

Design, synthesis, characterization of some new 1,2,3-Triazolyl pyrazole derivatives as potential antimicrobial agents -via Vilsmeier-Haack reaction approach

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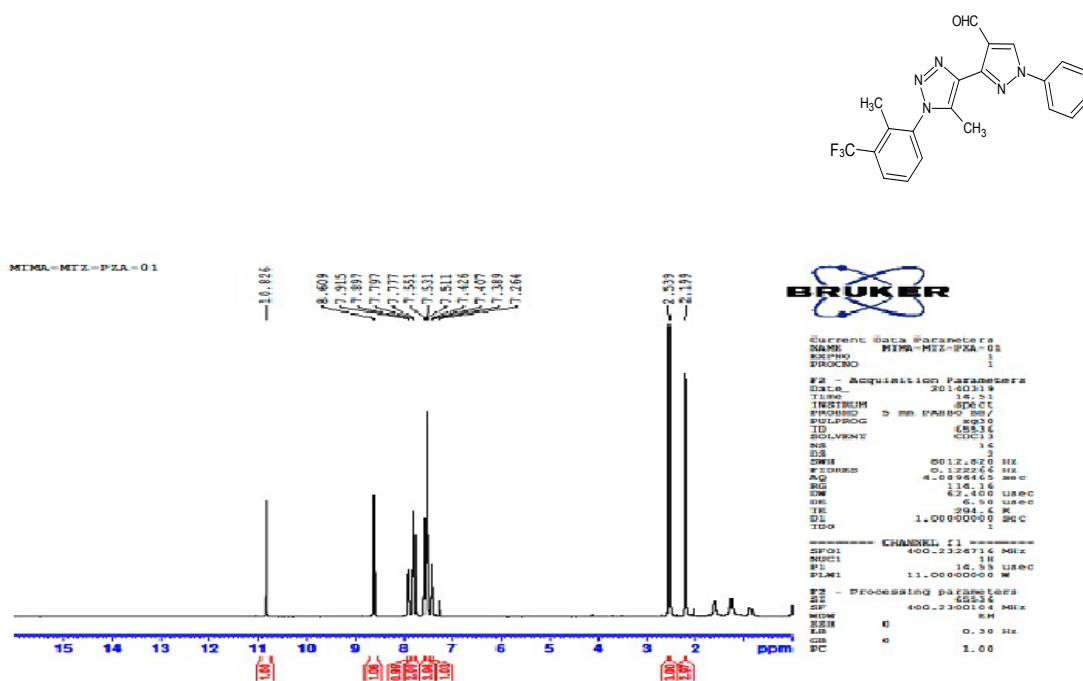
^bSeQuent Scientific Limited, No:120 A&B, Industrial Area, Baikampady, New Mangalore, Karnataka-575 011, India.

^cDepartment of Bio-Chemistry, Jnanasahyadri, Kuvempu University, Shankaraghatta, Karnataka 577 451, India.

^dDepartment of PG Studies and Research in Biotechnology and Bioinformatics, Kuvempu University, Jnanasahyadri, Shankaraghatta, Karnataka-577 451, India.

Supplementary data:

¹H NMR Spectrum of 5 (h)



MTMA-MTZ-PZA-01

7.915
7.897

7.797
7.777

7.551
7.531
7.511

7.426
7.407
7.389

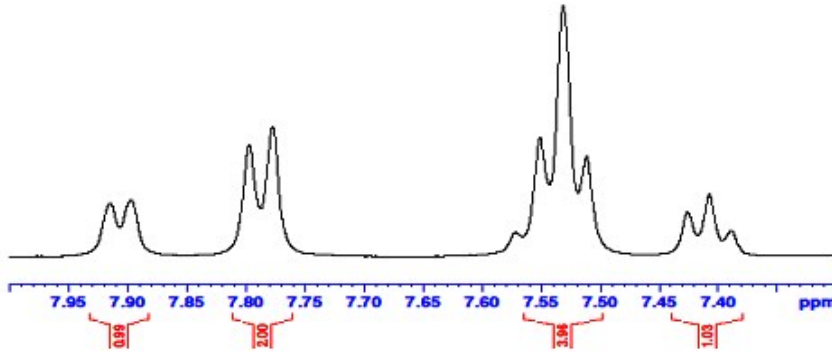


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EXPNO 1
PROCNO 1

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Time 14.51
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PULPROG zg30
ID 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894465 sec
RG 114.16
DW 62.400 usec
DE 6.50 usec
TE 294.6 K
D1 1.0000000 sec
TDO 1

CHANNEL f1
SFO1 400.2324716 MHz
NUC1 1H
P1 14.55 usec
PLW1 11.00000000 W

F2 - Processing parameters
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MTMA-MTZ-PZA-01

2.539

2.199

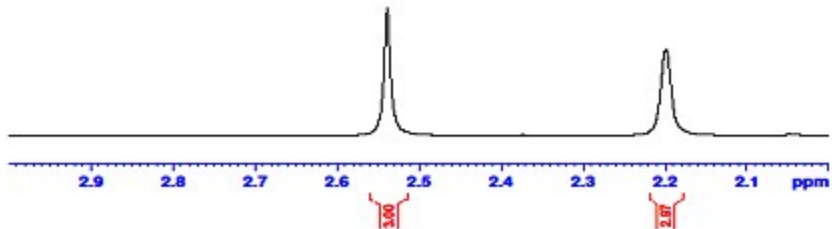


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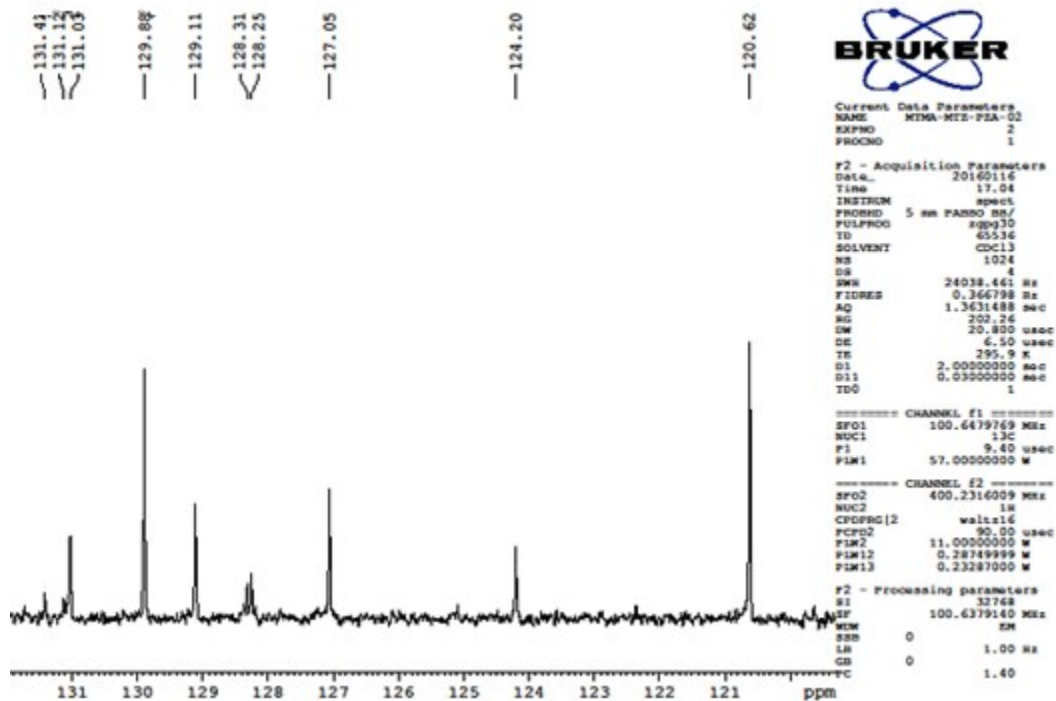
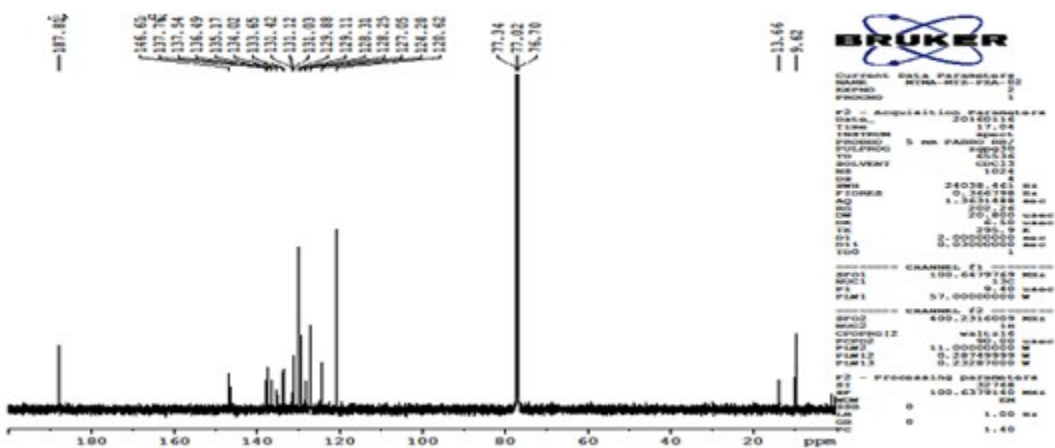
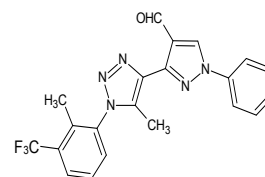
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Time 14.51
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PULPROG zg30
ID 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894465 sec
RG 114.16
DW 62.400 usec
DE 6.50 usec
TE 294.6 K
D1 1.0000000 sec
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CHANNEL f1
SFO1 400.2324716 MHz
NUC1 1H
P1 14.55 usec
PLW1 11.00000000 W

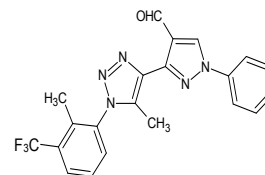
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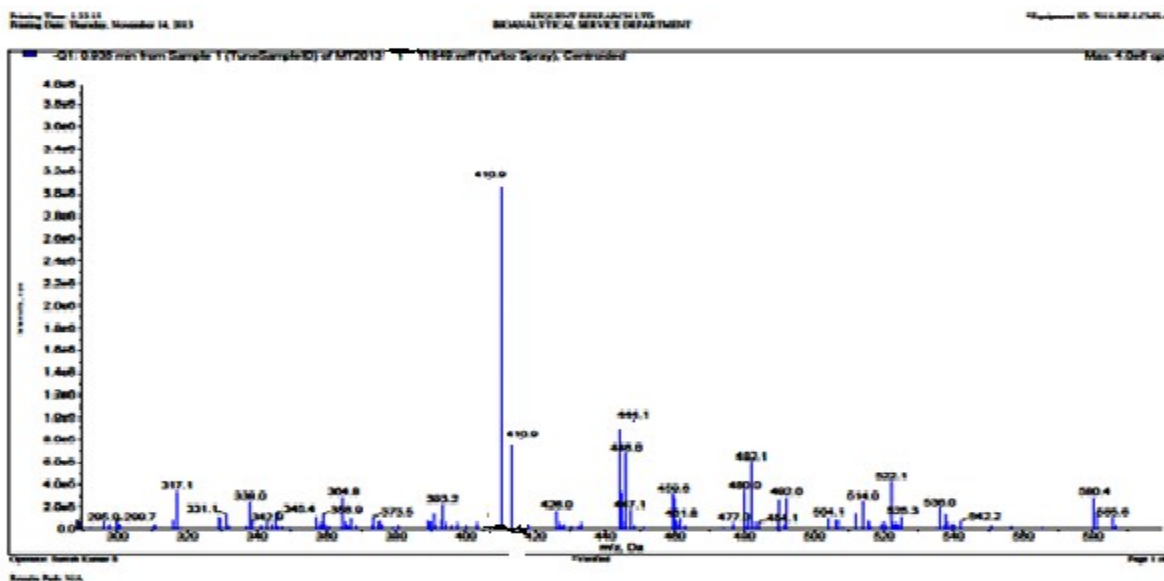
¹³C NMR Spectrum of 5 (h)



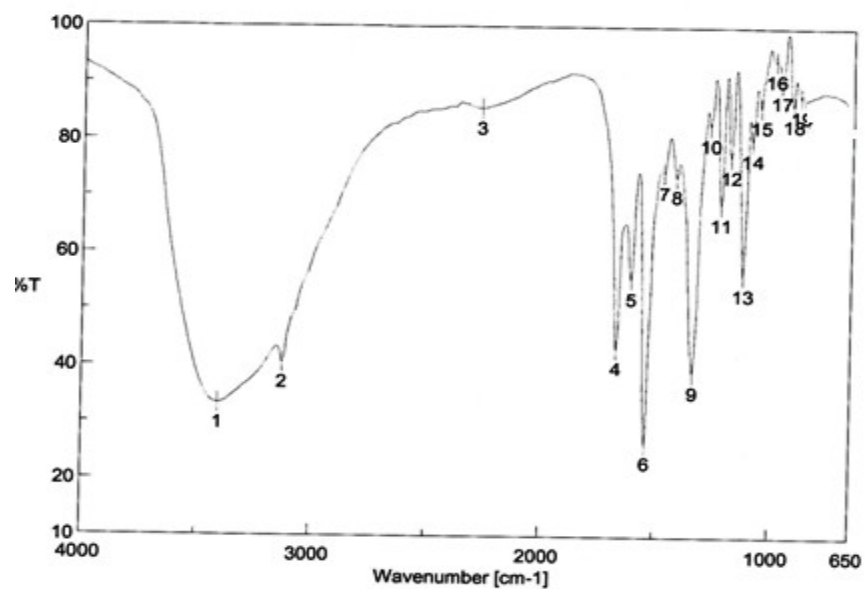
Mass spectrum of 5 (h)



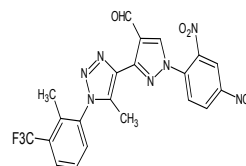
$m/z = 411.4$



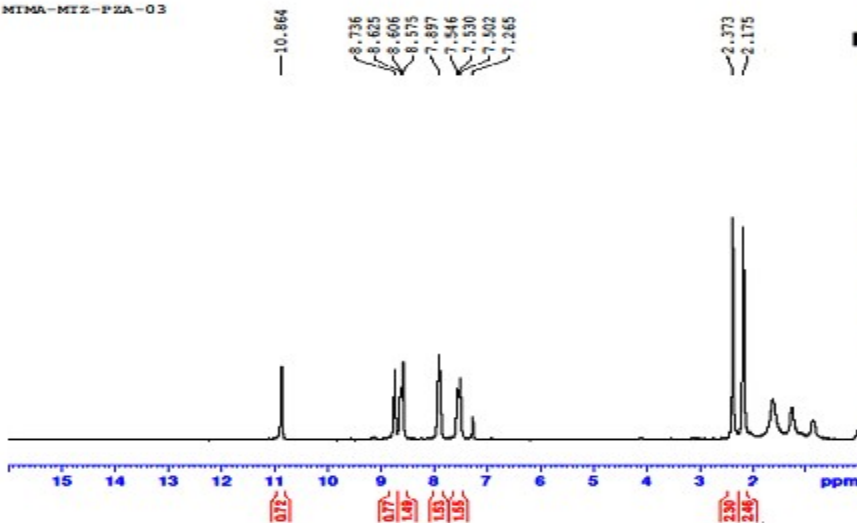
IR Spectrum of 5 (h)



¹H NMR Spectrum of 5 (j)



MIMA-MTZ-PZA-03



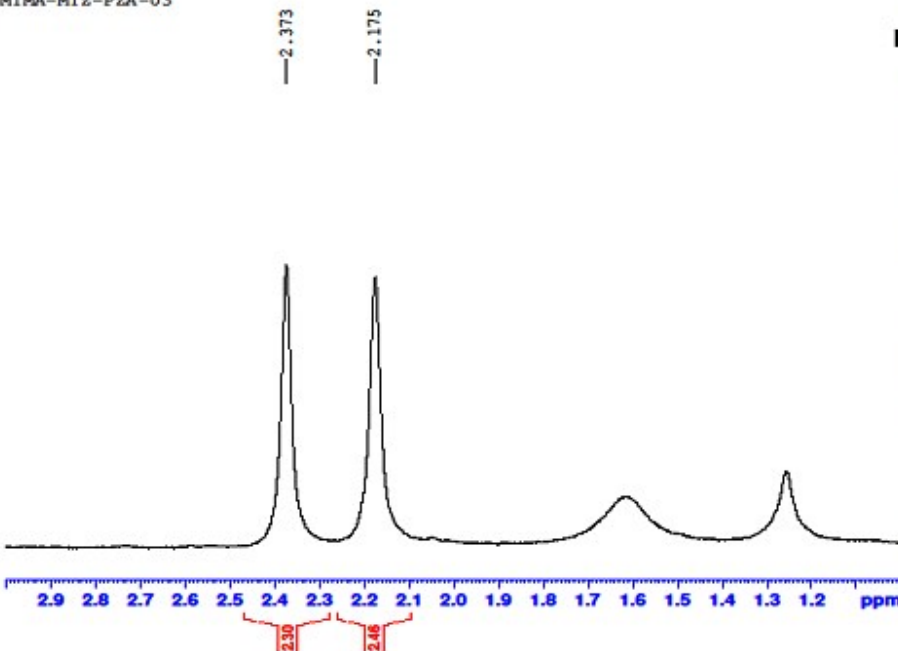
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Current Data Parameters
NAME      MIMA-MTZ-PZA-03
EXPNO    1
PROCNO   1

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Date_    20140319
Time     14.56
INSTRUM  spect
PROBHD   5 mm PABBO BB/
PULPROG  zg30
TD        65536
SOLVENT  CDCl3
NS        16
DS        2
SWH       8012.820 Hz
FIDRES    0.122266 Hz
AQ        4.0894465 sec
RG        114.16
SF        62.400 usec
DE        6.50 usec
TE        294.4 K
D1        1.0000000 sec
TD0       1
```

```
----- CHANNEL f1 -----
SFO1     400.2324716 MHz
NUC1     1H
P1       14.55 usec
PLM1     11.0000000 W

F2 - Processing parameters
SI       65536
SF       400.2300097 MHz
WDW      EM
SSB      0
LB       0.30 Hz
GB       0
PC       1.00
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MIMA-MTZ-PZA-03



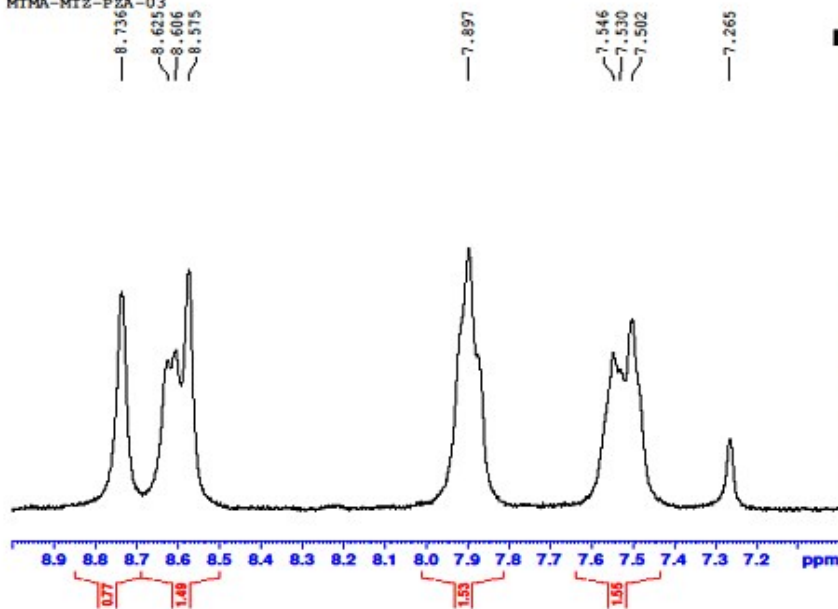
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Current Data Parameters
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EXPNO    1
PROCNO   1

F2 - Acquisition Parameters
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Time     14.56
INSTRUM  spect
PROBHD   5 mm PABBO BB/
PULPROG  zg30
TD        65536
SOLVENT  CDCl3
NS        16
DS        2
SWH       8012.820 Hz
FIDRES    0.122266 Hz
AQ        4.0894465 sec
RG        114.16
SF        62.400 usec
DE        6.50 usec
TE        294.4 K
D1        1.0000000 sec
TD0       1
```

```
----- CHANNEL f1 -----
SFO1     400.2324716 MHz
NUC1     1H
P1       14.55 usec
PLM1     11.0000000 W

F2 - Processing parameters
SI       65536
SF       400.2300097 MHz
WDW      EM
SSB      0
LB       0.30 Hz
GB       0
PC       1.00
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MIMA-MIZ-PEA-03



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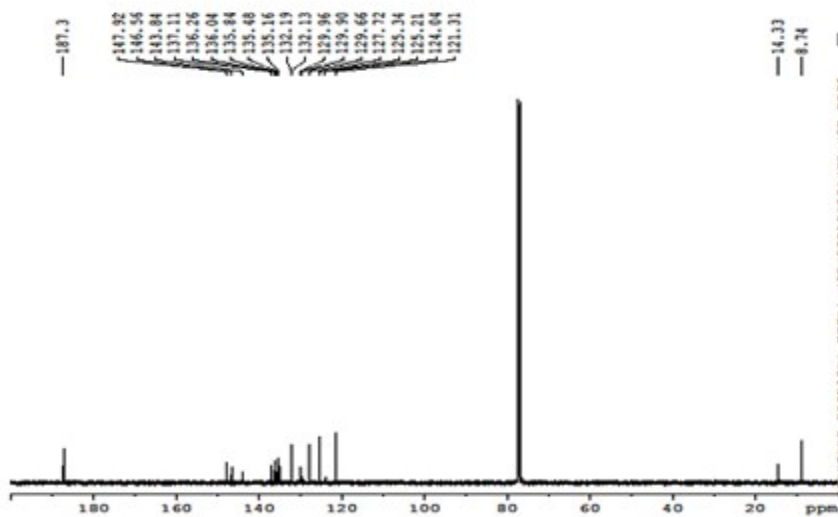
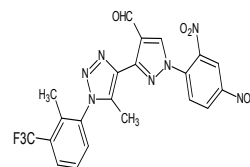
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EXPNO    1
PROCNO   1

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Time     14.56
INSTRUM  spect
PROBHD   5 mm PARRO BB/
PULPROG  zg30
TD        65536
SOLVENT  CDC13
NS        16
DS        2
SWH       8012.820 Hz
FIDRES   0.122266 Hz
AQ        4.889465 sec
RG        114.16
DW        62.400 usec
DE        6.50 usec
TE        294.6 K
D1        1.0000000 sec
TDO       1

----- CHANNEL f1 -----
SFO1     400.2324716 MHz
NUC1      1H
P1        14.53 usec
PLN1     11.0000000 W

F2 - Processing parameters
SI        65536
SF        400.2300097 MHz
WDW       EM
SSB       0
LB        0.30 Hz
GB        0
PC        1.00
    
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¹³C NMR Spectrum of 5 (j)



```

Current Data Parameters
NAME      MIZ-PEA-04
EXPNO    1
PROCNO   1

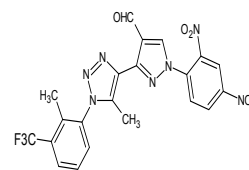
F2 - Acquisition Parameters
Date_    20151224
Time     13.44
INSTRUM  spect
PROBHD   5 mm PARRO BB/
PULPROG  zgpg30
TD        65536
SOLVENT  CDCl3
NS        1024
DS        4
SWH       24038.460 Hz
FIDRES   0.346788 Hz
AQ        1.363188 sec
RG        200.26
DW        20.400 usec
DE        2.50 usec
TE        300.2 K
D1        2.0000000 sec
D11       0.5300000 sec
TDO       1

----- CHANNEL f1 -----
SFO1     100.627969 MHz
NUC1      13C
P1        9.40 usec
PLN1     57.0000000 W

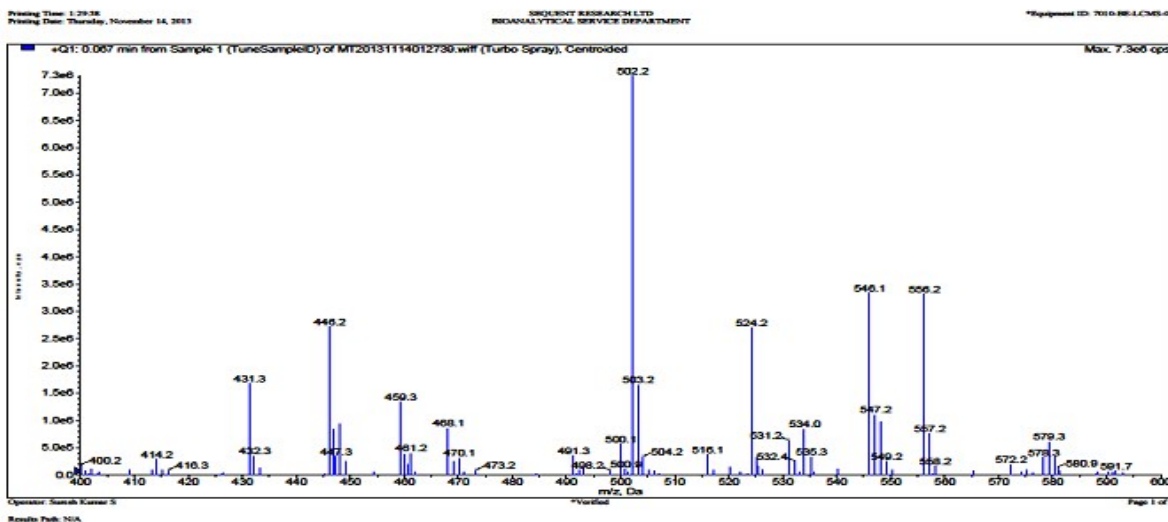
----- CHANNEL f2 -----
SFO2     400.2316009 MHz
NUC2      1H
CPDPRG12 waltz16
PROBHD   5 mm
PULPROG  zgpg30
PLN2     11.0000000 W
PLN12    0.28789999 W
PLN13    0.23287000 W

F2 - Processing parameters
SI        32768
SF        100.6279140 MHz
WDW       EM
SSB       0
LB        1.00 Hz
GB        0
PC        1.40
    
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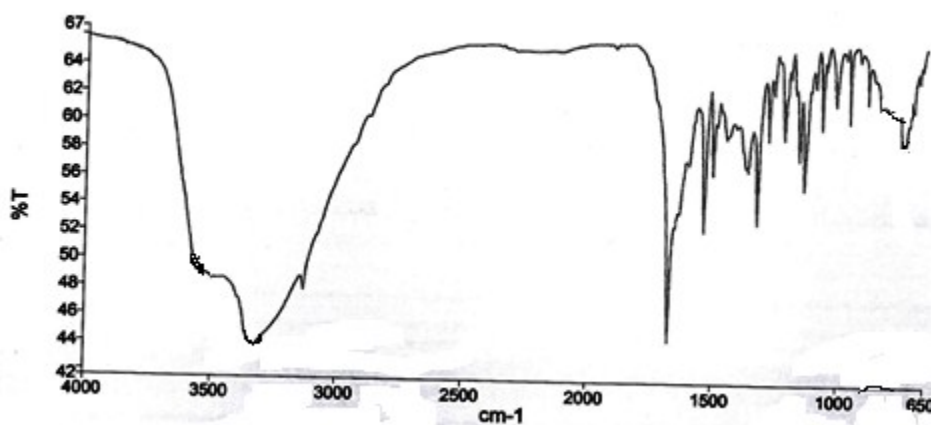
Mass spectrum of 5 (j)



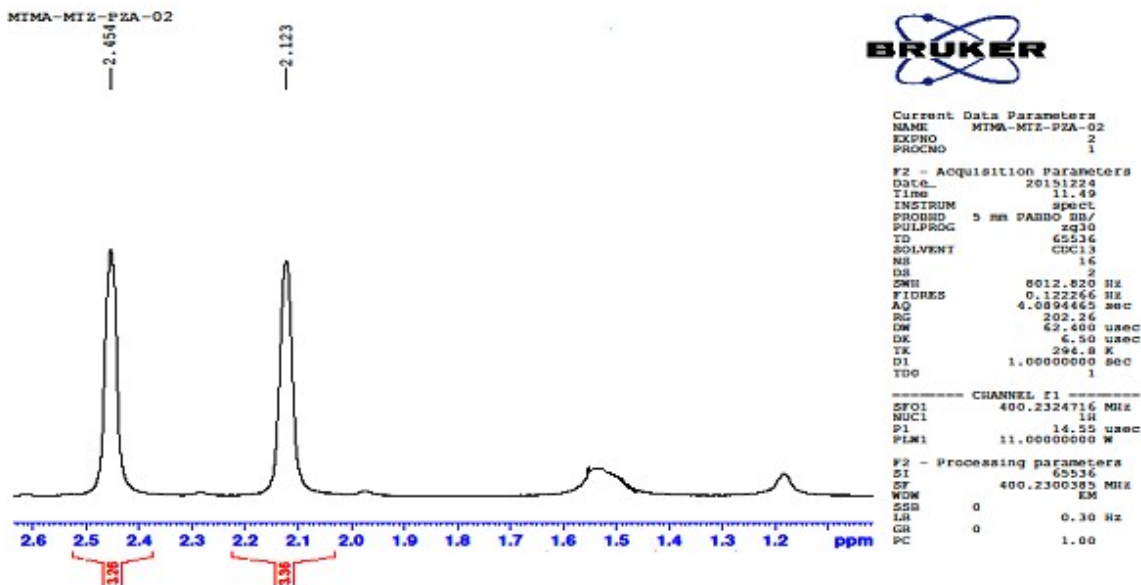
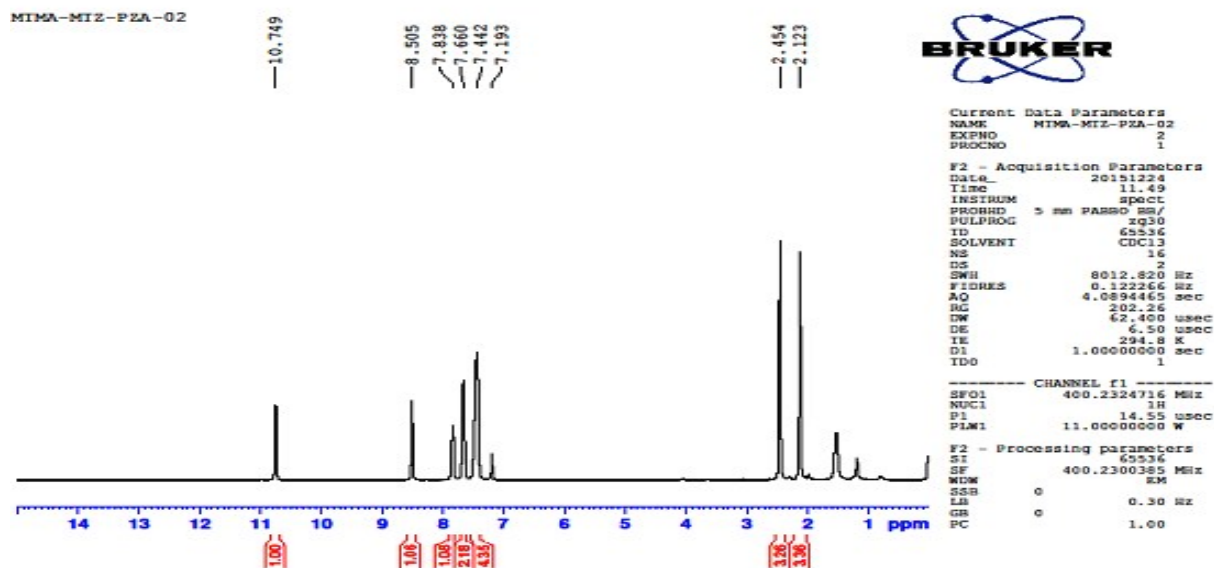
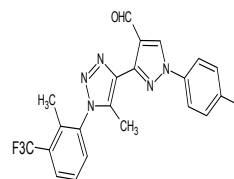
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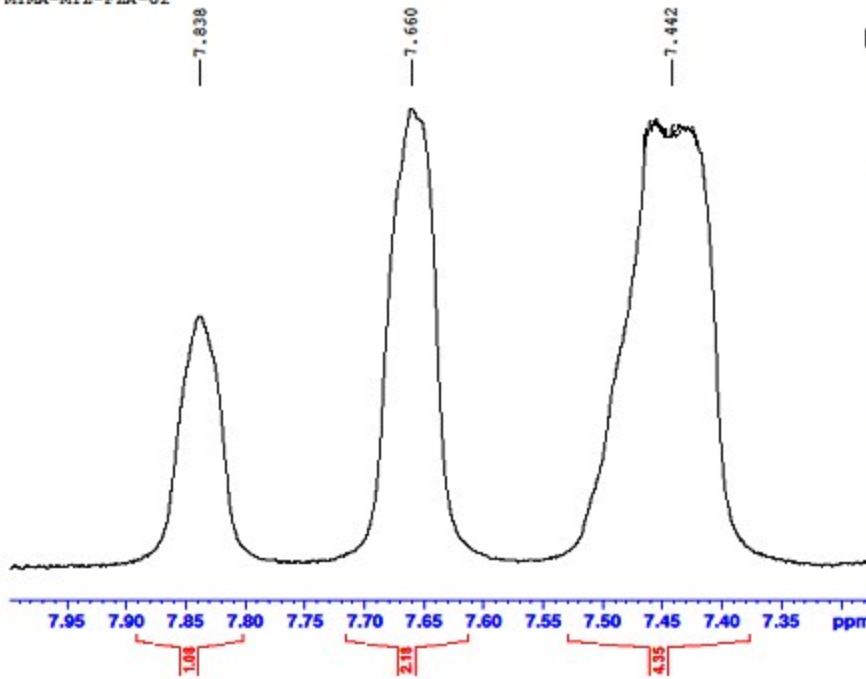
IR Spectrum of 5 (j)



¹H NMR Spectrum of 5 (i)



M1MA-M1Z-PZA-02



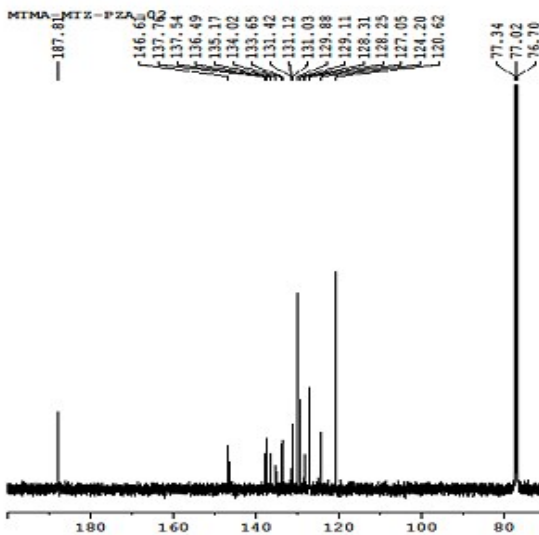
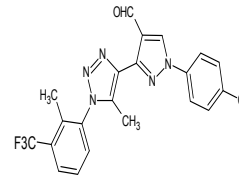
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 EXPNO 2
 PROCNO 1

F2 - Acquisition Parameters
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 Time 11.49
 INSTRUM spect
 PROBRD 5 mm PARBO BB/
 PULPROG zg30
 ID 65536
 SOLVENT CDCl3
 NS 16
 DS 2
 SWH 8012.820 Hz
 FIDRES 0.122266 Hz
 AQ 4.089485 sec
 RG 202.26
 DW 62.400 usec
 DE 6.50 usec
 TE 294.8 K
 D1 1.0000000 sec
 TDD 1

----- CHANNEL f1 -----
 SFO1 400.2324716 MHz
 NUC1 1H
 P1 14.55 usec
 PLW1 11.00000000 W

F2 - Processing parameters
 SI 65536
 SF 400.2300385 MHz
 MDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

¹³C NMR Spectrum of 5 (i)



13.66
9.62



Current Data Parameters
 NAME M1MA-M1Z-PZA-02
 EXPNO 2
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20160116
 Time 17.04
 INSTRUM spect
 PROBRD 5 mm PARBO BB/
 PULPROG zgpg30
 ID 65536
 SOLVENT CDCl3
 NS 1024
 DS 4
 SWH 24038.461 Hz
 FIDRES 0.366798 Hz
 AQ 1.3631488 sec
 RG 202.26
 DW 20.800 usec
 DE 6.50 usec
 TE 293.9 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TDD 1

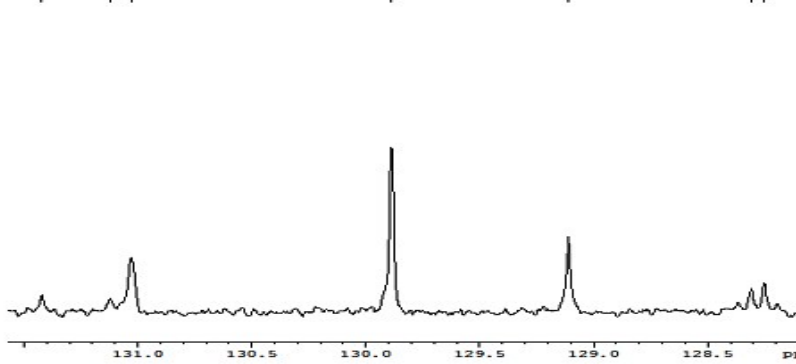
----- CHANNEL f1 -----
 SFO1 100.6479169 MHz
 NUC1 13C
 P1 9.40 usec
 PLW1 57.00000000 W

----- CHANNEL f2 -----
 SFO2 400.2316009 MHz
 NUC2 1H
 CPDPRG12 waltz16
 PCPD2 80.00 usec
 P1W2 11.00000000 W
 P1W12 0.28749999 W
 P1W13 0.23287000 W

F2 - Processing parameters
 SI 32768
 SF 100.6379140 MHz
 MDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

MIMA-MTZ-PZA-02

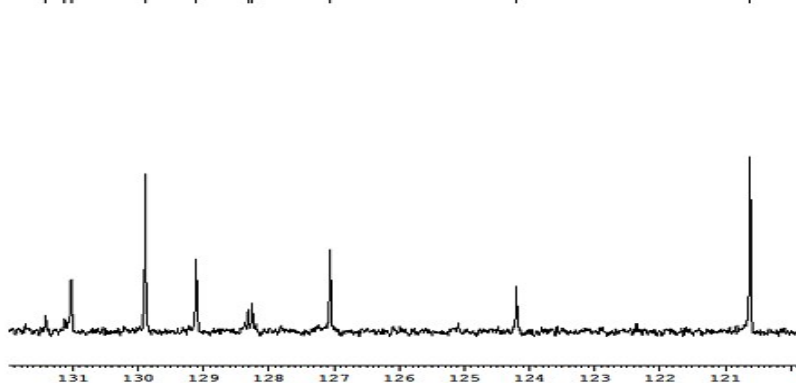
131.42
131.12
131.03
129.88
129.11
128.31
128.25



Current Data Parameters
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 EXPNO: 1
 PROCNO: 1
 F2 - Acquisition Parameters
 Date_: 20160116
 Time: 17.04
 INSTRUM: spect
 PROBRD: 5 mm PABBO BB7
 PULPROG: zgpg30
 TD: 65536
 SOLVENT: CDCl3
 NS: 1024
 DS: 4
 SWH: 24038.463 Hz
 FIDRES: 0.366798 Hz
 AQ: 1.3631488 sec
 RG: 250.24
 DW: 20.800 usec
 DE: 6.50 usec
 TE: 295.2 K
 D1: 2.0000000 sec
 D11: 0.0300000 sec
 TDD: 1
 ===== CHANNEL F1 =====
 SFO1: 100.6479769 MHz
 NUQ1: 13C
 P1: 9.40 usec
 PLW1: 57.0000000 W
 ===== CHANNEL F2 =====
 SFO2: 400.2316009 MHz
 NUQ2: 1H
 CPDPRG2: waltz16
 FREQ2: 11.0000000 usec
 P12: 11.0000000 usec
 P1M2: 0.28749999 W
 P1M3: 0.23287000 W
 F2 - Processing parameters
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 SF: 100.6379120 MHz
 MDW: 0 EM
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 GB: 0
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MIMA-MTZ-PZA-02

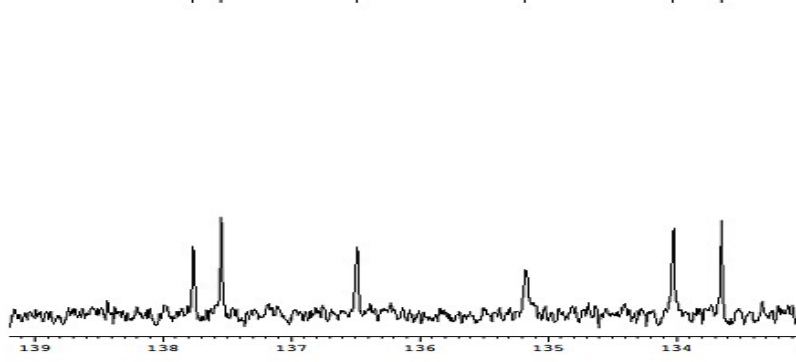
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131.12
131.03
129.88
129.11
128.31
128.25
127.05
124.20
120.62



Current Data Parameters
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 EXPNO: 1
 PROCNO: 1
 F2 - Acquisition Parameters
 Date_: 20160116
 Time: 17.04
 INSTRUM: spect
 PROBRD: 5 mm PABBO BB7
 PULPROG: zgpg30
 TD: 65536
 SOLVENT: CDCl3
 NS: 1024
 DS: 4
 SWH: 24038.463 Hz
 FIDRES: 0.366798 Hz
 AQ: 1.3631488 sec
 RG: 250.24
 DW: 20.800 usec
 DE: 6.50 usec
 TE: 295.2 K
 D1: 2.0000000 sec
 D11: 0.0300000 sec
 TDD: 1
 ===== CHANNEL F1 =====
 SFO1: 100.6479769 MHz
 NUQ1: 13C
 P1: 9.40 usec
 PLW1: 57.0000000 W
 ===== CHANNEL F2 =====
 SFO2: 400.2316009 MHz
 NUQ2: 1H
 CPDPRG2: waltz16
 FREQ2: 11.0000000 usec
 P12: 11.0000000 usec
 P1M2: 0.28749999 W
 P1M3: 0.23287000 W
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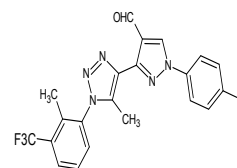
MIMA-MTZ-PZA-02

137.76
137.54
136.49
135.17
134.02
133.65

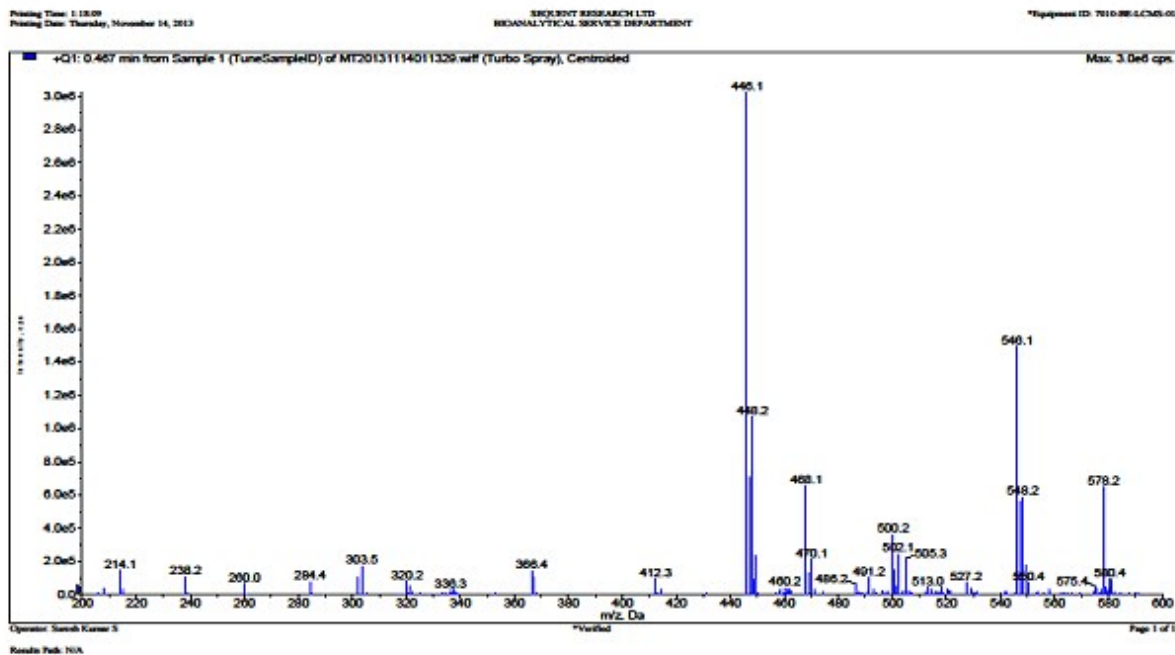


Current Data Parameters
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 EXPNO: 1
 PROCNO: 1
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 Time: 17.04
 INSTRUM: spect
 PROBRD: 5 mm PABBO BB7
 PULPROG: zgpg30
 TD: 65536
 SOLVENT: CDCl3
 NS: 1024
 DS: 4
 SWH: 24038.463 Hz
 FIDRES: 0.366798 Hz
 AQ: 1.3631488 sec
 RG: 250.24
 DW: 20.800 usec
 DE: 6.50 usec
 TE: 295.2 K
 D1: 2.0000000 sec
 D11: 0.0300000 sec
 TDD: 1
 ===== CHANNEL F1 =====
 SFO1: 100.6479769 MHz
 NUQ1: 13C
 P1: 9.40 usec
 PLW1: 57.0000000 W
 ===== CHANNEL F2 =====
 SFO2: 400.2316009 MHz
 NUQ2: 1H
 CPDPRG2: waltz16
 FREQ2: 11.0000000 usec
 P12: 11.0000000 usec
 P1M2: 0.28749999 W
 P1M3: 0.23287000 W
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 MDW: 0 EM
 SSB: 0
 LB: 1.00 Hz
 GB: 0
 PC: 1.40

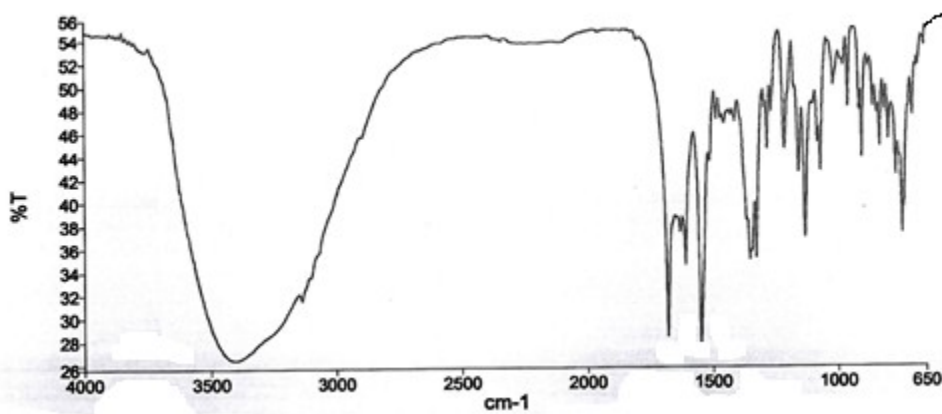
Mass spectrum of 5 (i)



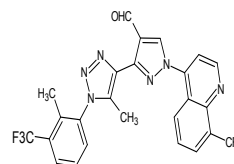
$m/z = 445.8$



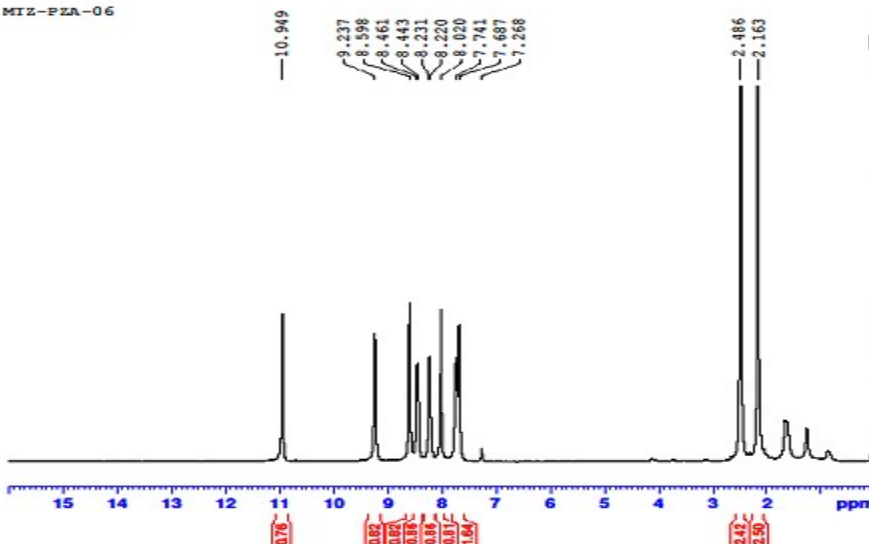
IR Spectrum of 5 (i)



¹H NMR Spectrum of 5 (m)



MTZ-PZA-06



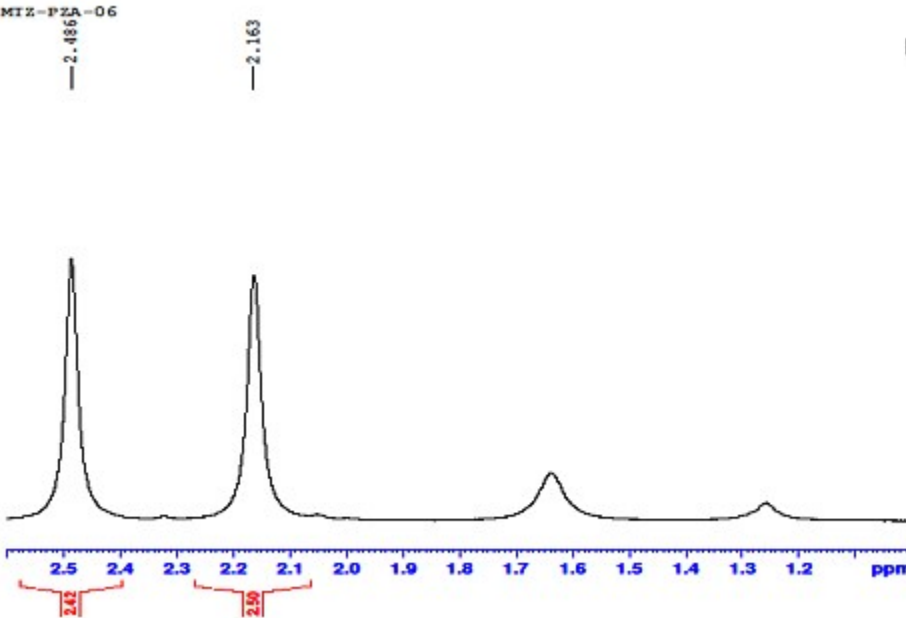
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NAME MTZ-PZA-06
EXPNO 1
PROCNO 1

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Time 15.00
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PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 1
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894465 sec
RG 114.16
DW 62.400 usec
DE 6.50 usec
TE 294.5 K
D1 1.00000000 sec
TD0 1

CHANNEL f1
SFO1 400.2324716 MHz
NUC1 1H
P1 14.55 usec
PLM1 11.00000000 W

F2 - Processing parameters
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SF 400.2300083 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

MTZ-PZA-06

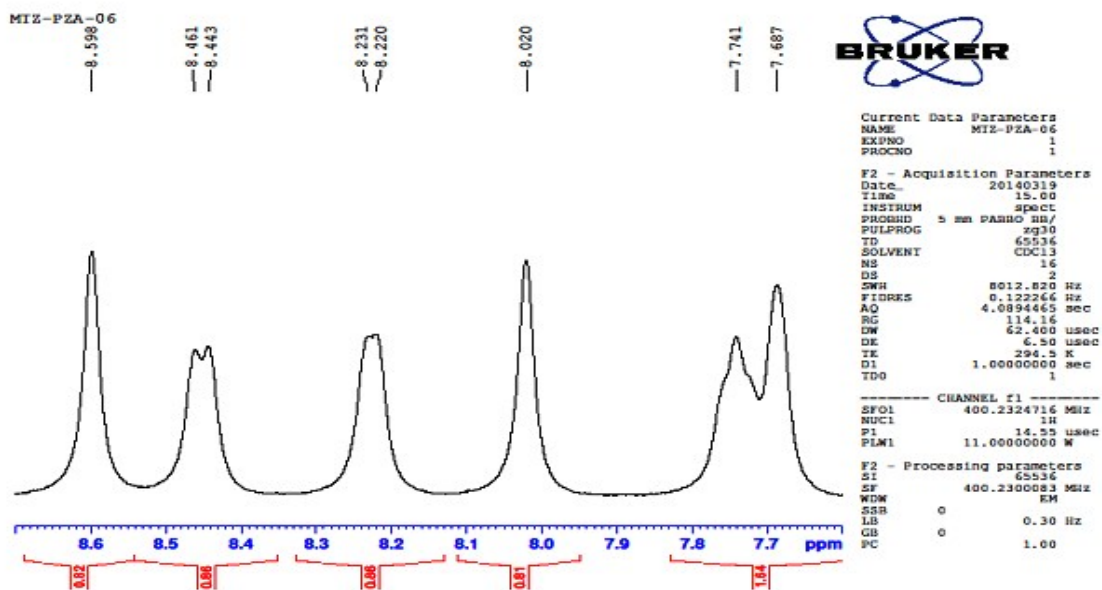


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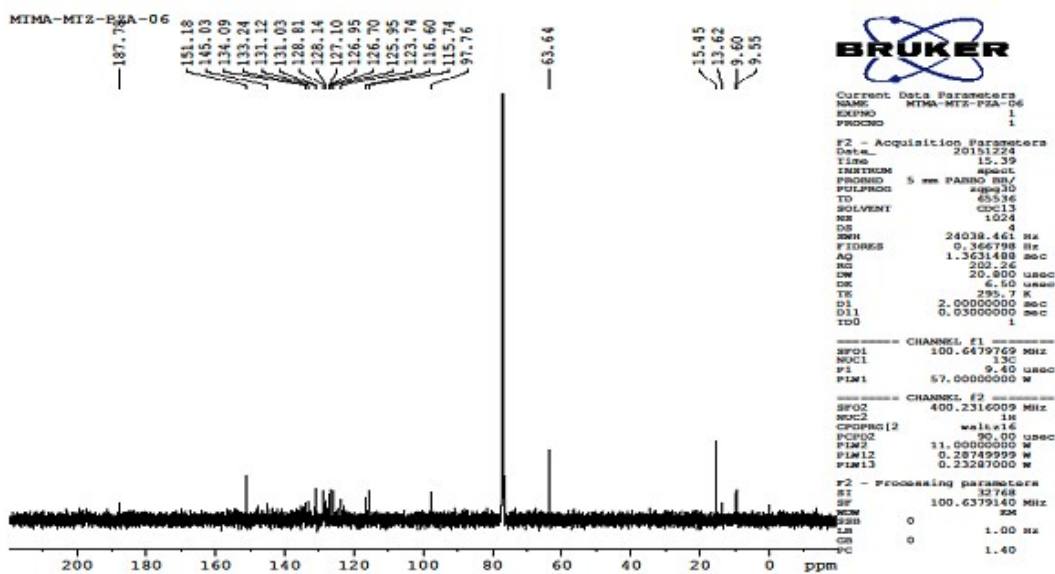
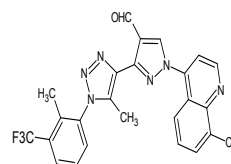
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PULPROG zg30
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SOLVENT CDCl3
NS 1
DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894465 sec
RG 114.16
DW 62.400 usec
DE 6.50 usec
TE 294.5 K
D1 1.00000000 sec
TD0 1

CHANNEL f1
SFO1 400.2324716 MHz
NUC1 1H
P1 14.55 usec
PLM1 11.00000000 W

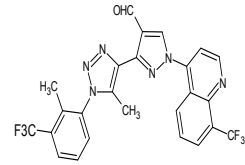
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GB 0
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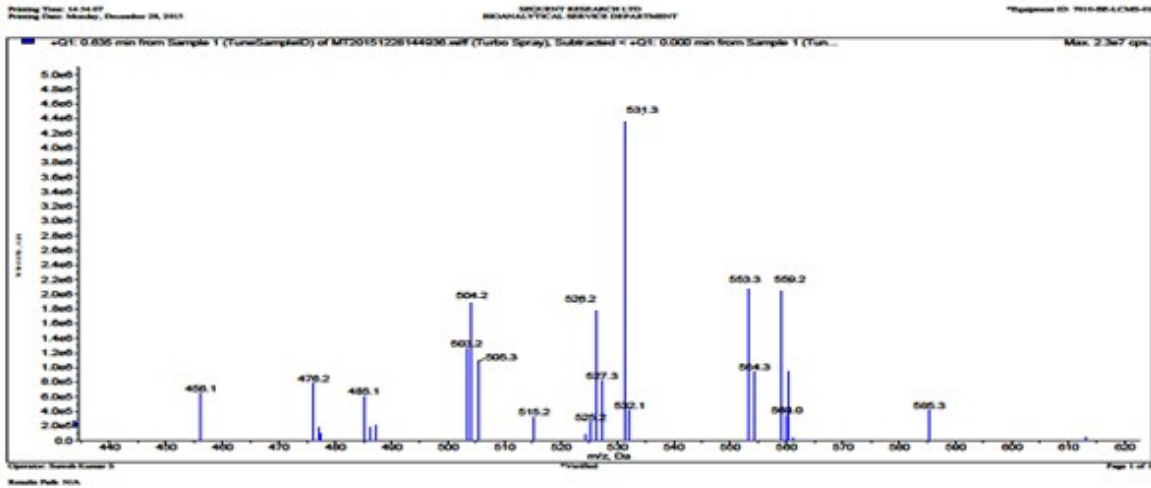
¹³C NMR Spectrum of 5 (m)



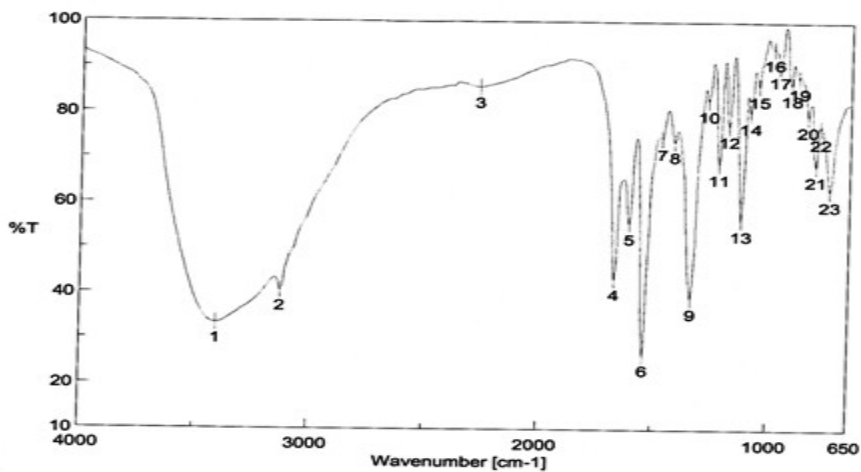
Mass spectrum of 5 (m)



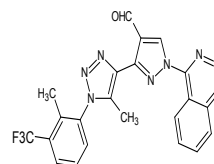
$m/z = 530.4$



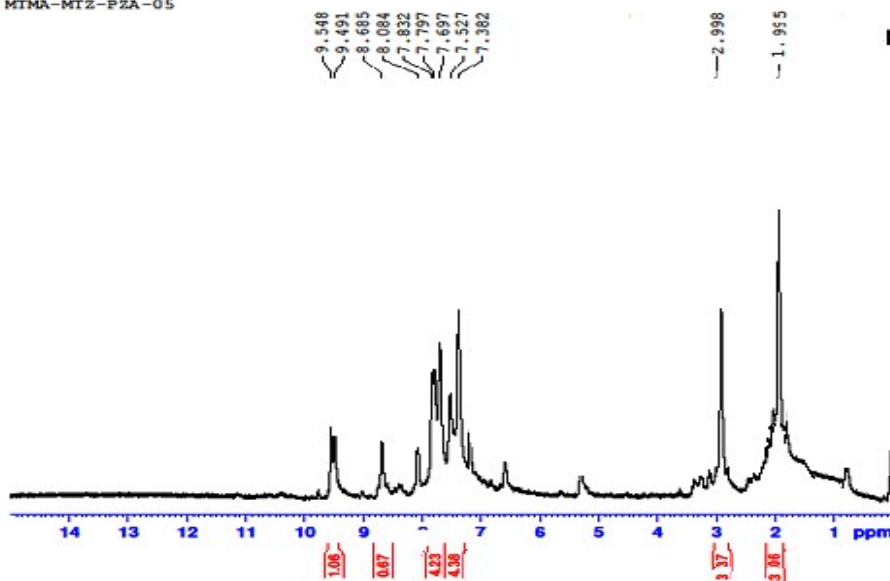
IR spectrum of 5 (m)



¹H NMR Spectrum of 5 (l)



MTMA-MTZ-PZA-05



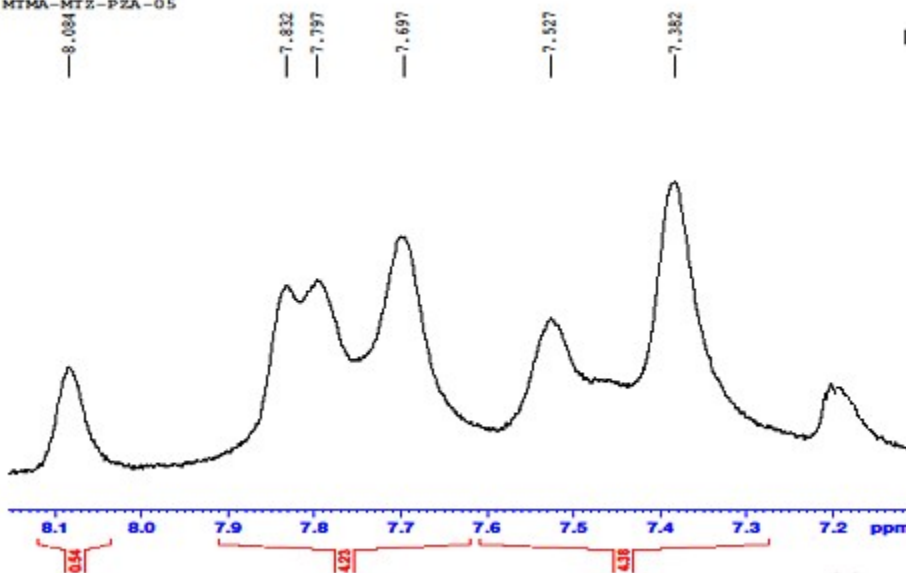
Current Data Parameters
 NAME MTMA-MTZ-PZA-05
 EXPNO 1
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20151224
 Time 12.43
 INSTRUM spect
 PROBRD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 16
 DS 2
 SWH 8012.820 Hz
 FIDRES 0.122266 Hz
 AQ 4.0894665 sec
 RG 180.44
 DW 62.400 usec
 DE 6.50 usec
 TE 294.8 K
 D1 1.00000000 sec
 TDO 1

CHANNEL f1
 SF01 400.2324716 MHz
 NUC1 1H
 P1 14.55 usec
 PLW1 11.00000000 W

F2 - Processing parameters
 SI 65536
 SF 400.2300372 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

MTMA-MTZ-PZA-05



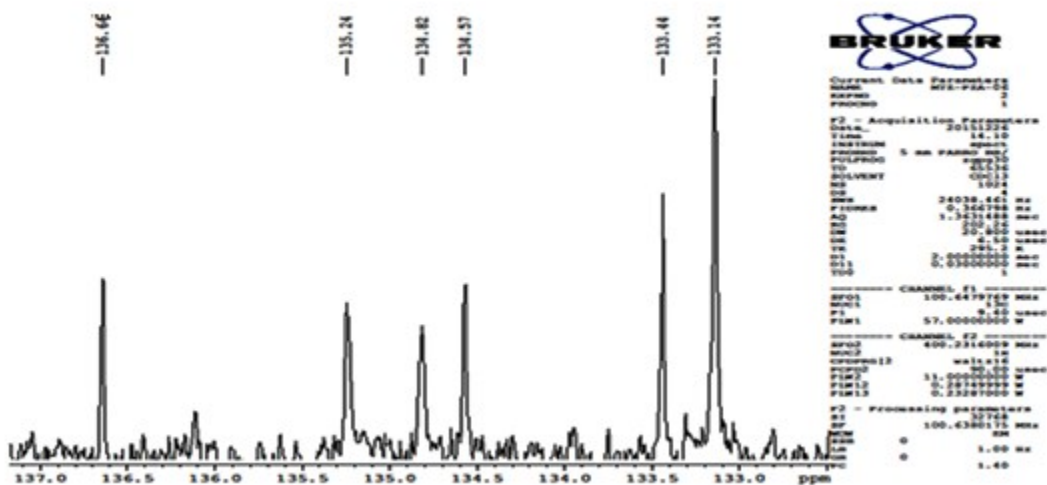
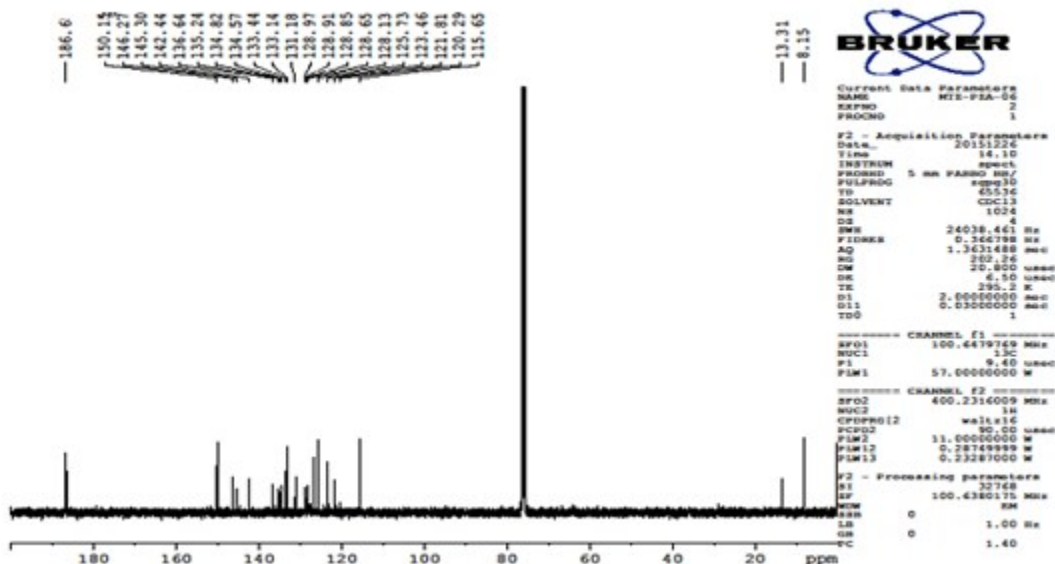
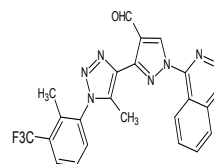
Current Data Parameters
 NAME MTMA-MTZ-PZA-05
 EXPNO 1
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20151224
 Time 12.43
 INSTRUM spect
 PROBRD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 16
 DS 2
 SWH 8012.820 Hz
 FIDRES 0.122266 Hz
 AQ 4.0894665 sec
 RG 180.44
 DW 62.400 usec
 DE 6.50 usec
 TE 294.8 K
 D1 1.00000000 sec
 TDO 1

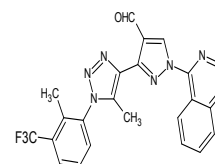
CHANNEL f1
 SF01 400.2324716 MHz
 NUC1 1H
 P1 14.55 usec
 PLW1 11.00000000 W

F2 - Processing parameters
 SI 65536
 SF 400.2300372 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

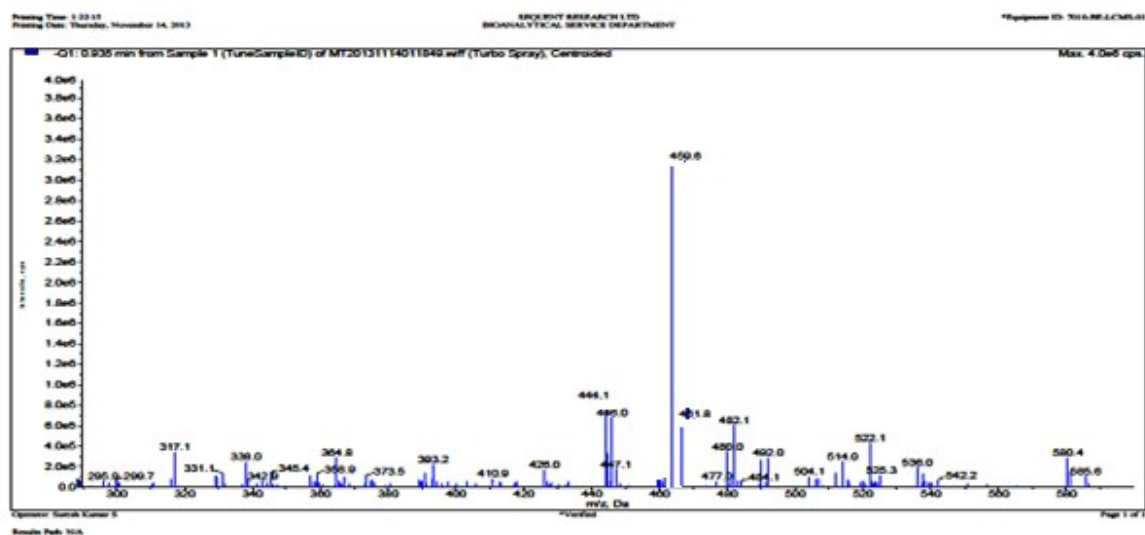
¹³C NMR Spectrum of 5 (I)



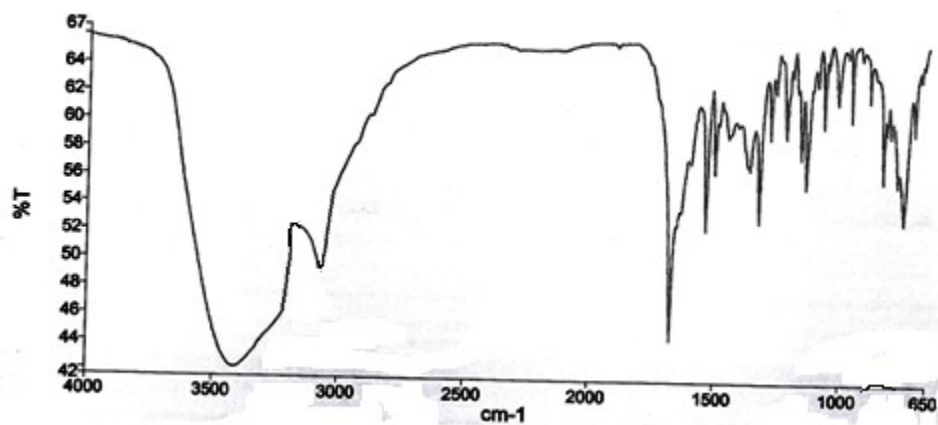
Mass spectrum of 5 (I)



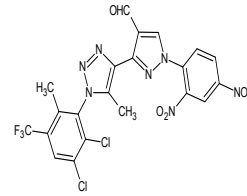
$m/z = 463.4$



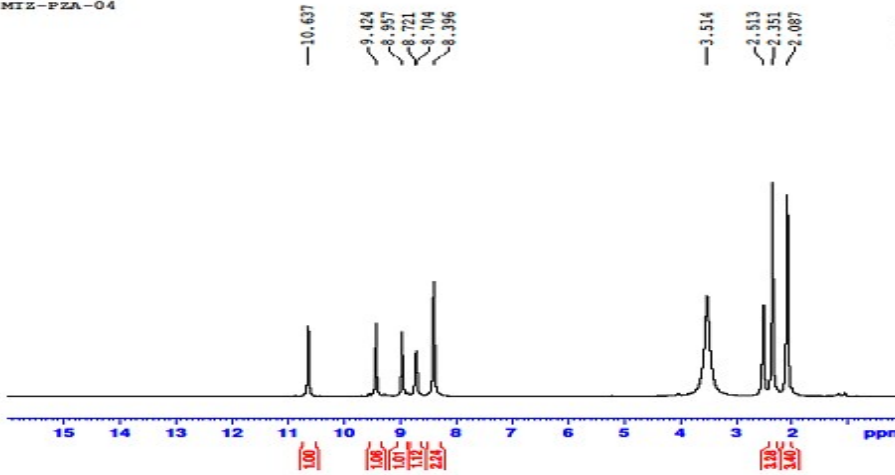
IR spectrum of 5 (I)



¹H NMR Spectrum of 5 (c)



MTZ-PZA-04



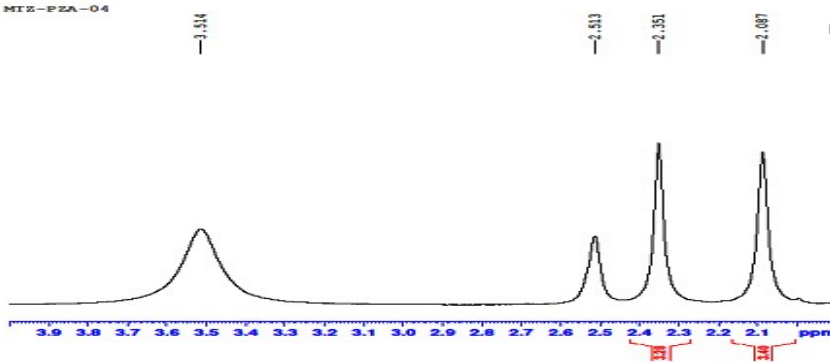
Current Data Parameters
 NAME: MTZ-PZA-04
 EXPNO: 1
 PROCNO: 1

F2 - Acquisition Parameters
 Date_: 20140319
 TIME: 15.05
 INSTRUM: spect
 PROBHD: 5 mm PABBO BB7
 PULPROG: zgpg30
 ID: 65536
 SOLVENT: DMSO
 NS: 16
 DS: 2
 SWH: 8012.820 Hz
 FIDRES: 0.122266 Hz
 AQ: 4.083463 sec
 RG: 79.47
 DW: 62.400 usec
 DE: 6.50 usec
 VE: 288.6 K
 D1: 1.0000000 sec
 TDD: 1

CHANNEL f1
 SFO1: 400.2324716 MHz
 NUC1: 1H
 P1: 14.33 usec
 PLW1: 11.0000000 W

F2 - Processing parameters
 SI: 65536
 SF: 400.2300000 MHz
 WDM: EM
 LB: 0
 GB: 0.30 Hz
 PC: 1.00

MTZ-PZA-04



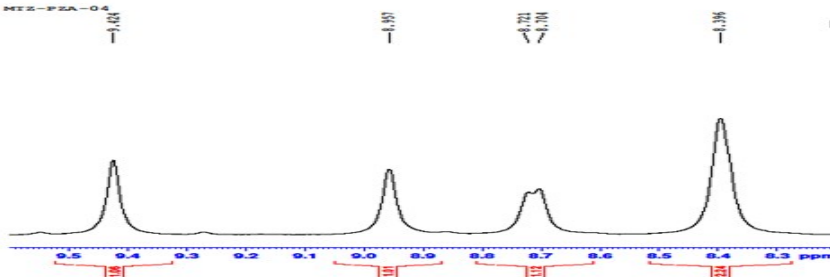
Current Data Parameters
 NAME: MTZ-PZA-04
 EXPNO: 1
 PROCNO: 1

F2 - Acquisition Parameters
 Date_: 20140319
 TIME: 15.05
 INSTRUM: spect
 PROBHD: 5 mm PABBO BB7
 PULPROG: zgpg30
 ID: 65536
 SOLVENT: DMSO
 NS: 16
 DS: 2
 SWH: 8012.820 Hz
 FIDRES: 0.122266 Hz
 AQ: 4.083463 sec
 RG: 79.47
 DW: 62.400 usec
 DE: 6.50 usec
 VE: 288.6 K
 D1: 1.0000000 sec
 TDD: 1

CHANNEL f1
 SFO1: 400.2324716 MHz
 NUC1: 1H
 P1: 14.33 usec
 PLW1: 11.0000000 W

F2 - Processing parameters
 SI: 65536
 SF: 400.2300000 MHz
 WDM: EM
 LB: 0
 GB: 0.30 Hz
 PC: 1.00

MTZ-PZA-04



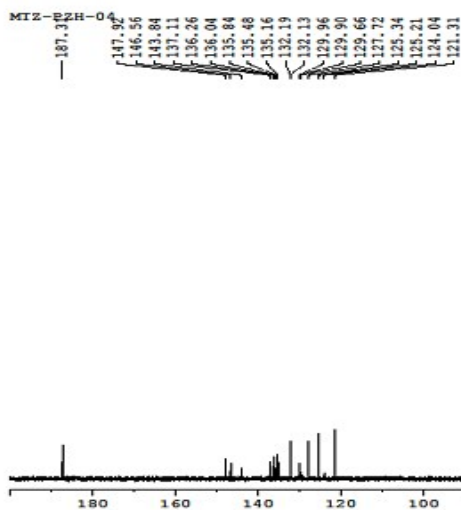
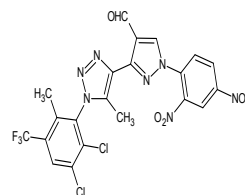
Current Data Parameters
 NAME: MTZ-PZA-04
 EXPNO: 1
 PROCNO: 1

F2 - Acquisition Parameters
 Date_: 20140319
 TIME: 15.05
 INSTRUM: spect
 PROBHD: 5 mm PABBO BB7
 PULPROG: zgpg30
 ID: 65536
 SOLVENT: DMSO
 NS: 16
 DS: 2
 SWH: 8012.820 Hz
 FIDRES: 0.122266 Hz
 AQ: 4.083463 sec
 RG: 79.47
 DW: 62.400 usec
 DE: 6.50 usec
 VE: 288.6 K
 D1: 1.0000000 sec
 TDD: 1

CHANNEL f1
 SFO1: 400.2324716 MHz
 NUC1: 1H
 P1: 14.33 usec
 PLW1: 11.0000000 W

F2 - Processing parameters
 SI: 65536
 SF: 400.2300000 MHz
 WDM: EM
 LB: 0
 GB: 0.30 Hz
 PC: 1.00

¹³C NMR Spectrum of 5 (c)



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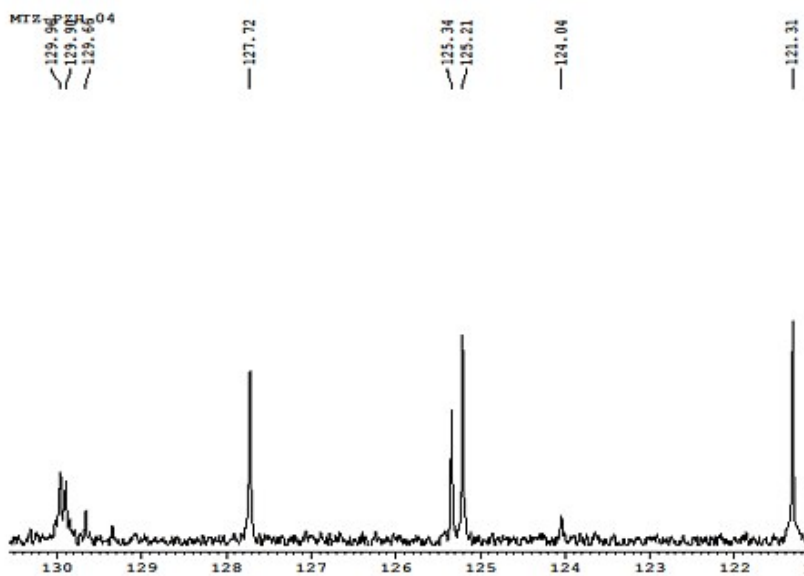
Current Data Parameters
NAME      MTX-P2H-04
EXPNO    1
PROCNO   1

F2 - Acquisition Parameters
Date_    201224
Time     13.44
INSTRUM  spect
PROBHD   5 mm PARBO Bb/
PULPROG  zgpg30
TD       65536
SOLVENT  CDCl3
NS       1024
DS       4
SWH      24038.461 Hz
FIDRES   0.366798 Hz
AQ       1.3631488 sec
RG       202.26
CW       20.800 usec
DE       6.50 usec
TE       295.2 K
D1       2.0000000 sec
d11      0.5300000 sec
TDO      1

===== CHANNEL f1 =====
SFO1     100.627169 MHz
NUC1     13C
P1       9.40 usec
PLM1     57.0000000 W

===== CHANNEL f2 =====
SFO2     400.2316009 MHz
NUC2     1H
CPDPRG2  waltz16
PCPD2    60.00 usec
PLM2     11.0000000 W
PLM12    0.2874999 W
PLM13    0.23287000 W

F2 - Processing parameters
SI       32768
SF       100.6379140 MHz
WDW      EM
SSB      0
GB       1.00 Hz
PC       1.40
    
```



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Current Data Parameters
NAME      MTX-P2H-04
EXPNO    1
PROCNO   1

F2 - Acquisition Parameters
Date_    201224
Time     13.44
INSTRUM  spect
PROBHD   5 mm PARBO Bb/
PULPROG  zgpg30
TD       65536
SOLVENT  CDCl3
NS       1024
DS       4
SWH      24038.461 Hz
FIDRES   0.366798 Hz
AQ       1.3631488 sec
RG       202.26
CW       20.800 usec
DE       6.50 usec
TE       295.2 K
D1       2.0000000 sec
d11      0.5300000 sec
TDO      1

===== CHANNEL f1 =====
SFO1     100.627169 MHz
NUC1     13C
P1       9.40 usec
PLM1     57.0000000 W

===== CHANNEL f2 =====
SFO2     400.2316009 MHz
NUC2     1H
CPDPRG2  waltz16
PCPD2    60.00 usec
PLM2     11.0000000 W
PLM12    0.2874999 W
PLM13    0.23287000 W

F2 - Processing parameters
SI       32768
SF       100.6379140 MHz
WDW      EM
SSB      0
GB       1.00 Hz
PC       1.40
    
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MTZ-PZH-04

137.19
136.26
136.04
135.84
135.40
135.16

132.19
132.13



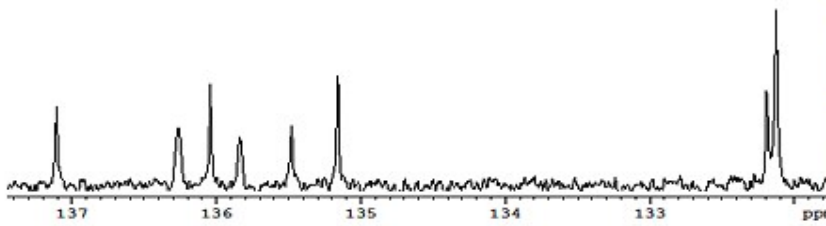
Current Data Parameters
NAME MTZ-PZH-04
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date_ 20151224
Time 13.44
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 1024
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631488 sec
RG 202.26
SQ 20.800 usec
DE 6.50 usec
TE 295.0 K
SI 2.0000000 sec
D11 0.0300000 sec
TD0 1

----- CHANNEL f1 -----
SFO1 100.6279769 MHz
NUC1 13C
P1 9.40 usec
P1M1 57.0000000 W

----- CHANNEL f2 -----
SFO2 400.2316009 MHz
NUC2 1H
CPOBPG12 waltz16
PCPD2 90.00 usec
P1M2 11.0000000 W
P1M12 0.28749999 W
P1M13 0.23287000 W

F2 - Processing parameters
SI 32768
SF 100.6379140 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40



MTZ-PZH-04

147.92
146.56

143.84



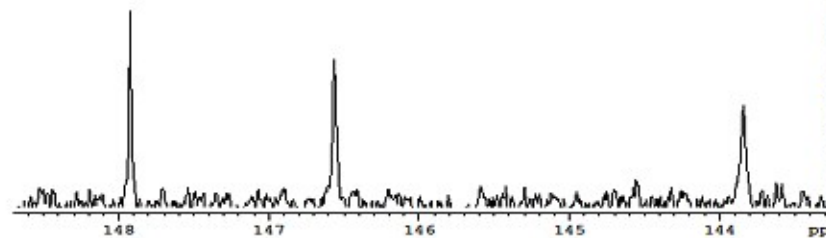
Current Data Parameters
NAME MTZ-PZH-04
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date_ 20151224
Time 13.44
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 1024
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631488 sec
RG 202.26
SQ 20.800 usec
DE 6.50 usec
TE 295.0 K
SI 2.0000000 sec
D11 0.0300000 sec
TD0 1

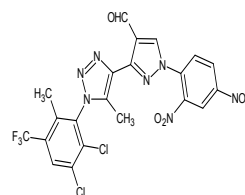
----- CHANNEL f1 -----
SFO1 100.6279769 MHz
NUC1 13C
P1 9.40 usec
P1M1 57.0000000 W

----- CHANNEL f2 -----
SFO2 400.2316009 MHz
NUC2 1H
CPOBPG12 waltz16
PCPD2 90.00 usec
P1M2 11.0000000 W
P1M12 0.28749999 W
P1M13 0.23287000 W

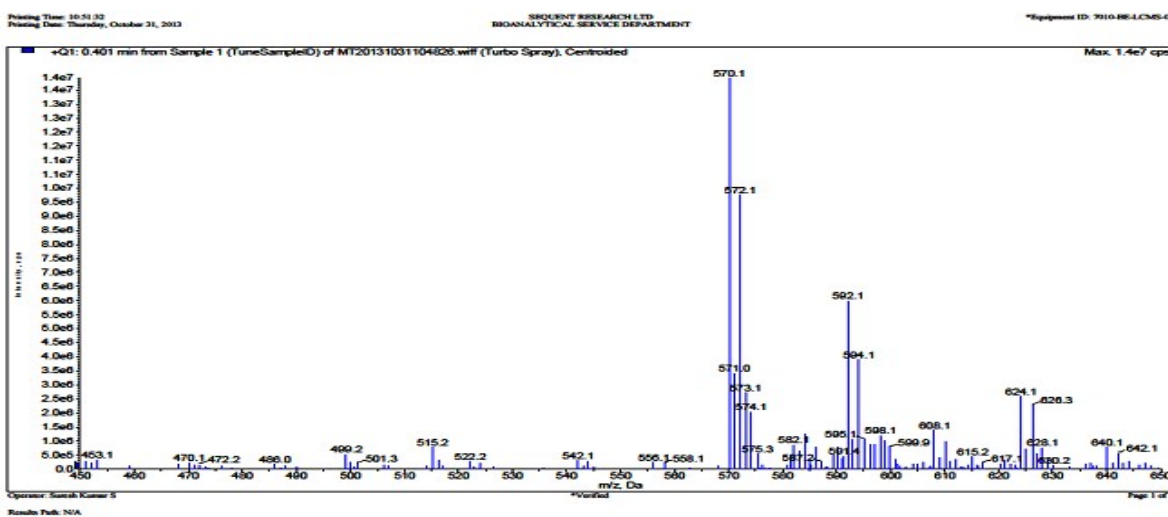
F2 - Processing parameters
SI 32768
SF 100.6379140 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40



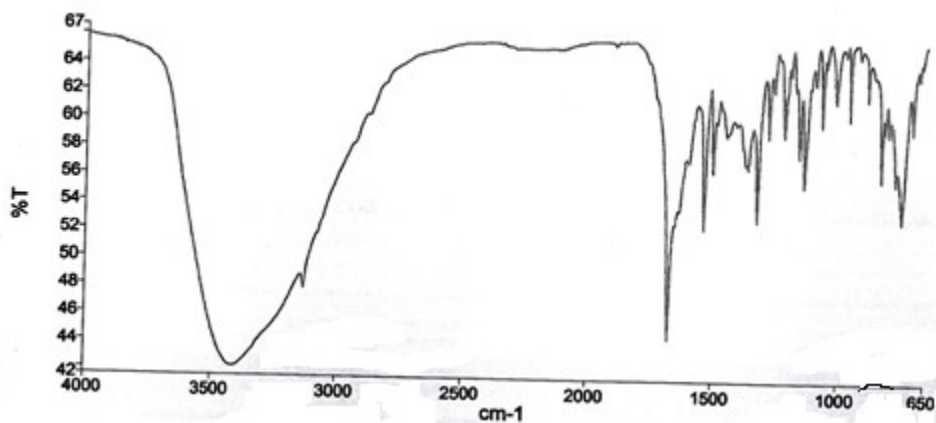
Mass spectrum of 5 (c)



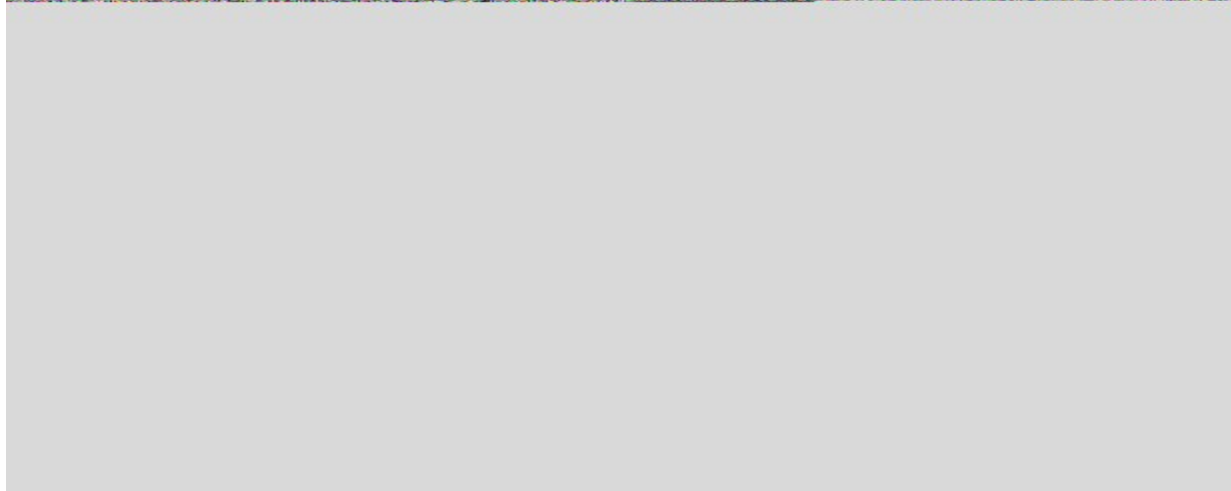
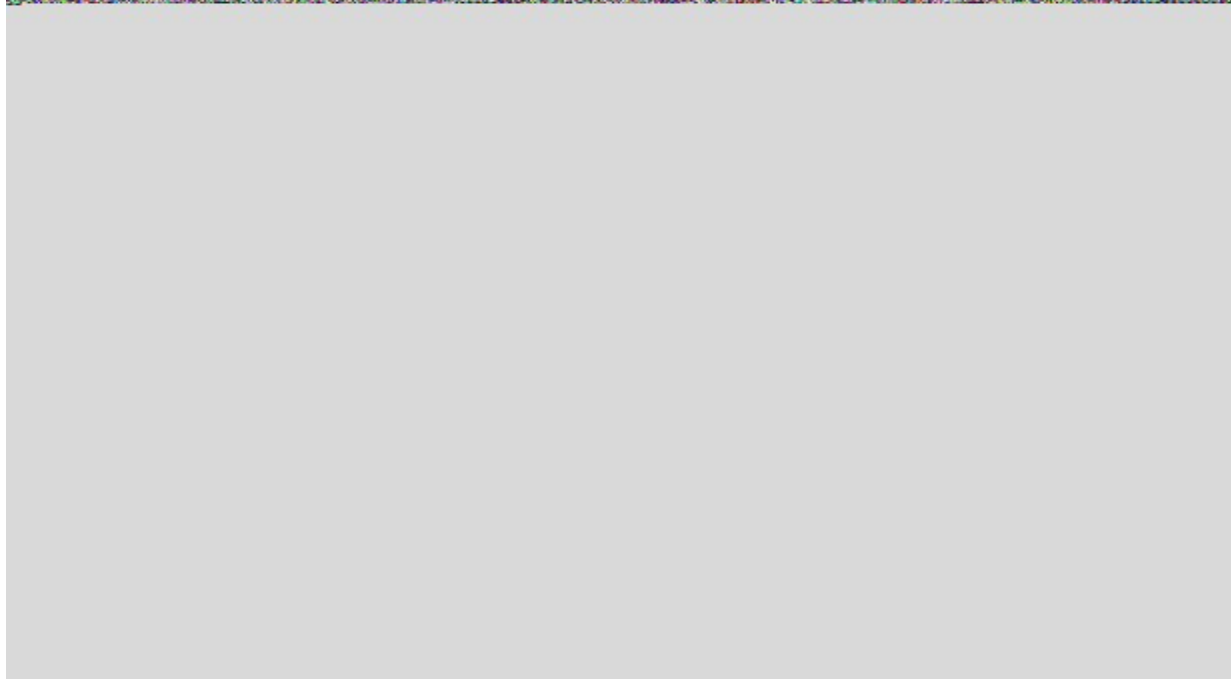
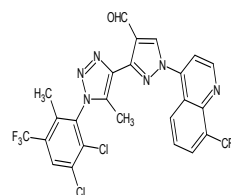
$m/z = 570.3$



IR spectrum of 5 (c)

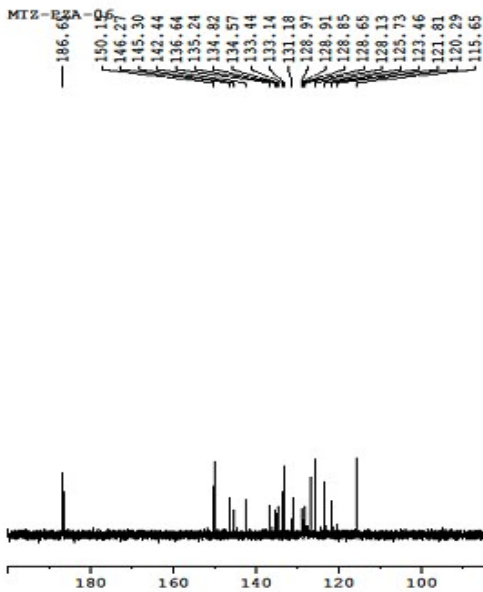
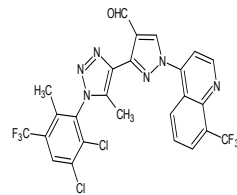


¹H NMR Spectrum of 5 (f)





¹³C NMR Spectrum of 5 (f)



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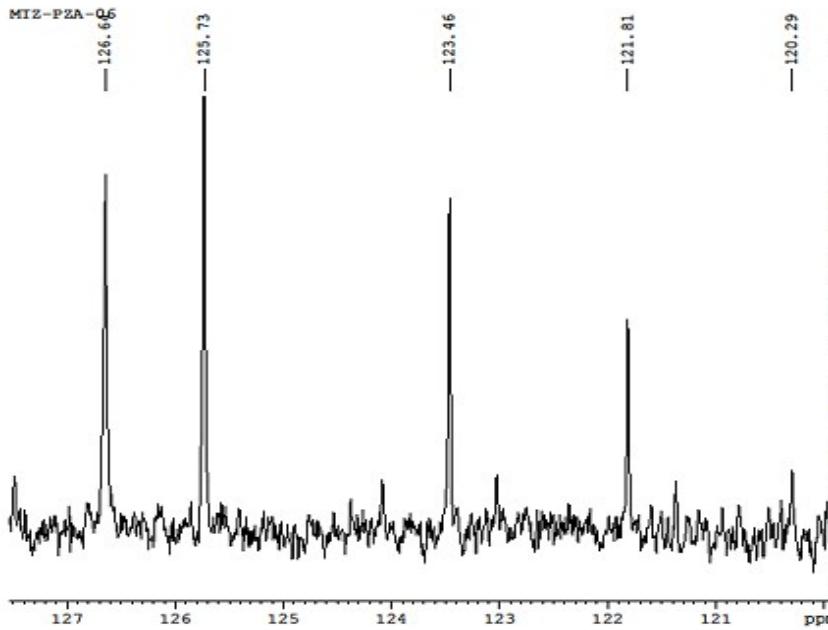
Current Data Parameters
NAME: N12-P1A-C6
EXPNO: 2
PROCNO: 1

F2 - Acquisition Parameters
Date_: 20151226
Time: 14.30
INSTRUM: spect
PROBHD: 5 mm PABBO MM7
PULPROG: zgpg30
TD: 65536
SOLVENT: CDCl3
NS: 1024
DS: 4
SWH: 24038.461 Hz
FIDRES: 0.366798 Hz
AQ: 1.3631488 sec
RG: 202.26
CW: 20.800 usec
DE: 6.50 usec
TE: 295.2 K
D1: 2.0000000 sec
D11: 0.0300000 sec
TD0: 1

----- CHANNEL f1 -----
SFO1: 100.6279769 MHz
NUC1: 13C
P1: 9.40 usec
PLM1: 57.0000000 W

----- CHANNEL f2 -----
SFO2: 400.2316009 MHz
NUC2: 1H
CPOPRG[2]: waltz16
PCPD2: 90.00 usec
P1M2: 11.0000000 W
P1M12: 0.2874999 W
P1M13: 0.23287000 W

F2 - Processing parameters
SI: 32768
SF: 100.6380175 MHz
WDW: EM
SSB: 0
LB: 1.00 Hz
GB: 0
PC: 1.40



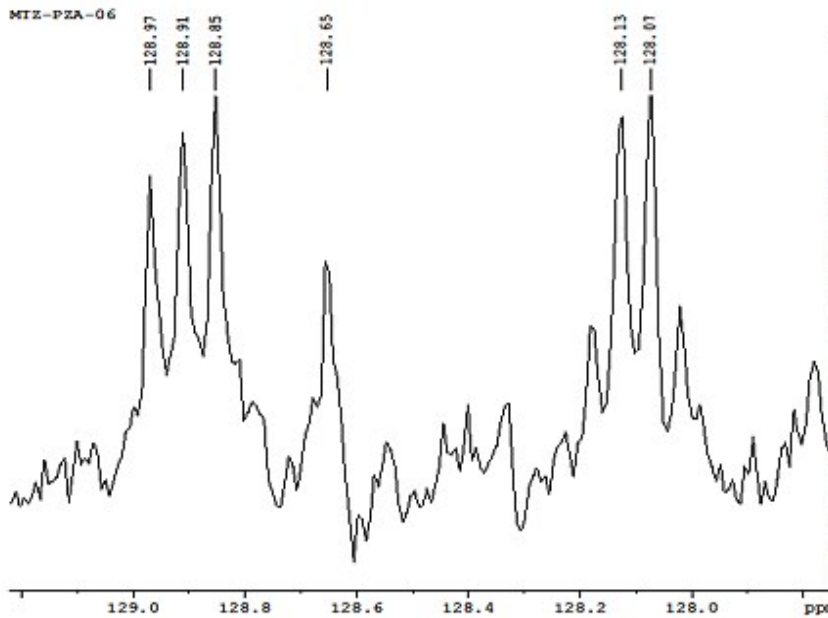
Current Data Parameters
 NAME MIZ-PZA-06
 EXPNO 2
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 2011226
 Time 14.10
 INSTRUM spect
 PROBRD 5 mm PABBO BB/ spect30
 PULPROG zgpg30
 TD 65536
 SOLVENT CDCl3
 NS 1024
 DS 4
 SWH 24038.461 Hz
 FIDRES 0.366798 Hz
 AQ 1.3631488 sec
 RG 202.26
 CW 20.800 usec
 DE 6.50 usec
 TE 295.2 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TDD 1

----- CHANNEL F1 -----
 SFO1 100.6479769 MHz
 NUC1 13C
 P1 9.40 usec
 P1M1 57.0000000 W

----- CHANNEL F2 -----
 SFO2 400.2316009 MHz
 NUC2 1H
 CPOPRG2 waltz16
 PCPD2 90.00 usec
 PPM2 11.0000000 W
 P1M2 0.28749999 W
 P1M3 0.23287000 W

F2 - Processing parameters
 SI 32768
 SF 100.6380175 MHz
 NTH 8M
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40



Current Data Parameters
 NAME MIZ-PZA-06
 EXPNO 2
 PROCNO 1

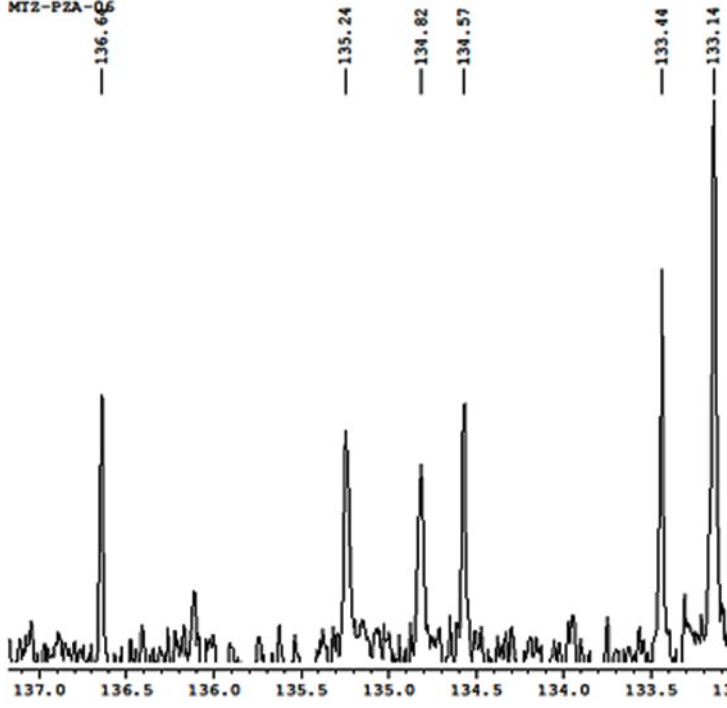
F2 - Acquisition Parameters
 Date_ 2011226
 Time 14.10
 INSTRUM spect
 PROBRD 5 mm PABBO BB/ spect30
 PULPROG zgpg30
 TD 65536
 SOLVENT CDCl3
 NS 1024
 DS 4
 SWH 24038.461 Hz
 FIDRES 0.366798 Hz
 AQ 1.3631488 sec
 RG 202.26
 CW 20.800 usec
 DE 6.50 usec
 TE 295.2 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TDD 1

----- CHANNEL F1 -----
 SFO1 100.6479769 MHz
 NUC1 13C
 P1 9.40 usec
 P1M1 57.0000000 W

----- CHANNEL F2 -----
 SFO2 400.2316009 MHz
 NUC2 1H
 CPOPRG2 waltz16
 PCPD2 90.00 usec
 PPM2 11.0000000 W
 P1M2 0.28749999 W
 P1M3 0.23287000 W

F2 - Processing parameters
 SI 32768
 SF 100.6380175 MHz
 NTH 8M
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

MTZ-PZA-06



Current Data Parameters
 NAME MTZ-PZA-06
 EXPNO 2
 PROCNO 1

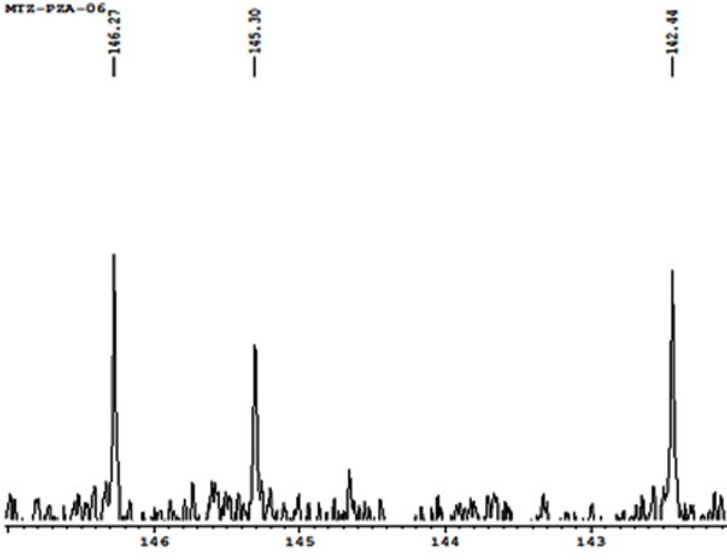
F2 - Acquisition Parameters
 Date_ 20151226
 Time 14.10
 INSTRUM spect
 PULPROG 5 mm PABBO 90/
 FULPROG zgpg30
 TD 65536
 SOLVENT CDCl3
 NS 1024
 DS 4
 SWH 24038.461 Hz
 FIDRES 0.366798 Hz
 AQ 1.3631488 sec
 RG 202.26
 DW 20.800 usec
 DE 6.50 usec
 TE 295.2 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TD0 1

==== CHANNEL f1 =====
 SF01 100.6479769 MHz
 NUQ1 13C
 P1 9.40 usec
 P1M1 57.0000000 W

==== CHANNEL f2 =====
 SF02 400.2316009 MHz
 NUQ2 1H
 CPDPRG2 waltz16
 PCPD2 90.00 usec
 P1M2 11.0000000 W
 P1M12 0.28749999 W
 P1M13 0.23287000 W

F2 - Processing parameters
 SI 32768
 SF 100.6380175 MHz
 SW 2M
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

MTZ-PZA-06



Current Data Parameters
 NAME MTZ-PZA-06
 EXPNO 2
 PROCNO 1

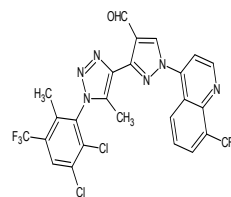
F2 - Acquisition Parameters
 Date_ 20151226
 Time 14.10
 INSTRUM spect
 PULPROG 5 mm PABBO 90/
 FULPROG zgpg30
 TD 65536
 SOLVENT CDCl3
 NS 1024
 DS 4
 SWH 24038.461 Hz
 FIDRES 0.366798 Hz
 AQ 1.3631488 sec
 RG 202.26
 DW 20.800 usec
 DE 6.50 usec
 TE 295.2 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TD0 1

==== CHANNEL f1 =====
 SF01 100.6479769 MHz
 NUQ1 13C
 P1 9.40 usec
 P1M1 57.0000000 W

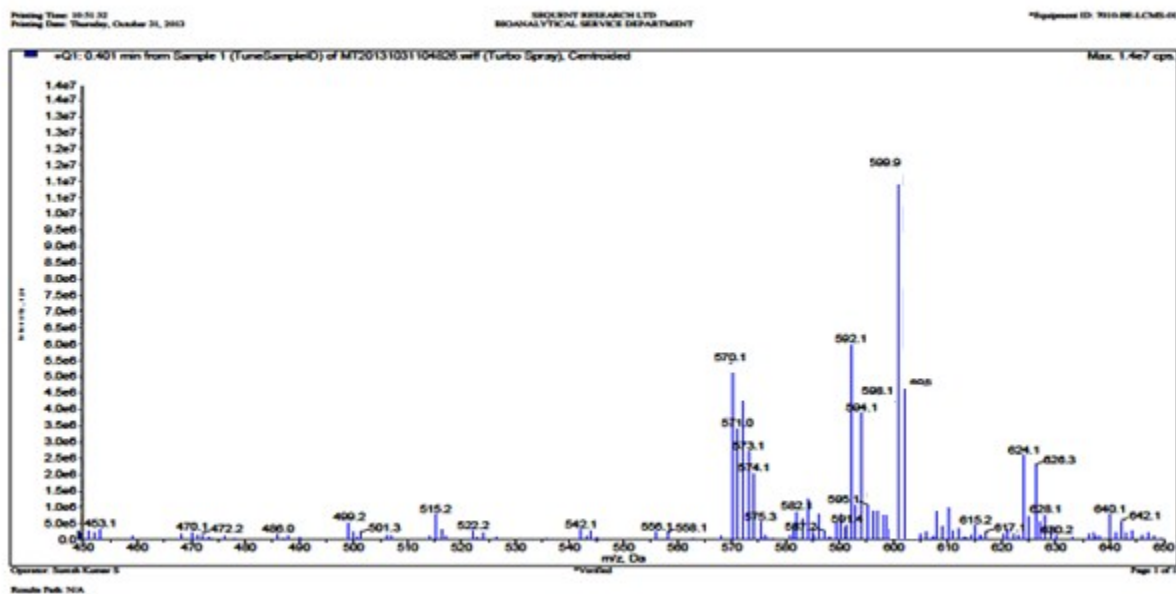
==== CHANNEL f2 =====
 SF02 400.2316009 MHz
 NUQ2 1H
 CPDPRG2 waltz16
 PCPD2 90.00 usec
 P1M2 11.0000000 W
 P1M12 0.28749999 W
 P1M13 0.23287000 W

F2 - Processing parameters
 SI 32768
 SF 100.6380175 MHz
 SW 2M
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

Mass spectrum of 5 (f)



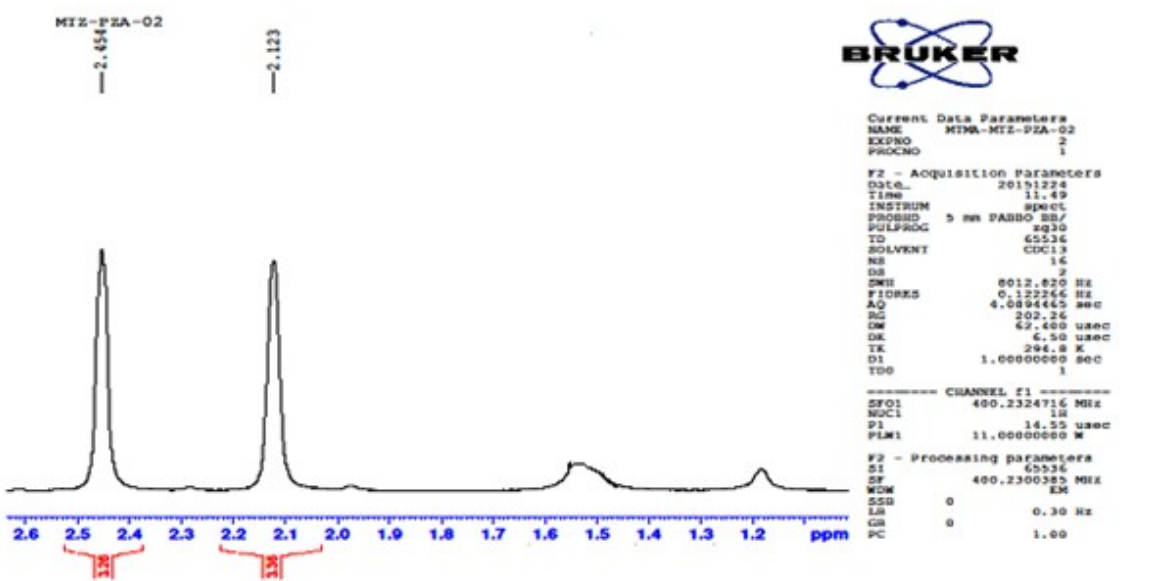
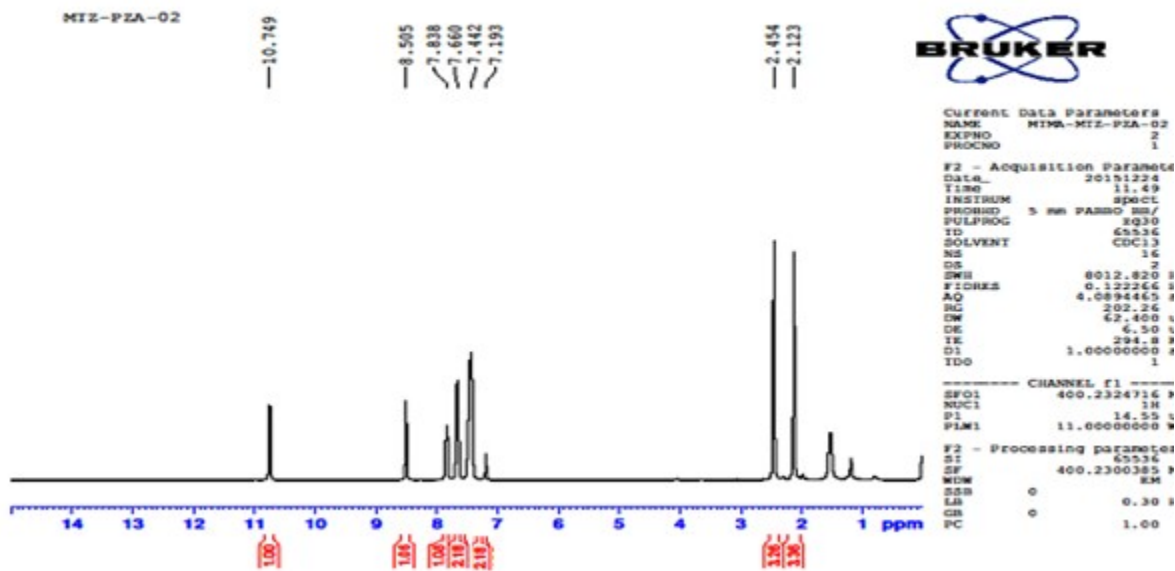
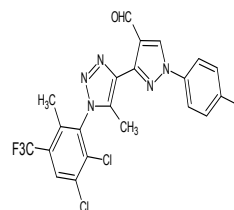
$m/z = 599.3$

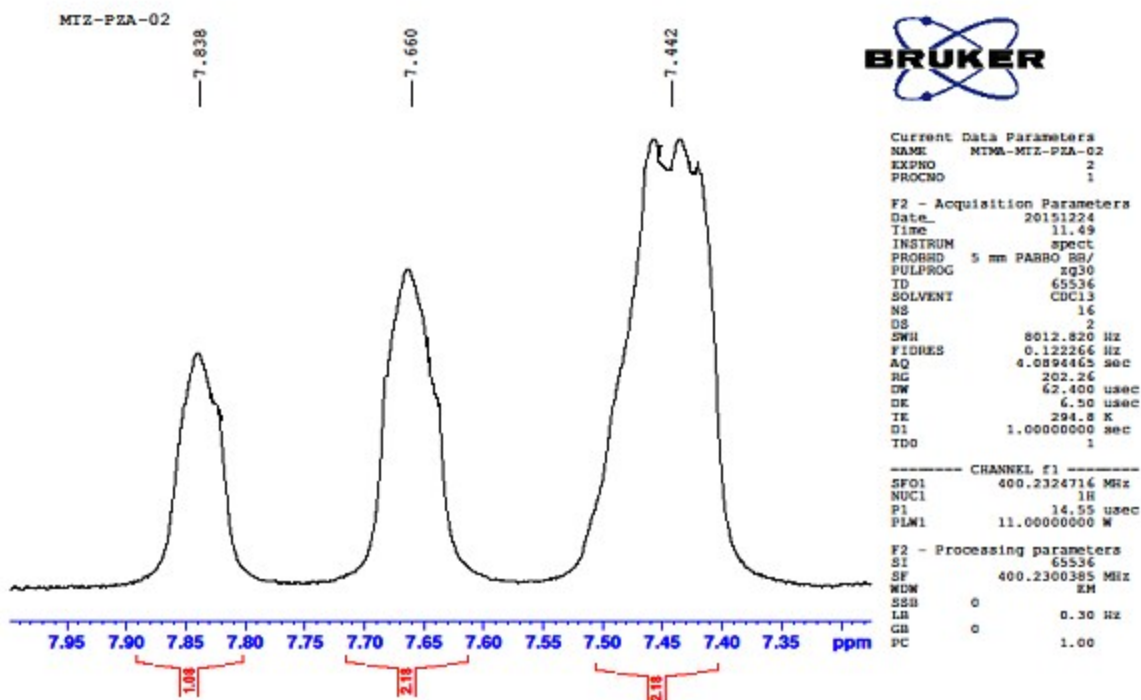


IR spectrum of 5 (f)

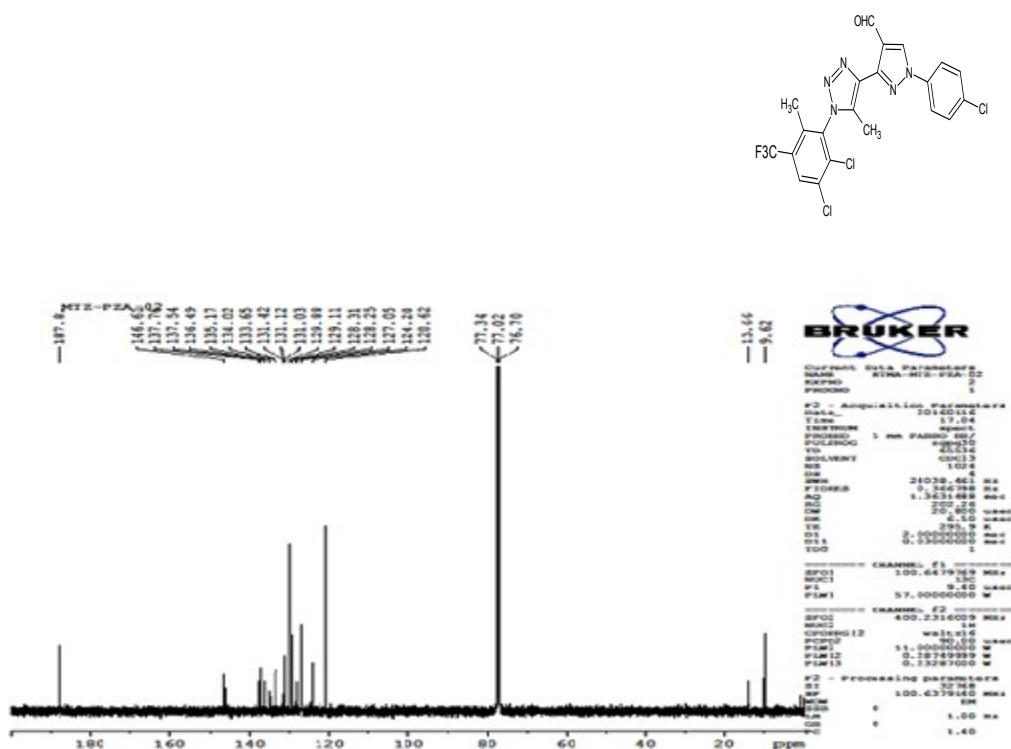


¹H NMR Spectrum of 5 (b)

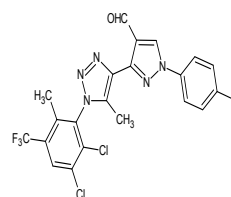




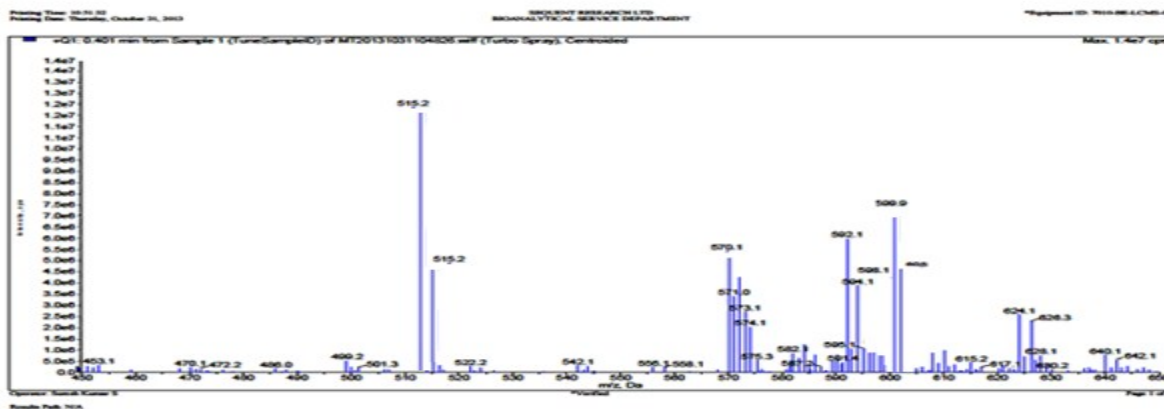
¹³C NMR Spectrum of 5 (b)



Mass spectrum of 5 (b)



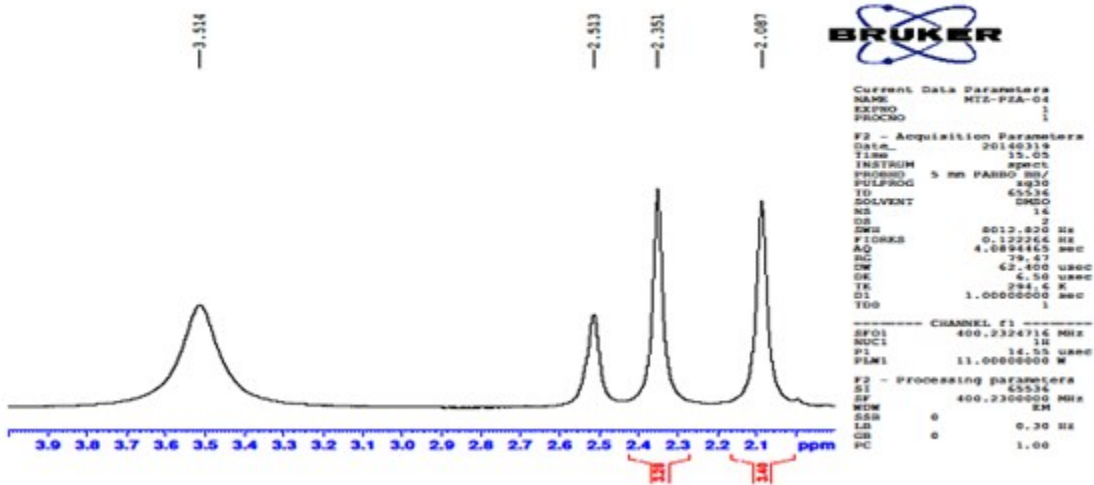
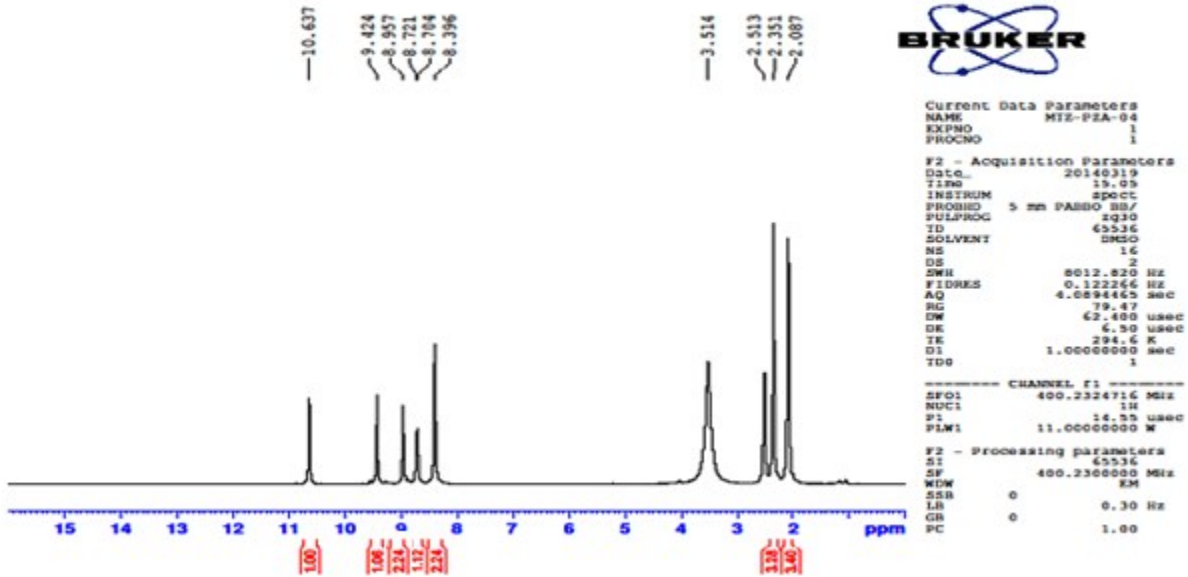
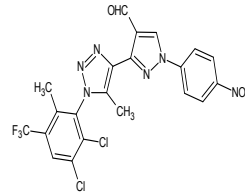
$m/z = 514.7$

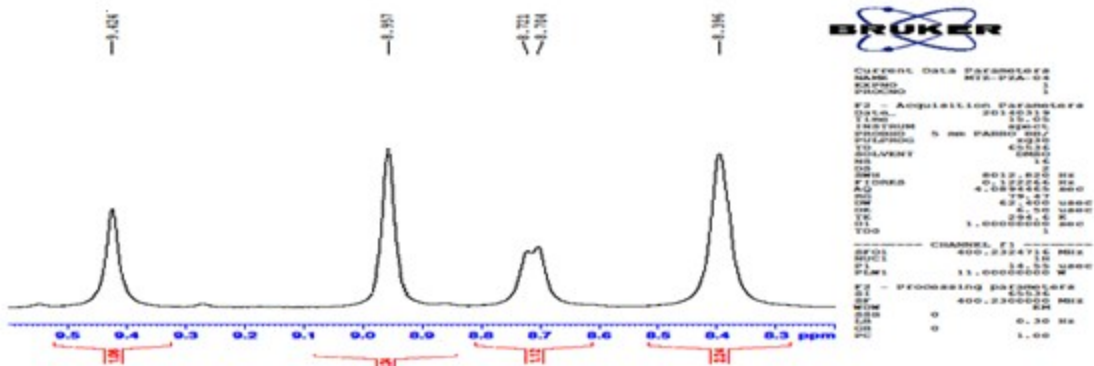


IR spectrum of 5 (b)

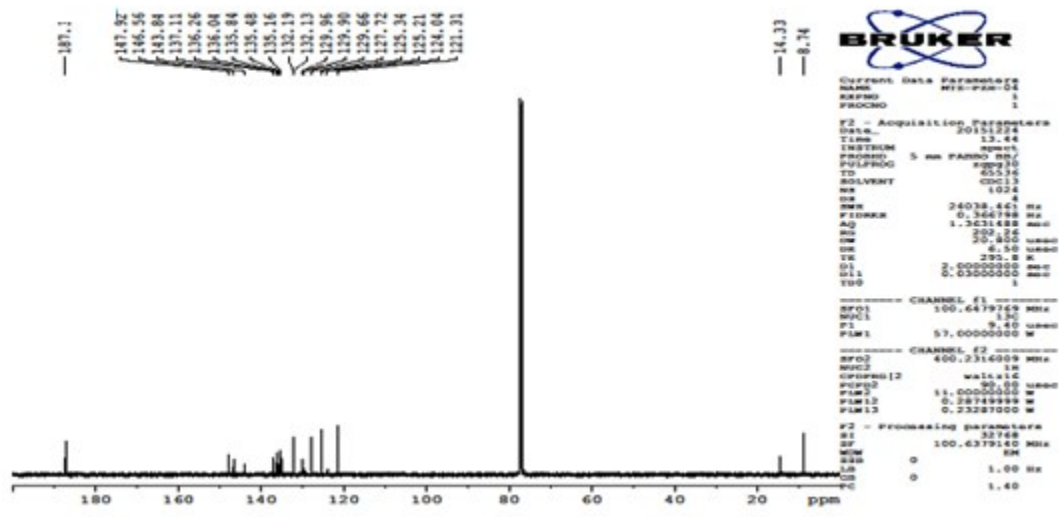
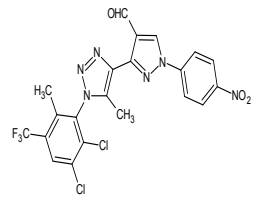


¹H NMR Spectrum of 5 (g)

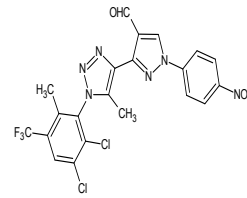




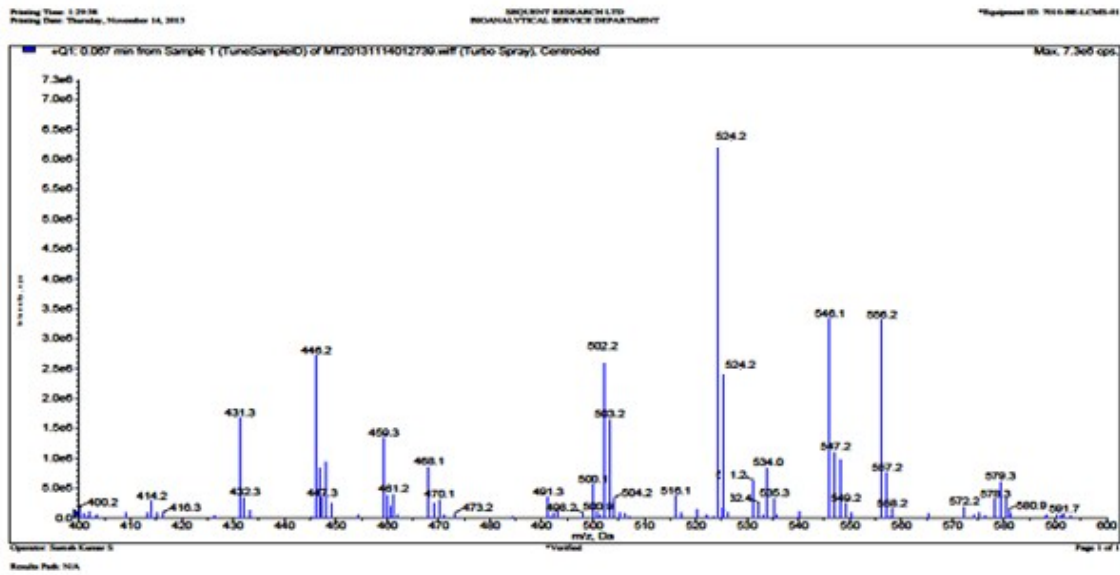
¹³C NMR Spectrum of 5 (g)



Mass spectrum of 5 (g)



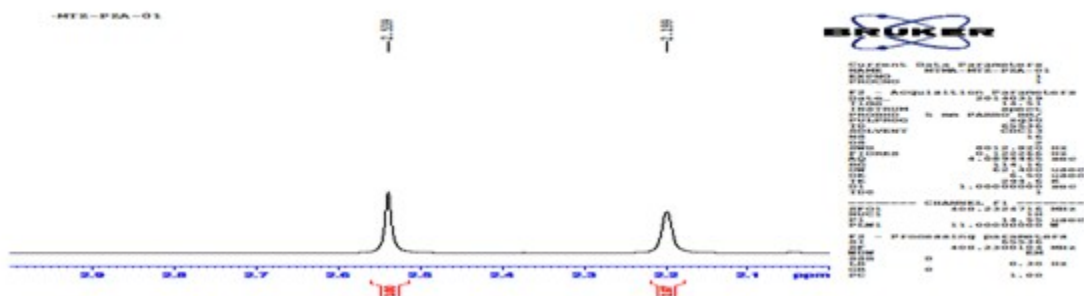
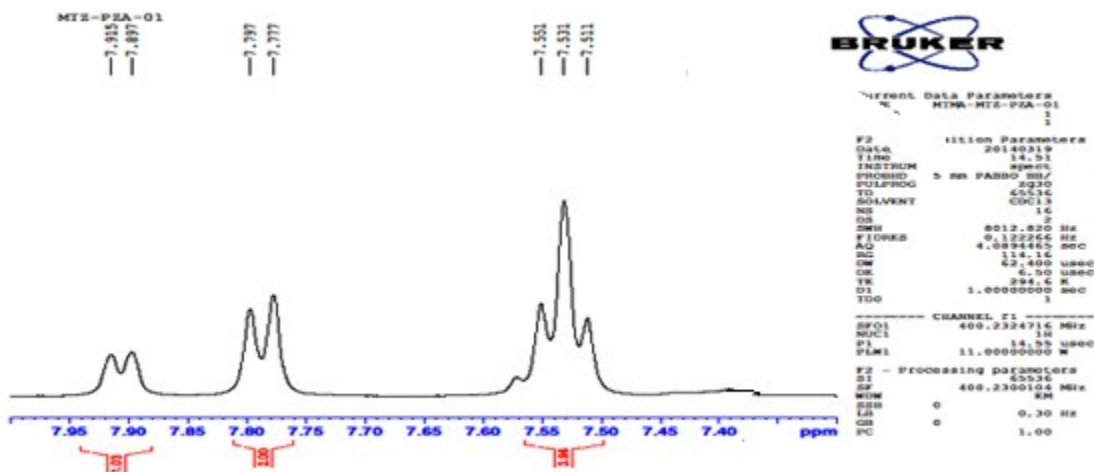
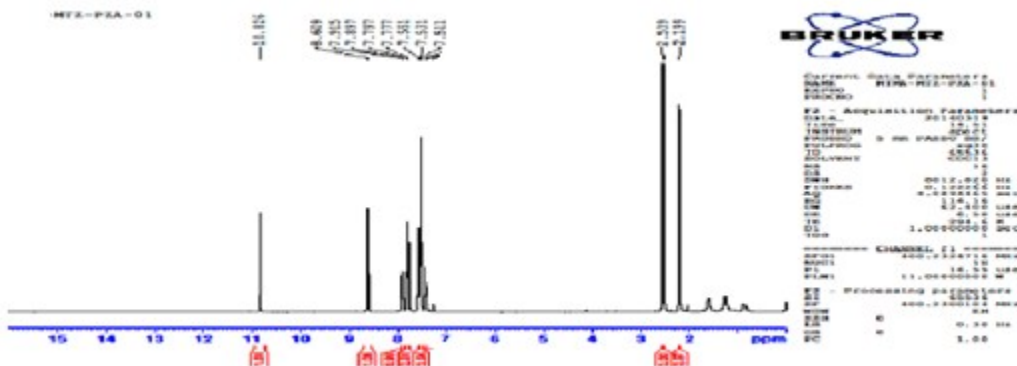
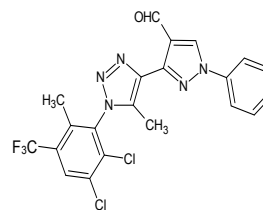
$m/z = 525.6$



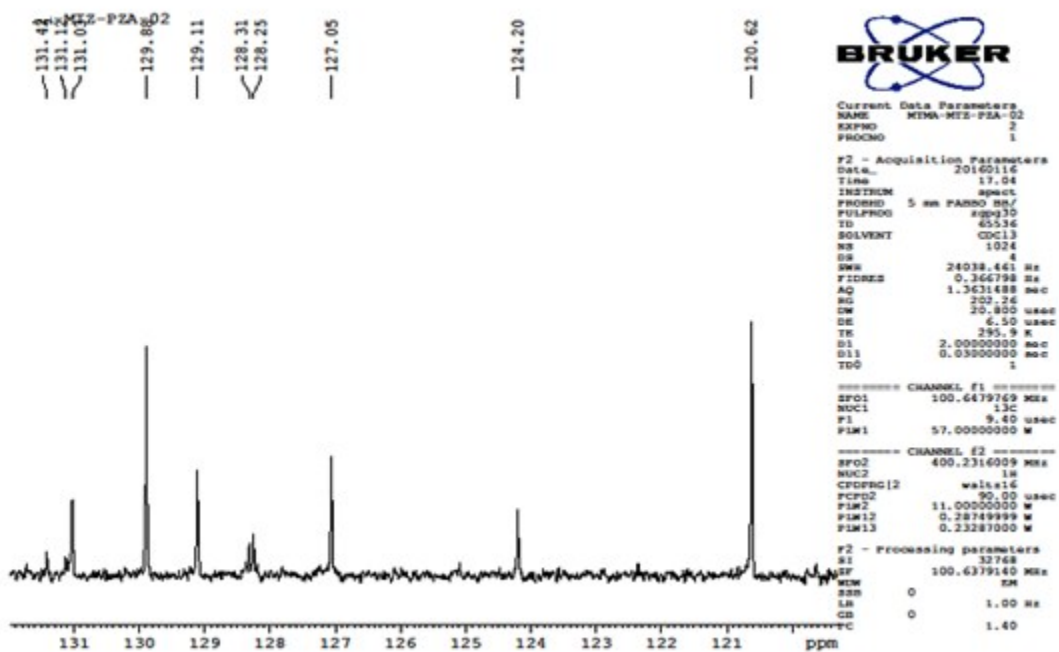
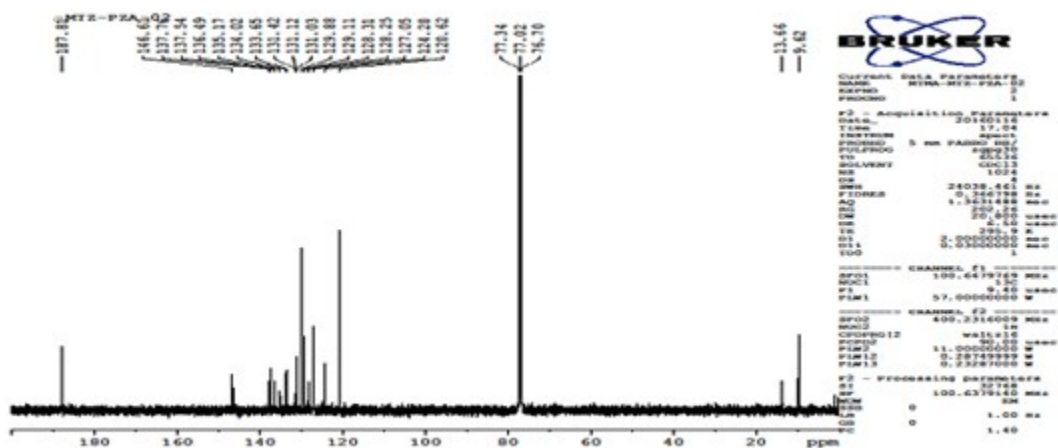
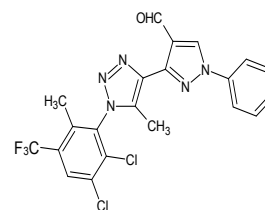
IR spectrum of 5 (g)



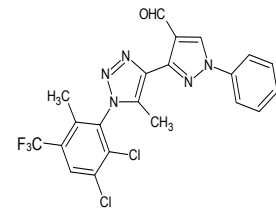
¹H NMR Spectrum of 5 (a)



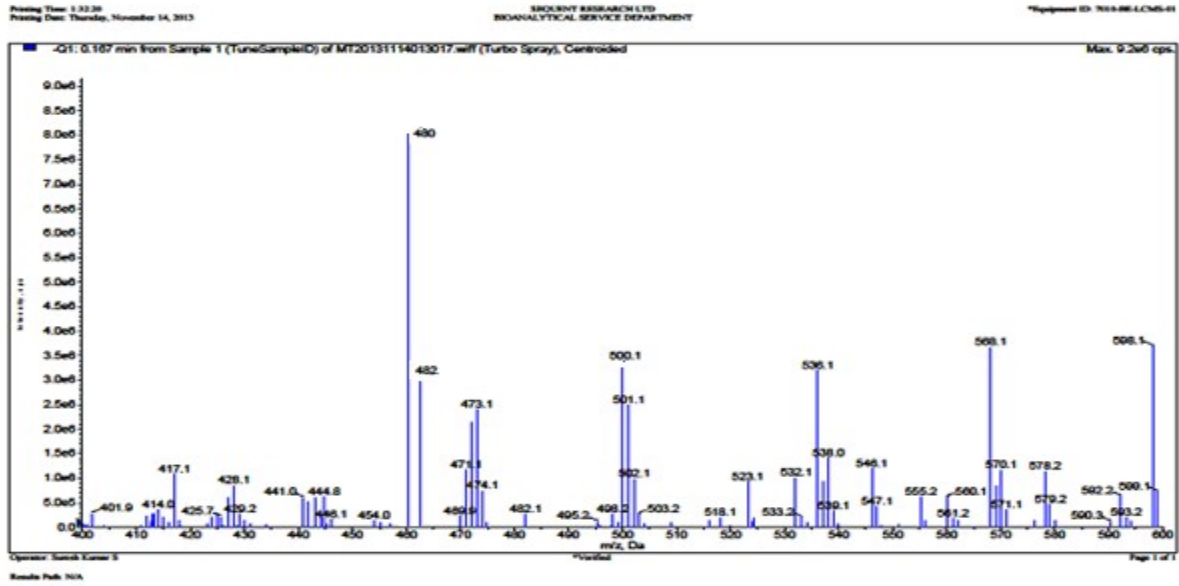
¹³C NMR Spectrum of 5 (a)



Mass spectrum of 5 (a)



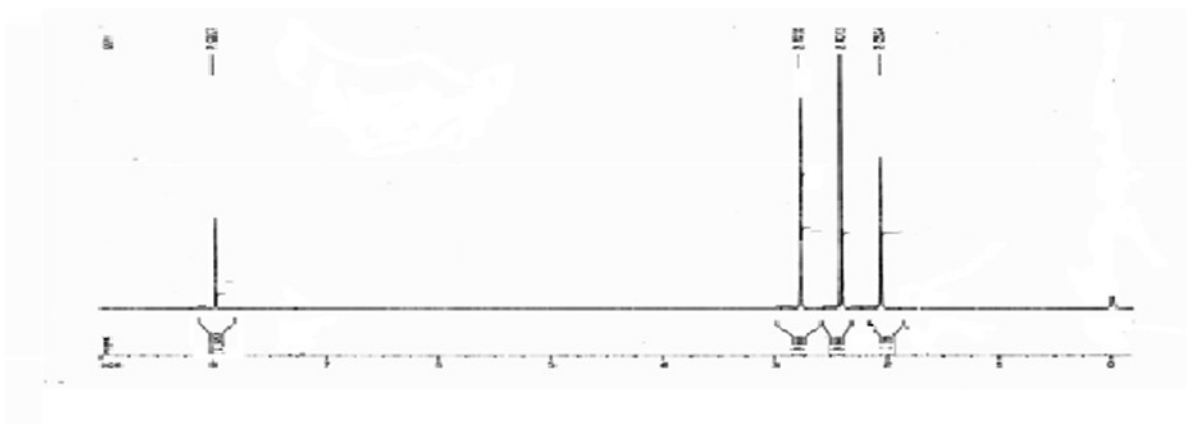
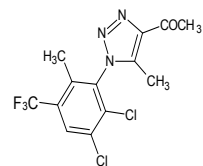
$m/z = 480.2$



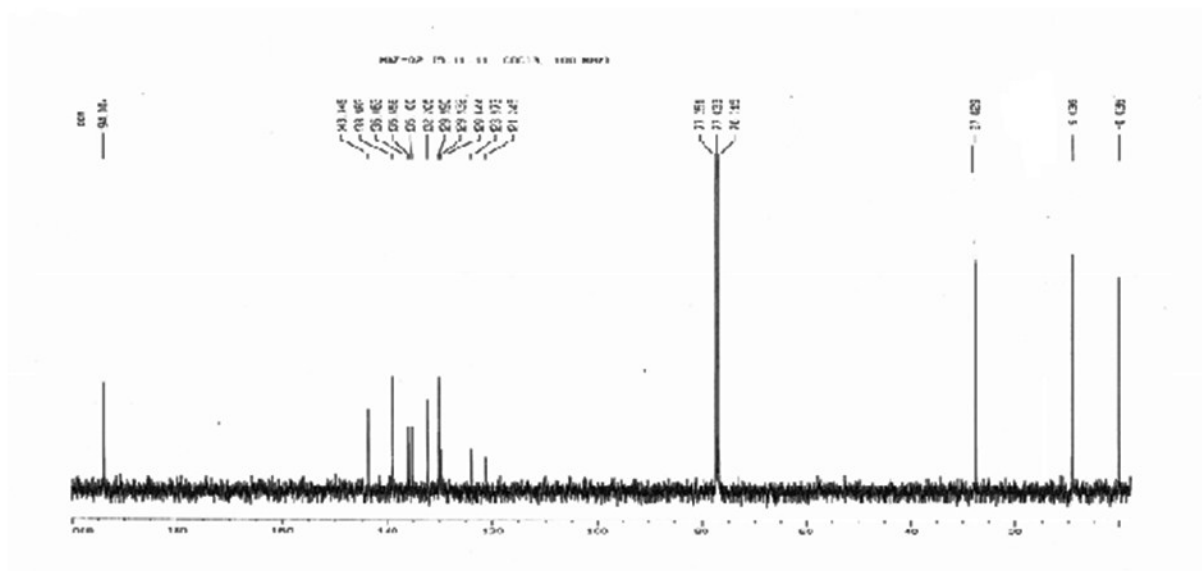
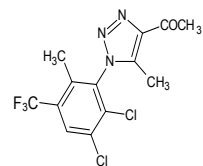
IR Spectrum of 5 (a)



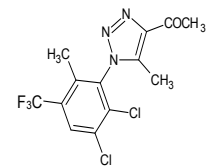
^1H NMR Spectrum of 3 ($\text{R}_1=\text{R}_2=\text{Cl}$)



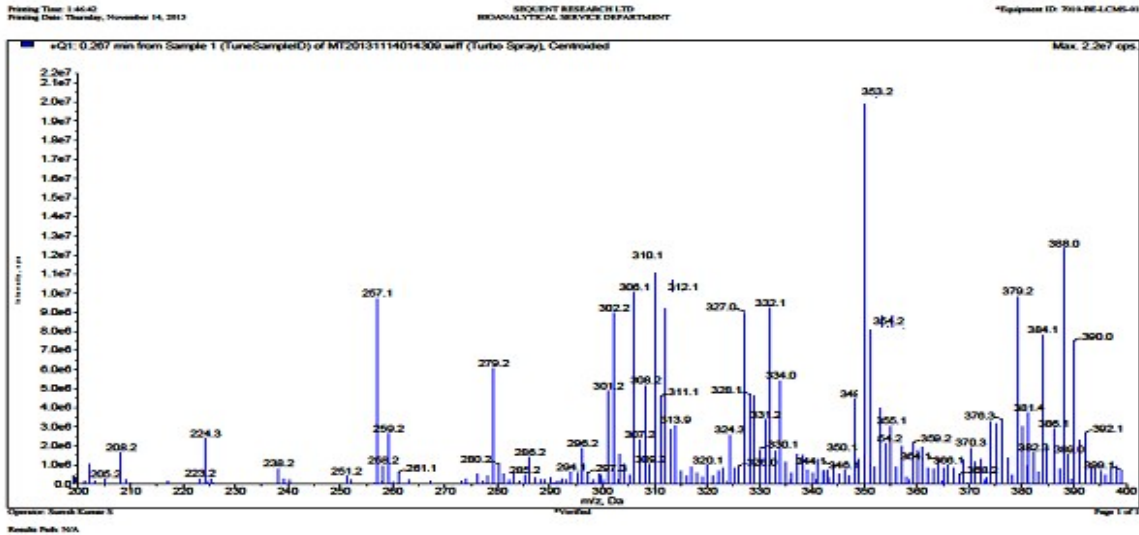
^{13}C NMR Spectrum of 3 ($\text{R}_1=\text{R}_2=\text{Cl}$)



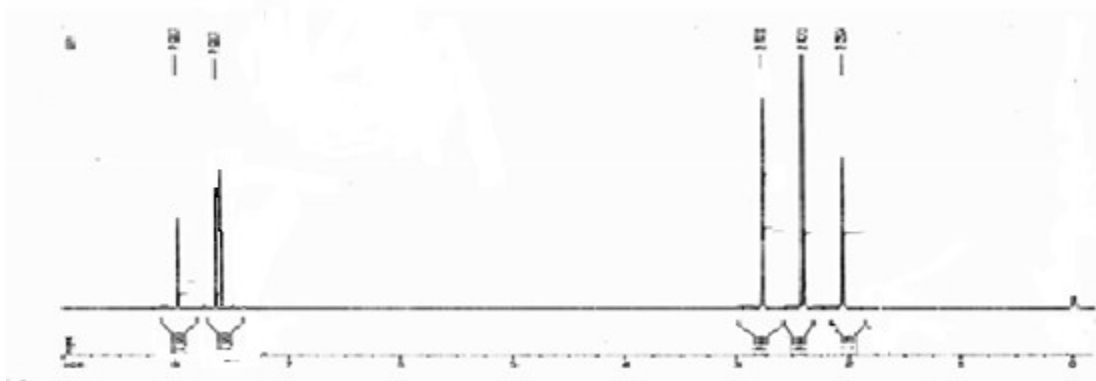
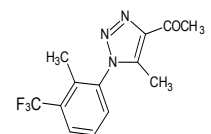
Mass spectrum of 3 (R₁=R₂= Cl)



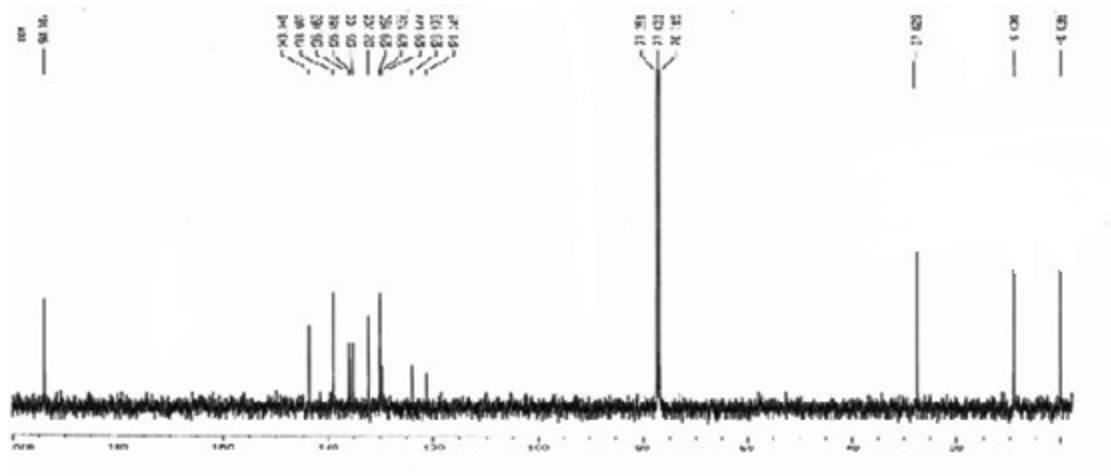
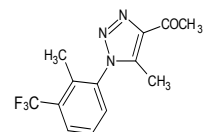
m/z = 352.2



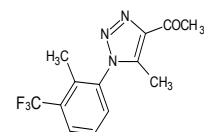
¹H NMR Spectrum of 3 (R₁=R₂= H)



^{13}C NMR Spectrum of 3 ($\text{R}_1=\text{R}_2=\text{H}$)



Mass spectrum of 3 ($\text{R}_1=\text{R}_2=\text{H}$)



$m/z = 283.2$

