

## Supporting Information

*Rec. Nat. Prod.* 10:5 (2016) 639-644

### Secondary Metabolites from the Root of *Aralia echinocaulis* Hand. -Mazz.

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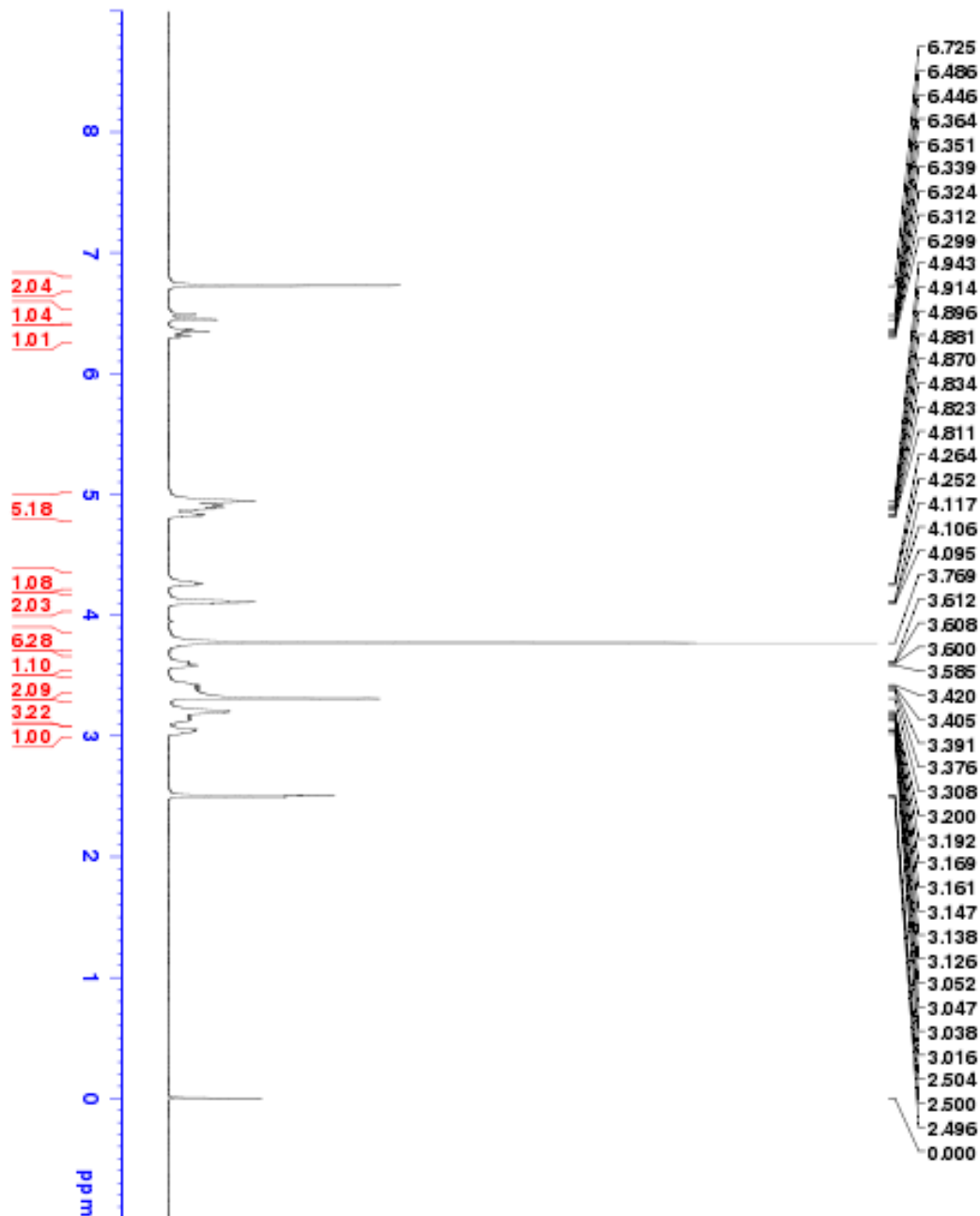
#### Table of Contents

Spectrums of compounds 1-12		Page
<b>S1:</b>	<sup>1</sup> H-NMR Spectrum of Compound 1	3
<b>S2:</b>	<sup>13</sup> C-NMR Spectrum of Compound 1	4
<b>S3:</b>	<sup>1</sup> H-NMR Spectrum of Compound 2	5
<b>S4:</b>	<sup>13</sup> C-NMR Spectrum of Compound 2	6
<b>S5:</b>	<sup>1</sup> H-NMR Spectrum of Compound 3	7
<b>S6:</b>	<sup>13</sup> C-NMR Spectrum of Compound 3	8
<b>S7:</b>	<sup>1</sup> H-NMR Spectrum of Compound 4	9
<b>S8:</b>	<sup>13</sup> C-NMR Spectrum of Compound 4	10
<b>S9:</b>	<sup>1</sup> H-NMR Spectrum of Compound 5	11
<b>S10:</b>	<sup>13</sup> C-NMR Spectrum of Compound 5	12
<b>S11:</b>	<sup>1</sup> H-NMR Spectrum of Compound 6	13

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<b>S12:</b>	<sup>13</sup> C-NMR <i>Spectrum of Compound 6</i>	<b>14</b>
<b>S13:</b>	<sup>1</sup> H-NMR Spectrum of Compound 7	<b>15</b>
<b>S14:</b>	<sup>13</sup> C-NMR Spectrum of Compound 7	<b>16</b>
<b>S15:</b>	<sup>1</sup> H-NMR Spectrum of Compound 8	<b>17</b>
<b>S16:</b>	<sup>13</sup> C-NMR Spectrum of Compound 8	<b>18</b>
<b>S17:</b>	<sup>1</sup> H-NMR Spectrum of Compound 9	<b>19</b>
<b>S18:</b>	<sup>1</sup> H-NMR Spectrum of Compound 10	<b>20</b>
<b>S19:</b>	<sup>13</sup> C-NMR Spectrum of Compound 10	<b>21</b>
<b>S20:</b>	<sup>1</sup> H-NMR Spectrum of Compound 11	<b>22</b>
<b>S21:</b>	<sup>1</sup> H-NMR Spectrum of Compound 12	<b>23</b>



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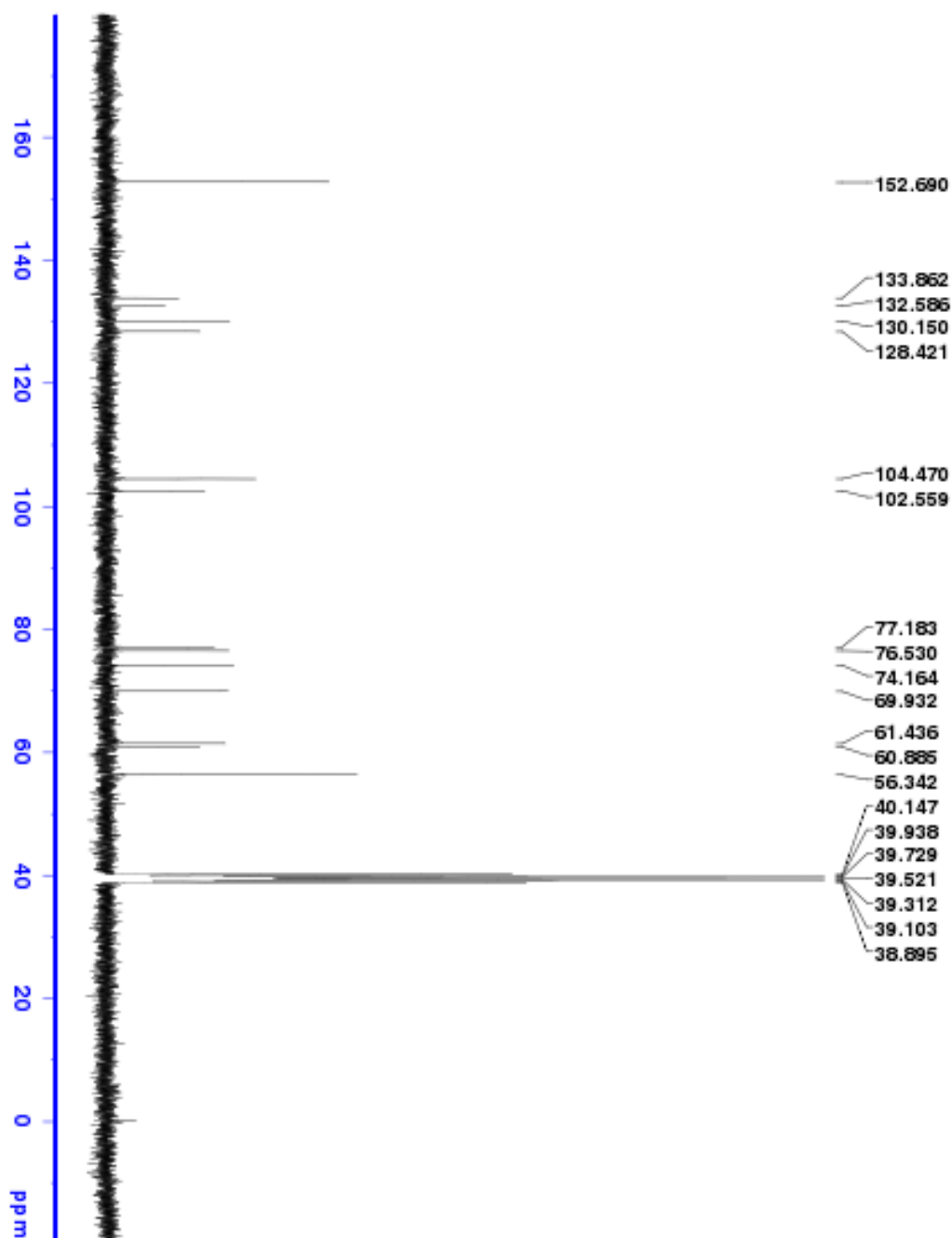
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CURRENT DATA PARAMETERS
NAME      23-57-1
EXPNO    3
PROCNO   1

F2 - Acquisition Parameters
Date_    20240526
Time     14.46
INSTRUM spect
PROBHD   5 mm TARGO-QNP
PULPROG zgpg30
TD        65536
SOLVENT  DMSO
NS        16
DS        2
SWH       8223.685 MHz
FIDRES    0.115483 MHz
AQ        3.9683387 sec
RG        36.43
SM        60.800 MHz
SFO       500.136099 MHz
TE        300.2 K
NUC1      13C
NUC2      1H
===== CHANNEL f1 =====
NUC1      1H
P1        120
PL1       0.22 dB
PL12      20.00000000 MHz
PL13      400.1264110 MHz
SFO1      400.1264110 MHz

F2 - Processing parameters
SI        65536
SF        400.1260992 MHz
WDW       EM
SSB       0
LB        0.30 MHz
GB        0
PC        1.00
  
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**S1:**  $^1\text{H-NMR}$  Spectrum of Compound 1



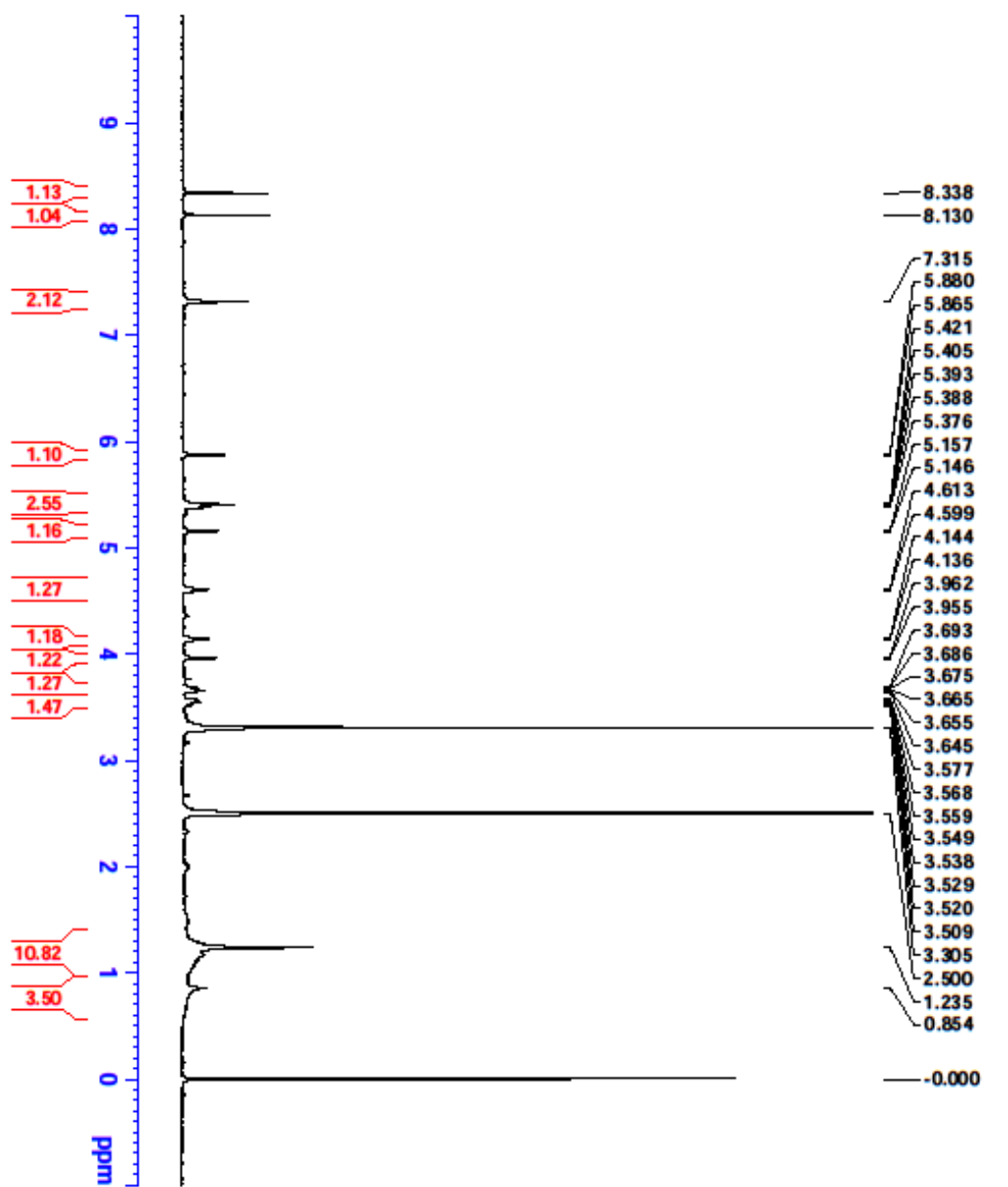
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Current Data Parameters
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EXPNO    1
PROCNO   1

F2 - Acquisition Parameters
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PROBHD   5 mm F400
PULPROG  zgpg30
ID       zgpg30
SOLVENT  DMSO
NS       640
DS       4
SWH      24038.463 MHz
FIDRES   0.365758 MHz
AQ       1.2623288 sec
RG       129.65
ZGZ      20.800 kHz
EK       8.50 kHz
TE       303.2 K
NUC1     13C
NUC2     13C
NUC3     13C
NUC4     13C
NUC5     13C
NUC6     13C
NUC7     13C
NUC8     13C
NUC9     13C
NUC10    13C
NUC11    13C
NUC12    13C
NUC13    13C
NUC14    13C
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NUC91    13C
NUC92    13C
NUC93    13C
NUC94    13C
NUC95    13C
NUC96    13C
NUC97    13C
NUC98    13C
NUC99    13C
NUC100   13C

```

S2: <sup>13</sup>C-NMR Spectrum of Compound 1



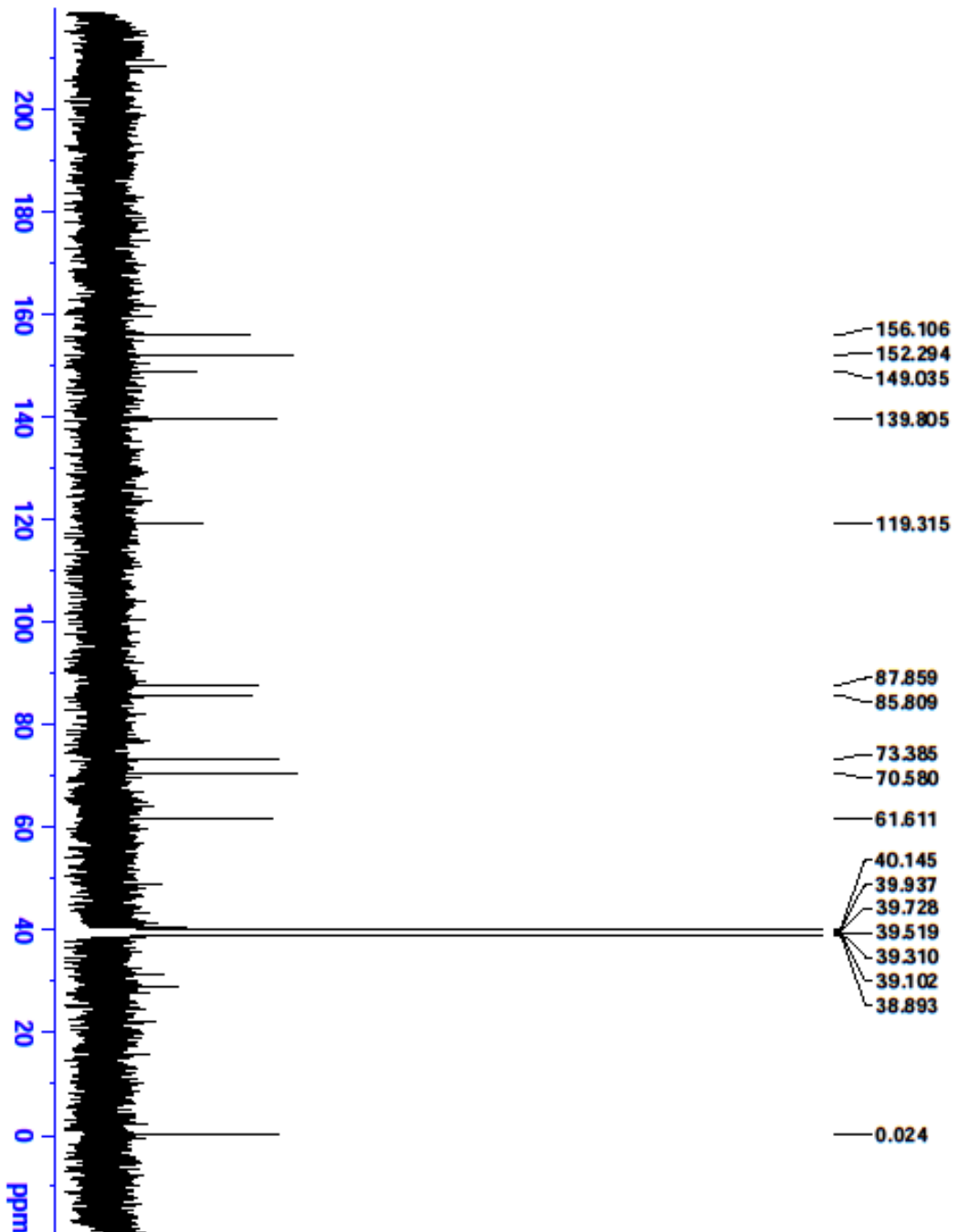
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 EXNO: 1  
 PROCNO: 1

F2 - Acquisition Parameters  
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 INSTRUM: spect  
 PROBRD: 5 mm DABBO/HR-  
 PULPROG: zg30  
 TD: 65536  
 SOLVENT: DMSO  
 NS: 16  
 DS: 2  
 SWH: 8223.685 Hz  
 FIDRES: 0.125483 Hz  
 AQ: 3.9846287 sec  
 RG: 139.69  
 DM: 60.800 umsec  
 DSE: 6.50 umsec  
 TR: 301.1 K  
 D1: 1.00000000 sec  
 TDO: 1

===== CHANNEL f1 =====  
 NUC1: 1H  
 P1: 9.23 umsec  
 PL1: 20.00000000 W  
 SFO1: 400.1324710 MHz

F2 - Processing parameters  
 SI: 65536  
 SF: 400.1300024 MHz  
 WHW: BM  
 SSB: 0  
 LB: 0.30 Hz  
 GB: 0  
 PC: 1.00

S3: <sup>1</sup>H-NMR Spectrum of Compound 2



Current Data Parameters  
 NAME: 24-37-7  
 EXNO: 1  
 PROCNO: 1

F2 - Acquisition Parameters  
 Date\_: 20140617  
 Time: 3.48

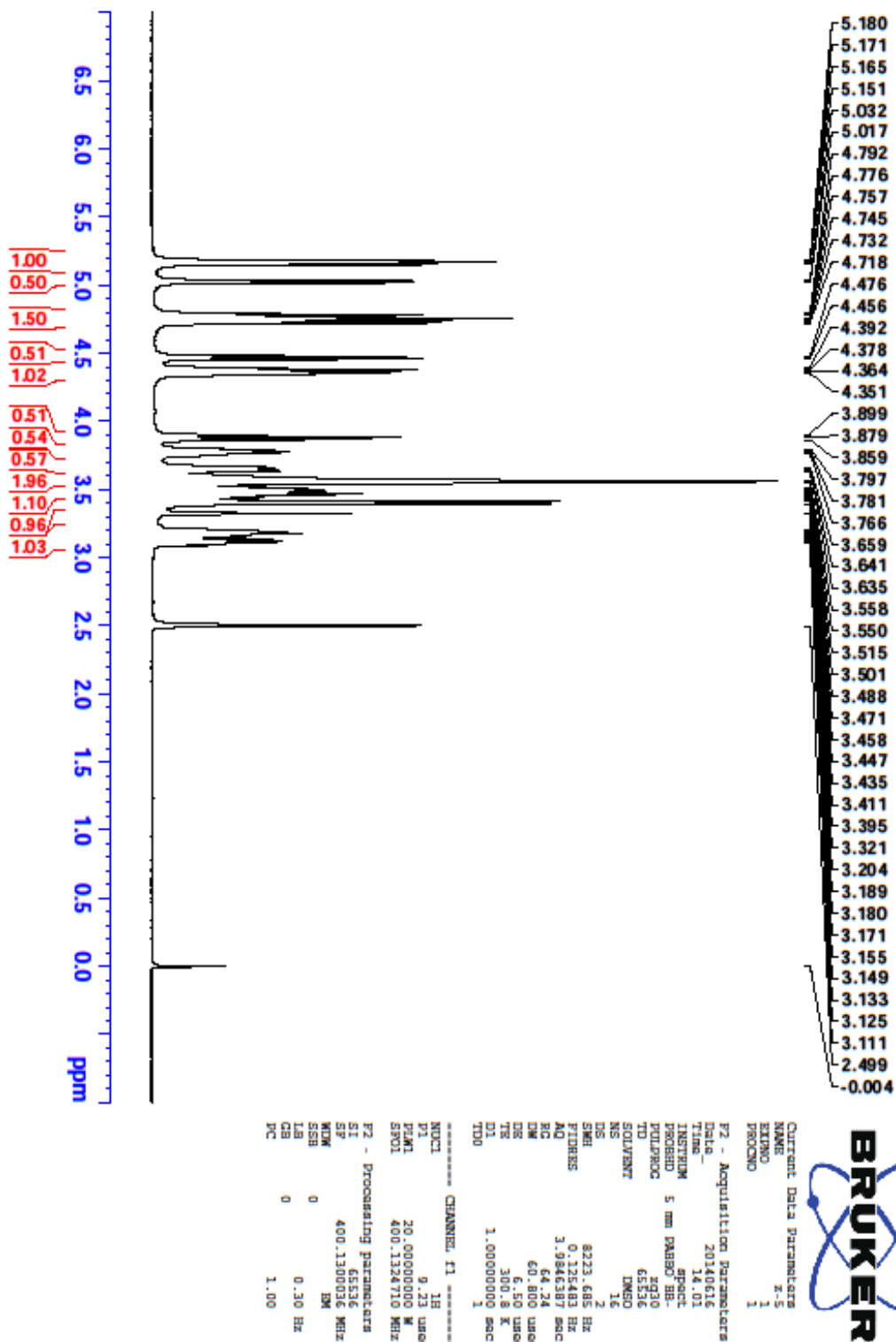
INSTRUM: spect  
 PROBRD: 5 mm DABBO  
 PULPROG: zgpg30  
 TD: 65536  
 ID: 85536  
 SOLVENT: DMF0  
 NS: 10240  
 DS: 4  
 SWH: 24038.461 Hz  
 FIDRES: 0.366798 Hz  
 AQ: 1.3631988 sec  
 RG: 194.85  
 BIC: 20.800 umsc  
 DM: 6.50 umsc  
 DR: 304.0 K  
 TR: 2.00000000 sec  
 D1: 0.03000000 sec  
 TDO: 1

----- CHANNEL f1 -----  
 NUC1: 13C  
 P1: 9.24 umsc  
 PL1: 95.00000000 MHz  
 SFO1: 100.6228293 MHz

----- CHANNEL f2 -----  
 CPOPRG2: waltz16  
 NUC2: 1H  
 PCPD2: 80.00 umsc  
 PLM12: 19.00000000 MHz  
 PLM13: 0.25292000 MHz  
 PLM14: 0.16187000 MHz  
 SFO2: 400.1316005 MHz

F2 - Processing parameters  
 SI: 32768  
 SF: 100.6128234 MHz  
 MVM: 64  
 SSB: 0  
 LB: 0  
 CB: 0  
 PC: 1.40

S4: <sup>13</sup>C-NMR Spectrum of Compound 2



S5: <sup>1</sup>H-NMR Spectrum of Compound 3



Current Data Parameters  
 NAME 24-37-7  
 EXPTNO 1  
 PROCNO 1

F2 - Acquisition Parameters

Date\_ 20140617  
 Time 3.48  
 INSTRUM spect  
 PROBRD 5 mm DABBO BB-  
 PULPROG zgpg30  
 TD 65536  
 SOLVENT DMSO  
 NS 10240  
 DS 4  
 SWH 24038.461 Hz  
 FIDRES 0.366798 Hz  
 AQ 1.3631988 sec  
 RC 194.85  
 DM 20.800 usec  
 DR 6.50 usec  
 TR 304.0 K  
 D1 2.00000000 sec  
 D11 0.03000000 sec  
 TDO 1

CHANNEL F1

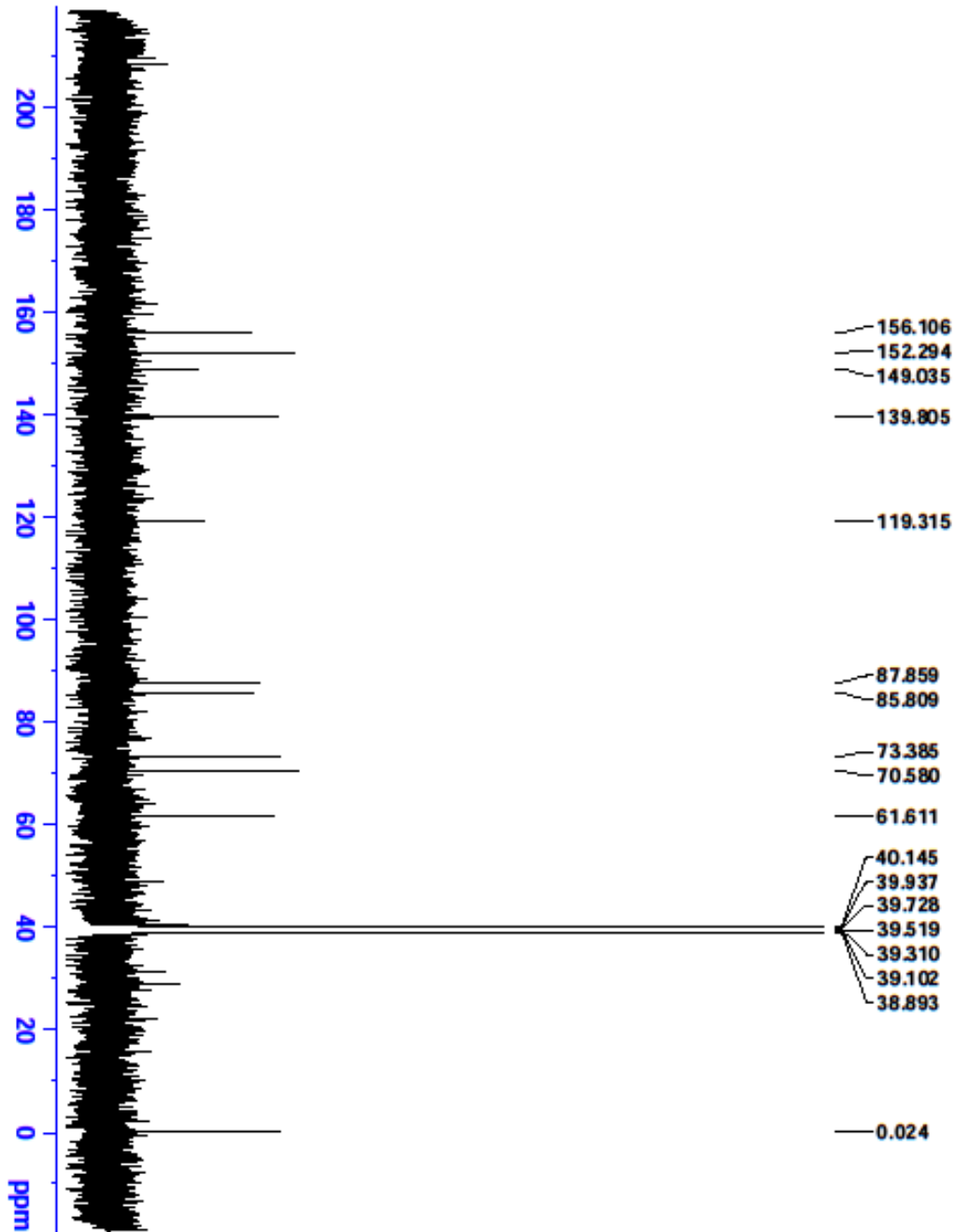
NUC1 13C  
 P1 9.74 usec  
 PL1 95.0000000 MHz  
 SFO1 100.6282899 MHz

CHANNEL F2

CPDPRG2 waltz16  
 NUC2 1H  
 PCPD2 80.00 usec  
 PLM2 19.0000000 MHz  
 PLM12 0.2529200 MHz  
 PLM13 0.1618700 MHz  
 SFO2 400.1316005 MHz

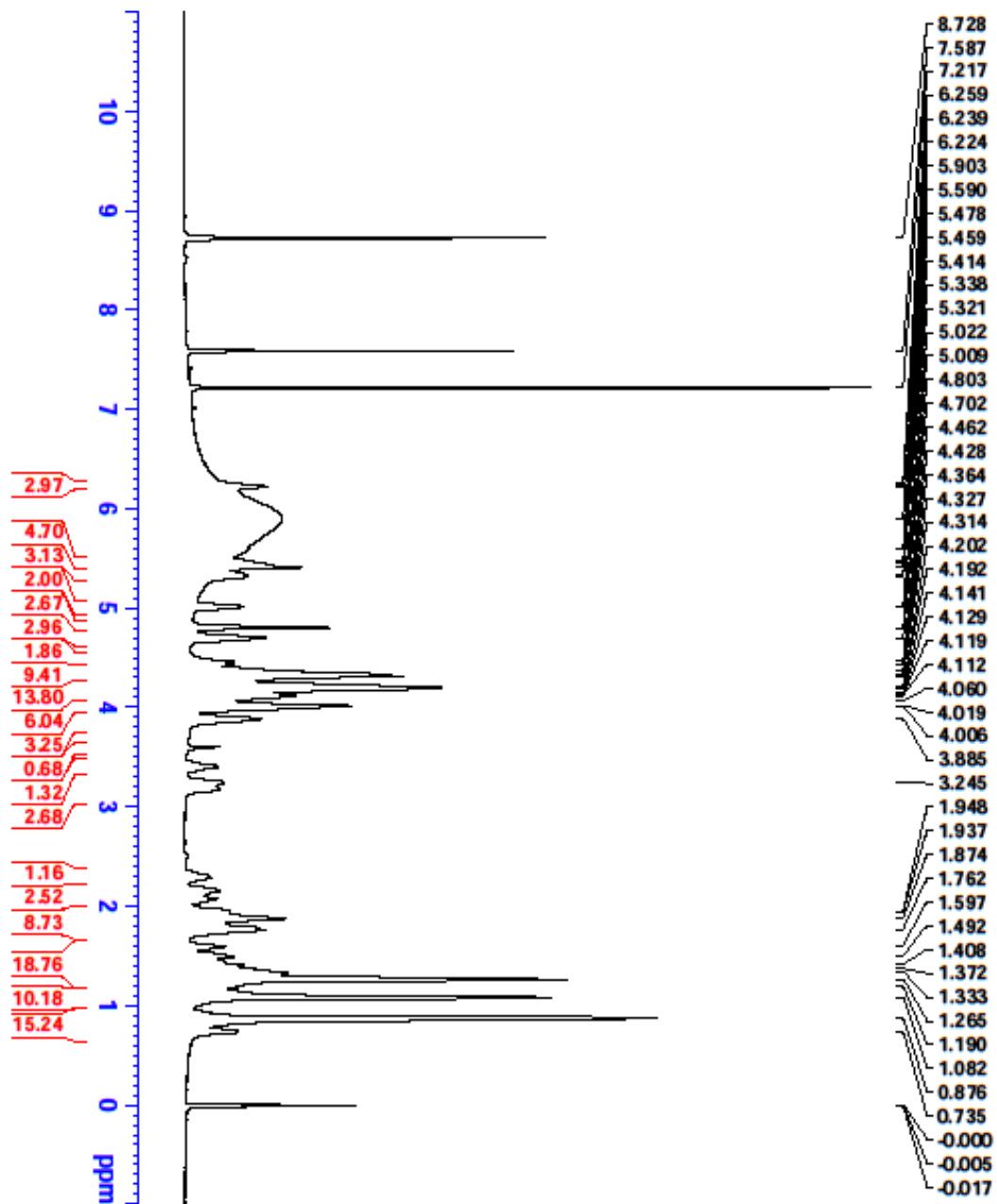
F2 - Processing parameters

SI 32768  
 SF 100.6128234 MHz  
 KW 32768  
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 CB 0  
 PC 1.40



S6: <sup>13</sup>C-NMR Spectrum of Compound 3





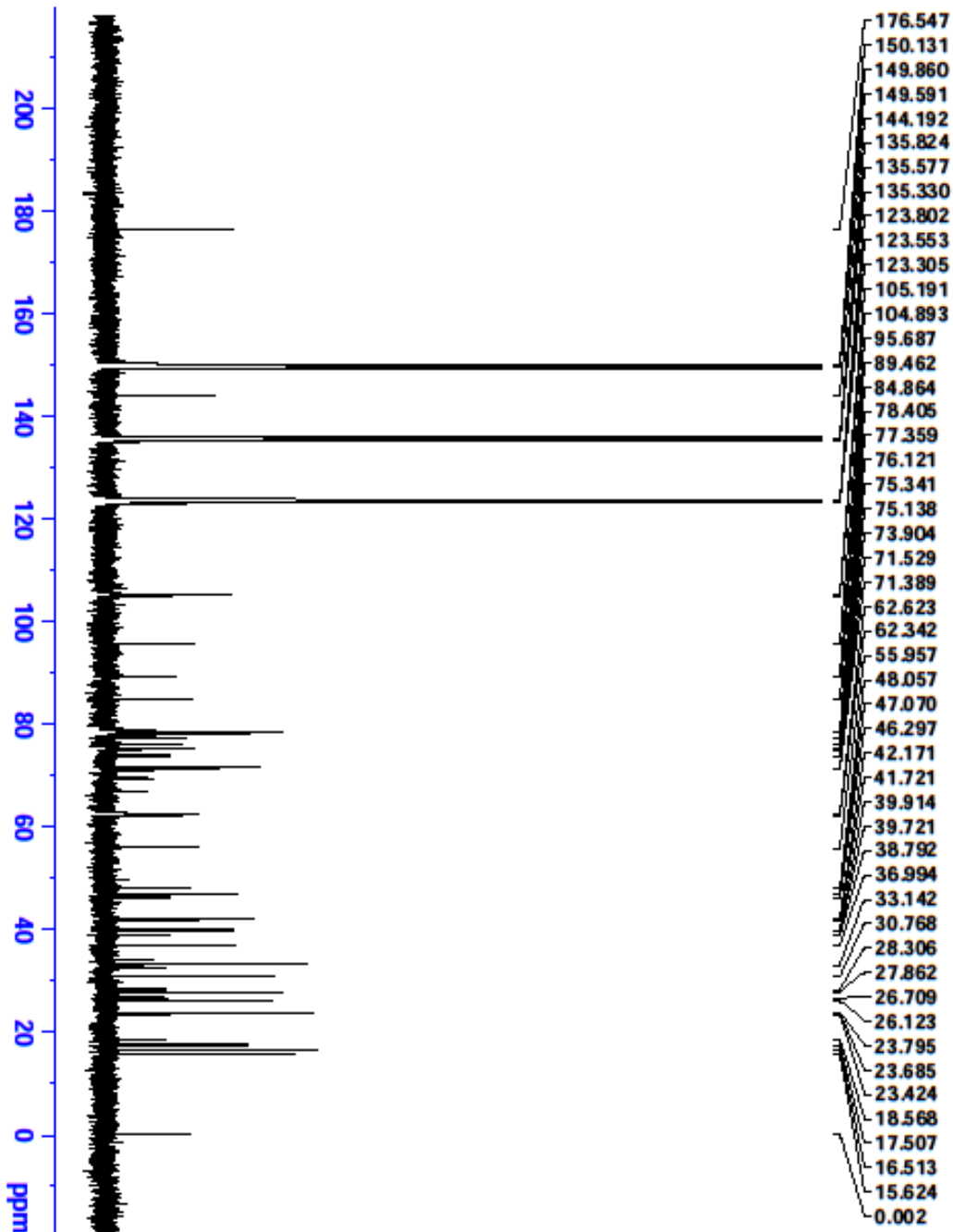
Current Data Parameters  
 NAME HPL-8  
 EXNO 1  
 PROCNO 1

F2 - Acquisition Parameters  
 Date\_ 20150602  
 Time 12.53  
 INSTRUM spect  
 PROBRD 5 mm PABBO BB-  
 PULPROG zg30  
 TD 65536  
 FIDRES 0.125483 Hz  
 AQ 3.9846387 sec  
 RG 32.73  
 DM 60.800 usec  
 DR 6.50 usec  
 TR 302.1 K  
 D1 1.00000000 sec  
 TDO 1

----- CHANNEL f1 -----  
 NUC1 1H  
 P1 9.23 usec  
 PLM1 20.00000000 W  
 SFO1 400.1324710 MHz

F2 - Processing Parameters  
 SI 65536  
 SF 400.1305918 MHz  
 MDW 0  
 SSB 0  
 LB 0.30 Hz  
 CB 0  
 PC 1.00

S7: <sup>1</sup>H-NMR Spectrum of Compound 4



Current Data Parameters  
 NAME HXL-8  
 EXPMO 2  
 PROCNO 1

F2 - Acquisition Parameters

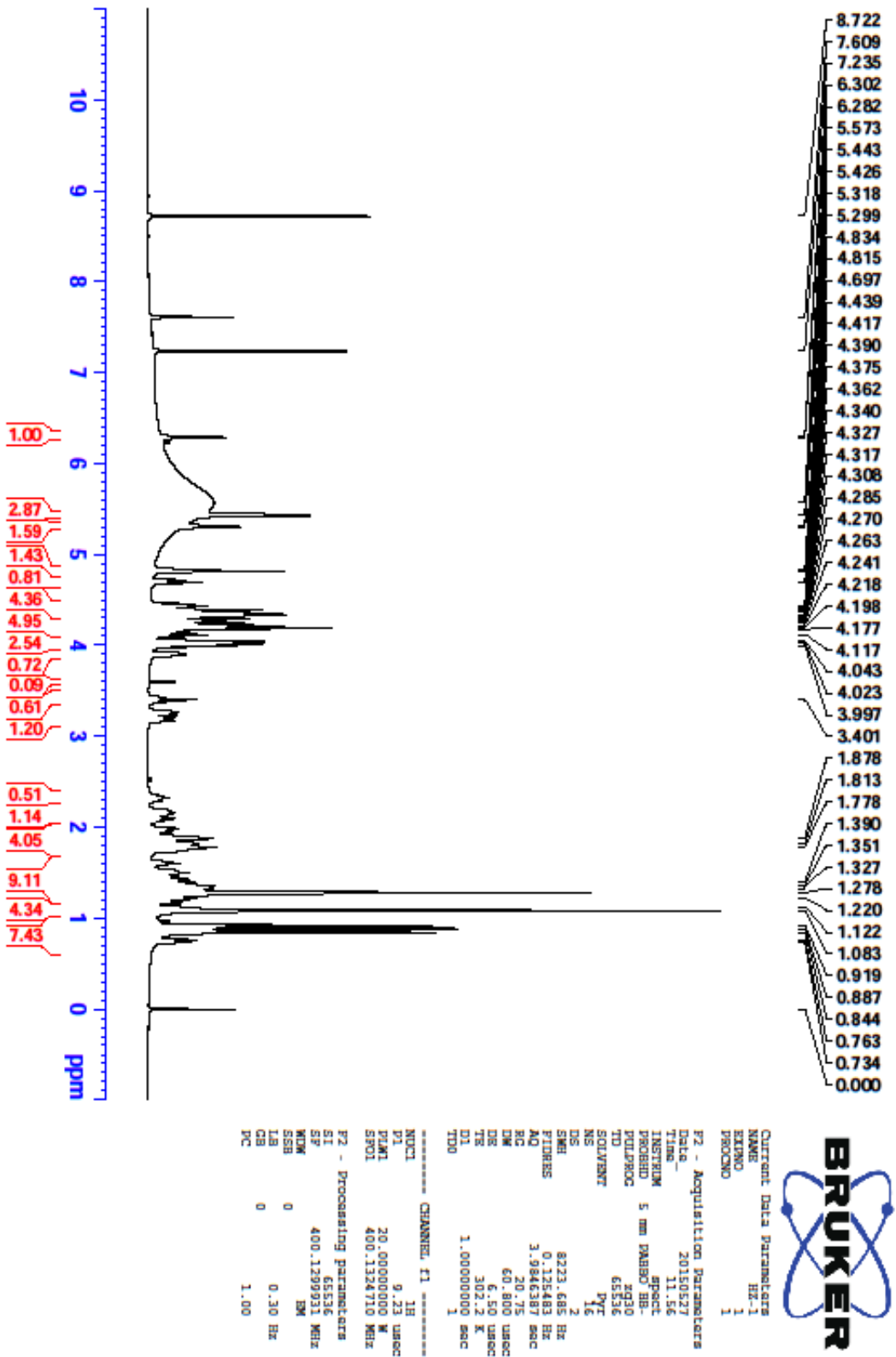
Date\_ 20150602  
 Time\_ 14.15  
 INSTRUM spect  
 PROBHD 5 mm PABBO BB-  
 PULPROG zgpg30  
 TD 65536  
 F2 253.16  
 SOLVENT PyT  
 NS 2085  
 DS 4  
 SWH 24038.461 Hz  
 SFO 253.16198 MHz  
 EQ 1.3631988 sec  
 R1 194.85  
 R2 20.800 usec  
 DR 6.50 usec  
 TR 302.6 K  
 D1 2.00000000 sec  
 D11 0.03000000 sec  
 TDO 1

----- CHANNEL f1 -----  
 NUC1 13C  
 P1 9.24 usec  
 PL1 95.00000000 W  
 SFO1 100.6228293 MHz

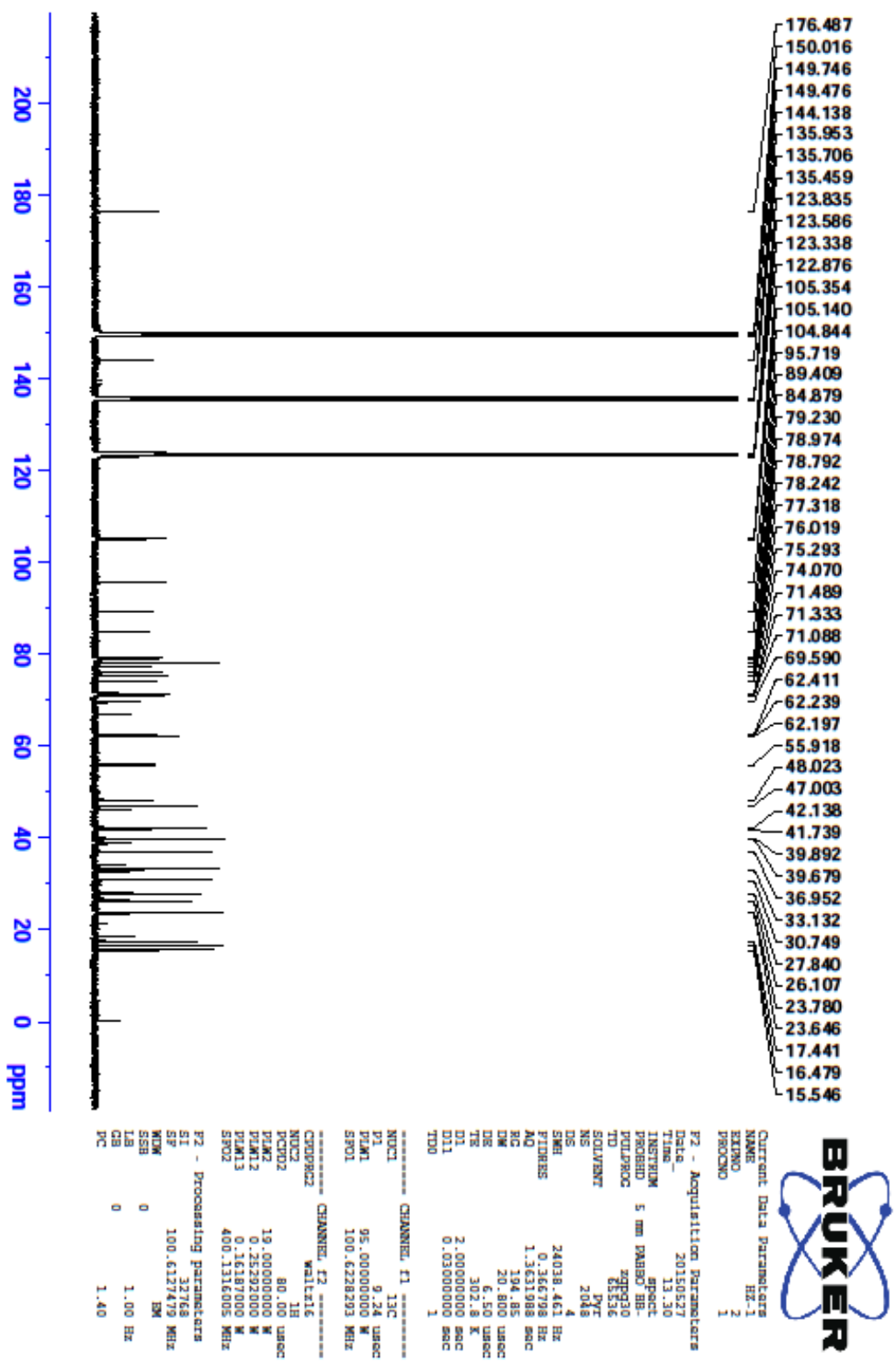
----- CHANNEL f2 -----  
 CDEPRG2 waltz16  
 NUC2 1H  
 PCPD2 80.00 usec  
 PLM2 19.00000000 W  
 PLM12 0.25292500 W  
 PLM13 0.16187000 W  
 SFO2 400.1116005 MHz

F2 - Processing parameters  
 SI 32768  
 SF 100.6128946 MHz  
 WDM SM  
 SSB 0  
 LB 1.00 Hz  
 GB 0  
 PC 1.40

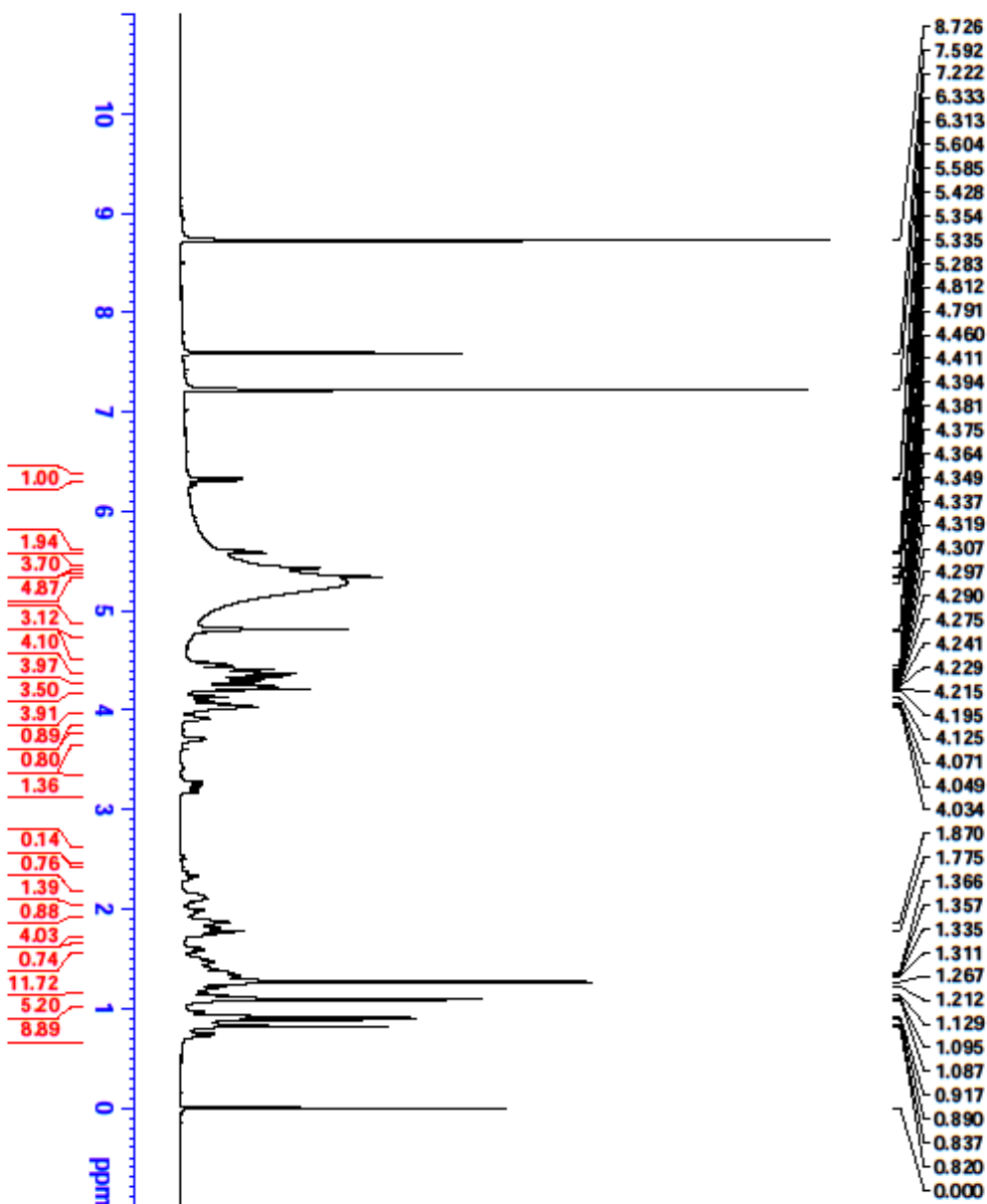
S8: <sup>13</sup>C-NMR Spectrum of Compound 4



S9: <sup>1</sup>H-NMR Spectrum of Compound 5



S10:  $^{13}\text{C}$ -NMR Spectrum of Compound 5



Current Data Parameters  
 NAME: HE-2  
 EXPNO: 1  
 PROCNO: 1

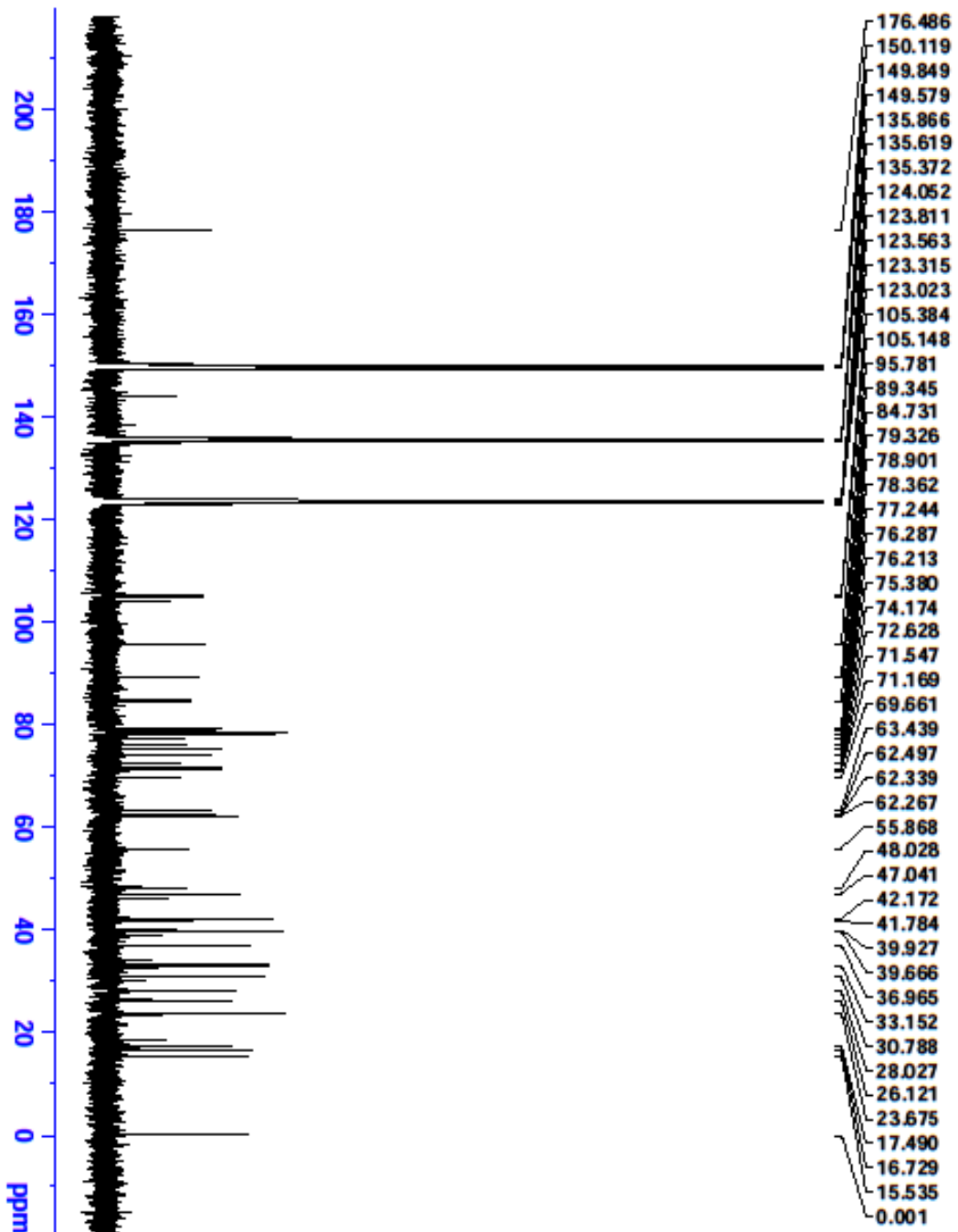
F2 - Acquisition Parameters  
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 Time 12.01  
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 PROBRD 5 mm DMBB2 HB-  
 PULPROG zg30  
 TD 65536  
 SFO1 400.1364710 MHz  
 SOLVENT DMS  
 NS 16  
 DS 2  
 SWH 8723.685 Hz  
 FIDRES 0.115483 Hz  
 AQ 3.9846387 sec  
 RG 12.415  
 AC 60.800 umsec  
 DS 30.50 umsec  
 TE 303.2 K  
 D1 1.00000000 sec  
 TDO 1

\*\*\*\*\* CHANNEL f1 \*\*\*\*\*  
 NUC1 1H  
 P1 9.23 umsec  
 PRAM 20.00000000 W  
 SFO1 400.1324710 MHz

F2 - Processing parameters  
 SI 65536  
 SF 400.1365895 MHz  
 WDW EM  
 SSB 0  
 LB 0.30 Hz  
 GB 0  
 PC 1.00



S11:  $^1\text{H}$ -NMR Spectrum of Compound 6



Output Data Parameters  
 NAME HR-2  
 EXNO 1  
 PROCNO 1

F2 - Acquisition Parameters  
 Date\_ 20150527  
 Time 15.00

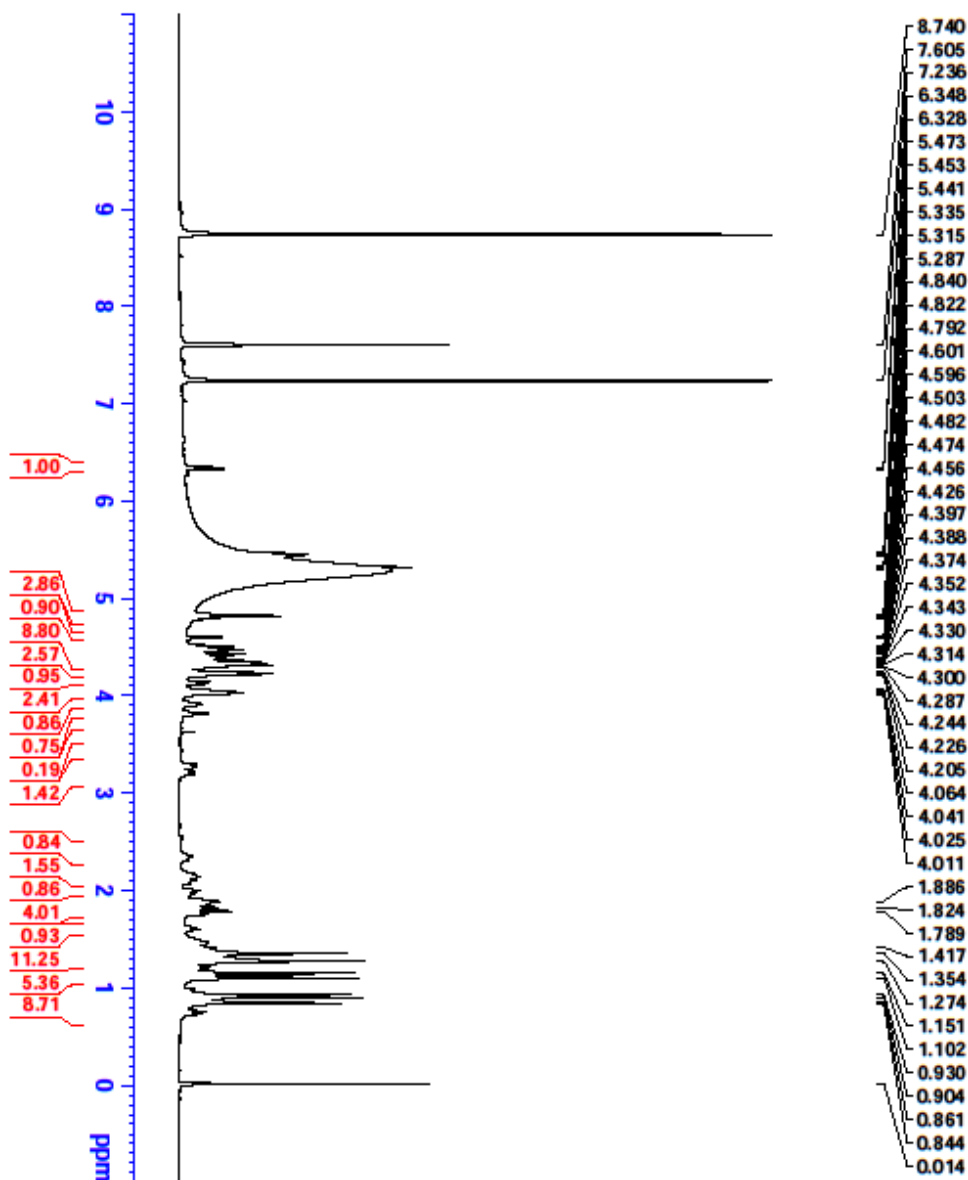
INSTRUM spect  
 PROBD 5 mm PABBO BB-  
 PULPROG zgpg30  
 TD 65536  
 SOLVENT Pyt  
 NS 2087  
 DS 4  
 SWH 24038.461 Hz  
 FIDRES 0.366798 Hz  
 AQ 1.3631088 sec  
 RG 194.85  
 BW 20.800 umsec  
 DR 6.50 umsec  
 TR 302.8 K  
 TE 2.00000000 sec  
 D1 0.03000000 sec  
 D11 0.03000000 sec  
 TDO 1

----- CHANNEL f1 -----  
 NUCL 13C  
 P1 9.24 umsec  
 PLM1 95.0000000 M  
 SFO1 100.6228293 MHz

----- CHANNEL f2 -----  
 CPDPRG2 waltz16  
 NUCL 1H  
 PCPD2 80.00 umsec  
 PLM2 19.00000000 M  
 PLM12 0.25292000 M  
 PLM13 0.16187000 M  
 SFO2 400.1316005 MHz

F2 - Processing parameters  
 SI 32768  
 SF 100.6128939 MHz  
 KW EM  
 SSB 0  
 LB 1.00 Hz  
 CB 0  
 PC 1.40

S12: <sup>13</sup>C-NMR Spectrum of Compound 6



Current Data Parameters  
 NAME: HX-3  
 EXPTNO: 1  
 PROCNO: 1

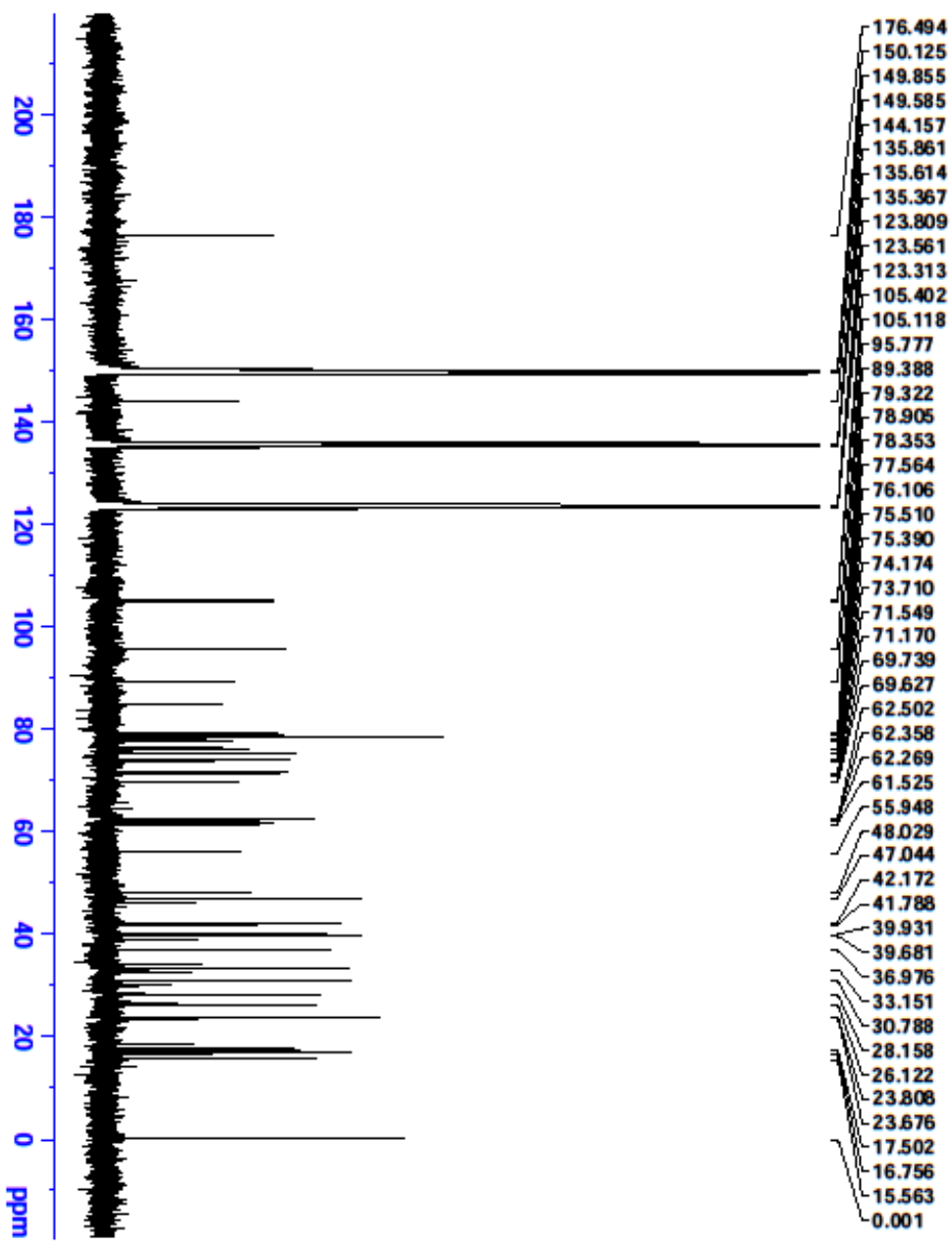
F2 - Acquisition Parameters  
 Date\_: 20150526  
 Time: 18.38  
 INSTRUM: spect  
 PROBRD: 5 mm PABBO BB-  
 PULPROG: zg30  
 TD: 65536  
 SOLVENT: H<sub>2</sub>O  
 NS: 2  
 DS: 2  
 SFO1: 8233.685 Hz  
 FIDRES: 0.125483 Hz  
 AQ: 3.9846387 sec  
 RG: 52.45  
 DW: 60.800 usec  
 DR: 6.50 usec  
 TR: 302.2 K  
 D1: 1.00000000 sec  
 TDO: 1

\*\*\*\*\* CHANNEL f1 \*\*\*\*\*  
 NUC1: 1H  
 P1: 9.23 usec  
 PL1: 20.0000000 W  
 SFO1: 400.1264710 MHz

F2 - Processing parameters  
 SI: 65536  
 SF: 400.1299859 MHz  
 KW: EM  
 SSB: 0  
 LB: 0.30 Hz  
 GB: 0  
 PC: 1.00



S13: <sup>1</sup>H-NMR Spectrum of Compound 7



Current Data Parameters  
 NAME: Hz-3  
 EXNO: 2  
 PROCNO: 1

P2 - Acquisition Parameters  
 Date\_ 2015026  
 Time 19.30  
 INSTRUM spect  
 PULPROG zgpg30  
 TD 65536  
 SOLVENT H<sub>2</sub>O  
 NS 710  
 DS 4  
 SFO 2403.461 Hz  
 FIDRES 0.366708 Hz  
 AQ 1.161908 sec  
 RG 194.85  
 DW 20.800 usec  
 DE 6.50 usec  
 TR 302.3 K  
 TE 302.3 K  
 D1 2.00000000 sec  
 D11 0.03000000 sec  
 TDO 1

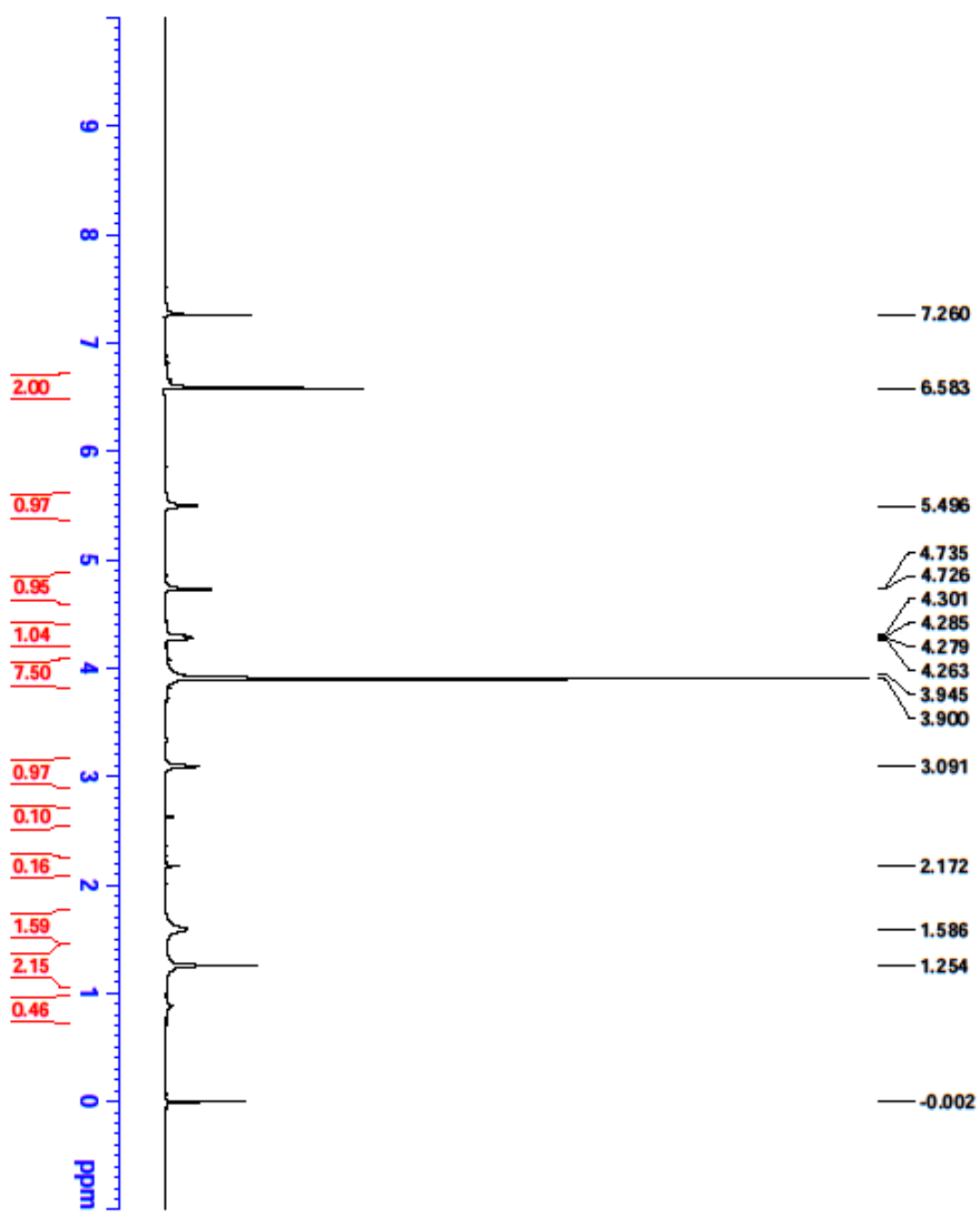
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 NUC1 13C  
 P1 9.24 usec  
 PL1 95.0000000 W  
 SFO1 100.628293 MHz

----- CHANNEL f2 -----  
 CPGPRG2 WALTZ16  
 NUC2 1H  
 PCPD2 80.00 usec  
 PLM2 19.00000000 W  
 PLM12 0.25292000 W  
 PLM13 0.16187000 W  
 SFO2 400.1316005 MHz

P2 - Processing Parameters  
 SI 32768  
 SF 100.6127435 MHz  
 MW 5M  
 SSB 0  
 LB 1.00 Hz  
 GB 0  
 PC 1.40

S14: <sup>13</sup>C-NMR Spectrum of Compound 7





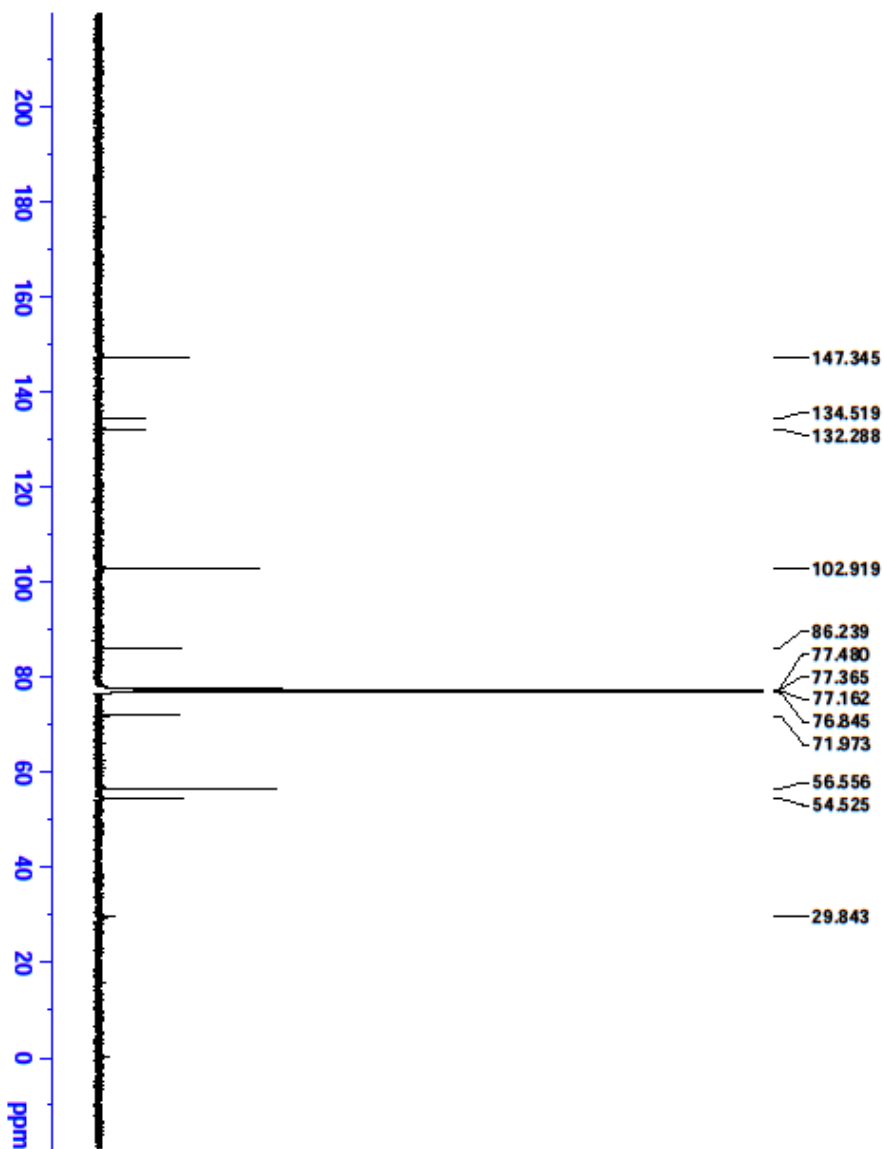
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 NAME: HR-6  
 EXTNO: 1  
 PROCNO: 1

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 Date\_: 20150602  
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 INSTRUM: spect  
 PROBD: 5 mm PABBO BB-  
 PULPROG: zg30  
 TD: 65536  
 SOLVENT: CDCl3  
 NS: 16  
 DS: 2  
 SWH: 8223.685 Hz  
 FIDRES: 0.125483 Hz  
 AQ: 3.9846387 sec  
 RG: 109.31  
 DM: 60.800 umsec  
 DE: 6.50 umsec  
 TE: 303.0 K  
 D1: 1.00000000 sec  
 TDO: 1

\*\*\*\*\* CHANNEL f1 \*\*\*\*\*  
 NUC1: 1H  
 P1: 9.23 umsec  
 PL1: 20.00000000 W  
 SFO1: 400.1324710 MHz

F2 - Processing parameters  
 SI: 65536  
 SF: 400.1300105 MHz  
 WDW: EM  
 SSB: 0  
 LB: 0.30 Hz  
 GB: 0  
 PC: 1.00

S15: <sup>1</sup>H-NMR Spectrum of Compound 8



**BRUKER**

Current Data Parameters  
 NAME HY-6  
 EXNO 2  
 PROGN 1

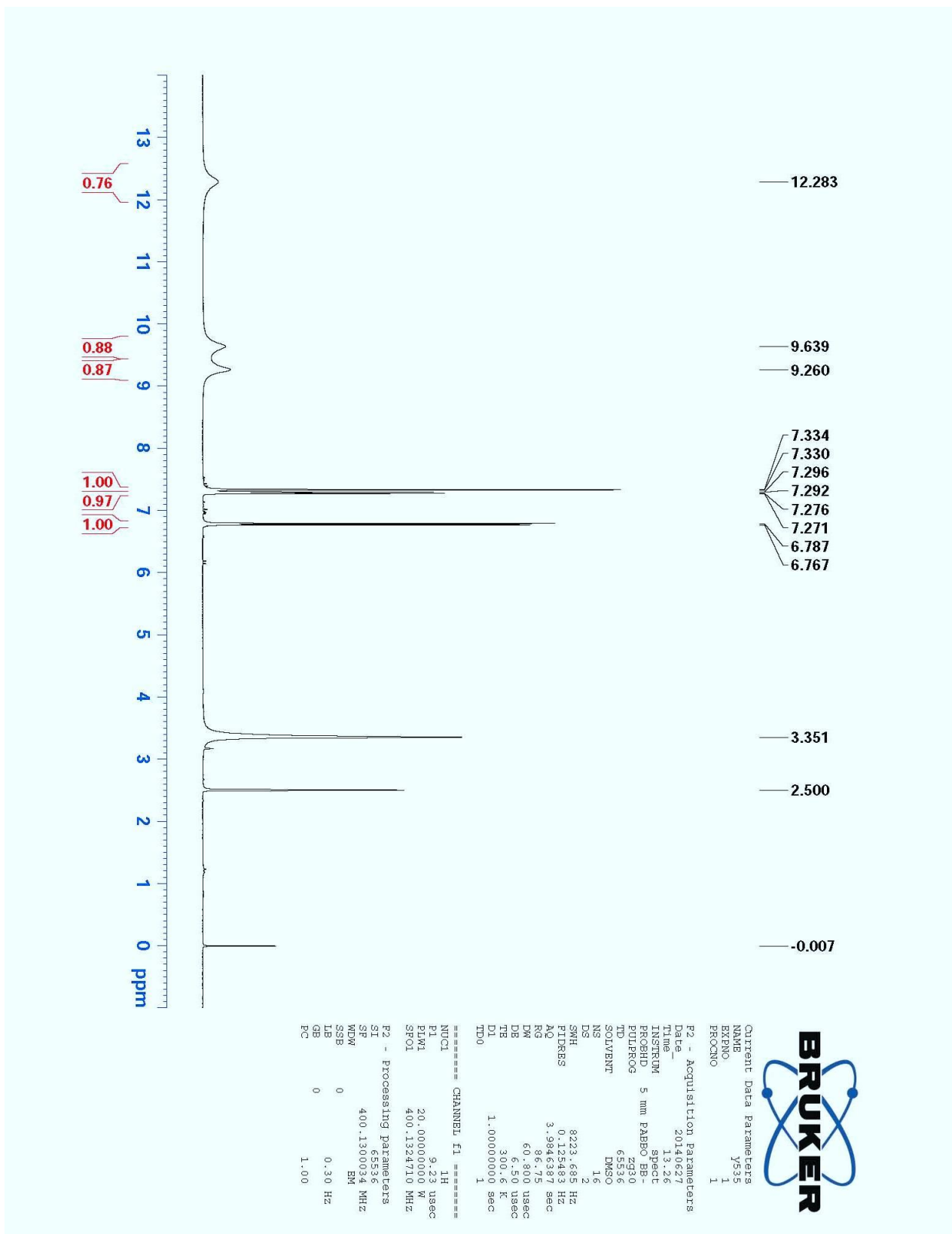
F2 - Acquisition Parameters  
 Date\_ 201503  
 Time\_ 2 11  
 INSTRUM spect  
 PROBRD 5 mm PABBO BB-  
 PULPROG zgpg30  
 TD 65536  
 FIDRES 0.333  
 SOLVENT CDCl3  
 NS 2048  
 DS 4  
 SFO 2403.46 Hz  
 EPC 0.366793 Hz  
 AQ 1.631908 sec  
 RG 194.85  
 DW 20.800 usec  
 DDE 6.50 usec  
 TR 303.0 K  
 D11 2.00000000 sec  
 D12 0.03000000 sec  
 TDO 1

===== CHANNEL f1 =====  
 NUC1 13C  
 P1 9.24 usec  
 PL1 95.00000000 W  
 SFO1 100.628293 MHz

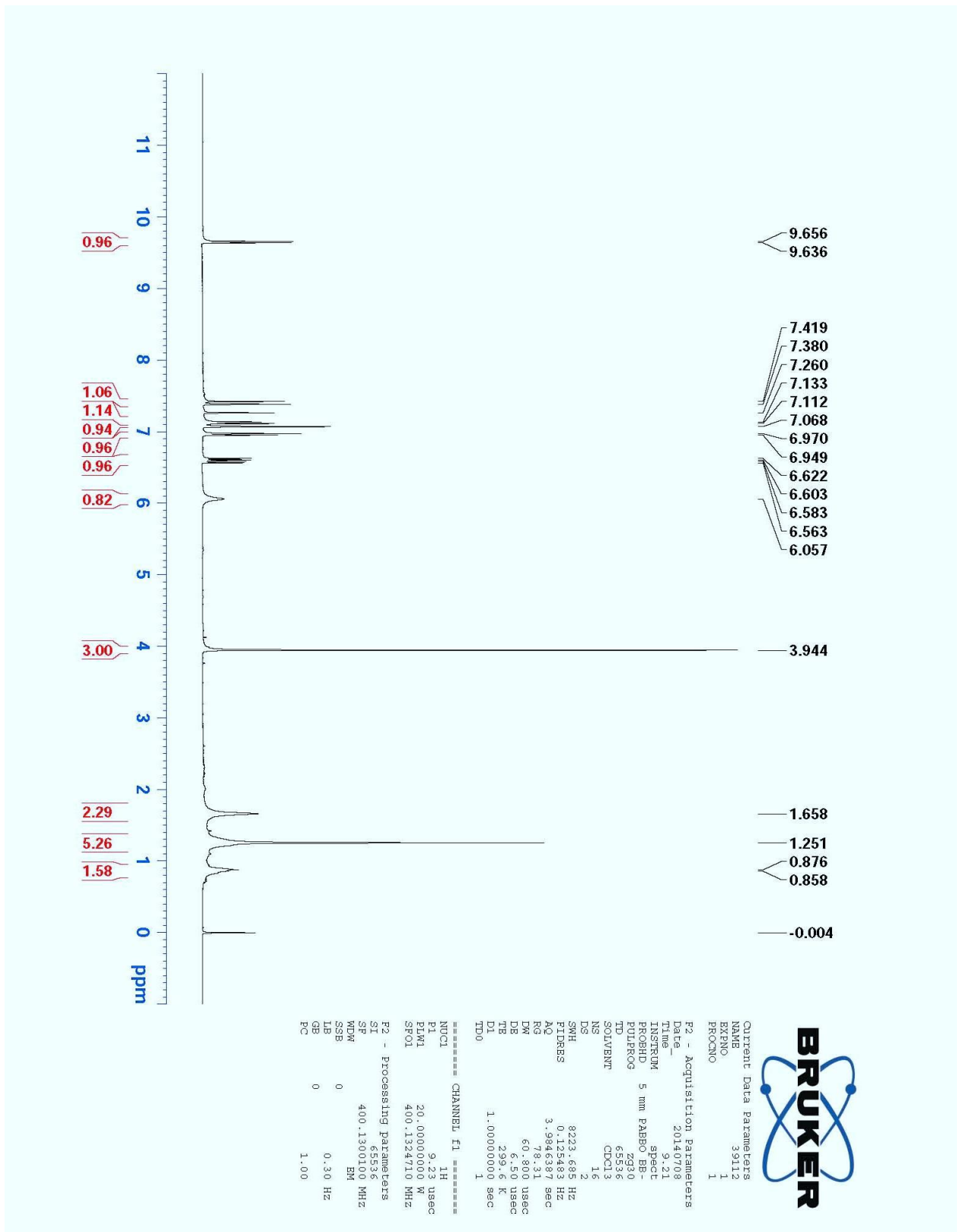
===== CHANNEL f2 =====  
 CHANF2 wait4x16  
 NUC2 13C  
 P2 80.00 usec  
 PL2 19.00000000 W  
 PL12 0.25292000 W  
 PL13 0.16370000 W  
 SFO2 400.131605 MHz

F2 - Processing parameters  
 SI 32768  
 SF 100.6127525 MHz  
 MD 32768  
 AS 0  
 L8 1.00 Hz  
 CB 0  
 PC 1.40

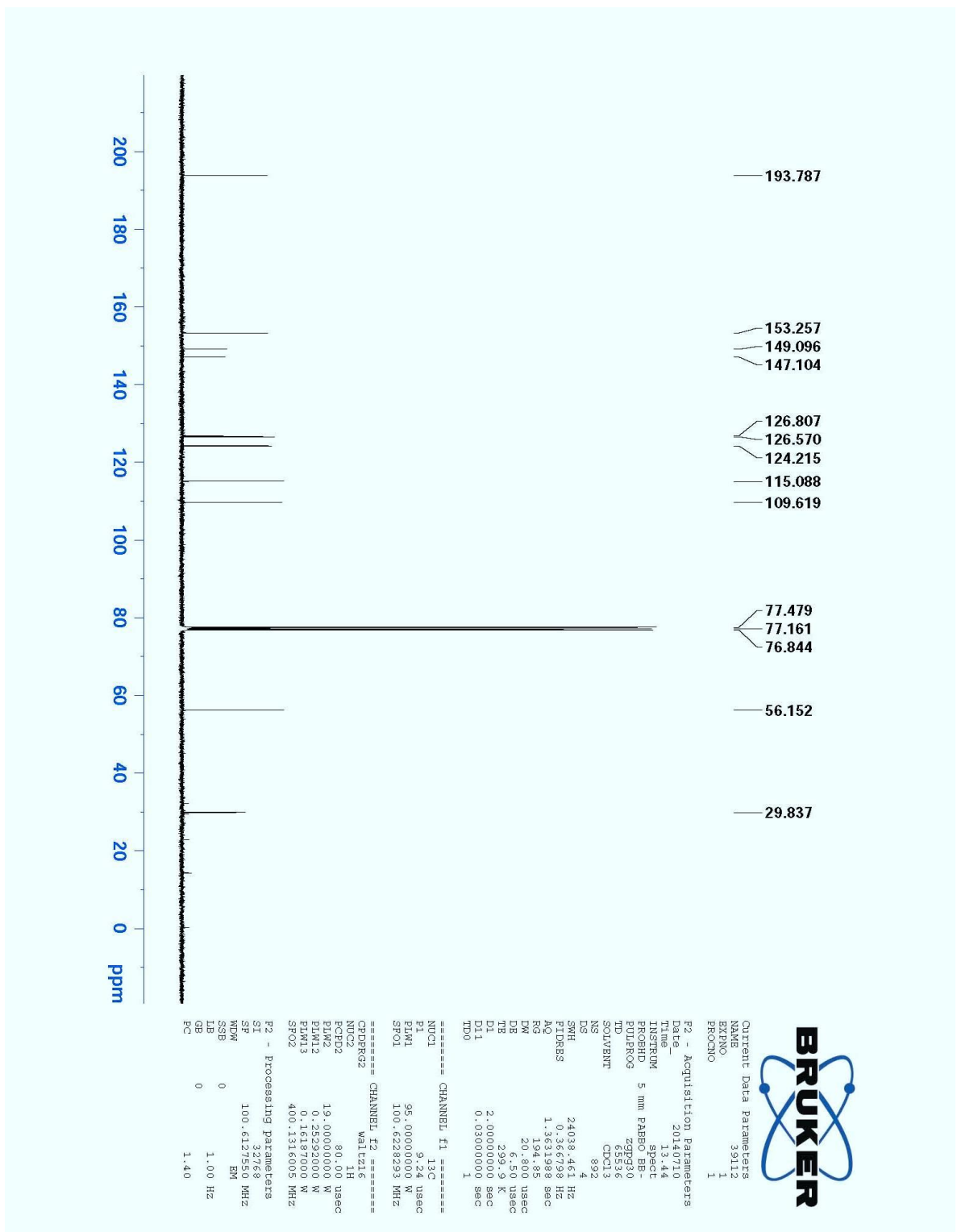
S16: <sup>13</sup>C-NMR Spectrum of Compound 8



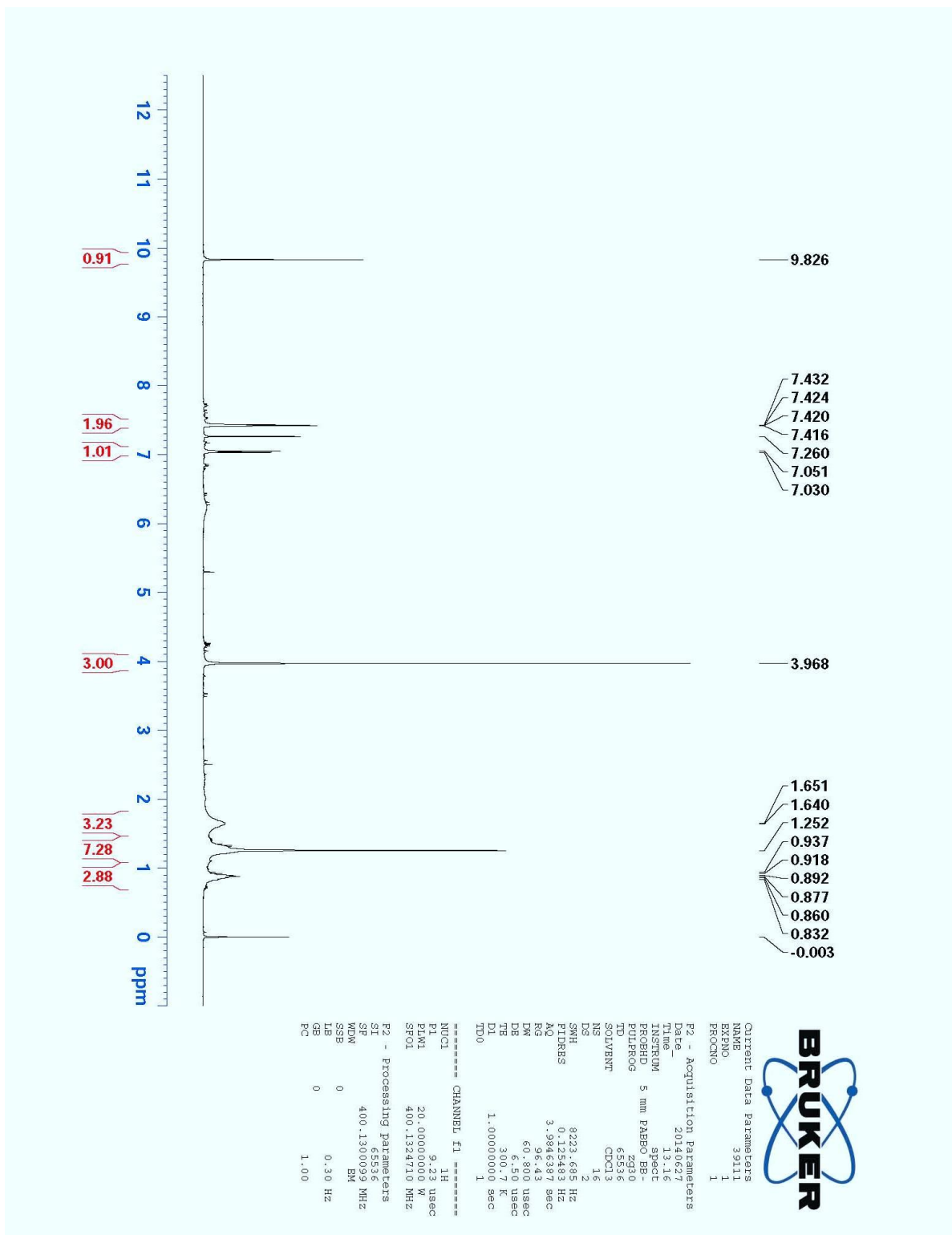
S17: <sup>1</sup>H-NMR Spectrum of Compound 9



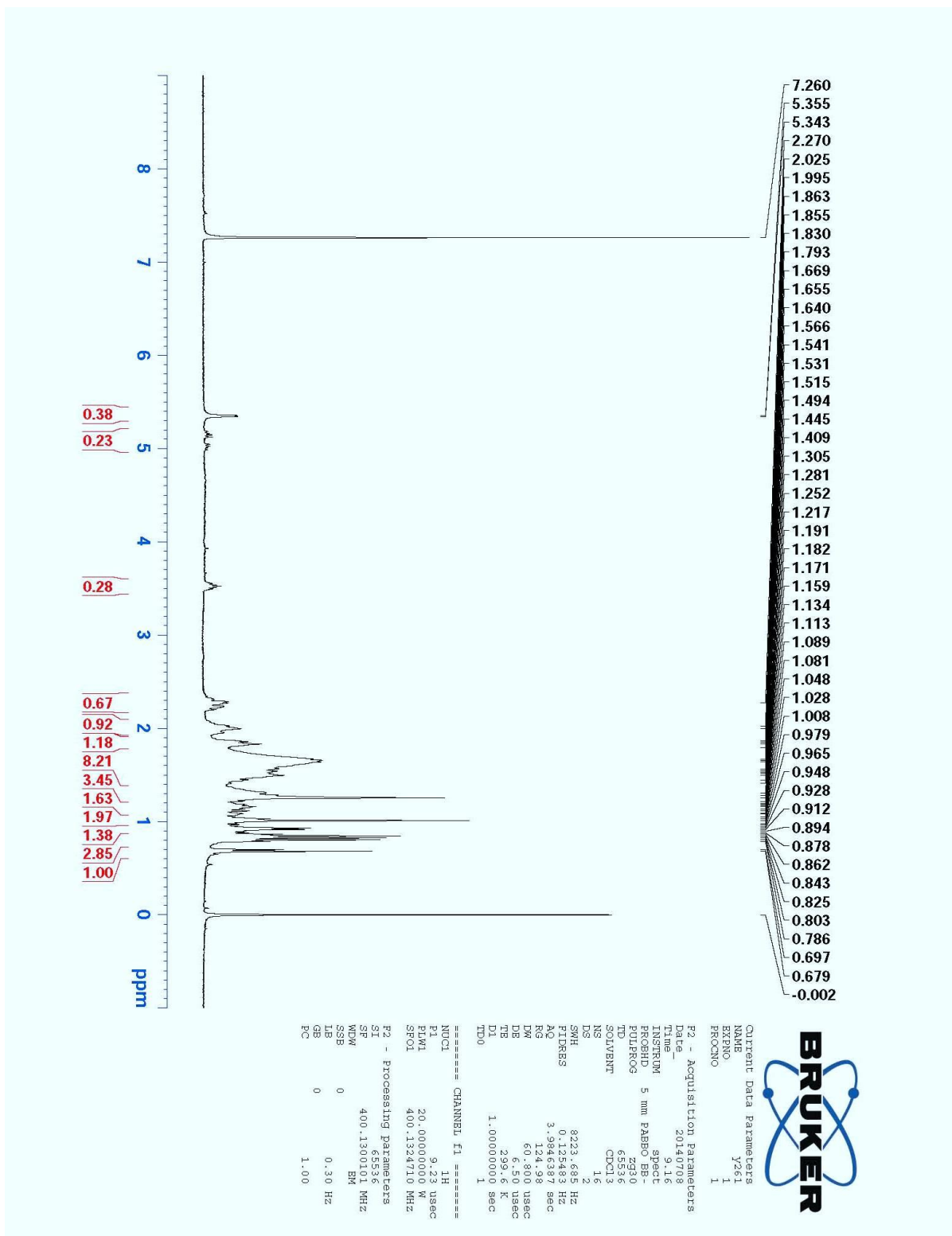
S18: <sup>1</sup>H-NMR Spectrum of Compound 10



S19: <sup>13</sup>C-NMR Spectrum of Compound 10



S20: <sup>1</sup>H-NMR Spectrum of Compound 11



S21: <sup>1</sup>H-NMR Spectrum of Compound 12