

Supplementary Material

Tandem one-pot synthesis of 2-arylcinnolin-6-one derivatives from arylhydrazonopropanals and acetoacetanilides using sustainable ultrasound and microwave platforms

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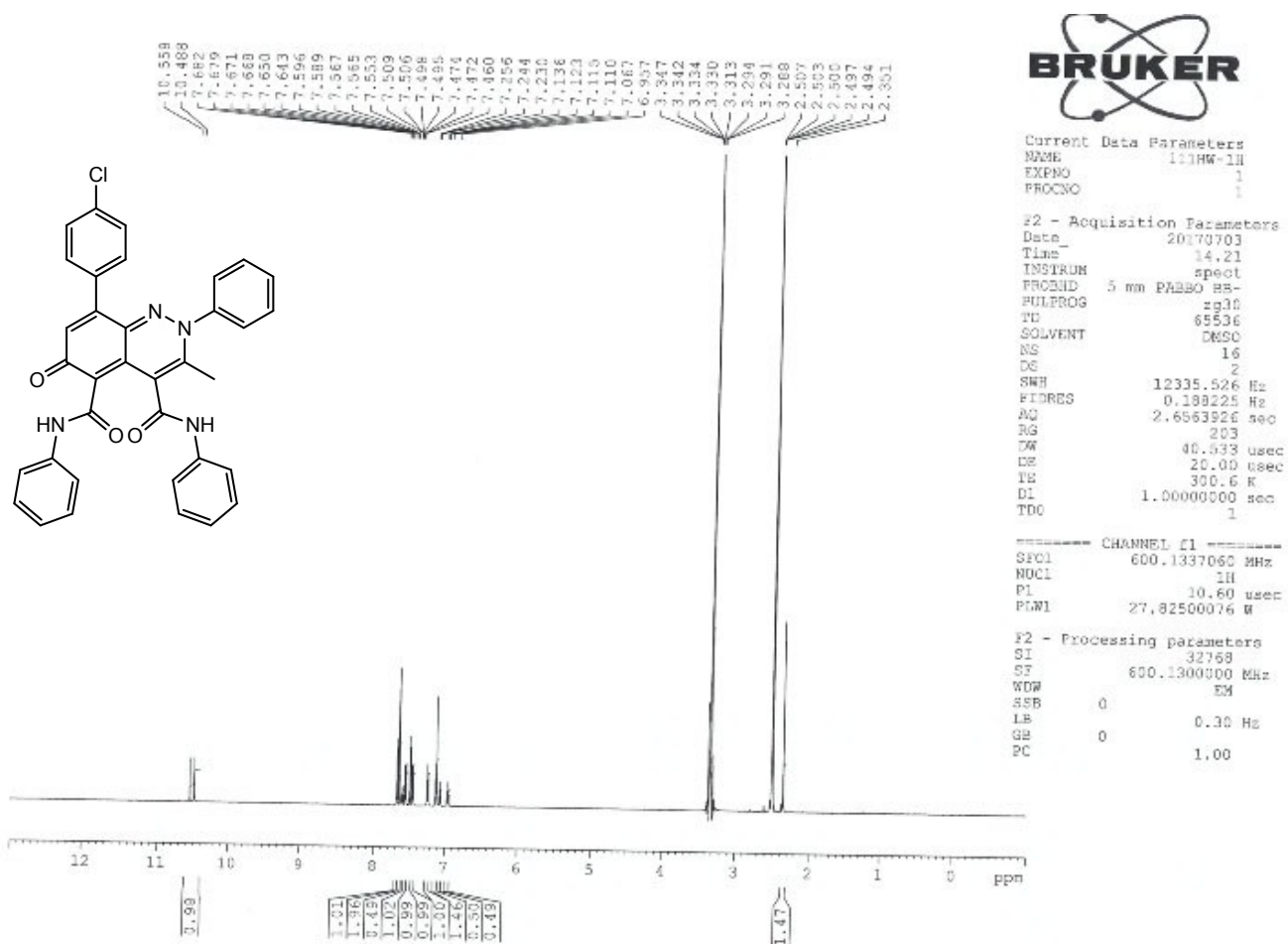
*Corresponding author 2: Tel.: +2 0235676602; fax: +2 0235727556
E-mail address: dr_dawood@yahoo.com (K.M. Dawood)

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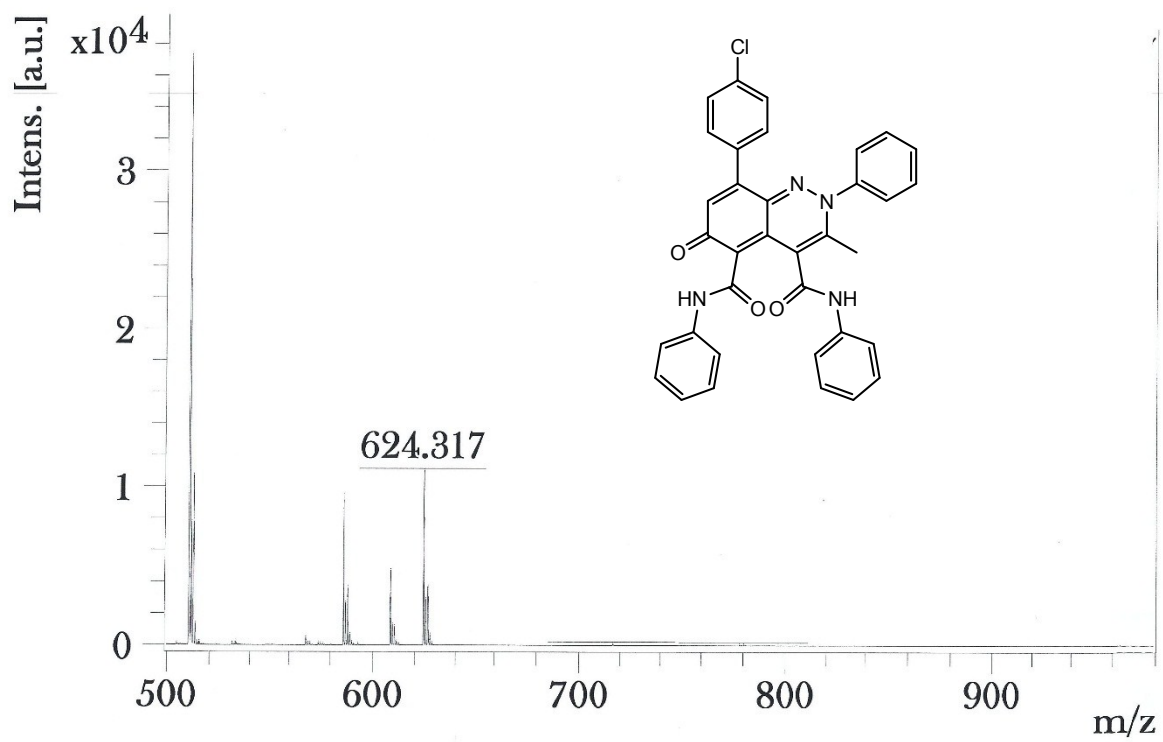
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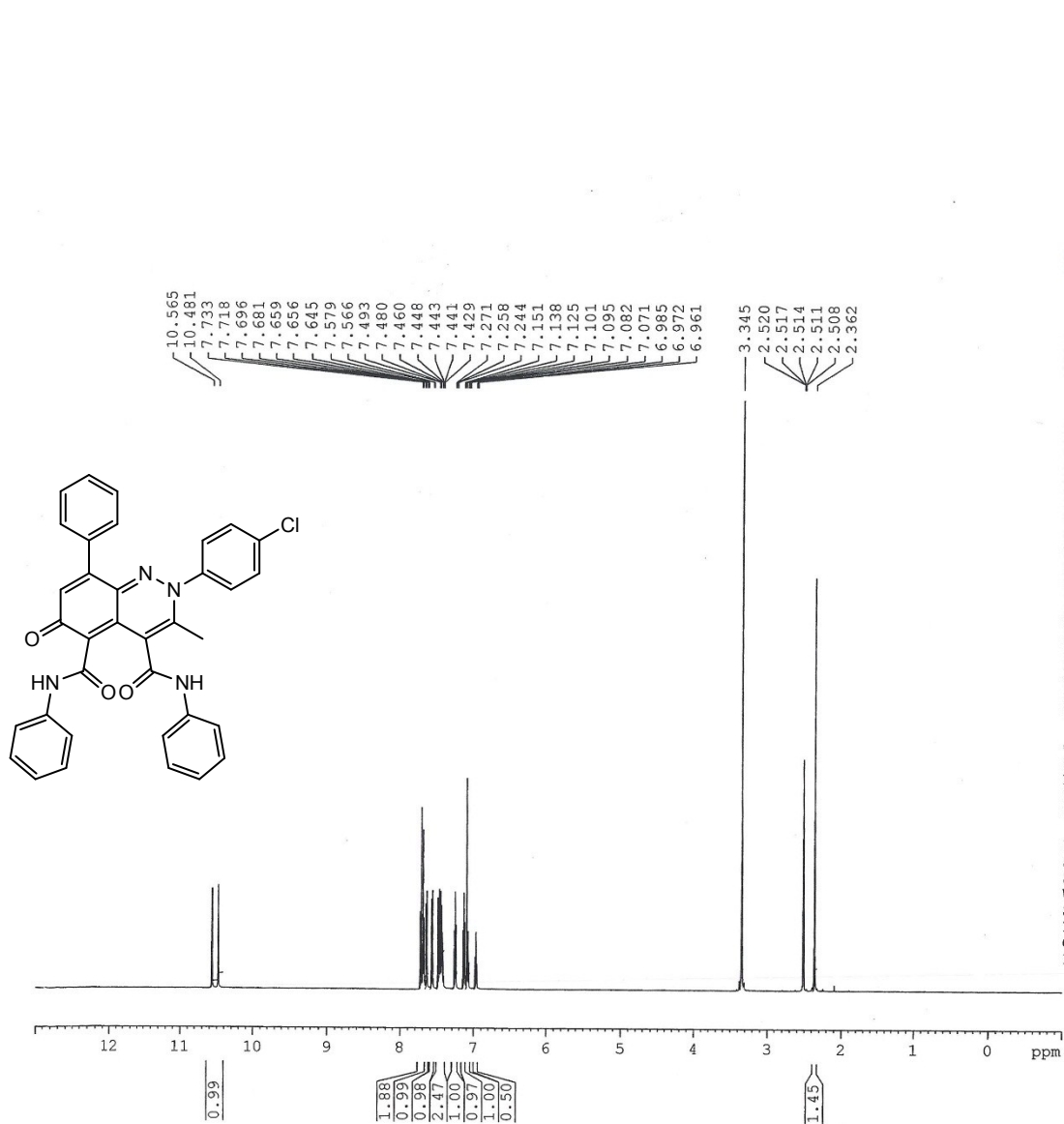
8-(4-Chlorophenyl)-3-methyl-6-oxo-*N*⁴,*N*⁵,2-triphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3a)



8-(4-Chlorophenyl)-3-methyl-6-oxo-*N*⁴,*N*⁵,2-triphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3a)



2-(4-Chlorophenyl)-3-methyl-6-oxo-*N*⁴,*N*⁵,8-triphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3b)



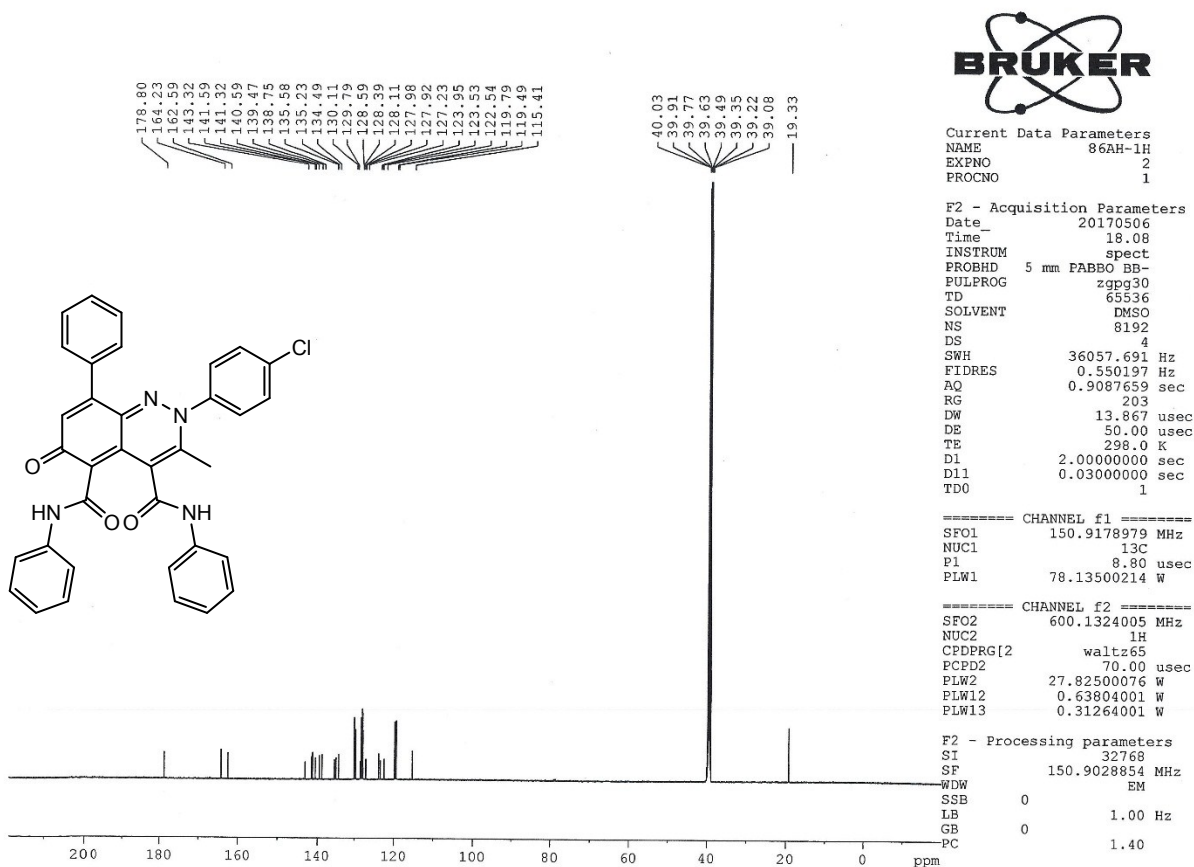
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 EXPNO 1
 PROCNO 1

F2 - Acquisition Parameters
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 PROBHD 5 mm PABBO BB-
 PULPROG zg30
 TD 65536
 SOLVENT DMSO
 NS 16
 DS 2
 SWH 12335.526 Hz
 FIDRES 0.188225 Hz
 AQ 2.6563926 sec
 RG 203
 DW 40.533 usec
 DE 20.00 usec
 TE 298.0 K
 D1 1.00000000 sec
 TD0 1

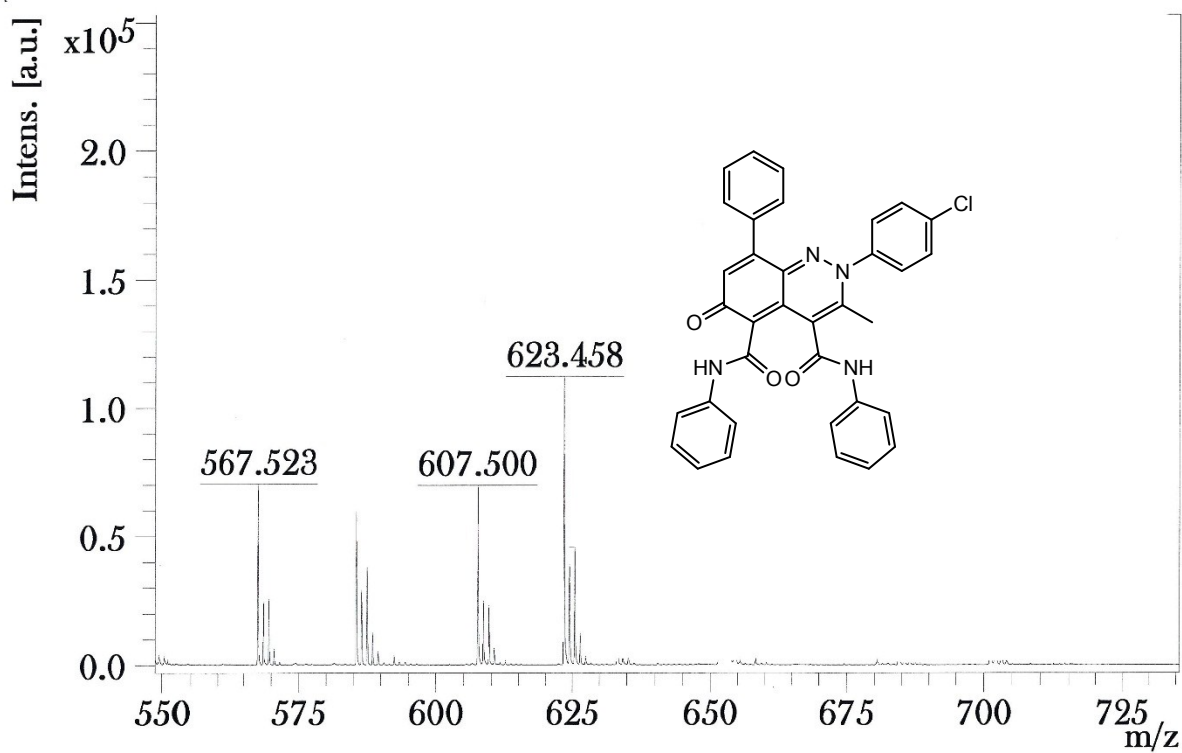
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 NUC1 1H
 P1 10.60 usec
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F2 - Processing parameters
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 LB 0.30 Hz
 GB 0
 PC 1.00

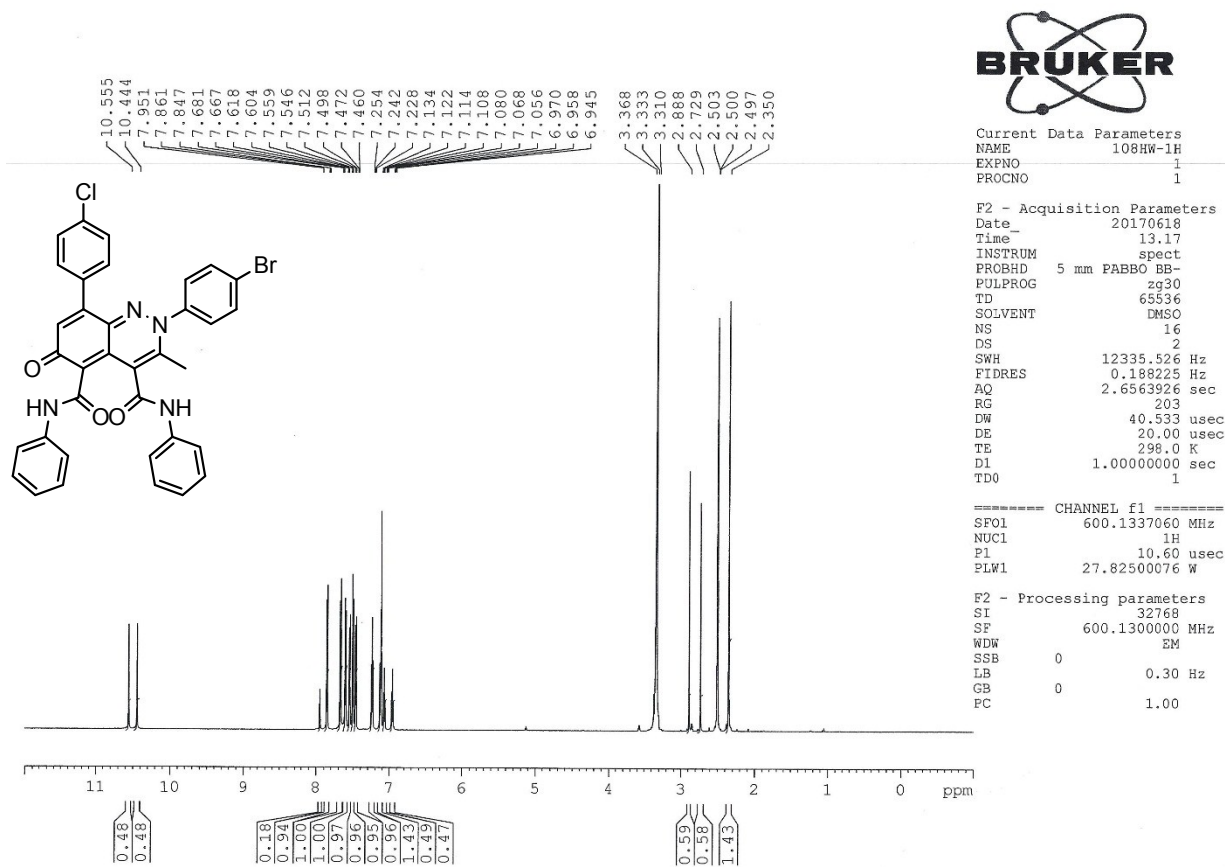
2-(4-Chlorophenyl)-3-methyl-6-oxo-*N*⁴,*N*⁵,8-triphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3b)



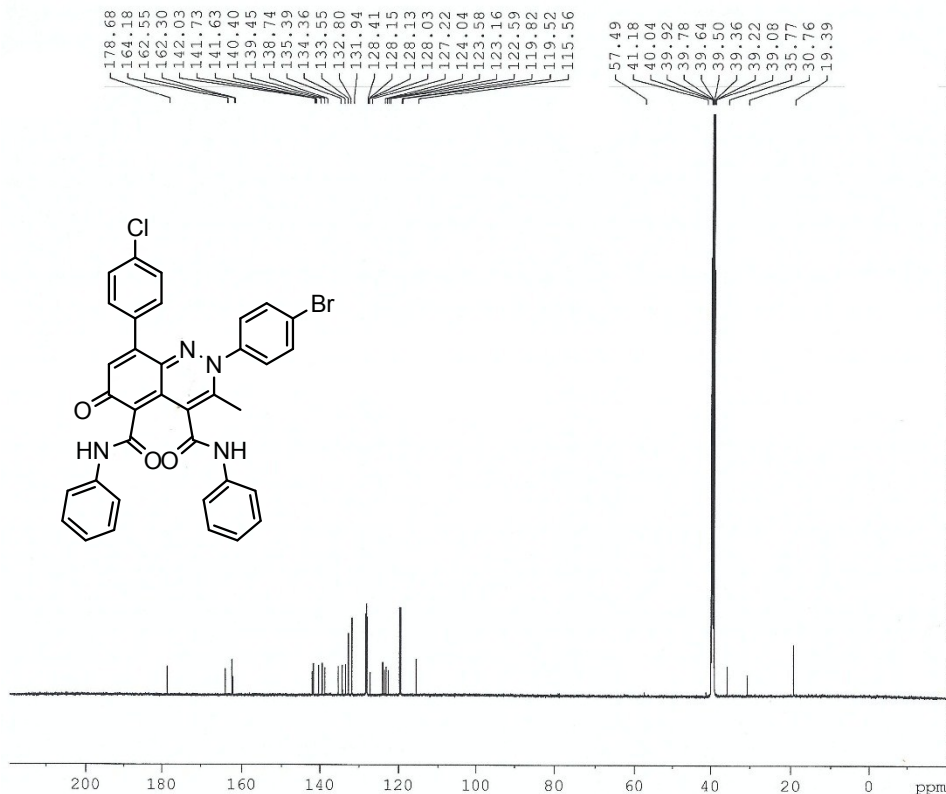
2-(4-Chlorophenyl)-3-methyl-6-oxo-*N*⁴,*N*⁵,8-triphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3b)



2-(4-Bromophenyl)-8-(4-chlorophenyl)-3-methyl-6-oxo-*N*⁴,*N*⁵-diphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3c)



2-(4-Bromophenyl)-8-(4-chlorophenyl)-3-methyl-6-oxo-*N*⁴,*N*⁵-diphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3c)



Current Data Parameters
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 EXPNO 2
 PROCNO 1

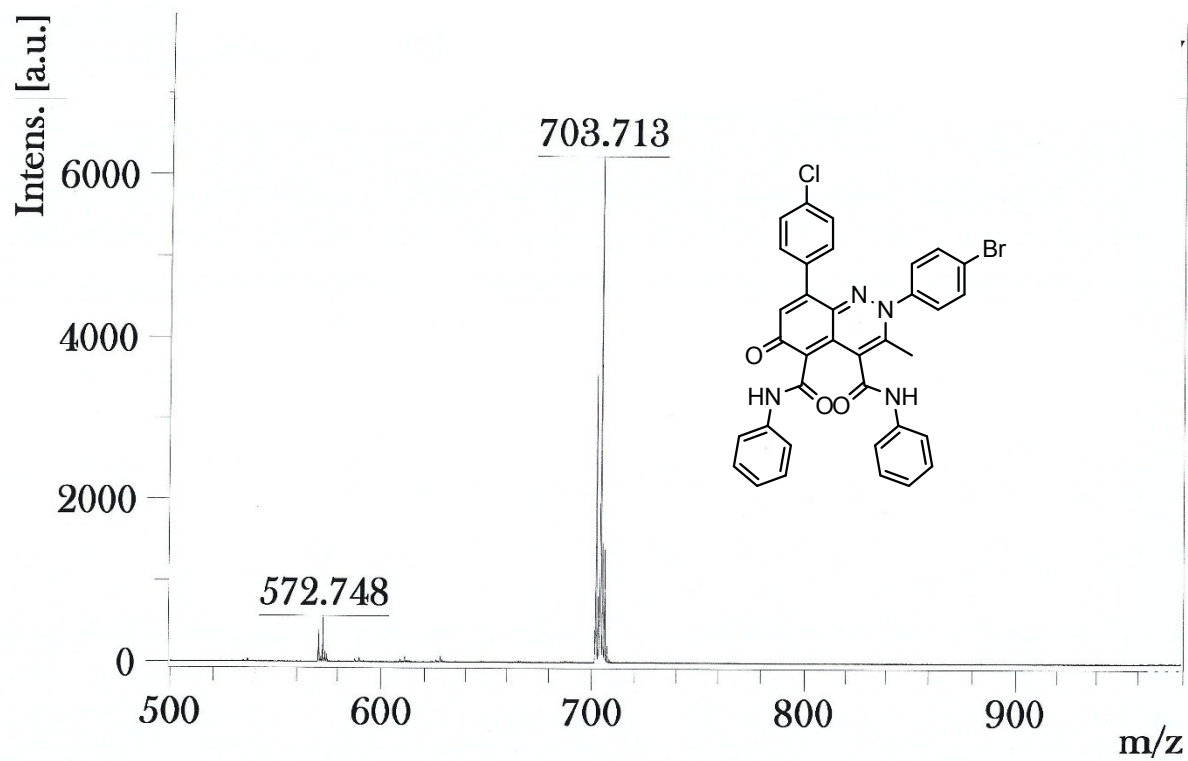
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 Time 7.40
 INSTRUM spect
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 PULPROG zgpg30
 TD 65536
 SOLVENT DMSO
 NS 14336
 DS 4
 SWH 36057.691 Hz
 FIDRES 0.550197 Hz
 AQ 0.9087659 sec
 RG 203
 DW 13.867 usec
 DE 50.00 usec
 TE 298.0 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 TDO 1

----- CHANNEL f1 -----
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 NUC1 13C
 P1 8.80 usec
 PLW1 78.13500214 W

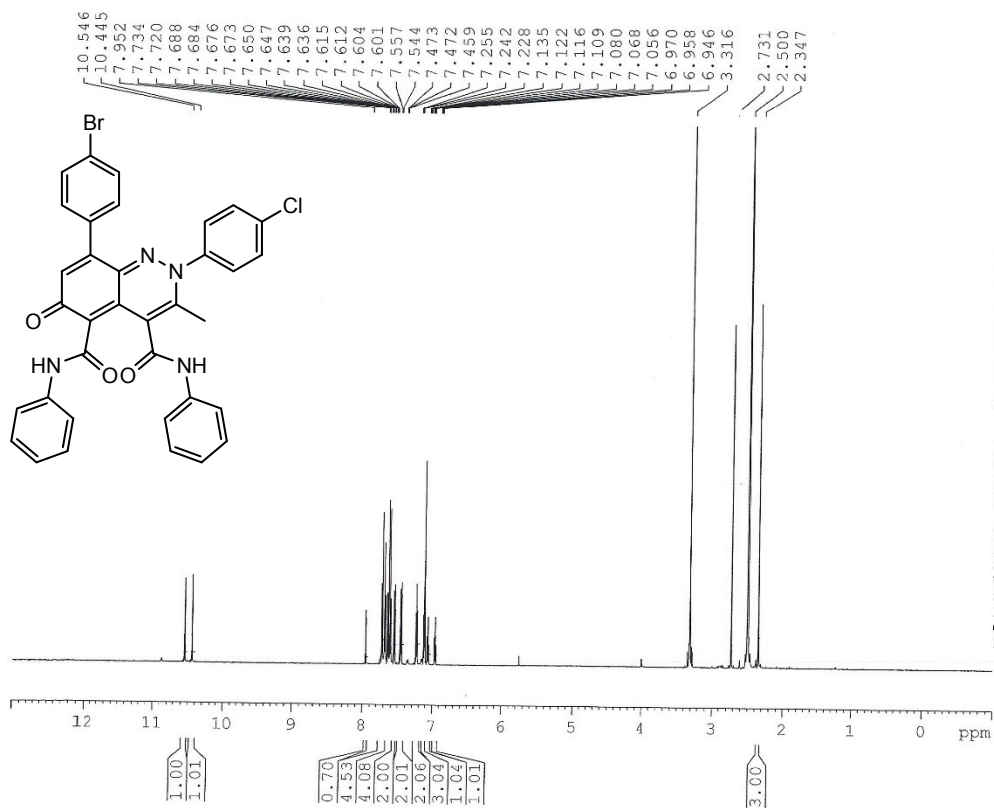
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 NUC2 1H
 CPDPRG[2] waltz65
 PCPD2 70.00 usec
 PLW2 27.82500076 W
 PLW12 0.63804001 W
 PLW13 0.31264001 W

F2 - Processing parameters
 SI 32768
 SF 150.9028804 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

2-(4-Bromophenyl)-8-(4-chlorophenyl)-3-methyl-6-oxo-*N*⁴,*N*⁵-diphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3c)



8-(4-Bromophenyl)-2-(4-chlorophenyl)-3-methyl-6-oxo-*N*⁴,*N*⁵-diphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3d)



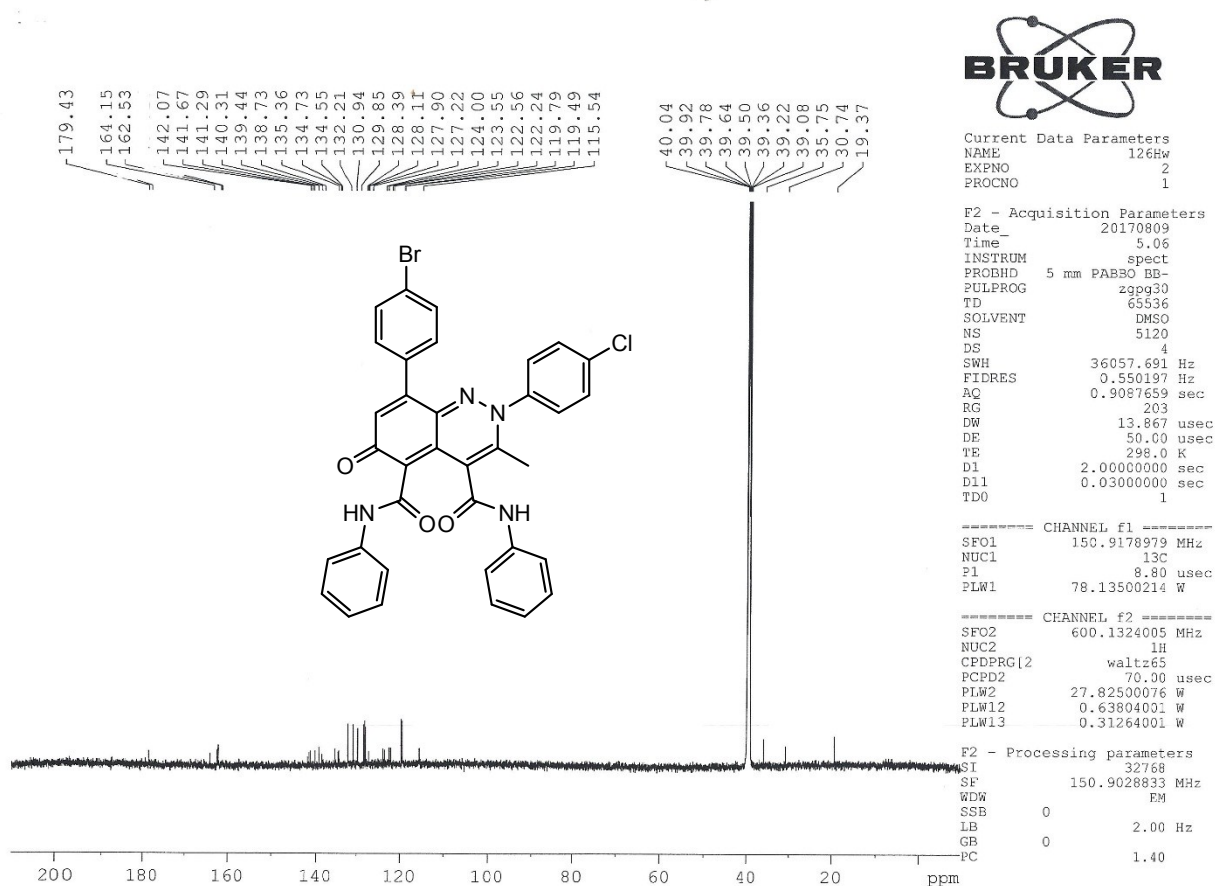
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 NAME 126HW
 EXPNO 1
 PROCNO 1

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 FULPROG zg30
 TD 65536
 SOLVENT DMSO
 NS 16
 DS 2
 SWH 12335.526 Hz
 FIDRES 0.188225 Hz
 AQ 2.6563926 sec
 RG 203
 DW 40.533 usec
 DE 20.00 usec
 TE 298.0 K
 D1 1.0000000 sec
 TDO 1

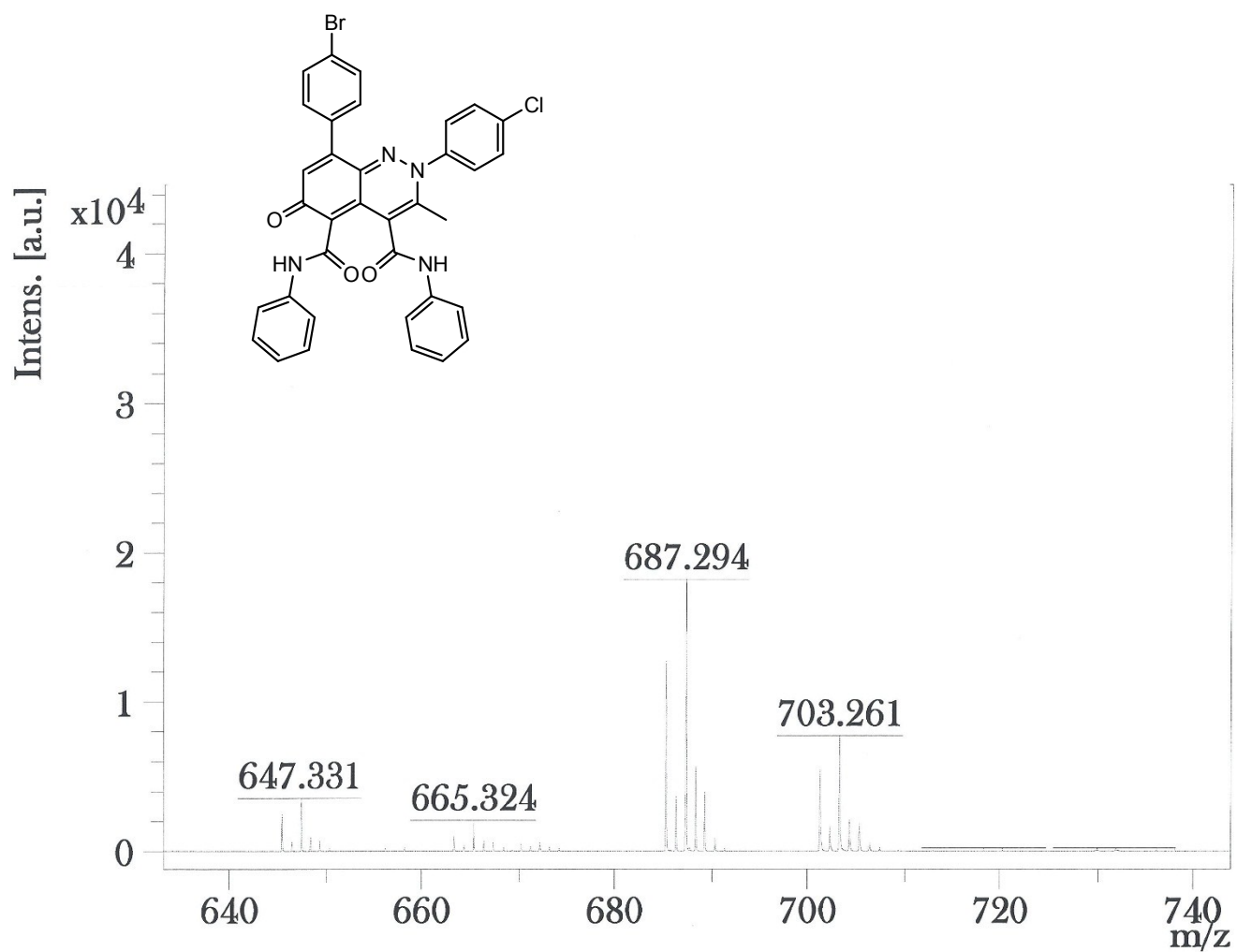
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 NUC1 1H
 P1 10.60 usec
 PLW1 27.82500076 W

F2 - Processing parameters
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 SF 600.1300000 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

8-(4-Bromophenyl)-2-(4-chlorophenyl)-3-methyl-6-oxo-*N*⁴,*N*⁵-diphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3d)

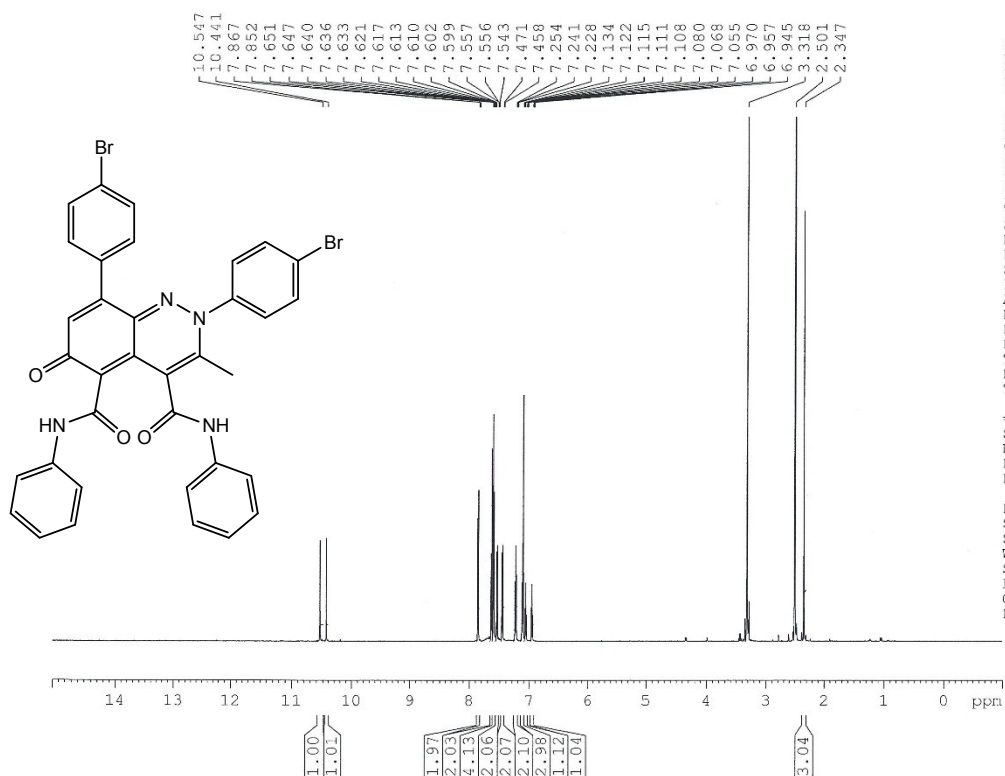


8-(4-Bromophenyl)-2-(4-chlorophenyl)-3-methyl-6-oxo-*N*⁴,*N*⁵-diphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3d)



2,8-Di(4-bromophenyl)-3-methyl-6-oxo-*N*⁴,*N*⁵-diphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3e)

1H spectra Dr.Hamad 129HW in DMSO



Current Data Parameters
 NAME 129Hw
 EXPNO 1
 PROCNO 1

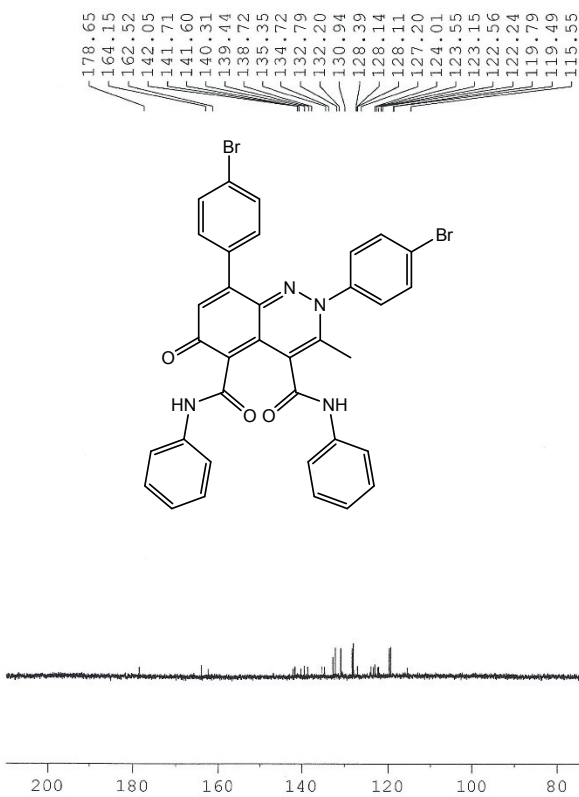
F2 - Acquisition Parameters
 Date 20170807
 Time 10.40
 INSTRUM spect
 PROBHD 5 mm PABBO BB-
 PULPROG zg30
 TD 65536
 SOLVENT DMSO
 NS 16
 DS 2
 SWH 12335.526 Hz
 FIDRES 0.188225 Hz
 AQ 2.6563926 sec
 RG 203
 DW 40.533 usec
 DE 20.00 usec
 TE 298.0 K
 D1 1.0000000 sec
 TDC 1

===== CHANNEL f1 =====
 SF01 600.1337060 MHz
 NUC1 1H
 F1 10.60 usec
 PLW1 27.82500076 W

F2 - Processing parameters
 SI 32768
 SF 600.1300000 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

2,8-Di(4-bromophenyl)-3-methyl-6-oxo-*N*⁴,*N*⁵-diphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3e)

13C decoupled spectra Dr.Hamad 129HW in DMSO



Current Data Parameters
 NAME 129HW
 EXPNO 2
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20170809
 Time_ 8.35
 INSTRUM spect
 PROBHD 5 mm PABBO BB-
 PULPROG zgpg30
 TD 65536
 SOLVENT DMSO
 NS 4096
 DS 4
 SWH 36057.691 Hz
 FIDRES 0.550197 Hz
 AQ 0.9087659 sec
 RG 203
 DW 13.867 usec
 DE 50.00 usec
 TE 298.0 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TD0 1

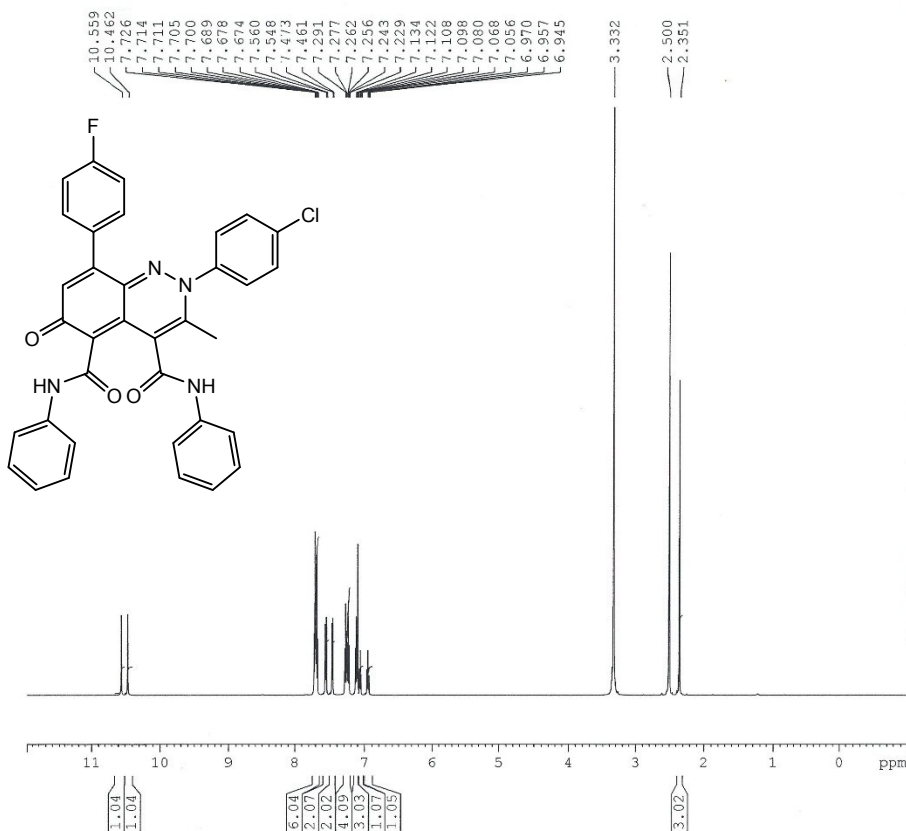
----- CHANNEL f1 -----
 SF01 150.9178979 MHz
 NUC1 13C
 P1 8.80 usec
 PLW1 78.13500214 W

----- CHANNEL f2 -----
 SFC2 600.1324005 MHz
 NUC2 1H
 CPDPRG[2] waltz65
 PCPD2 70.00 usec
 PLW2 27.82500076 W
 PLW12 0.63804001 W
 PLW13 0.31264001 W

F2 - Processing parameters
 SI 32768
 SF 150.9028835 MHz
 WFV EM
 SSR 0
 LB 2.00 Hz
 GB 0
 PC 1.40

2-(4-Chlorophenyl)-8-(4-fluorophenyl)-3-methyl-6-oxo-*N*⁴,*N*⁵-diphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3f)

¹H spectra Dr.Hamad 138 HW in DMSO



Current Data Parameters
 NAME 138HW
 EXPNO 1
 PROCNO 1

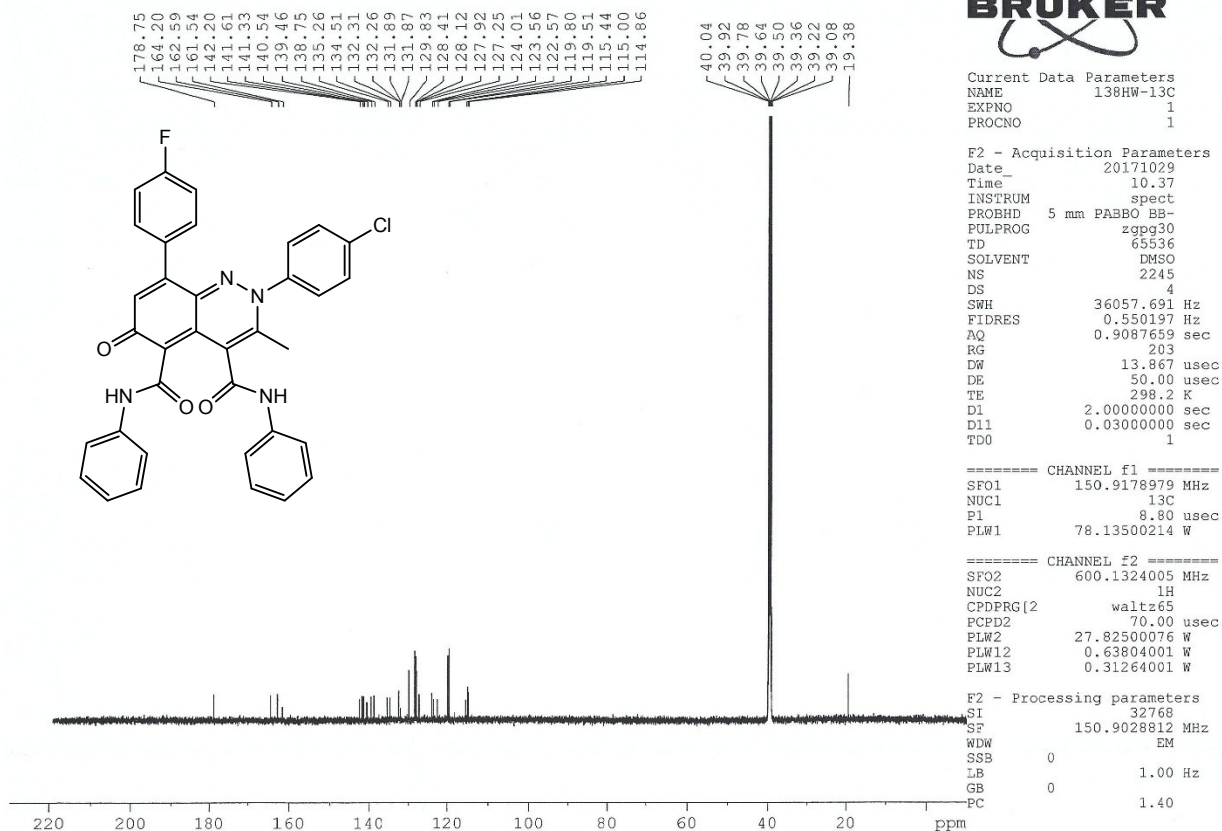
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 PULPROG zg30
 TD 65536
 SOLVENT DMSO
 NS 16
 DS 2
 SWH 12335.526 Hz
 FIDRES 0.188225 Hz
 AQ 2.6563926 sec
 RG 203
 DW 40.533 usec
 DE 20.00 usec
 TE 298.0 K
 D1 1.0000000 sec
 TDO 1

===== CHANNEL f1 =====
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 NUC1 1H
 P1 10.60 usec
 PLW1 27.82500076 W

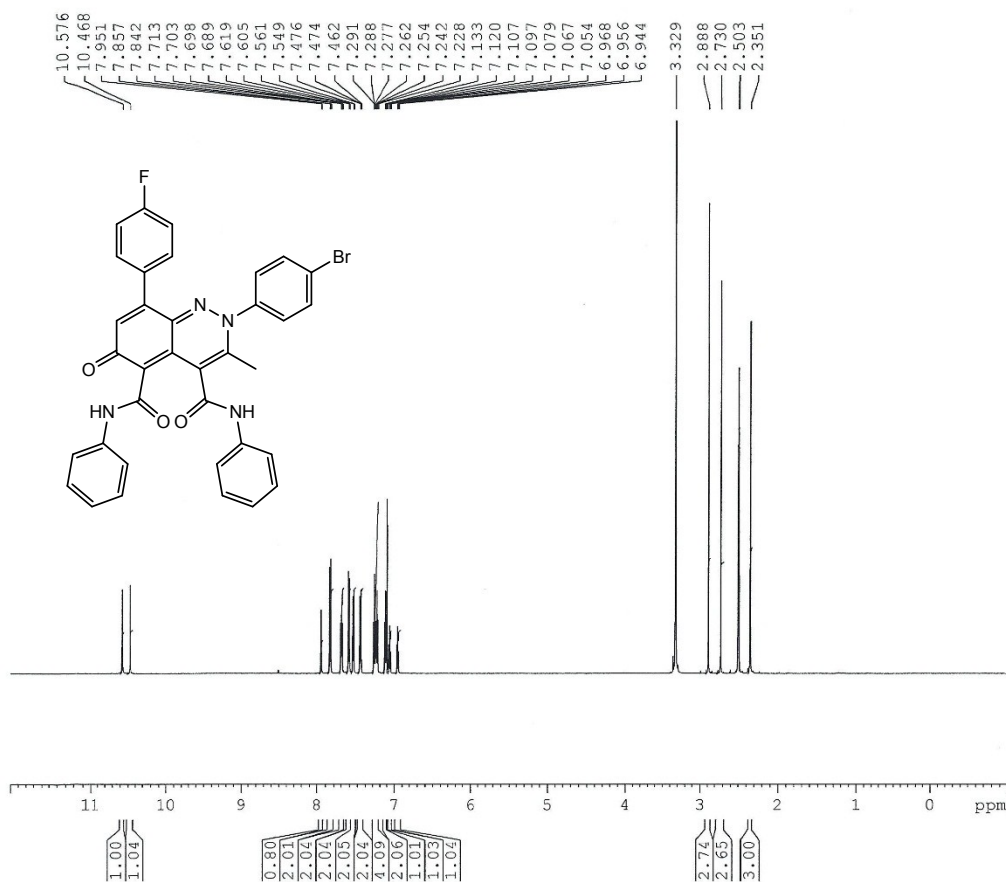
F2 - Processing parameters
 SI 32768
 SF 600.1300000 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

2-(4-Chlorophenyl)-8-(4-fluorophenyl)-3-methyl-6-oxo-*N*⁴,*N*⁵-diphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3f)

13C decoupled spectrum Dr.Hamad 138 Hw in DMSO



2-(4-Bromophenyl)-8-(4-fluorophenyl)-3-methyl-6-oxo-*N*⁴,*N*⁵-diphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3g)



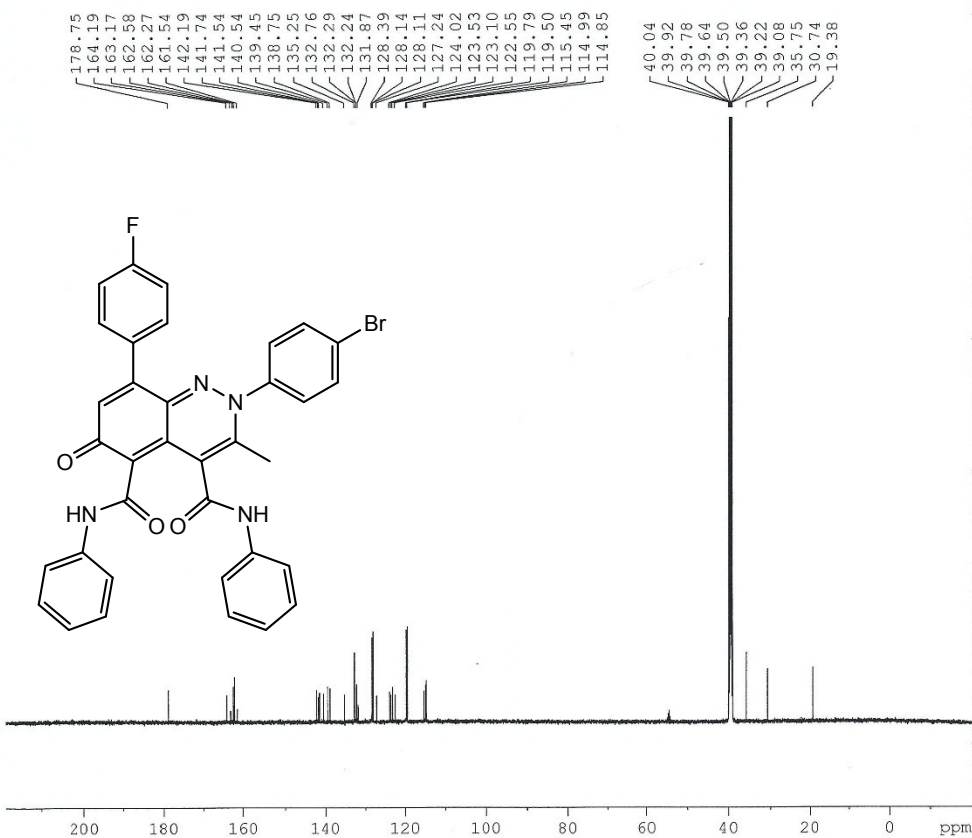
Current Data Parameters
 NAME 136HW-1H
 EXPNO 1
 PROCNO 1

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 PROBHD 5 mm PABBO BB-
 PULPROG zg30
 TD 65536
 SOLVENT DMSO
 NS 16
 DS 2
 SWH 12335.526 Hz
 FIDRES 0.188225 Hz
 AQ 2.6563926 sec
 RG 203
 DW 40.533 usec
 DE 20.00 usec
 TE 298.0 K
 D1 1.0000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 600.1337060 MHz
 NUC1 1H
 P1 10.60 usec
 PLW1 27.82500076 W

F2 - Processing parameters
 SI 32768
 SF 600.1300000 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

2-(4-Bromophenyl)-8-(4-fluorophenyl)-3-methyl-6-oxo-*N*⁴,*N*⁵-diphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3g)



Current Data Parameters
NAME 136HW-1H
EXPNO 2
PROCNO 1

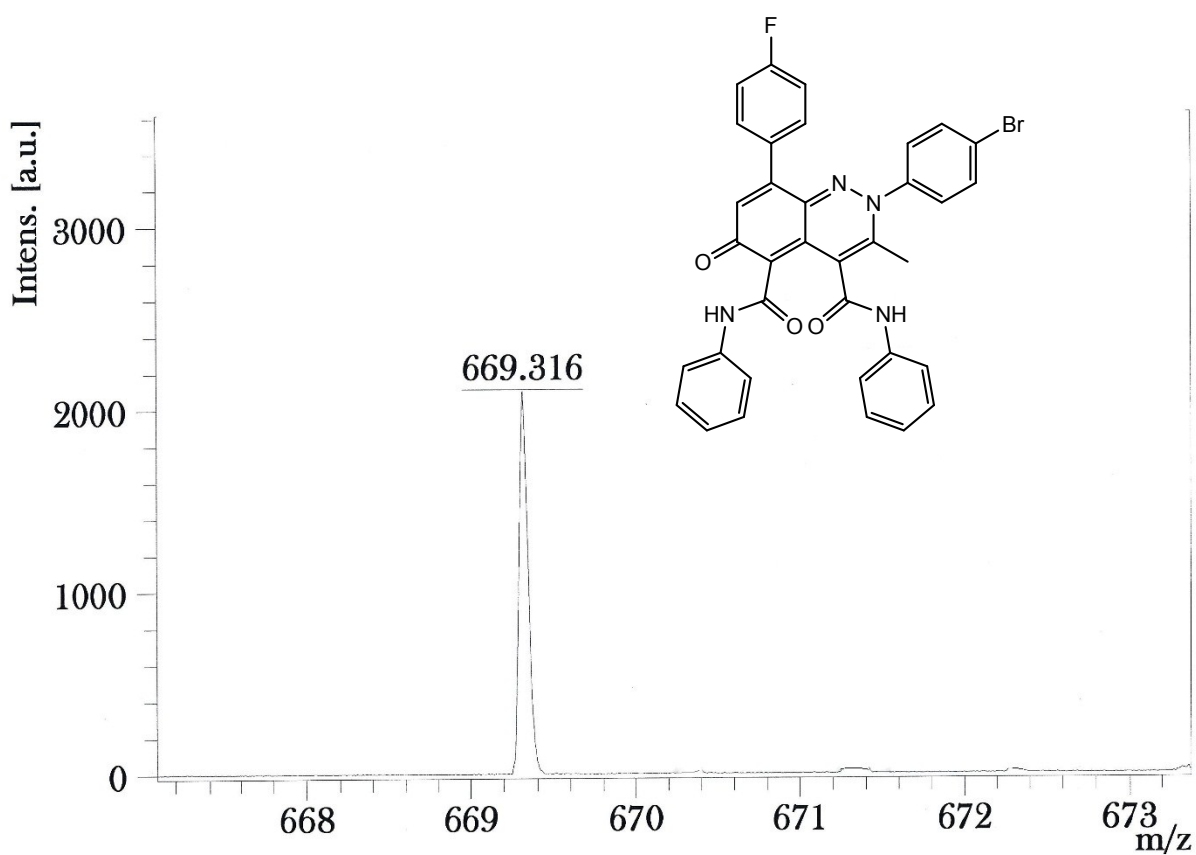
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Time_ 14.08
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PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 5120
DS 4
SWH 36057.691 Hz
FIDRES 0.550197 Hz
AQ 0.9087659 sec
RG 203
DW 13.867 usec
DE 50.00 usec
TE 298.0 K
D1 2.00000000 sec
D11 0.03000000 sec
TDO 1

===== CHANNEL f1 =====
SFO1 150.9178979 MHz
NUC1 13C
P1 8.80 usec
PLW1 78.13500214 W

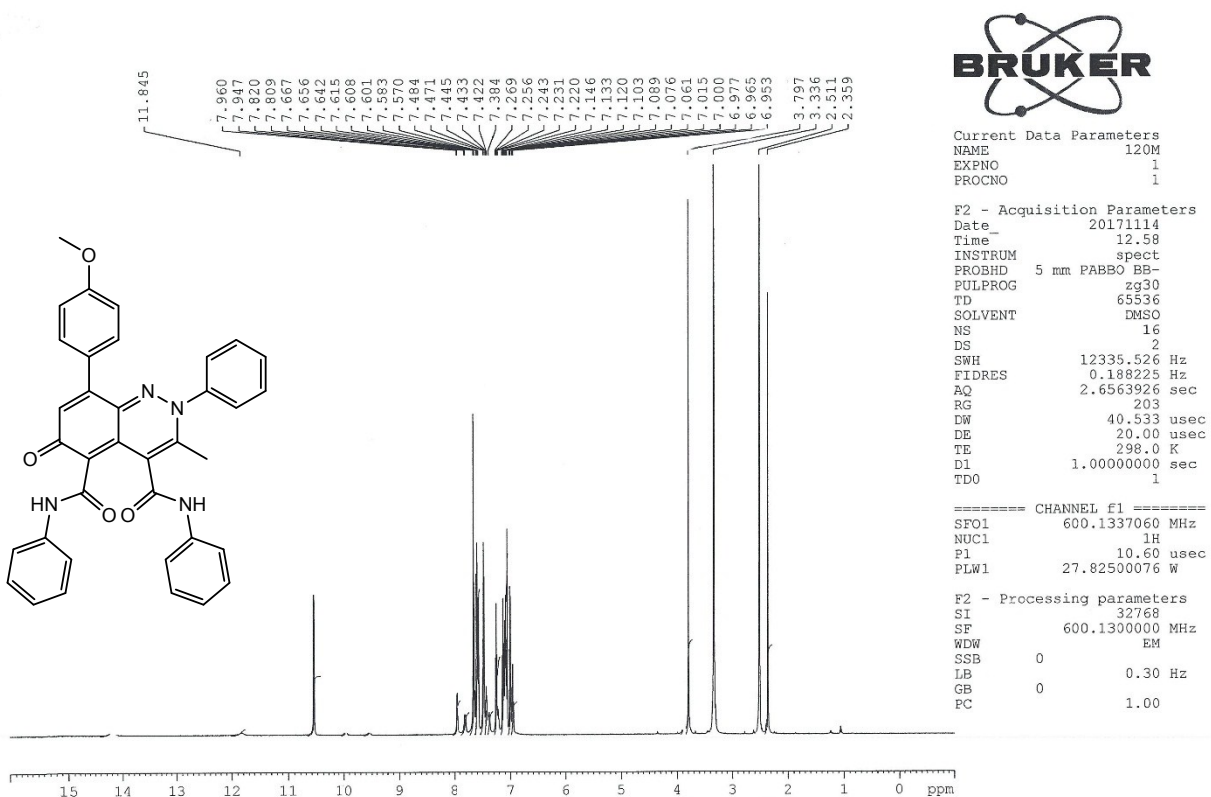
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NUC2 1H
CPDPRG[2] waltz65
PCPD2 70.00 usec
PLW2 27.82500076 W
PLW12 0.63804001 W
PLW13 0.31264001 W

F2 - Processing parameters
SI 32768
SF 150.9028827 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

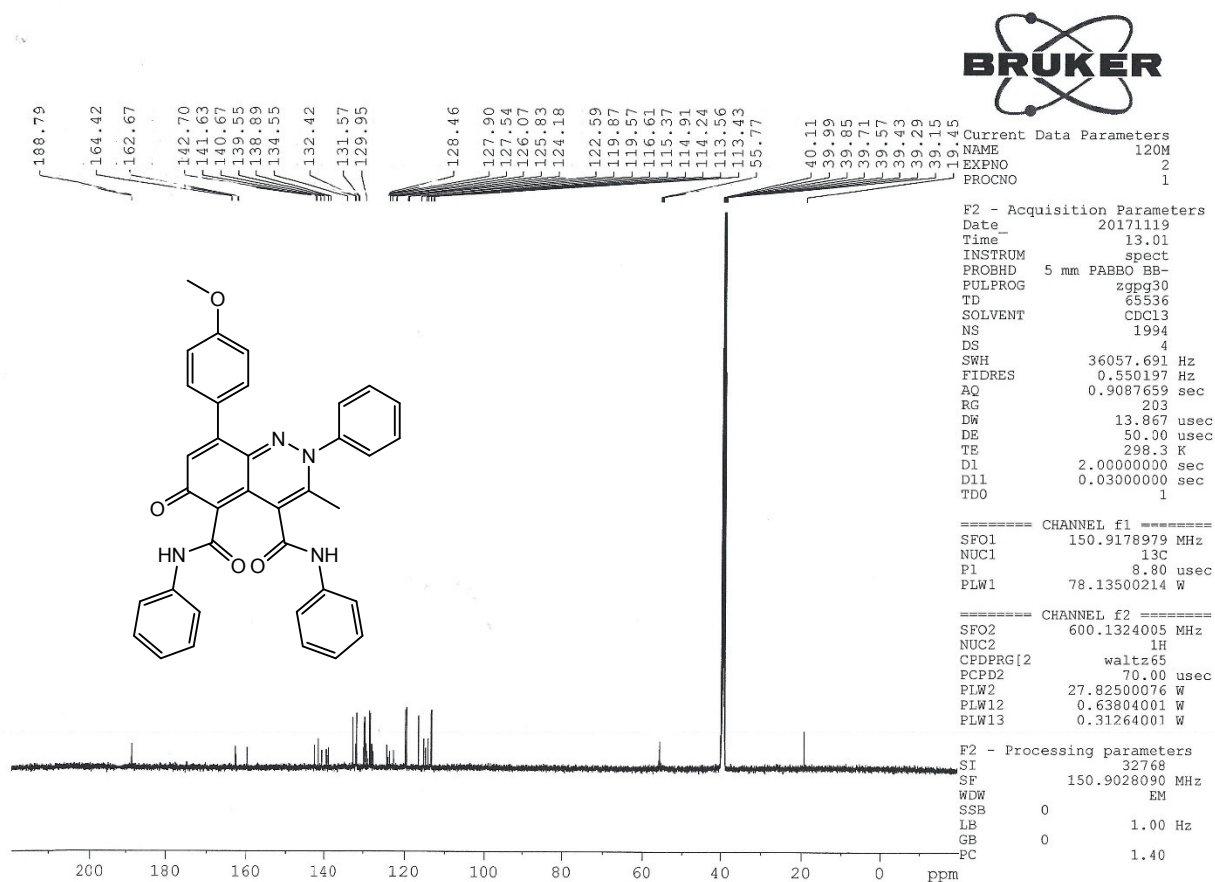
2-(4-Bromophenyl)-8-(4-fluorophenyl)-3-methyl-6-oxo-*N*⁴,*N*⁵-diphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3g)



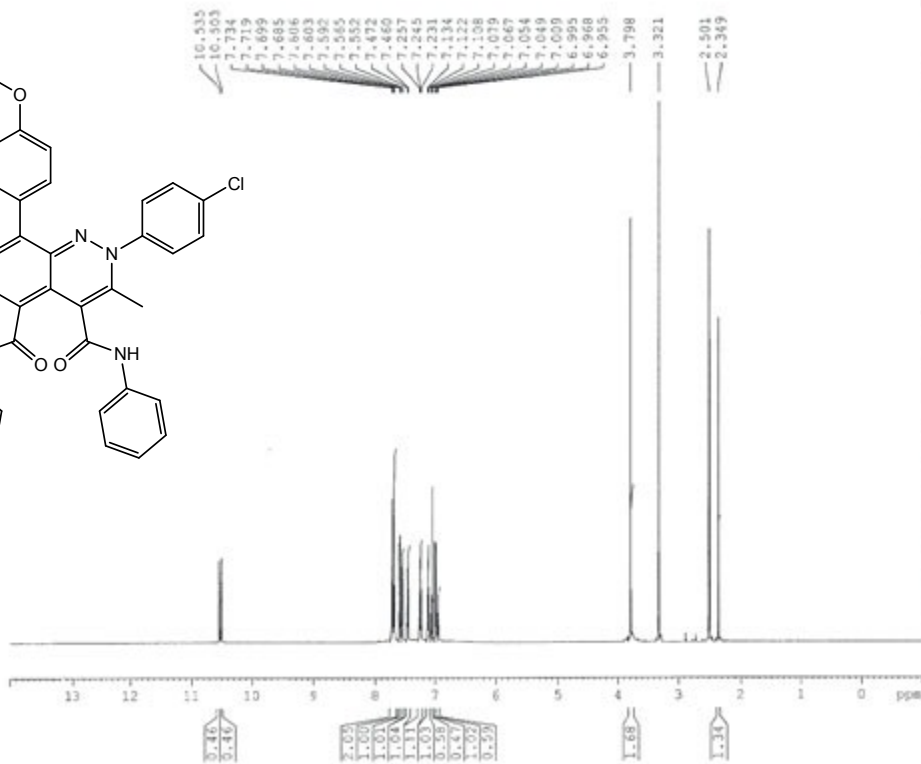
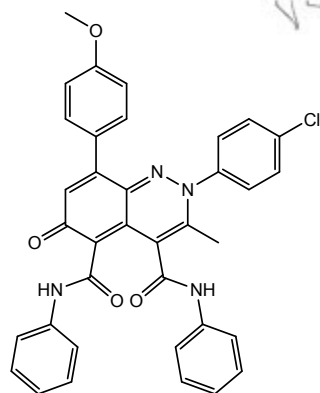
8-(4-Anisyl)-3-methyl-6-oxo-*N*⁴,*N*⁵,2-triphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3h)



8-(4-Anisyl)-3-methyl-6-oxo-*N*⁴,*N*⁵,2-triphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3h)



8-(4-Anisyl)-2-(4-chlorophenyl)-3-methyl-6-oxo-*N*⁴,*N*⁵-diphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3i)



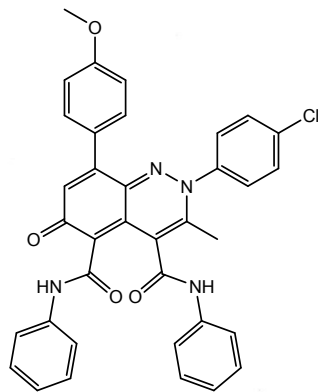
Current Data Parameters
 NAME 100HW
 EXPNO 3
 PROCNO 1

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 Time 11.21
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 PULPROG zg30
 TD 65536
 SOLVENT DMSO
 NS 16
 DS 2
 SSW 12335.526 Hz
 FIDRES 0.188225 Hz
 AQ 2.4563926 sec
 RG 203
 DW 40.533 usec
 DE 20.00 usec
 TE 298.0 K
 D1 1.00000000 sec
 TDC 1

----- CHANNEL f1 -----
 SFO1 600.1337060 MHz
 NUCL1 1H
 P1 10.60 usec
 PLW1 27.82500076 W

F2 - Processing parameters
 SI 32768
 SF 600.1300000 MHz
 MW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

8-(4-Anisyl)-2-(4-chlorophenyl)-3-methyl-6-oxo-*N*⁴,*N*⁵-diphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3i)



Current Data Parameters
 NAME 100HW
 EXPNO 4
 PROCNO 1

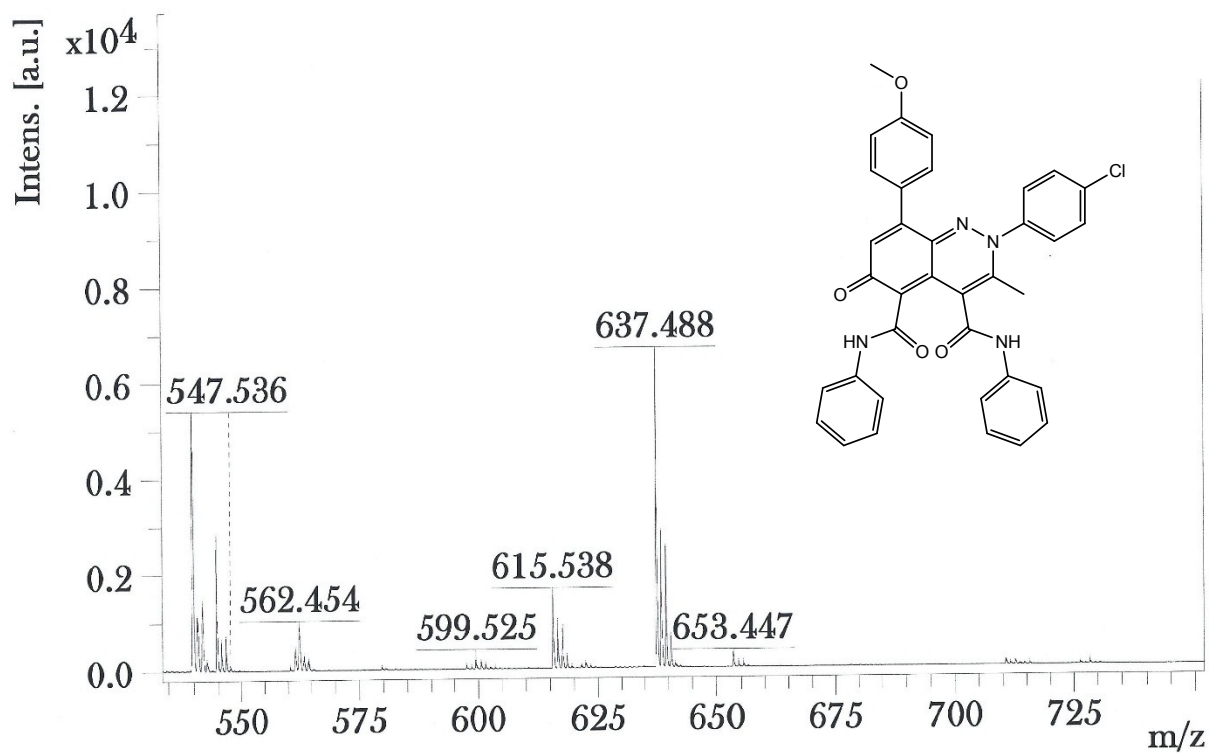
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 Time 2.08
 INSTRUM spect
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 PULPROG zgpg30
 TD 65536
 SOLVENT DMSO
 NS 8192
 DS 4
 SWH 36057.691 Hz
 FIDRES 0.550197 Hz
 AQ 0.9087659 sec
 RG 203
 DW 13.867 usec
 DE 50.00 usec
 TE 298.0 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 150.9178979 MHz
 NUC1 13C
 P1 8.80 usec
 PLW1 78.13500214 W

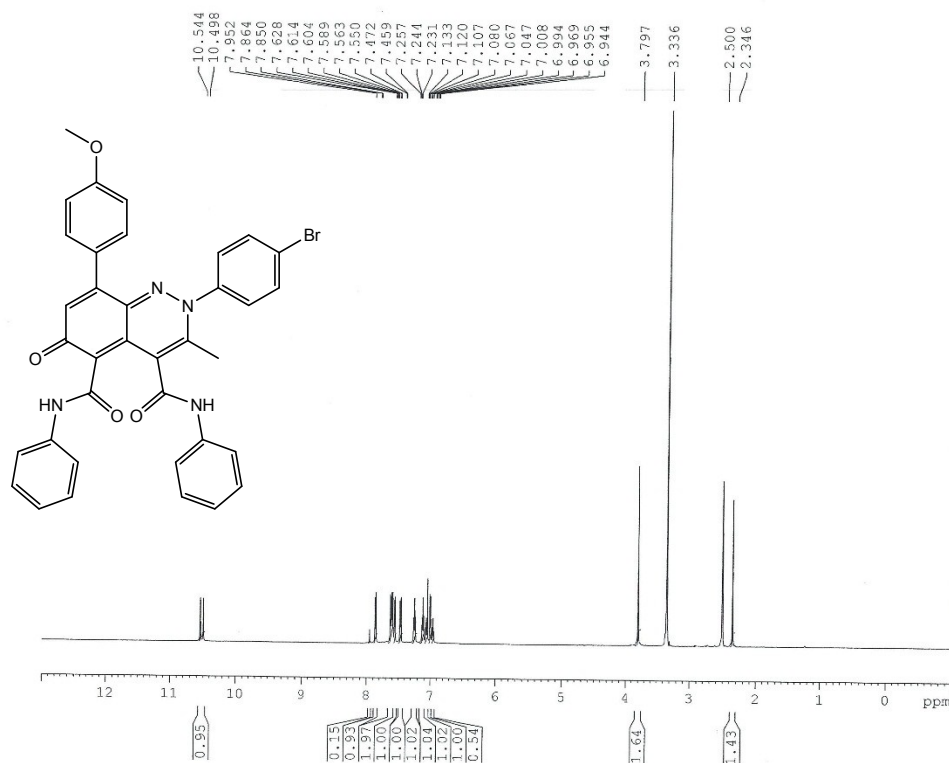
===== CHANNEL f2 =====
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 NUC2 1H
 CPDPRG[2] waltz65
 PCPD2 70.00 usec
 PLW2 27.82500076 W
 PLW12 0.63804001 W
 PLW13 0.31264001 W

F2 - Processing parameters
 SI 32768
 SF 150.9028829 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

8-(4-Anisyl)-2-(4-chlorophenyl)-3-methyl-6-oxo-*N*⁴,*N*⁵-diphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3i)



8-(4-Anisyl)-2-(4-bromophenyl)-3-methyl-6-oxo-*N*⁴,*N*⁵-diphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3j)



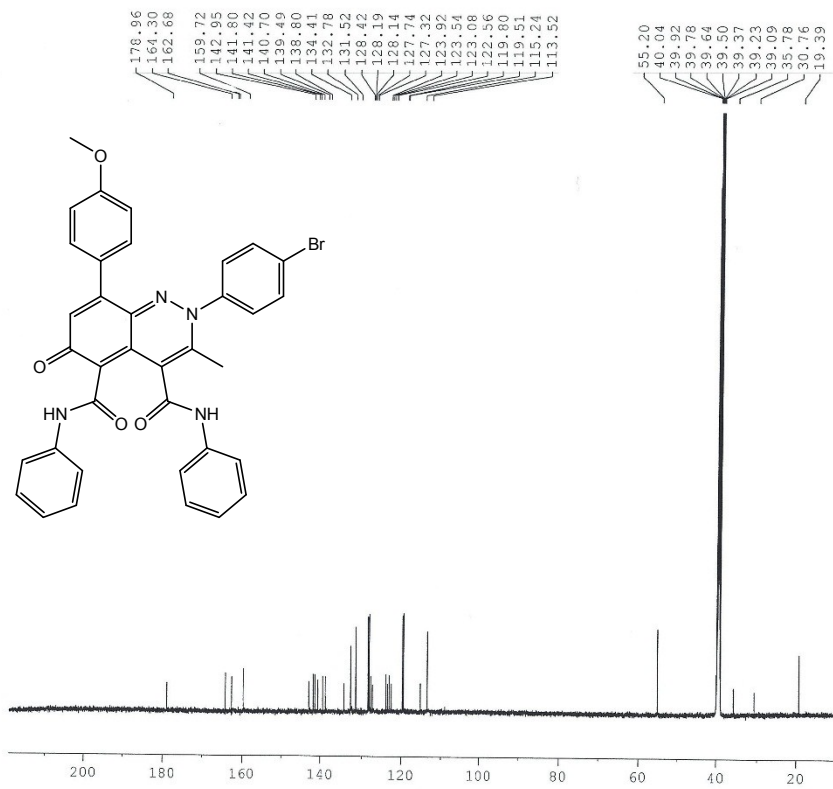
Current Data Parameters
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 EXPNO 1
 PROCNO 1

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 Time_ 13.55
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 PROBHD 5 mm PABBO BB-
 PULPROG zg30
 TD 65536
 SOLVENT DMSO
 NS 16
 DS 2
 SWH 12335.526 Hz
 FIDRES 0.188225 Hz
 AQ 2.6563926 sec
 RG 203
 DW 40.533 usec
 DE 20.00 usec
 TE 296.2 K
 D1 1.0000000 sec
 TDC 1

===== CHANNEL f1 =====
 SFO1 600.1337060 MHz
 NUC1 1H
 P1 10.60 usec
 PLW1 27.82500076 W

F2 - Processing parameters
 SI 32768
 SF 600.1300000 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 EC 1.00

8-(4-Anisyl)-2-(4-bromophenyl)-3-methyl-6-oxo-N⁴,N⁵-diphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3j)



Current Data Parameters
NAME 118HW
EXPNO 2
PROCNO 1

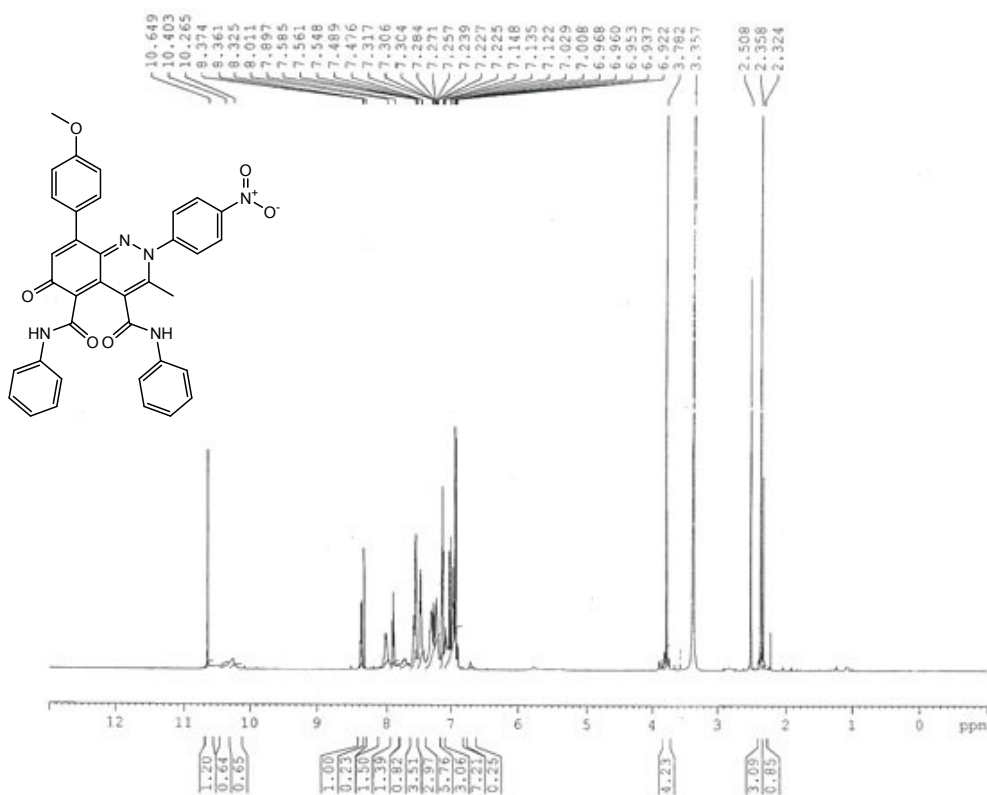
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Date_ 20170727
Time 7.42
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PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 4096
DS 4
SWH 36057.691 Hz
FIDRES 0.550197 Hz
AQ 0.9087659 sec
RG 203
DW 13.867 usec
DE 50.00 usec
TE 296.0 K
D1 2.0000000 sec
D11 0.03000000 sec
TD0 1

==== CHANNEL f1 =====
SF01 150.9178979 MHz
NUC1 13C
P1 8.80 usec
PLW1 78.13500214 W

==== CHANNEL F2 =====
SF02 600.1324005 MHz
NUC2 1H
PCPDPRG[2] waltz65
PCPD2 70.00 usec
PLW2 27.82500076 W
PLW12 0.63804001 W
PLW13 0.31264001 W

F2 - Processing parameters
SI 32768
SF 150.9028793 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

8-(4-Anisyl)-3-methyl-2-(4-nitrophenyl)-6-oxo-*N*⁴,*N*⁵-diphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3k)



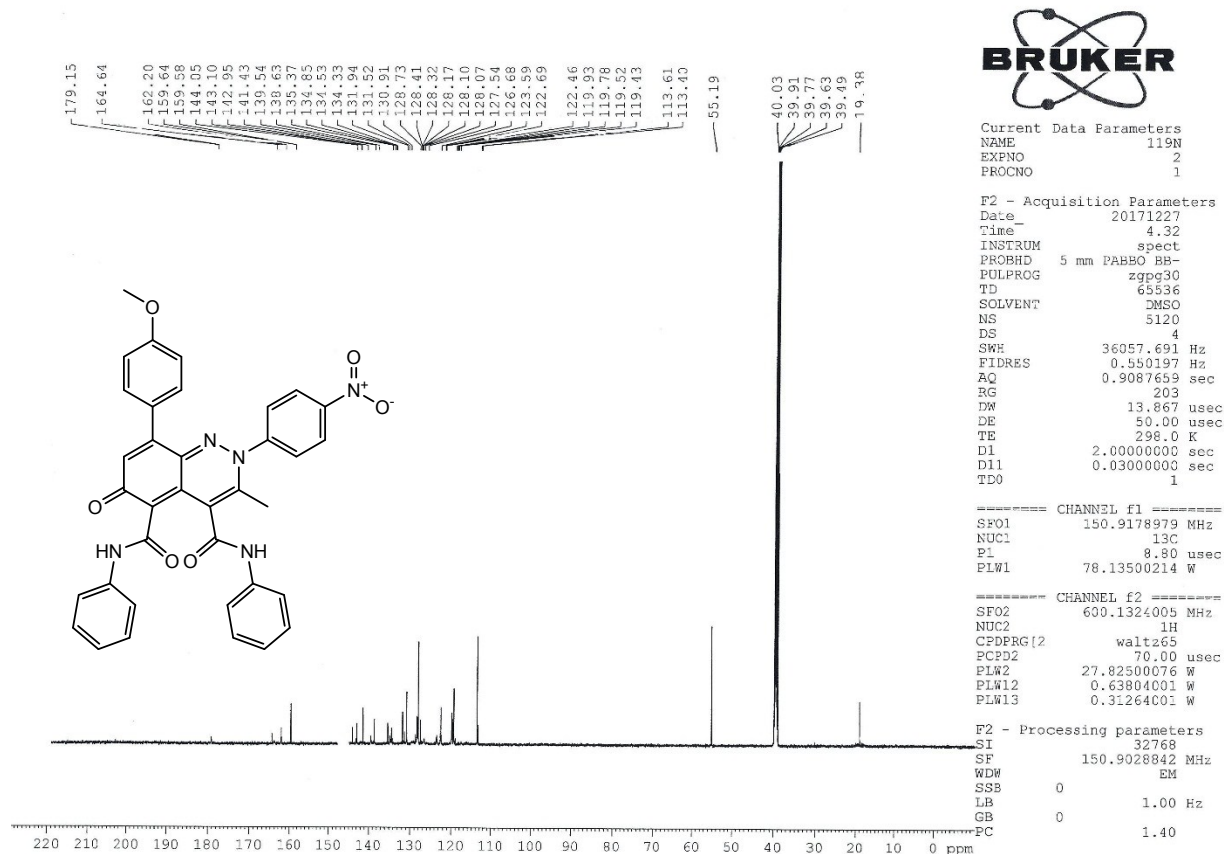
Current Data Parameters
 NAME 119N
 EXPNO 1
 PROCNO 1

F2 - Acquisition Parameters
 Date 20171225
 Time 12.29
 INSTRUM spect
 PROBHD 5 mm PABBO BB-
 PULPROG zg30
 TD 65536
 SOLVENT DMSO
 NS 16
 DS 2
 SWH 12335.526 Hz
 FIDRES 0.188225 Hz
 AQ 2.6563926 sec
 RG 203
 DW 40.533 usec
 DE 20.00 usec
 TE 298.0 K
 D1 1.00000000 sec
 TD0 1

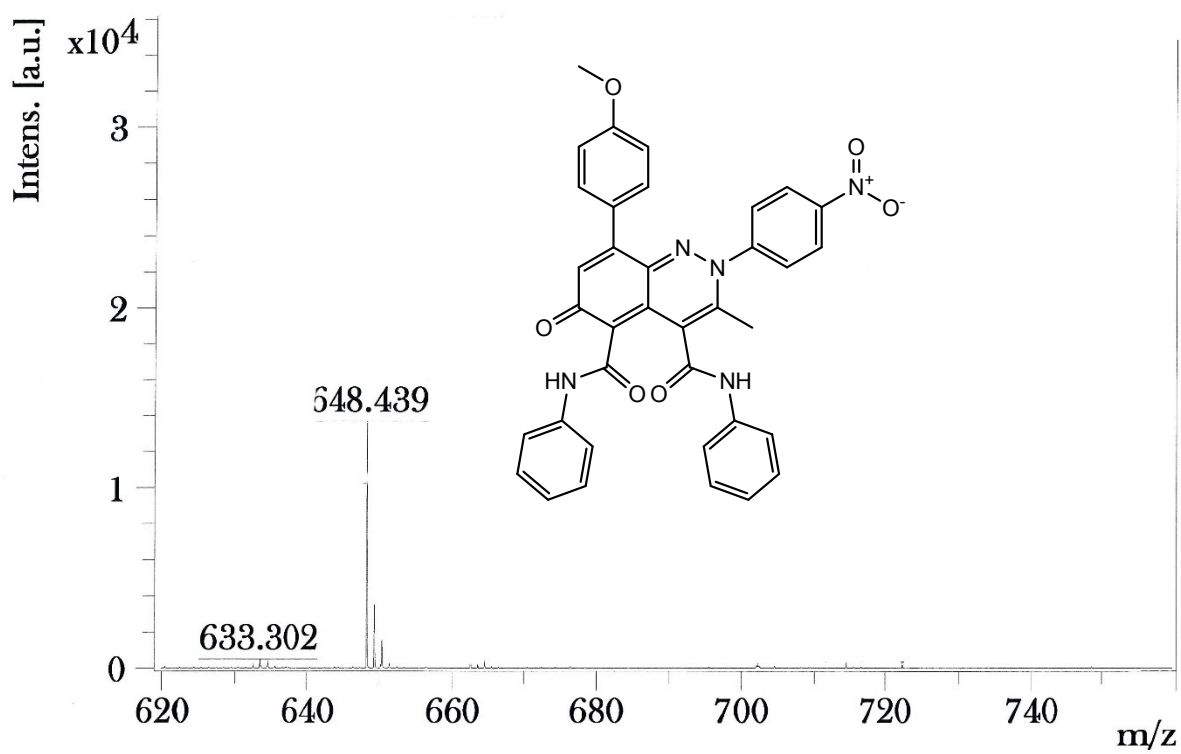
----- CHANNEL f1 -----
 SF01 600.1337060 MHz
 NUC1 1H
 P1 10.60 usec
 P1M1 27.82500076 W

F2 - Processing parameters
 SI 32768
 SF 600.1300000 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 FC 1.00

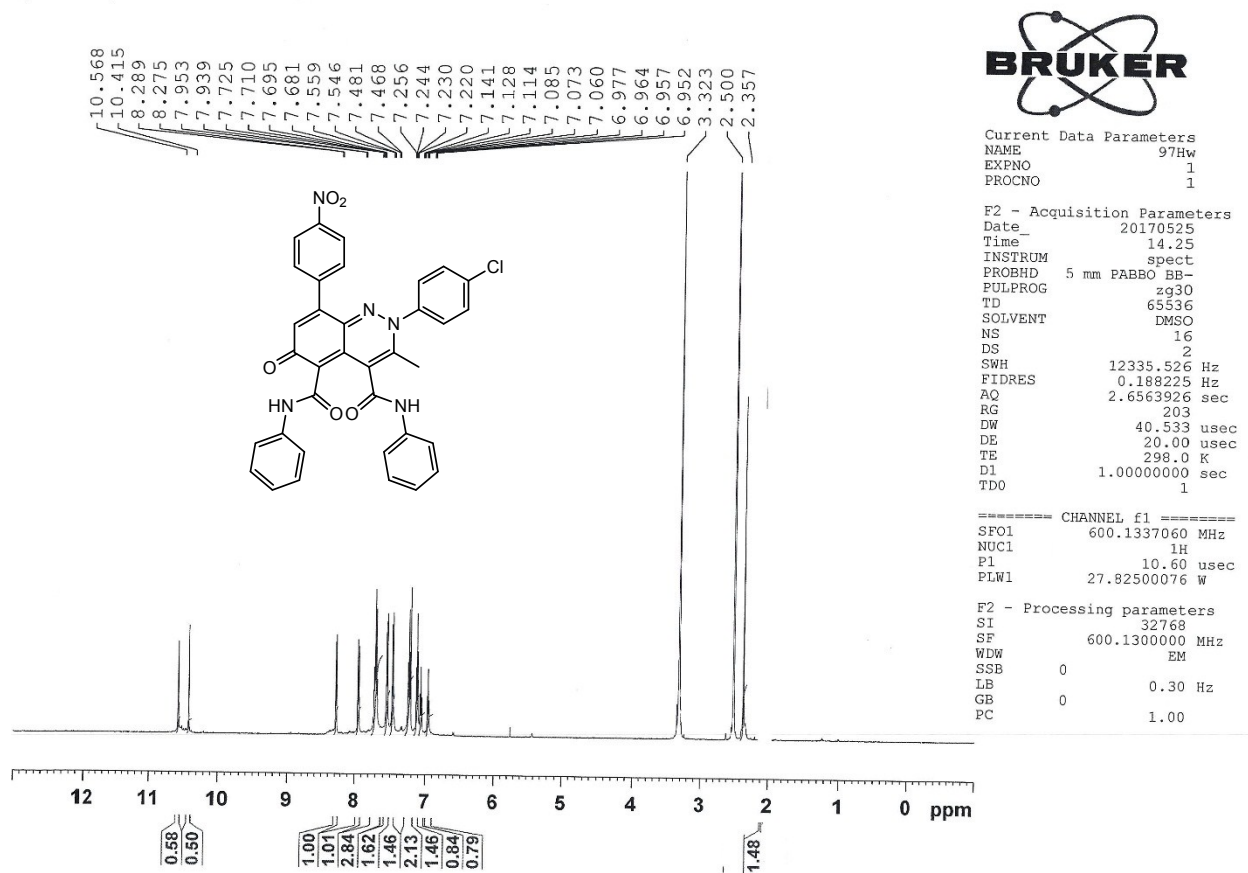
8-(4-Anisyl)-3-methyl-2-(4-nitrophenyl)-6-oxo-*N*⁴,*N*⁵-diphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3k)



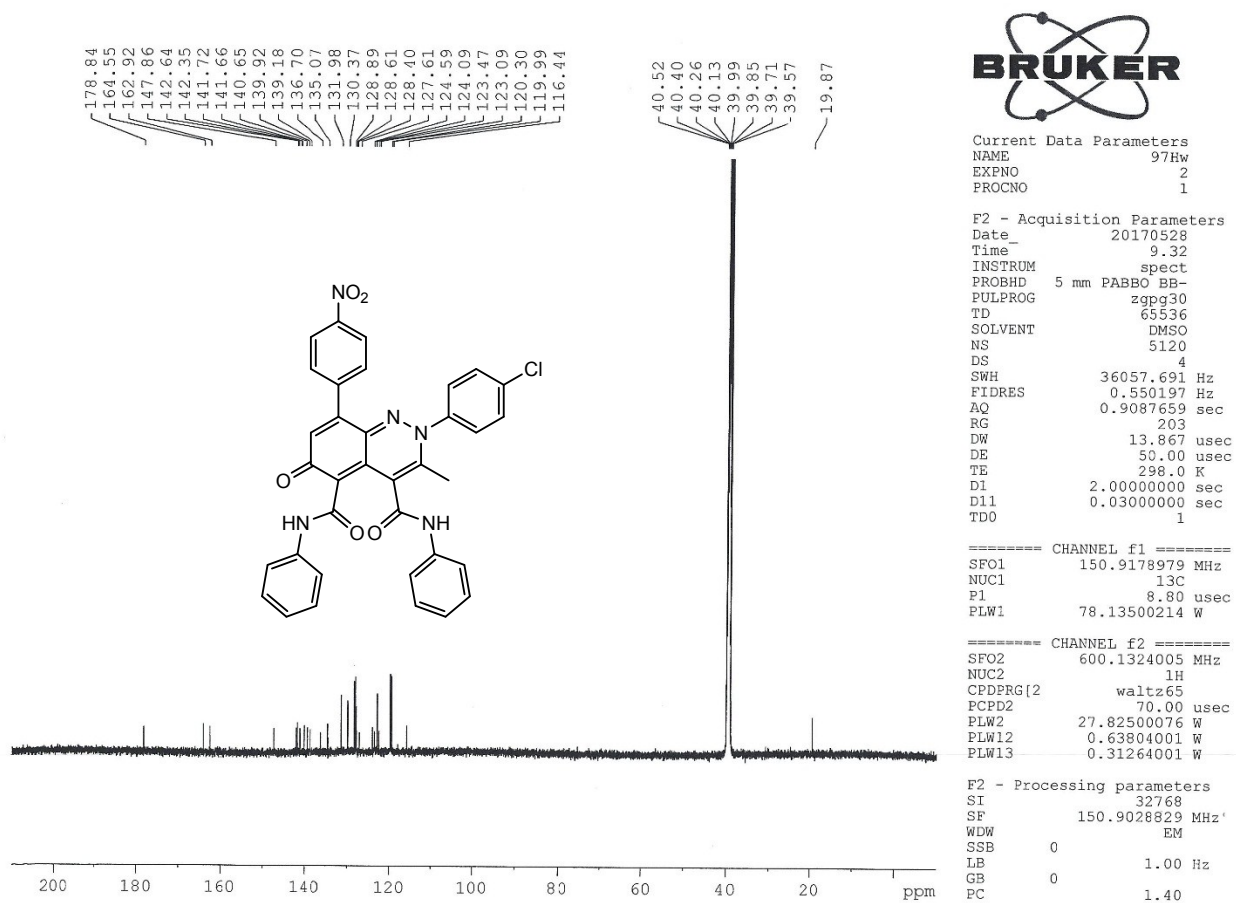
8-(4-Anisyl)-3-methyl-2-(4-nitrophenyl)-6-oxo-*N*⁴,*N*⁵-diphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3k)



2-(4-Chlorophenyl)-3-methyl-8-(4-nitrophenyl)-6-oxo-*N*⁴,*N*⁵-diphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3l)

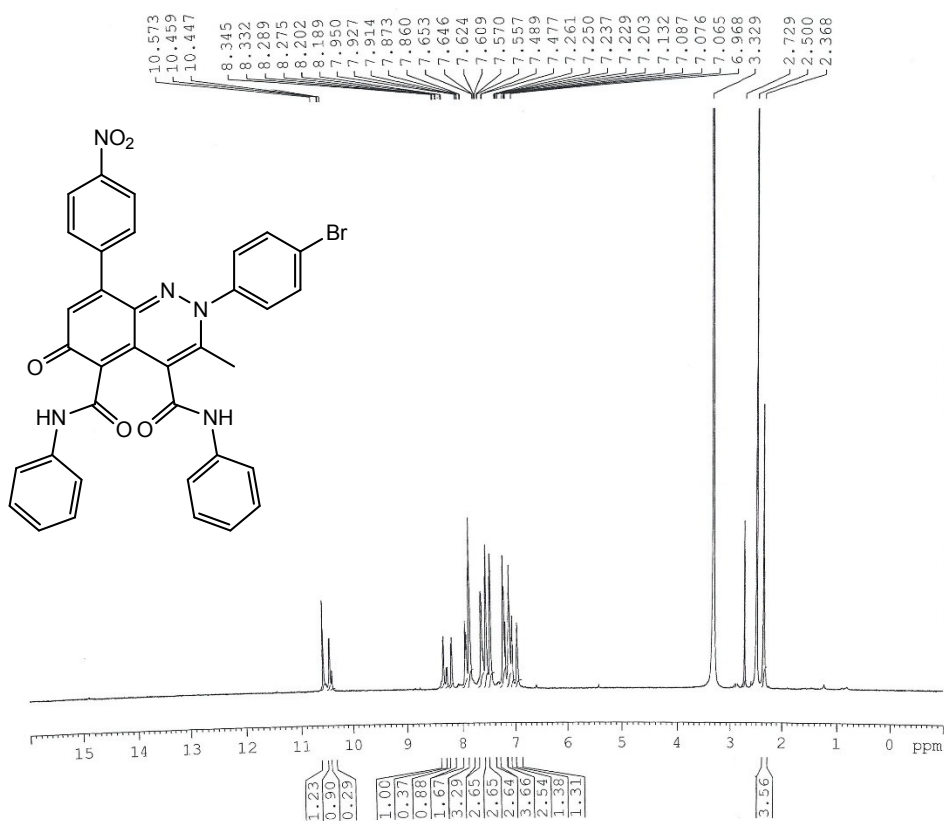


2-(4-Chlorophenyl)-3-methyl-8-(4-nitrophenyl)-6-oxo-*N*⁴,*N*⁵-diphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3l)



2-(4-Bromophenyl)-3-methyl-8-(4-nitrophenyl)-6-oxo-*N*⁴,*N*⁵-diphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3m)

1H spectra Dr.Hamad 104HW in DMSO



Current Data Parameters
NAME 104HW
EXPNO 1
PROCNO 1

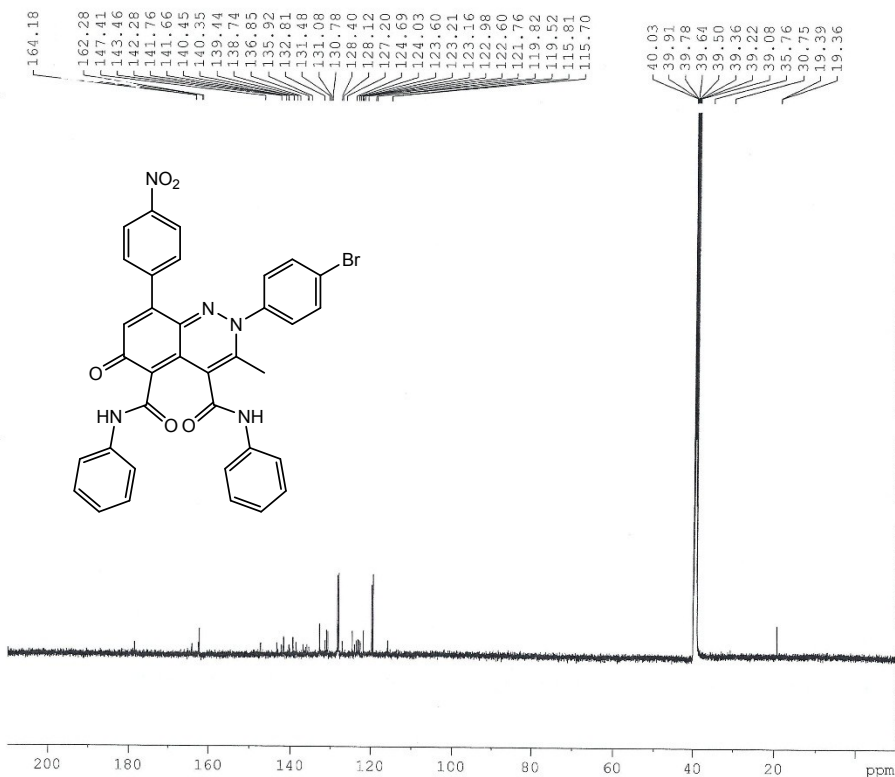
F2 - Acquisition Parameters
Date_ 20170621
Time 11.57
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 16
DS 2
SWH 12335.526 Hz
FIDRES 0.188225 Hz
AQ 2.6563926 sec
RG 203
DW 40.533 usec
DE 20.00 usec
TE 298.0 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 600.1337060 MHz
NUC1 1H
P1 10.60 usec
PLW1 27.82500076 W

F2 - Processing parameters
SI 32768
SF 600.1300000 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

2-(4-Bromophenyl)-3-methyl-8-(4-nitrophenyl)-6-oxo-*N*⁴,*N*⁵-diphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3m)

¹³C decoupled spectra Dr.Hamad 104HW in DMSO



Current Data Parameters
 NAME 104HW
 EXPNO 2
 PROCNO 1

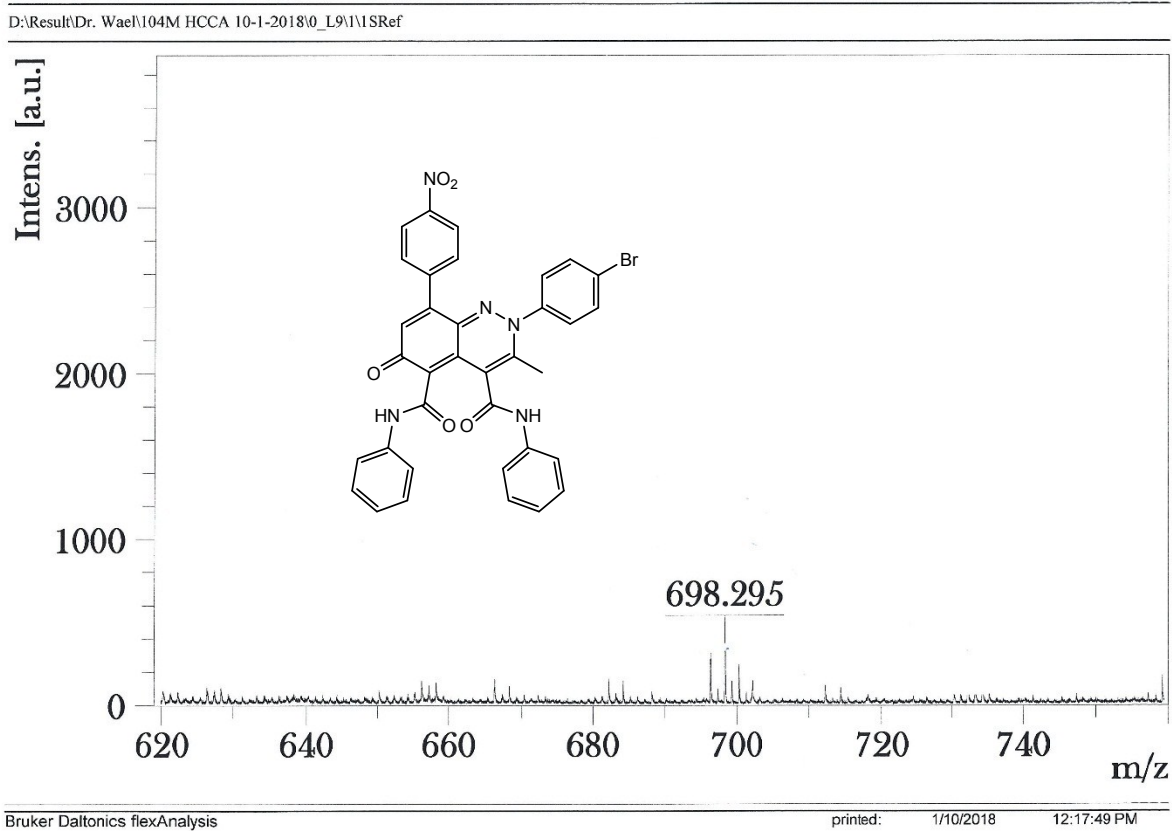
F2 - Acquisition Parameters
 Date 20170621
 Time 23.03
 INSTRUM spect
 PROBHD 5 mm PABBO BB-
 PULPROG zgpg30
 TD 65536
 SOLVENT DMSO
 NS 6144
 DS 4
 SWH 36057.691 Hz
 FIDRES 0.550197 Hz
 AQ 0.9087659 sec
 RG 203
 DW 13.867 usec
 DE 50.00 usec
 TE 297.9 K
 D1 2.0000000 sec
 D11 0.0300000 sec
 TDO 1

===== CHANNEL f1 =====
 SFO1 150.9178979 MHz
 NUC1 13C
 PI 8.80 usec
 PLW1 78.13500214 W

===== CHANNEL f2 =====
 SFO2 600.1324005 MHz
 NUC2 1H
 CPDPRG2 waltz65
 PCPD2 70.00 usec
 PLW2 27.82500076 W
 PLW12 0.63804001 W
 PLW13 0.31264001 W

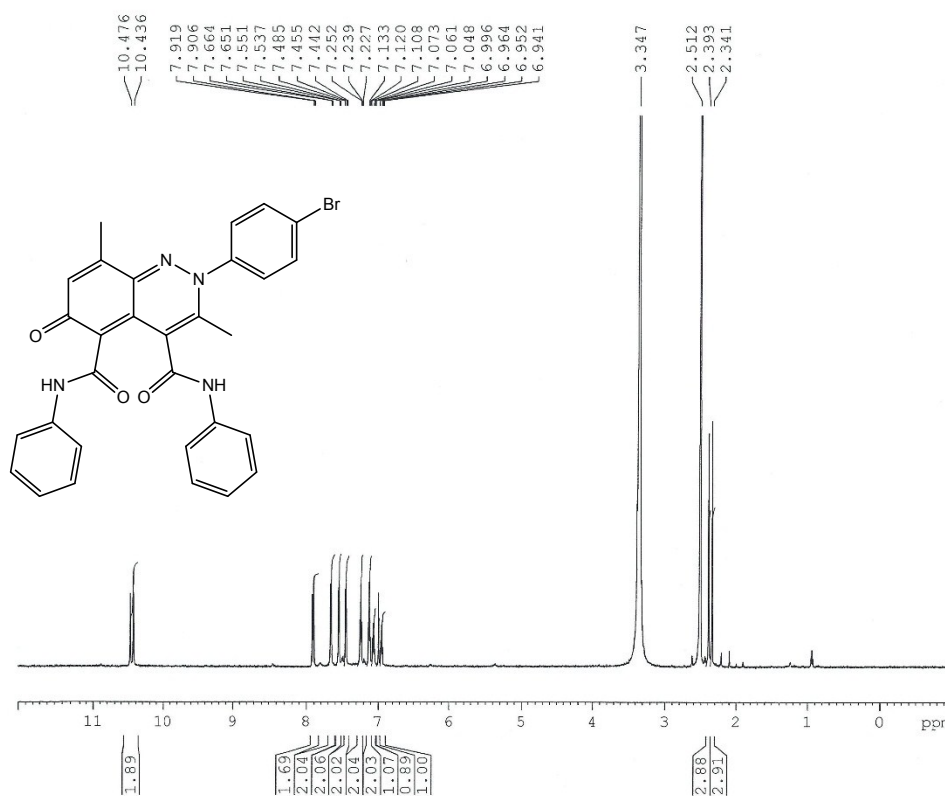
F2 - Processing parameters
 SI 32768
 SF 150.9028825 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

2-(4-Bromophenyl)-3-methyl-8-(4-nitrophenyl)-6-oxo-*N*⁴,*N*⁵-diphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3m)



2-(4-Bromophenyl)-3,8-dimethyl-6-oxo-*N*⁴,*N*⁵-diphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3n)

1H spectra Dr.Hamad 141HW in DMSO



Current Data Parameters
 NAME 141HW
 EXPNO 1
 PROCNO 1

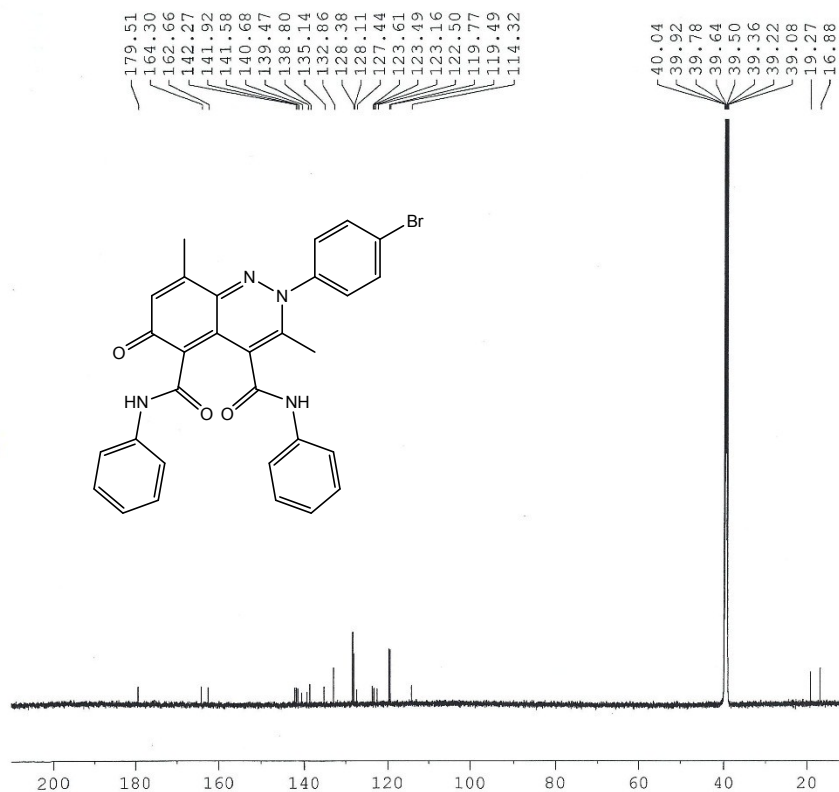
F2 - Acquisition Parameters
 Date_ 20171108
 Time 8.55
 INSTRUM spect
 PROBHD 5 mm PABBO BB-
 PULPROG zg30
 TD 65536
 SOLVENT DMSO
 NS 16
 DS 2
 SWH 12335.526 Hz
 FIDRES 0.188225 Hz
 AQ 2.6563926 sec
 RG 203
 DW 40.533 usec
 DE 20.06 usec
 TE 298.0 K
 D1 1.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SF01 600.1337060 MHz
 NUCL 1H
 P1 10.60 usec
 PLW1 27.82500076 W

F2 - Processing parameters
 SI 32768
 SF 600.1300000 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

2-(4-Bromophenyl)-3,8-dimethyl-6-oxo-*N*⁴,*N*⁵-diphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3n)

13C decoupled spectra Dr.Hamad 141HW in DMSO



Current Data Parameters
NAME 141HW
EXPNO 3
PROCNO 1

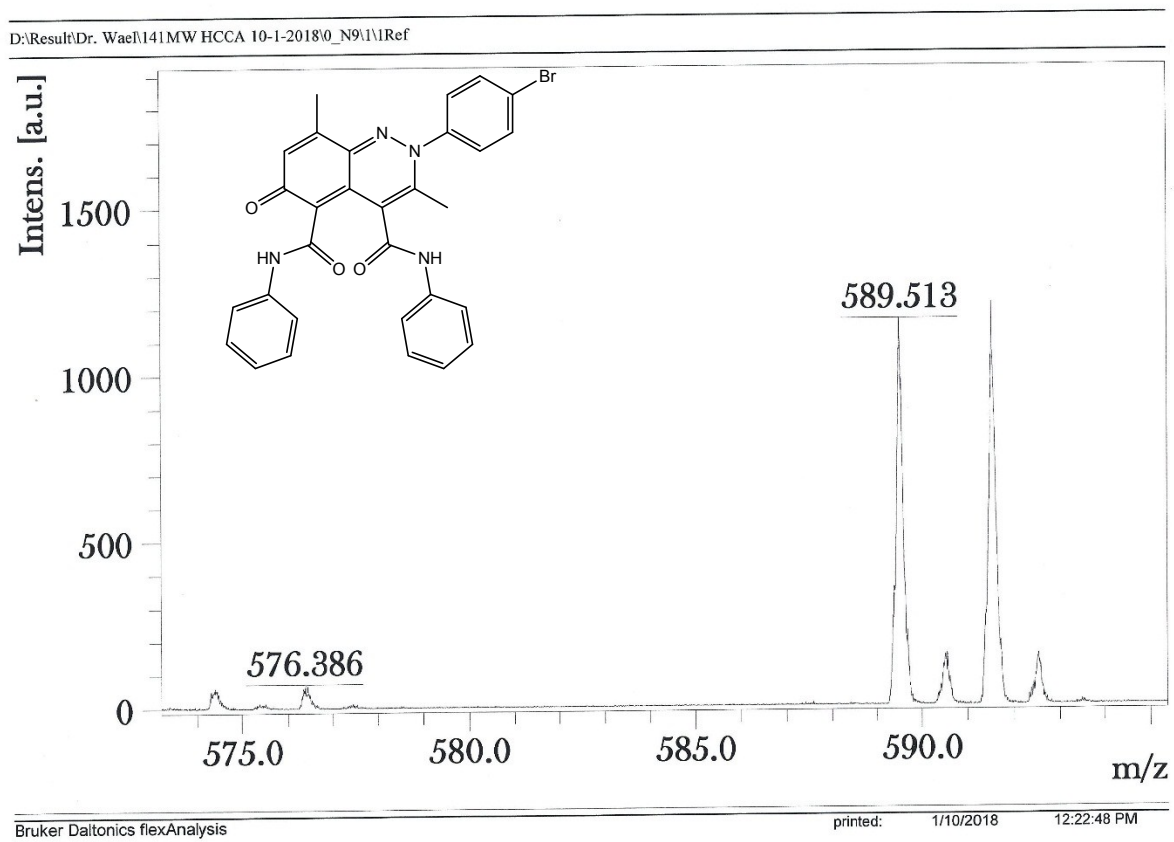
F2 - Acquisition Parameters
Date_ 20171111
Time_ 13.34
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT DMSO
NS 20480
DS 4
SWH 36057.691 Hz
FIDRES 0.550197 Hz
AQ 0.9087659 sec
RG 203
DW 13.867 usec
DE 50.00 usec
TE 298.0 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 150.9178979 MHz
NUC1 13C
P1 8.80 usec
PLW1 78.13500214 W

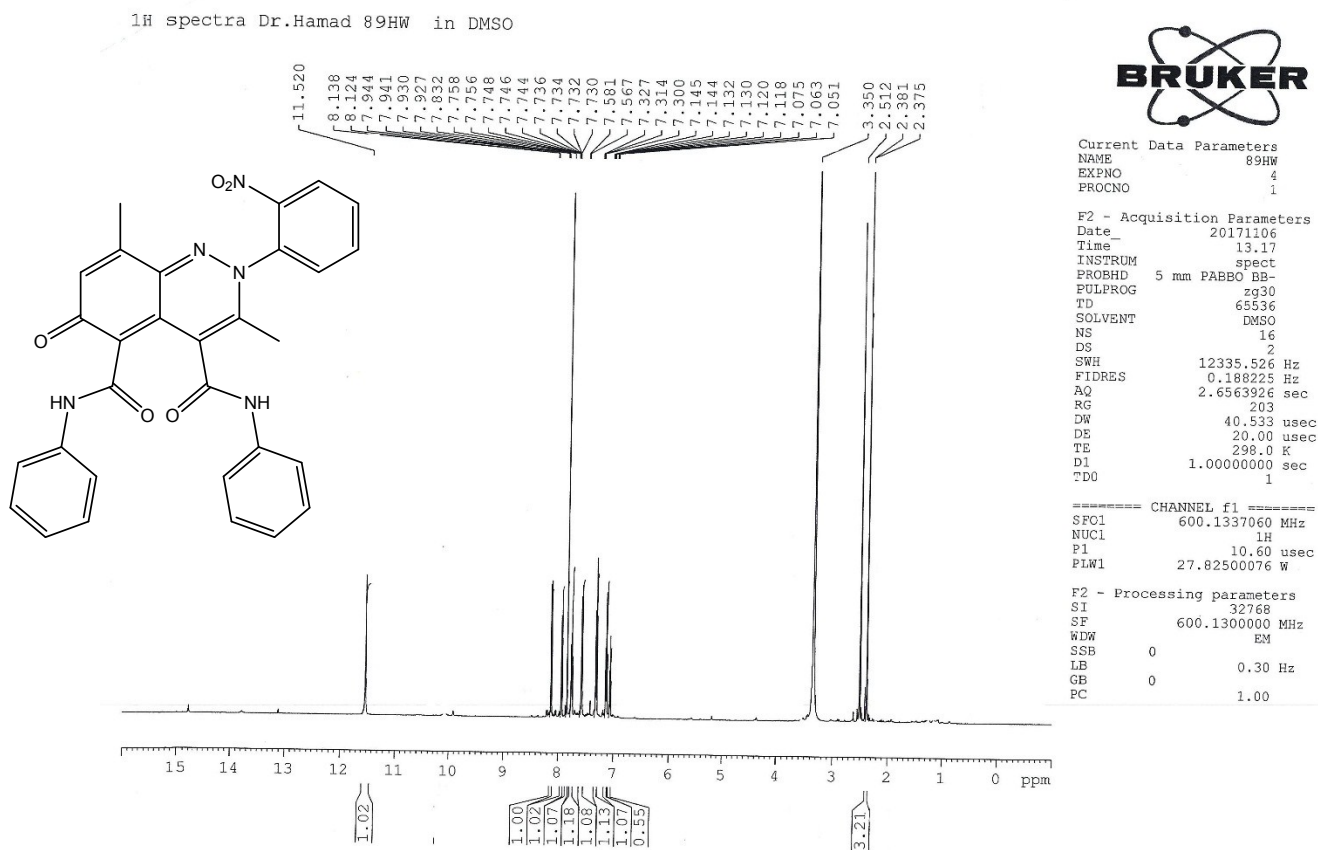
===== CHANNEL f2 =====
SFO2 600.1324005 MHz
NUC2 1H
CPDPRG[2] waltz65
PCPD2 70.00 usec
PLW2 27.82500076 W
PLW12 0.63804001 W
PLW13 0.31264001 W

F2 - Processing parameters
SI 32768
SF 150.9028815 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

2-(4-Bromophenyl)-3,8-dimethyl-6-oxo-*N*⁴,*N*⁵-diphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3n)

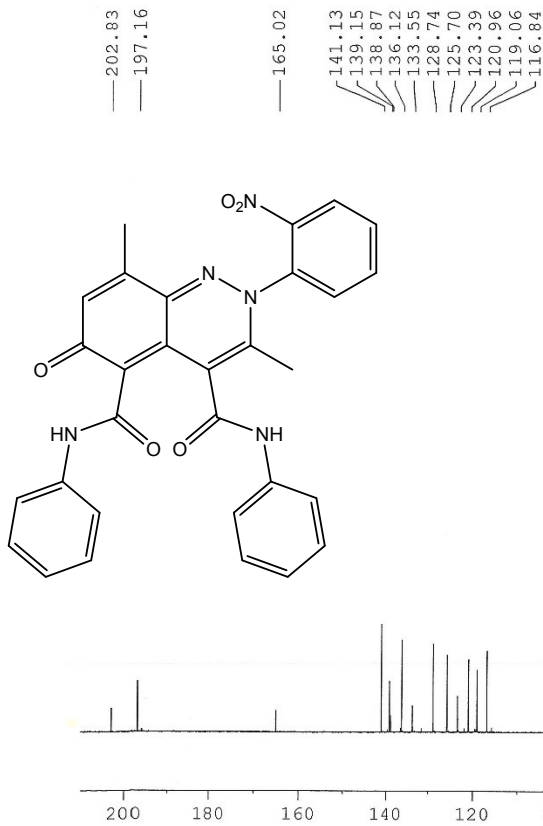


3,8-Dimethyl-2-(2-nitrophenyl)-6-oxo-*N*⁴,*N*⁵-diphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (30)



3,8-Dimethyl-2-(2-nitrophenyl)-6-oxo-*N*⁴,*N*⁵-diphenyl-2,6-dihydrocinnoline-4,5-dicarboxamide (3o)

13C decoupled spectra Dr.Hamad 89HW in DMSO



```

Current Data Parameters
NAME          89HW
EXPNO         5
PROCNO        1

F2 - Acquisition Parameters
Date_         20171108
Time          0.51
INSTRUM      spect
PROBHD       5 mm PABBO BB-
PULPROG      zgpg30
TD           65536
SOLVENT      DMSO
NS           10240
DS           4
SWH          36057.691 Hz
FIDRES       0.550197 Hz
AQ           0.9087659 sec
RG           203
DW           13.867 usec
DE           50.00 usec
TE           298.0 K
D1           2.0000000 sec
D11          0.0300000 sec
TD0          1

===== CHANNEL f1 =====
SFO1         150.9178979 MHz
NUC1          13C
PI            8.80 usec
PLW1         78.13500214 W

===== CHANNEL f2 =====
SFO2         600.1324005 MHz
NUC2          1H
CPDPRG[2]    waltz65
PCPD2        70.00 usec
PLW2         27.82500076 W
PLW12        0.63804001 W
PLW13        0.31264001 W

F2 - Processing parameters
SI            32768
SF           150.9028819 MHz
WDW           EM
SSB           0
LB            1.00 Hz
GB            0
PC            1.40
    
```