

Supporting Information

AN EFFECTIVE, NOVEL AND RECYCLABLE γ -Fe₂O₃@MoS₂@Zn AS MAGNETIC NANOCATALYST IN THE UNPRECEDENTED SYNTHESIS OF MONO- AND BIS-TRIAZOLES

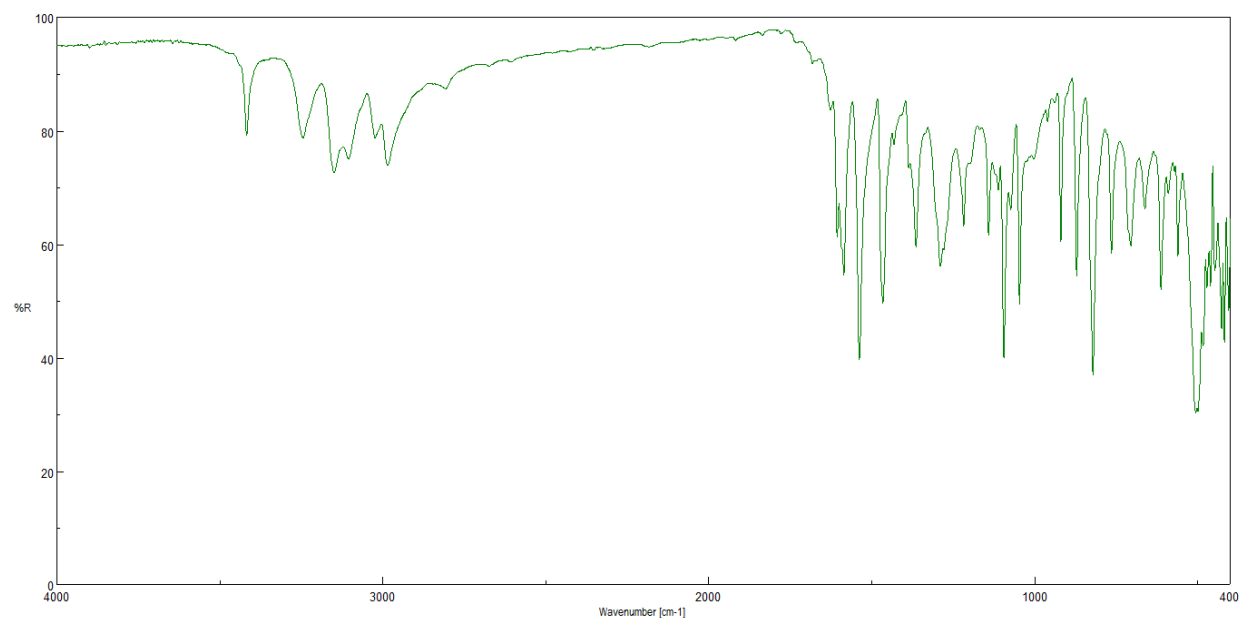
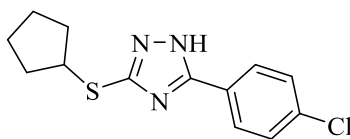
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5-(4-chlorophenyl)-3-(cyclopentylthio)-1H-1,2,4-triazole (5a):



Dr.Mamaghani- code 01 -

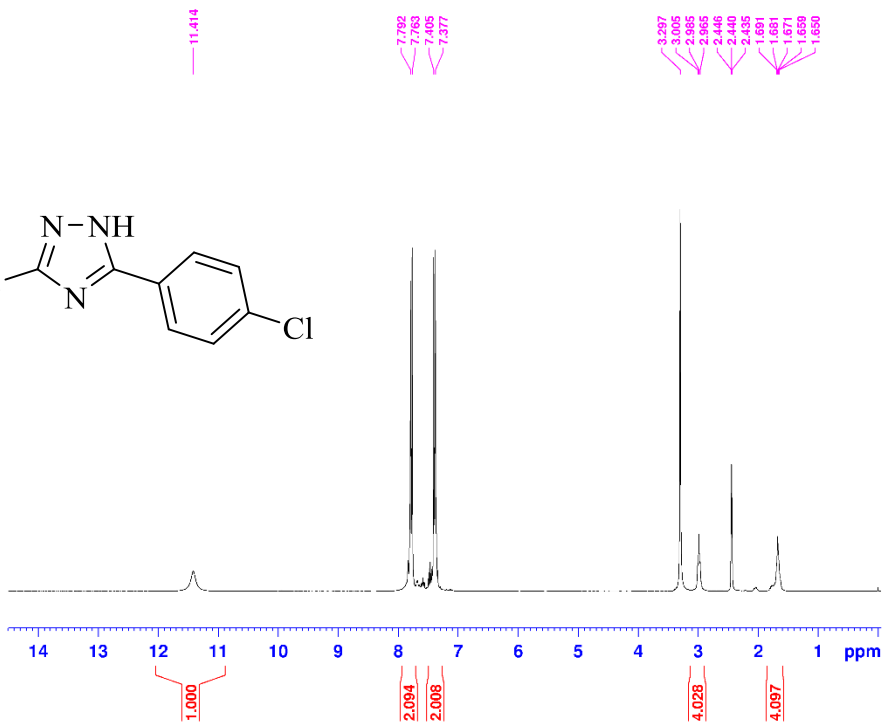
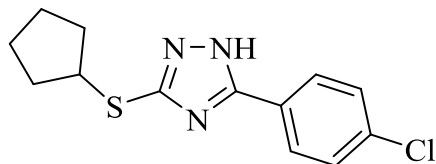


Current Data Parameters
NAME ordibehesh
EXNO 117
PROCNO -

F2 - Acquisition Parameters
Date_ 20230427
Time 14.32
INSTRUM spec
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 24036
SOLVENT DMSO
NS 32
DS 2
SWH 6009.613 Hz
FIDRES 0.250023 Hz
AQ 1.999792 sec
RG -43.92
DW 83.200 usec
DE 6.50 usec
TE 295.2 K
D1 1.0000000 sec
D11 -
D10 -

----- CHANNEL f1 -----
SF01 300.8118576 MHz
NUC1 1H
P1 15.00 usec
PLW1 6.40000010 W

F2 - Processing parameters
SI 65536
ST 300.8100247 MHz
WDW EX
SSB 0
LB 0.30 Hz
GB 0
PC 1.00



Dr.Mamaghani- code 01 -



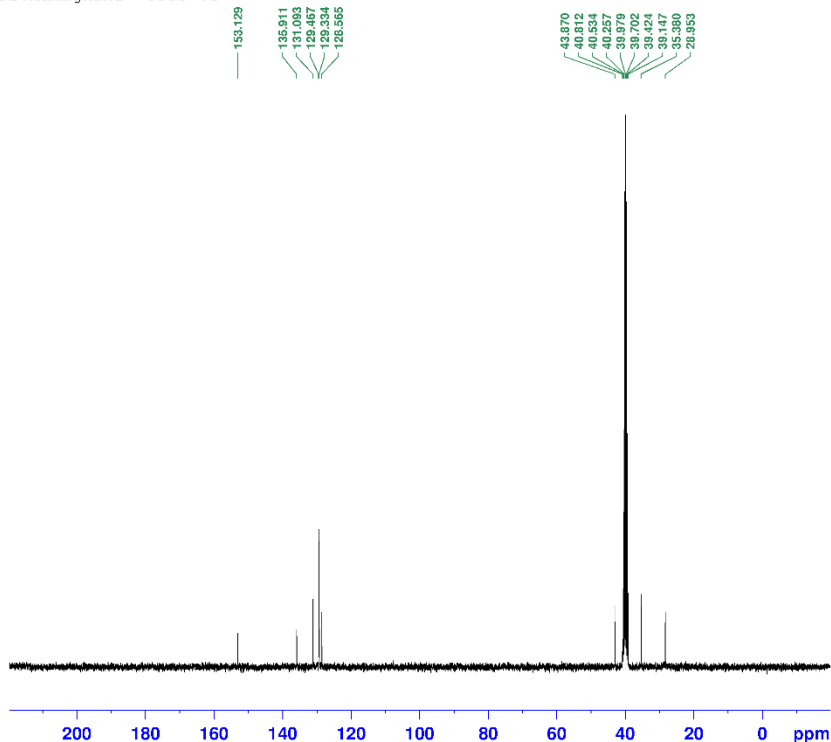
Current Data Parameters
NAME ordibehesh
EXNO 962
PROCNO -

F2 - Acquisition Parameters
Date_ 20230427
Time 16.27
INSTRUM spec
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 330
DS 4
SWH 18115.941 Hz
FIDRES 0.276427 Hz
AQ 1.8087933 sec
RG 202
DW 27.600 usec
DE 6.50 usec
TE 295.2 K
D1 2.0000000 sec
D11 0.03500000 sec
D10 -

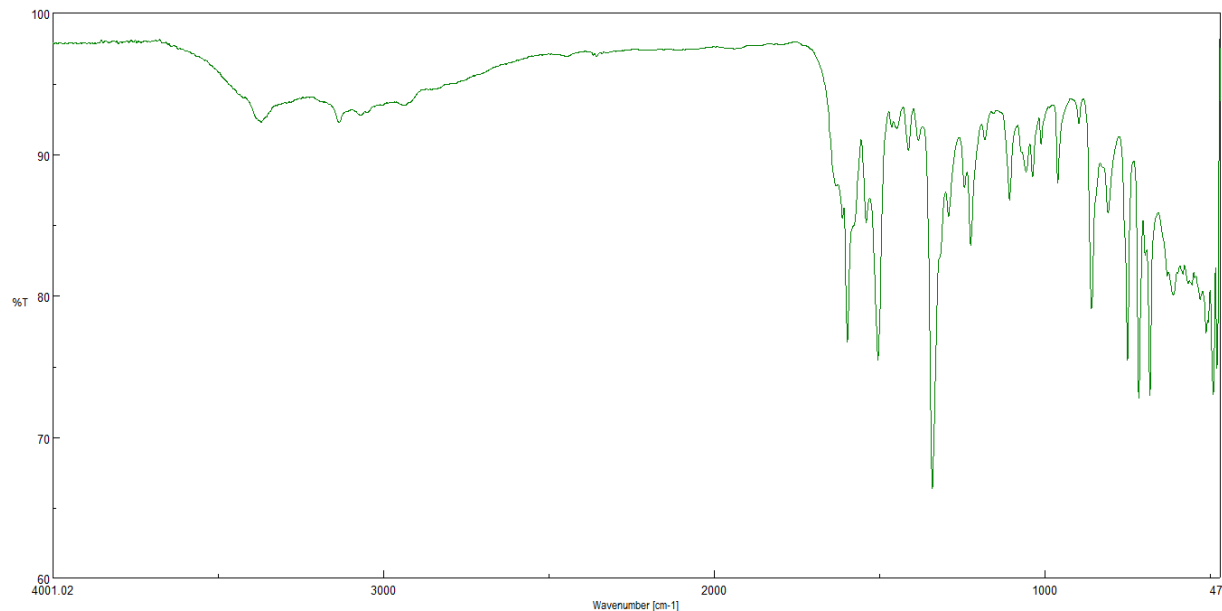
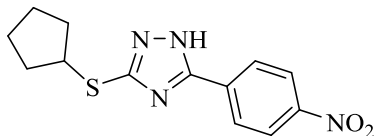
----- CHANNEL f1 -----
SF01 75.6462982 MHz
NUC1 13C
P1 10.00 usec
PLW1 30.00000000 W

----- CHANNEL f2 -----
SF02 300.8112032 MHz
NUC2 1H
CDEPRG2 waltz16
PCPD2 90.00 usec
PLW2 6.40000010 W
PLR12 0.17778000 W
PLR13 0.14399999 W

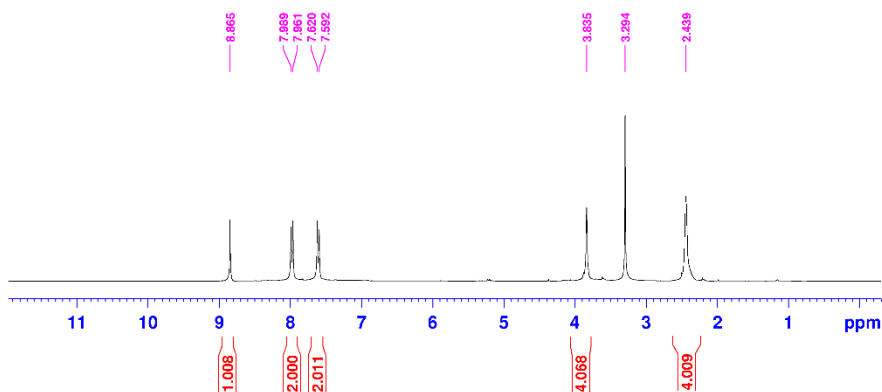
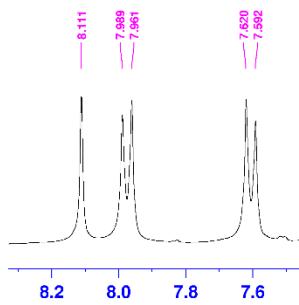
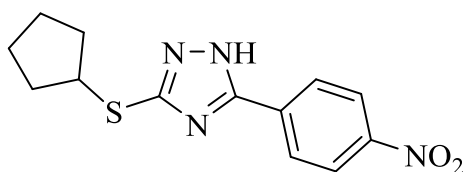
F2 - Processing parameters
SI 32768
SF 75.6387350 MHz
WDW EX
SSB 0
LB 1.00 Hz
GB 0
PC 1.40



3-(cyclopentylthio)-5-(4-nitrophenyl)-1H-1,2,4-triazole (5b):



Dr.Mamaghani:- code 03 -

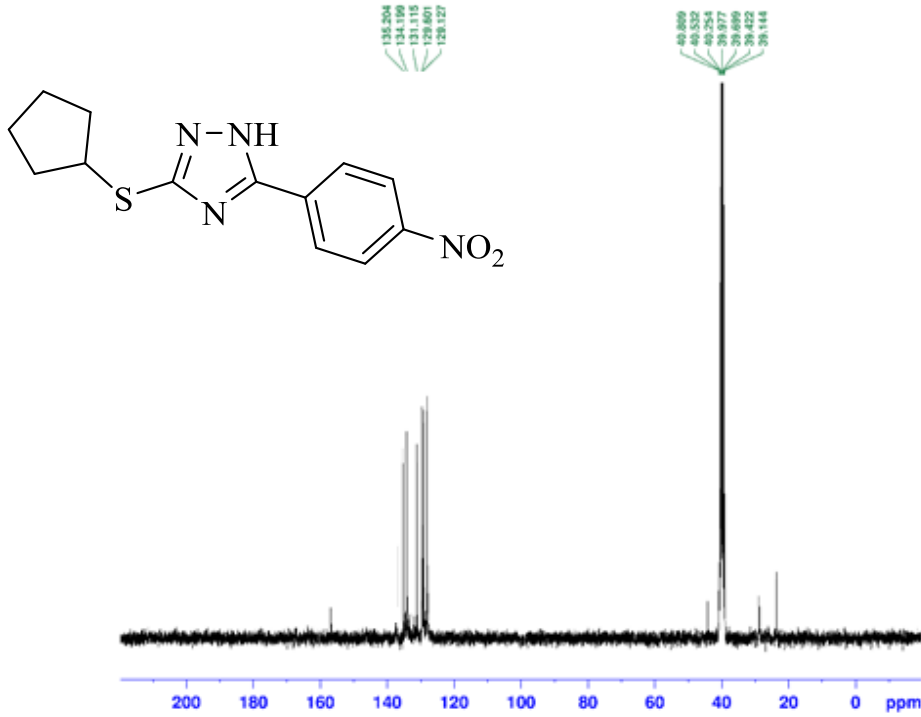


Current Data Parameters
 Date_ 20230423
 Time_ 15.18
 INSTRUM spec_
 PROBHD 5 mm PABBO BB-
 PULPROG zg30
 TD 12818
 SOLVENT DMSO
 NS 113
 DS 2
 SWH 6069.613 Hz
 FIDRES 0.360052 Hz
 AQ 0.3998978 sec
 RG 43.92
 DW 83.200 usec
 DE 6.50 usec
 TR 294.4 K
 D1 1.00000000 sec
 TD0 -

----- CHANNEL f1 -----
 SFOL 300.818578 MHz
 NUC1 1H
 P1 15.00 usec
 PLW 6.40000010 W

P2 - Processing parameters
 SI 65535
 ST 300.800263 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

Dr.Mamaghani- code 03 -



Current Data Parameters
NAME: ordibehesht
EXPNO: 120
PROCNO: 1

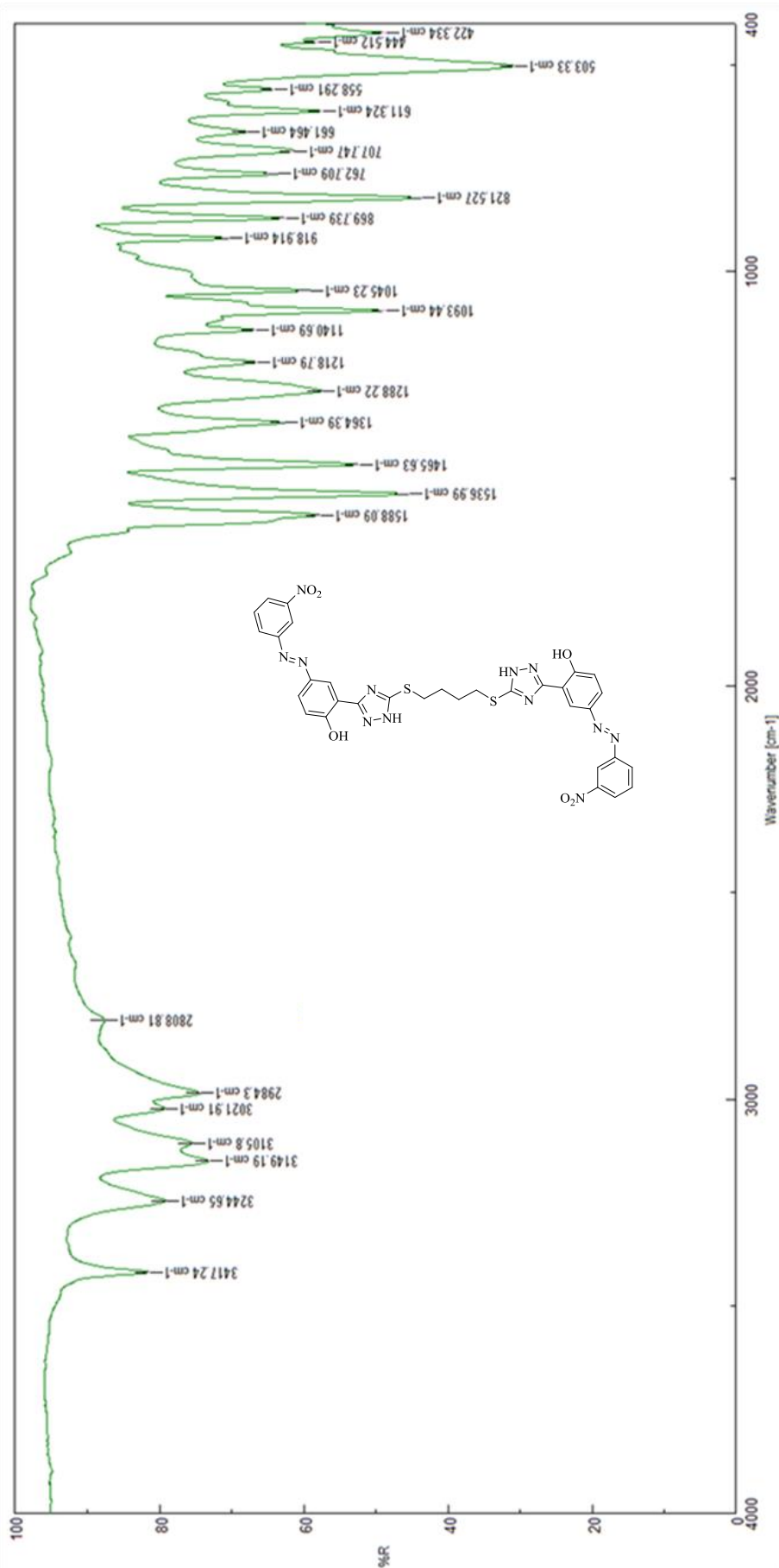
F2 - Acquisition Parameters
Date_ 20230427
Time: 15.38
INSTRUM: spect
PROBHD: 5 mm VASCO 80-
PULPROG: zgpg30
TD: 65536
SOLVENT: DMSO
NS: 512
DS: 4
SWH: 18119.941 Hz
FIDRES: 0.276427 Hz
AQ: 1.8087935 sec
RG: 252
DK: 27.660 usec
DE: 6.50 usec
TE: 295.9 K
D1: 2.0000000 sec
d11: 0.0300000 sec
TUC: 1

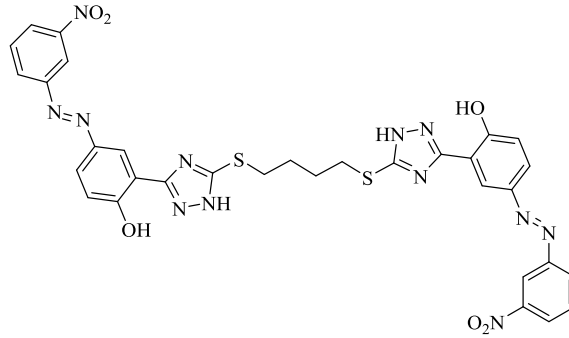
----- CHANNEL f1 -----
SFO1 75.6462982 MHz
NUC1 13C
P1 16.00 usec
P1M1 30.0000000 W

----- CHANNEL f2 -----
SFO2 300.8112032 MHz
NUC2 1H
CROSSP12 waltz16
PCPD2 90.00 usec
PLA2 5.0000013 W
P1M2 0.1778000 W
P1M3 0.14399999 W

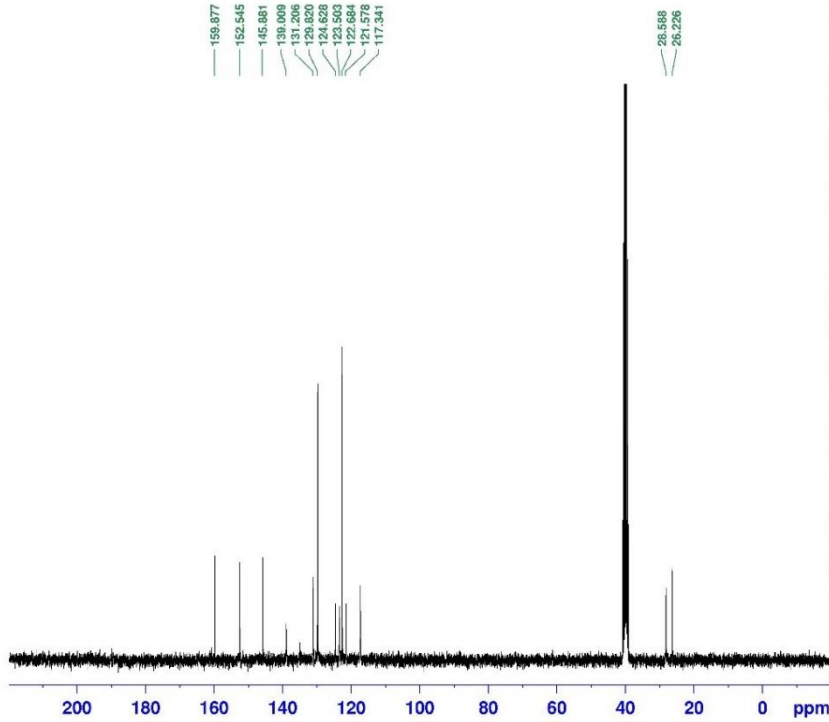
F2 - Processing parameters
SI 32768
SF 75.6387350 MHz
WDW EM
SSB 0
FR 0 1.00 Hz
GB 0
PC 1.40

2,2'-((butane-1,4-diylbis(sulfaneydi))bis(1H-1,2,4-triazole-5,3-diyl))bis(4-((E)-(3-nitrophenyl)diazenyl)phenol) (3b):





C13-Dr.Mamaghani- code 01--



Current Data Parameters
 NAME Raw2
 EXPNO 57
 PROCKG 1

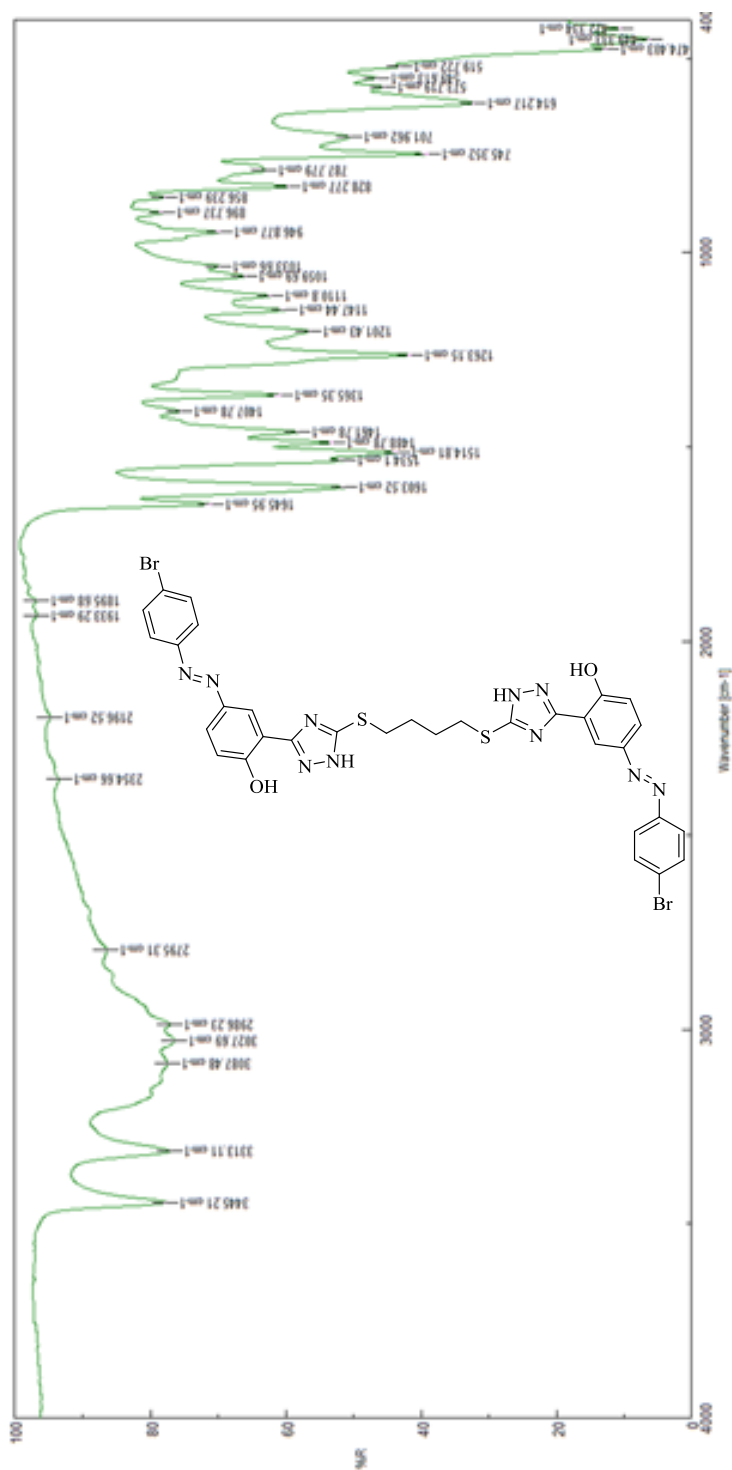
F2 - Acquisition Parameters
 Date_ 20201125
 Time 13.01
 INSTRUM spect
 PROBHD 5 mm PABBO BB-
 PULPROG zgpg30
 TD 65536
 SOLVENT DMSO
 NS 300
 DS 4
 SWH 18115.941 Hz
 FIDRES 0.216427 Hz
 AQ 1.8087935 sec
 RG 202
 CW 27.600 usec
 DE 6.50 usec
 TE 297.8 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TD0 1

===== CHANNEL #1 =====
 SFO1 75.6462982 MHz
 NUC1 13C
 P1 10.00 usec
 PLW1 30.0000000 W

===== CHANNEL #2 =====
 SFO2 300.8112032 MHz
 NUC2 1H
 CPDPRG12 waltz16
 PCPD2 90.00 usec
 PLW2 6.4000000 W
 PLW12 0.1778000 W
 PLW13 0.1439999 W

F2 - Processing parameters
 SI 32768
 SF 75.6387350 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 EB 0
 PC 1.40

2,2'-((butane-1,4-diylbis(sulfaneydiyl))bis(1*H*-1,2,4-triazole-5,3-diyl))bis(4-((*E*)-(4-bromophenyl)diazenyl)phenol) (3c):



Dr.Mamaghani- code 01 -

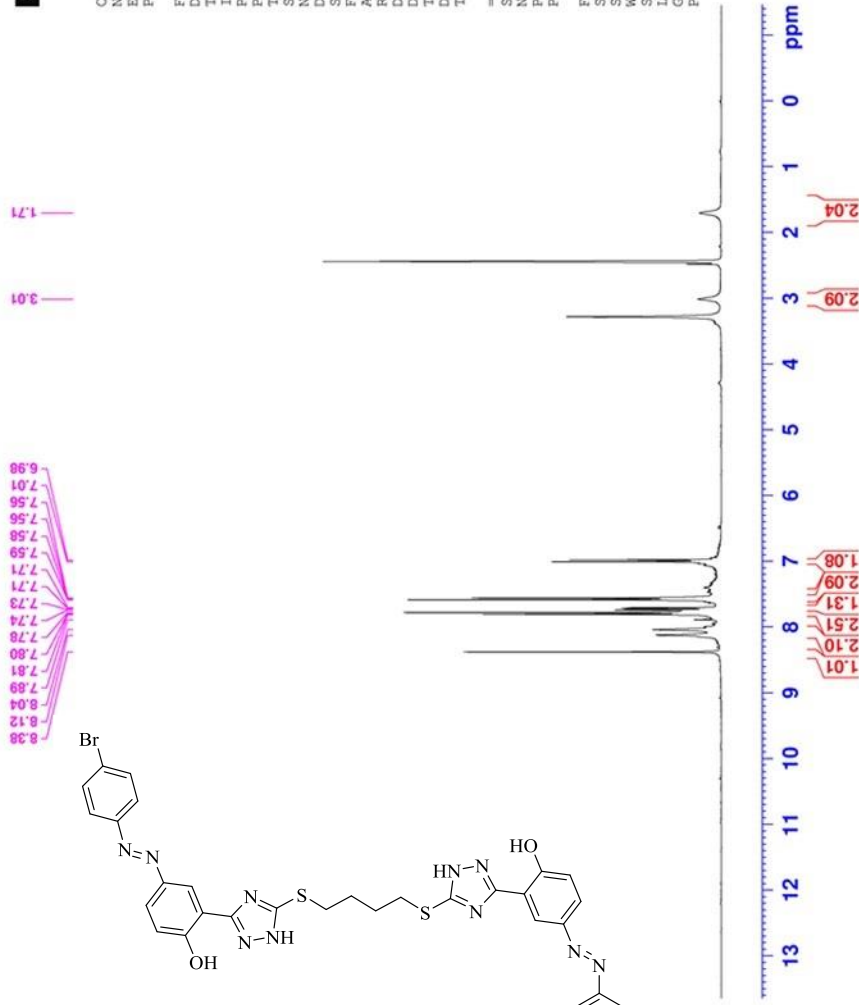


Current Data Parameters
NAME Azar
EXPNO 34
PROCNO 1

F2 - Acquisition Parameters
Date_ 20201125
Time 12.06
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 105
DS 2
SWH 6009.615 Hz
FIDRES 0.091699 Hz
AQ 5.4525952 sec
RG 202
DW 83.200 usec
DE 6.50 usec
TE 297.1 K
D1 1.0000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 300.8118576 MHz
NUC1 1H
P1 15.00 usec
PLW1 6.40000010 W

F2 - Processing parameters
SI 65536
SF 300.8100249 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00



C13-Dr.Mamaghani- code C1 -



Current Data Parameters
NAME Azaz
EXPNO 55
PROCNO 1

F2 - Acquisition Parameters
Date_ 20201125
Time 12.32
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 400
DS 4
SMH 1815.941 Hz
FIDRES 0.276427 Hz
AQ 1.8087935 sec
RG 202
DM 27.600 usec
DE 6.50 usec
TE 297.7 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 75.6462982 MHz
NUC1 13C
P1 10.00 usec
PL1 30.00000000 W

===== CHANNEL f2 =====
SFO2 300.612032 MHz
NUC2 1H
P2 12.00 usec
PL2 1.00000000 W
PLW2 6.40000010 W
PLW3 0.17780000 W
PLW4 0.14399999 W

F2 - Processing parameters
SI 32768
SF 75.6387350 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

