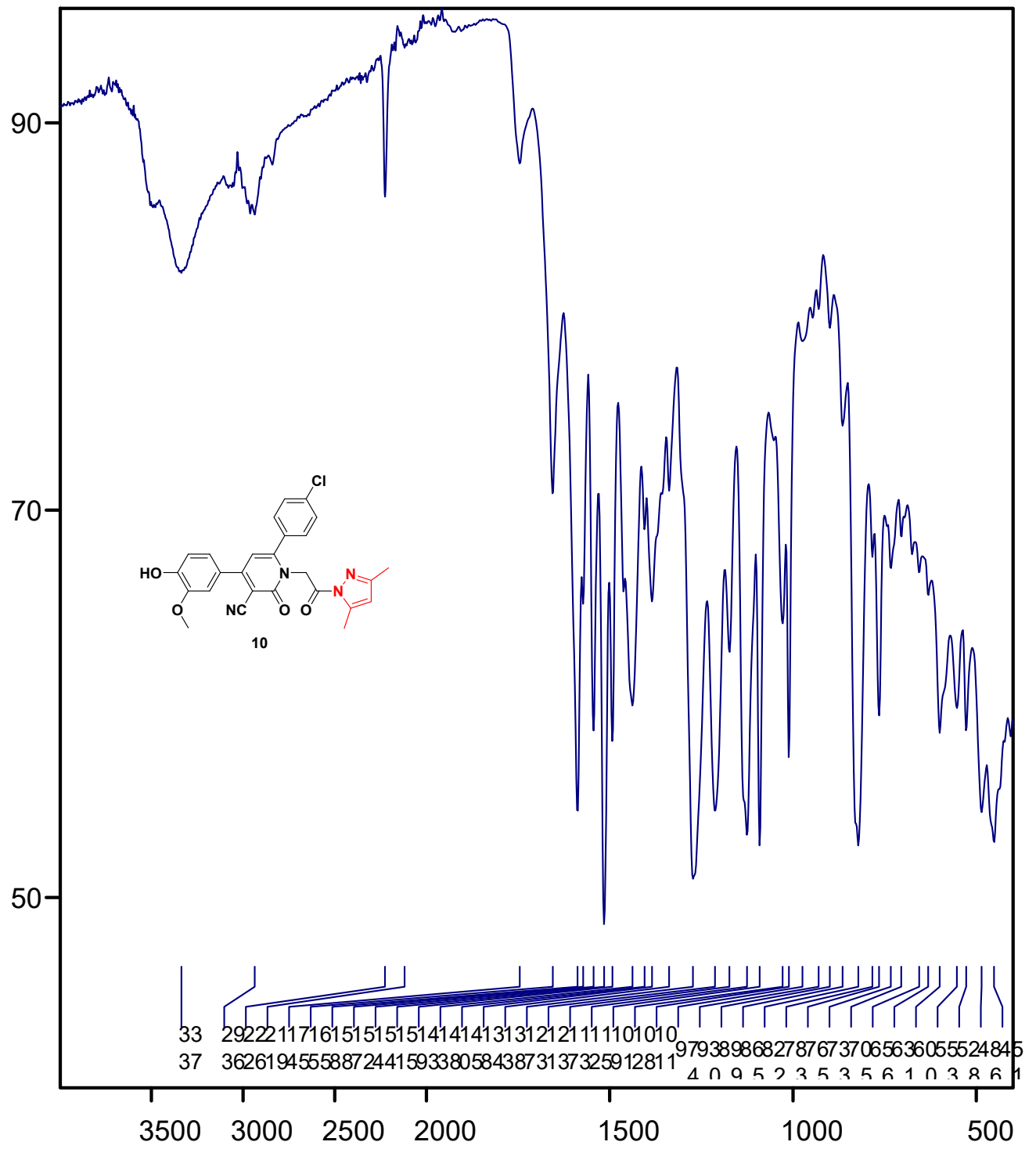
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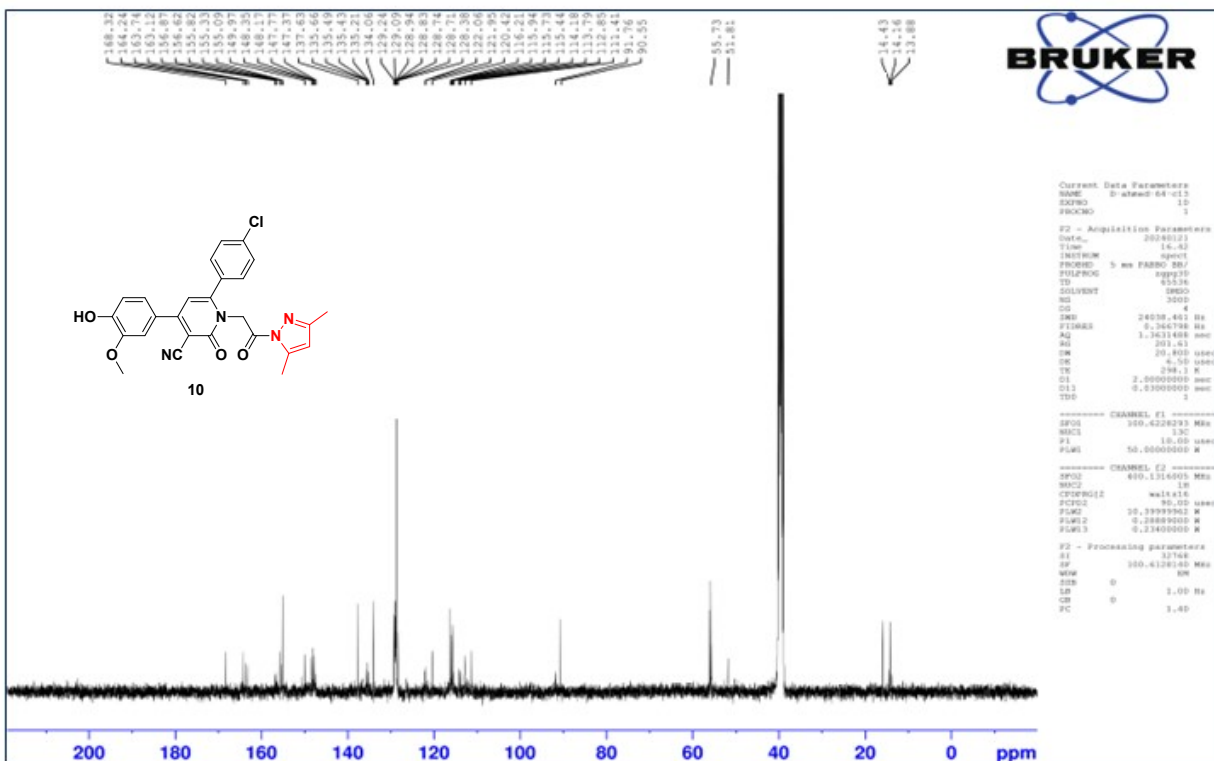
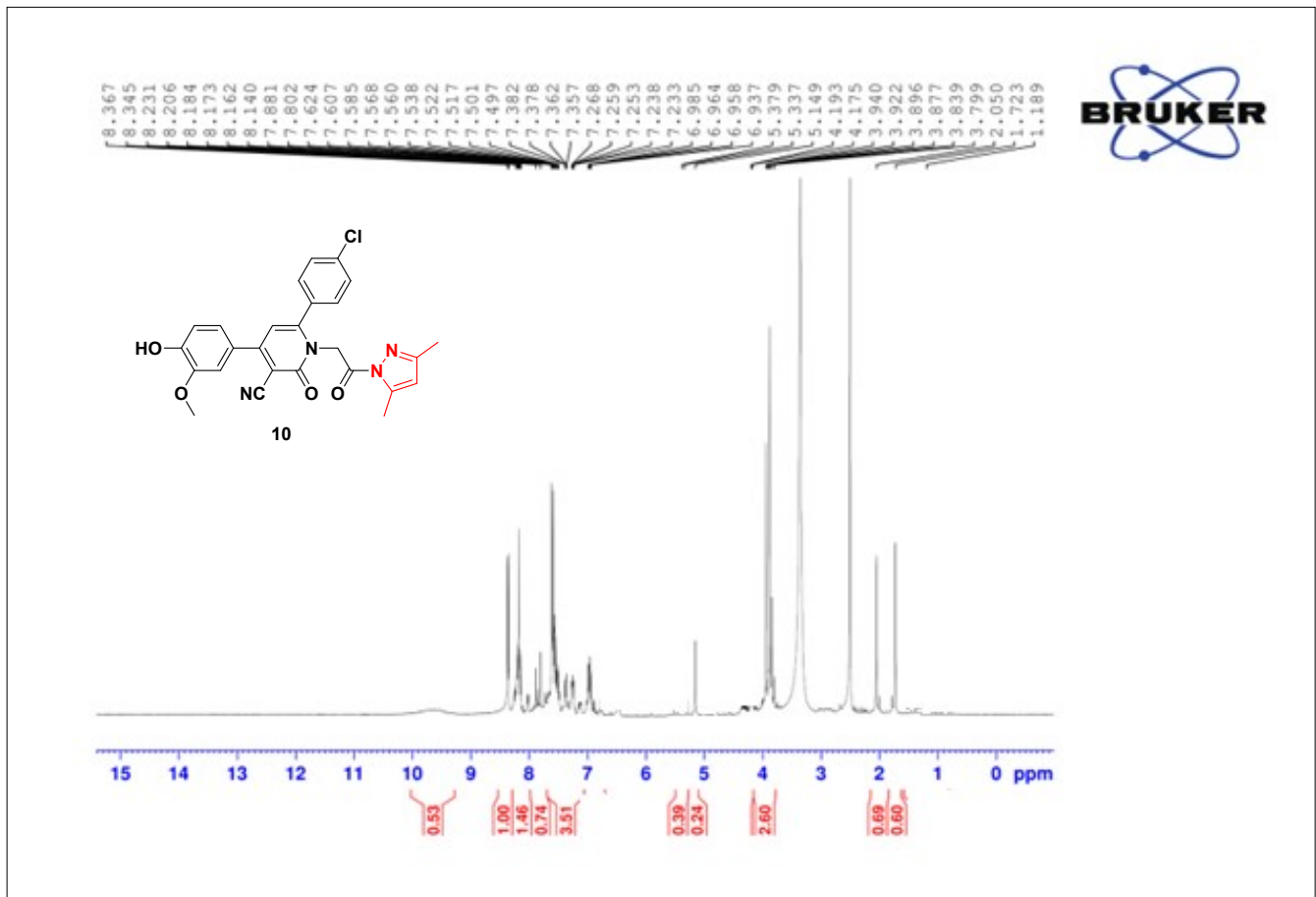
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Time 12.26
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PULPROG zg30
TD 65536
SOLVENT DMSO
NS 16
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894465 sec
RG 143.63
DW 62.400 usec
DE 6.50 usec
TE 298.1 K
D1 1.0000000 sec
TD0 1

----- CHANNEL f1 -----
SFO1 400.1324710 MHz
NUC1 1H
P1 15.00 usec
PLW1 10.39999962 W

F2 - Processing parameters
SI 65536
SF 400.1300041 MHz
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SSB 0
LB 0.30 Hz
GB 0
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Current Data Parameters

NAME: D:\shw04\015

EXPNO: 10

PROCNO: 1

F2 - Acquisition Parameters

Date_: 20240121

Time: 16.42

INSTRUM: spect

PROBHD: 5 mm PABBO 50/

PULPROG: zgpg30

TD: 65536

SOLVENT: DMSO

NS: 3000

DS: 4

SWH: 24038.402 Hz

FIDRES: 0.346708 Hz

AQ: 1.3631488 sec

RG: 201.43

SM: 20.800 usec

DM: 4.50 usec

TE: 298.2 K

DE: 2.0000000 sec

DELTA: 0.0300000 sec

TDS: 3

===== CHANNEL F1 =====

NUC1: 13C

NUC2: 13C

PC1: 10.00 usec

PLW1: 50.00000000 M

===== CHANNEL F2 =====

NUC1: 13C

NUC2: 13C

PC1: 10.00 usec

PLW1: 50.00000000 M

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PLW3: 0.23400000 M

PLW4: 0.23400000 M

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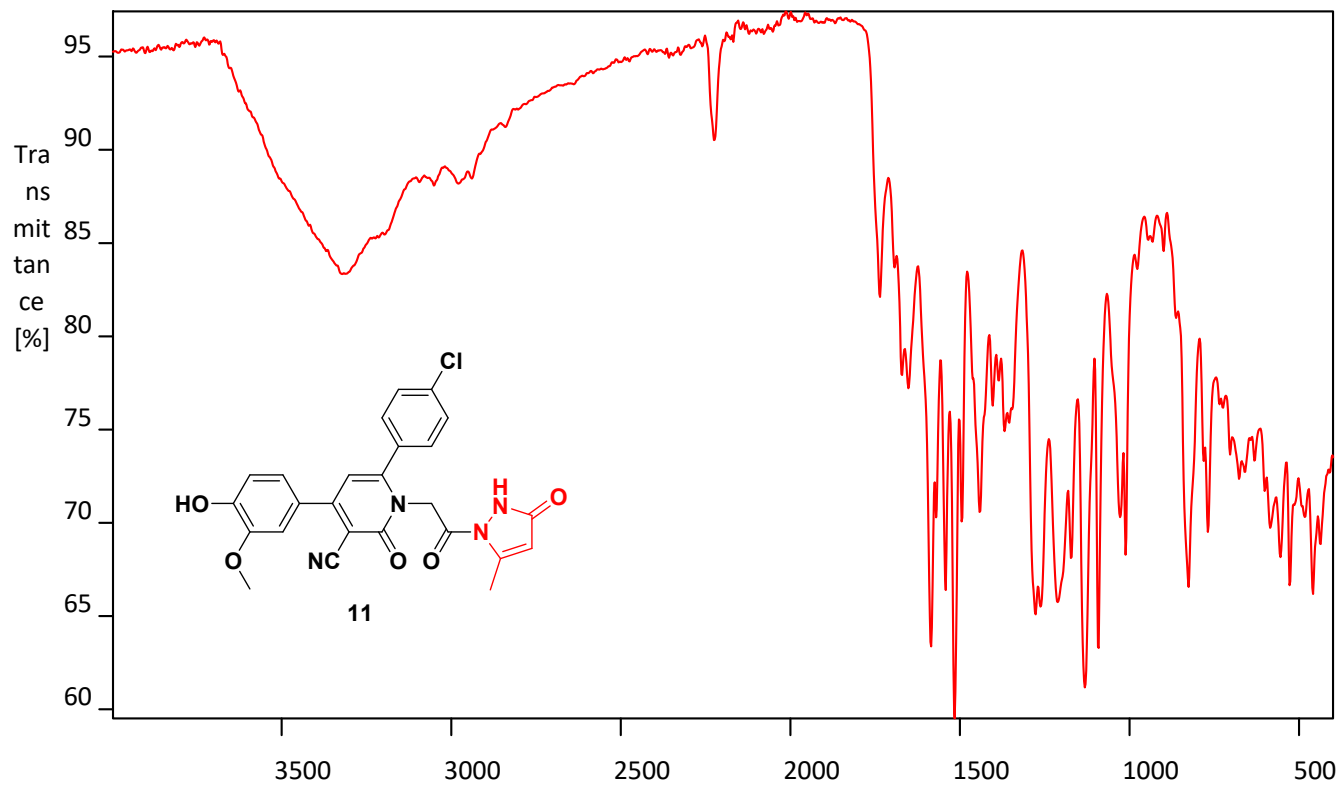
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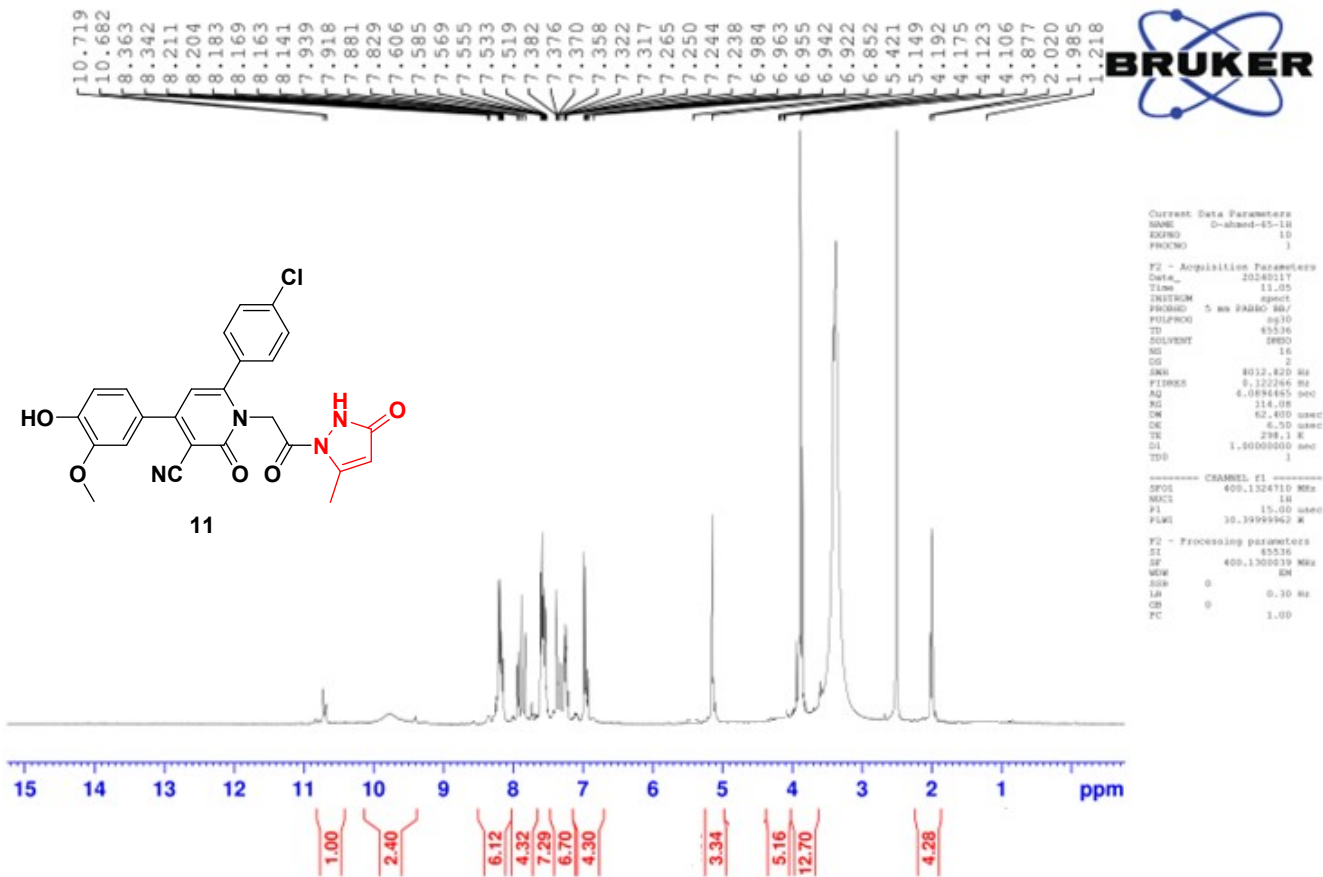
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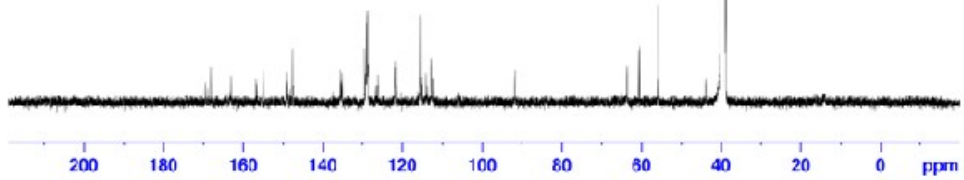
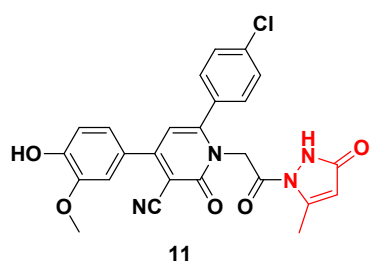
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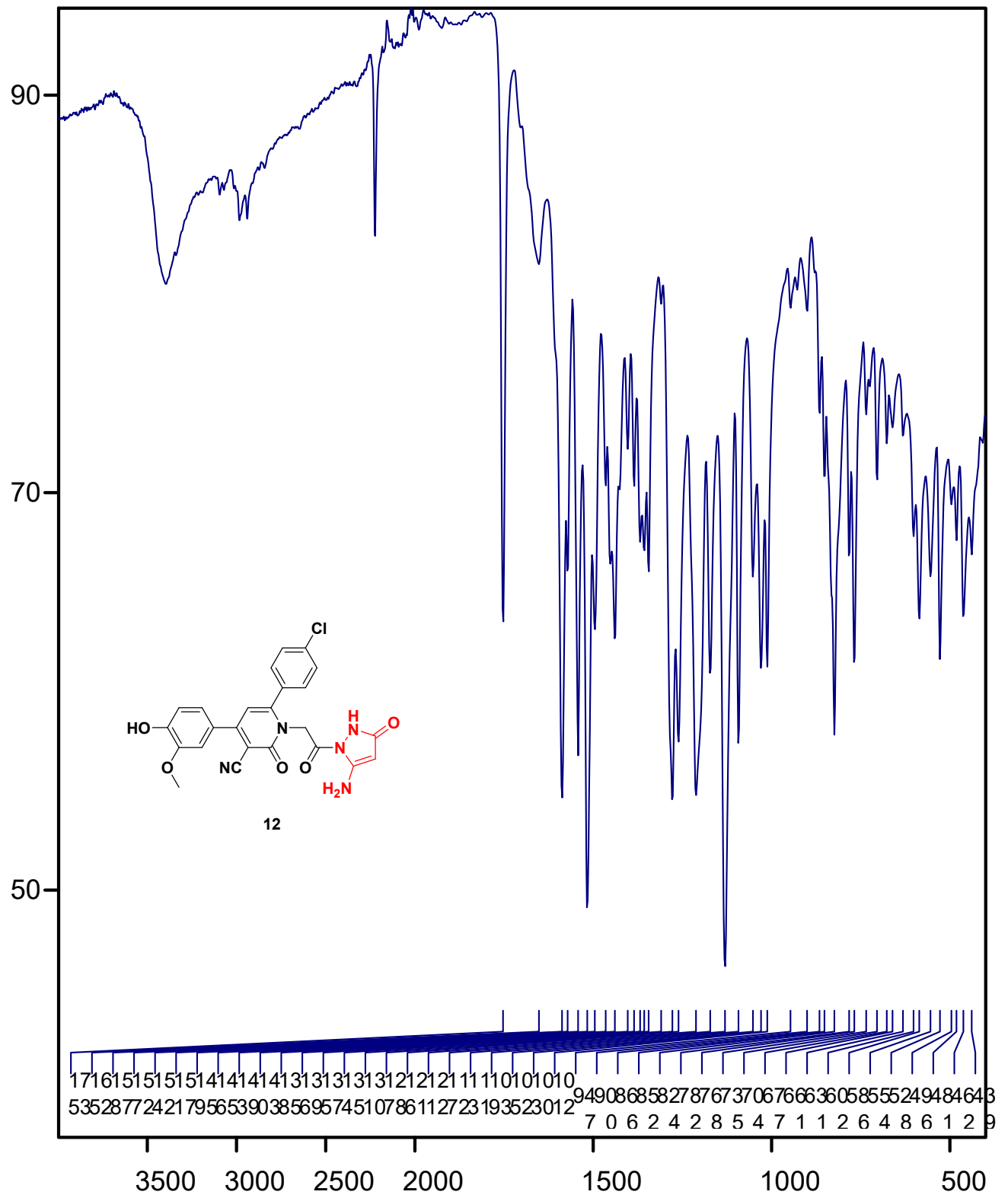
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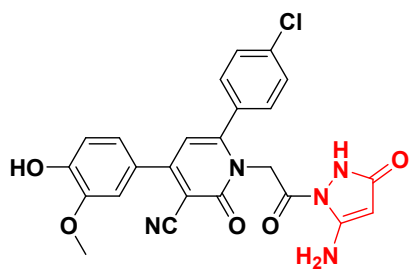


D-ahmed-65-1H

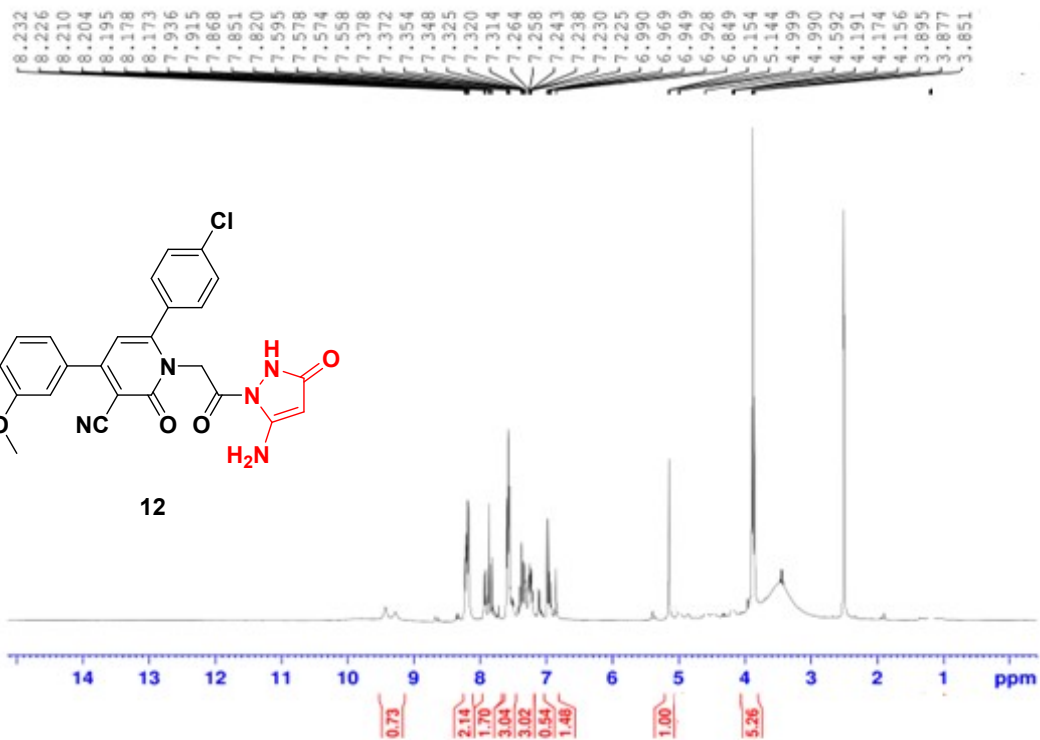






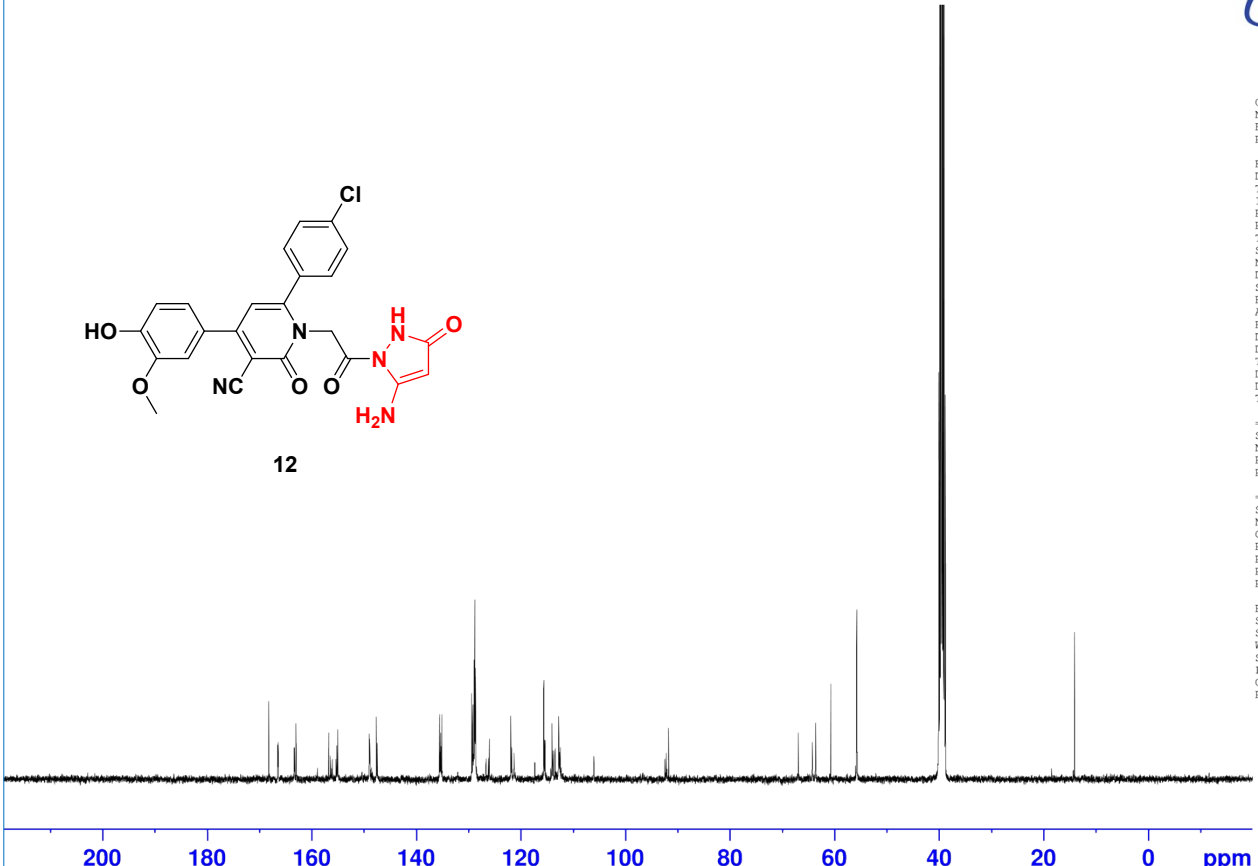
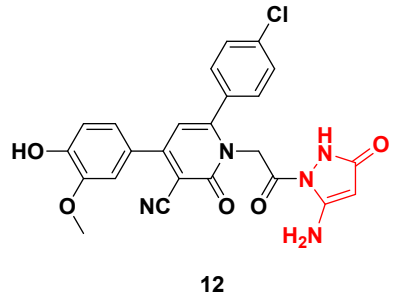


12



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155.47
155.29
155.12
149.15
149.02
148.99
147.76
147.75
147.56
147.56
139.61
139.56
139.46
139.38
139.18
129.52
129.33
129.29
129.07
128.92
128.81
128.76
126.77
126.29
126.13
122.04
121.96
121.82
121.43
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110.52
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87.03
84.33
63.71
60.77
55.86

14.16



Current Data Parameters
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EXPNO 11
PROCNO 1

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Time 22.07
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PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 3000
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631488 sec
RG 201.61
DW 20.800 usec
DE 6.50 usec
TE 298.2 K
D1 2.0000000 sec
D11 0.0300000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 100.6228293 MHz
NUC1 13C
P1 10.00 usec
PLW1 50.0000000 W

===== CHANNEL f2 =====
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NUC2 1H
CPDPRG[2] waltz16
PCPD2 90.00 usec
PLW2 10.3999962 W
PLW12 0.2888900 W
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PC 1.40

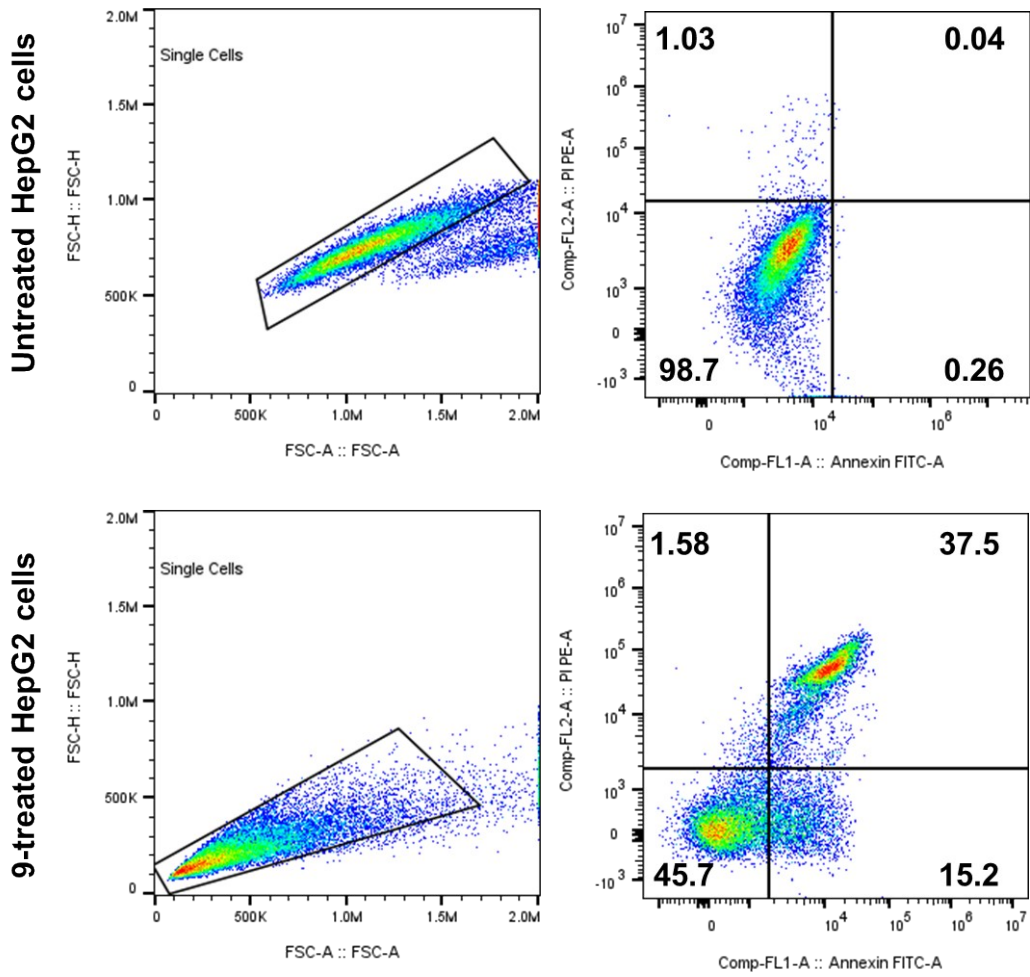


Fig. of flow cytometry results of apoptosis and necrosis assessment using Annexin V/PI staining.