

**Title of Manuscript: Iridoids and Lignans from *Valeriana jatamansi***

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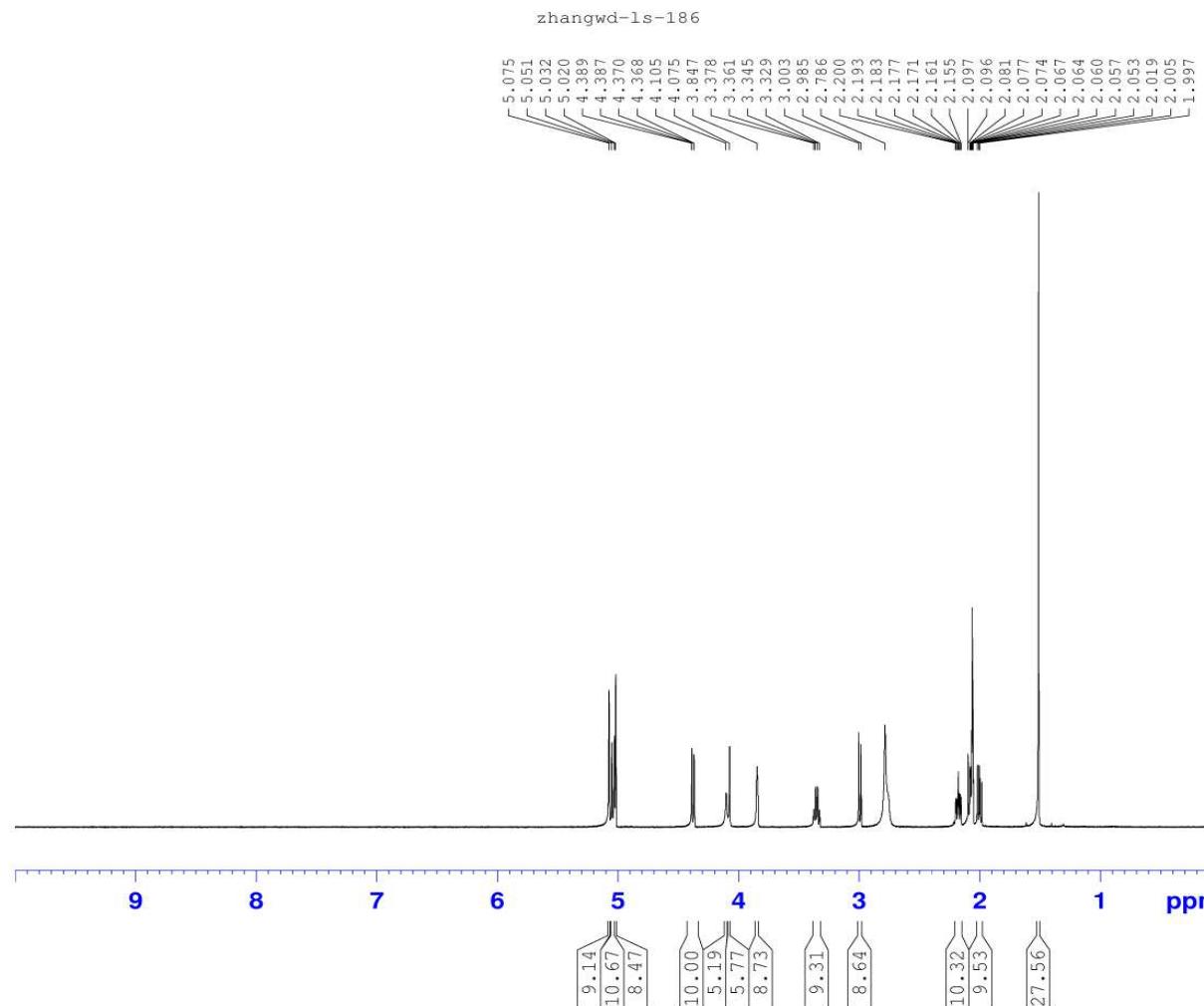
**Supporting Information Available**

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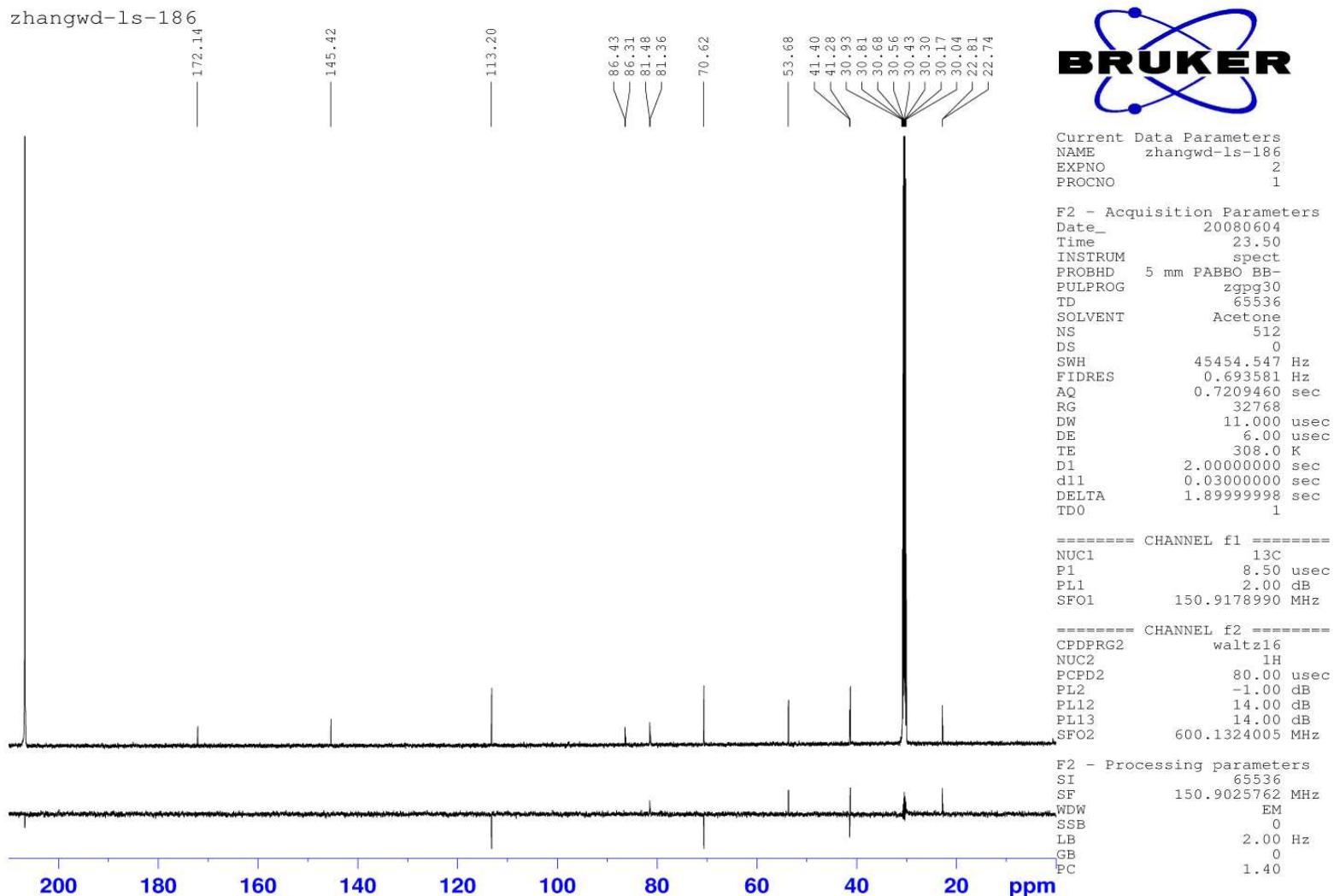
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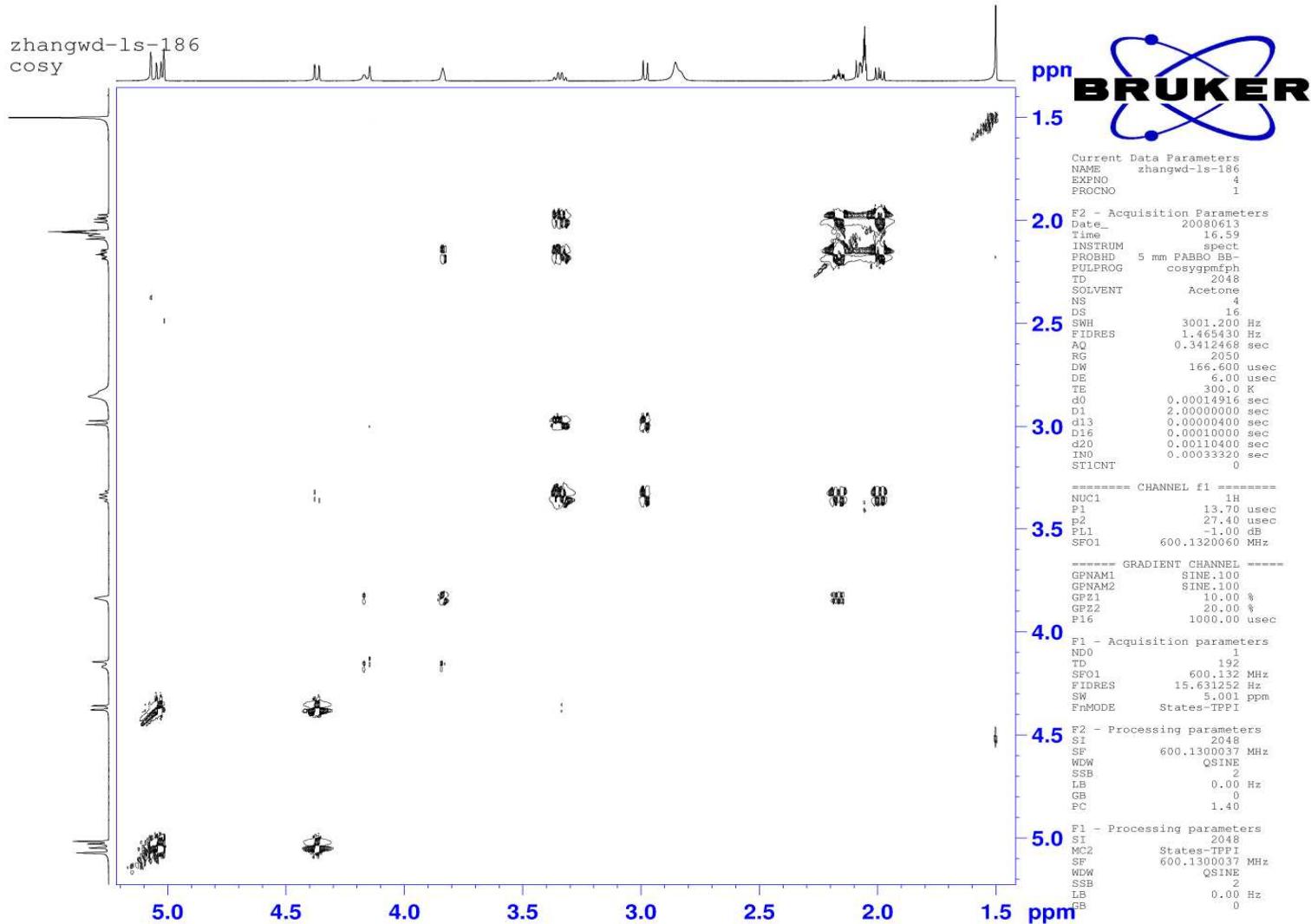
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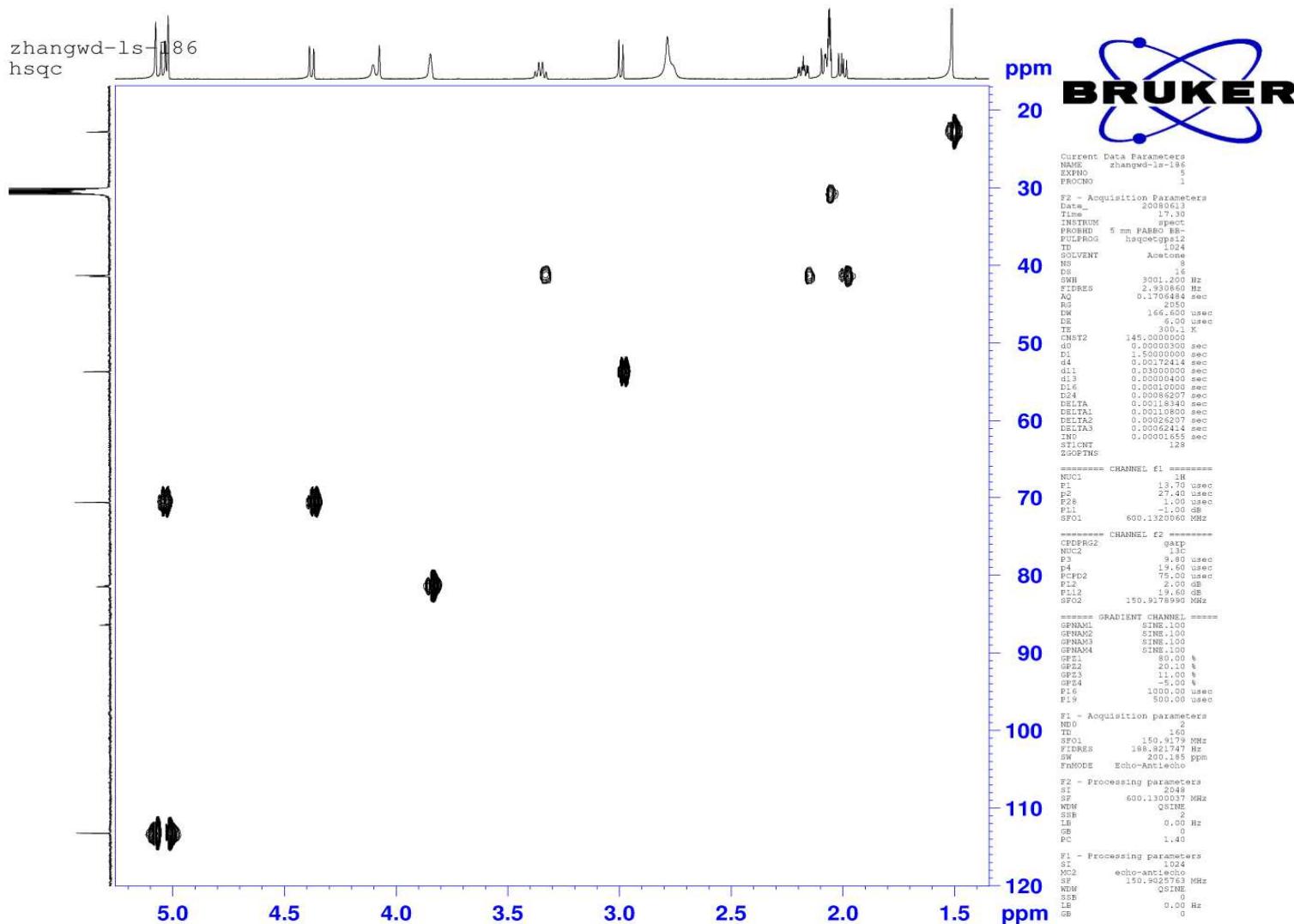
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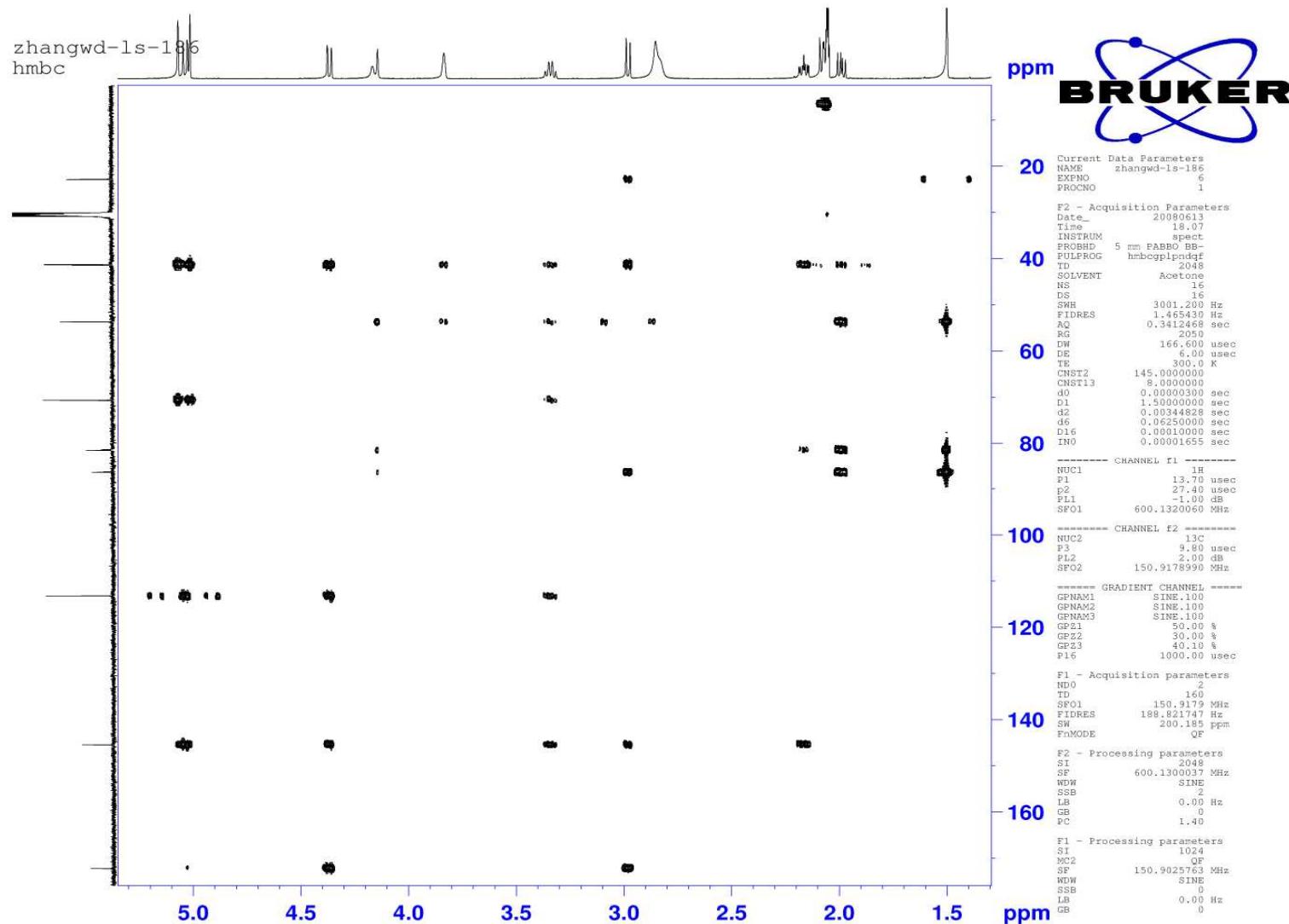
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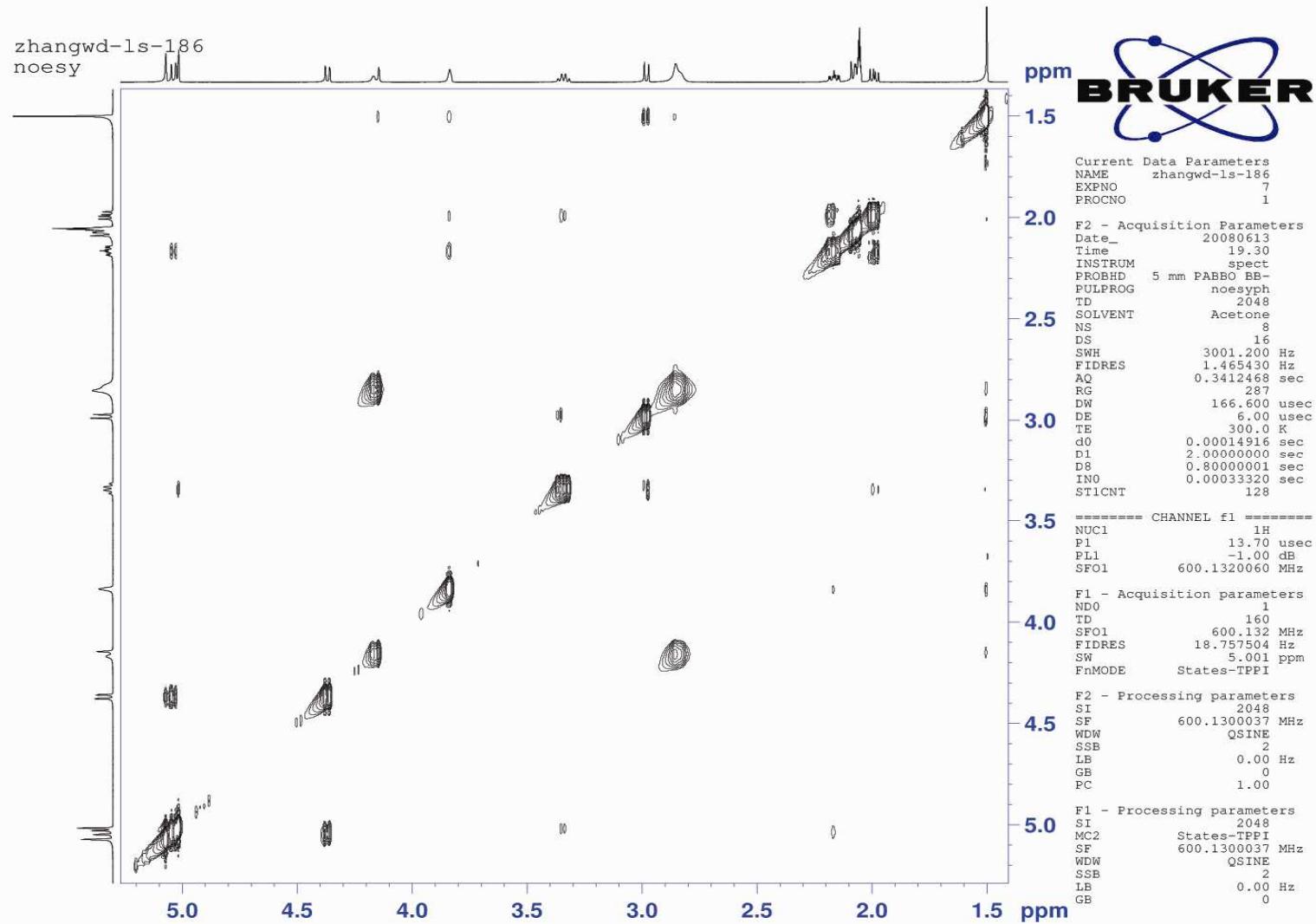
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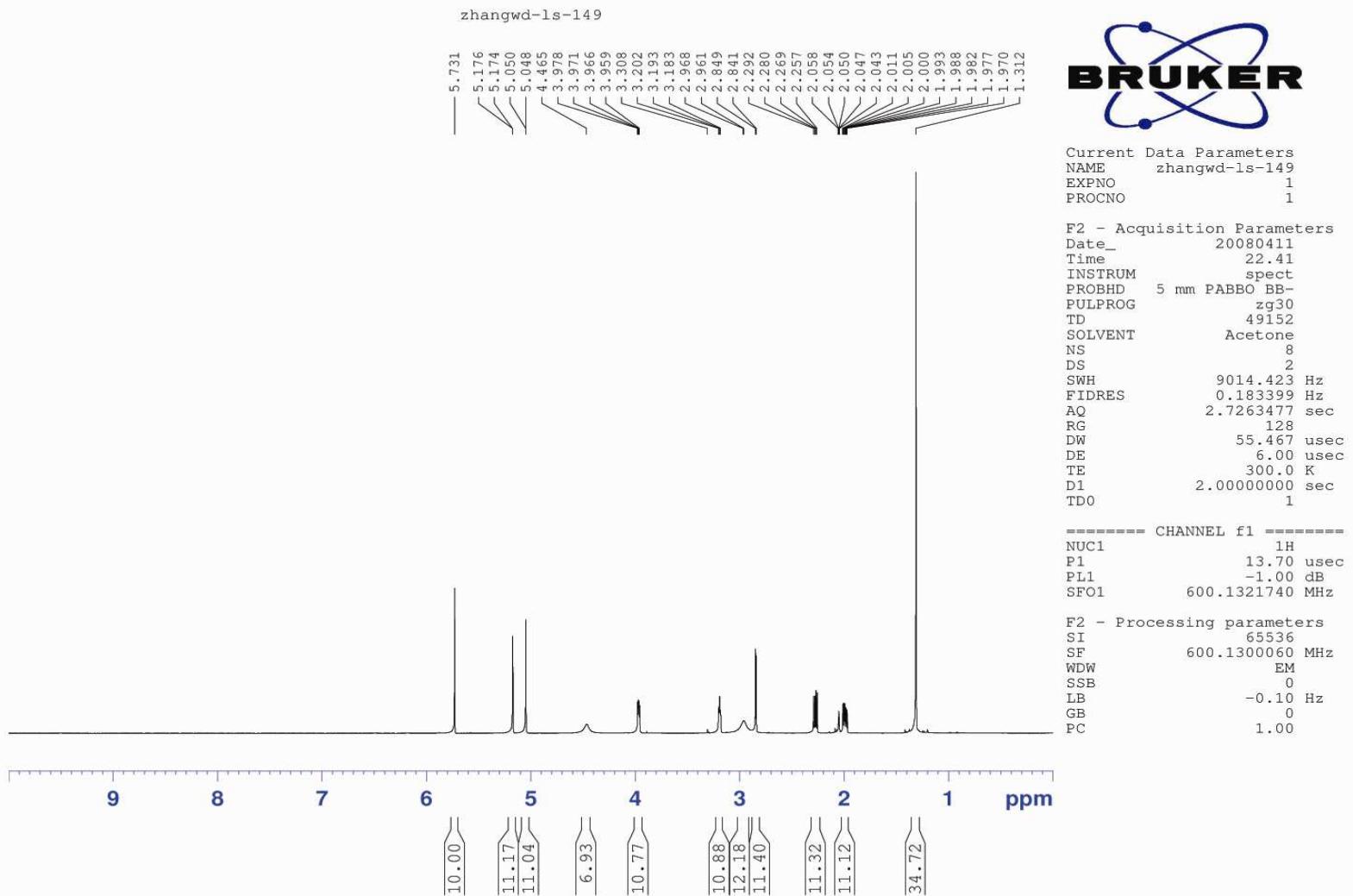
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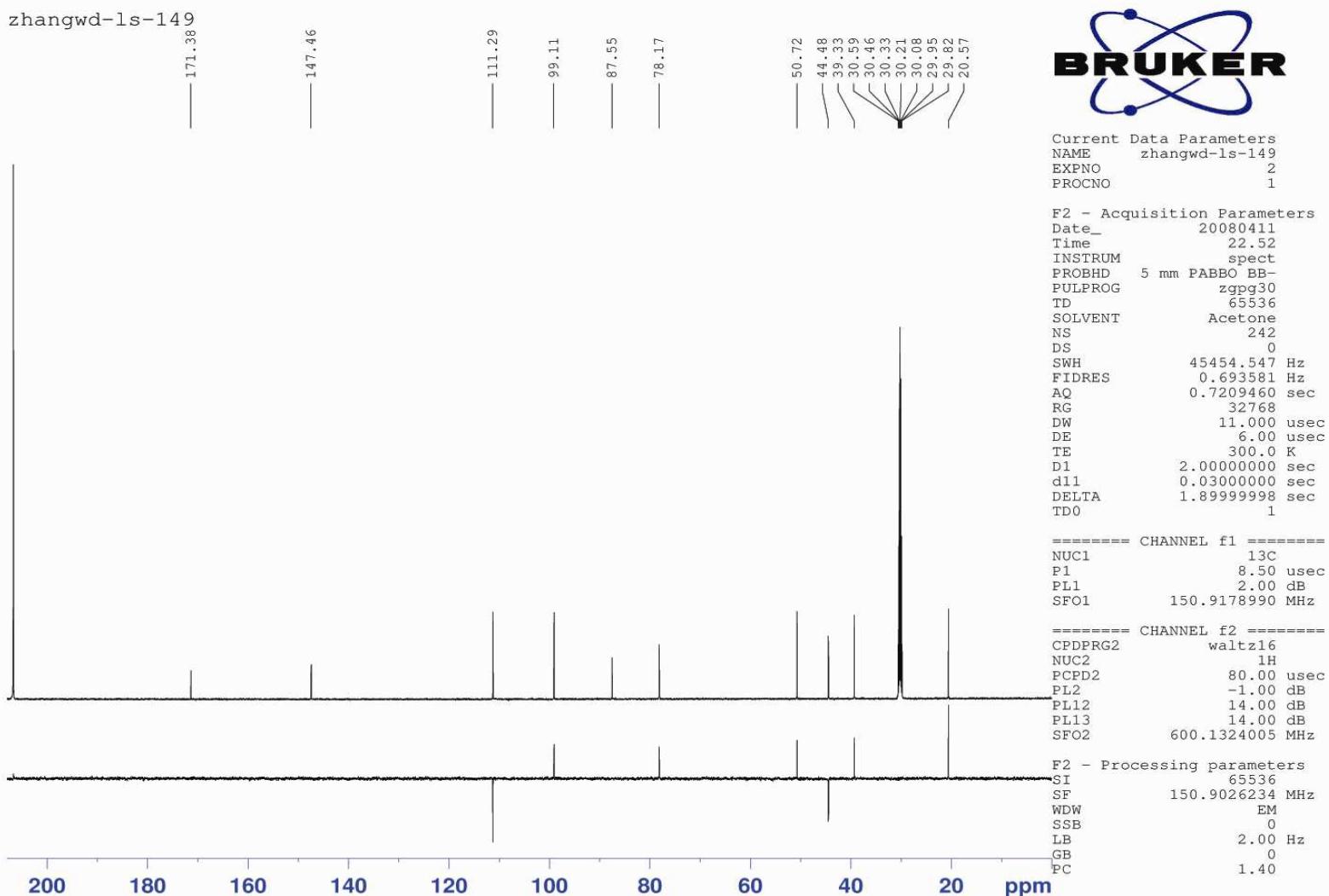
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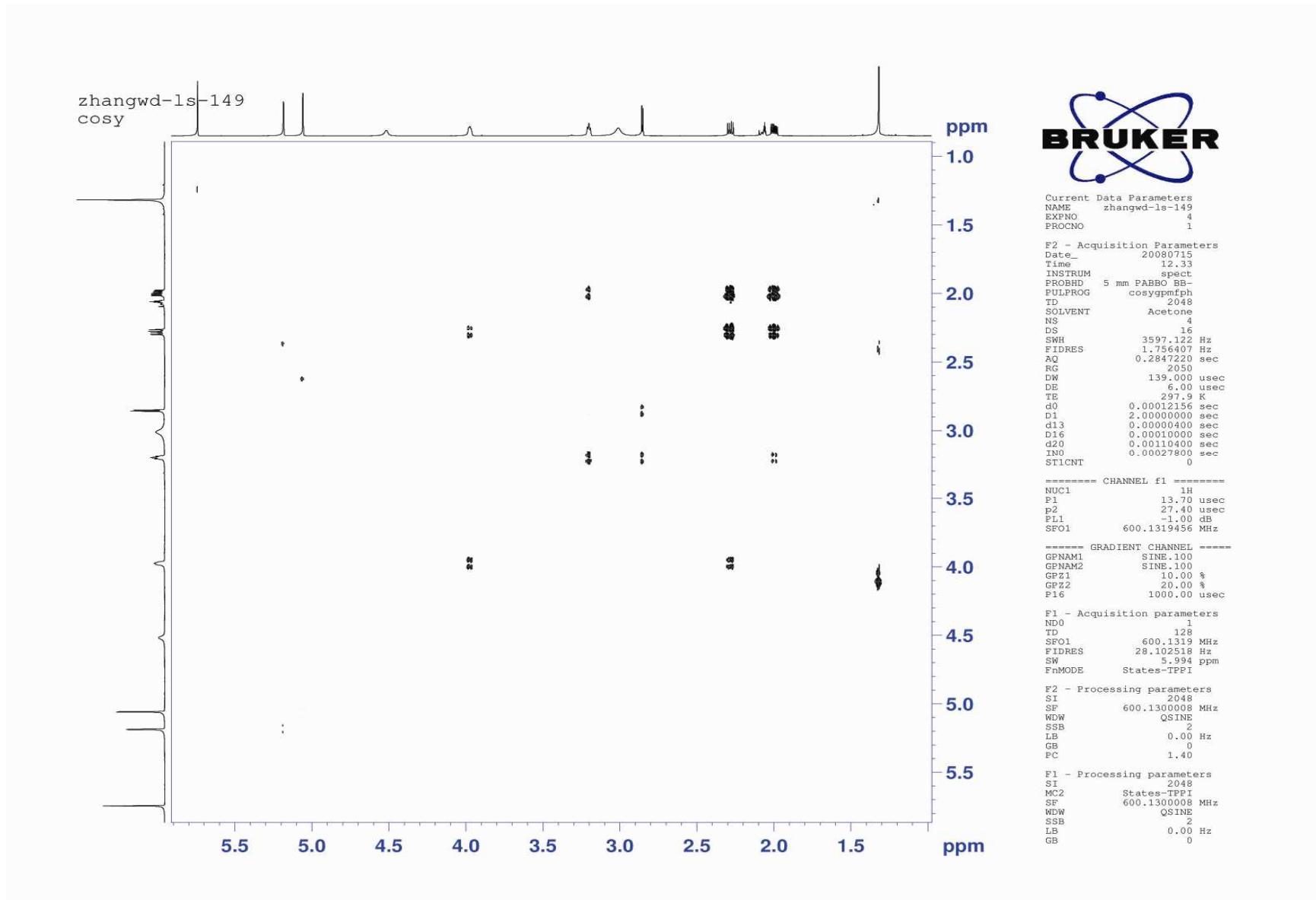
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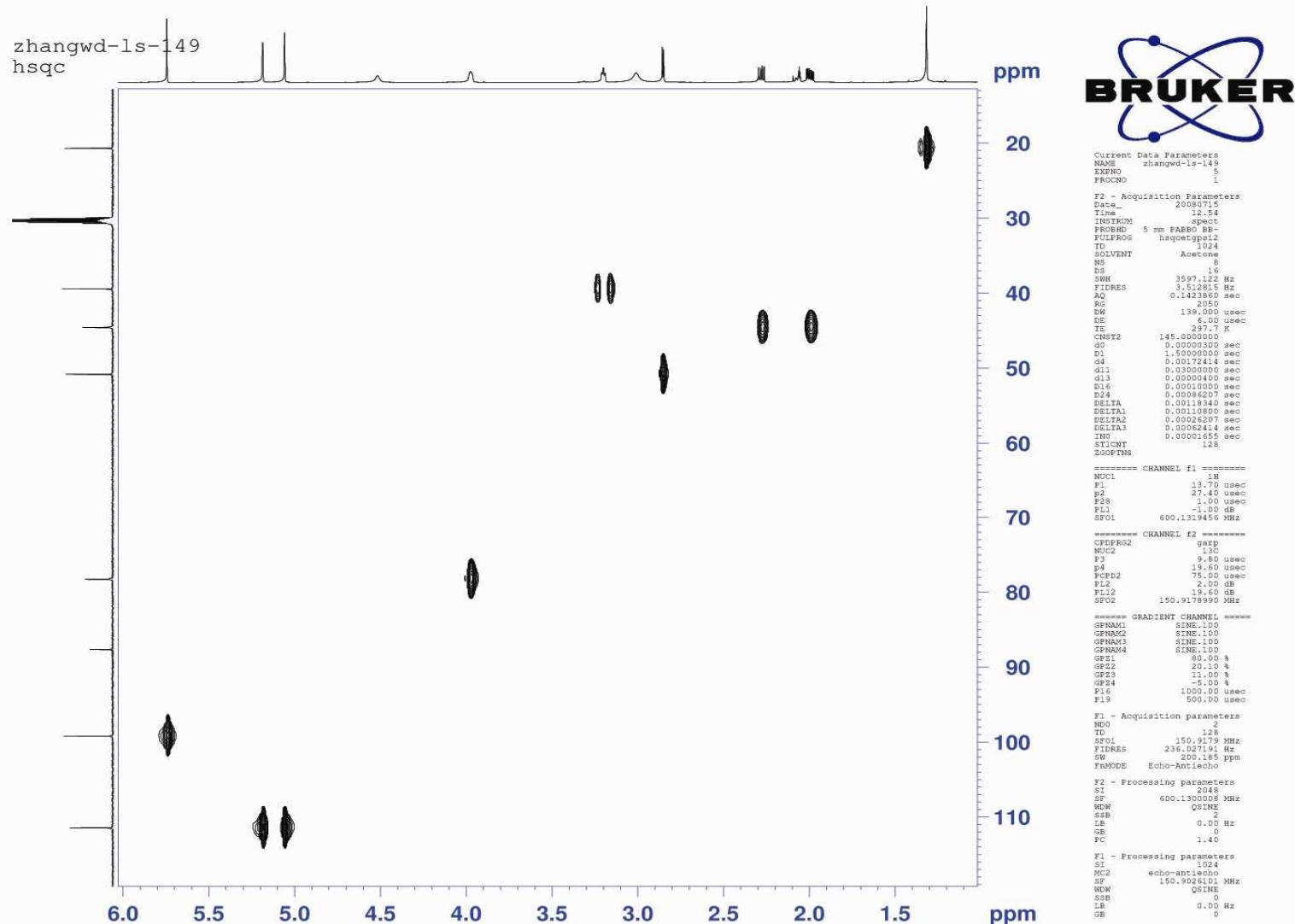
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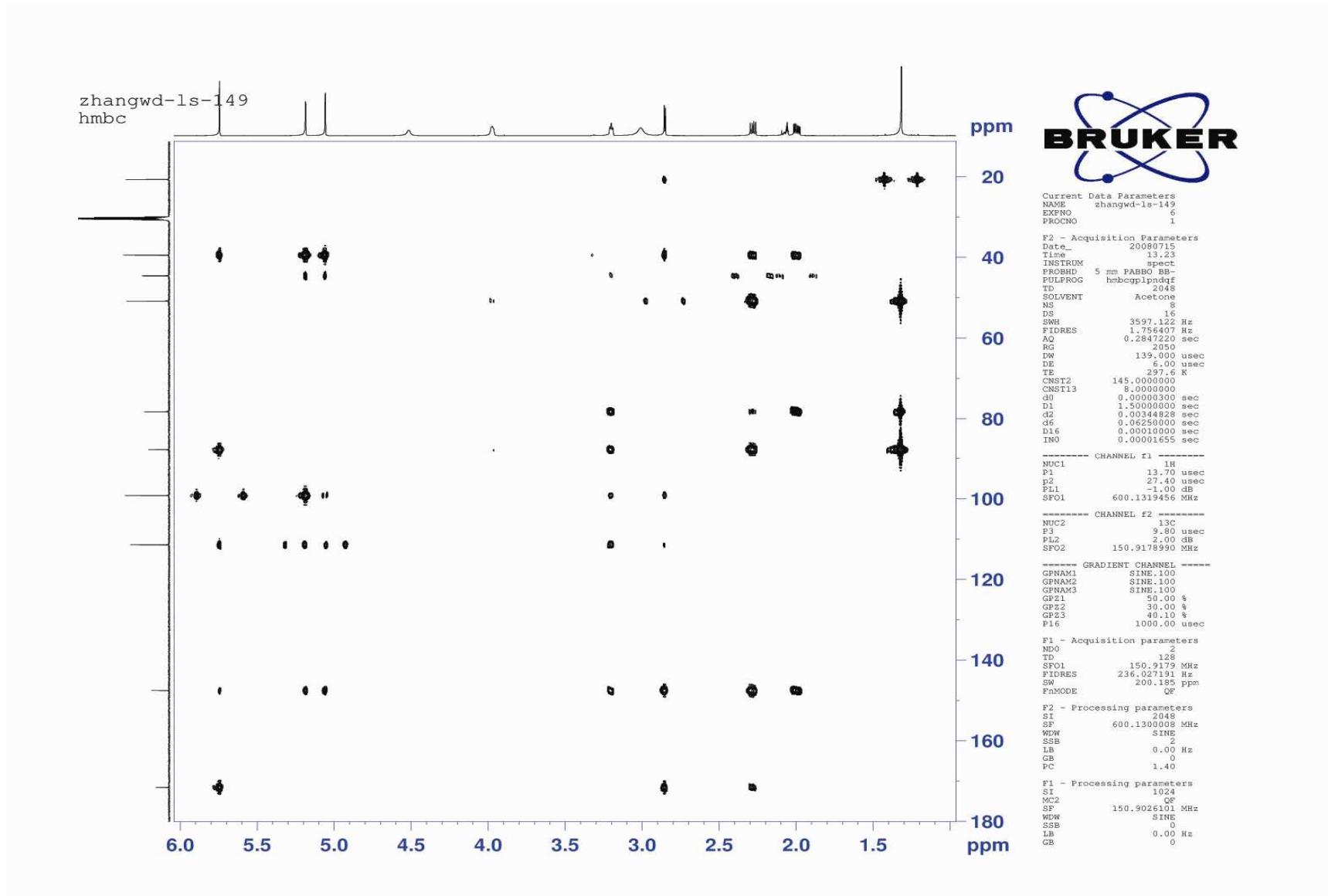
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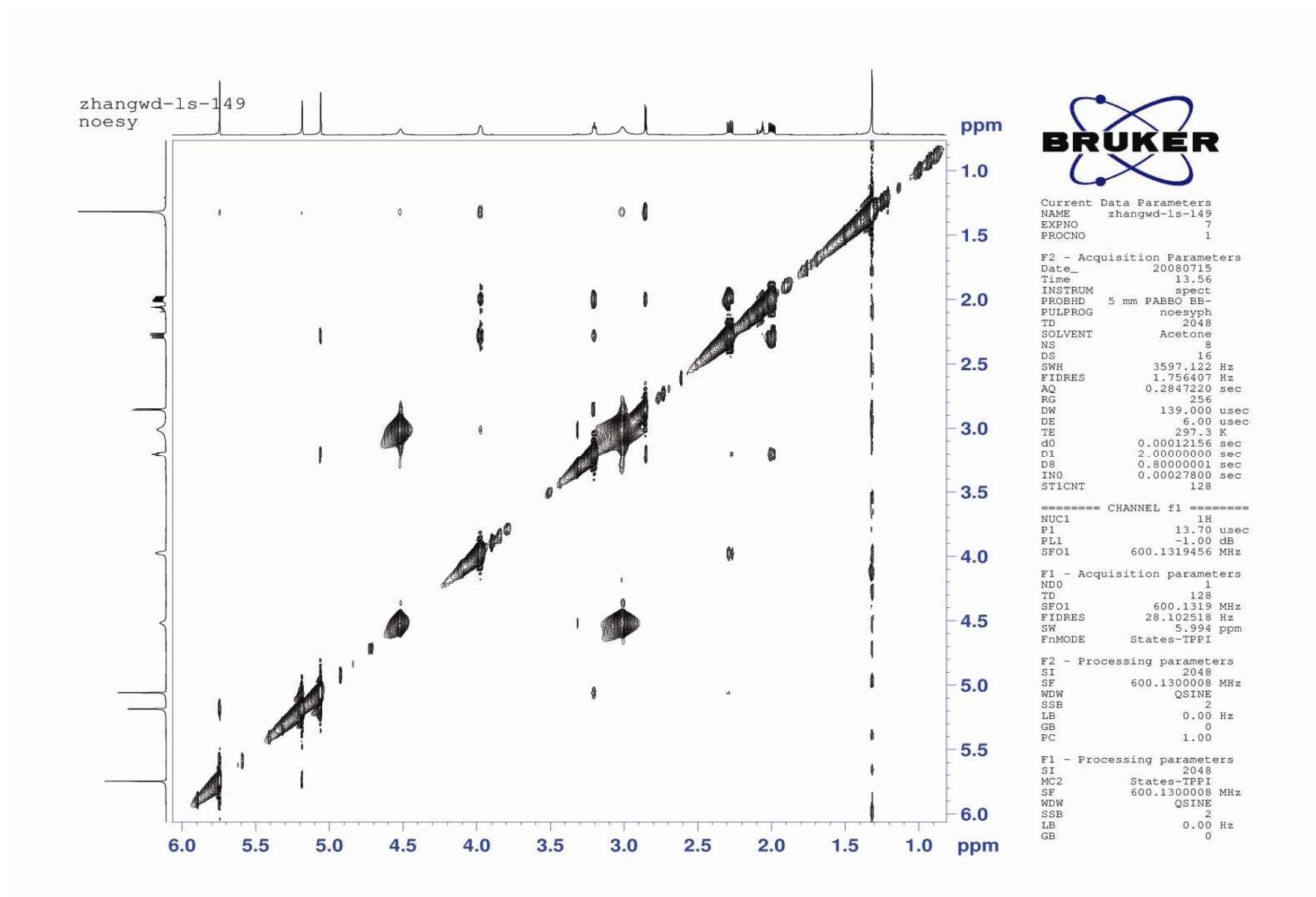
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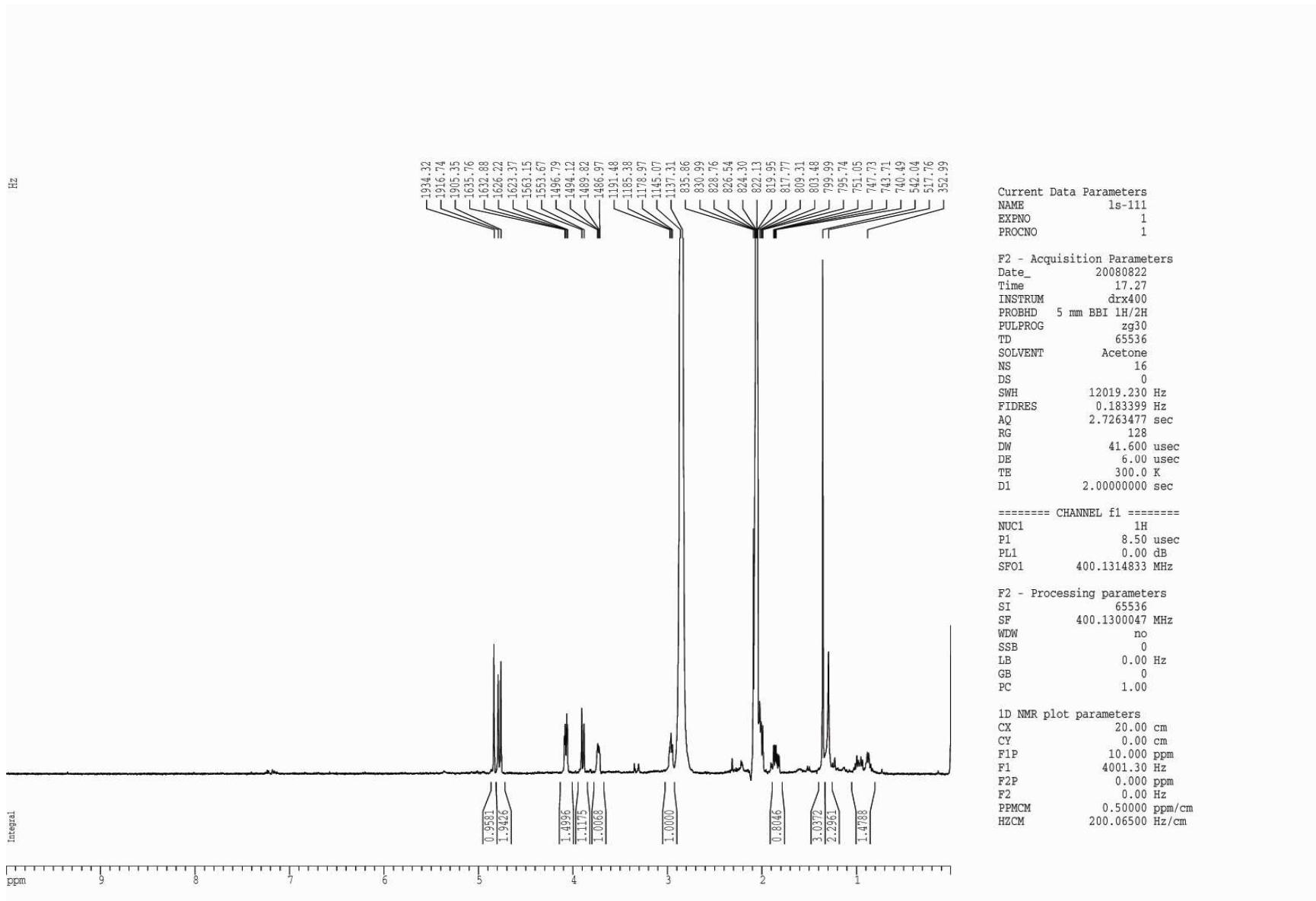
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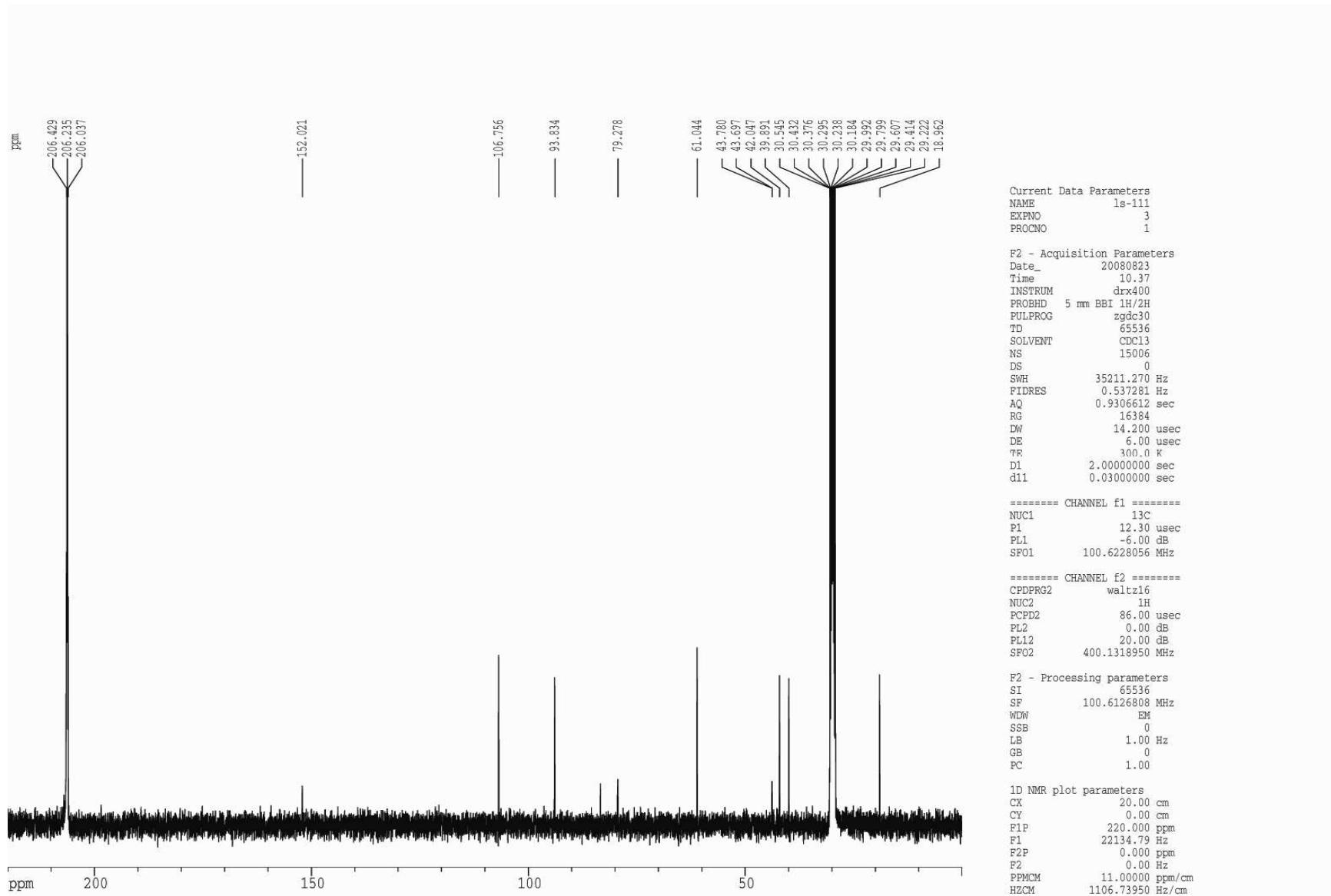
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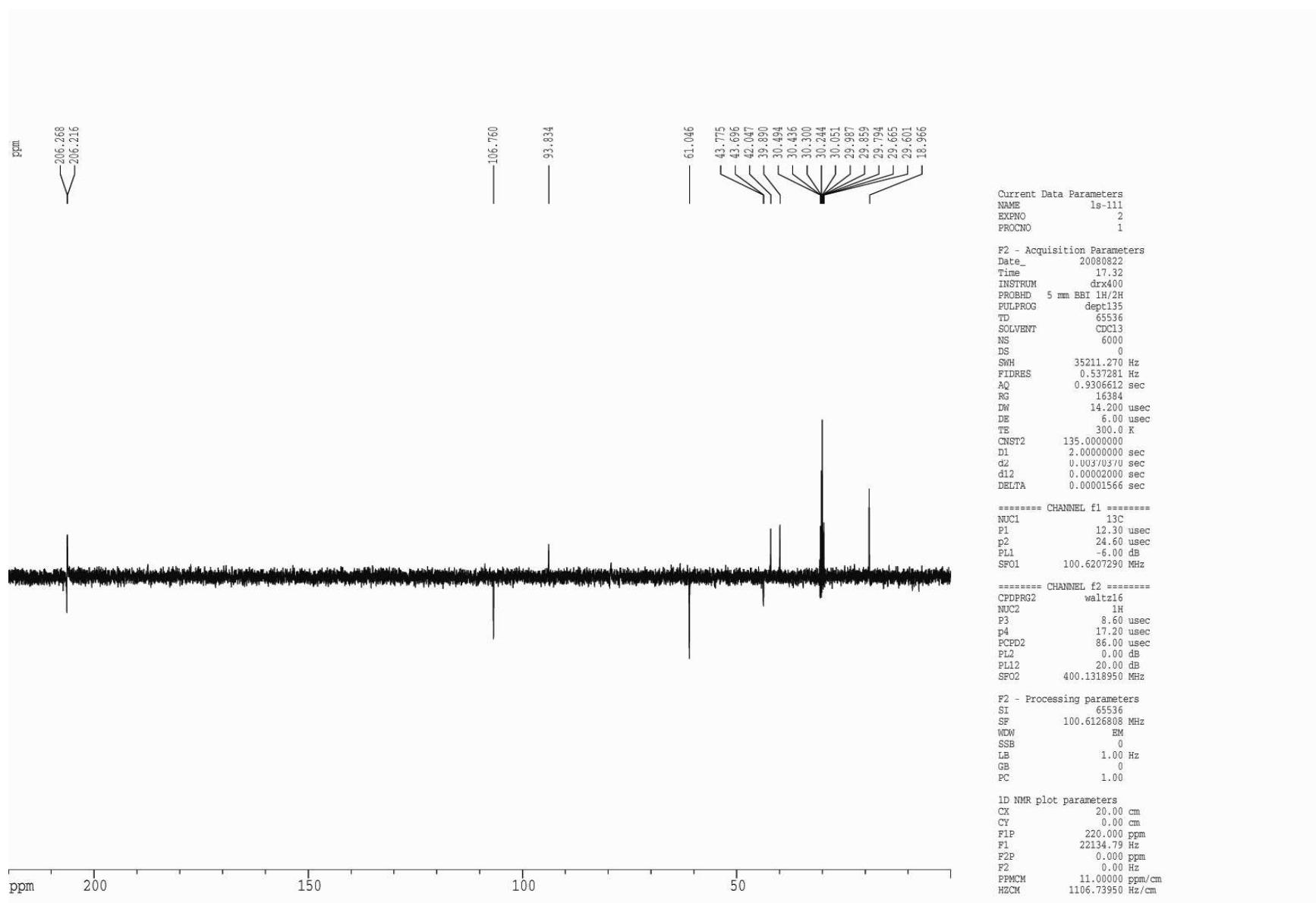
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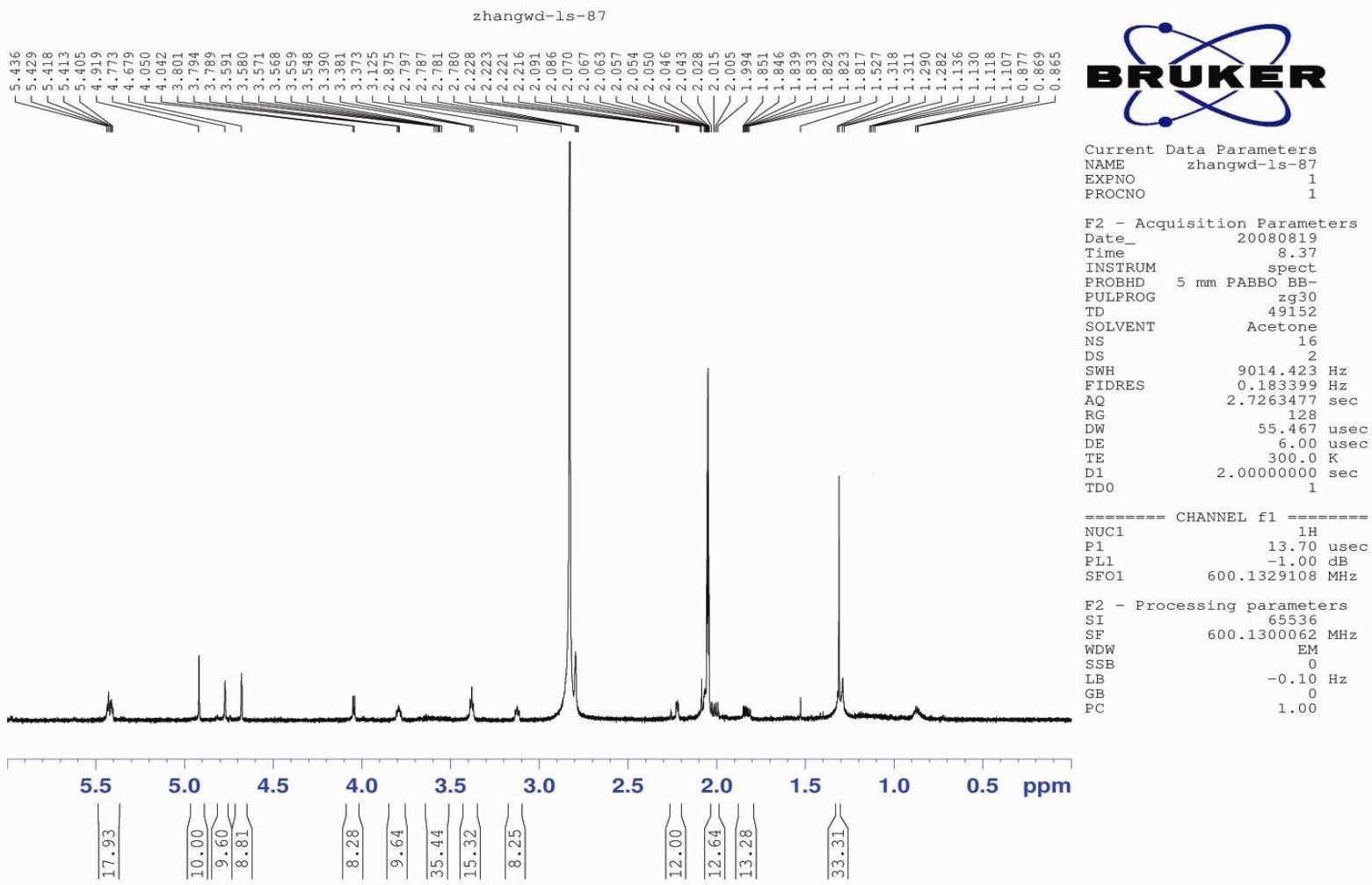
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The  $^{13}\text{C}$  NMR Spectrum of Jatamanin C (3) in  $\text{Me}_2\text{CO}-d_6$

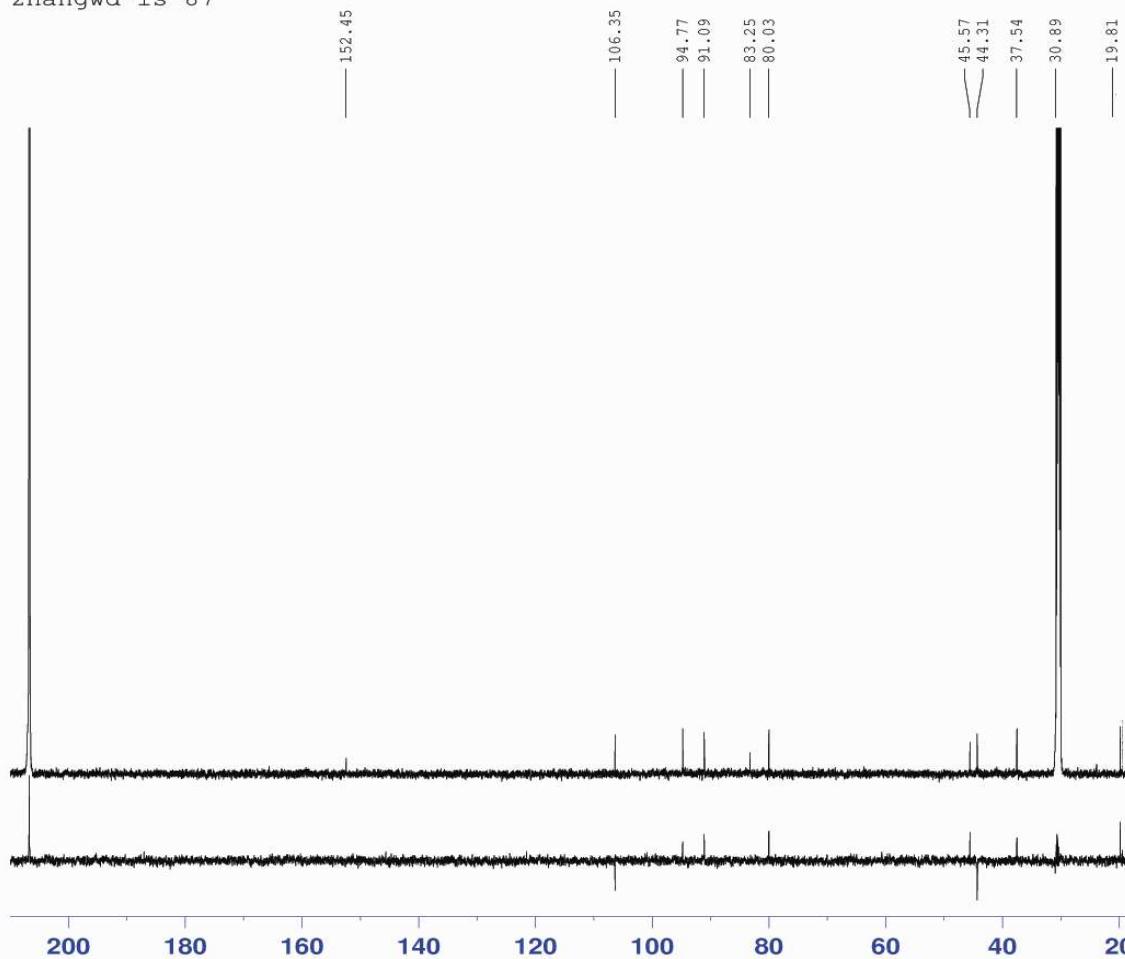


The DEPT Spectrum of Jatamanin C (3) in Me<sub>2</sub>CO-*d*<sub>6</sub>



The  $^1\text{H}$  NMR Spectrum of Jatamanin D (4) in  $\text{Me}_2\text{CO}-d_6$

zhangwd-ls-87



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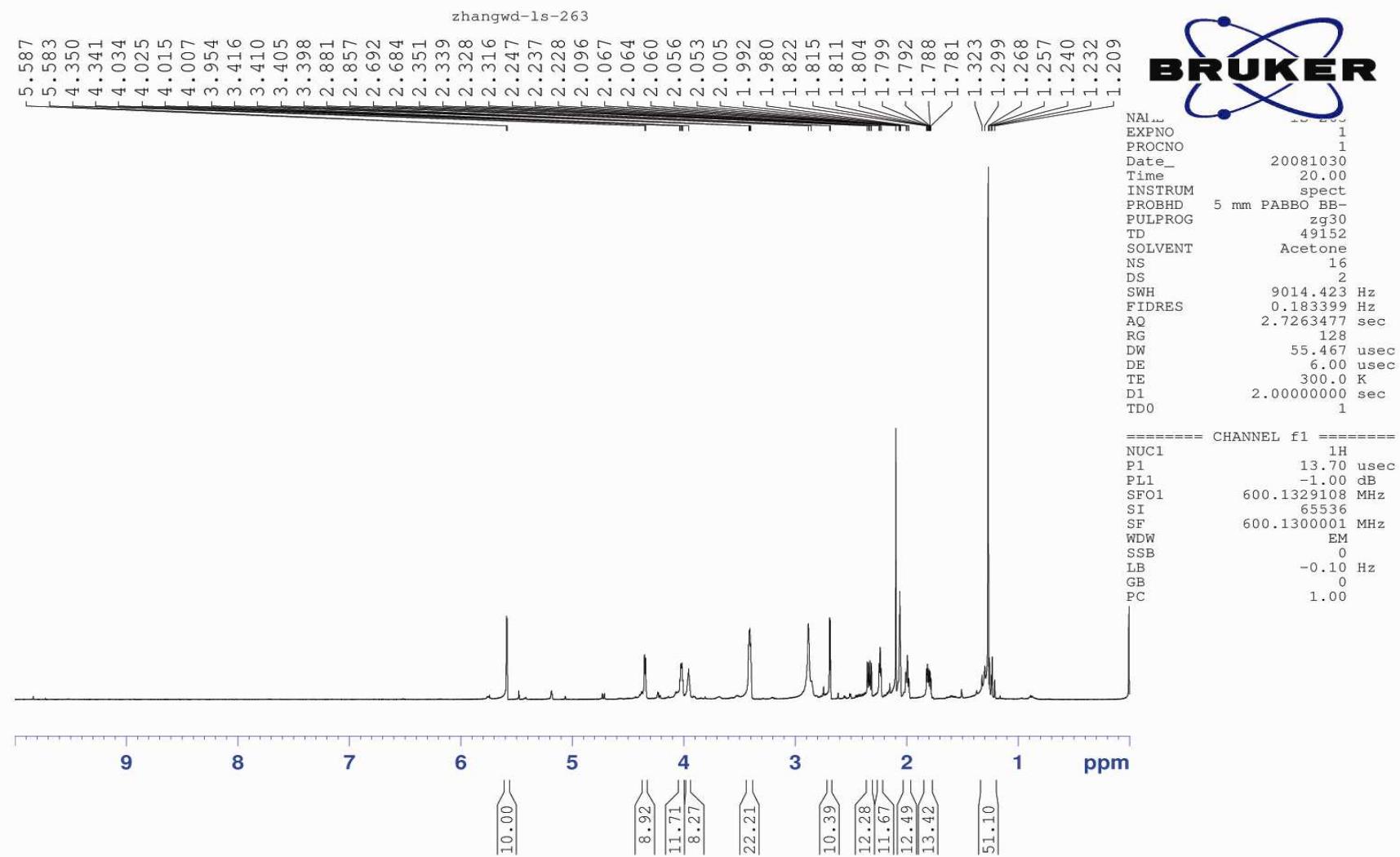
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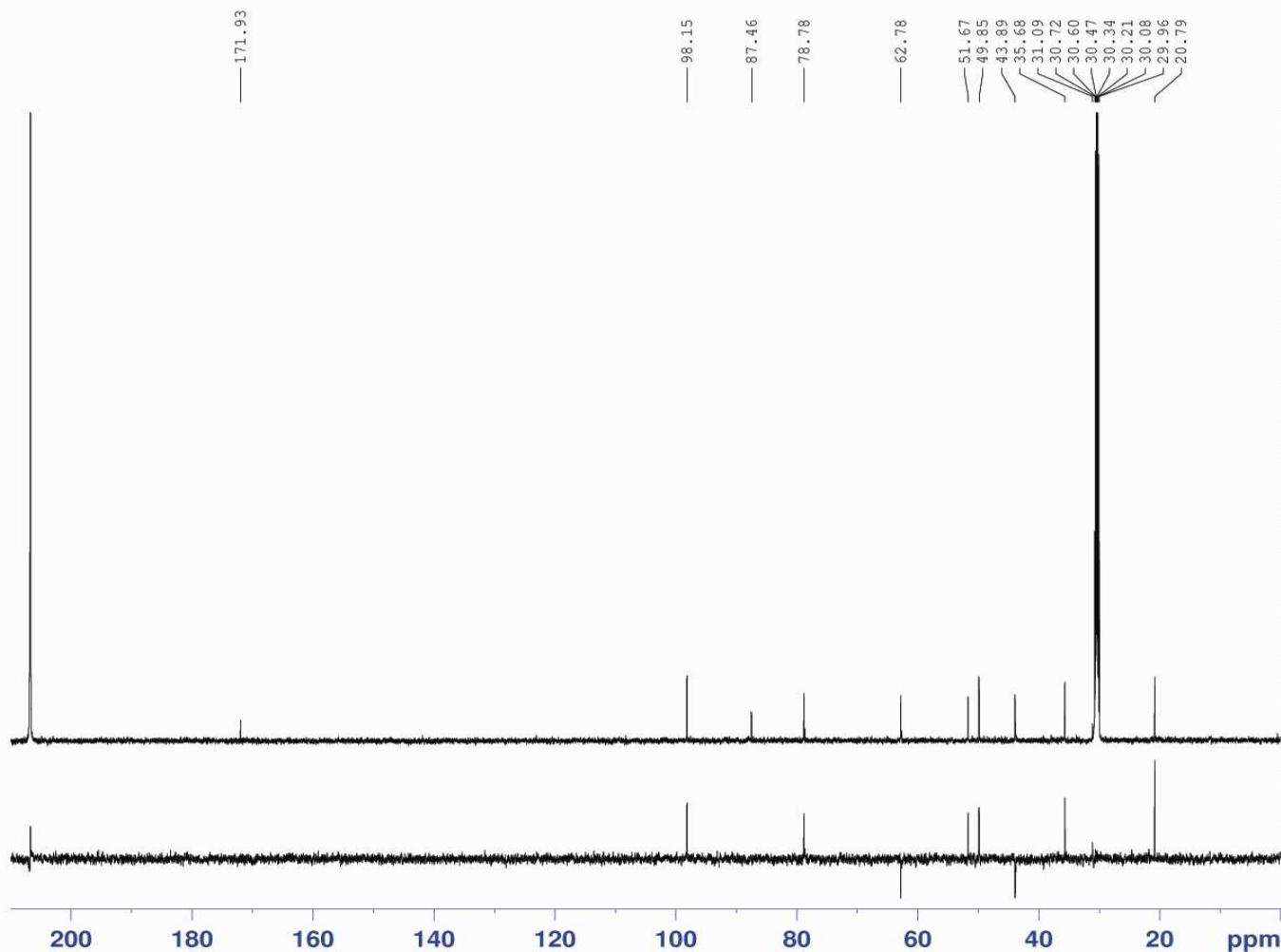
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The <sup>1</sup>H NMR Spectrum of Jatamanin E (5) in Me<sub>2</sub>CO-*d*<sub>6</sub>

zhangwd-ls-263

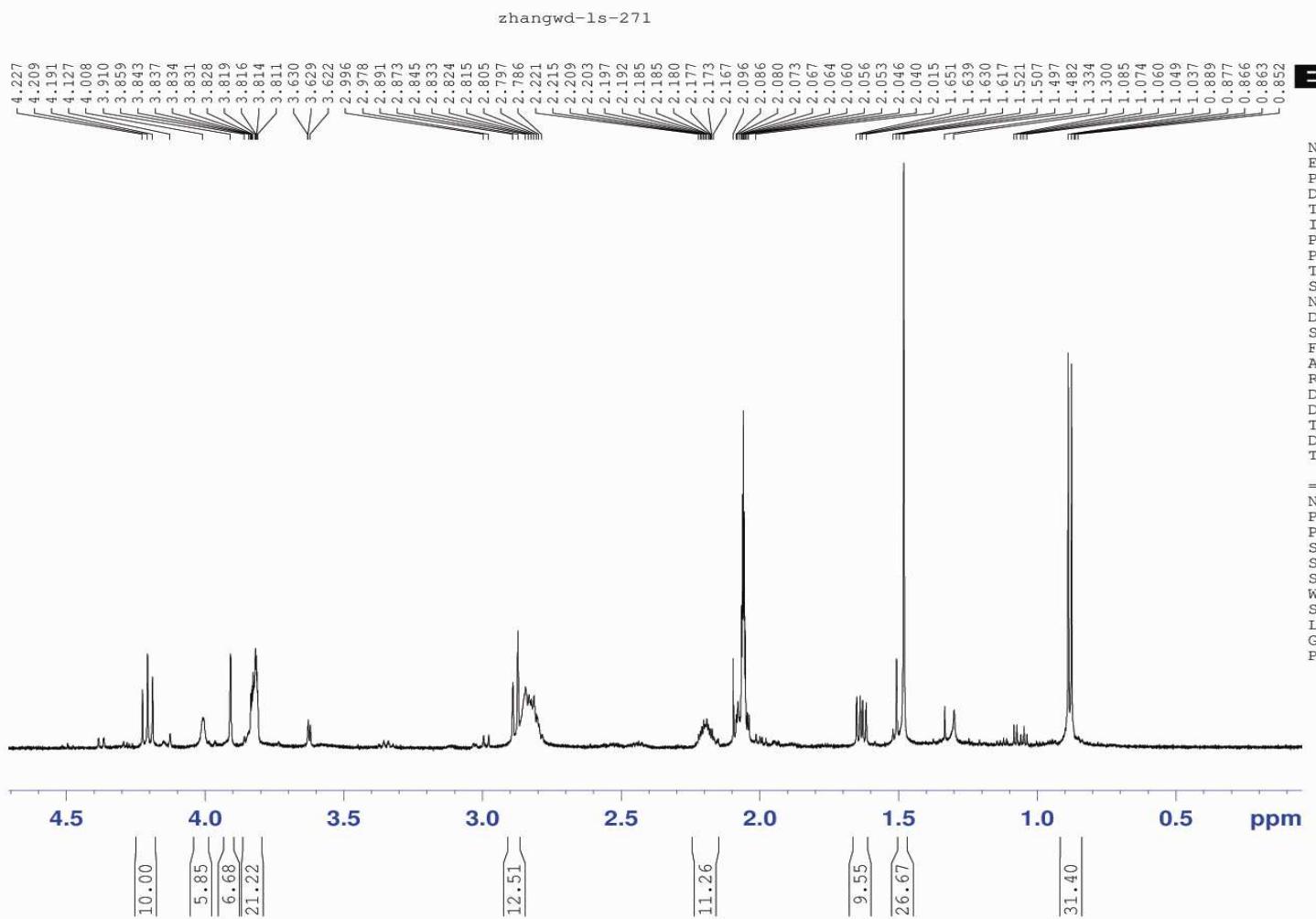


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The <sup>13</sup>C NMR and DEPT Spectra of Jatamanin E (5) in  $\text{Me}_2\text{CO}-d_6$



L 0.852  

**BRUKER**

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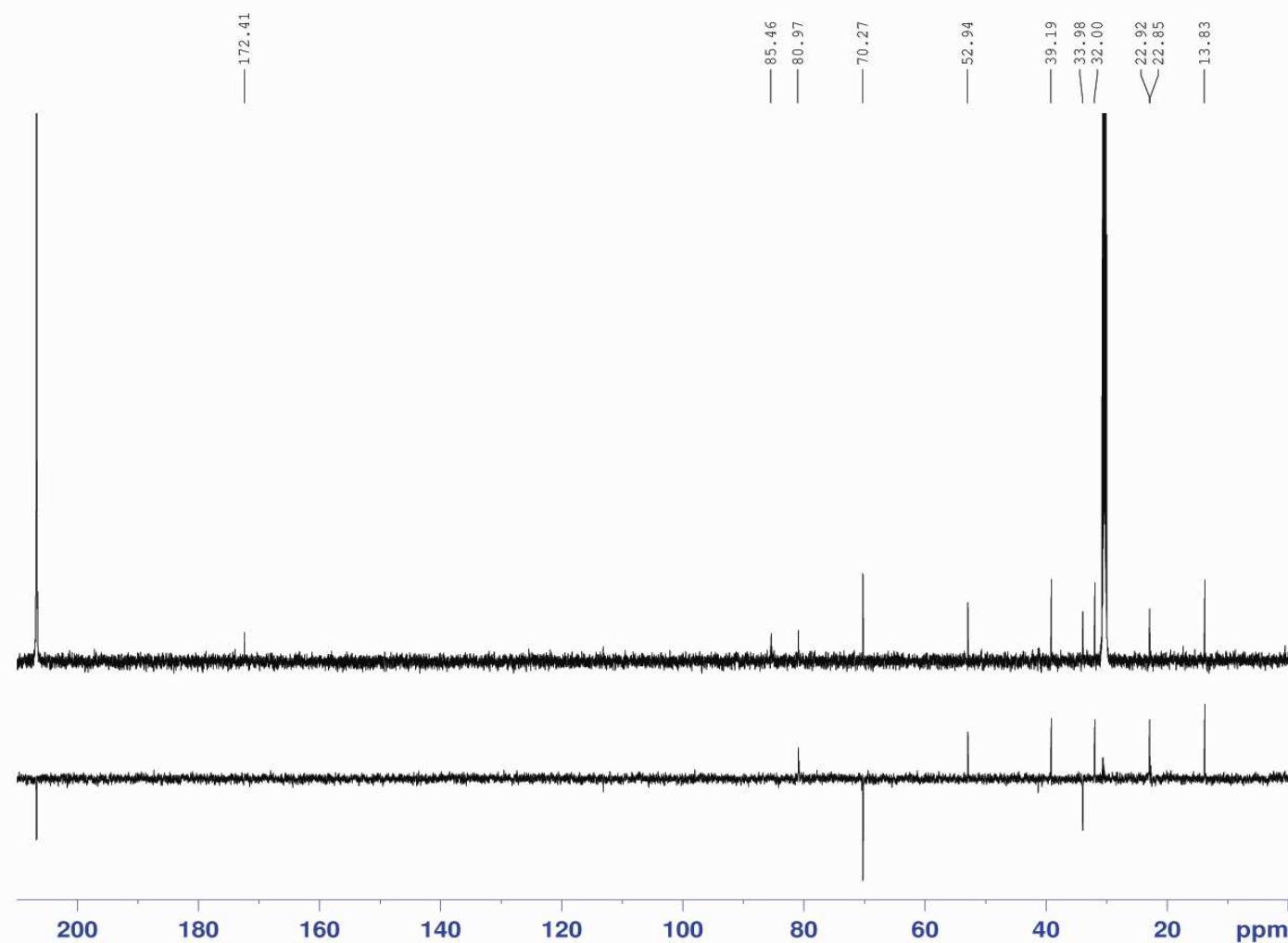
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## The $^1\text{H}$ NMR Spectrum of Jatamanin F (**6**) in $\text{Me}_2\text{CO}-d_6$

zhangwd-ls-271

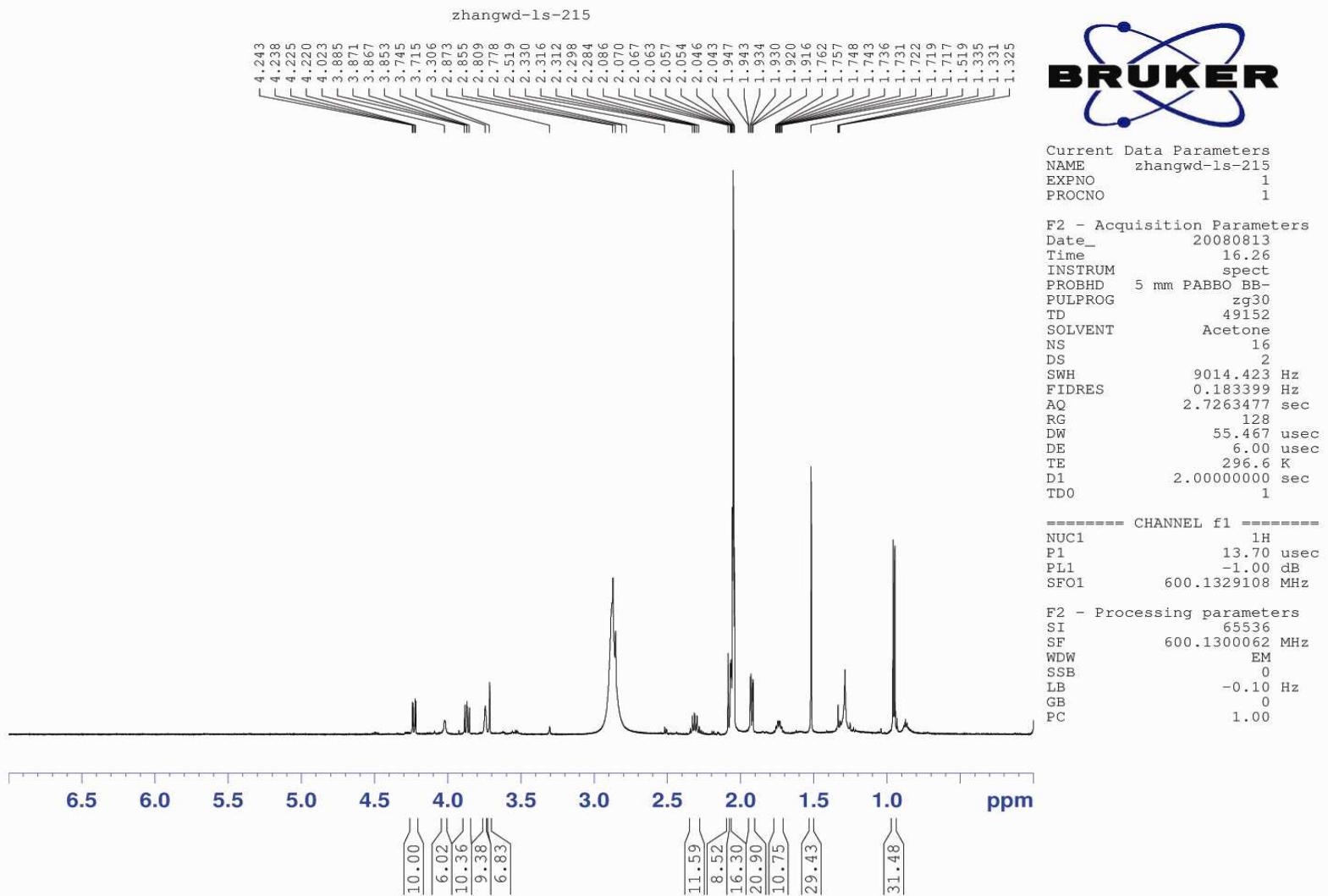


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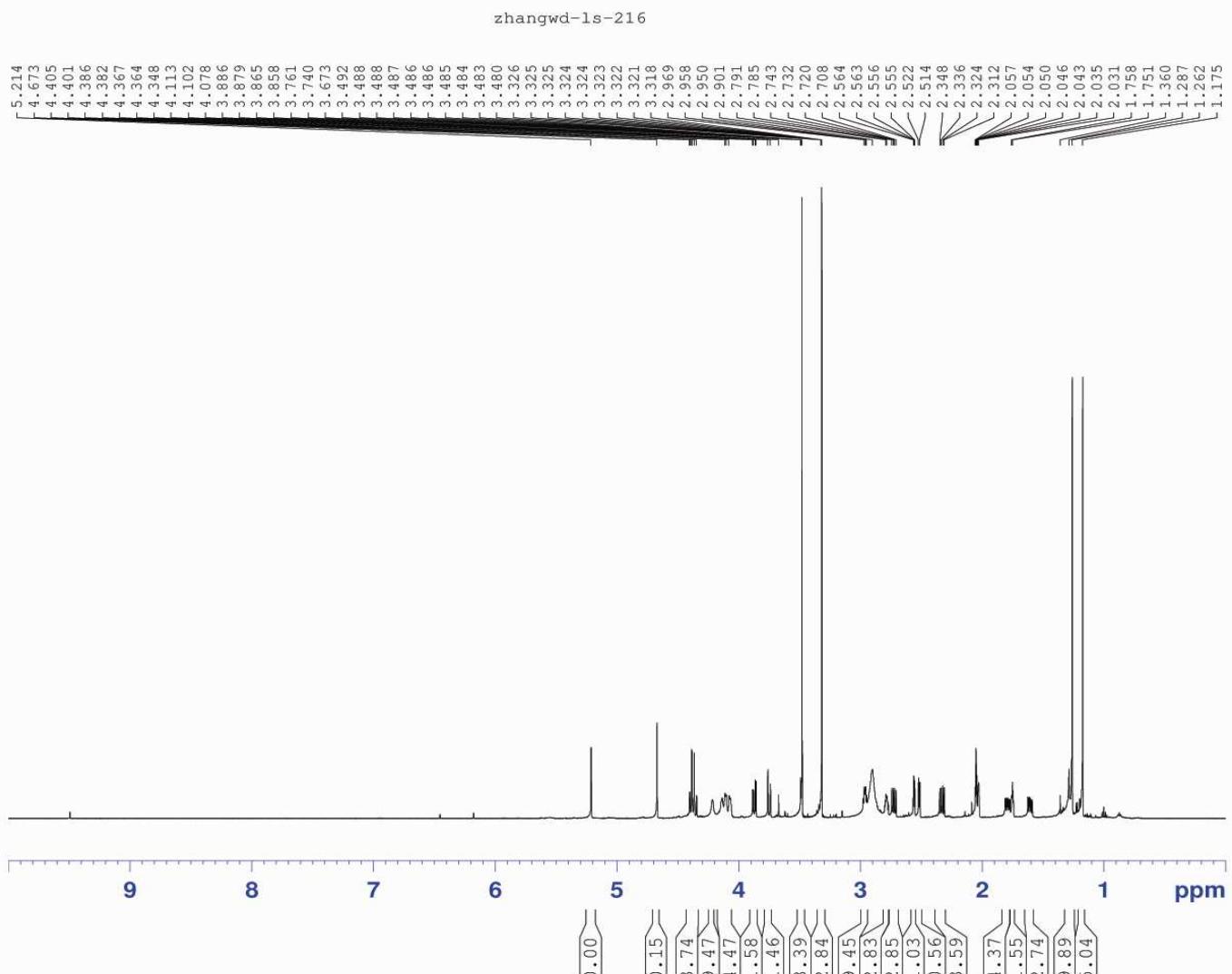
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The  $^{13}\text{C}$  NMR and DEPT Spectra of Jatamanin F (6) in  $\text{Me}_2\text{CO}-d_6$



The  $^1\text{H}$  NMR Spectrum of Jatamanin G (7) in  $\text{Me}_2\text{CO}-d_6$



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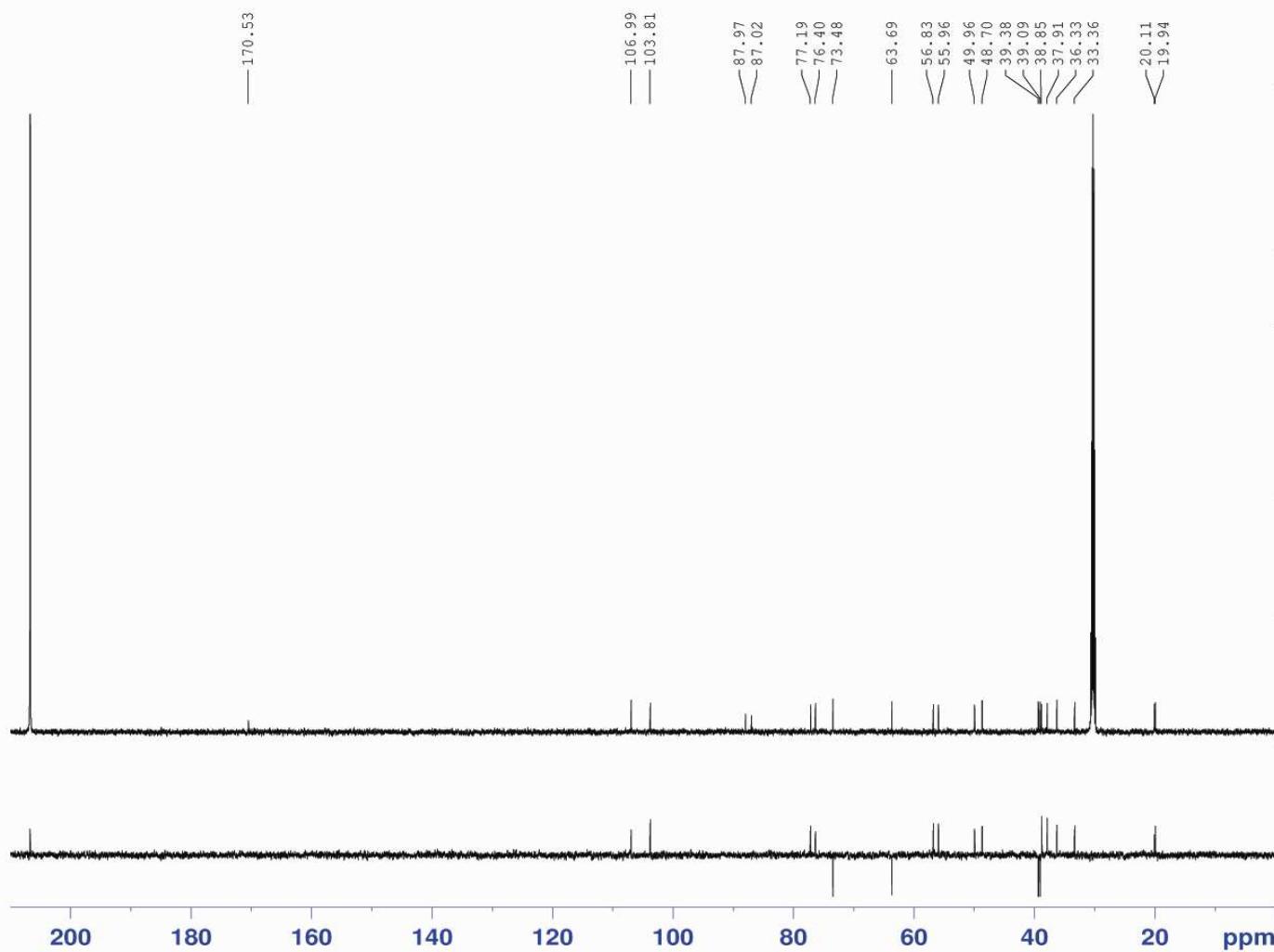
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## The $^1\text{H}$ NMR Spectrum of Jatamanins H (8) and I (9) in $\text{Me}_2\text{CO}-d_6$

zhangwd-ls-216

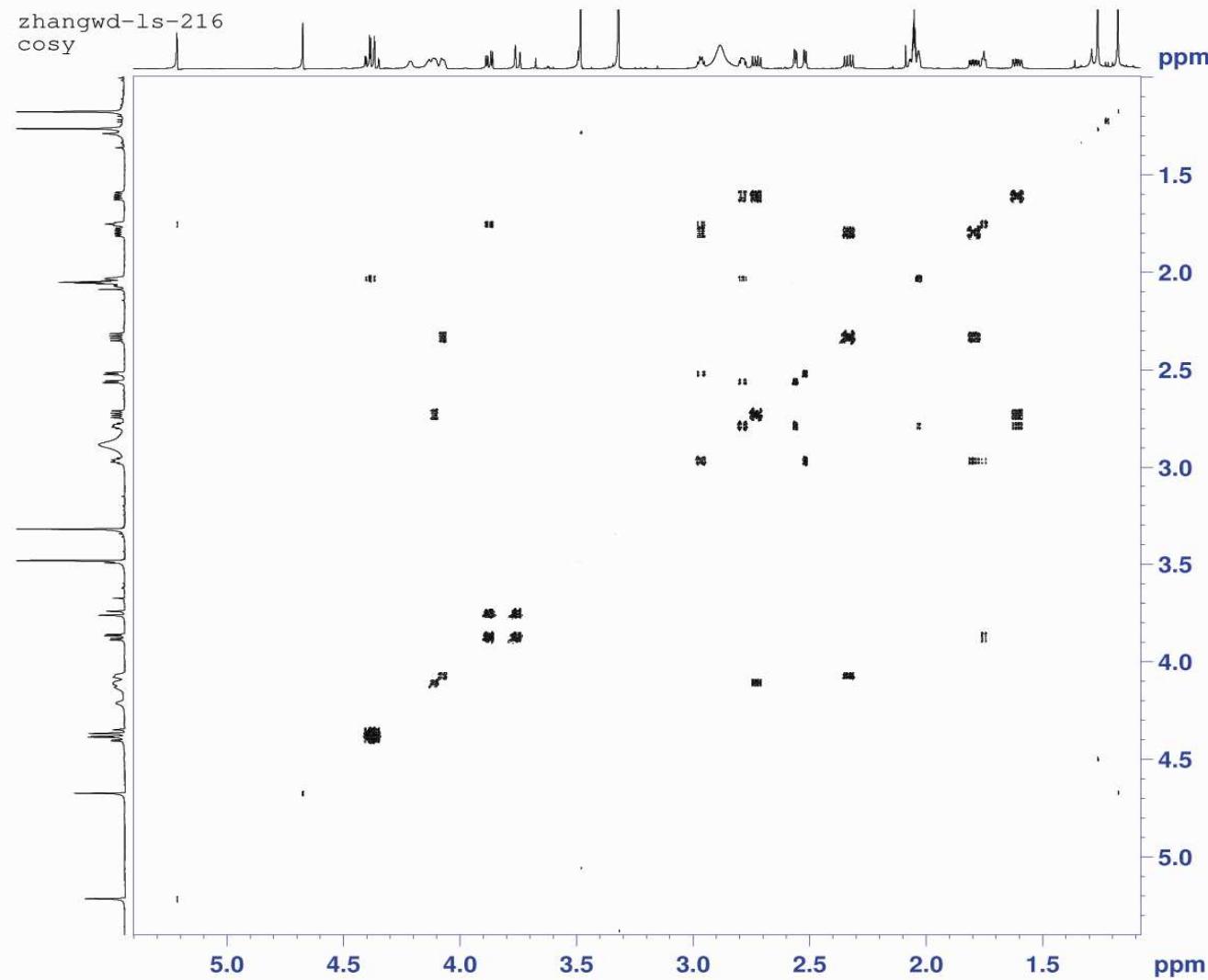


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The  $^{13}\text{C}$  NMR and DEPT Spectra of Jatamanins H (8) and I (9) in  $\text{Me}_2\text{CO}-d_6$



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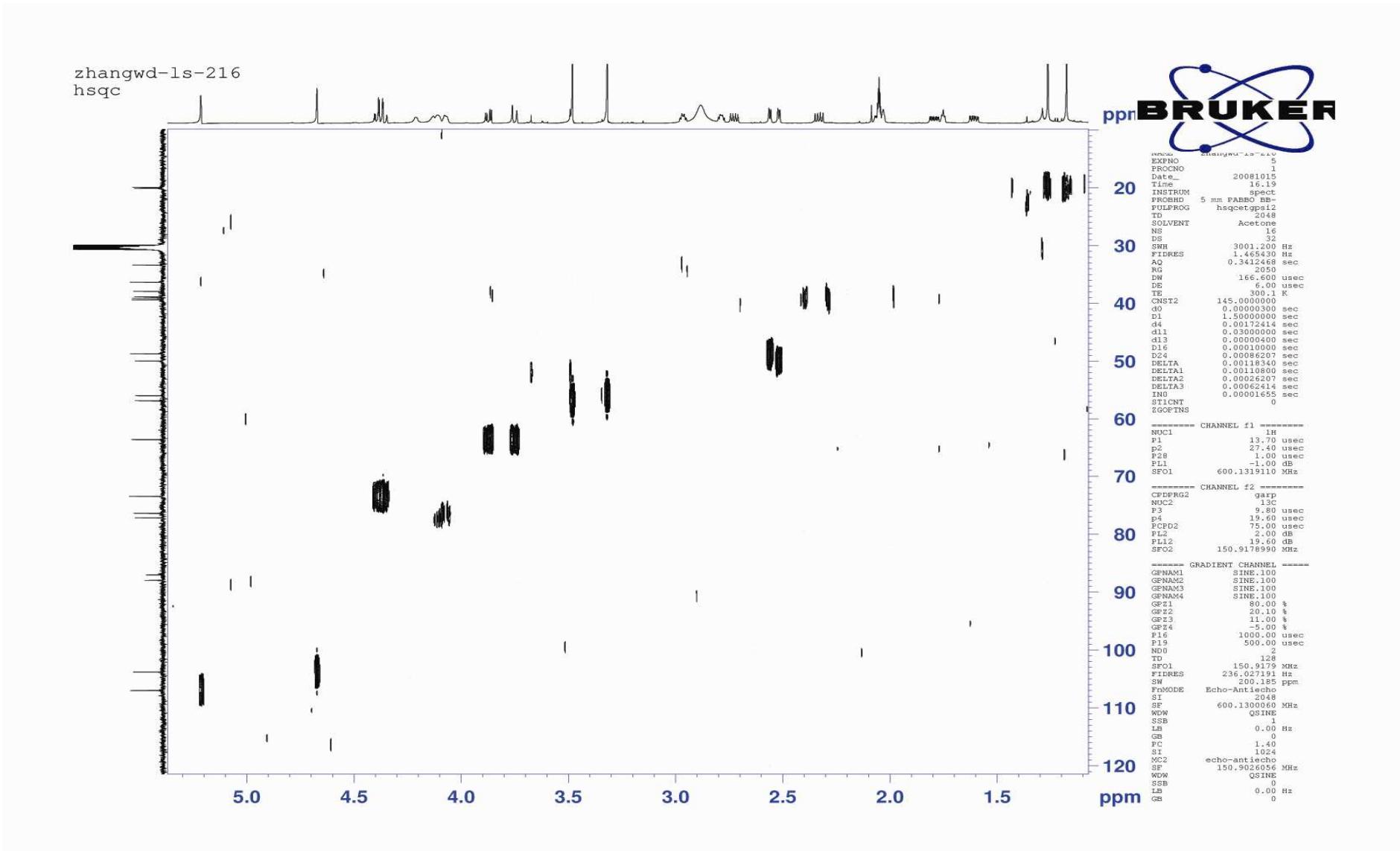
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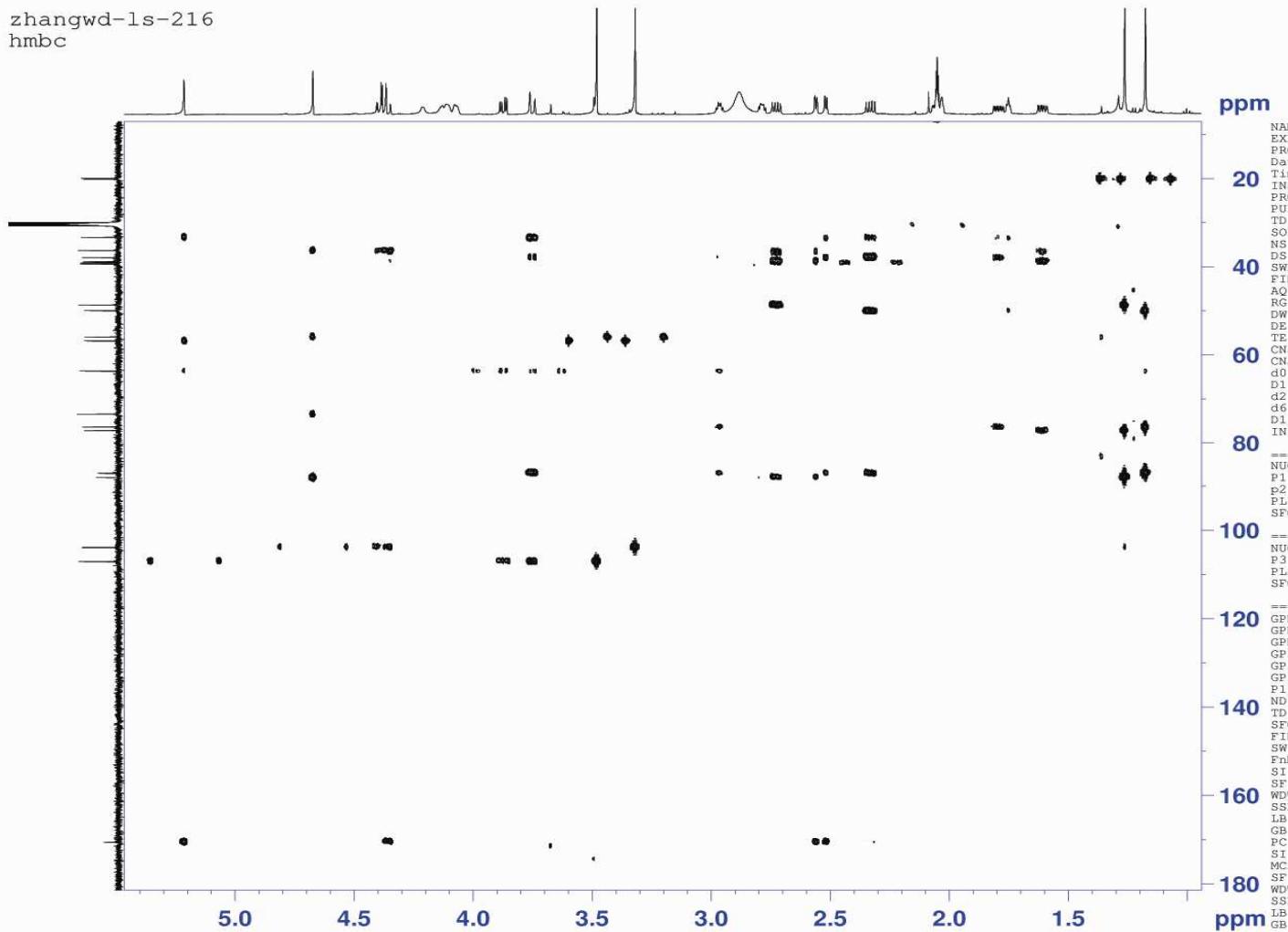
```

The  $^1\text{H}$ - $^1\text{H}$ COSY Spectrum of Jatamanins H (8) and I (9) in  $\text{Me}_2\text{CO}-d_6$



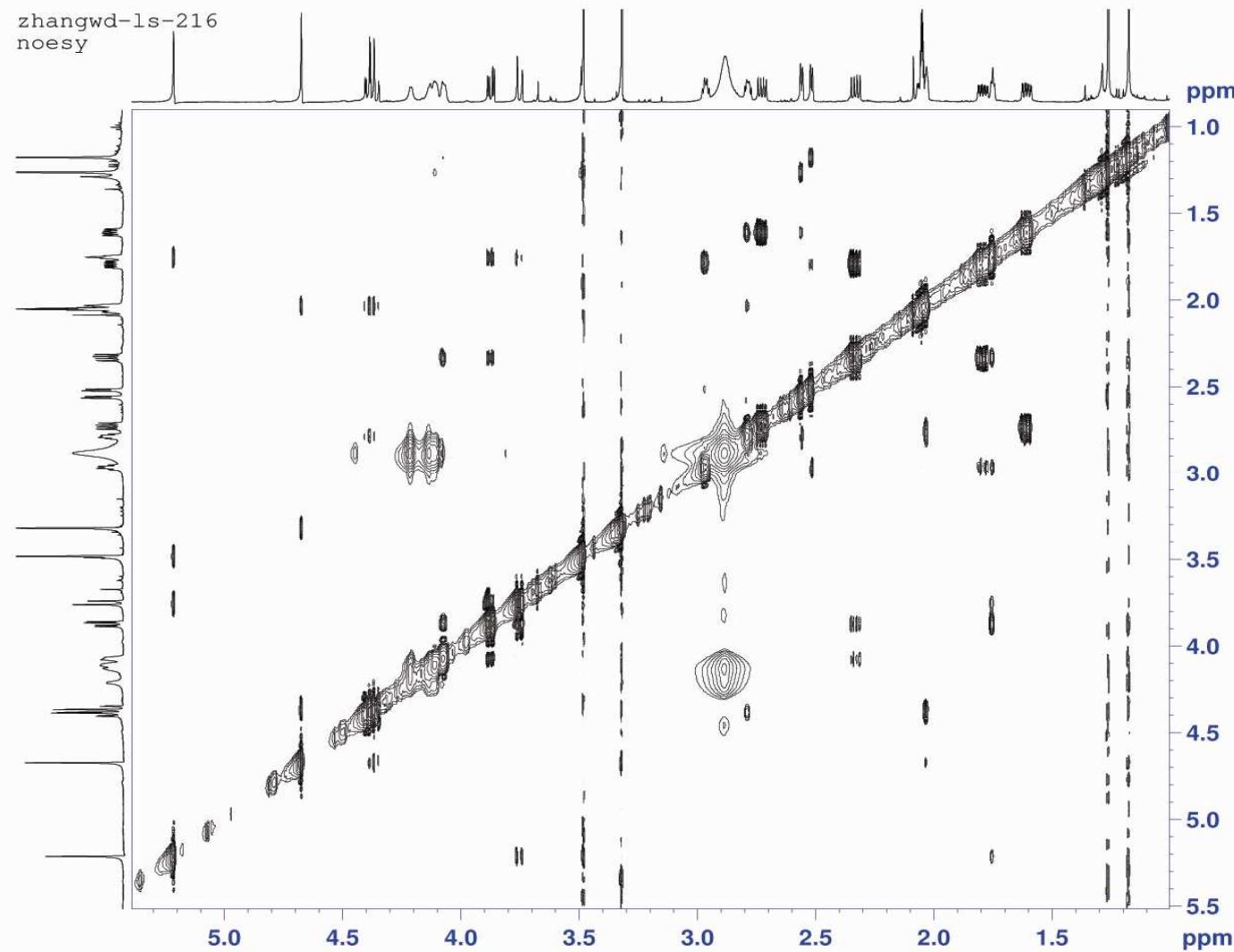
The HSQC Spectrum of Jatamanins H (8) and I (9) in  $\text{Me}_2\text{CO}-d_6$

zhangwd-ls-216  
hmhc



zhangwd-ls-216  
NAME zhangwd-ls-216  
EXPNO 6  
PROCNO 1  
Date\_ 20081015  
Time 17.24  
INSTRUM spect  
PROBHD 5 mm PABBO BB-  
PULPROG hmbcgp1pndqf  
TD 2048  
SOLVENT Acetone-  
NS 1.6  
DS 32  
SWH 3001.200 Hz  
FIDRES 1.465430 Hz  
AQ 0.3412468 sec  
RG 2050  
DW 166.600 usec  
DE 6.00 usec  
TE 299.9 K  
CNUST2 145.000000  
CNUST13 8.0000000  
d1 0.00000300 sec  
D1 1.5000000 sec  
d2 0.00344828 sec  
d6 0.06250000 sec  
D16 0.00010000 sec  
INO 0.00001655 sec  
  
===== CHANNEL f1 =====  
NUC1 1H  
P1 13.74 usec  
P2 27.40 usec  
PL1 -1.00 dB  
SF01 600.1319110 MHz  
  
===== CHANNEL f2 =====  
NUC2 13C  
P3 9.80 usec  
PL2 2.00 dB  
SF02 150.9178990 MHz  
  
===== GRADIENT CHANNEL =====  
GPNAME1 SINE1.00  
GPNAME2 SINE1.00  
GPNAME3 SINE1.00  
GPZ1 50.00 %  
GPZ2 30.00 %  
GPZ3 40.10 %  
P16 1000.00 usec  
ND0 2  
TD 160  
SF01 150.9179 MHz  
FIDRES 188.821747 Hz  
SW 200.115 ppm  
FMODE 0  
SI 2048  
SF 600.1300060 MHz  
WDW SINE  
SSB 2  
LB 0.00 Hz  
GB 0  
PC 1.40  
SI 1024  
MC2 QF  
SF 150.9026056 MHz  
WDW SINE  
SSB 0  
LB 0.00 Hz  
GB 0

The HMBC Spectrum of Jatamanins H (8) and I (9) in  $\text{Me}_2\text{CO}-d_6$



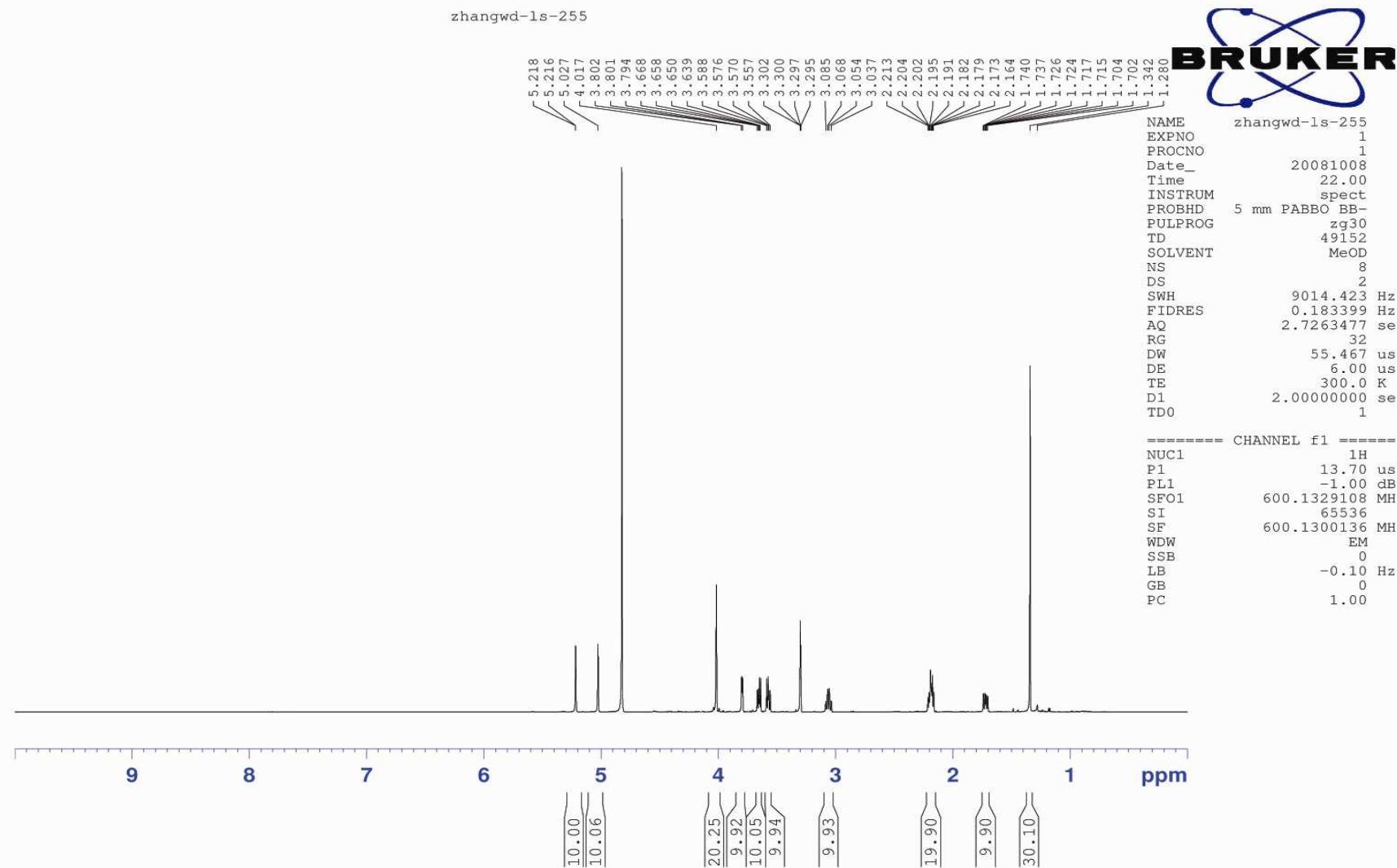
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NAME: zhangwd-ls-216
EXPNO: 7
PROCNO: 1
Date: 20081015
Time: 18.48
INSTRUM: spect
PROBHD: 5 mm PABBO BB-
PULPROG: noesyp
TD: 4096
SOLVENT: Acetic
NS: 8
DS: 32
SWH: 3001.200 Hz
FIDRES: 0.732715 Hz
AQ: 0.6824436 sec
RG: 362
DW: 166.600 usec
DE: 6.00 usec
TE: 300.0 K
d0: 0.00014916 sec
D1: 2.0000000 sec
D8: 0.80000001 sec
INO: 0.00033320 sec
ST1CNT: 0

===== CHANNEL f1 =====
NUC1: 1H
P1: 13.70 usec
PL1: -1.00 dB
SFO1: 600.1319110 MHz
NDO: 1
TD: 160
SFO1: 600.1319 MHz
FIDRES: 18.757504 Hz
SW: 5.001 ppm
FnMODE: States-TPPI
SI: 2048
SF: 600.1300060 MHz
WDW: QSINE
SSB: 2
LB: 0.00 Hz
GB: 0
PC: 1.00
SI: 2048
MC2: States-TPPI
SF: 600.1300060 MHz
WDW: QSINE
SSB: 2
LB: 0.00 Hz
GB: 0

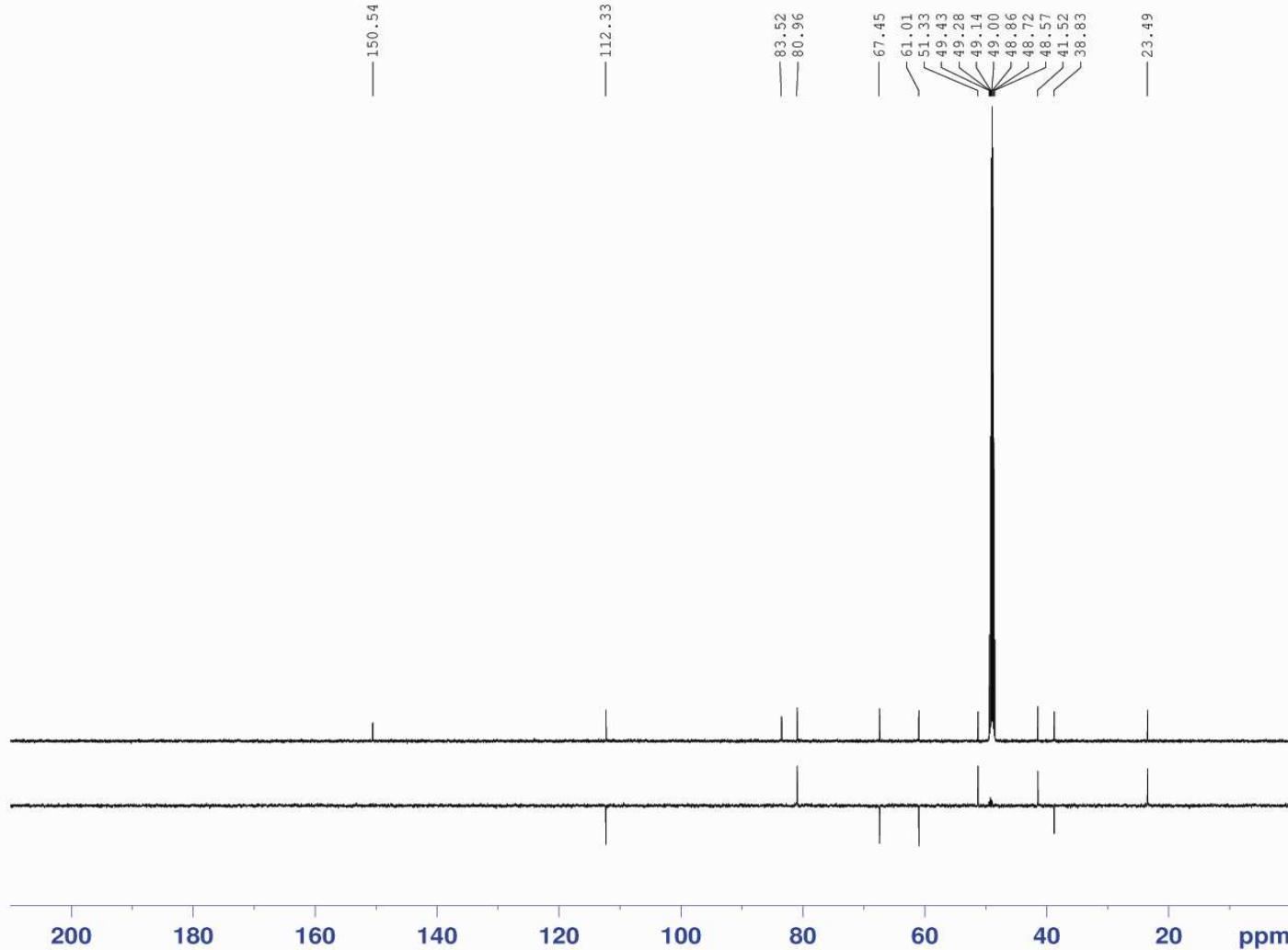
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The NOESY Spectrum of Jatamanins H (8) and I (9) in  $\text{Me}_2\text{CO}-d_6$



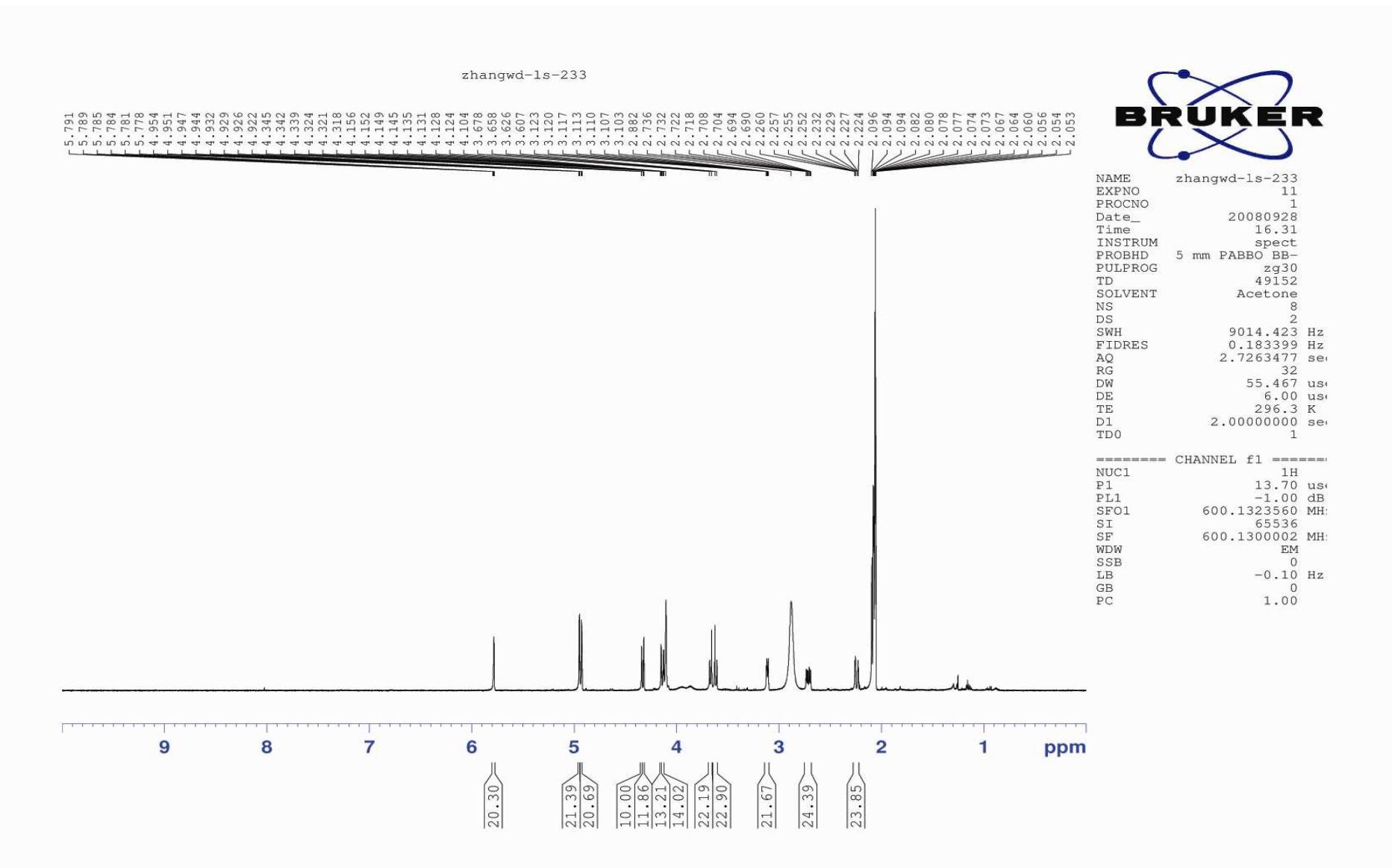
The  $^1\text{H}$  NMR Spectrum of Jatamanin J (10) in MeOD

zhangwd-ls-255



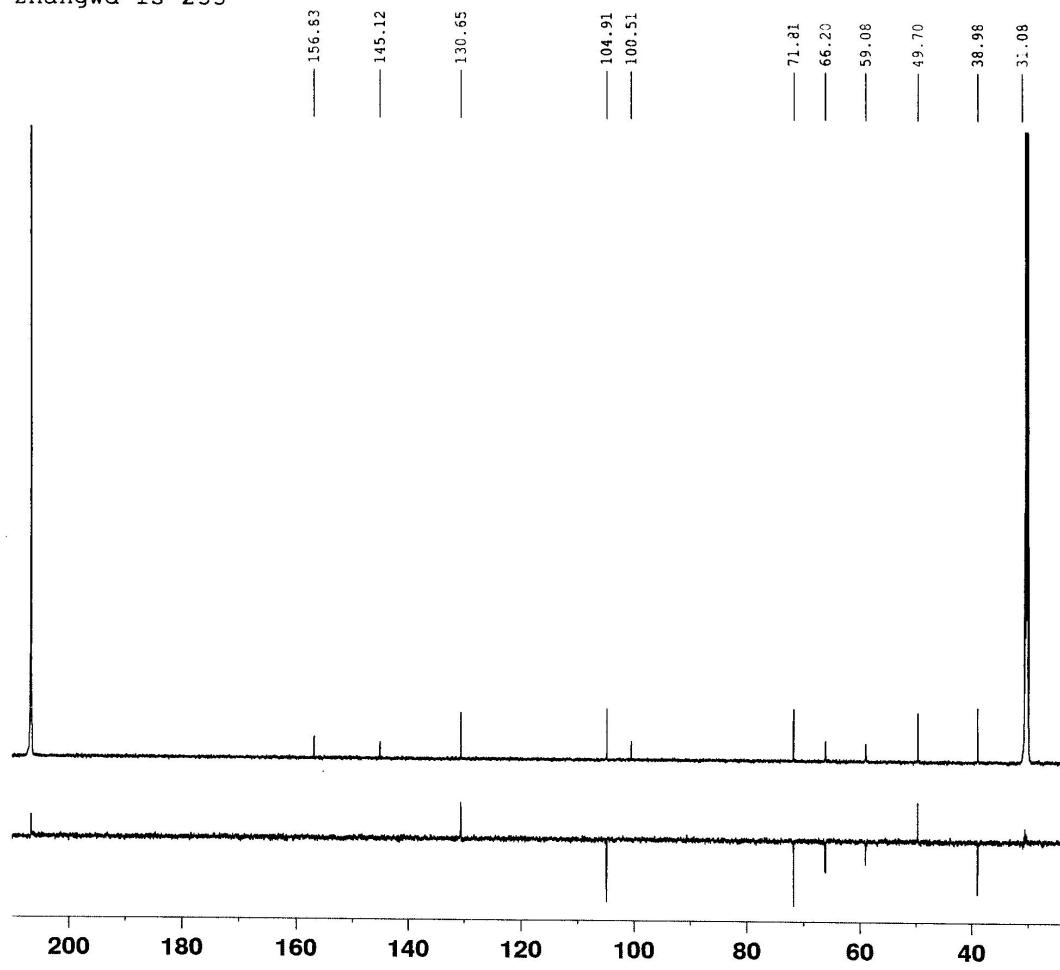
NAME zhangwd-ls-255  
EXPNO 2  
PROCNO 1  
Date 20081008  
Time 22.08  
INSTRUM spect  
PROBHD 5 mm PABBO BB-  
PULPROG zgpg30  
TD 65536  
SOLVENT MeOD  
NS 167  
DS 0  
SWH 45454.547 Hz  
FIDRES 0.693581 Hz  
AQ 0.7209460 sec  
RG 32768  
DW 11.000 usec  
DE 6.00 usec  
TE 300.1 K  
D1 2.0000000 sec  
d11 0.0300000 sec  
DELTA 1.8999998 sec  
TD0 1  
----- CHANNEL f1 -----  
NUC1 13C  
P1 8.50 usec  
PL1 2.00 dB  
SF01 150.917890 MHz  
----- CHANNEL f2 -----  
CPDPG2 waltz16  
NUC2 1H  
PCPD2 80.00 usec  
PL2 -1.00 dB  
PL12 14.00 dB  
PL13 14.00 dB  
SF02 600.1324005 MHz  
SI 65536  
SF 150.9025969 MHz  
WDW EM  
SSB 0  
LB 2.00 Hz  
GB 0  
PC 1.40

The  $^{13}\text{C}$  NMR and DEPT Spectra of Jatamanin J (10) in MeOD



The  $^1\text{H}$  NMR Spectrum of Jatamanin K (**11**) in  $\text{Me}_2\text{CO}-d_6$

zhangwd-ls-233



Current Data Parameters

NAME zhangwd-ls-233  
EXPNO 2  
PROCNO 1

F2 - Acquisition Parameters

Date\_ 20080914  
Time 17.04  
INSTRUM spect  
PROBHD 5 mm PABBO BB-  
PULPROG zgpg30  
TD 65536  
SOLVENT Acetone  
NS 2048  
DS 0  
SWH 45454.547 Hz  
FIDRES 0.693581 Hz  
AQ 0.7209460 sec  
RG 32768  
DW 11.000 usec  
DE 6.00 usec  
TE 300.1 K  
D1 2.0000000 sec  
d11 0.03000000 sec  
DELTA 1.8999998 sec  
TDO 1

===== CHANNEL f1 =====

NUC1 13C  
P1 8.50 usec  
PL1 2.00 dB  
SFO1 150.9178990 MHz

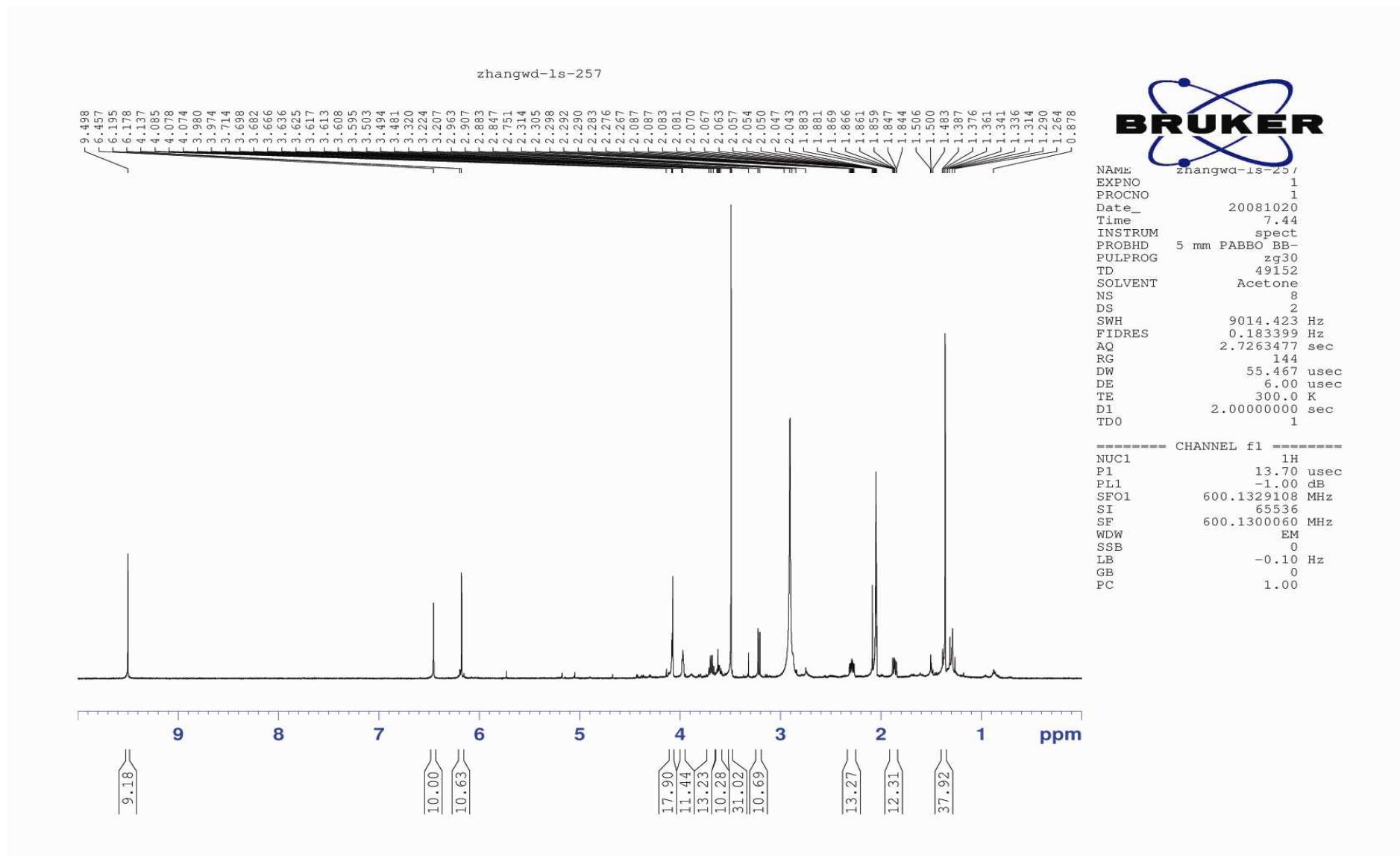
===== CHANNEL f2 =====

CPDPRG2 waltz16  
NUC2 1H  
PCPD2 80.00 usec  
PL2 -1.00 dB  
PL12 14.00 dB  
PL13 14.00 dB  
SFO2 600.1324005 MHz

F2 - Processing parameters

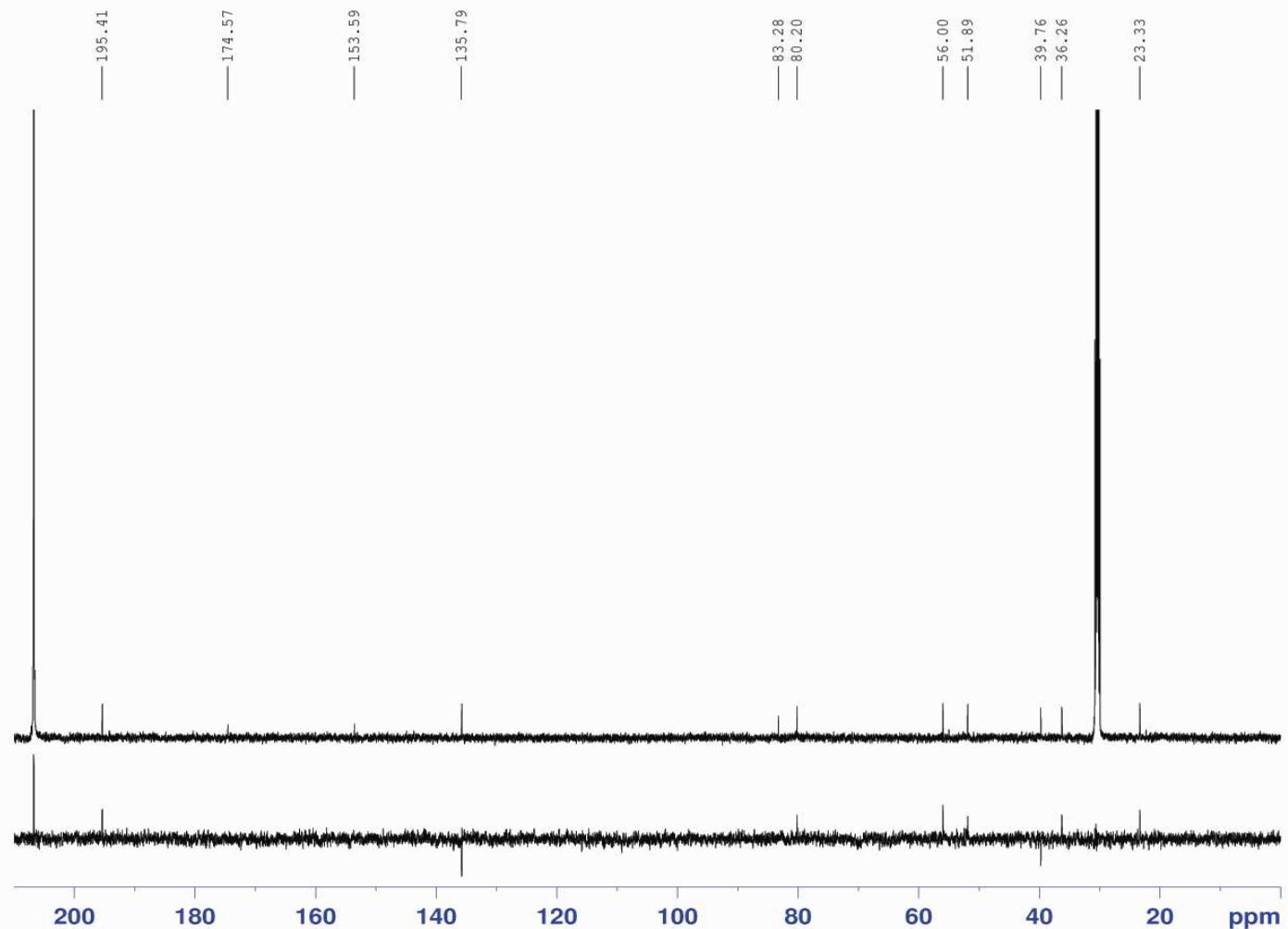
SI 65536  
SF 150.9025968 MHz  
WDW EM  
SSB 0  
LB 2.00 Hz  
GB 0  
PC 1.40

The  $^{13}\text{C}$  NMR and DEPT Spectra of Jatamanin K (11) in  $\text{Me}_2\text{CO}-d_6$



## The $^1\text{H}$ NMR Spectrum of Jatamanin L (12) in $\text{Me}_2\text{CO}-d_6$

zhangwd-ls-257

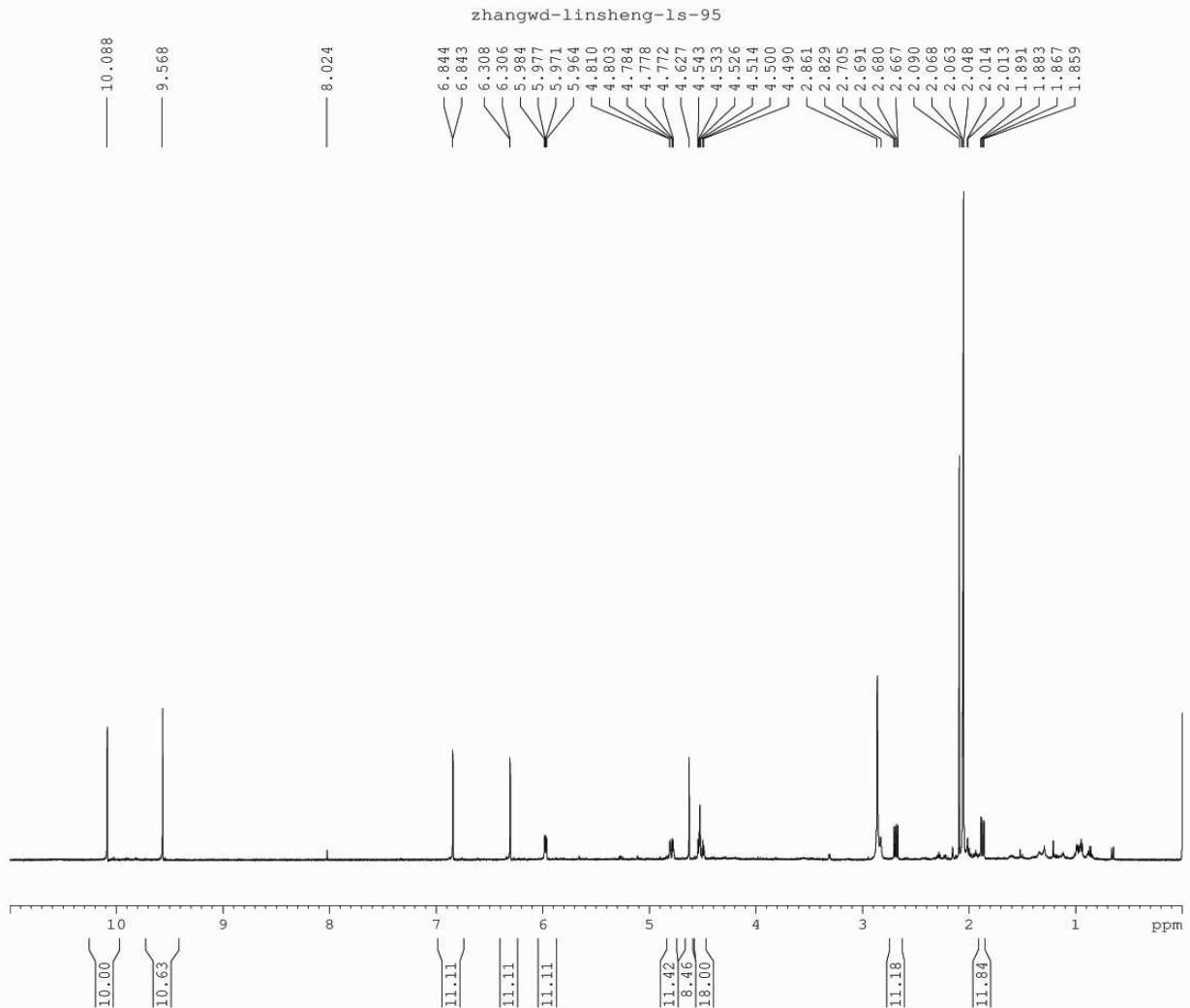


NAME zhangwd-ls-257  
EXPNO 2  
PROCNO 1  
Date\_ 20081020  
Time 8.07  
INSTRUM spect  
PROBHD 5 mm PABBO BB-  
PULPROG zgpg30  
TD 65536  
SOLVENT Acetone  
NS 506  
DS 4  
SWH 45454.547  
FIDRES 0.693581  
AQ 0.7209460  
RG 32768  
DW 11.000  
DE 6.00  
TE 300.0  
D1 2.0000000  
d11 0.03000000  
DELTA 1.8999998  
TDO 1

===== CHANNEL f1 =====  
NUC1 13C  
P1 8.50  
PL1 2.00  
SFO1 150.9178990

===== CHANNEL f2 =====  
CPDPRG2 waltz16  
NUC2 1H  
PCPD2 80.00  
PL2 -1.00  
PL12 14.00  
PL13 14.00  
SFO2 600.1324005  
SI 65536  
SF 150.9025917  
WDW EM  
SSB 0  
LB 2.00  
GB 0  
PC 1.40

The <sup>13</sup>C NMR and DEPT Spectra of Jatamanin L (12) in Me<sub>2</sub>CO-*d*<sub>6</sub>



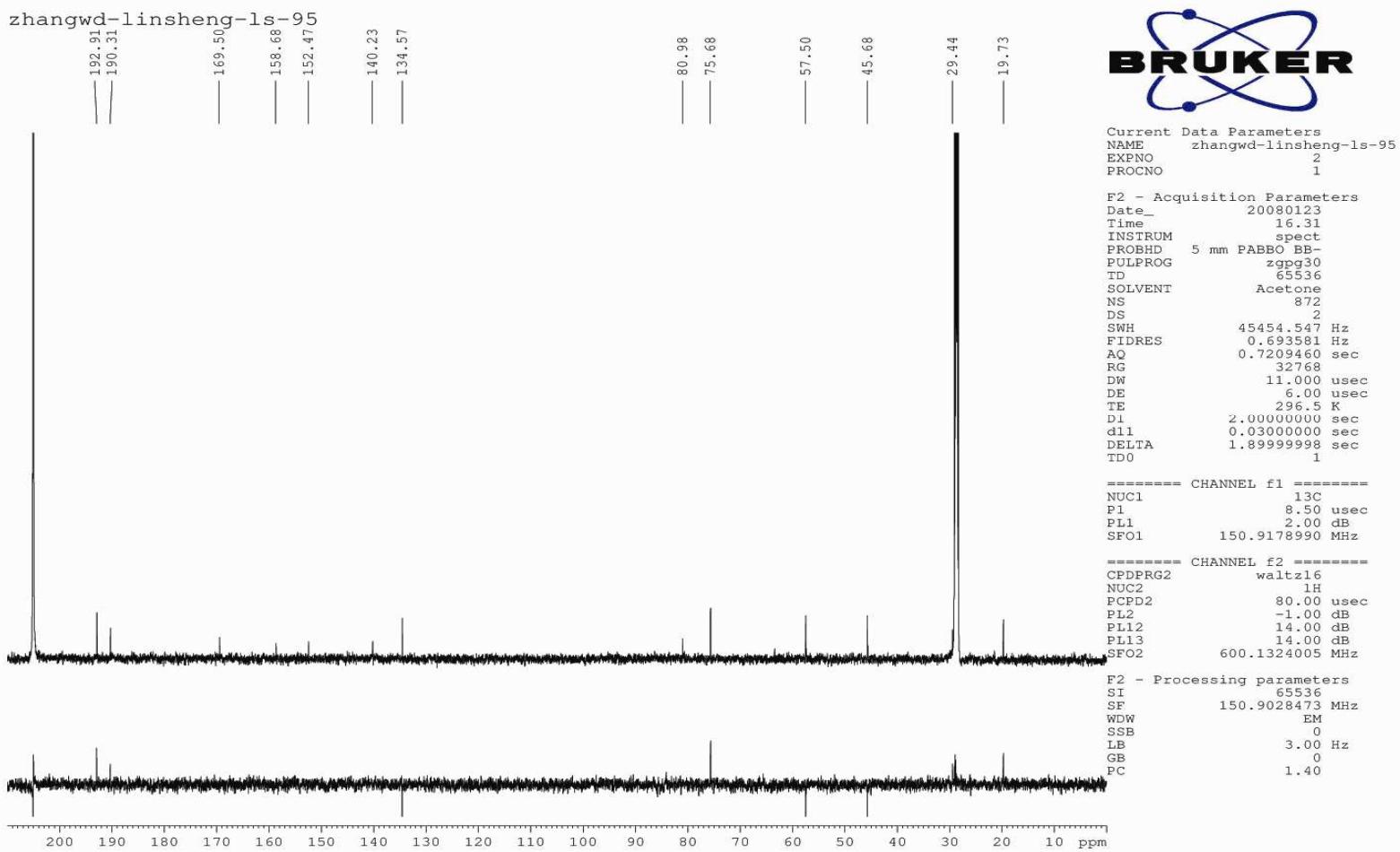
Current Data Parameters  
 NAME zhangwd-linsheng-ls-95  
 EXPNO 1  
 PROCNO 1

F2 - Acquisition Parameters  
 Date\_ 20080123  
 Time 16.19  
 INSTRUM spect  
 PROBHD 5 mm PABBO BB-  
 PULPROG zg30  
 TD 49152  
 SOLVENT Acetone  
 NS 8  
 DS 2  
 SWH 9014.423 Hz  
 FIDRES 0.183399 Hz  
 AQ 2.7263477 sec  
 RG 128  
 DW 55.467 usec  
 DE 6.00 usec  
 TE 294.2 K  
 D1 2.0000000 sec  
 TD0 1

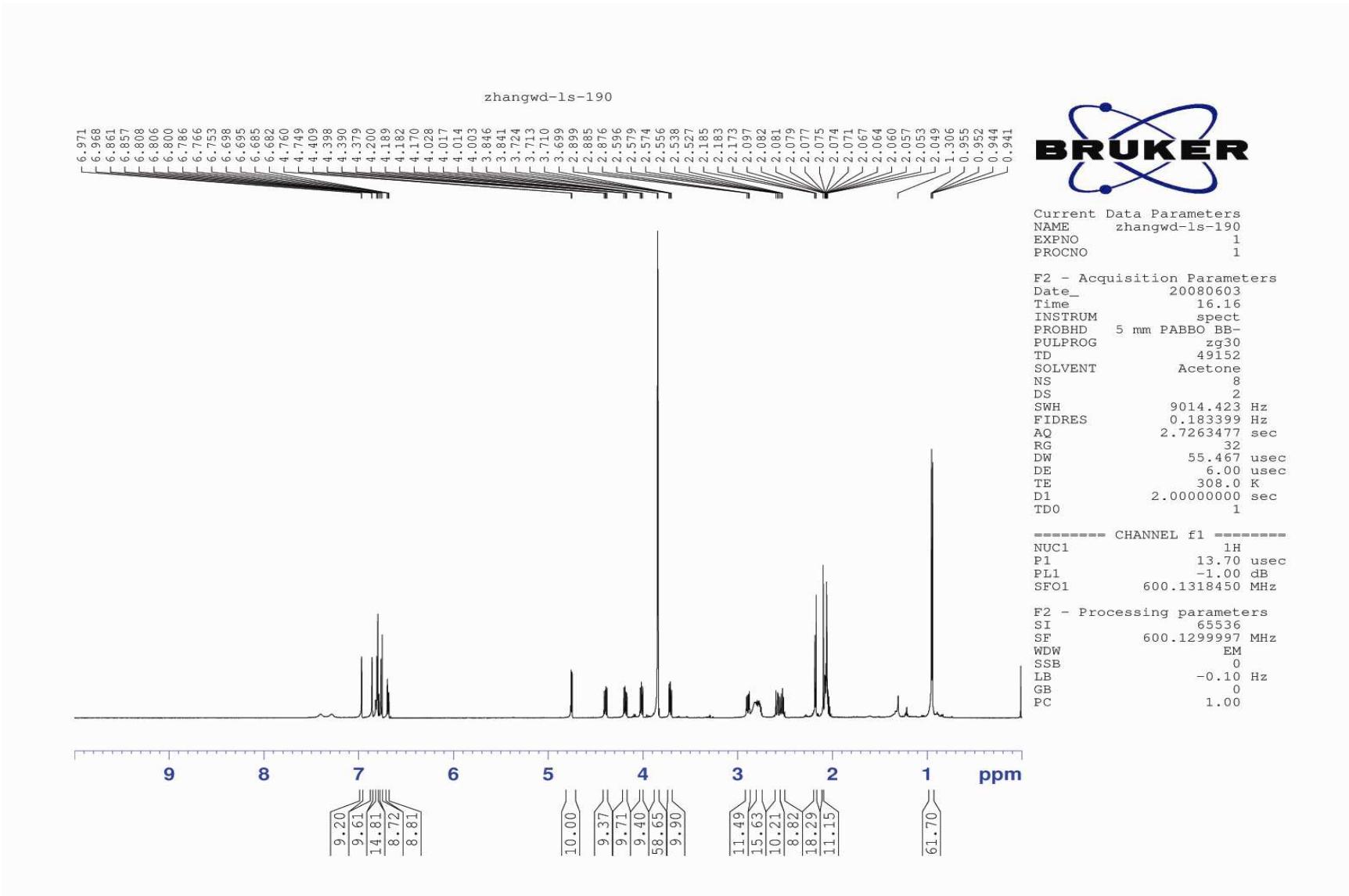
===== CHANNEL f1 =====  
 NUC1 1H  
 P1 13.70 usec  
 PLL -1.00 dB  
 SFO1 600.1330490 MHz

F2 - Processing parameters  
 SI 65536  
 SF 600.1300030 MHz  
 WDW EM  
 SSB 0  
 LB -0.10 Hz  
 GB 0  
 PC 1.00

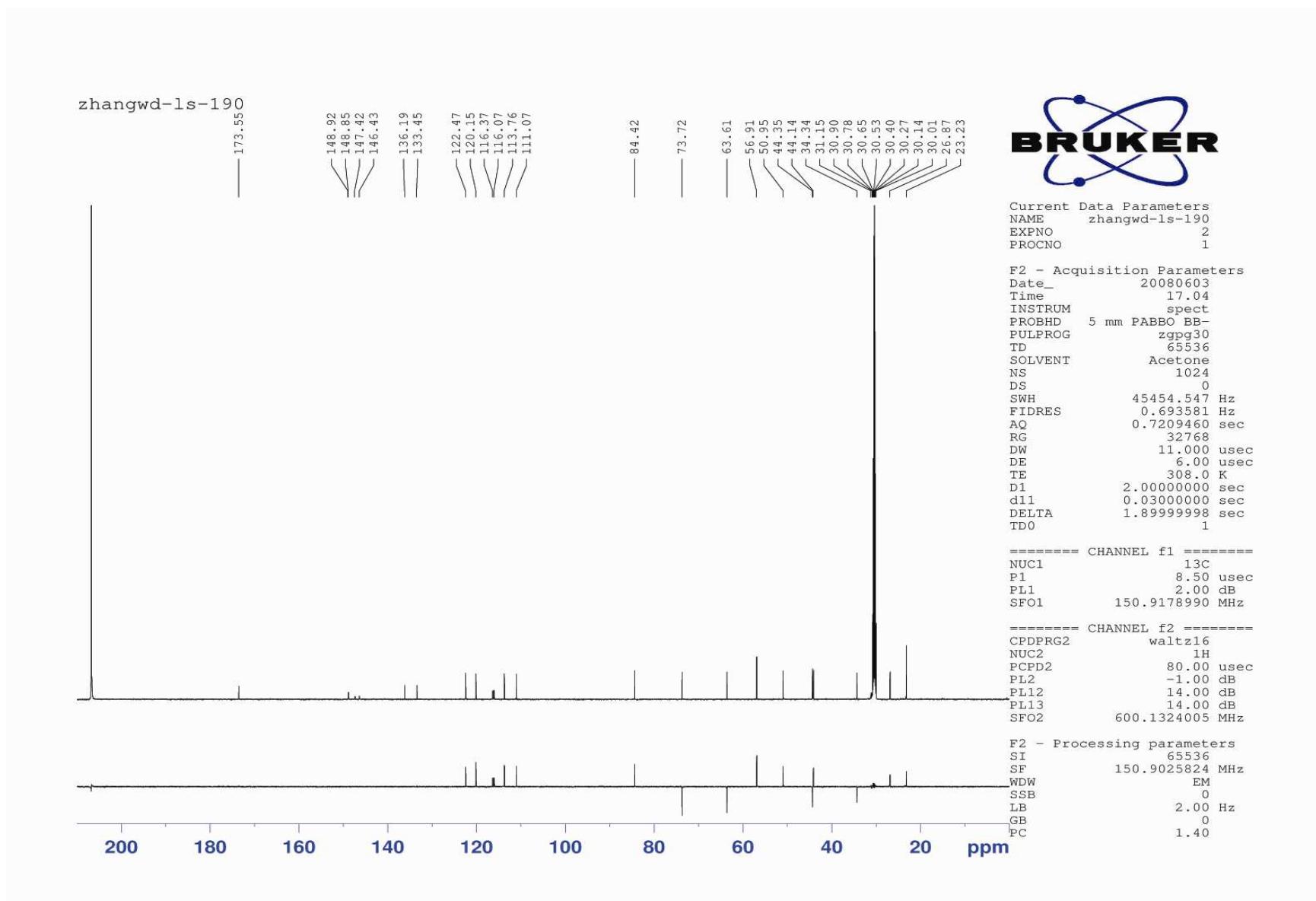
The  $^1\text{H}$  NMR Spectrum of Jatamanin M (13) in  $\text{Me}_2\text{CO}-d_6$



The  $^{13}\text{C}$  NMR and DEPT Spectra of Jatamanin M (13) in  $\text{Me}_2\text{CO}-d_6$



The  $^1\text{H}$  NMR Spectrum of Compound 14 in  $\text{Me}_2\text{CO}-d_6$



The  $^{13}\text{C}$  NMR and DEPT Spectra of Compound 14 in  $\text{Me}_2\text{CO}-d_6$

### Crystal Data and Structure Refinement for Jatamanin A (1)

Empirical formula	$C_{10}H_{14}O_4$
Formula weight	198.09
Temperature	293(2) K
Wavelength	0.71073 Å
Crystal system	Monoclinic
space group	P2(1)
Unit cell dimensions	a= 5.957(14) Å $\alpha$ = 90 ° b= 13.28(3) Å $\beta$ = 90 ° c= 7.662(17) Å $\gamma$ = 90 °
Volume	587 (2) Å <sup>3</sup>
Z	2
Calculated density	1.320 Mg/m <sup>3</sup>
Absorption coefficient	0.109 mm <sup>-1</sup>
F(000)	250
Crystal size	0.25 × 0.20 × 0.18 mm <sup>3</sup>
Theta range for data collection	3.07 to 25.00 °
Limiting indices	-6<=h<=7 -14<=k<=15 -8<=l<=9
Reflections collected / unique	2385/1835 [R(int) = 0.0406]
Completeness to $\theta$ = 24.99 °	99.2 %
Absorption correction	Semi-empirical from equivalents
Max. and min. transmission	0.9806 and 0.9732
Refinement method	Full-matrix least-squares on $F^2$
Data / restraints / parameters	1835/7/162
Goodness-of-fit on $F^2$	1.091
Final R indices [ $I>2\sigma(I)$ ]	$R_1$ = 0.0595, $wR_2$ = 0.1501
R indices (all data)	$R_1$ = 0.0606, $wR_2$ = 0.1517
Absolute structure parameter	1.0(14)