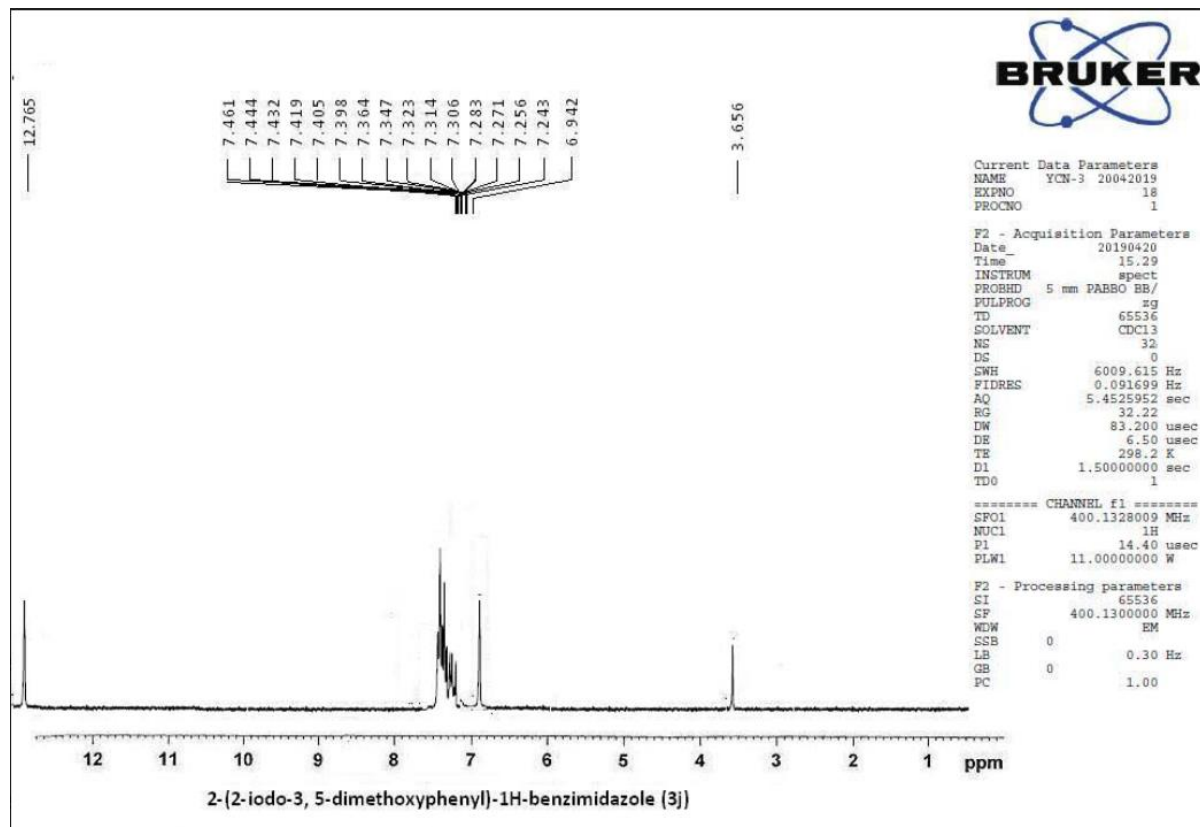
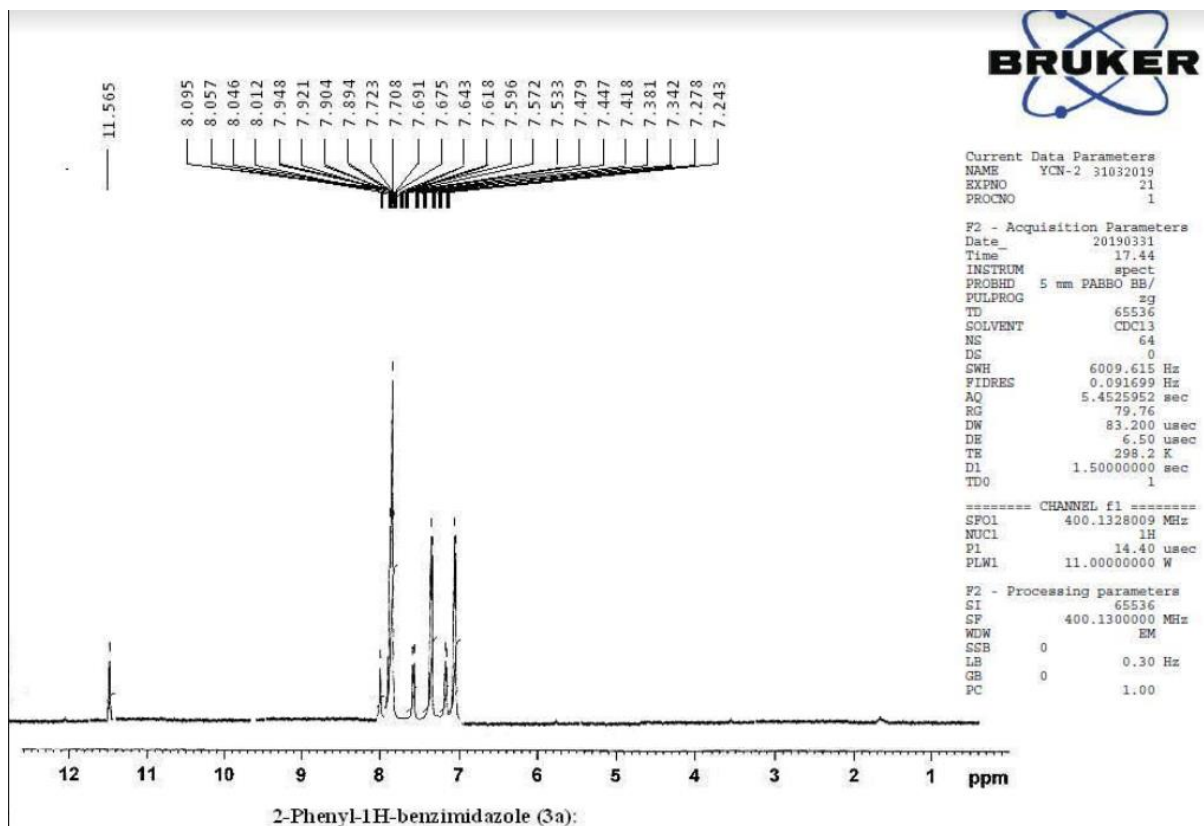
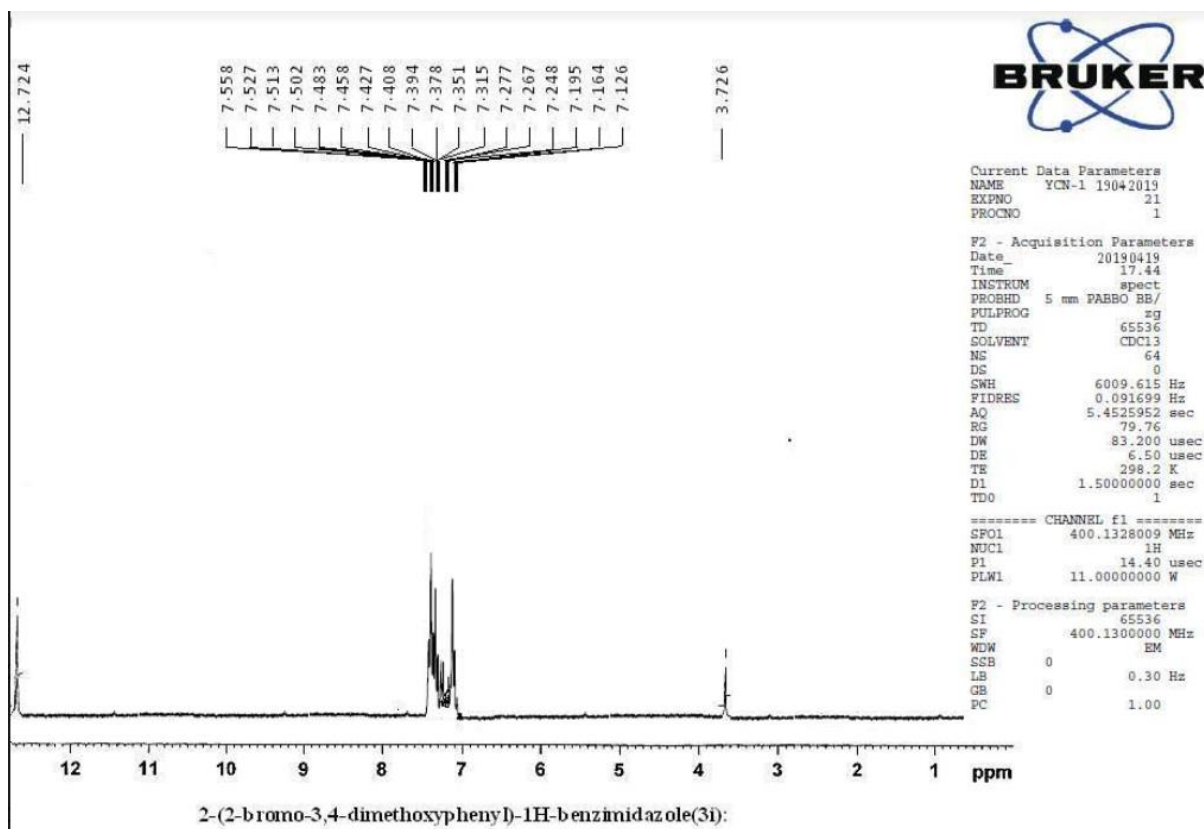
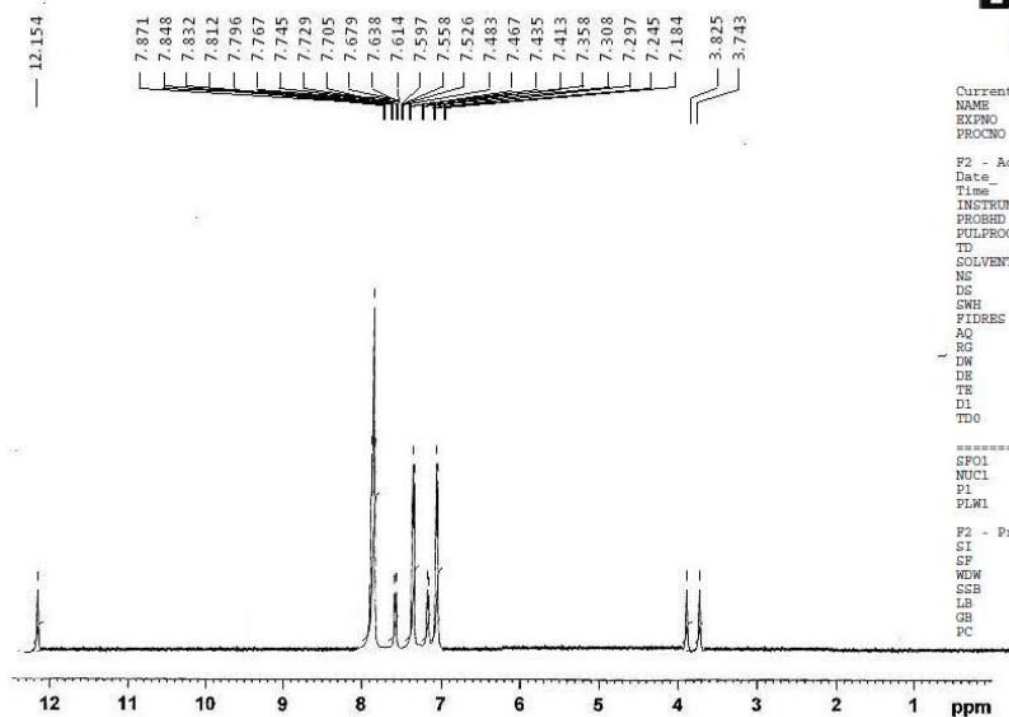


Supporting Information

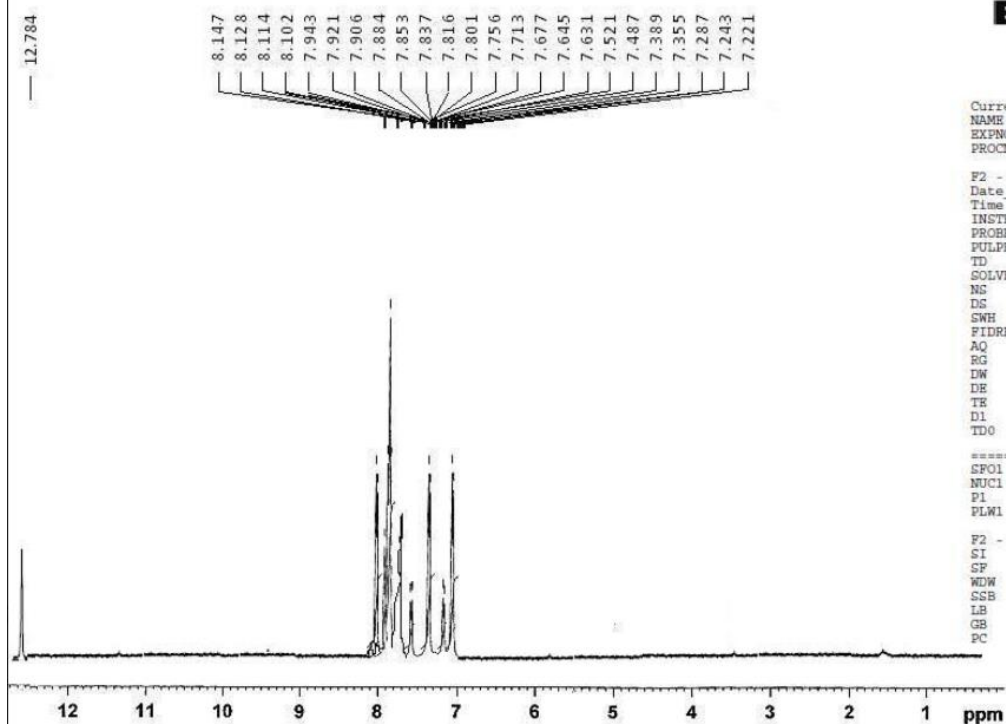
Reusable Nano- Zirconia- Catalyzed Synthesis of Benzimidazoles and Their Antibacterial and Antifungal Activities



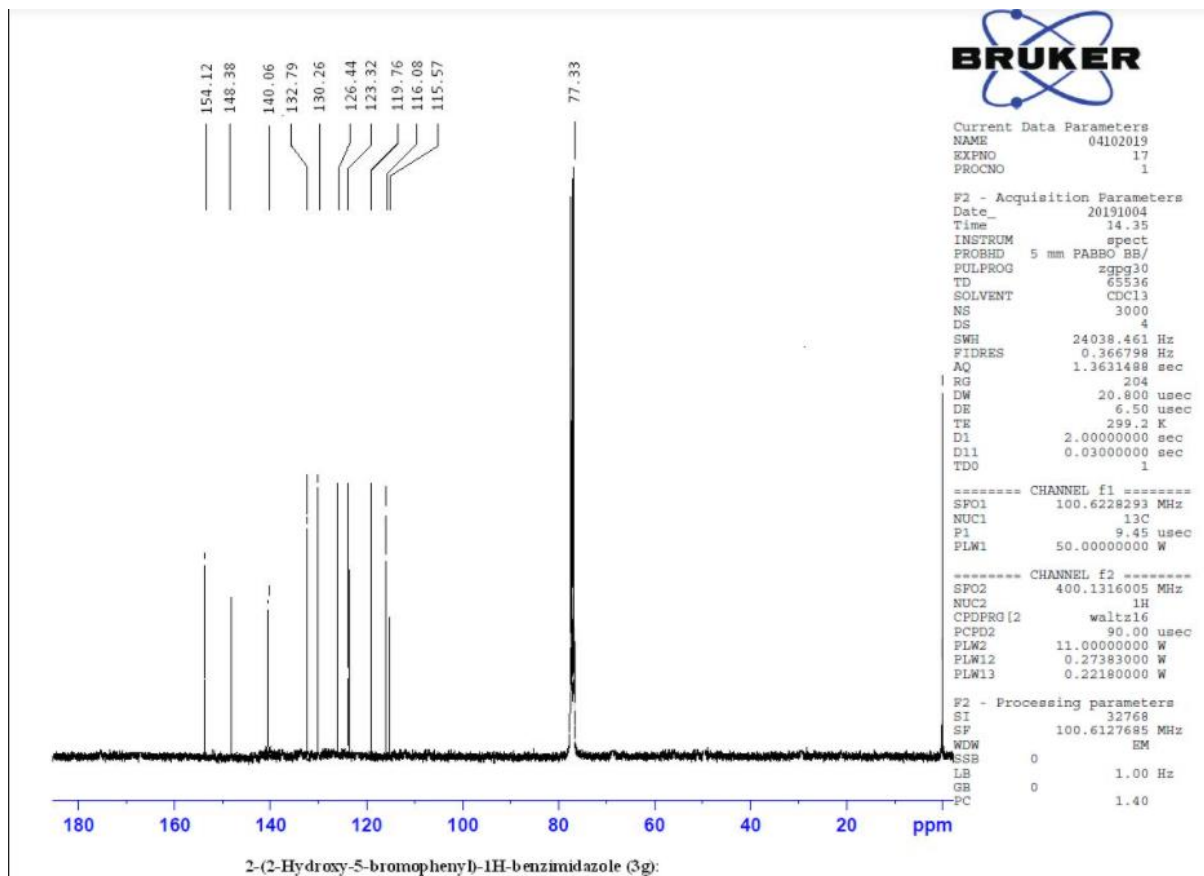
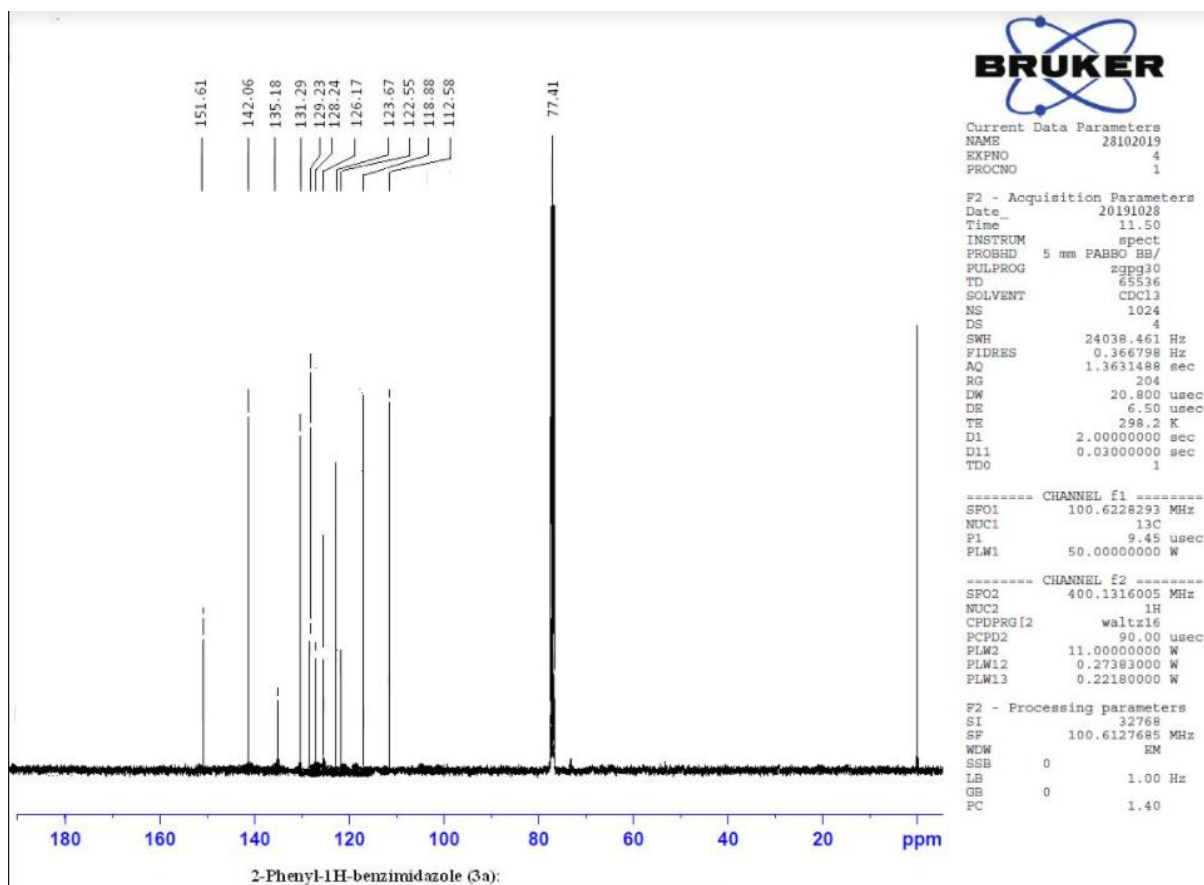


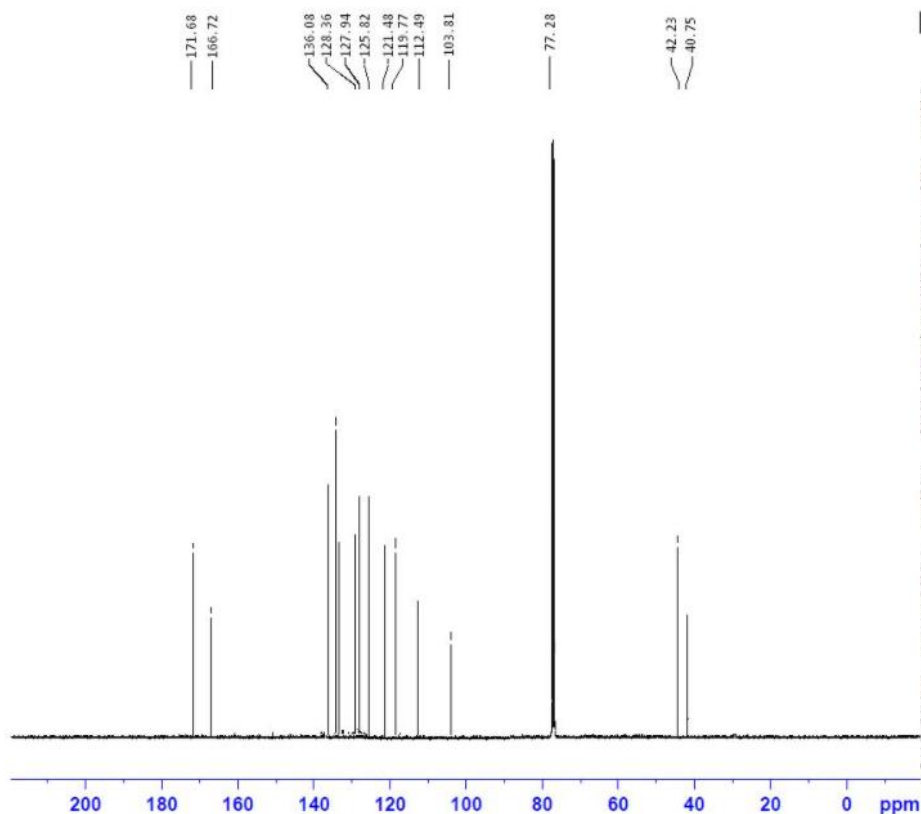


2-(3,5-Dimethoxyphenyl)-1H-benzimidazole (3c):



2-(3-Nitrophenyl)-1H-benzimidazole (3h):





2-(4-methoxyphenyl)-1H-benzimidazole (3b):



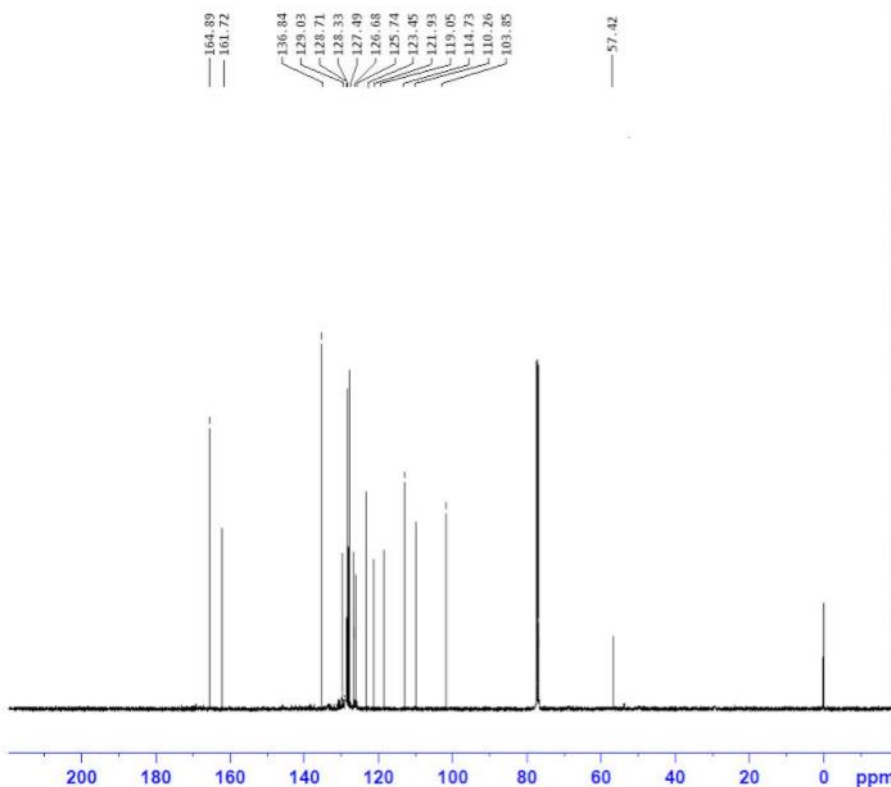
Current Data Parameters
NAME 29102019
EXPNO 13
PROCNO 1

F2 - Acquisition Parameters
Date 20191029
Time 19.21
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 4000
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631488 sec
RG 204
DW 20.800 usec
DE 6.50 usec
TE 293.6 K
D1 2.00000000 sec
D11 0.03000000 sec
TDO 1

===== CHANNEL f1 =====
SFO1 100.6228293 MHz
NUC1 13C
P1 9.45 usec
PLW1 50.00000000 W

===== CHANNEL f2 =====
SFO2 400.1316005 MHz
NUC2 1H
CPDPRG2 waltz16
PCPD2 90.00 usec
PLW2 11.00000000 W
PLW12 0.27383000 W
PLW13 0.22180000 W

F2 - Processing parameters
SI 32768
SF 100.6127685 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40



2-(3,5-Dimethoxyphenyl)-1H-benzimidazole



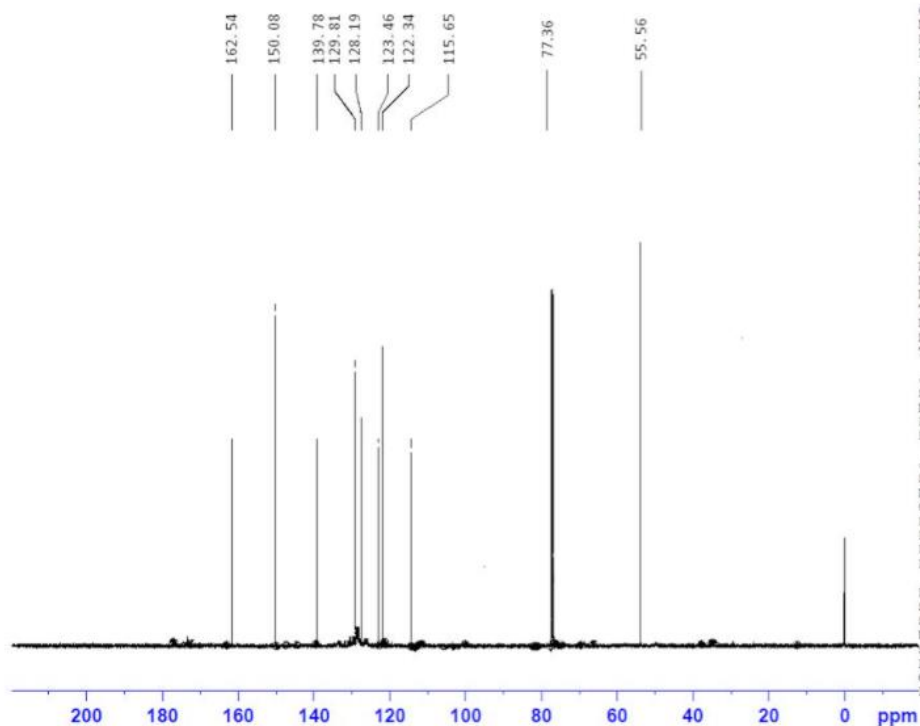
Current Data Parameters
NAME 01112019
EXPNO 3
PROCNO 1

F2 - Acquisition Parameters
Date 20191101
Time 11.19
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 204
DW 20.800 usec
DE 6.50 usec
TE 298.1 K
D1 2.00000000 sec
D11 0.03000000 sec
TDO 1

===== CHANNEL f1 =====
SFO1 100.6228293 MHz
NUC1 13C
P1 9.45 usec
PLW1 50.00000000 W

===== CHANNEL f2 =====
SFO2 400.1316005 MHz
NUC2 1H
CPDPRG2 waltz16
PCPD2 90.00 usec
PLW2 11.00000000 W
PLW12 0.27383000 W
PLW13 0.22180000 W

F2 - Processing parameters
SI 32768
SF 100.6127685 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40



2-(4-methoxyphenyl)-1H-benzimidazole (3b):



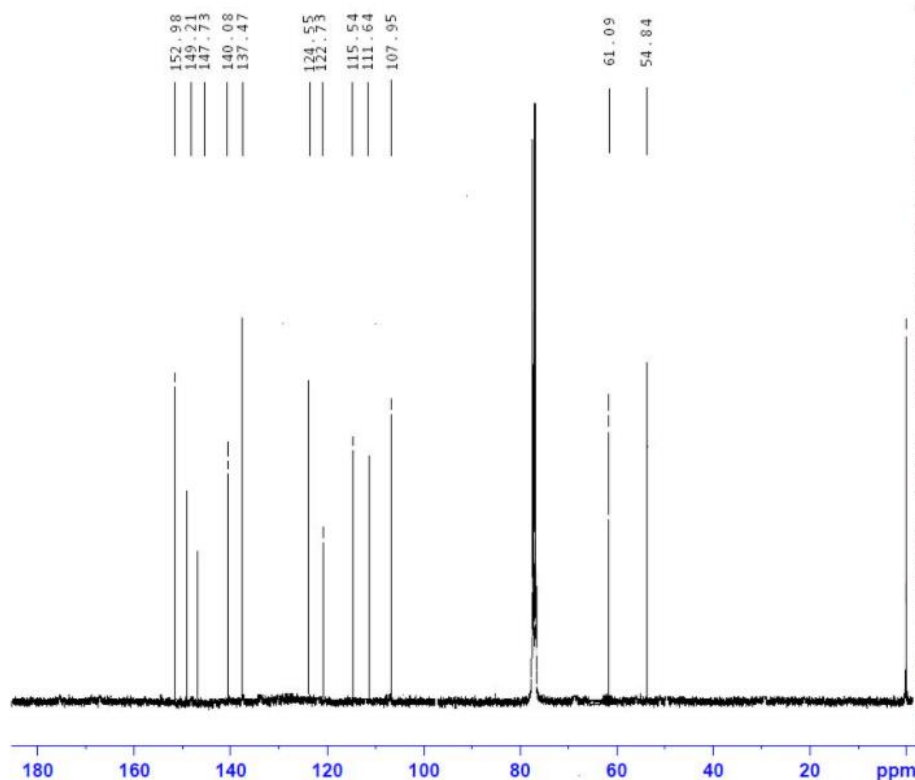
Current Data Parameters
NAME 01112019
EXPNO 4
PROCNO 1

F2 - Acquisition Parameters
Date_ 20191101
Time_ 14.10
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 204
DW 20.800 usec
DE 6.50 usec
TE 298.1 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 100.6228293 MHz
NUC1 13C
P1 9.45 usec
PLW1 50.00000000 W

===== CHANNEL f2 =====
SFO2 400.1316005 MHz
NUC2 1H
CPDPRG2 waltz16
PCPD2 90.00 usec
PLW2 11.00000000 W
PLW12 0.27383000 W
PLW13 0.22180000 W

F2 - Processing parameters
SI 32768
SF 100.6127685 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40



2-(2-bromo-3,4-dimethoxyphenyl)-1H-benzimidazole(3i):



Current Data Parameters
Date_ 26102019
5
1

F2 - Acquisition Parameters
Date_ 20191026
Time_ 17.50
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 1004
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631488 sec
RG 204
DW 20.800 usec
DE 6.50 usec
TE 298.2 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 100.6228293 MHz
NUC1 13C
P1 9.45 usec
PLW1 50.00000000 W

===== CHANNEL f2 =====
SFO2 400.1316005 MHz
NUC2 1H
CPDPRG2 waltz16
PCPD2 90.00 usec
PLW2 11.00000000 W
PLW12 0.27383000 W
PLW13 0.22180000 W

F2 - Processing parameters
SI 32768
SF 100.6127685 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40



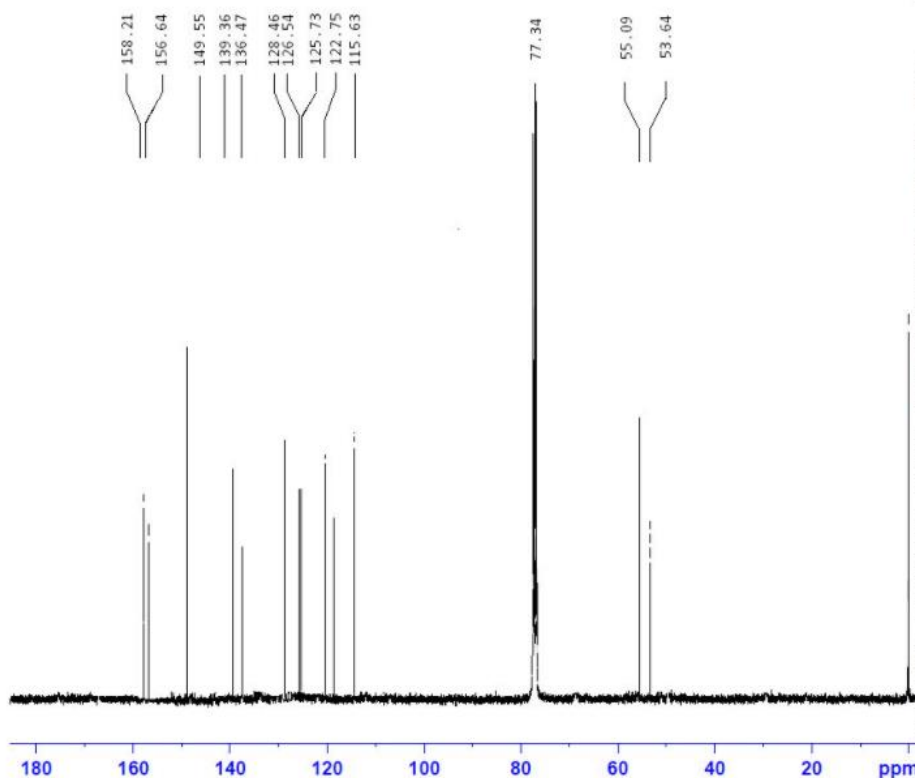
Current Data Parameters
NAME 02112019
EXPNO 17
PROCNO 1

F2 - Acquisition Parameters
Date_ 20191102
Time 15.00
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 3000
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631488 sec
RG 204
DW 20.800 usec
DE 6.50 usec
TE 299.2 K
D1 2.00000000 sec
D11 0.03000000 sec
TDO 1

===== CHANNEL f1 =====
SFO1 100.6228293 MHz
NUC1 13C
P1 9.45 usec
PLW1 50.00000000 W

===== CHANNEL f2 =====
SFO2 400.1316005 MHz
NUC2 1H
CPDPRG2 waltz16
PCPD2 90.00 usec
PLW2 11.00000000 W
PLW12 0.27383000 W
PLW13 0.22180000 W

F2 - Processing parameters
SI 32768
SF 100.6127685 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40



2-(2-iodo-3,5-dimethoxyphenyl)-1H-benzimidazole (3j):