

Supporting Information-II

Copies of ESIMS, 1D and 2D NMR spectra of compounds 7–10, 8a–8i, 9a–9b, and 10a–10c.

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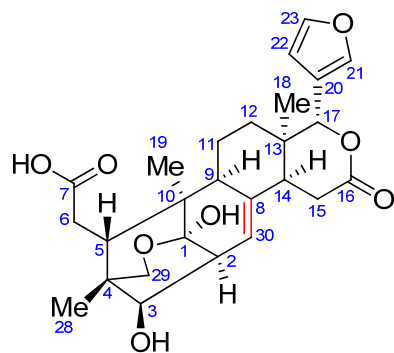
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LR-ESIMS for compound 7



7

Chemical Formula: $C_{26}H_{32}O_8$

Exact Mass: 472.20972

Generic Display Report

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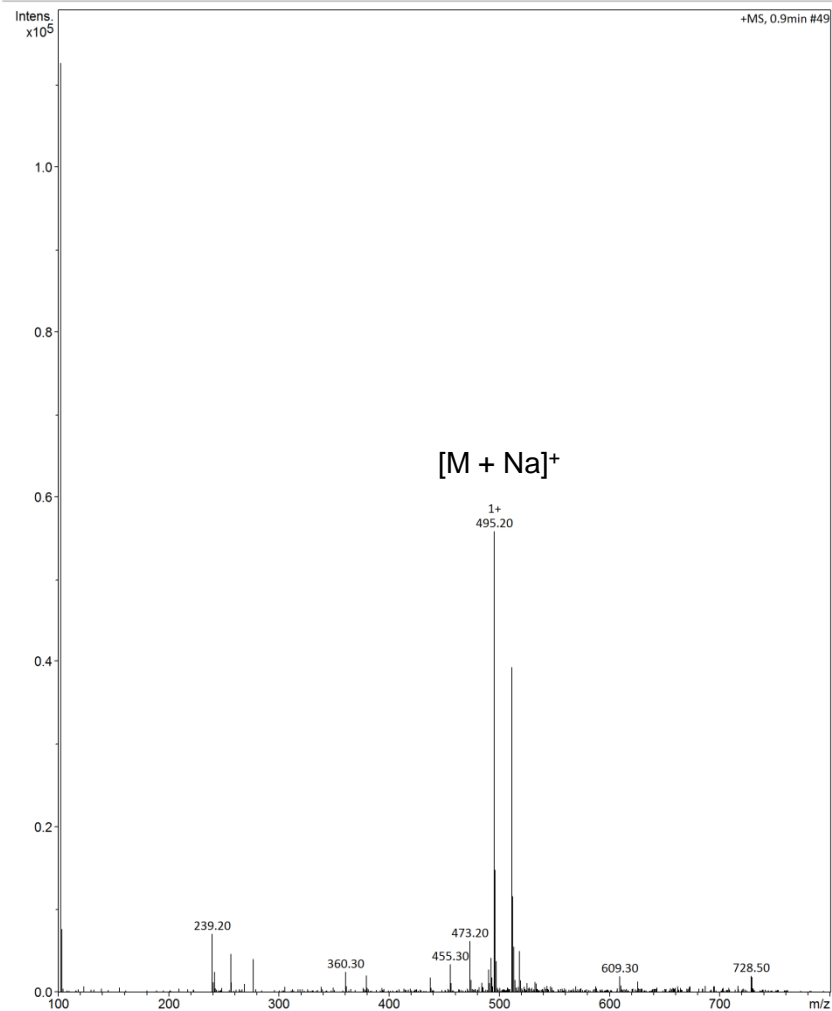
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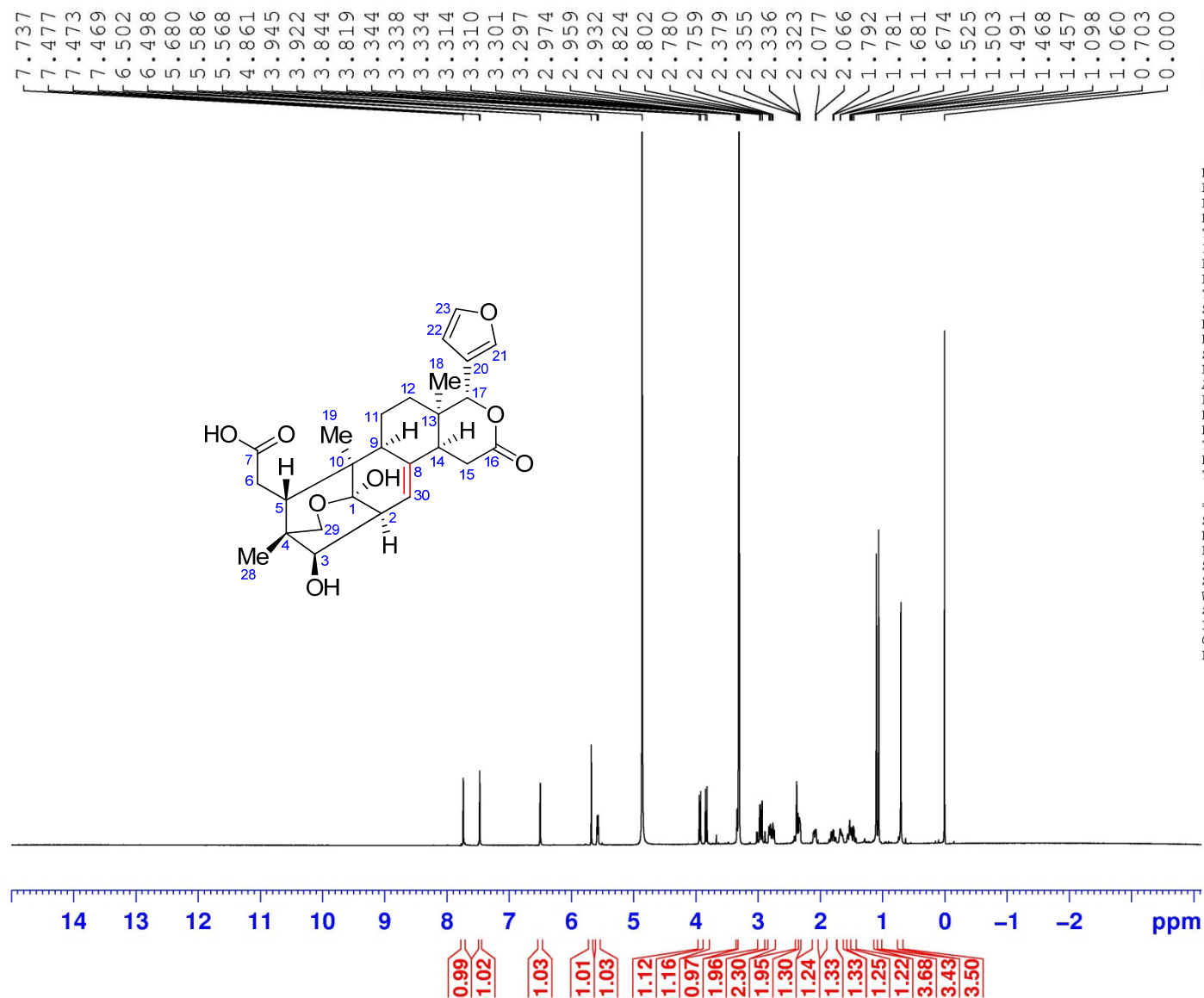
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Instrument LCMSSD



Bruker Compass DataAnalysis

¹H NMR (400 MHz) spectrum of **7** in CD₃OD

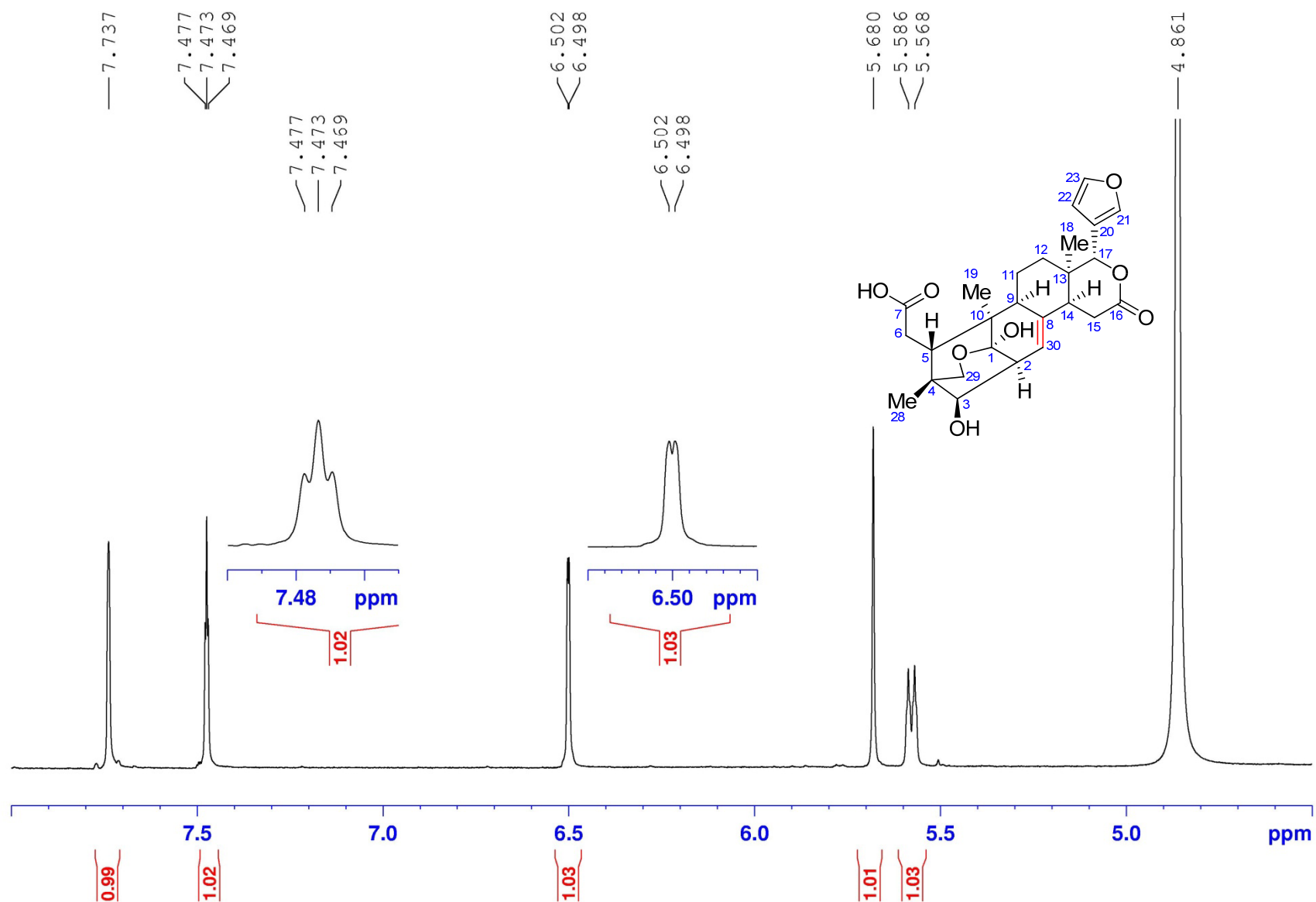


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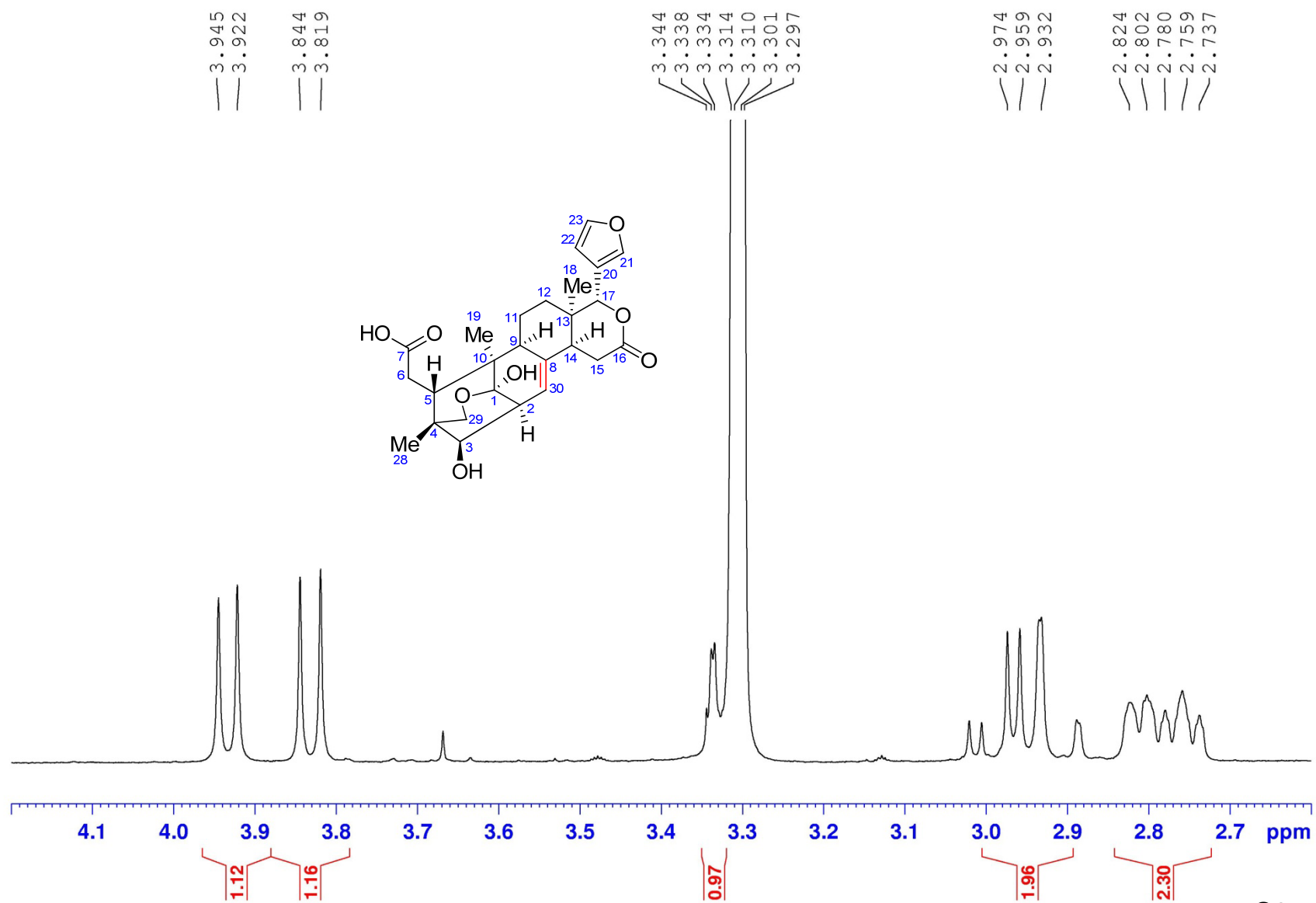
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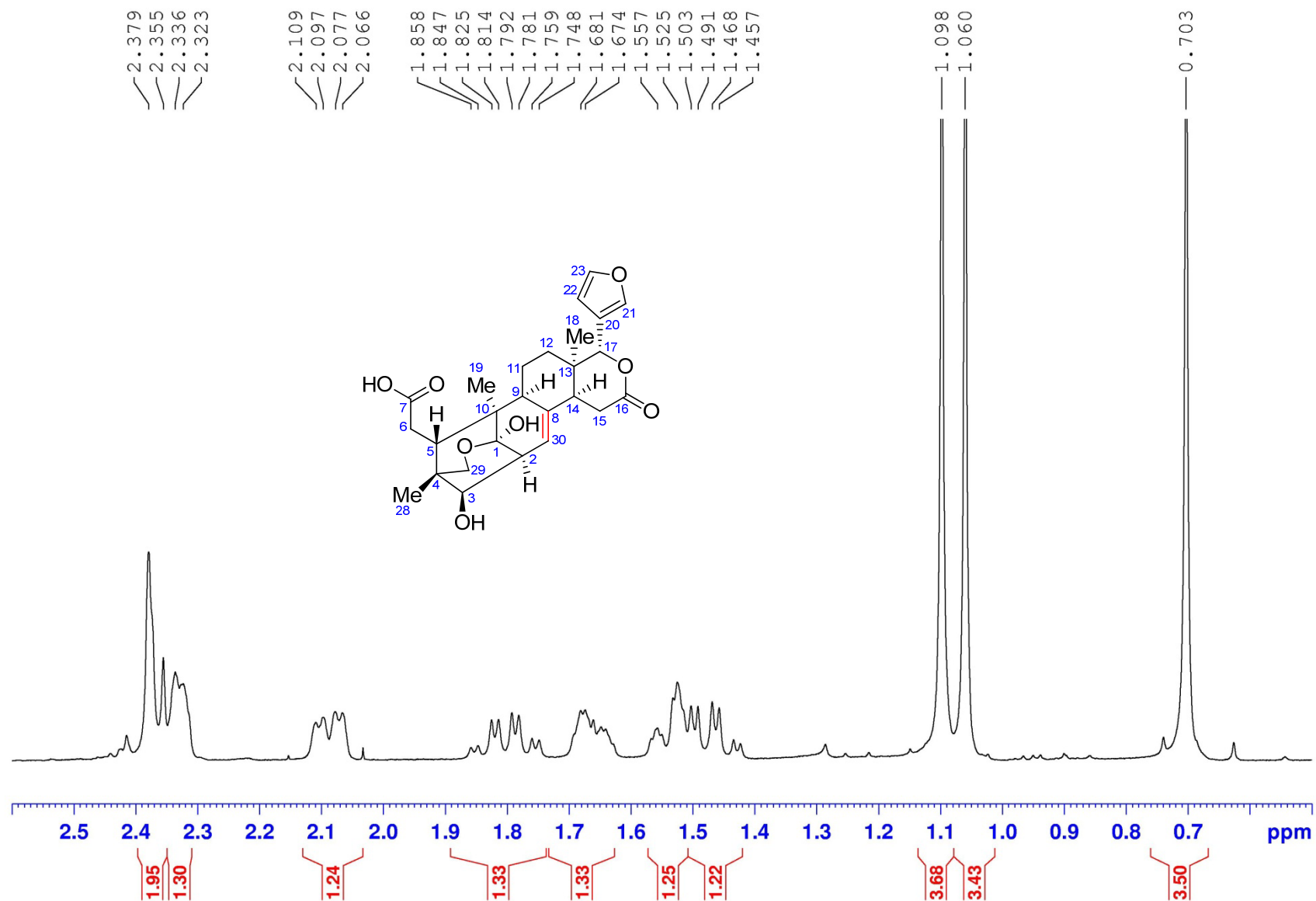
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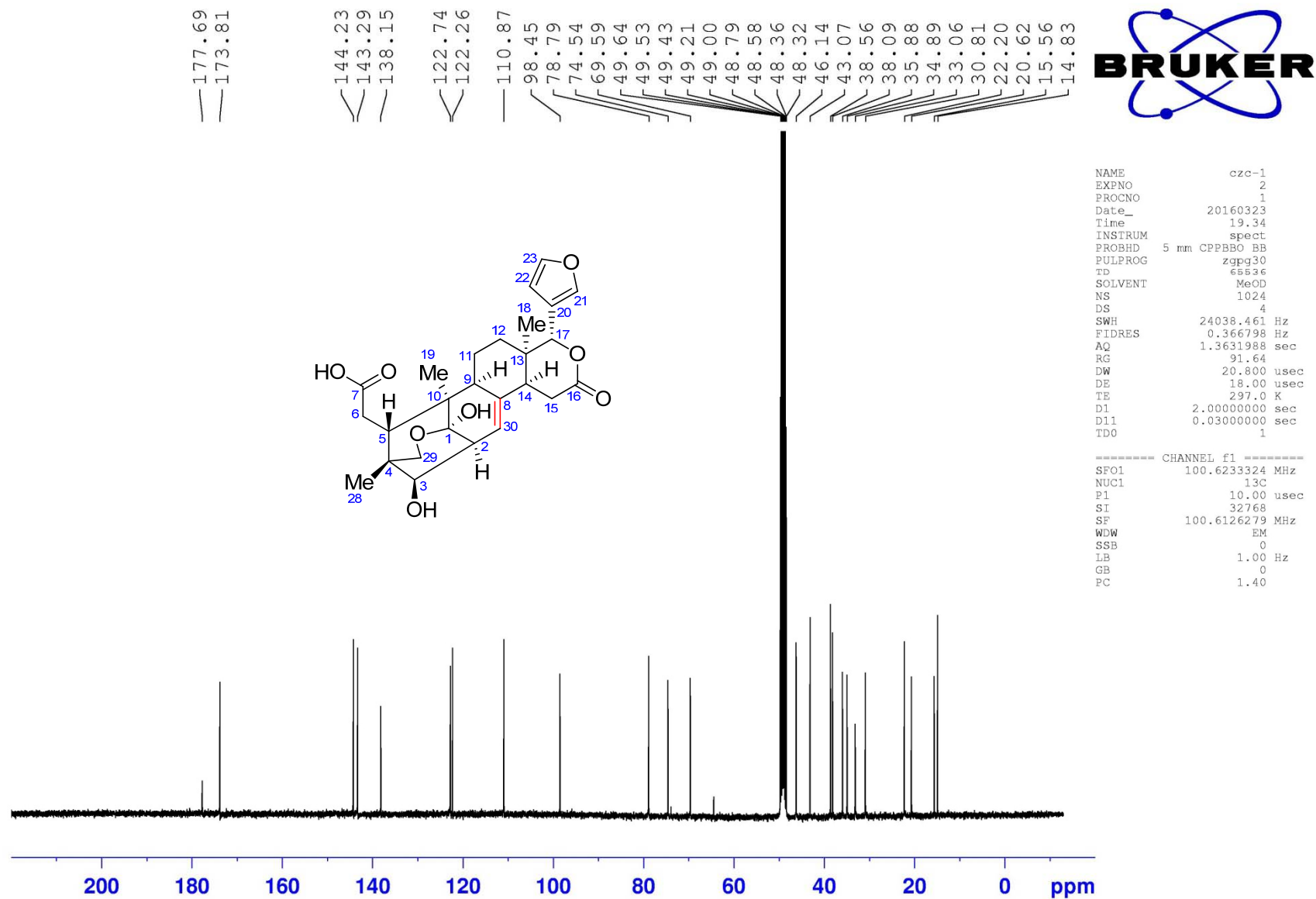
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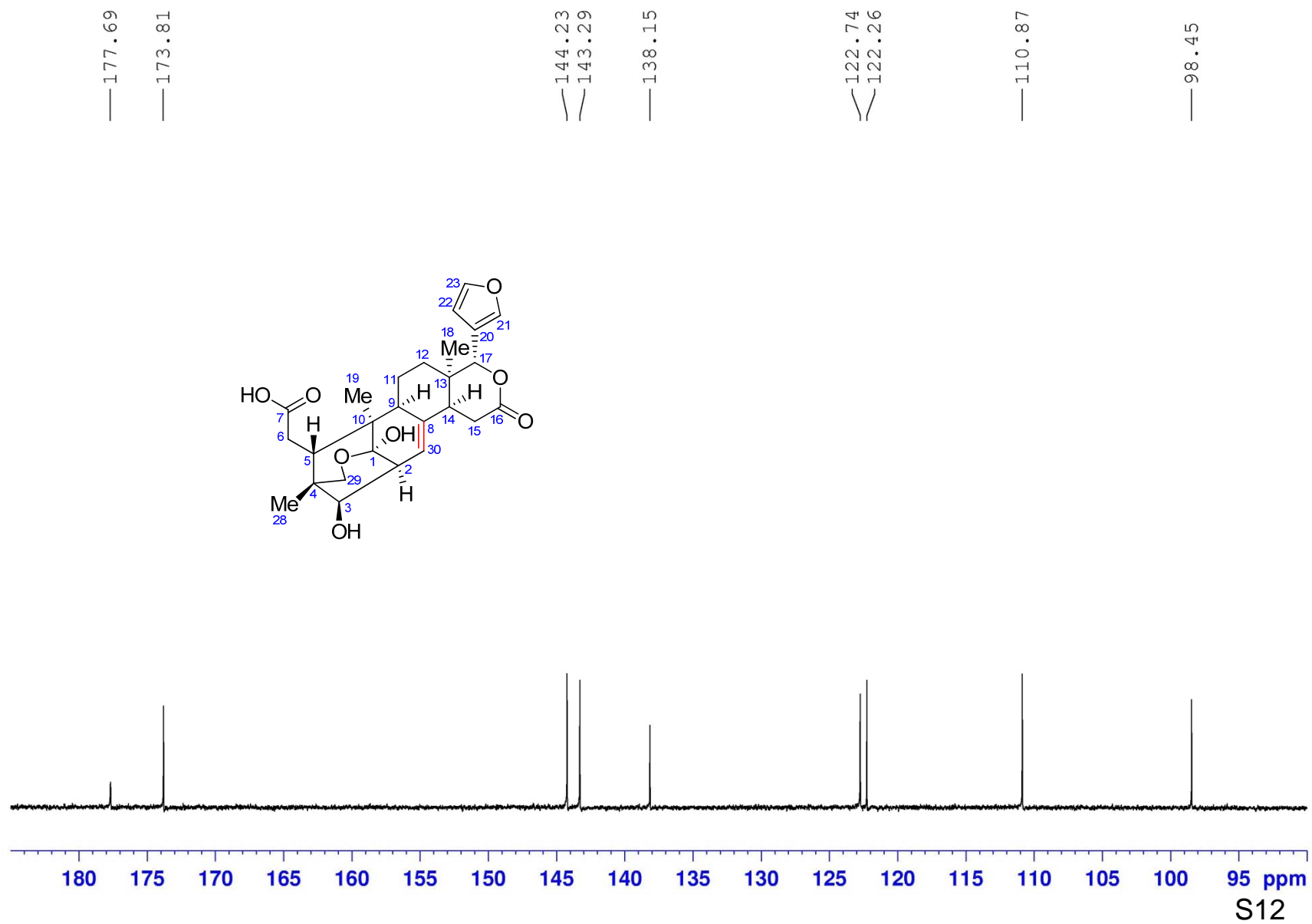
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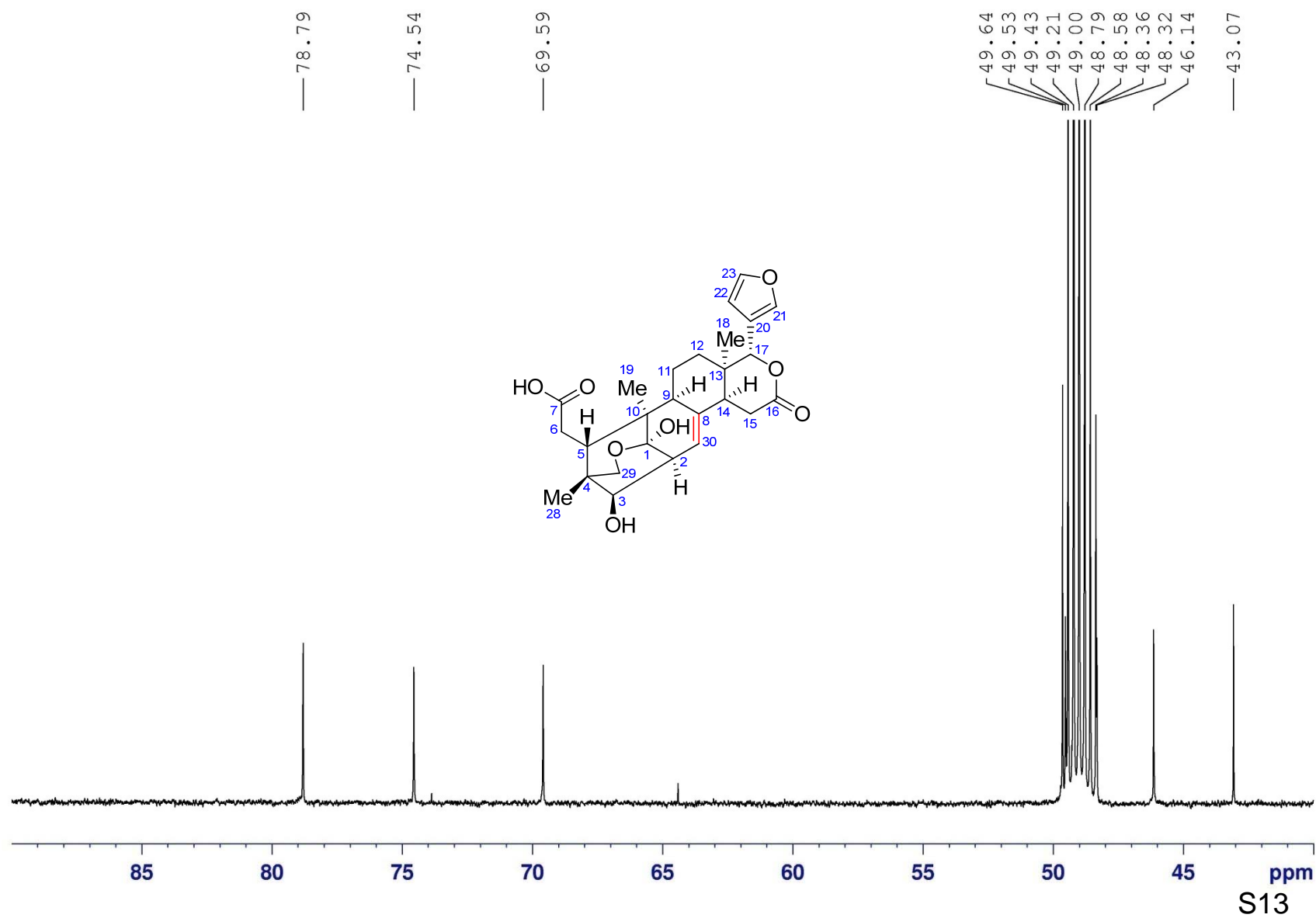
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^{13}C NMR (100 MHz) spectrum of **7** in CD_3OD



^{13}C NMR (100 MHz) spectrum of **7** in CD_3OD



^{13}C NMR (100 MHz) spectrum of **7** in CD_3OD

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— 35.88

— 34.89

— 33.06

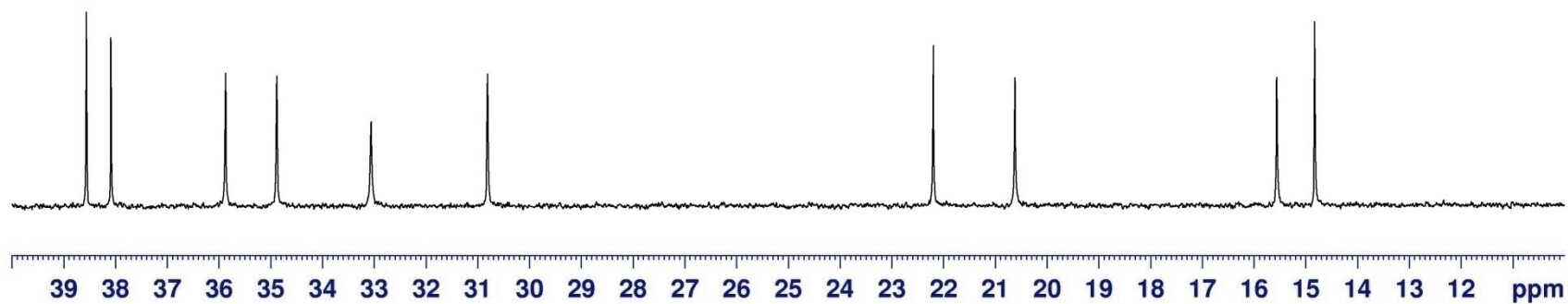
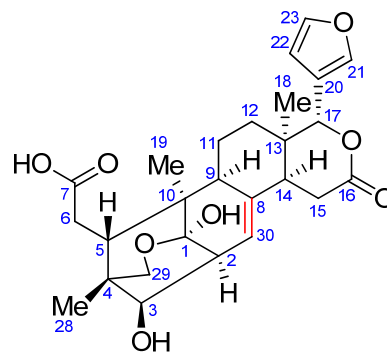
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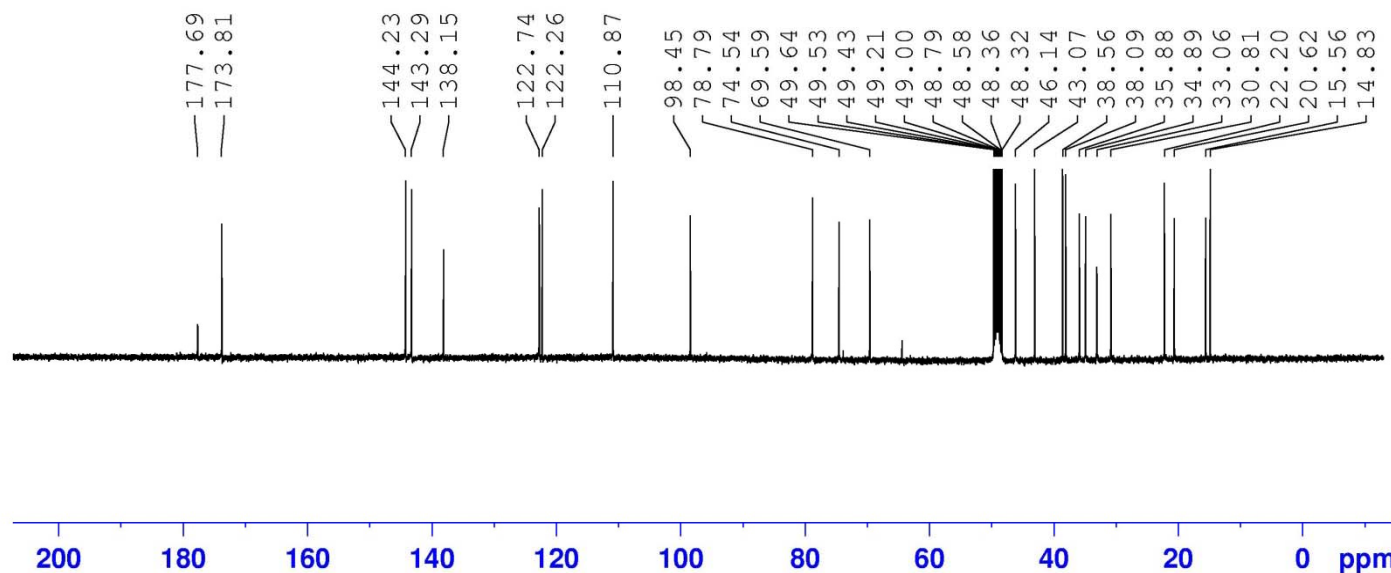
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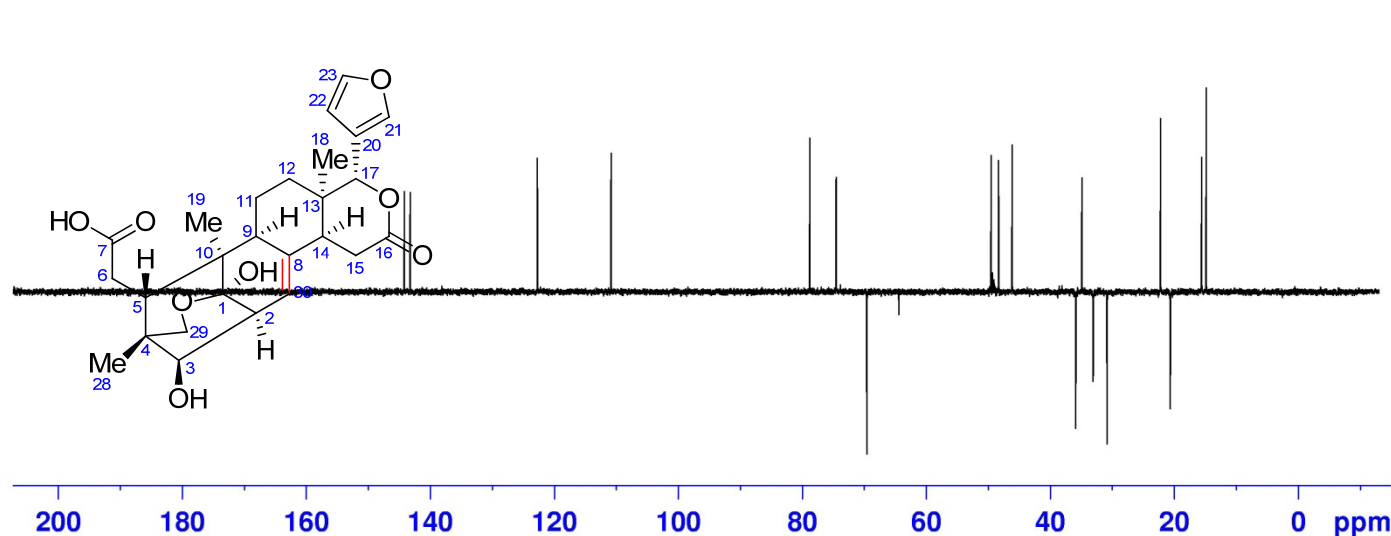


DEPT 135 spectrum of **7** in CD₃OD



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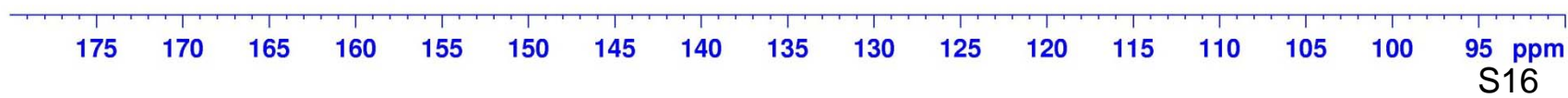
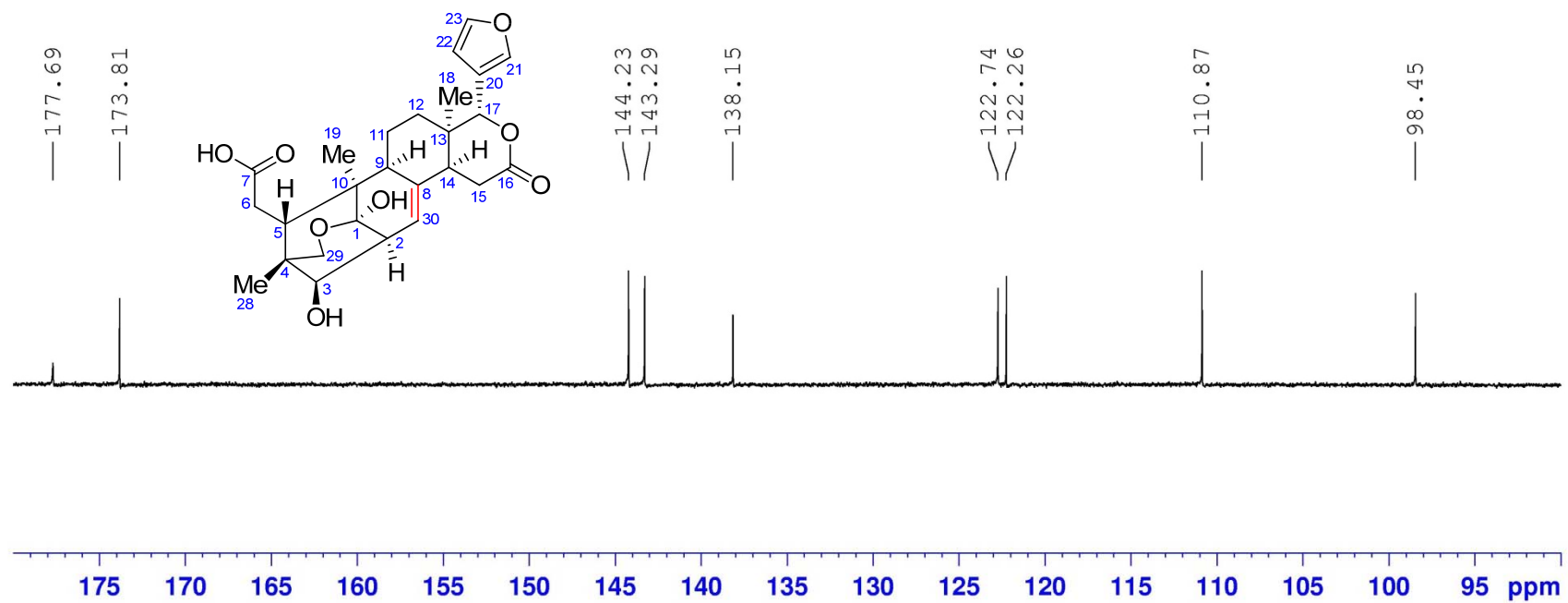
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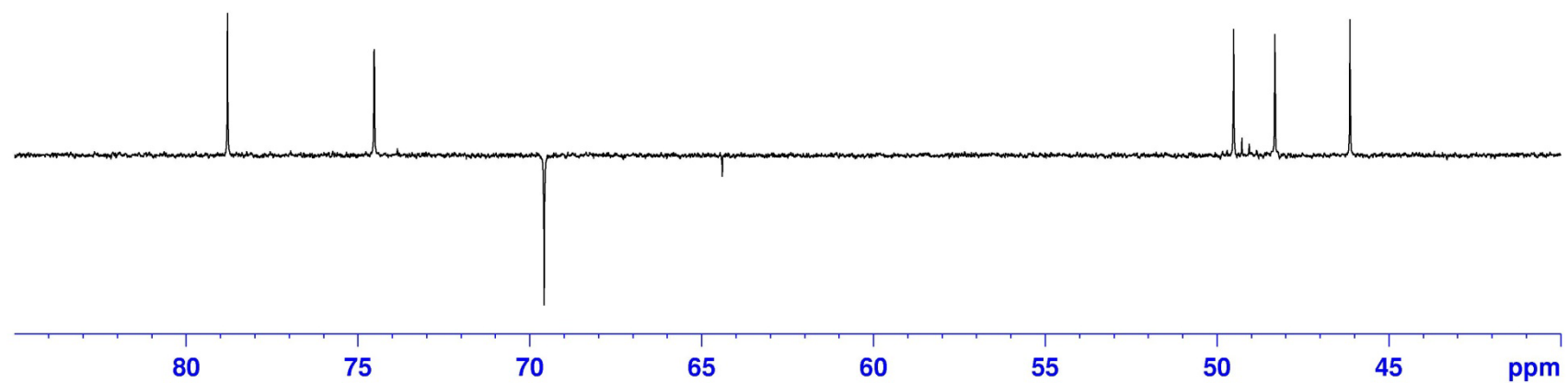
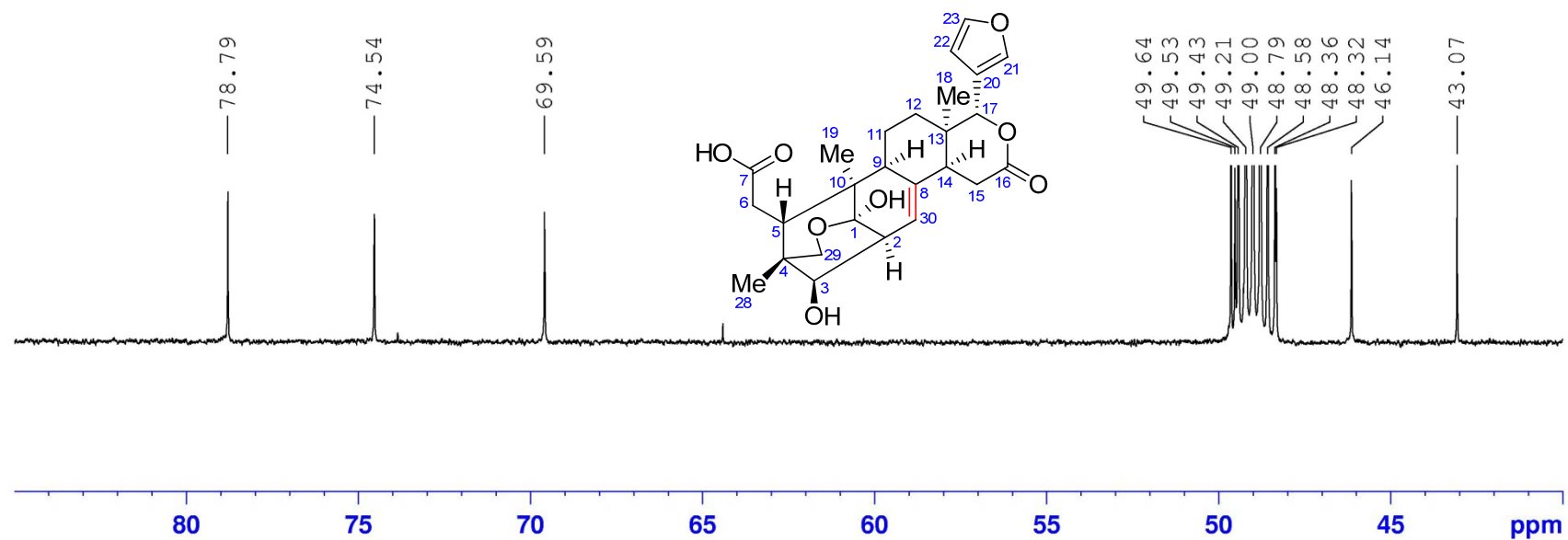
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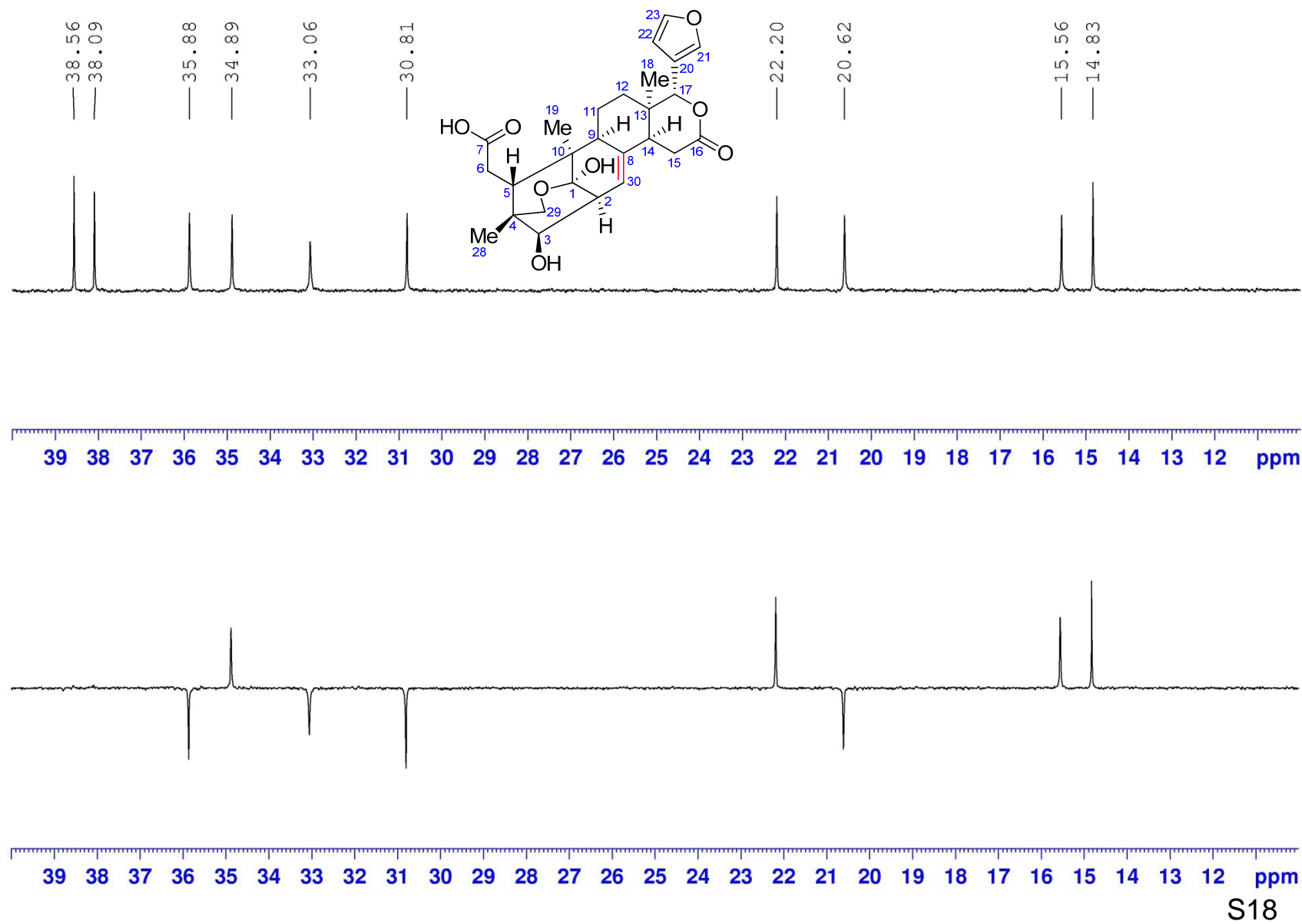
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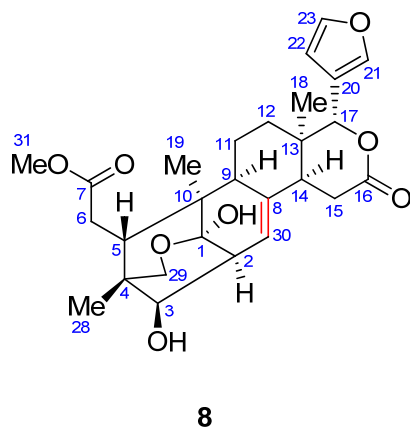
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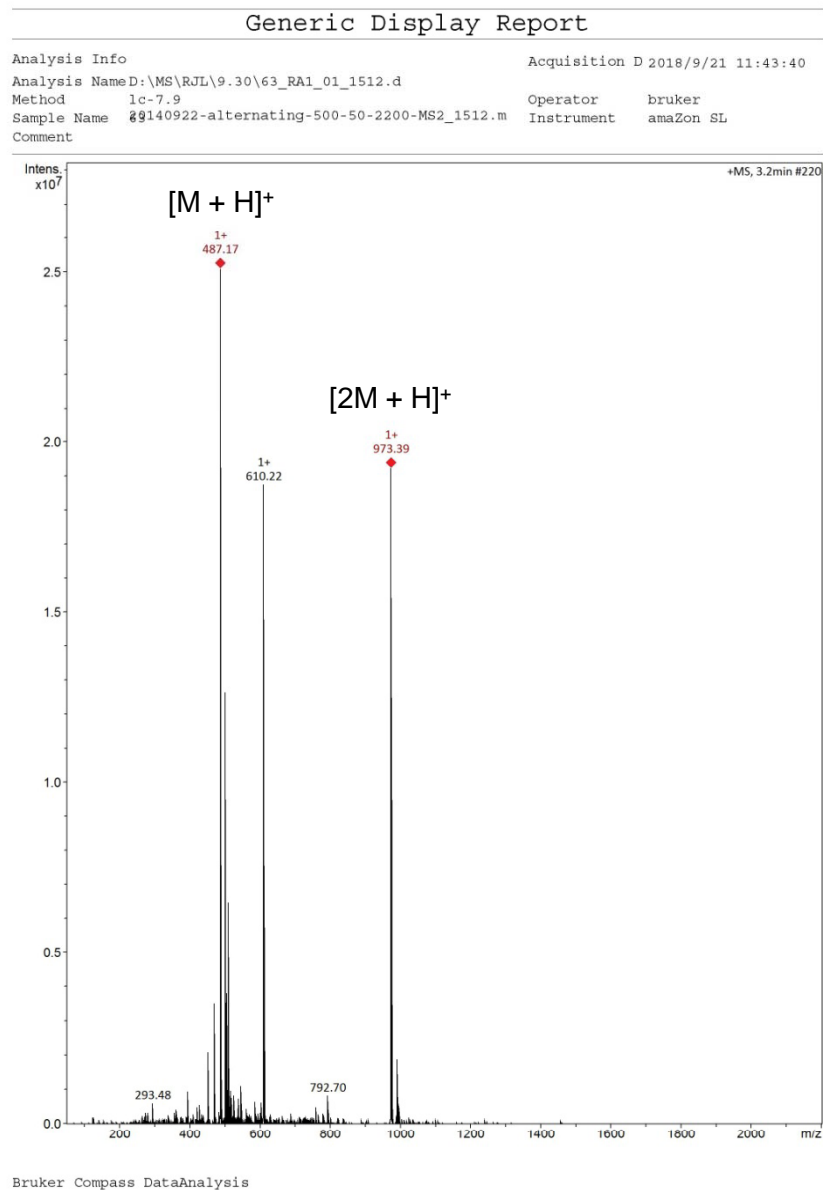
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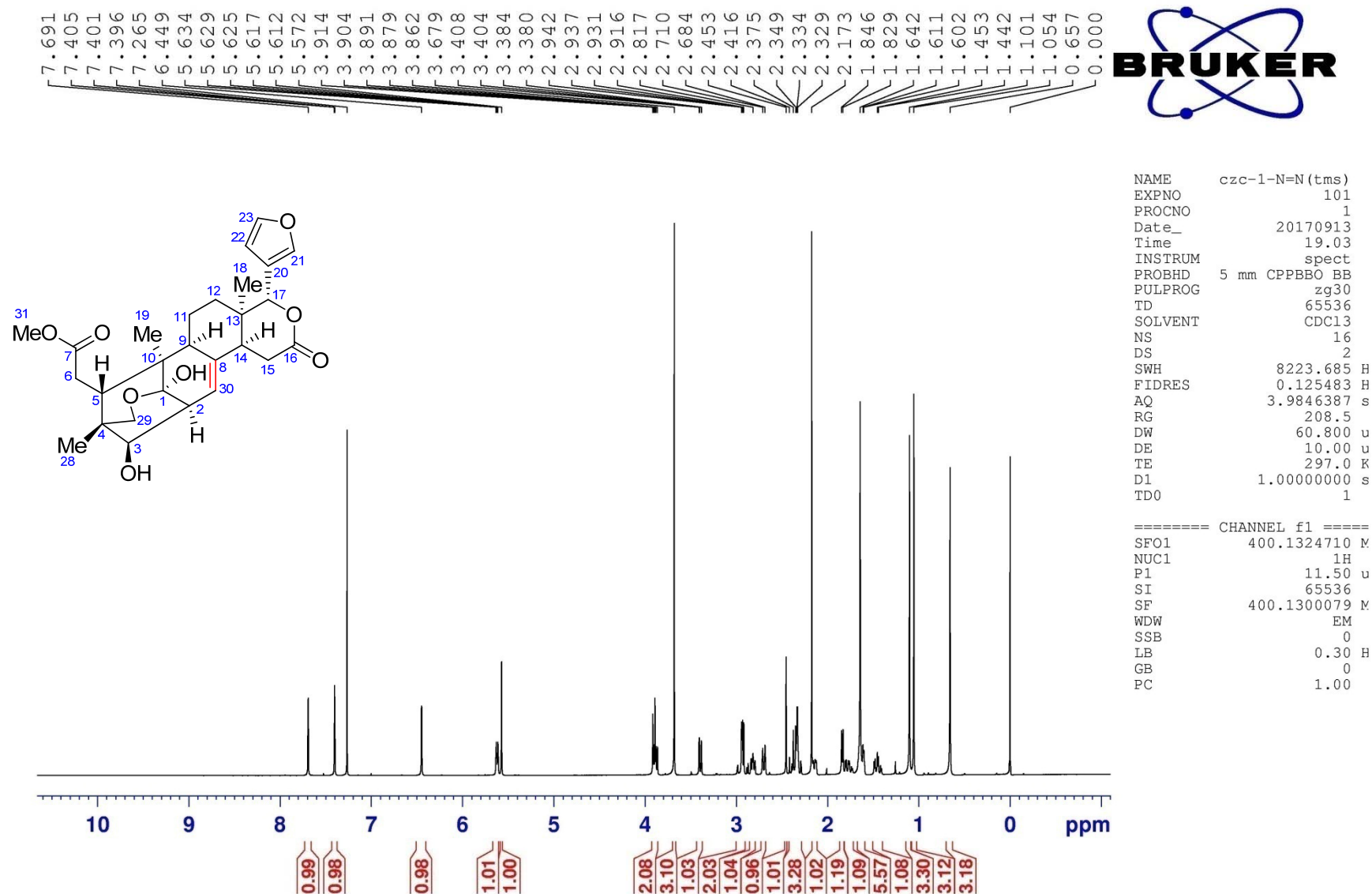
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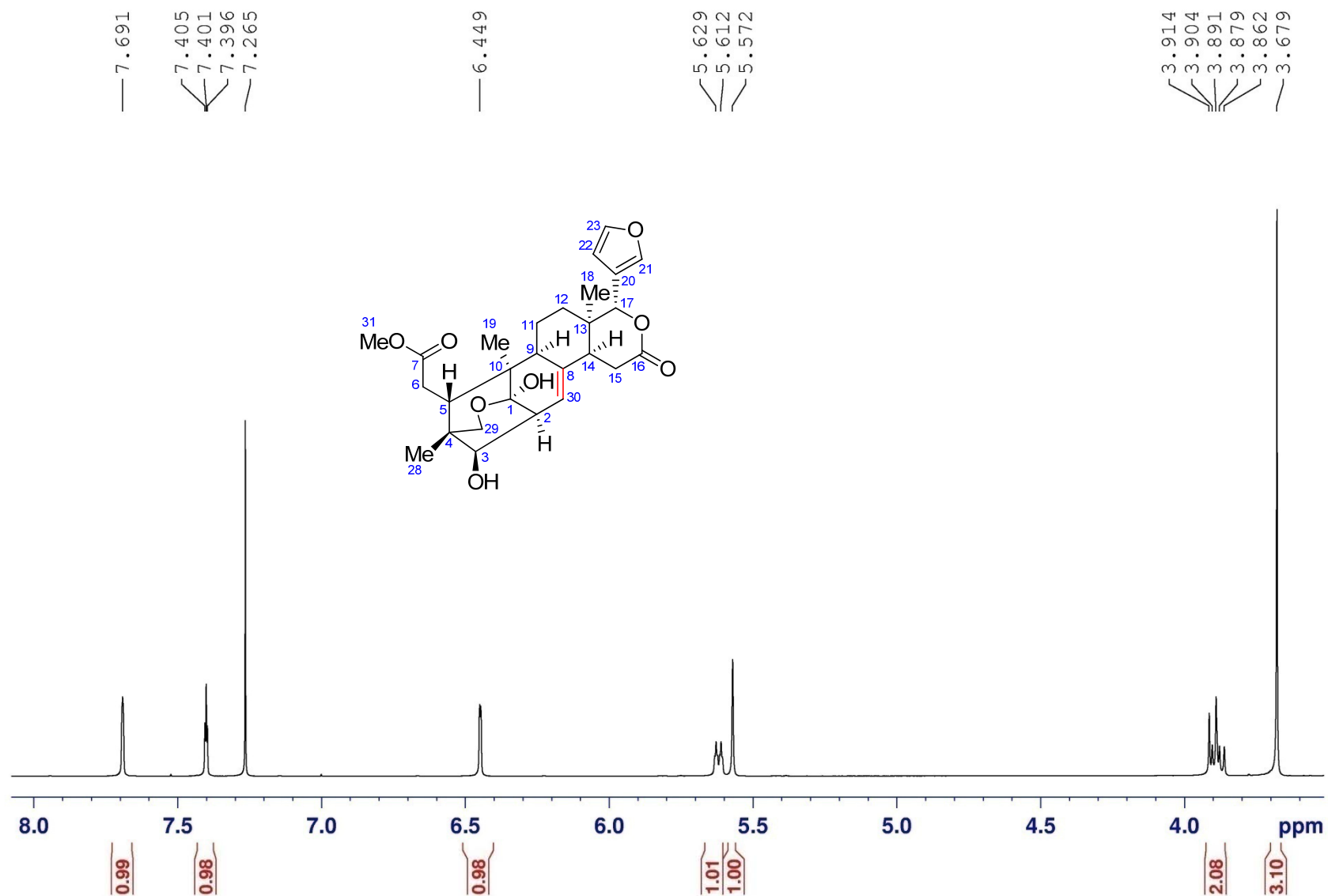
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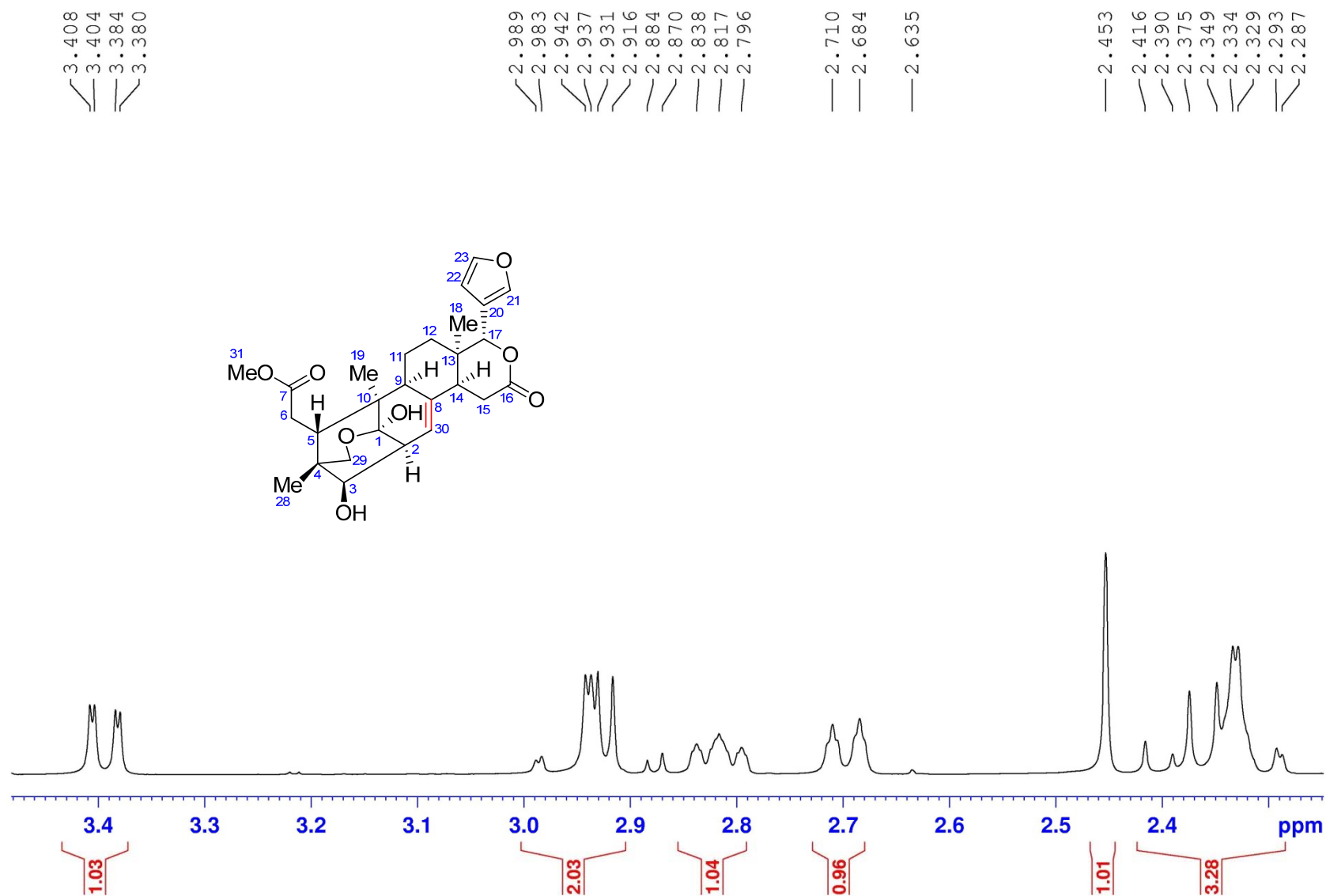
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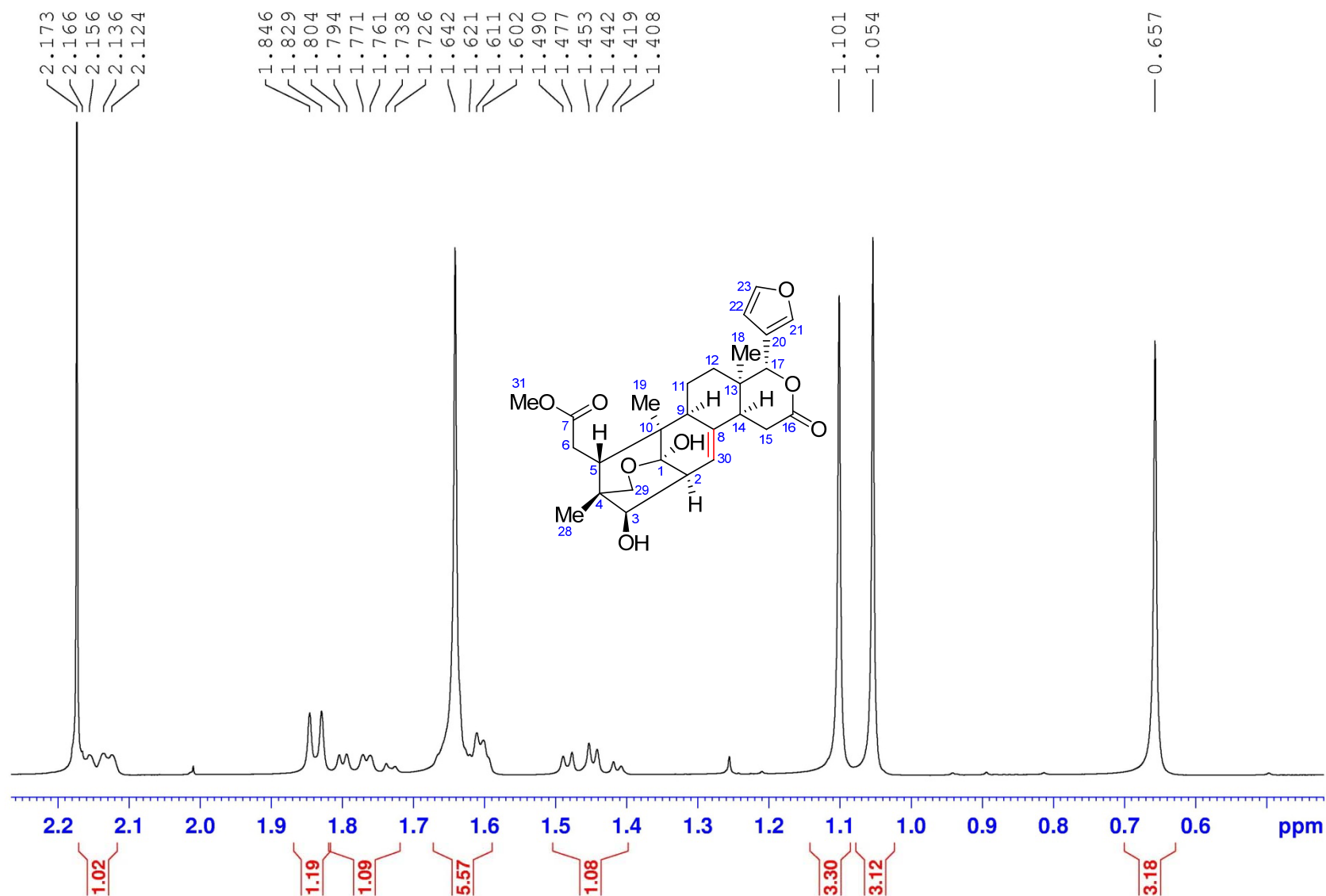
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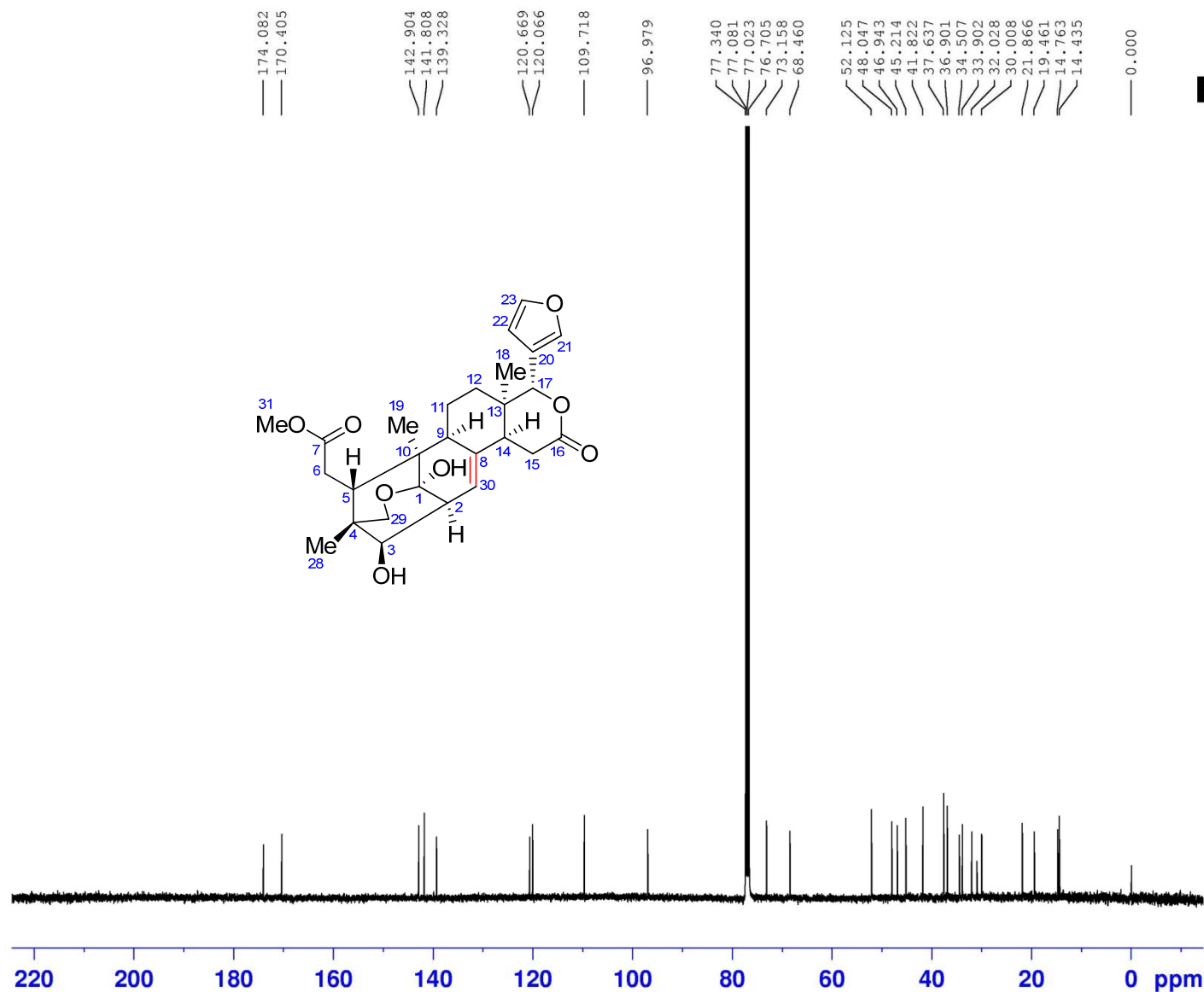
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^1H NMR (400 MHz) spectrum of **8** in CDCl_3



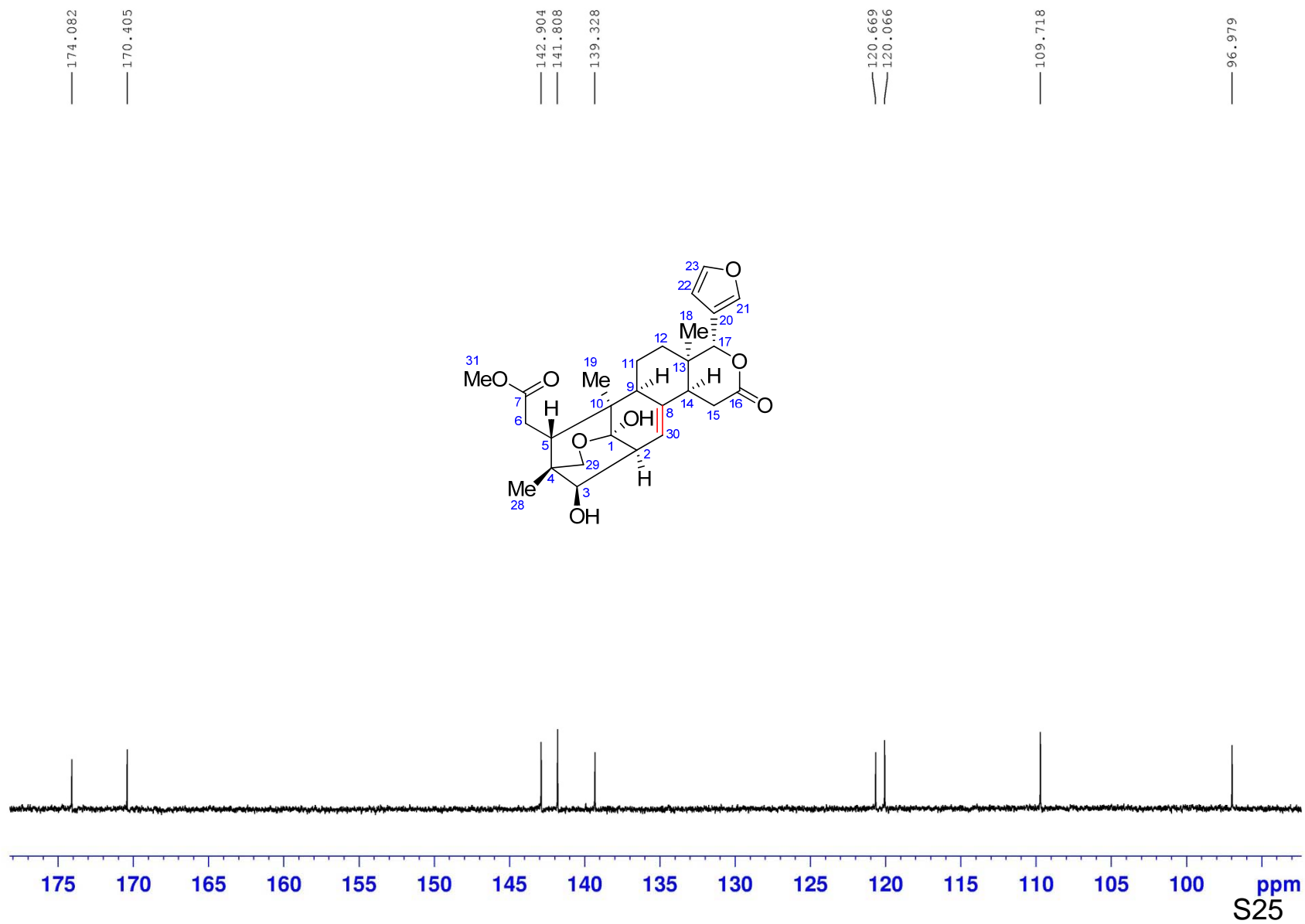
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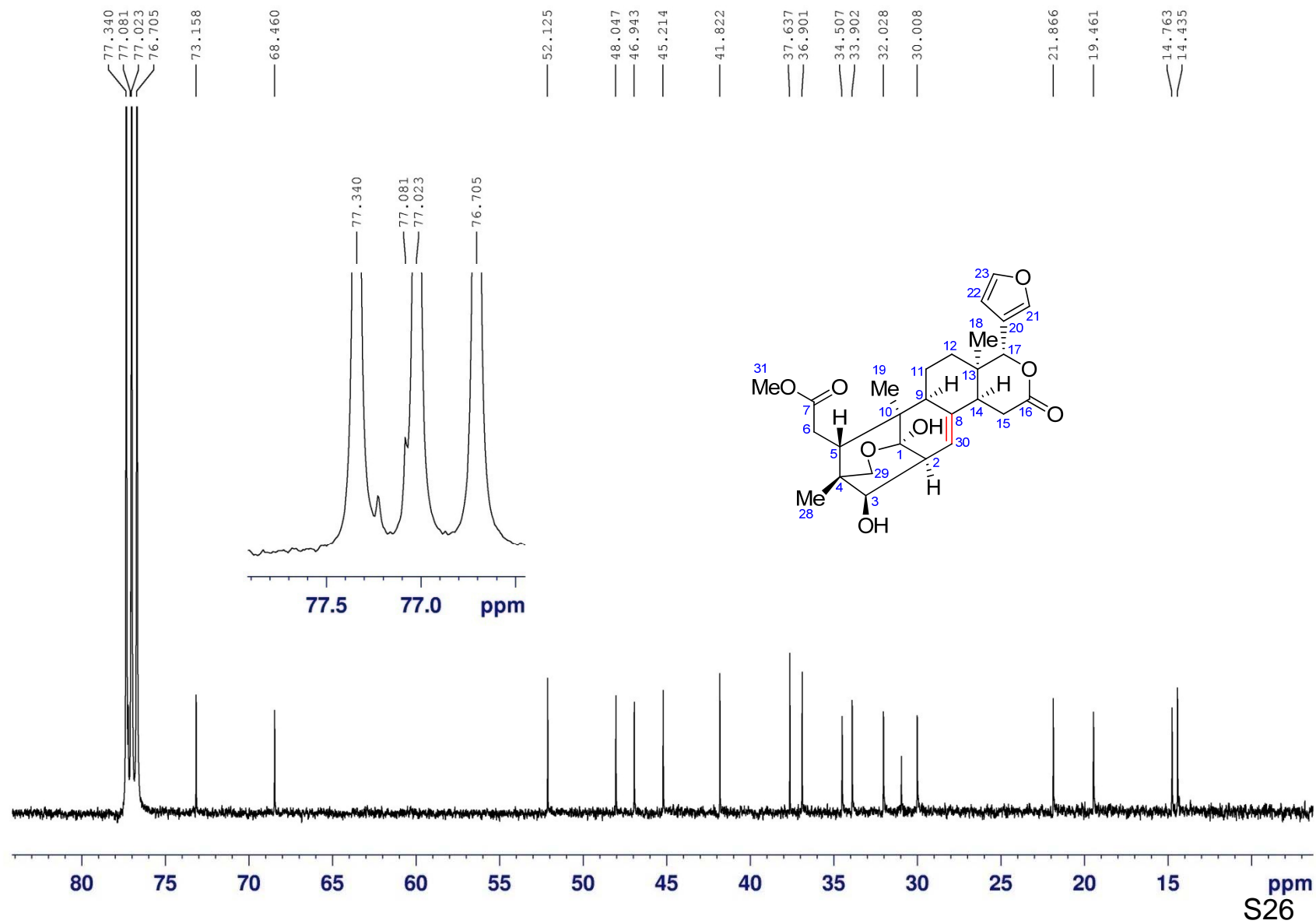
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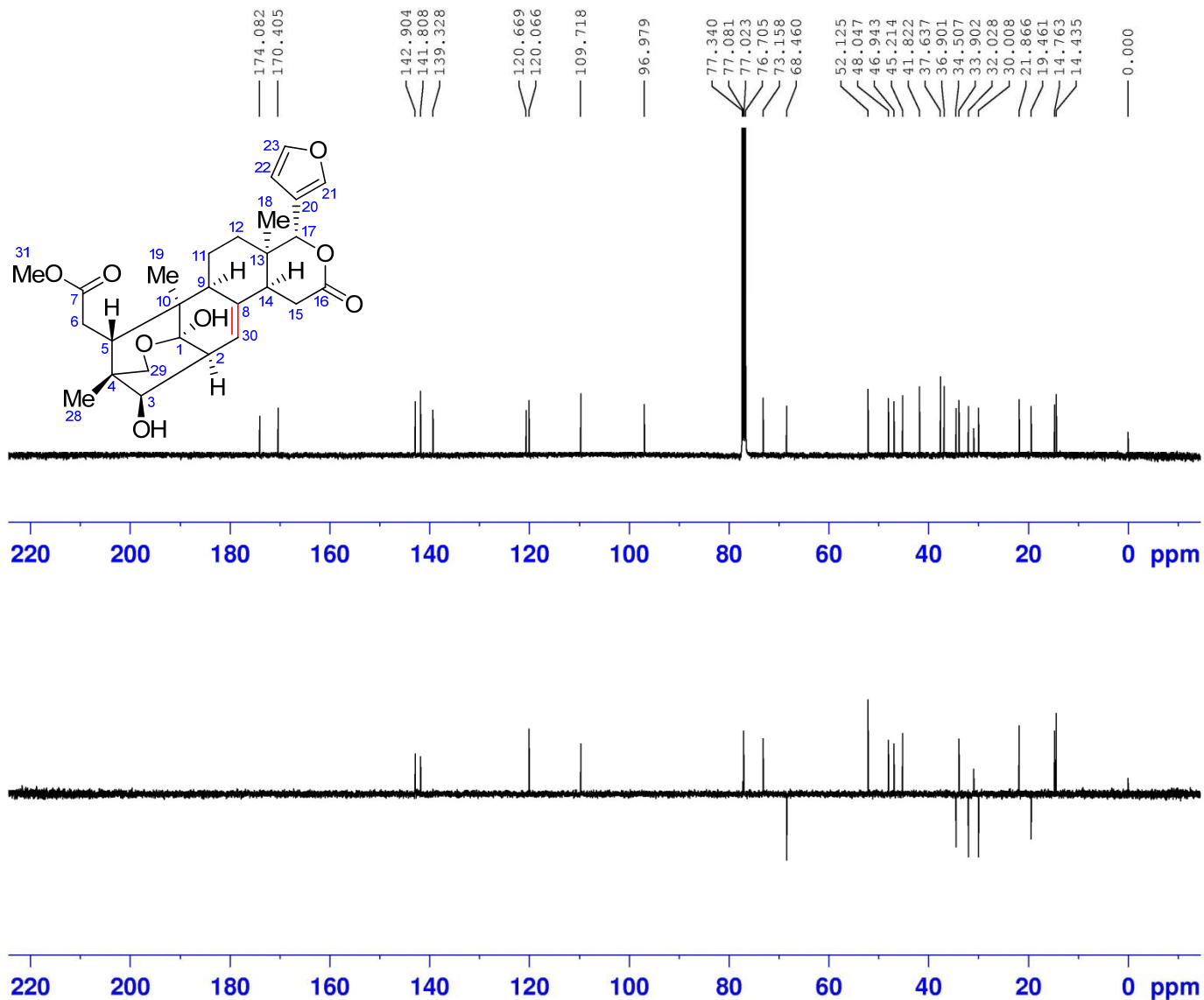
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^{13}C NMR (100 MHz) spectrum of **8** in CDCl_3



DEPT 135 spectrum of **8** in CDCl₃



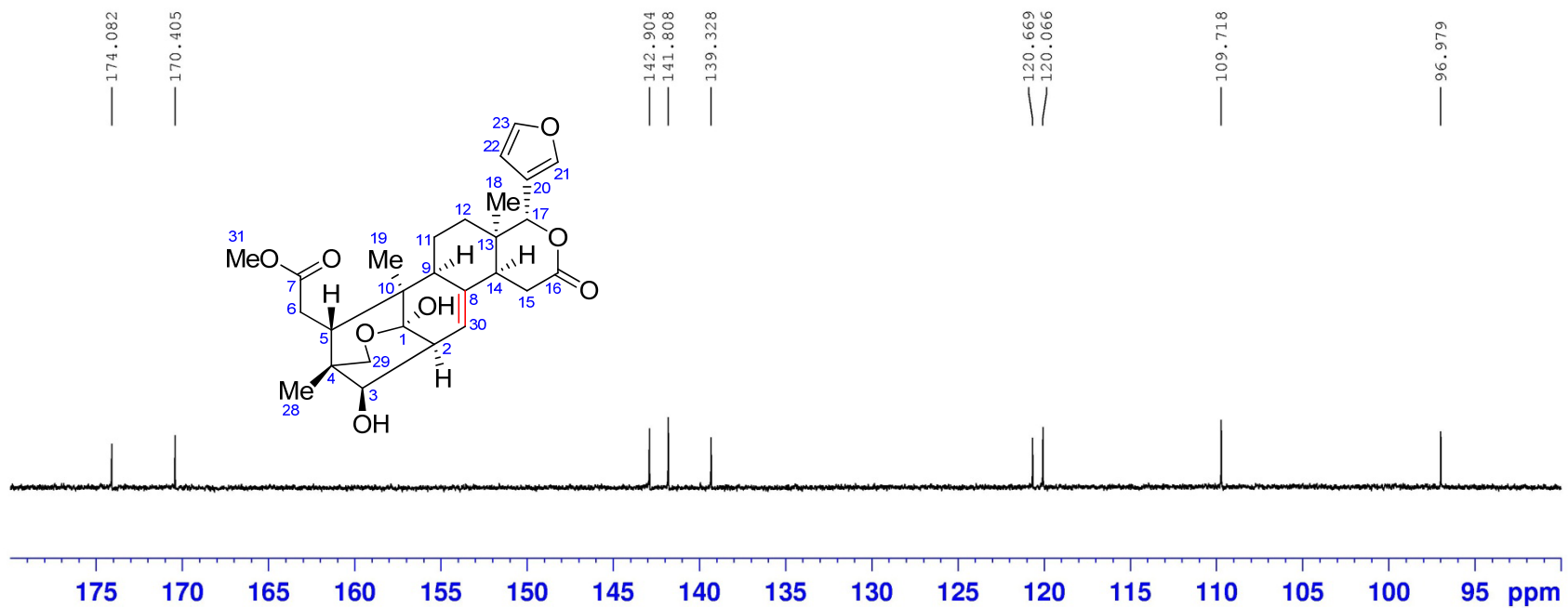
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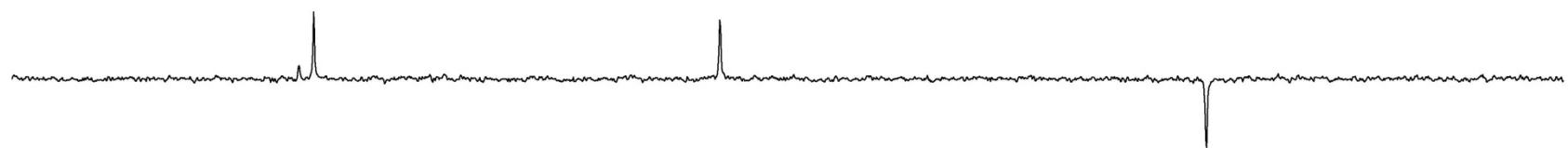
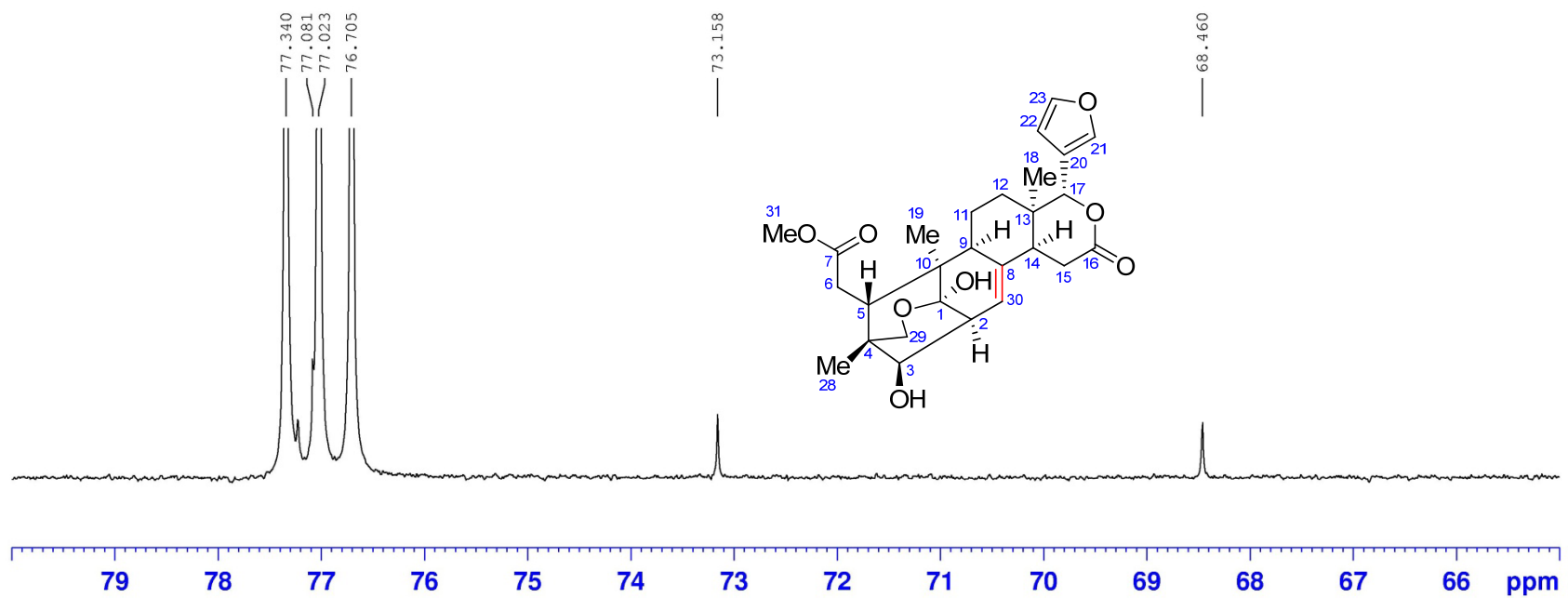
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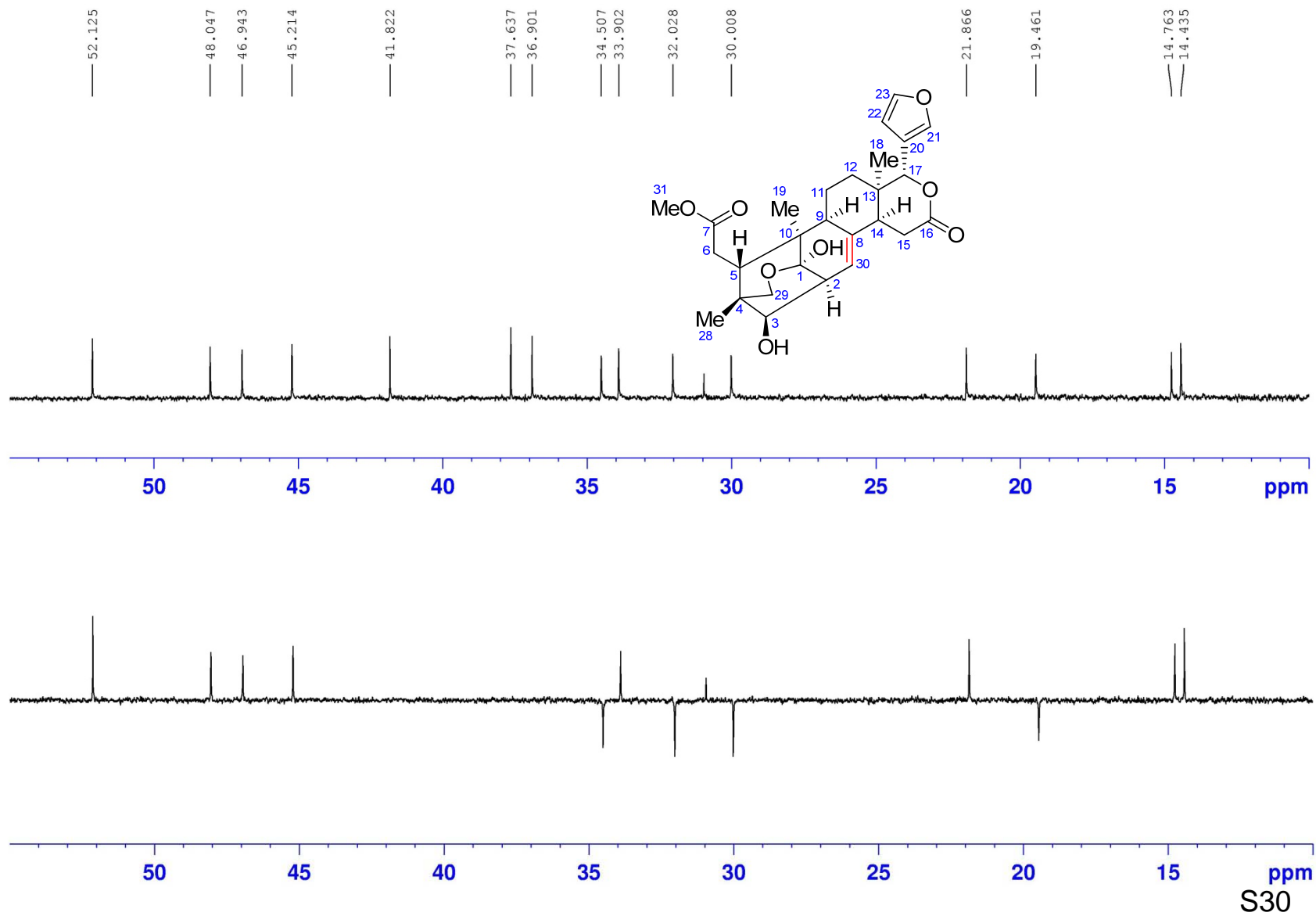
DEPT 135 spectrum of **8** in CDCl₃



DEPT 135 spectrum of **8** in CDCl₃



DEPT 135 spectrum of **8** in CDCl₃



HR-ESIMS for compound **8a**

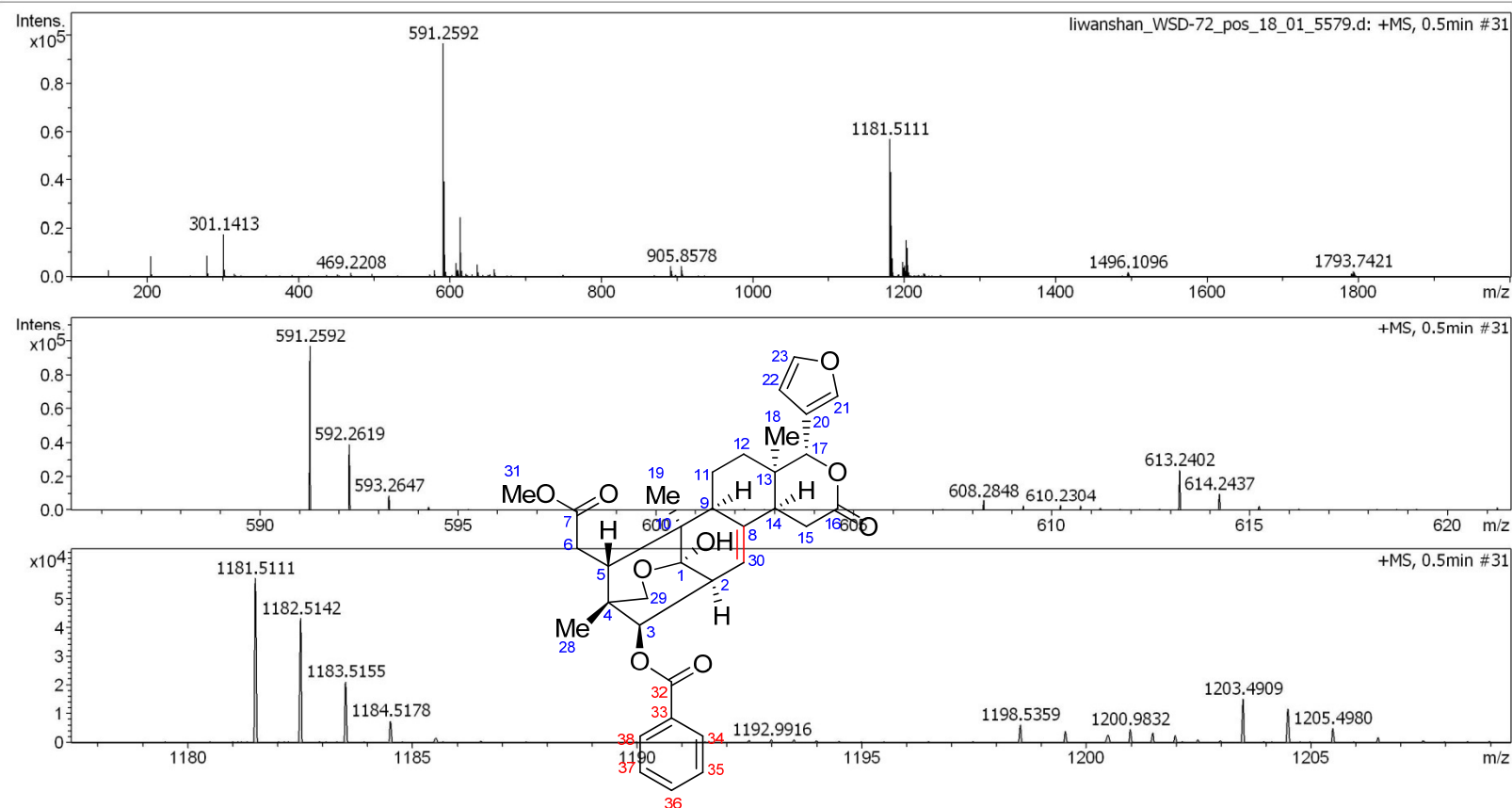
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Operator SCSIO
Instrument maXis



HR-ESIMS for compound **8a**

Mass Spectrum SmartFormula Report

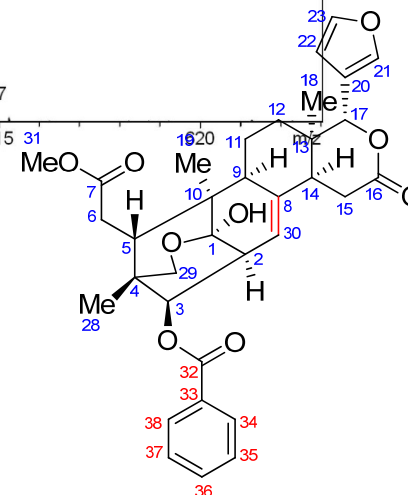
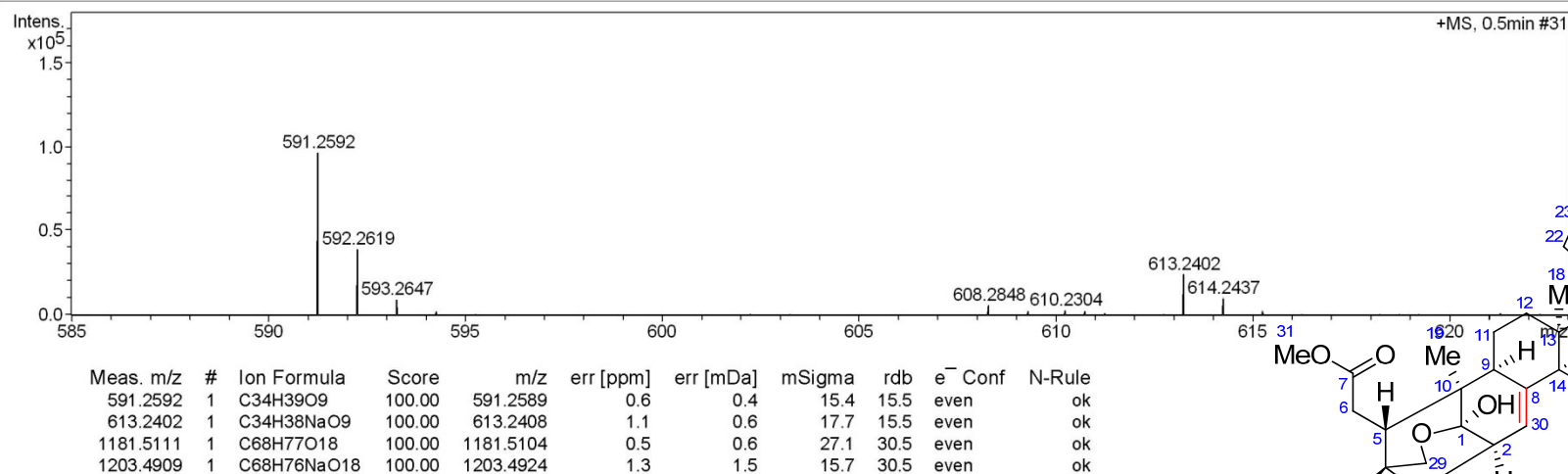
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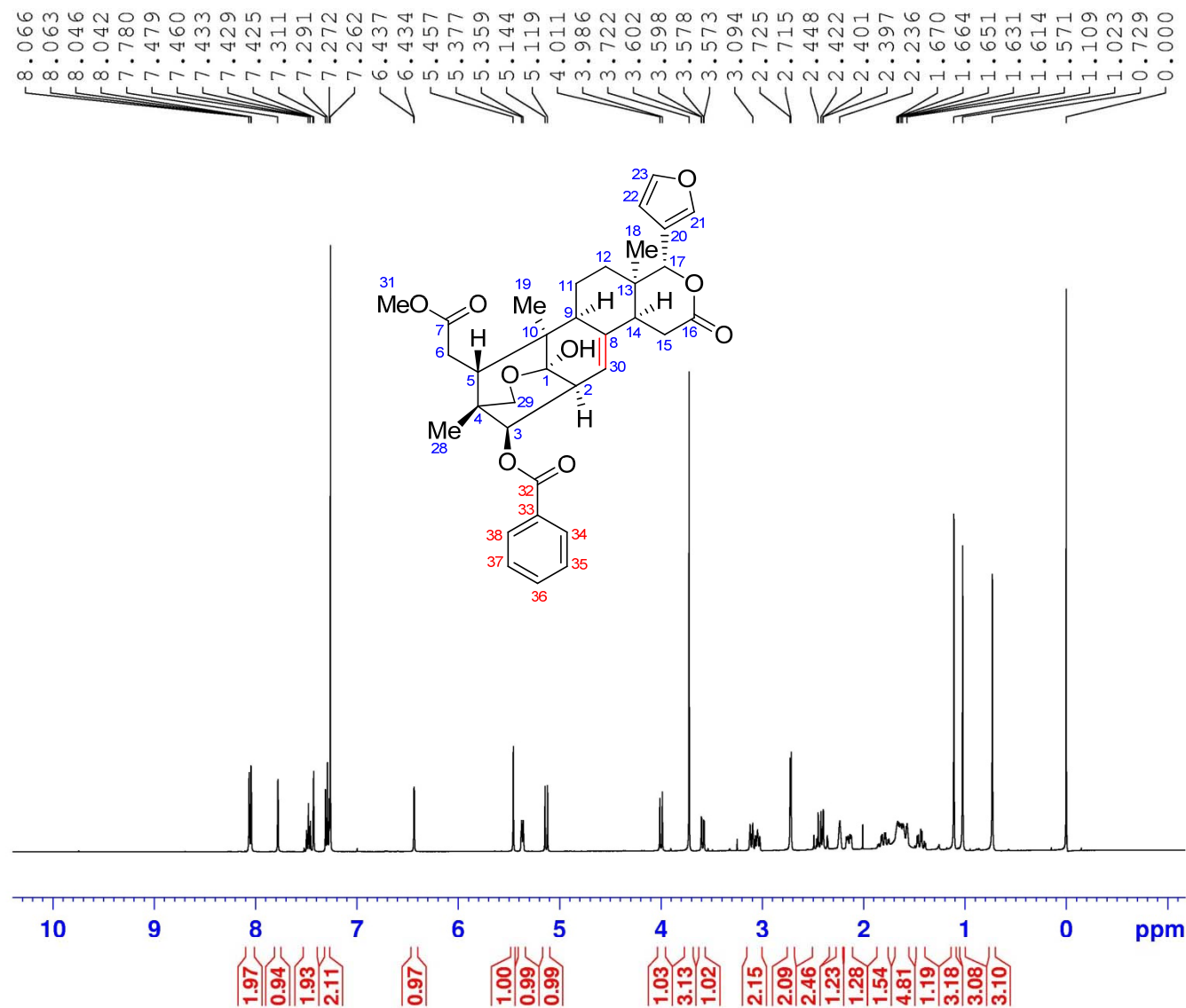
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by: SCSIO

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^1H NMR (400 MHz) spectrum of **8a** in CDCl_3

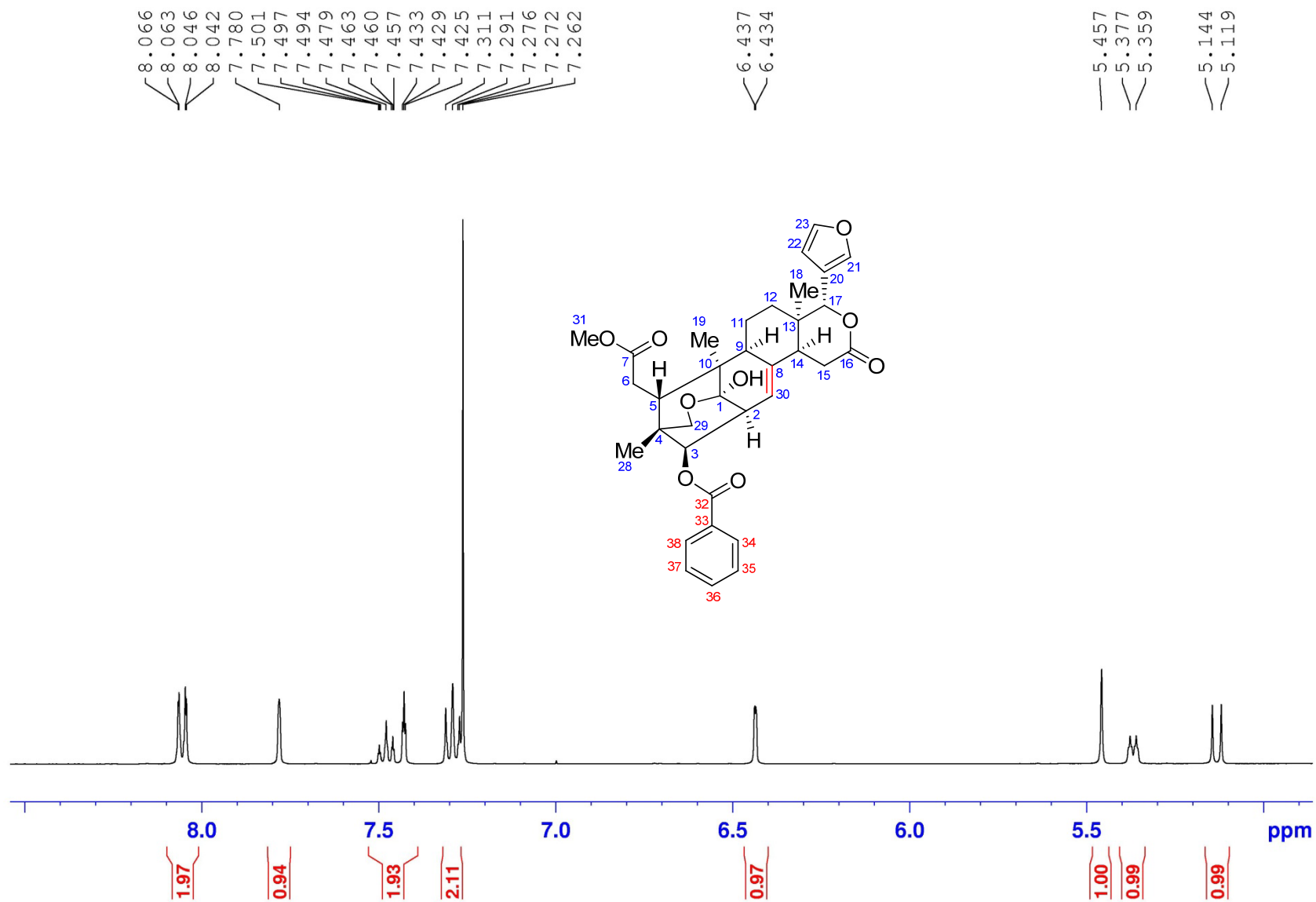


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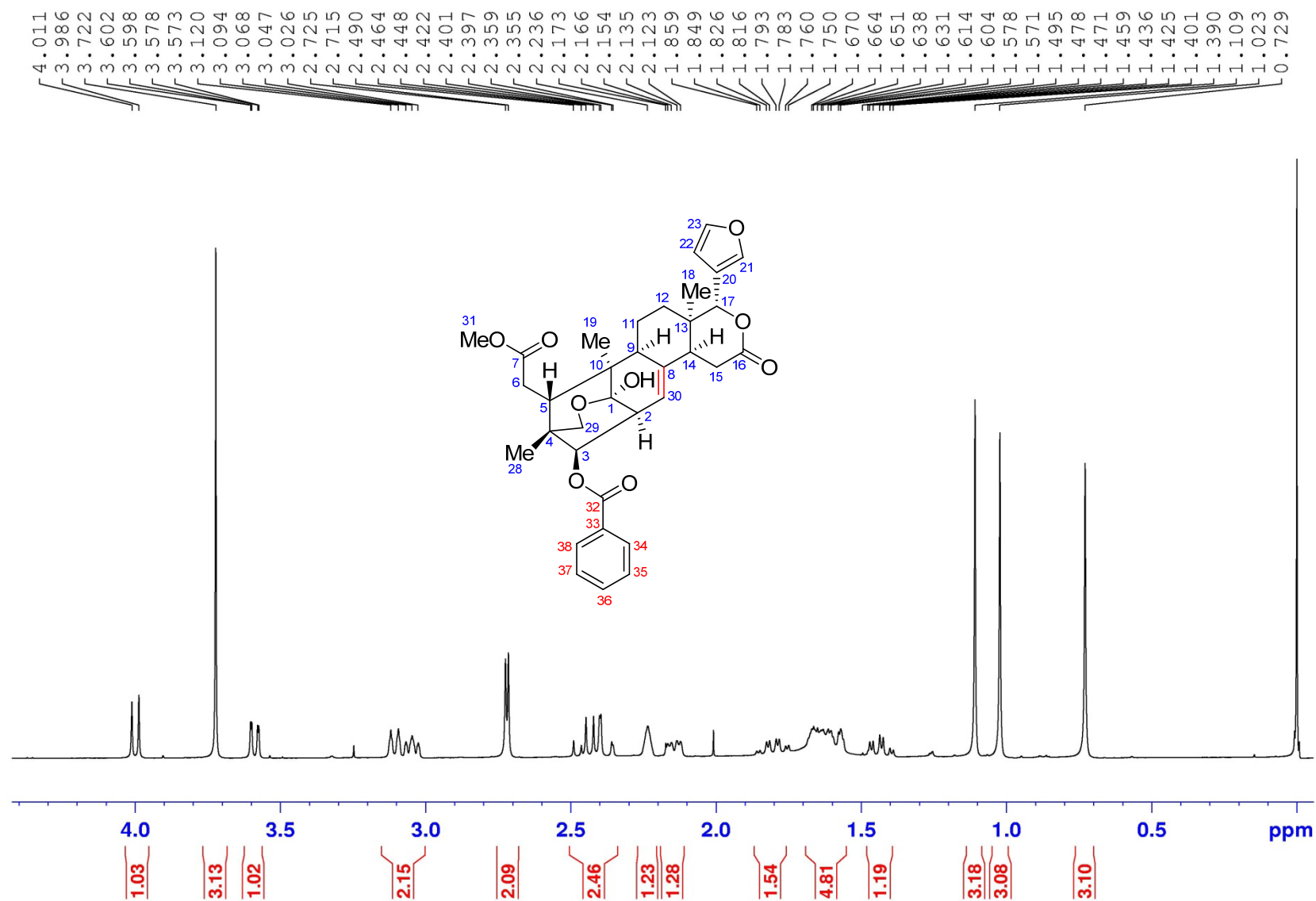
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D1        1.00000000 sec
TD0       1

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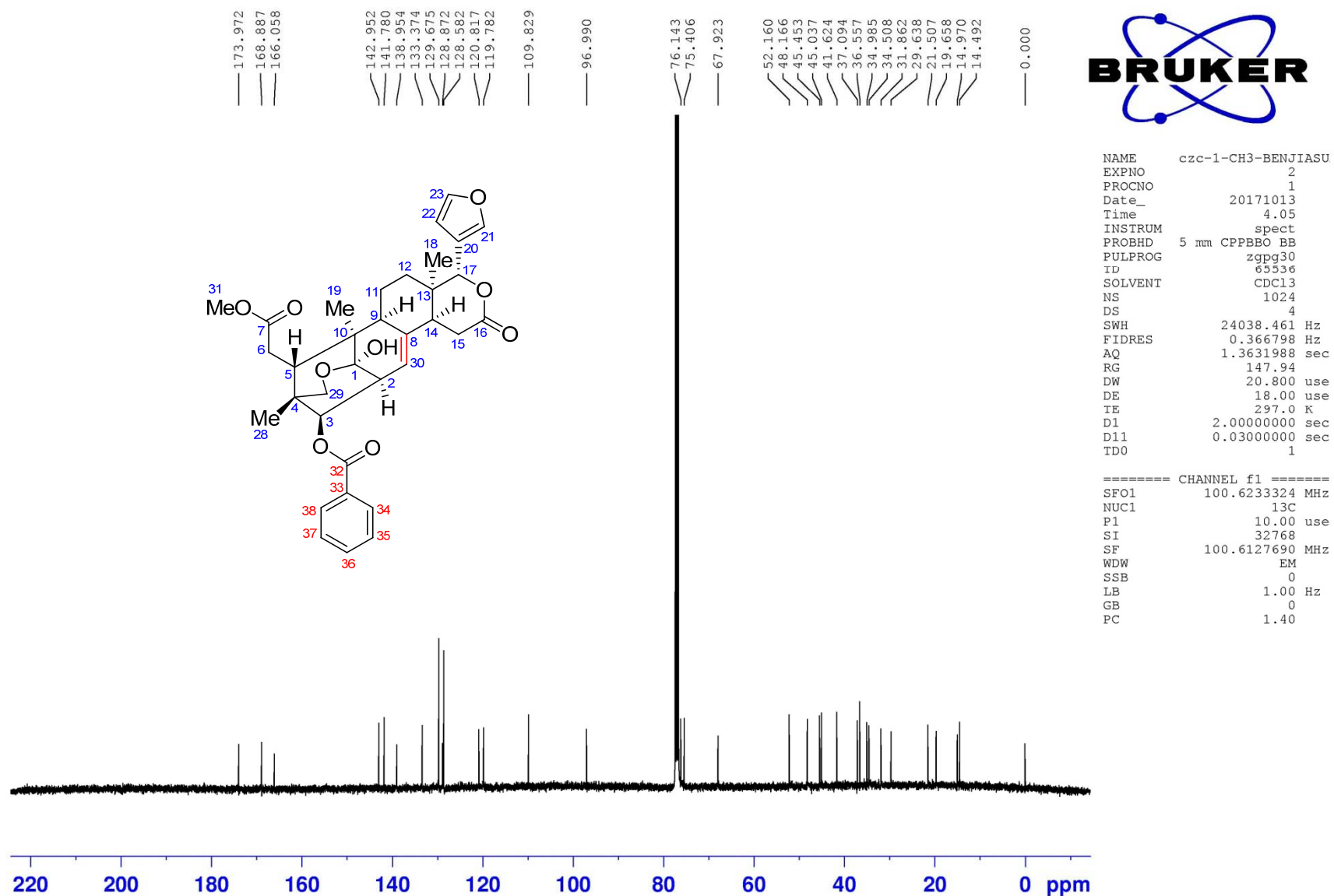
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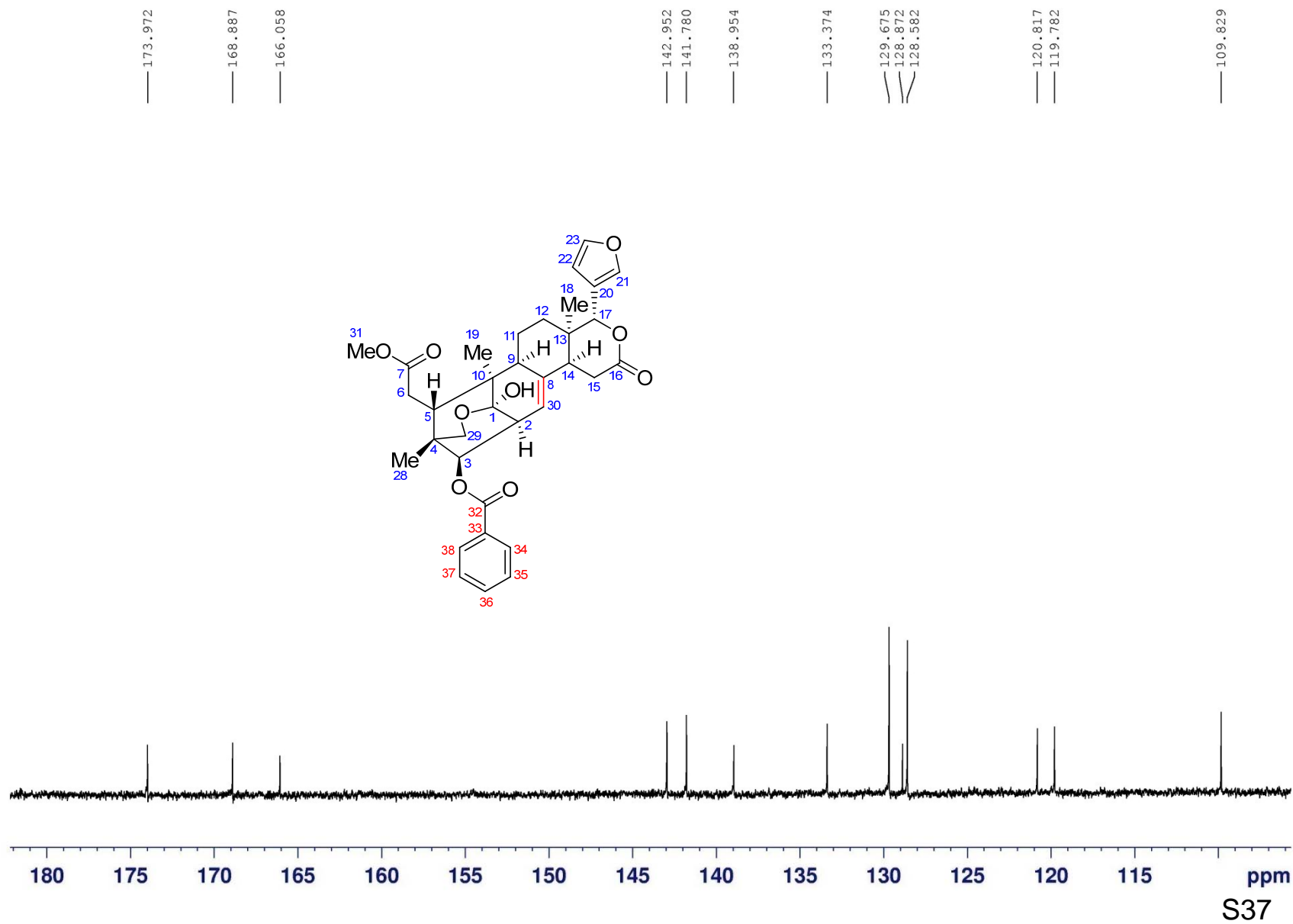
^1H NMR (400 MHz) spectrum of **8a** in CDCl_3



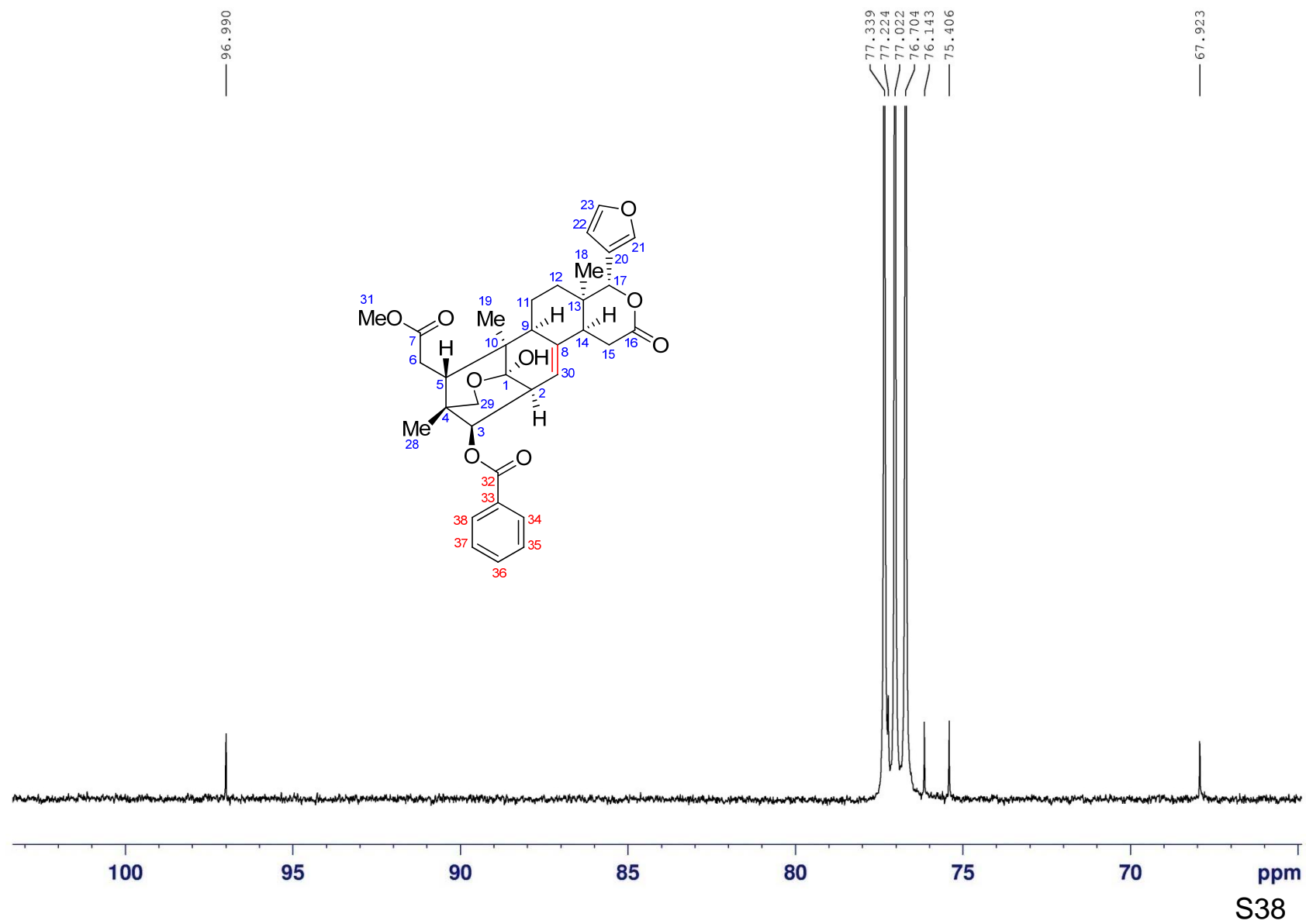
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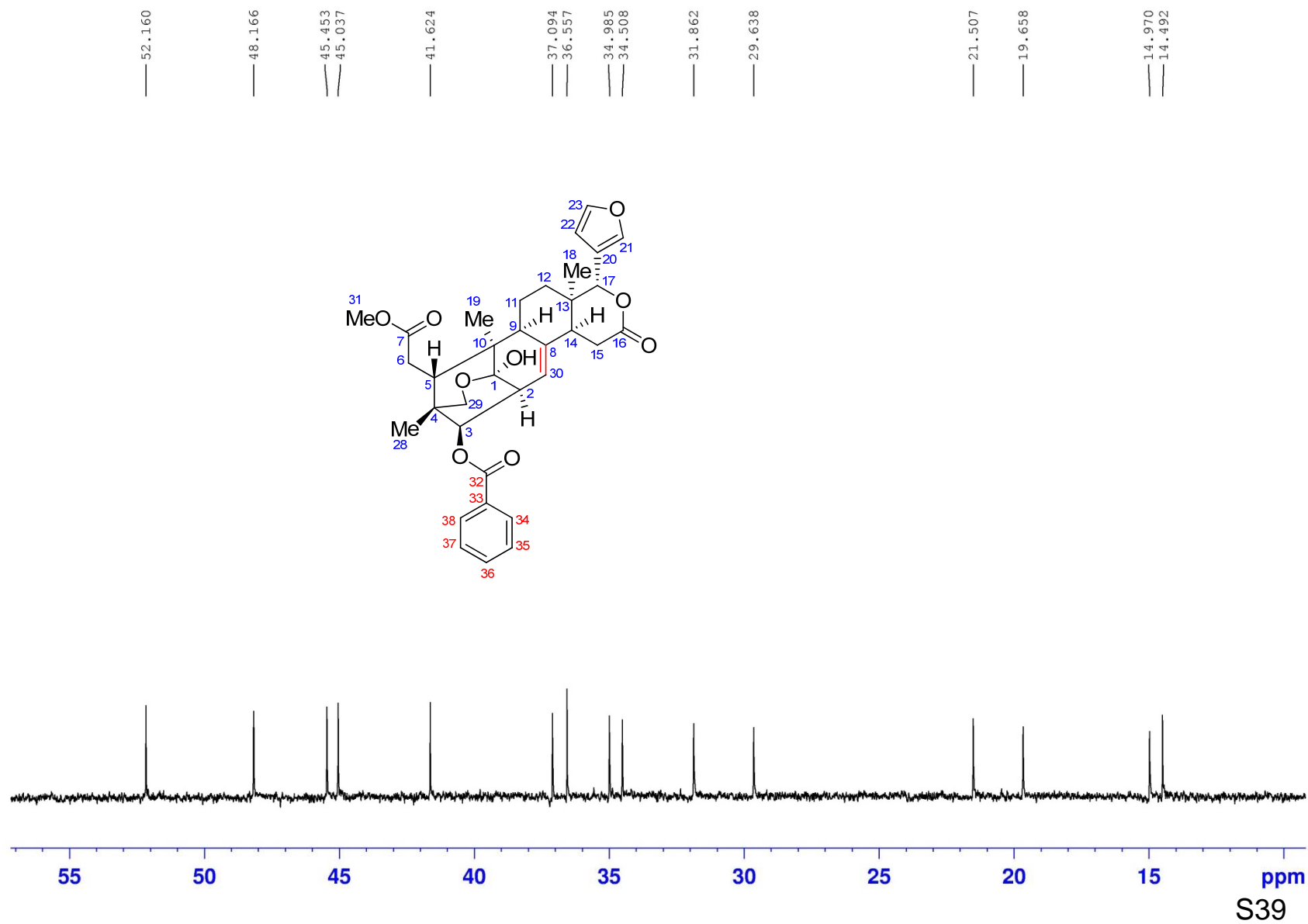
^{13}C NMR (100 MHz) spectrum of **8a** in CDCl_3



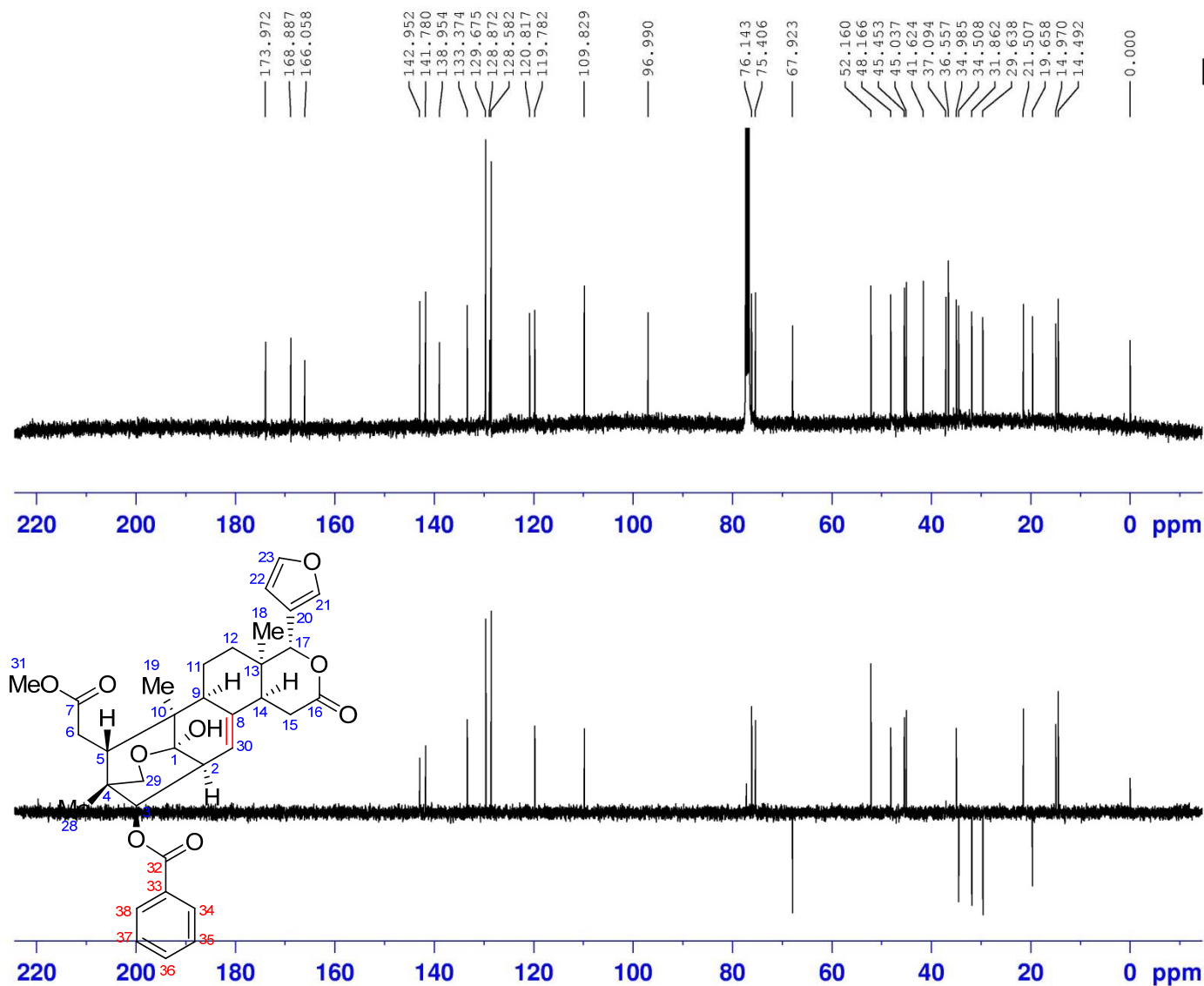
^{13}C NMR (100 MHz) spectrum of **8a** in CDCl_3



^{13}C NMR (100 MHz) spectrum of **8a** in CDCl_3



DEPT 135 spectrum of **8a** in CDCl₃



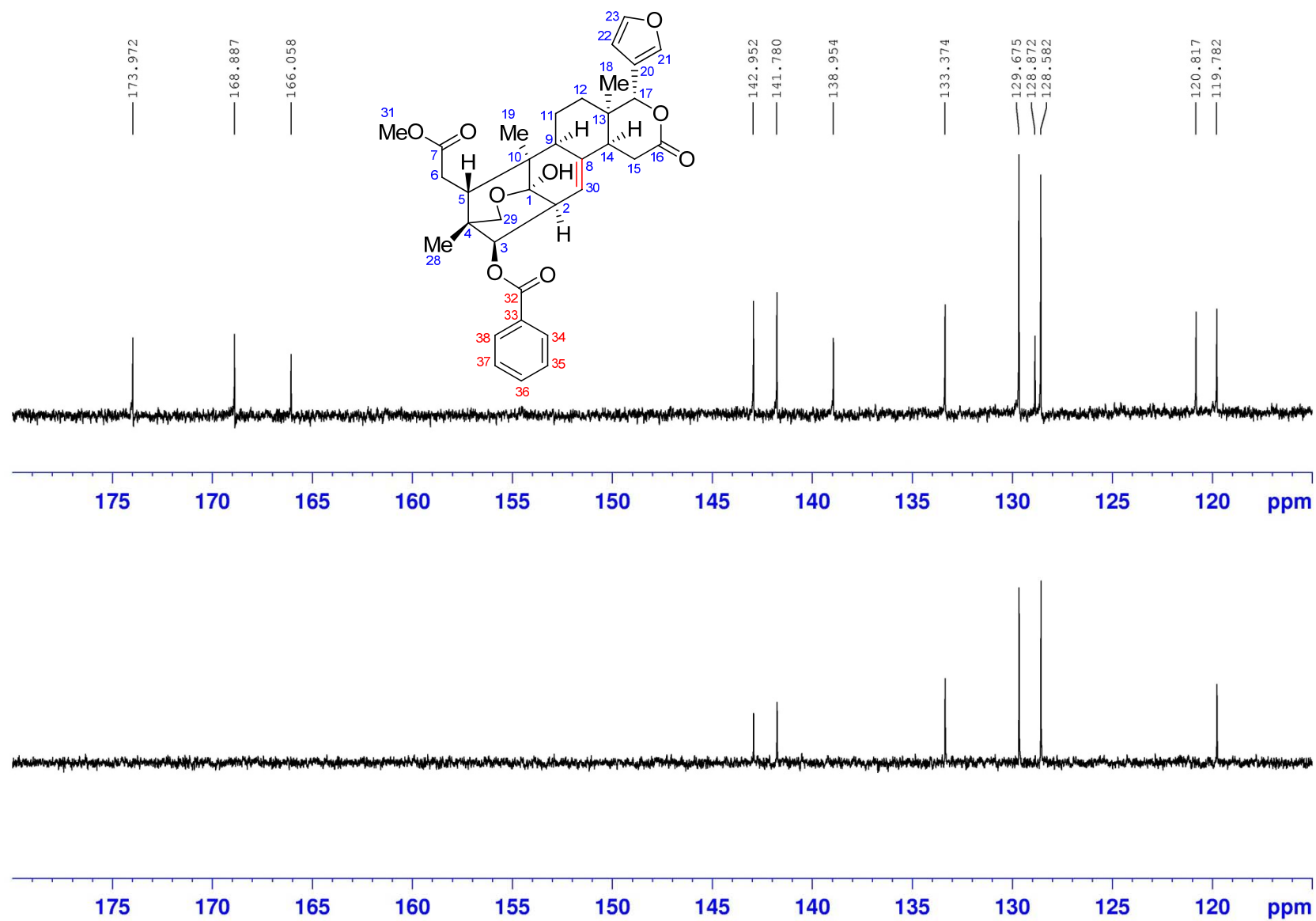
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INSTRUM   spect
PROBHD    5 mm CPPBBO BB
PULPROG   deptsp135
TD        65536
SOLVENT   CDCl3
NS        300
DS        4
SWH       24038.461 Hz
FIDRES    0.366798 Hz
AQ        1.3631988 sec
RG        85.34
DW        20.800 usec
DE        18.00 usec
TE        297.0 K
CNST2     145.0000000
D1        2.00000000 sec
D2        0.00344828 sec
D12       0.00002000 sec
TD0       1
    
```

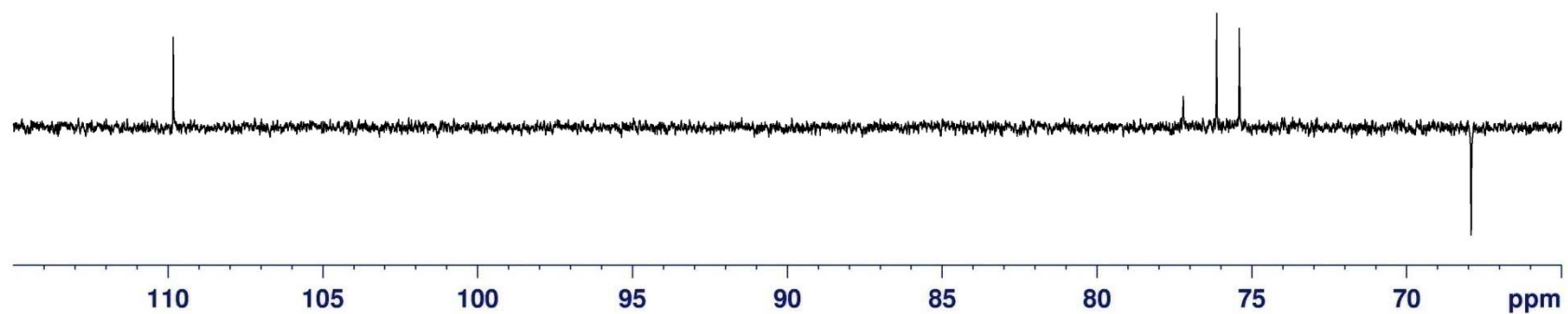
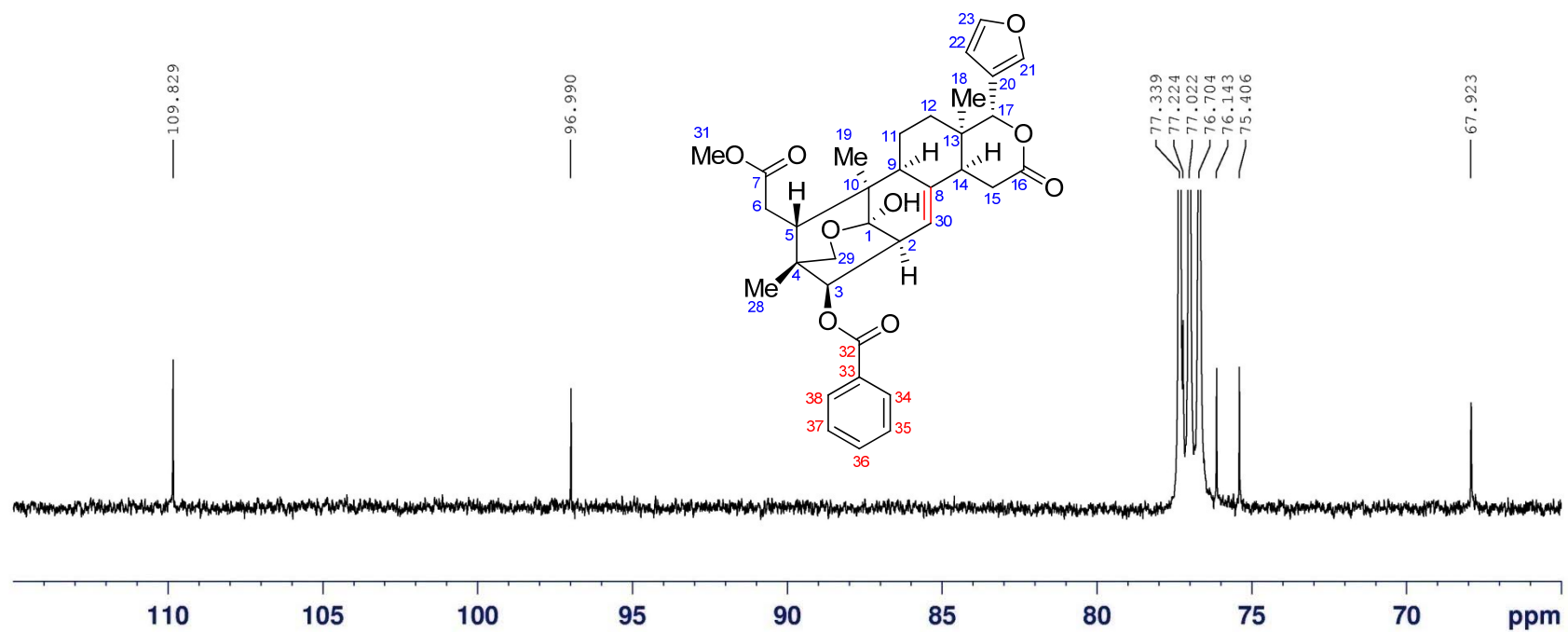
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===== CHANNEL f1 =====
SFO1    100.6233324 MHz
NUC1     13C
P1       10.00 usec
P13      2000.00 usec
SI       32768
SF      100.6127692 MHz
WDW      EM
SSB      0
LB       1.00 Hz
GB       0
PC       1.40
    
```

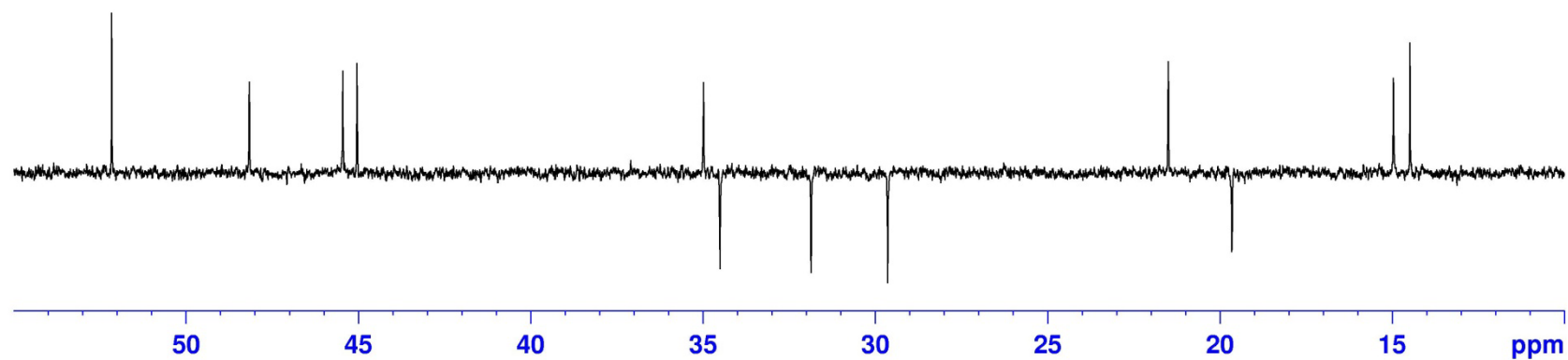
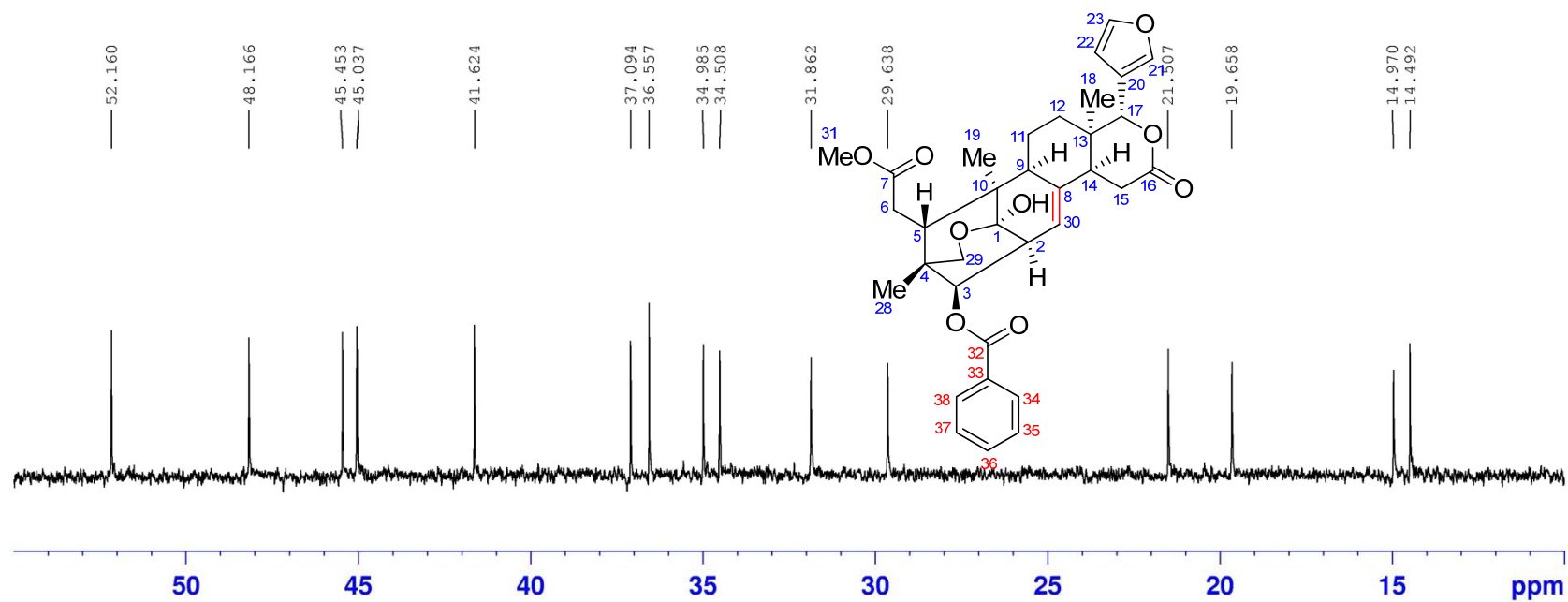
DEPT 135 spectrum of **8a** in CDCl₃



DEPT 135 spectrum of **8a** in CDCl₃



DEPT 135 spectrum of **8a** in CDCl₃



HR-ESIMS for compound **8b**

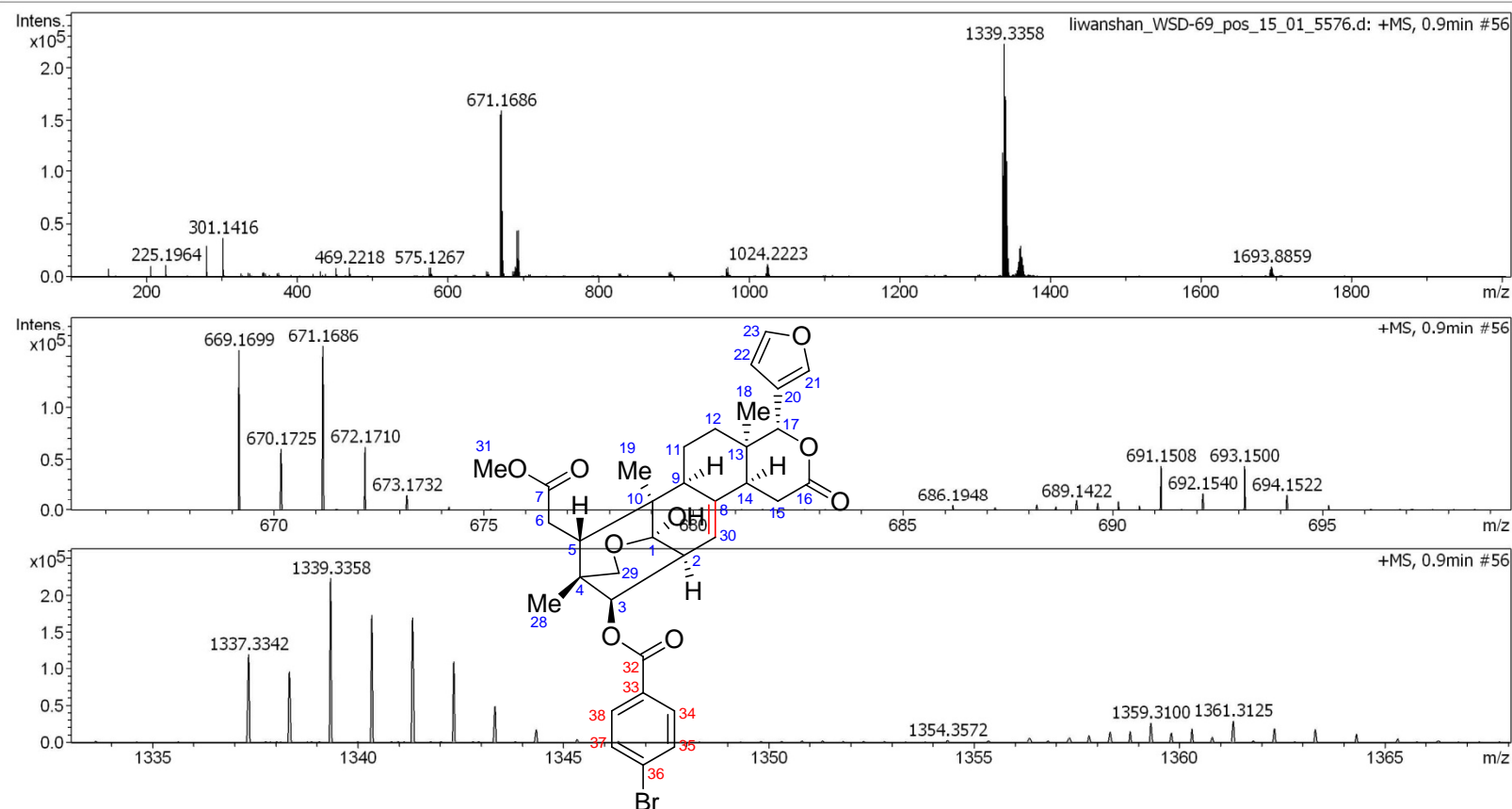
Generic Display Report

Analysis Info

Analysis Name D:\Data\MS\data\201809\liwanshan_WSD-69_pos_15_01_5576.d
Method LC_Direct Infusion_pos_100-1000mz.m
Sample Name liwanshan_WSD-69_pos
Comment

Acquisition Date 9/30/2018 6:08:56 PM

Operator SCSIO
Instrument maXis



HR-ESIMS for compound **8b**

Mass Spectrum SmartFormula Report

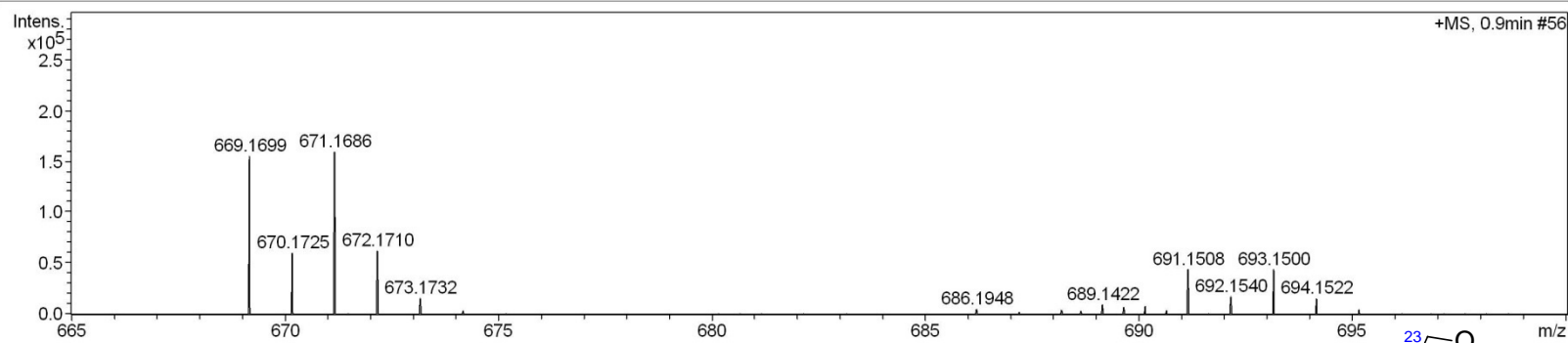
Analysis Info

Analysis Name D:\Data\MS\data\201809\liwanshan_WSD-69_pos_15_01_5576.d
 Method LC_Direct Infusion_pos_100-1000mz.m
 Sample Name liwanshan_WSD-69_pos
 Comment

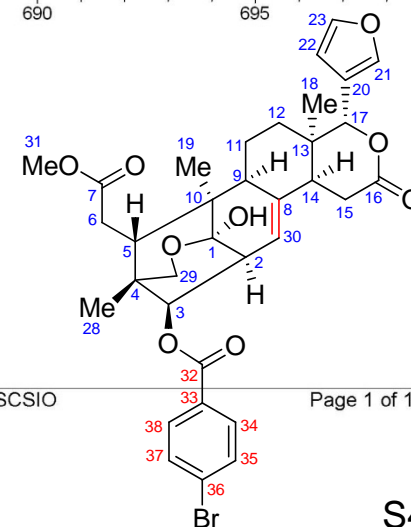
Acquisition Date 9/30/2018 6:08:56 PM
 Operator SCSIO
 Instrument maXis 255552.00029

Acquisition Parameter

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Focus	Active	Set Capillary	4500 V	Set Dry Heater	180 °C
Scan Begin	100 m/z	Set End Plate Offset	-500 V	Set Dry Gas	4.0 l/min
Scan End	2000 m/z	Set Charging Voltage	0 V	Set Divert Valve	Waste
		Set Corona	0 nA	Set APCI Heater	0 °C



Meas. m/z	#	Ion Formula	Score	m/z	err [ppm]	err [mDa]	mSigma	rdB	e ⁻ Conf	N-Rule
669.1699	1	C34H38BrO9	100.00	669.1694	0.8	0.5	21.4	15.5	even	ok
691.1508	1	C34H37BrNaO9	100.00	691.1513	0.8	0.5	28.4	15.5	even	ok
1337.3342	1	C68H75Br2O18	100.00	1337.3315	2.0	2.7	70.3	30.5	even	ok



liwanshan_WSD-69_pos_15_01_5576.d
 Bruker Compass DataAnalysis 4.1

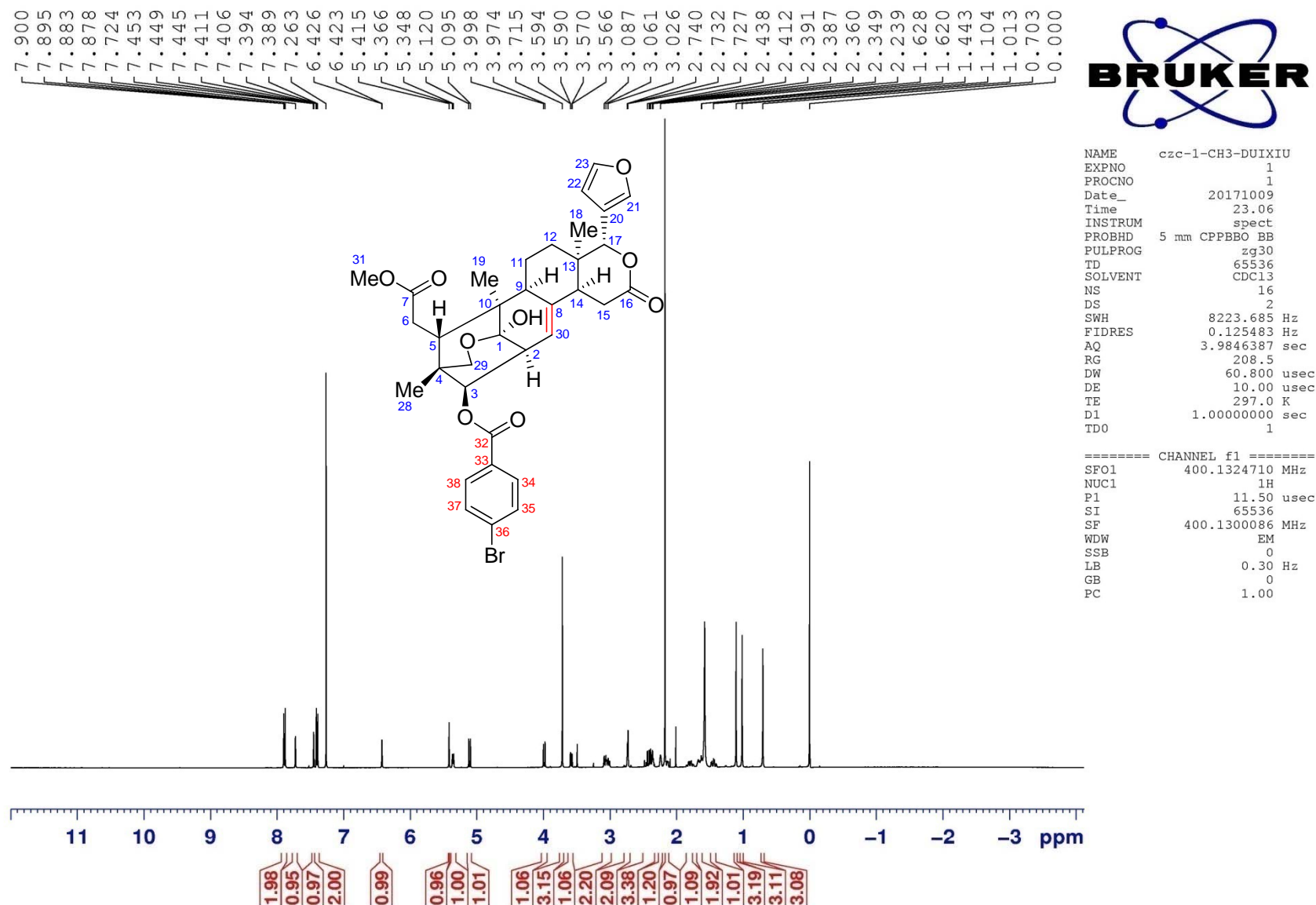
printed: 9/30/2018 6:23:15 PM

by: SCSIO

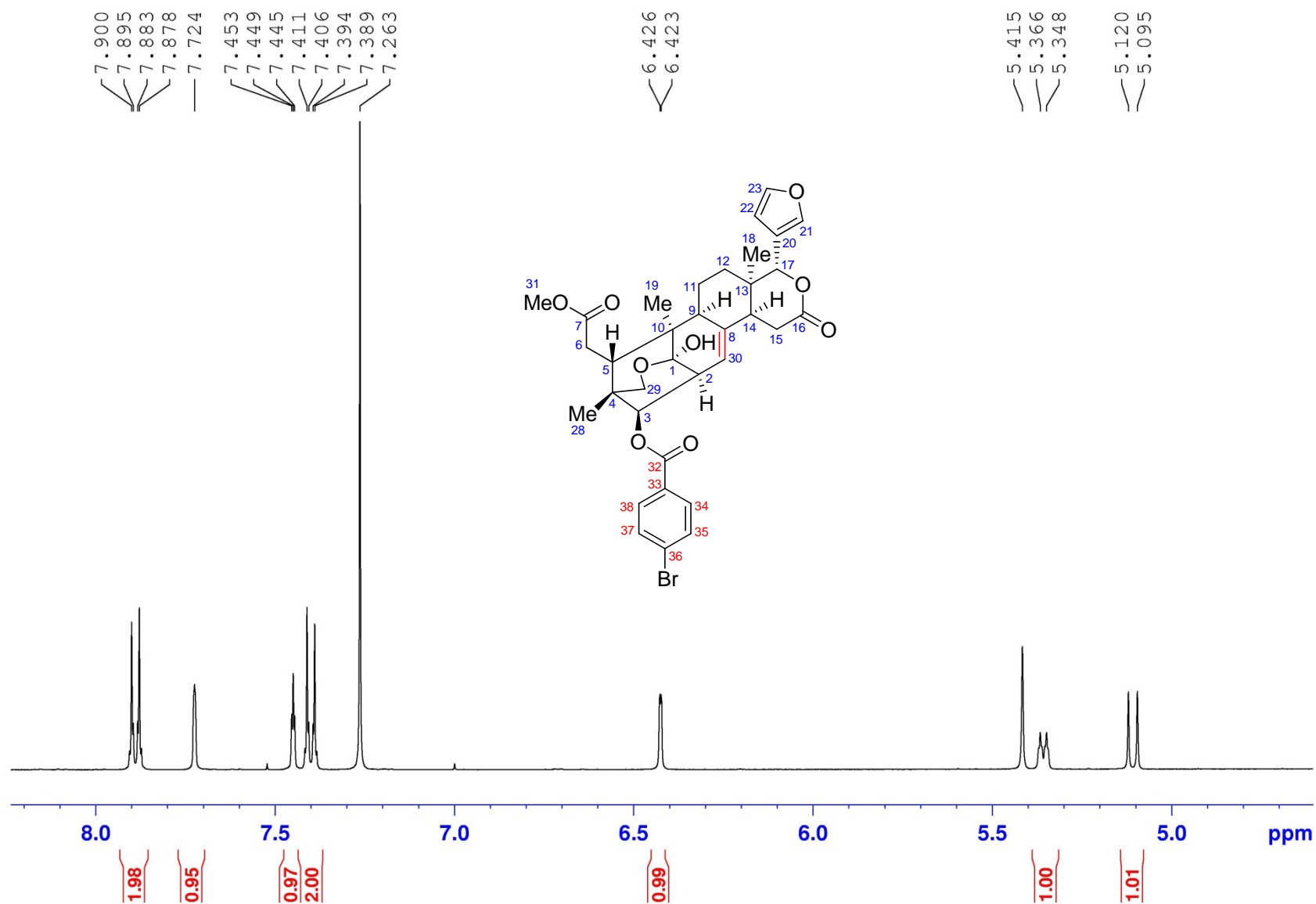
Page 1 of 1

S45

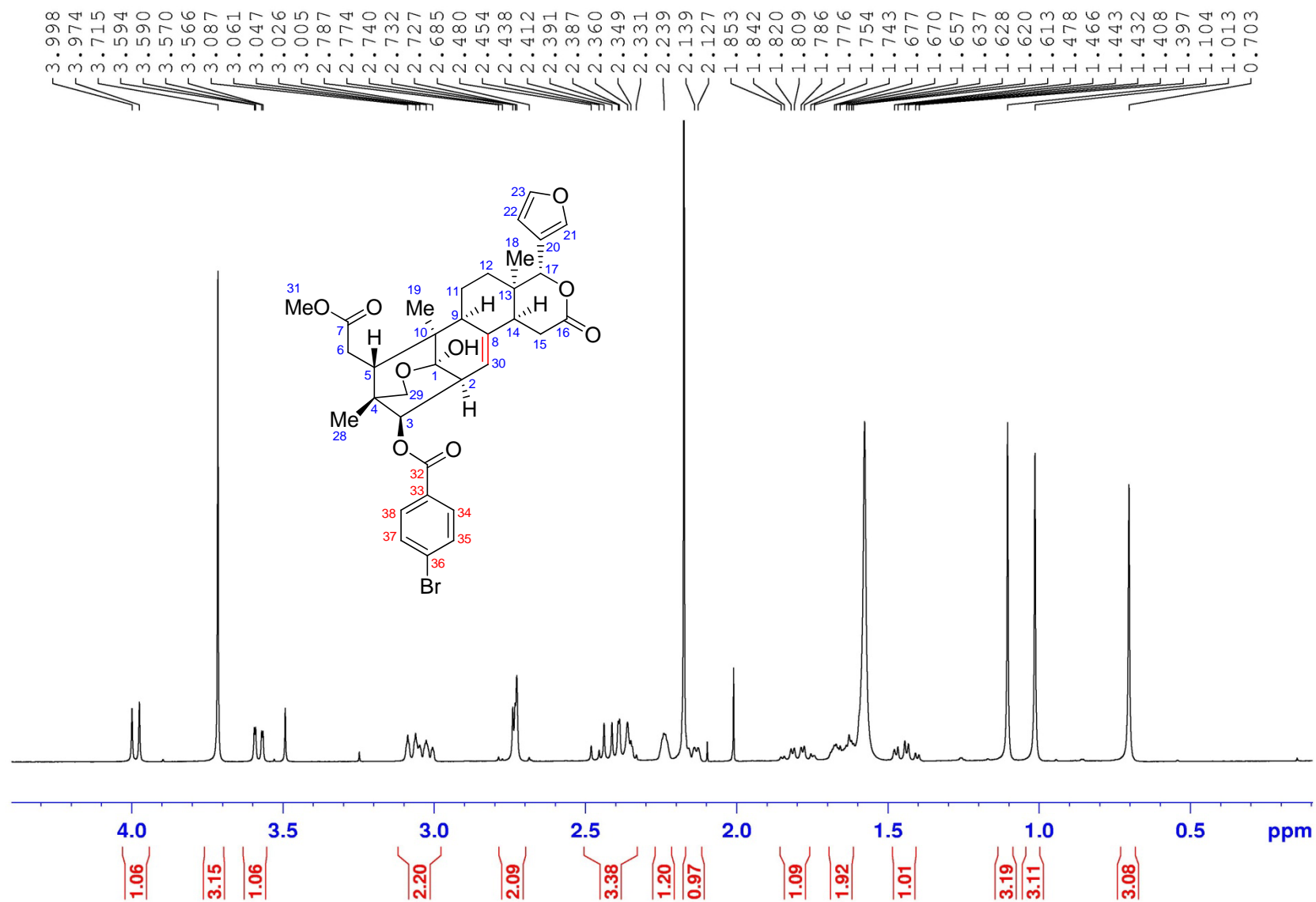
^1H NMR (400 MHz) spectrum of **8b** in CDCl_3



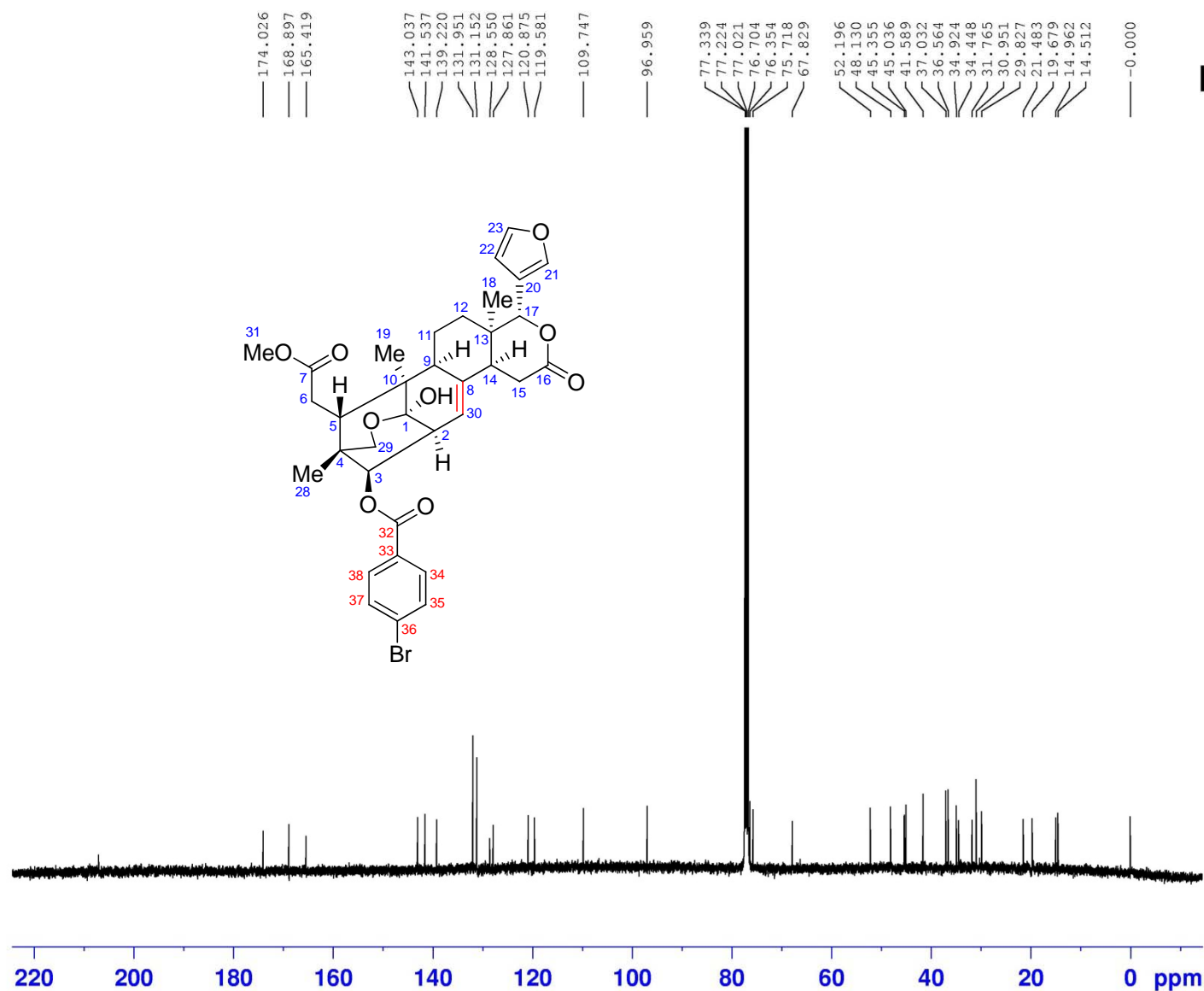
^1H NMR (400 MHz) spectrum of **8b** in CDCl_3



^1H NMR (400 MHz) spectrum of **8b** in CDCl_3



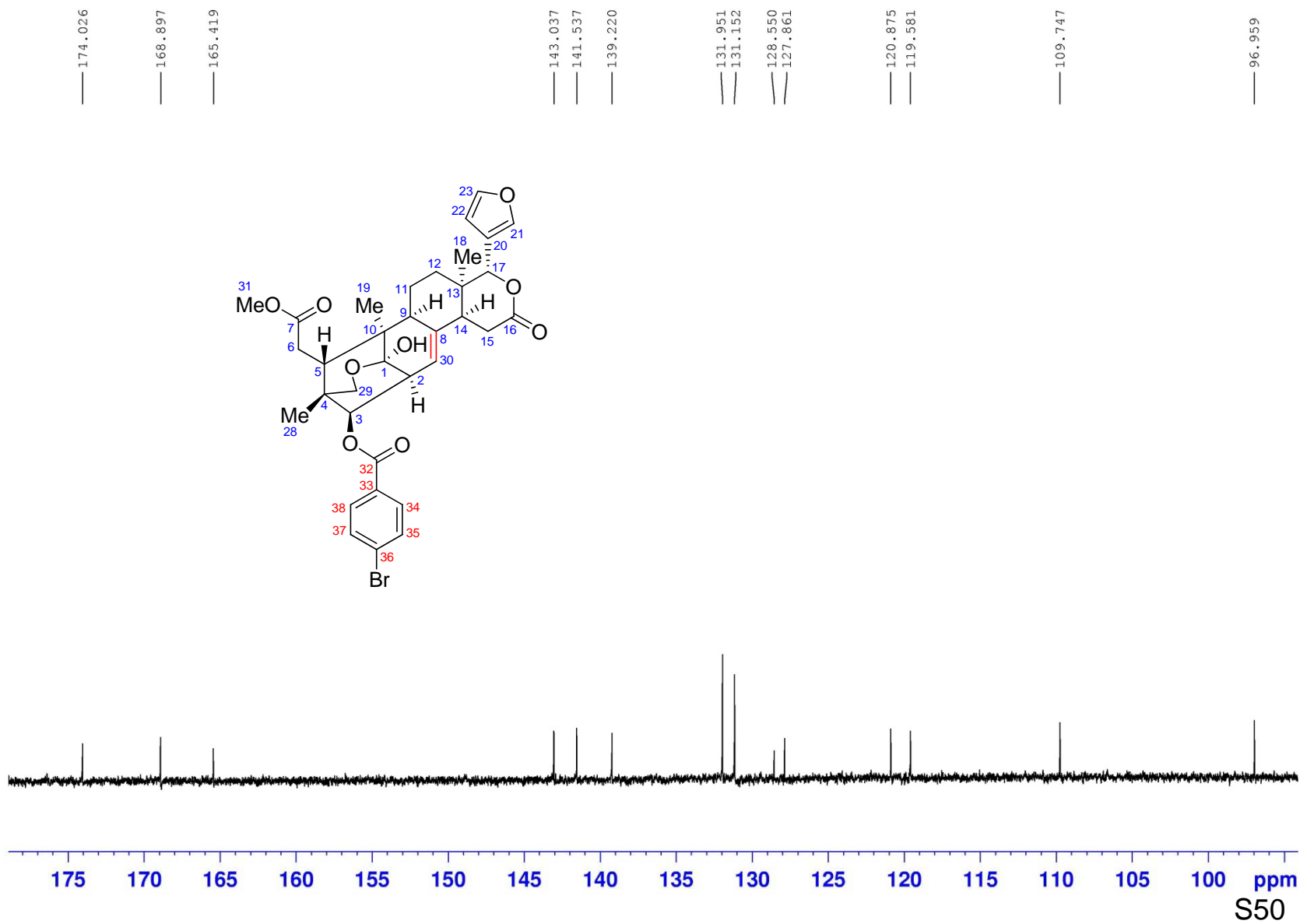
^{13}C NMR (100 MHz) spectrum of **8b** in CDCl_3



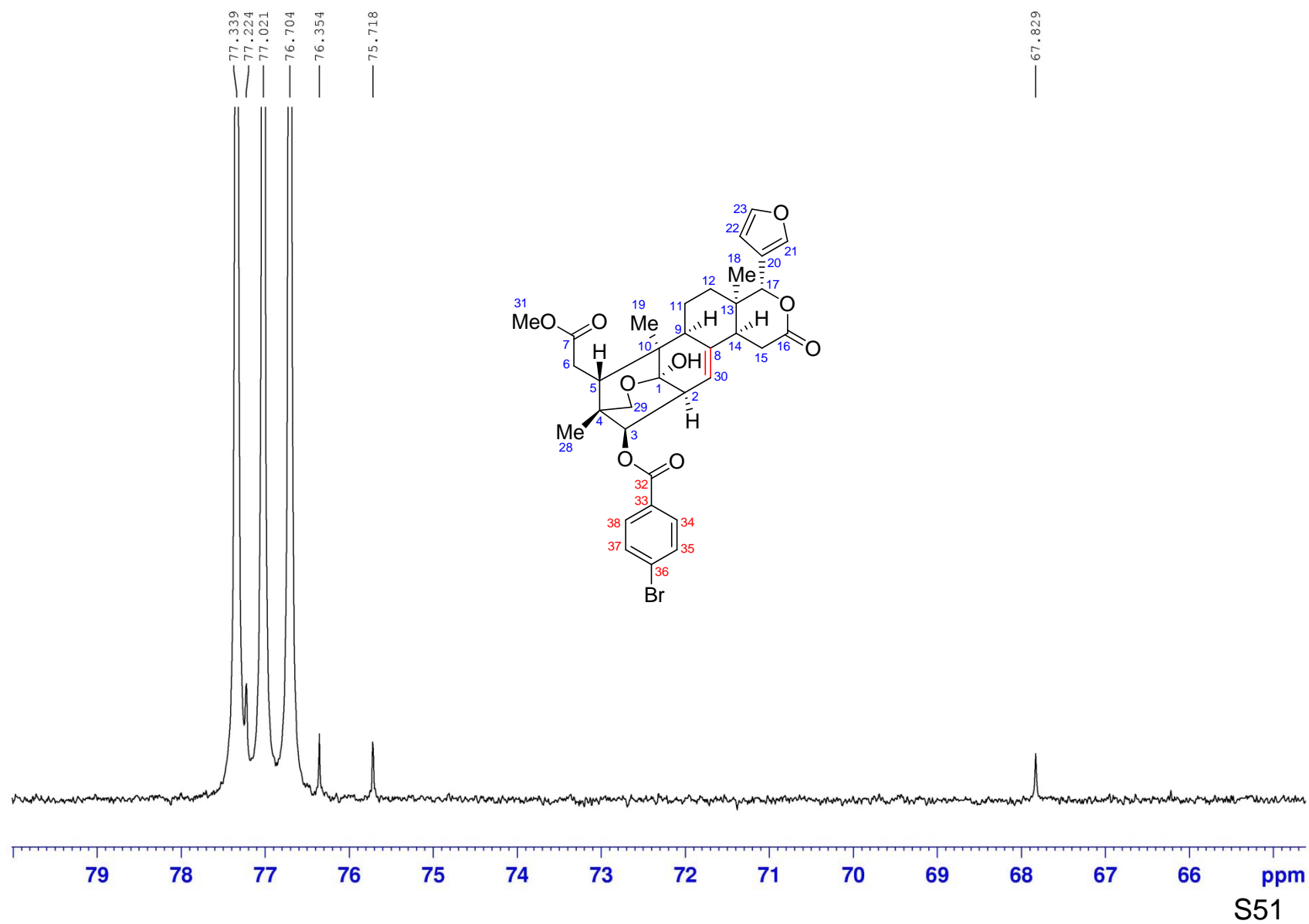
NAME czc-1-CH3-DUIXII
 EXPNO 2
 PROCNO 1
 Date_ 20171010
 Time 0.13
 INSTRUM spect
 PROBHD 5 mm CPPBBO BB
 PULPROG zgpg30
 TD 65536
 SOLVENT CDCl_3
 NS 1024
 DS 4
 SWH 24038.461 MHz
 FIDRES 0.366798 MHz
 AQ 1.3631988 s
 RG 73.92
 DW 20.800 us
 DE 18.00 us
 TE 297.0 K
 D1 2.00000000 s
 D11 0.03000000 s
 TD0 1

===== CHANNEL f1 =====
 SFO1 100.6233324 MHz
 NUC1 ^{13}C
 P1 10.00 us
 SI 32768
 SF 100.6127690 MHz
 WDW EM
 SSB 0
 LB 1.00 MHz
 GB 0
 PC 1.40

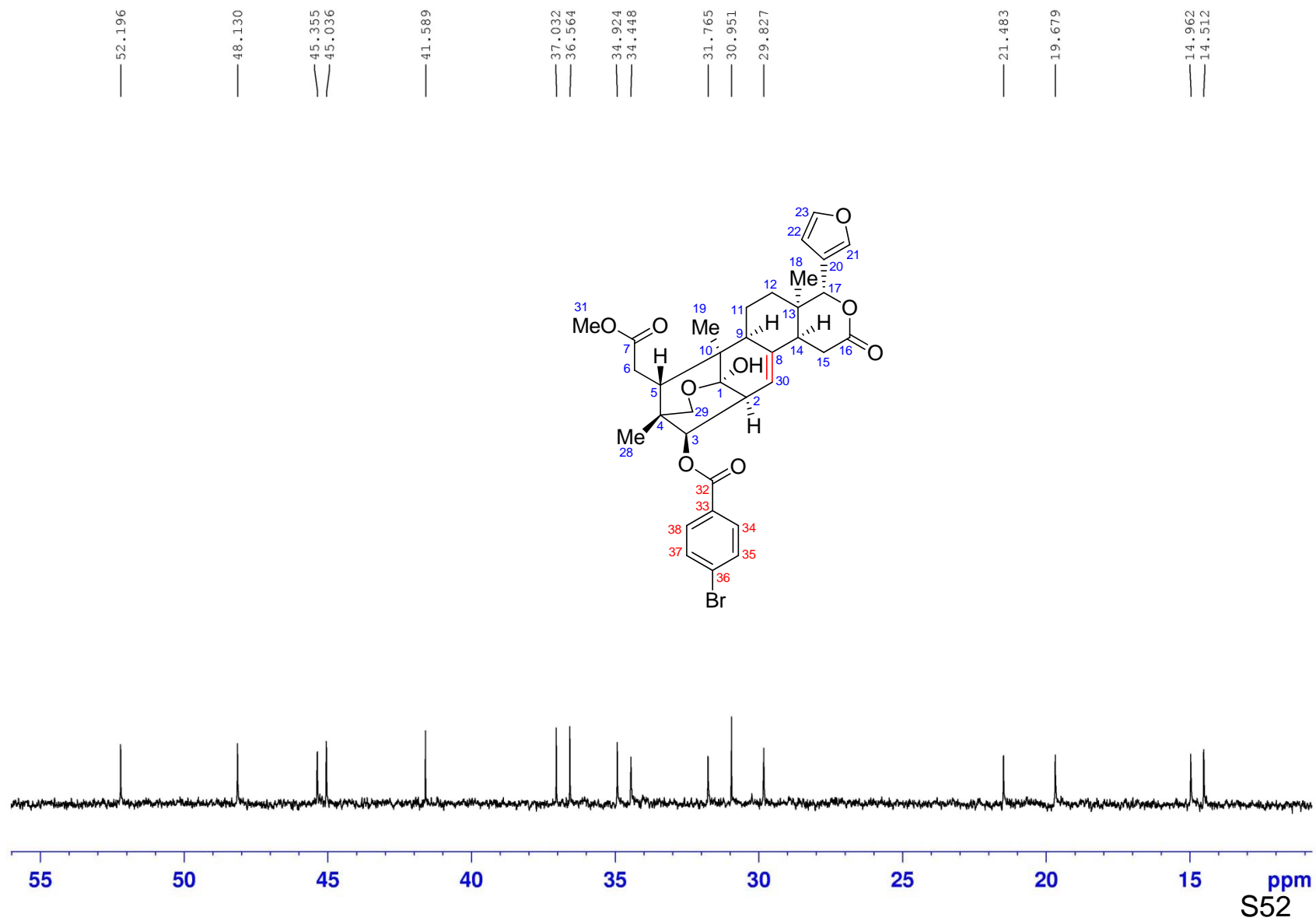
^{13}C NMR (100 MHz) spectrum of **8b** in CDCl_3



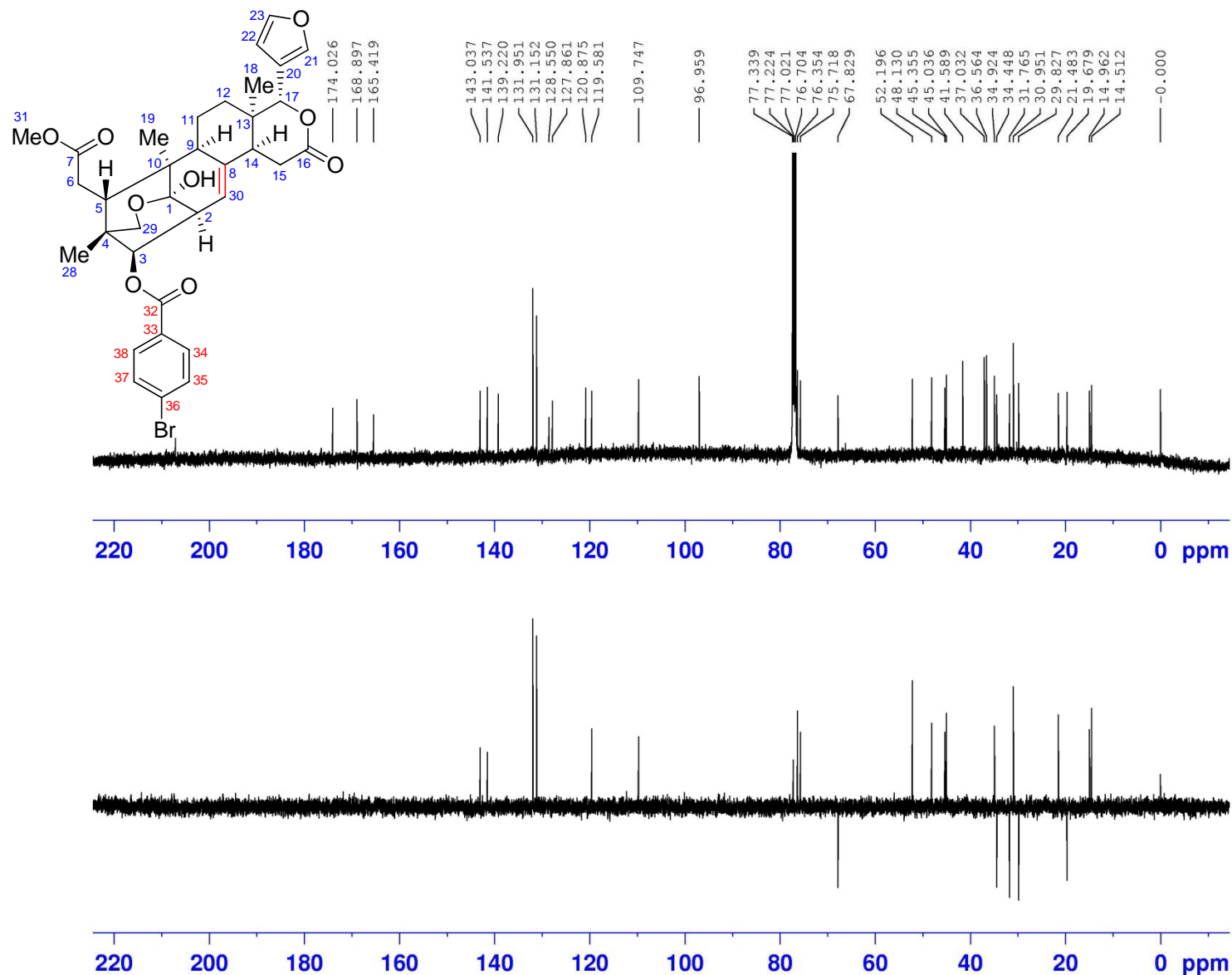
^{13}C NMR (100 MHz) spectrum of **8b** in CDCl_3



^{13}C NMR (100 MHz) spectrum of **8b** in CDCl_3



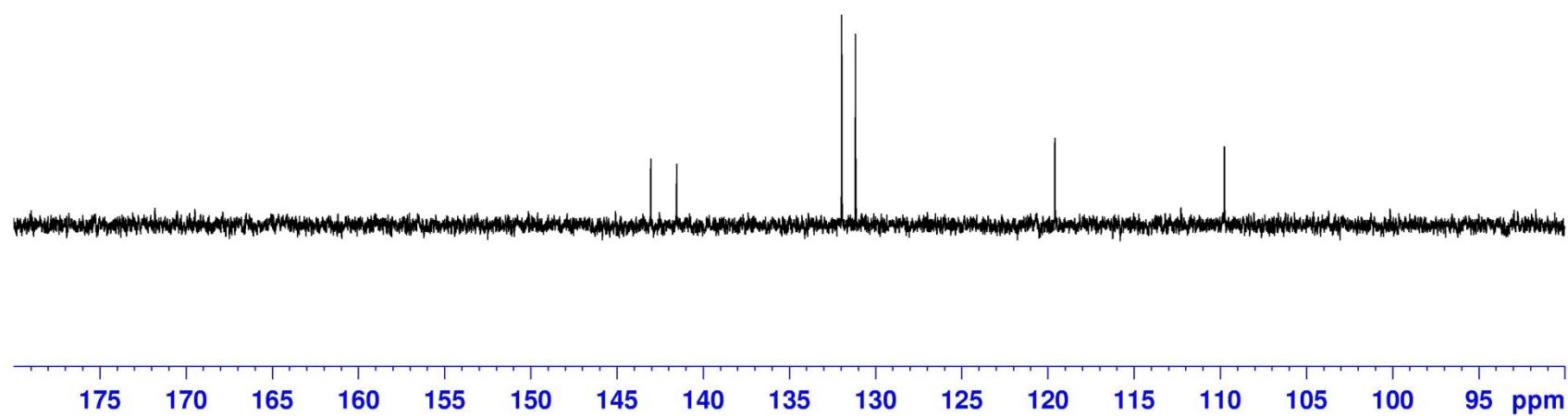
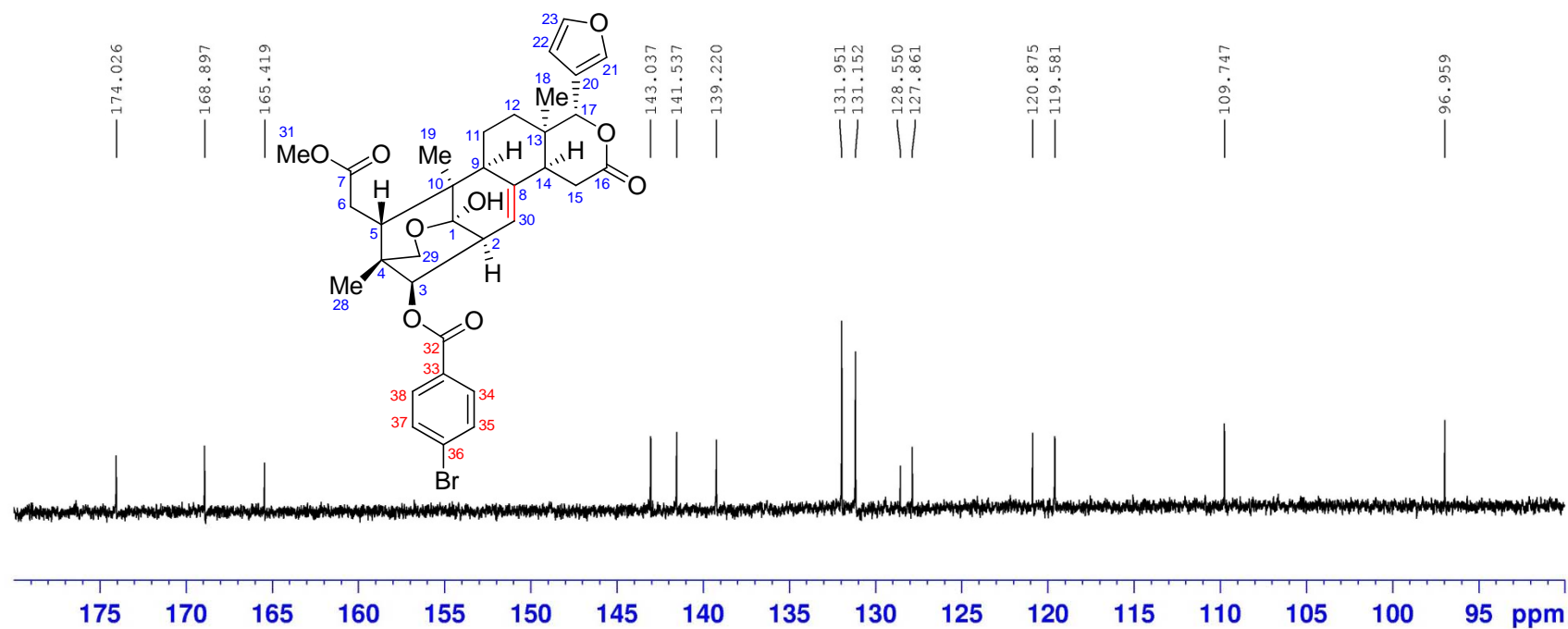
DEPT 135 spectrum of **8b** in CDCl₃



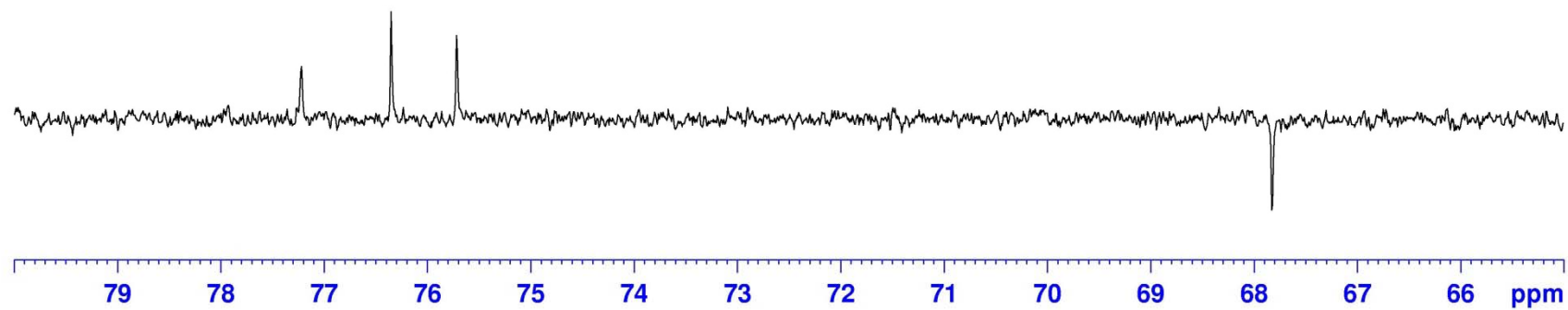
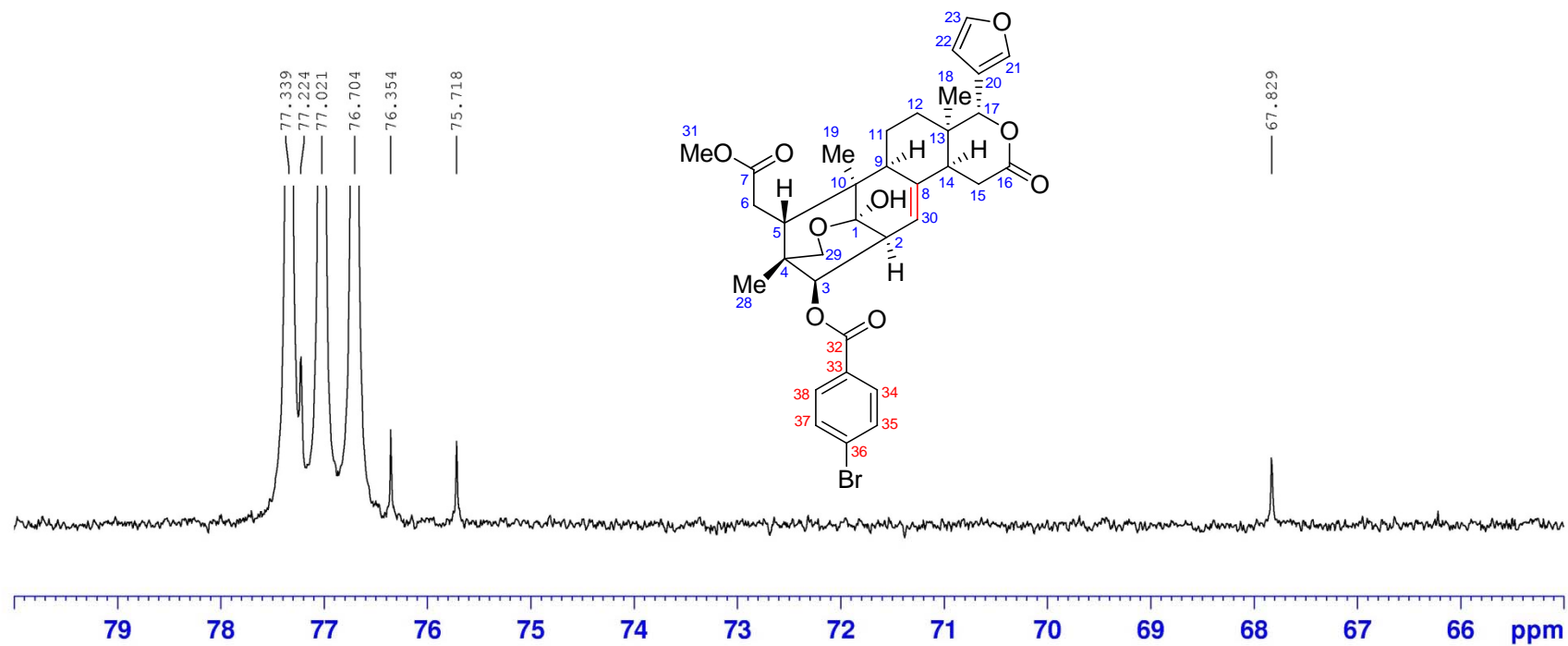
NAME czc-1-CH3-DUIXI
 EXPNO 3
 PROCNO 1
 Date_ 20171010
 Time 0.31
 INSTRUM spect
 PROBHD 5 mm CPPBBO BB
 PULPROG deptsp135
 TD 65536
 SOLVENT CDCl3
 NS 300
 DS 4
 SWH 24038.461
 FIDRES 0.366798
 AQ 1.3631988
 RG 130.26
 DW 20.800
 DE 18.00
 TE 297.0
 CNST2 145.0000000
 D1 2.00000000
 D2 0.00344828
 D12 0.00002000
 TD0 1

===== CHANNEL f1 =====
 SFO1 100.6233324
 NUC1 13C
 P1 10.00
 P13 2000.00
 SI 32768
 SF 100.6127693
 WDW EM
 SSB 0
 LB 1.00
 GB 0
 PC 1.40

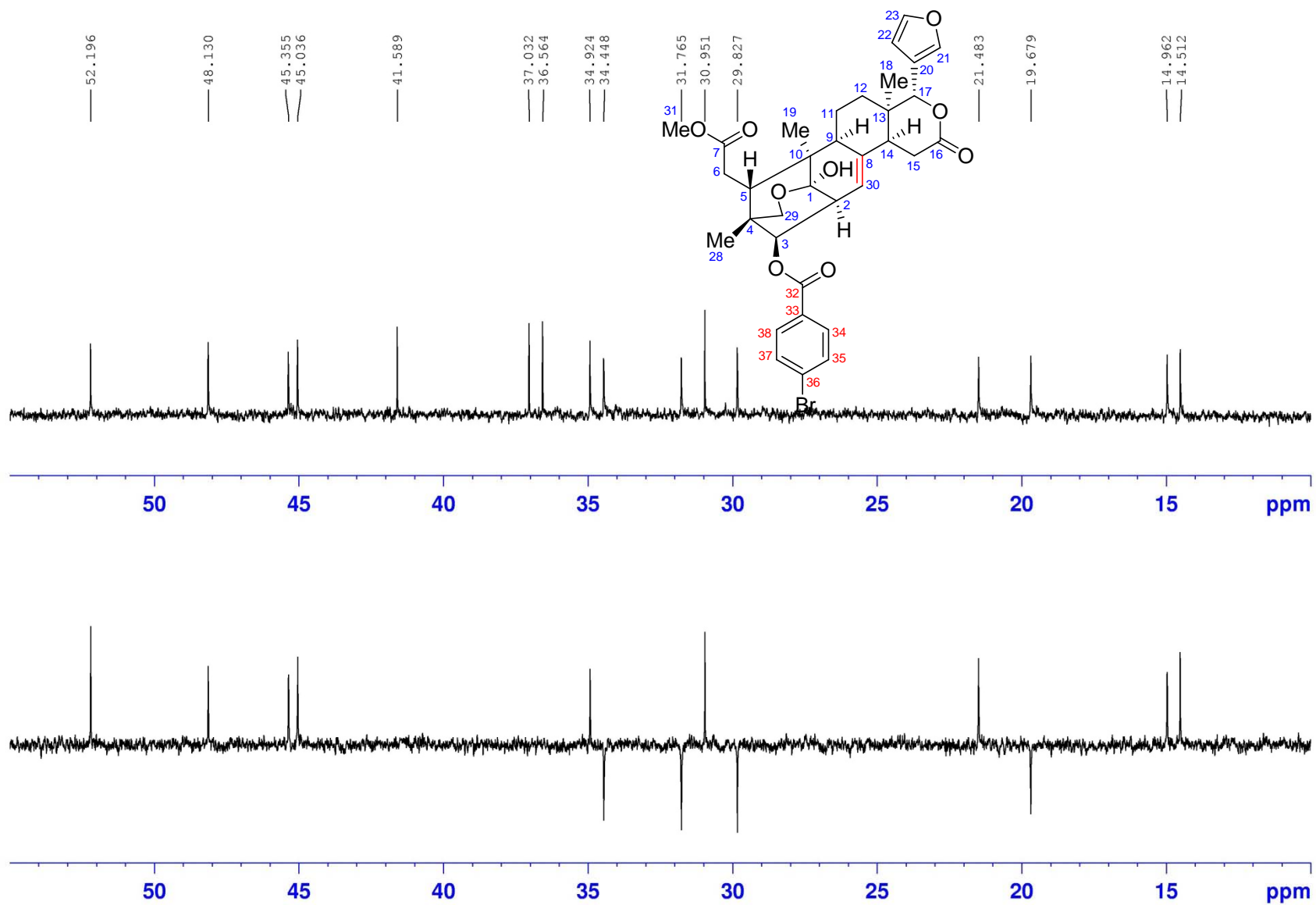
DEPT 135 spectrum of **8b** in CDCl₃



DEPT 135 spectrum of **8b** in CDCl₃



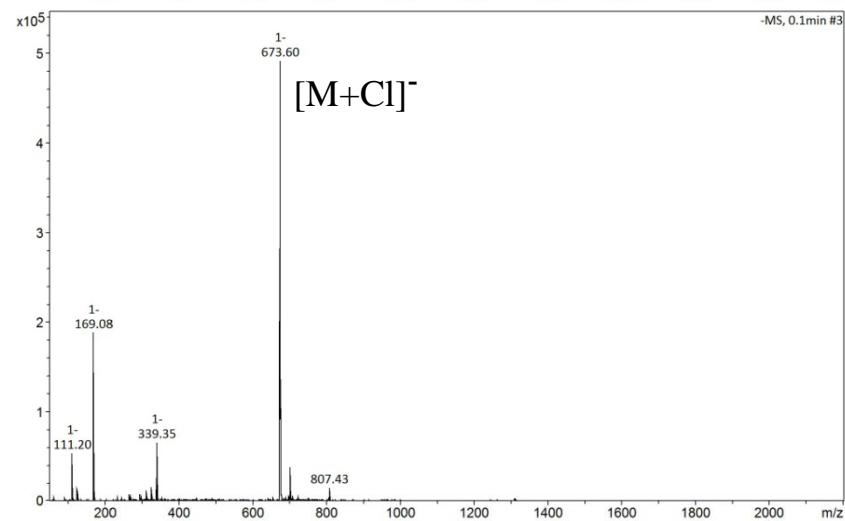
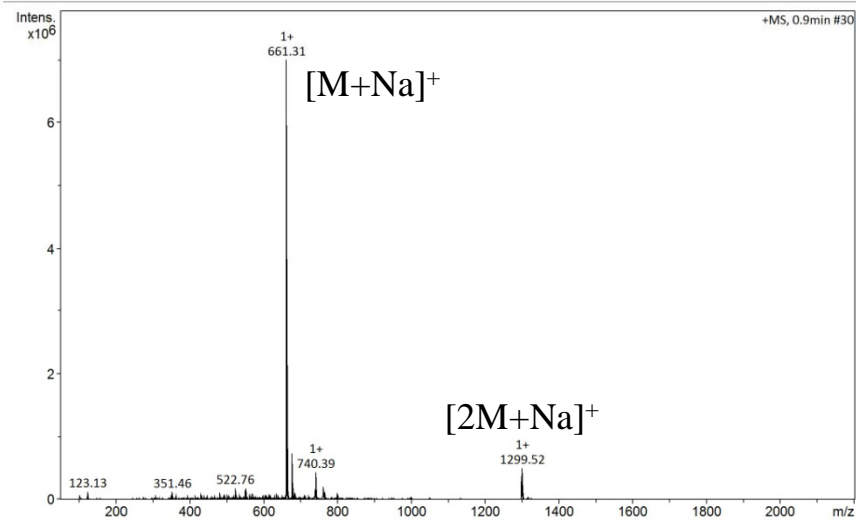
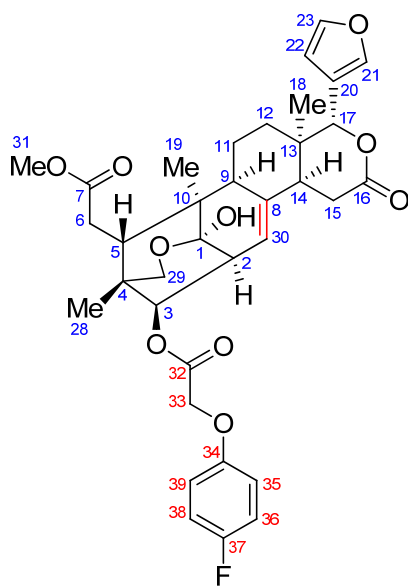
DEPT 135 spectrum of **8b** in CDCl₃



LR-ESIMS for compound **8c**

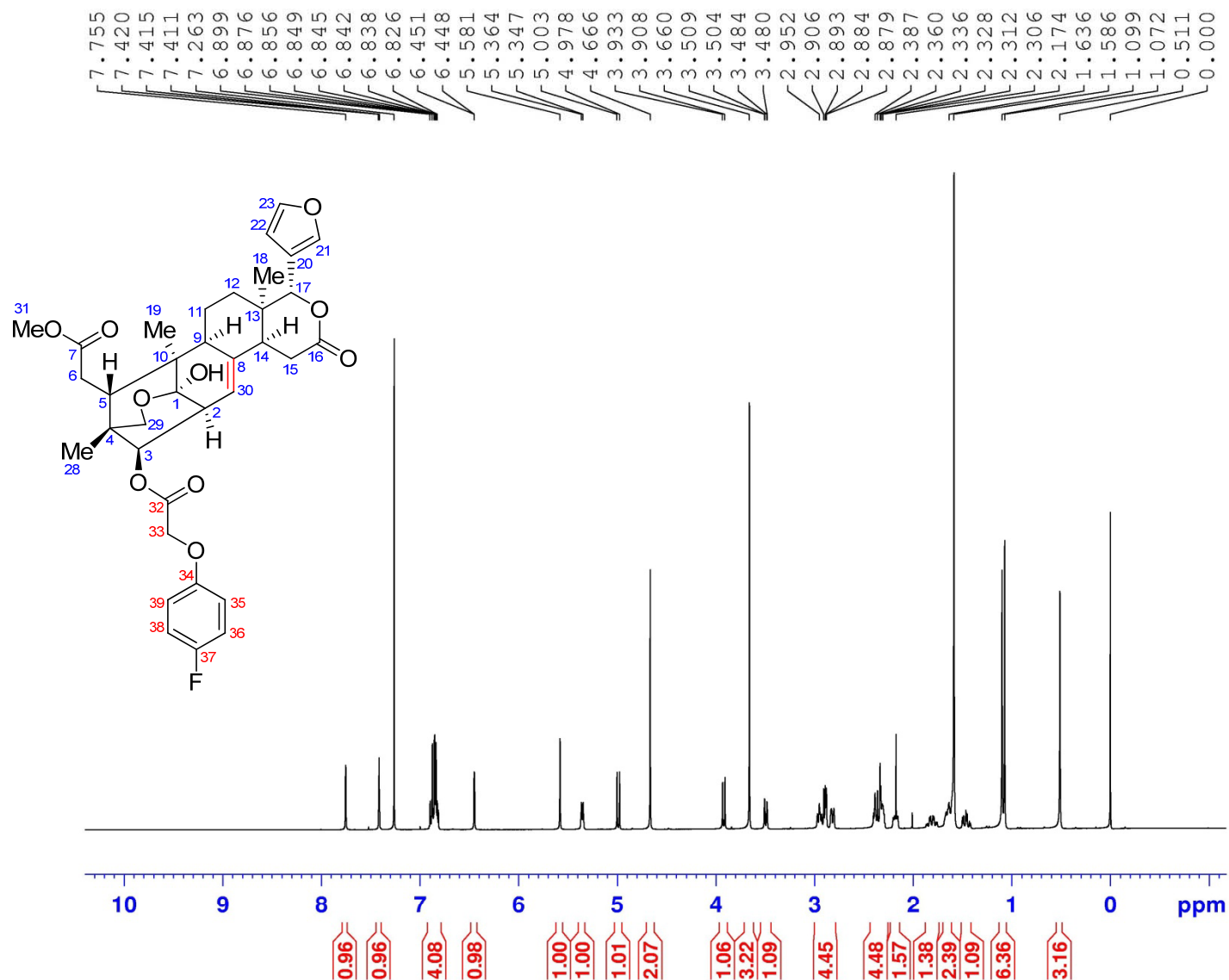
Generic Display Report

Analysis Info		Acquisition D 2017/10/20 10:48:50
Analysis Name H:\Data-MS-20180909\liwanshan\CZC-1-CH3 4-F ben yang yi suan.d		
Method	DEF_MS.M	Operator bdal
Sample Name	CZC-1-CH3 4-F ben yang yi suan	Instrument amaZon SL
Comment		



Bruker Compass DataAnalysis

^1H NMR (400 MHz) spectrum of **8c** in CDCl_3



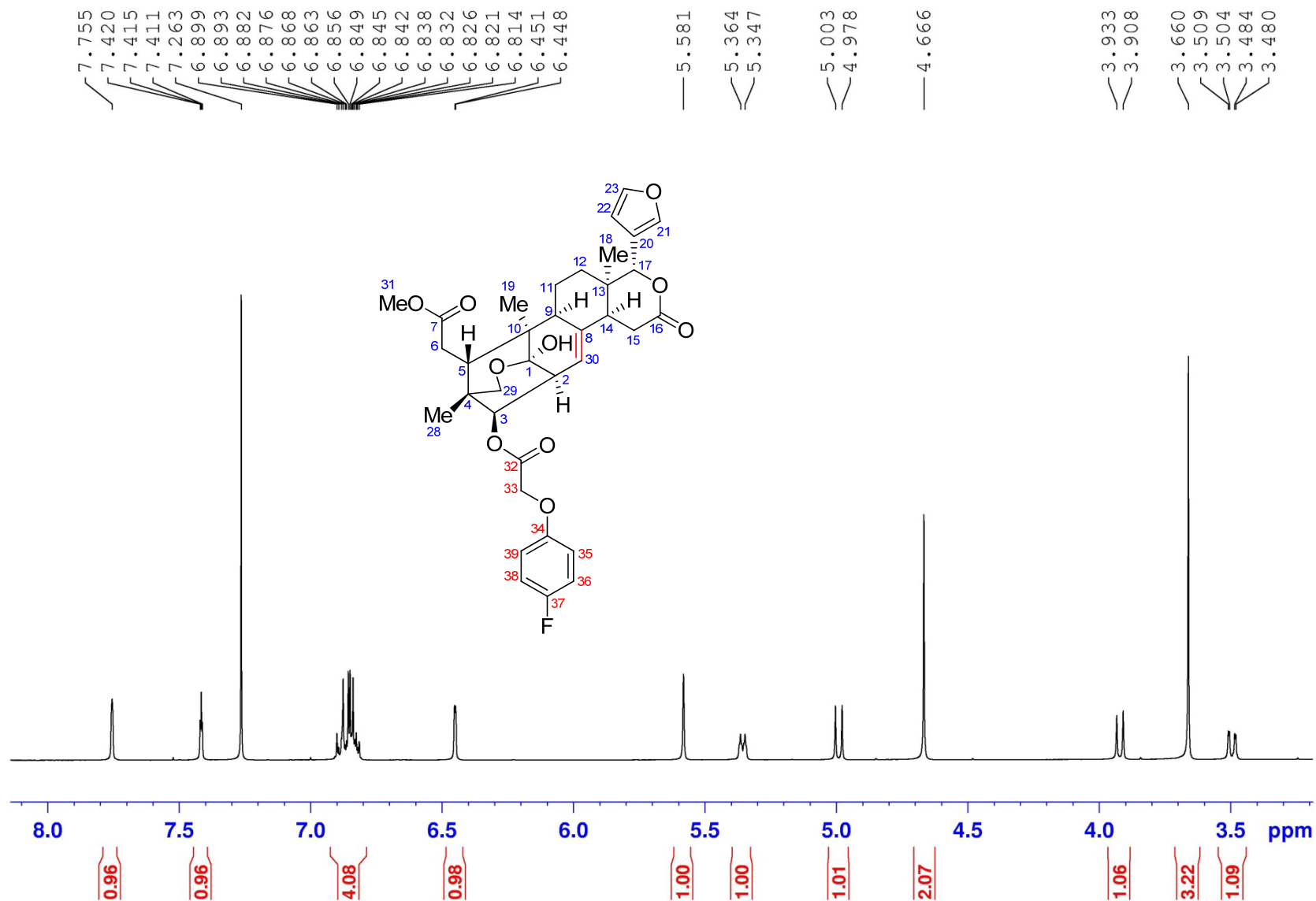
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EXPNO     1
PROCNO    1
Date_     20171017
Time      14.25
INSTRUM   spect
PROBHD    5 mm CPPBBO BB
PULPROG   zg30
TD        65536
SOLVENT   CDCl3
NS         16
DS         2
SWH        8223.685 Hz
FIDRES     0.125483 Hz
AQ         3.9846387 sec
RG         208.5
DW         60.800 usec
DE         10.00 usec
TE         297.0 K
D1         1.00000000 sec
TD0        1
  
```

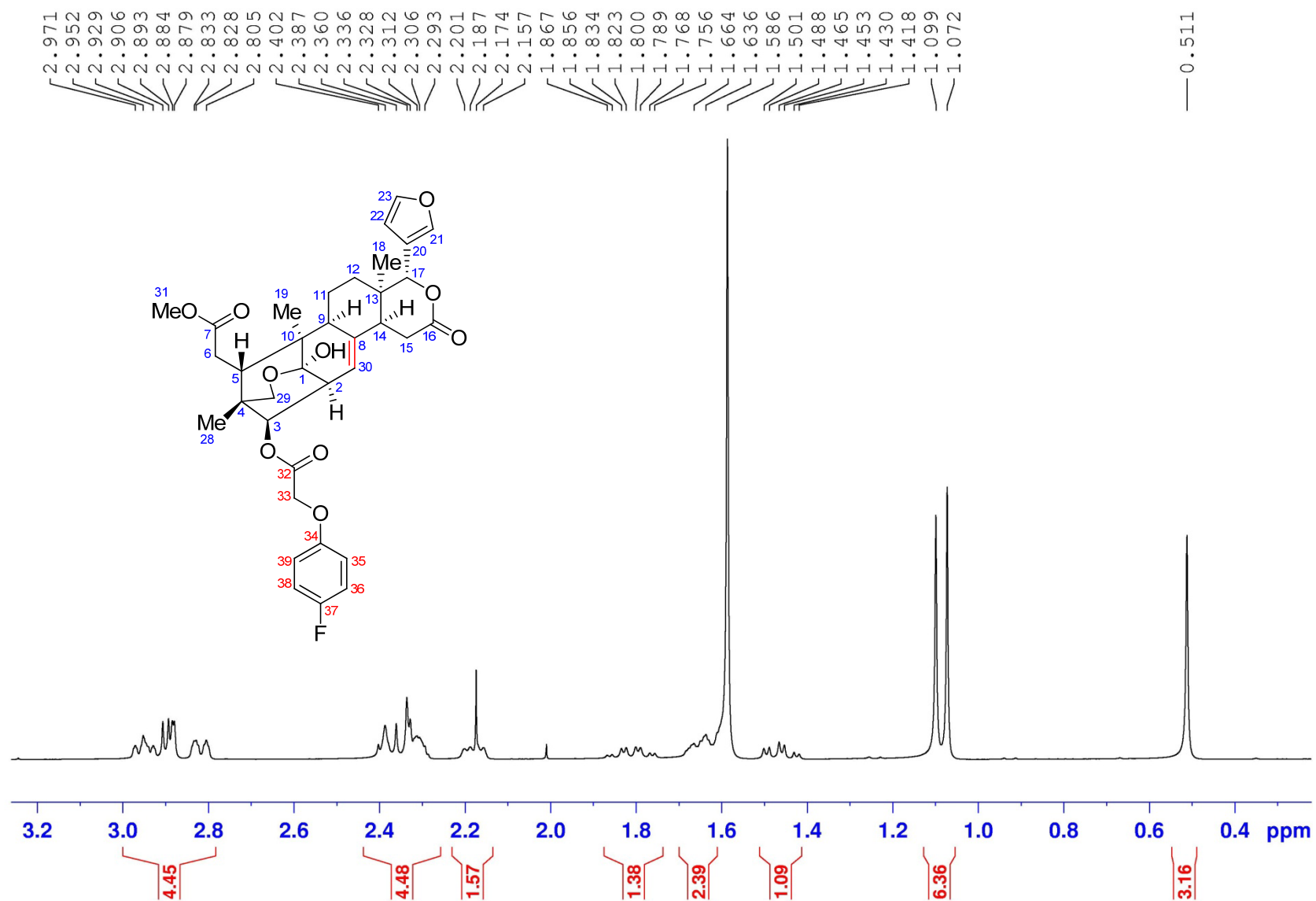
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===== CHANNEL f1 =====
SFO1      400.1324710 MHz
NUC1       1H
P1         11.50 usec
SI         65536
SF         400.1300084 MHz
WDW        EM
SSB        0
LB         0.30 Hz
GB         0
PC         1.00
  
```

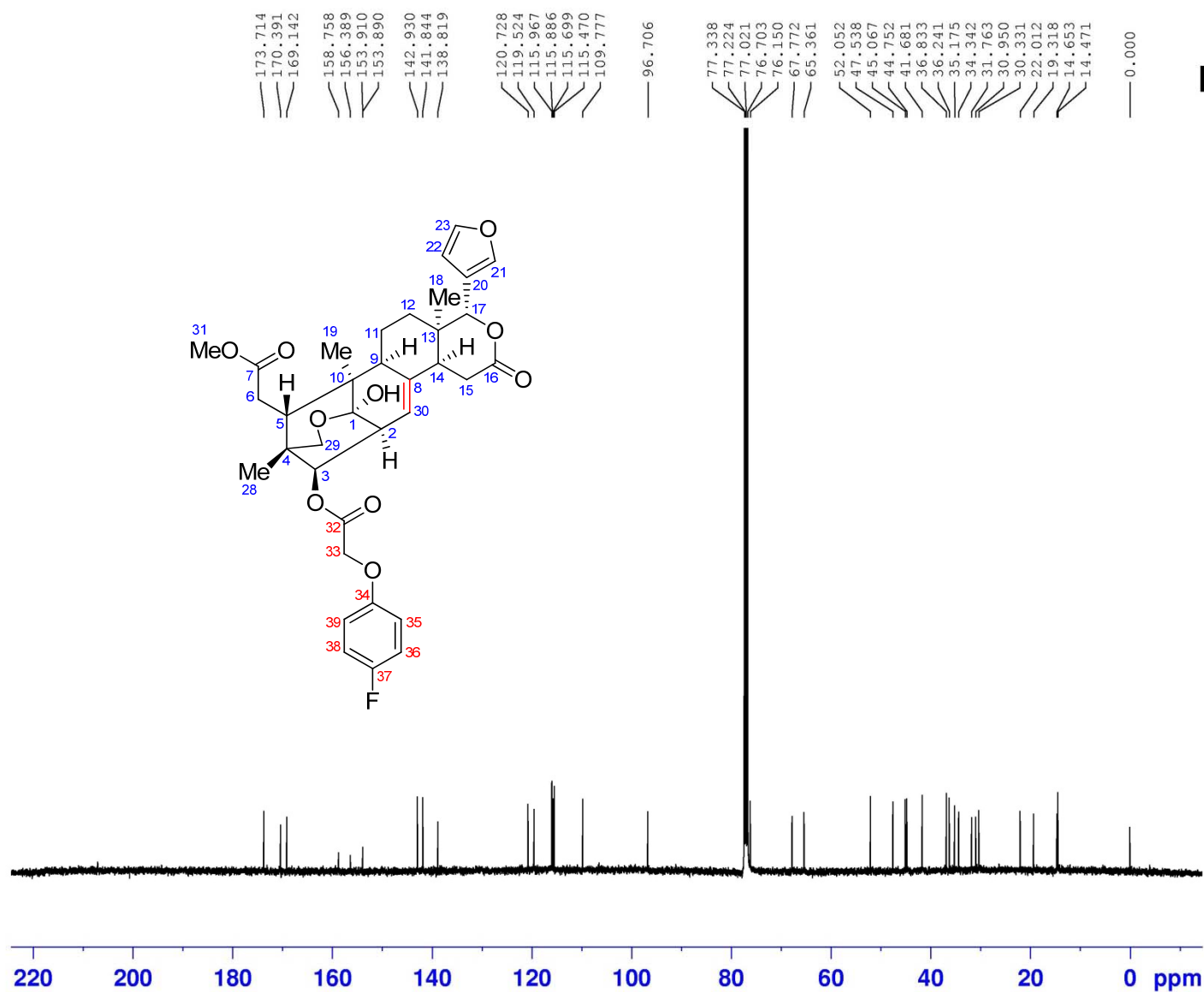

^1H NMR (400 MHz) spectrum of **8c** in CDCl_3



^1H NMR (400 MHz) spectrum of **8c** in CDCl_3



^{13}C NMR (100 MHz) spectrum of **8c** in CDCl_3

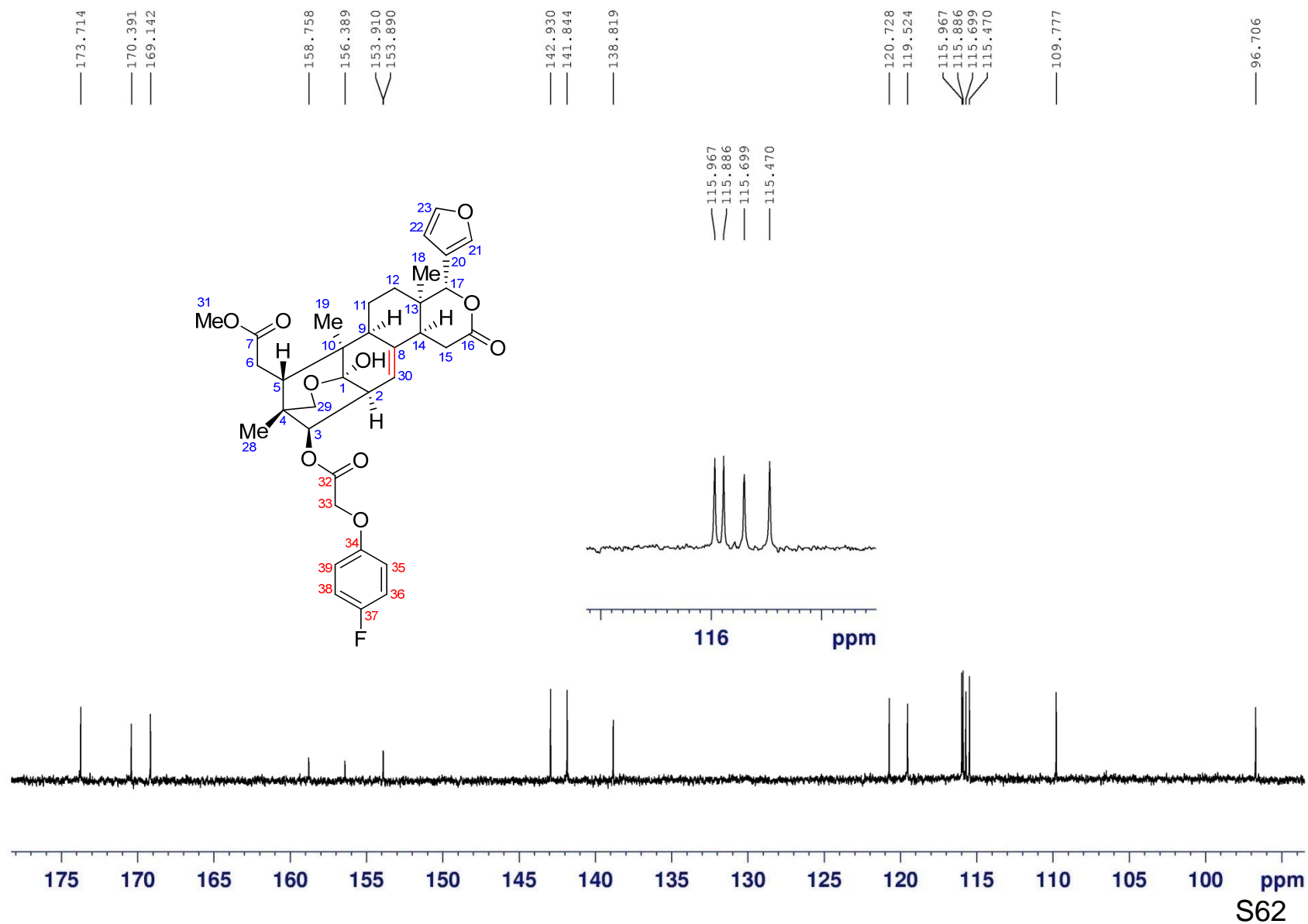


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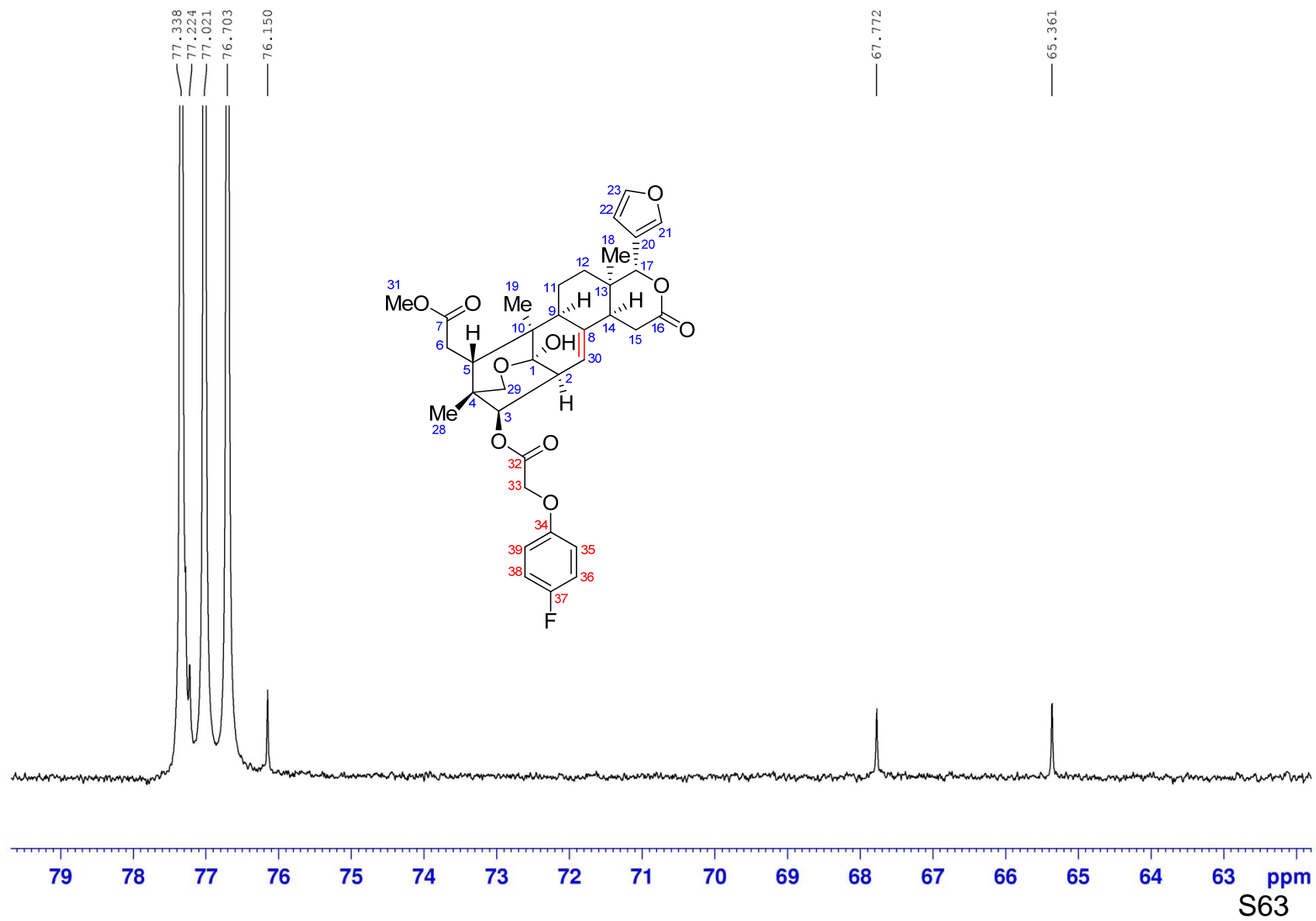
NAME      czc-1-CH3-4-F-BENYANGY.
EXPNO     2
PROCNO    1
Date_     20171010
Time      1.35
INSTRUM   spect
PROBHD    5 mm CPBPBBO BB
PULPROG   zgpg30
TD        65536
SOLVENT   CDCl3
NS        1024
DS        4
SWH       24038.461 Hz
FIDRES    0.366798 Hz
AQ        1.3631988 sec
RG        147.94
DW        20.800 usec
DE        18.00 usec
TE        297.0 K
D1        2.00000000 sec
D11       0.03000000 sec
TD0       1

===== CHANNEL f1 =====
SFO1     100.6233324 MHz
NUC1     13C
P1       10.00 usec
SI       32768
SF       100.6127691 MHz
WDW      EM
SSB      0
LB       1.00 Hz
GB       0
PC       1.40
    
```

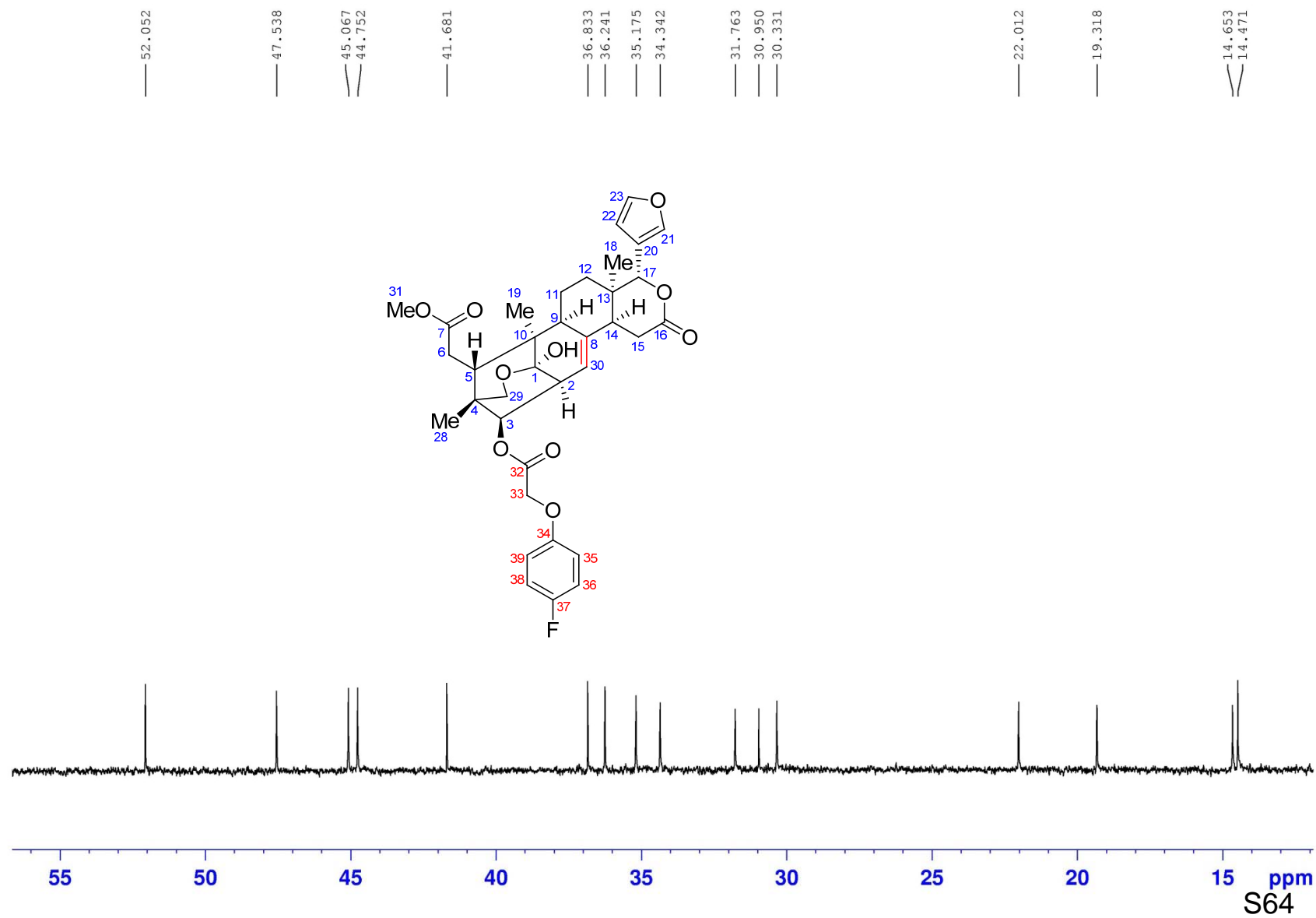
^{13}C NMR (100 MHz) spectrum of **8c** in CDCl_3



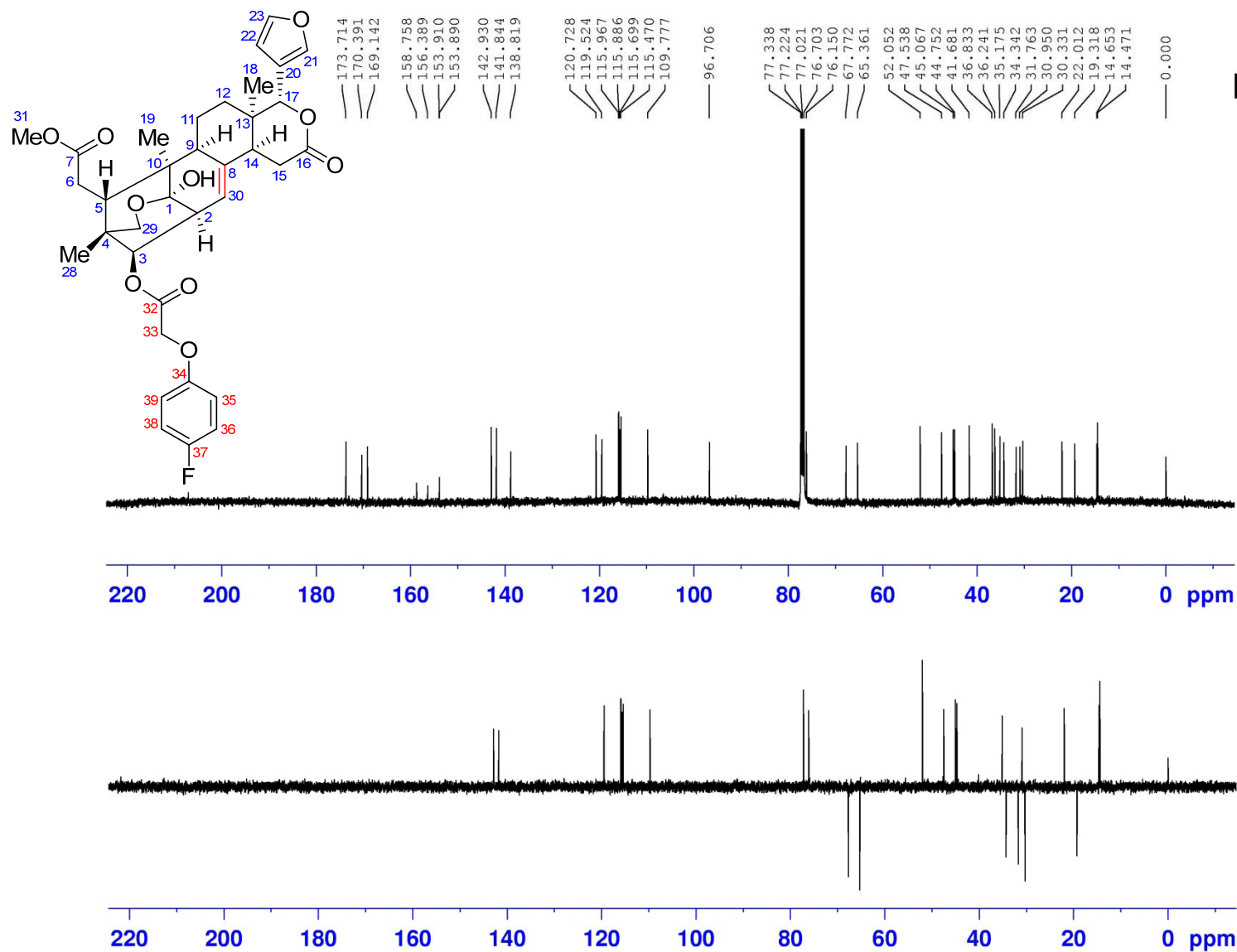
^{13}C NMR (100 MHz) spectrum of **8c** in CDCl_3



^{13}C NMR (100 MHz) spectrum of **8c** in CDCl_3



DEPT 135 spectrum of **8c** in CDCl₃



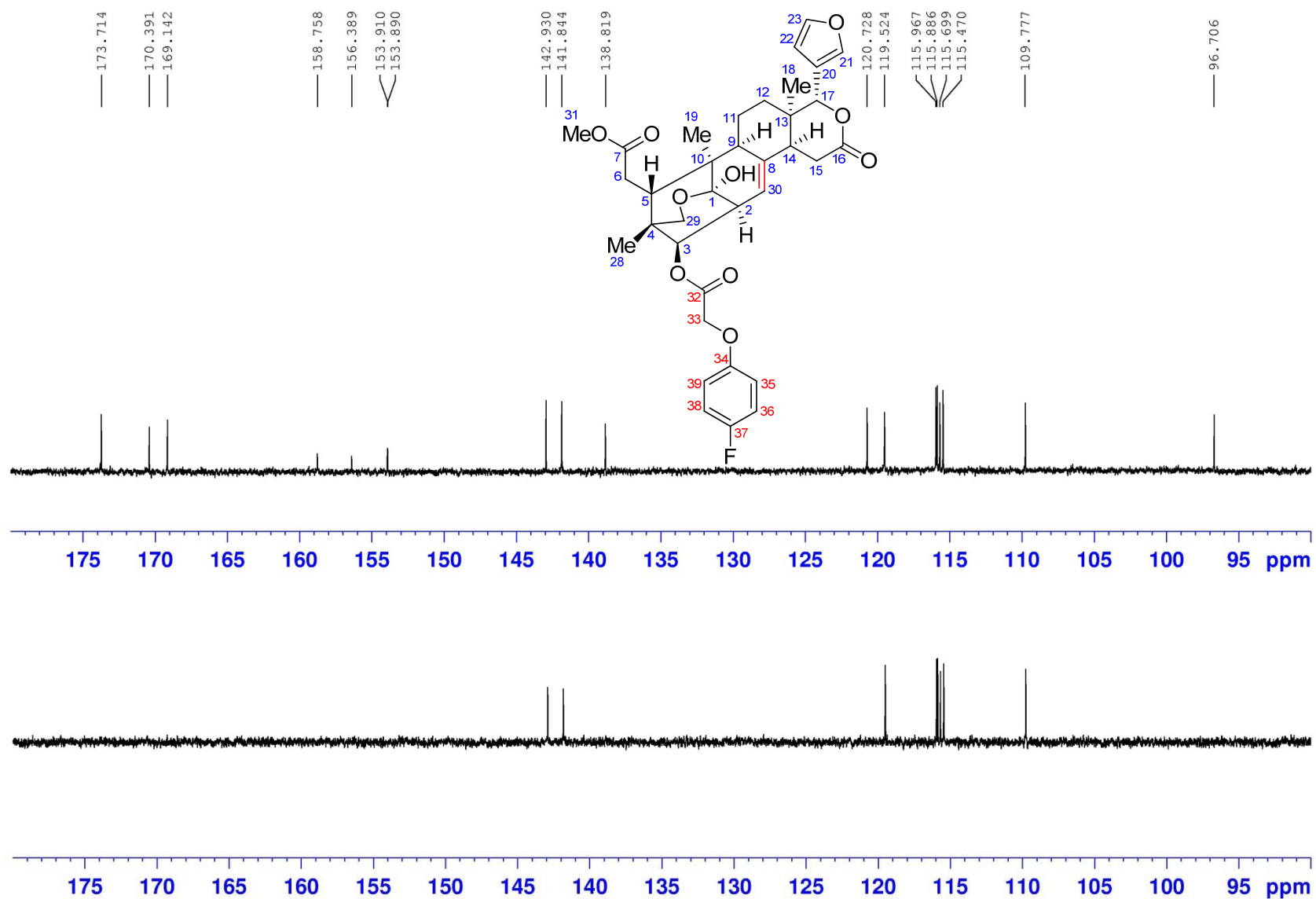
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NAME      czc-1-CH3-4-F-BENYANG'
EXPNO     3
PROCNO    1
Date_     20171010
Time      1.53
INSTRUM   spect
PROBHD    5 mm CPPBBO BB
PULPROG   deptsp135
TD         65536
SOLVENT   CDCl3
NS         300
DS         4
SWH        24038.461 Hz
FIDRES     0.366798 Hz
AQ         1.3631988 sec
RG          73.92
DW         20.800 usec
DE         18.00 usec
TE         297.0 K
CNST2      145.0000000
D1         2.00000000 sec
D2         0.00344828 sec
D12        0.00002000 sec
TD0        1
    
```

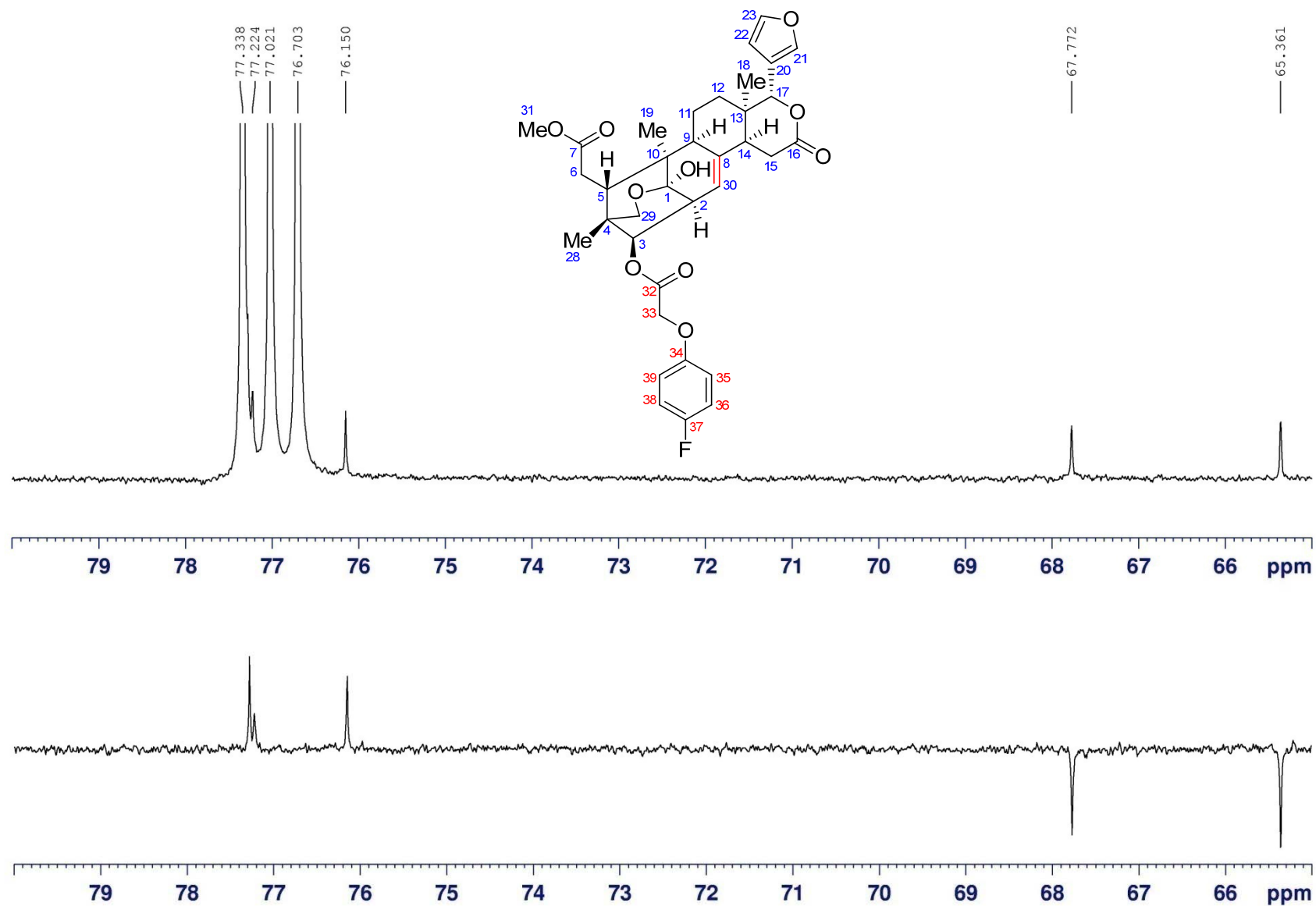
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CHANNEL f1
SFO1      100.6233324 MHz
NUC1       13C
P1         10.00 usec
P13        2000.00 usec
SI         32768
SF         100.6127692 MHz
WDW        EM
SSB        0
LB         1.00 Hz
GB         0
PC         1.40
    
```

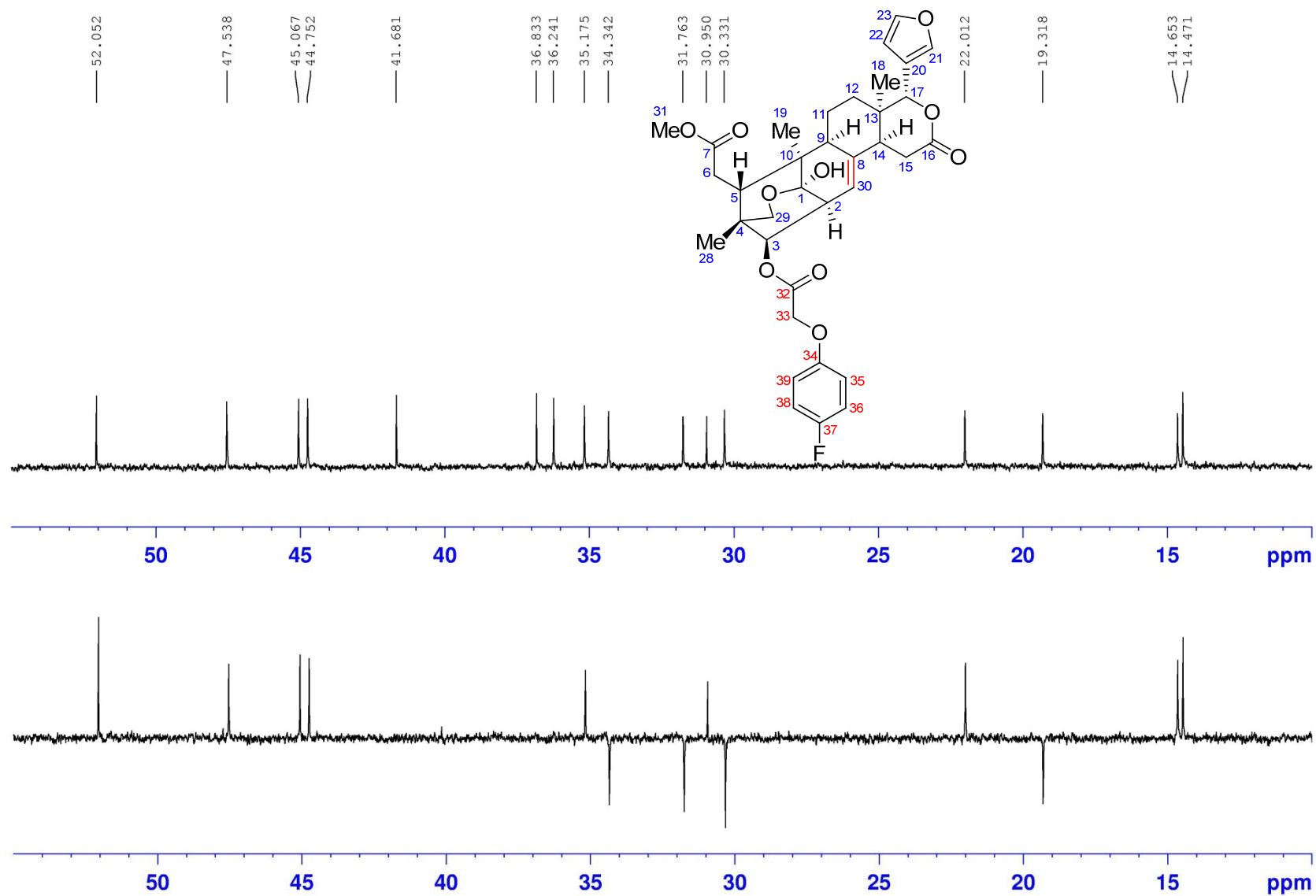
DEPT 135 spectrum of **8c** in CDCl₃



DEPT 135 spectrum of **8c** in CDCl₃



DEPT 135 spectrum of **8c** in CDCl₃



HR-ESIMS for compound **8d**

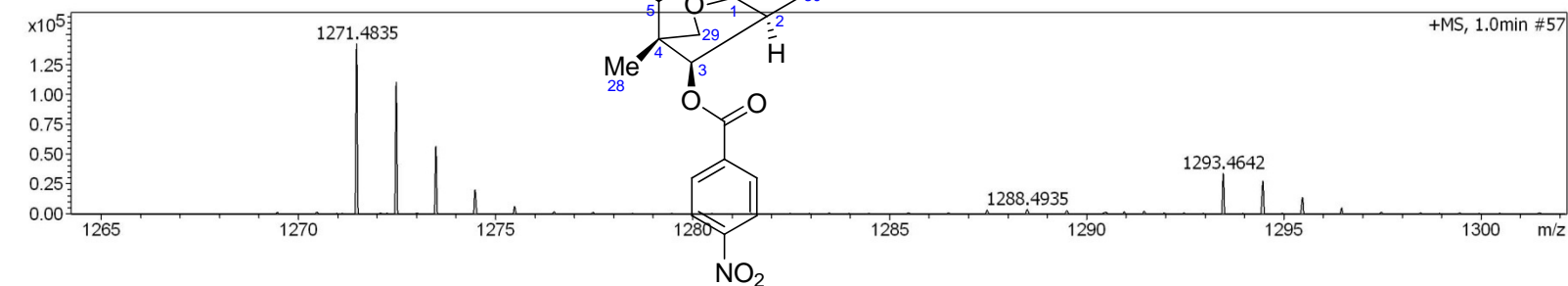
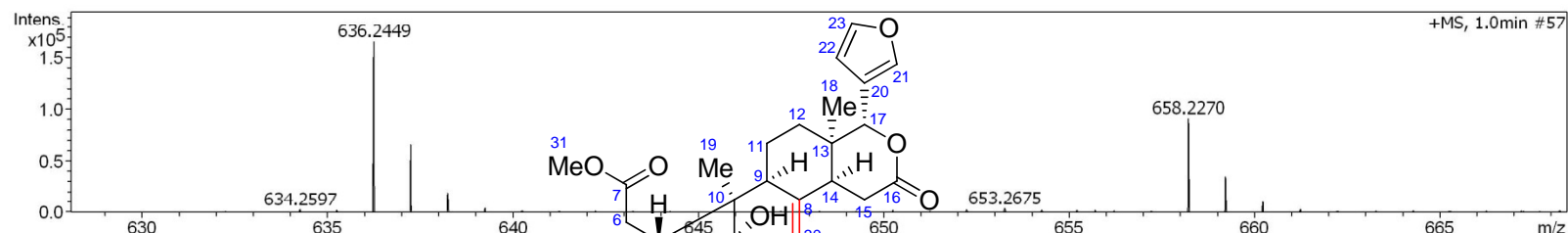
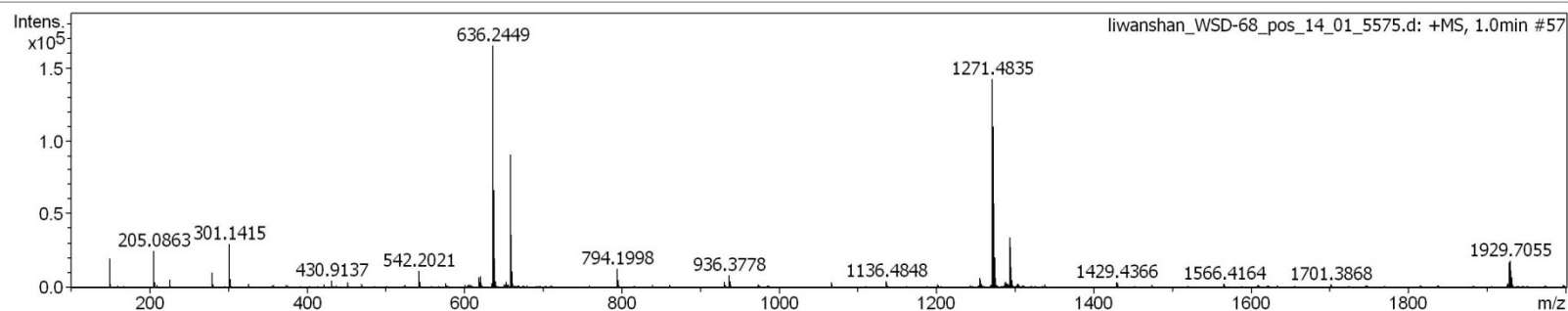
Generic Display Report

Analysis Info

Analysis Name D:\Data\MS\data\201809\liwanshan_WSD-68_pos_14_01_5575.d
Method LC_Direct Infusion_pos_100-1000mz.m
Sample Name liwanshan_WSD-68_pos
Comment

Acquisition Date 9/30/2018 6:05:28 PM

Operator SCSIO
Instrument maXis



HR-ESIMS for compound **8d**

Mass Spectrum SmartFormula Report

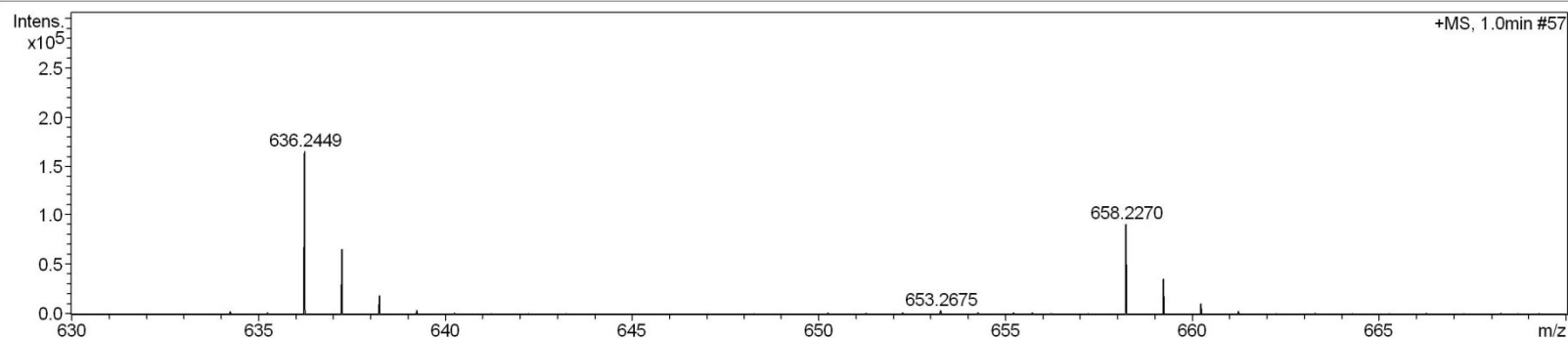
Analysis Info

Analysis Name D:\Data\MS\data\201809\liwanshan_WSD-68_pos_14_01_5575.d
 Method LC_Direct Infusion_pos_100-1000mz.m
 Sample Name liwanshan_WSD-68_pos
 Comment

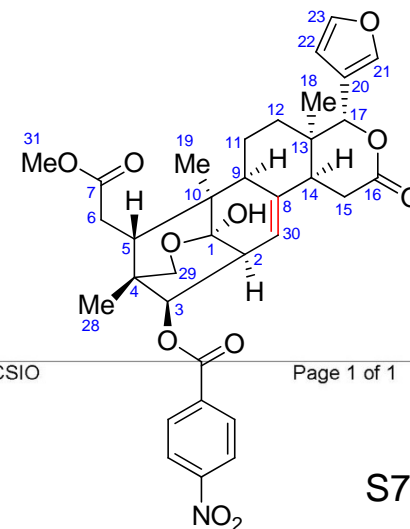
Acquisition Date 9/30/2018 6:05:28 PM
 Operator SCSIO
 Instrument maXis 255552.00029

Acquisition Parameter

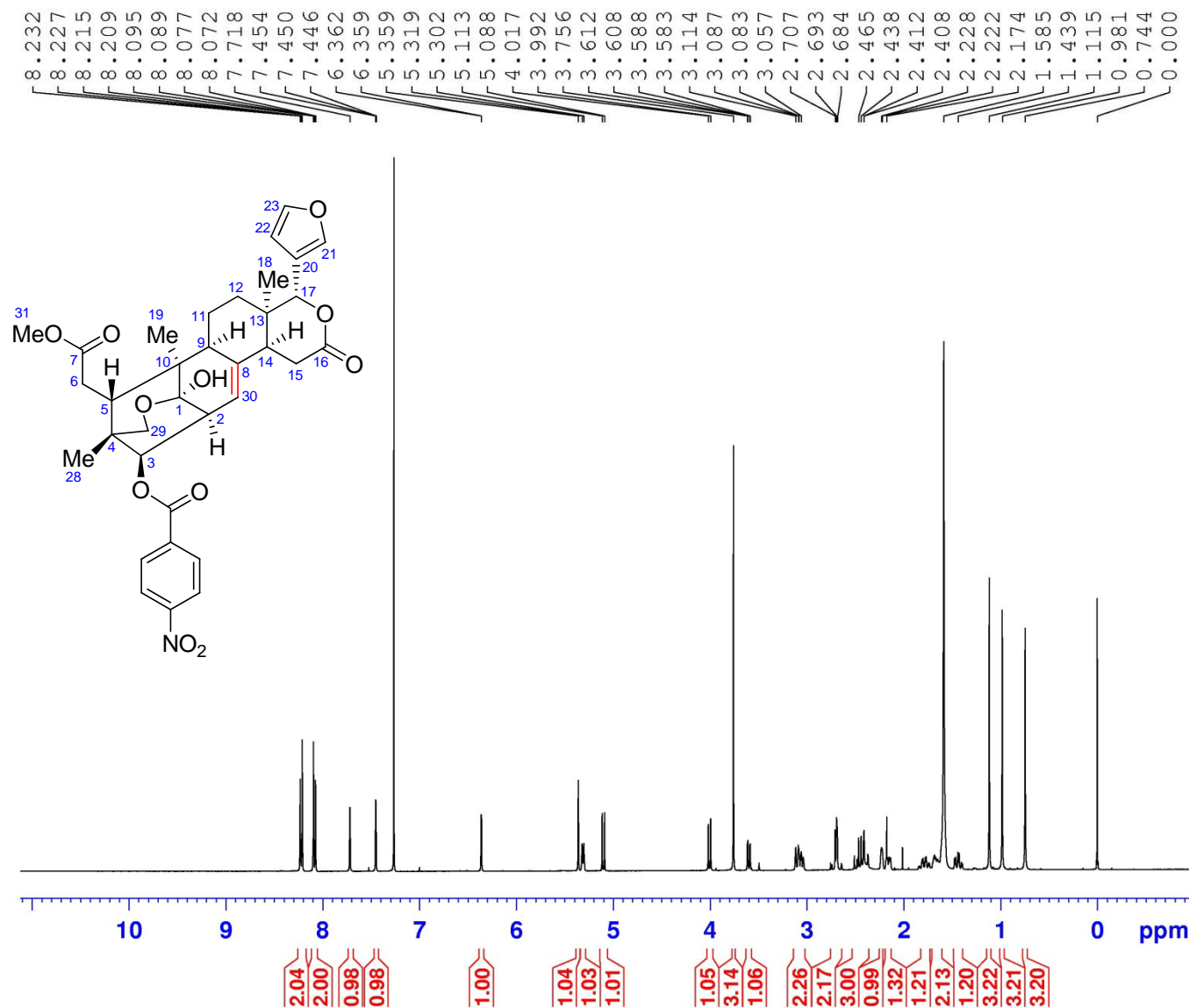
Source Type	ESI	Ion Polarity	Positive	Set Nebulizer	0.4 Bar
Focus	Active	Set Capillary	4500 V	Set Dry Heater	180 °C
Scan Begin	100 m/z	Set End Plate Offset	-500 V	Set Dry Gas	4.0 l/min
Scan End	2000 m/z	Set Charging Voltage	0 V	Set Divert Valve	Waste
		Set Corona	0 nA	Set APCI Heater	0 °C



Meas. m/z	#	Ion Formula	Score	m/z	err [ppm]	err [mDa]	mSigma	rdb	e ⁻ Conf	N-Rule
636.2449	1	C34H38NO11	100.00	636.2439	-1.5	-0.9	16.8	16.5	even	ok
658.2270	1	C34H37NNaO11	100.00	658.2259	-1.6	-1.1	14.2	16.5	even	ok
1271.4835	1	C68H75N2O22	77.91	1271.4806	-2.3	-2.9	33.3	32.5	even	ok
1293.4642	1	C68H74N2NaO22	100.00	1293.4625	-1.3	-1.7	41.6	32.5	even	ok



¹H NMR (400 MHz) spectrum of **8d** in CDCl₃



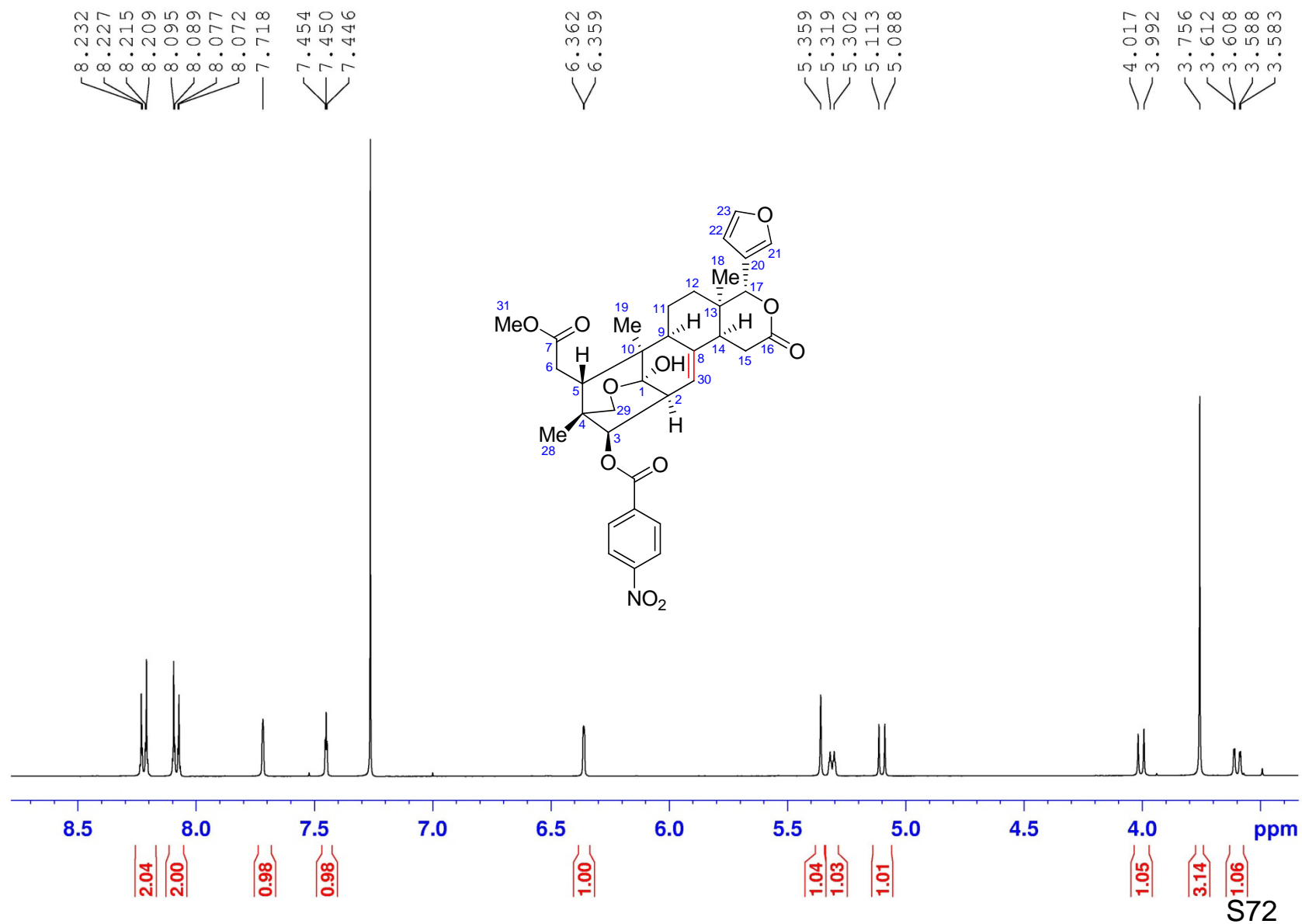
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NAME      czc-1-CH3-duixia
EXPNO     1
PROCNO    1
Date_     20170922
Time      23.09
INSTRUM   spect
PROBHD    5 mm CPPBBO BB
PULPROG   zg30
TD         65536
SOLVENT   CDCl3
NS         16
DS         2
SWH        8223.685 F
FIDRES     0.125483 F
AQ         3.9846387 s
RG         208.5
DW         60.800 u
DE         10.00 u
TE         297.0 K
D1         1.00000000 s
TD0        1
  
```

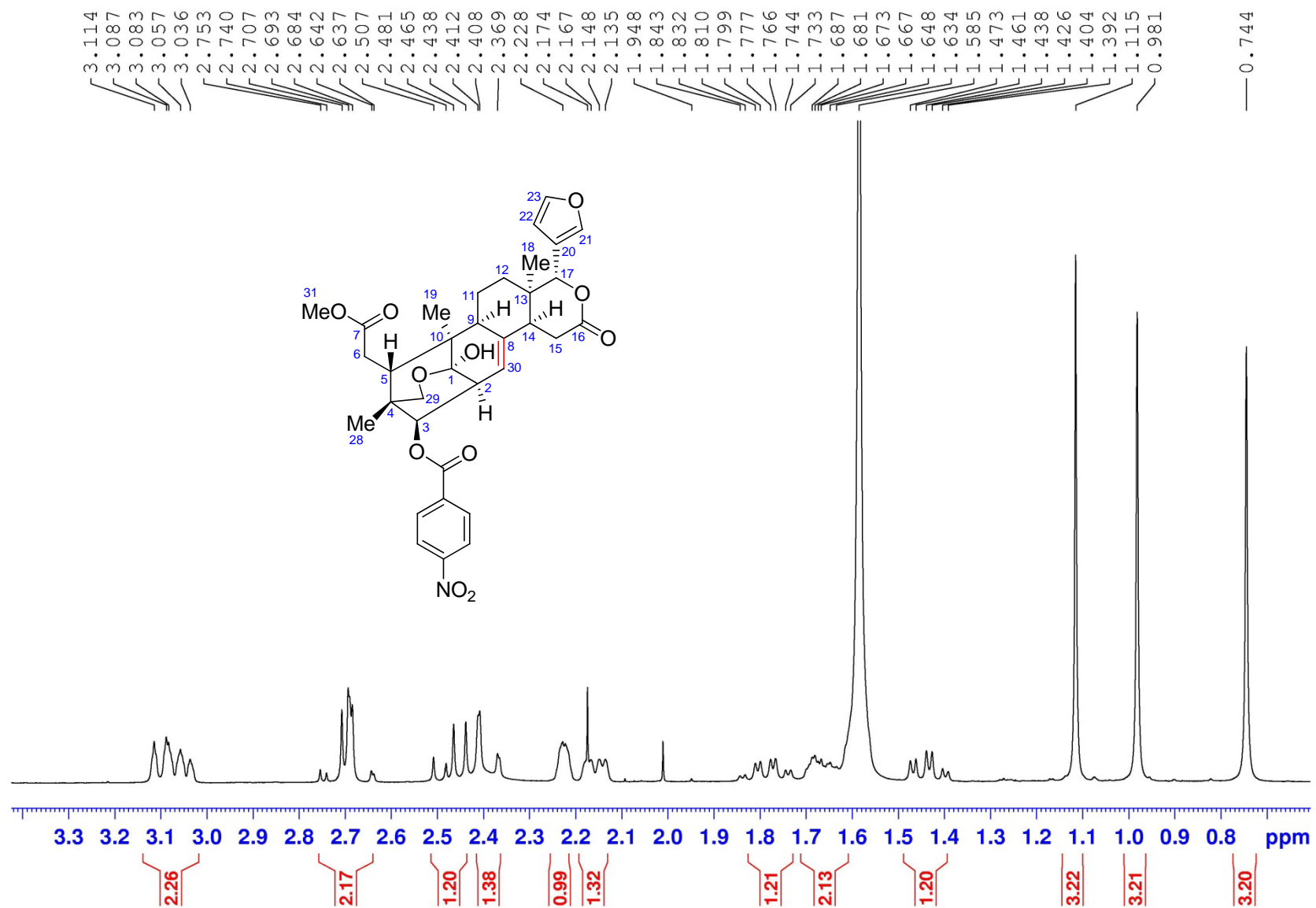
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===== CHANNEL f1 =====
SFO1      400.1324710 M
NUC1       1H
P1        11.50 u
SI         65536
SF         400.1300083 M
WDW        EM
SSB        0
LB         0.30 F
GB         0
PC         1.00
  
```

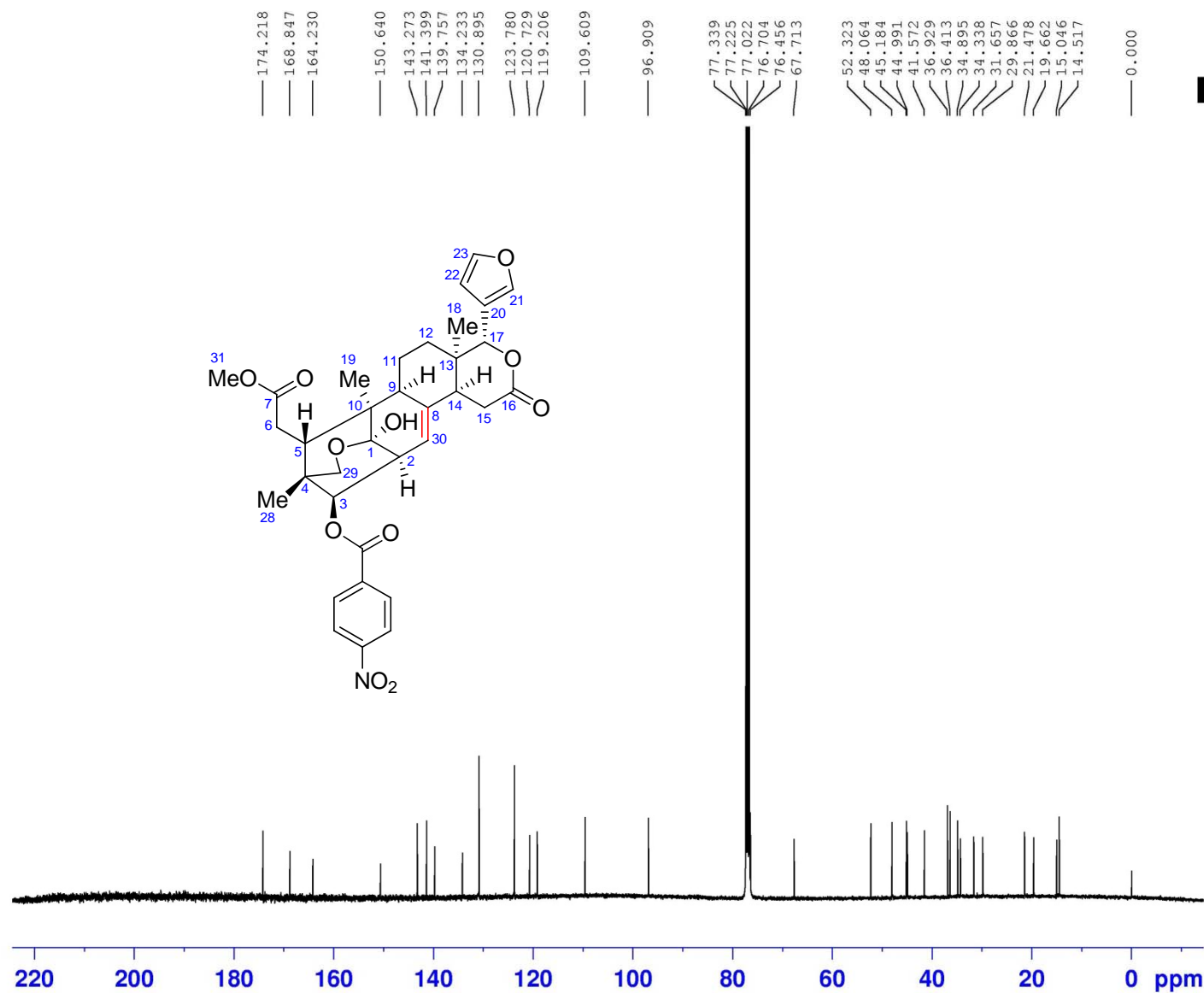
^1H NMR (400 MHz) spectrum of **8d** in CDCl_3



^1H NMR (400 MHz) spectrum of **8d** in CDCl_3



^{13}C NMR (100 MHz) spectrum of **8d** in CDCl_3



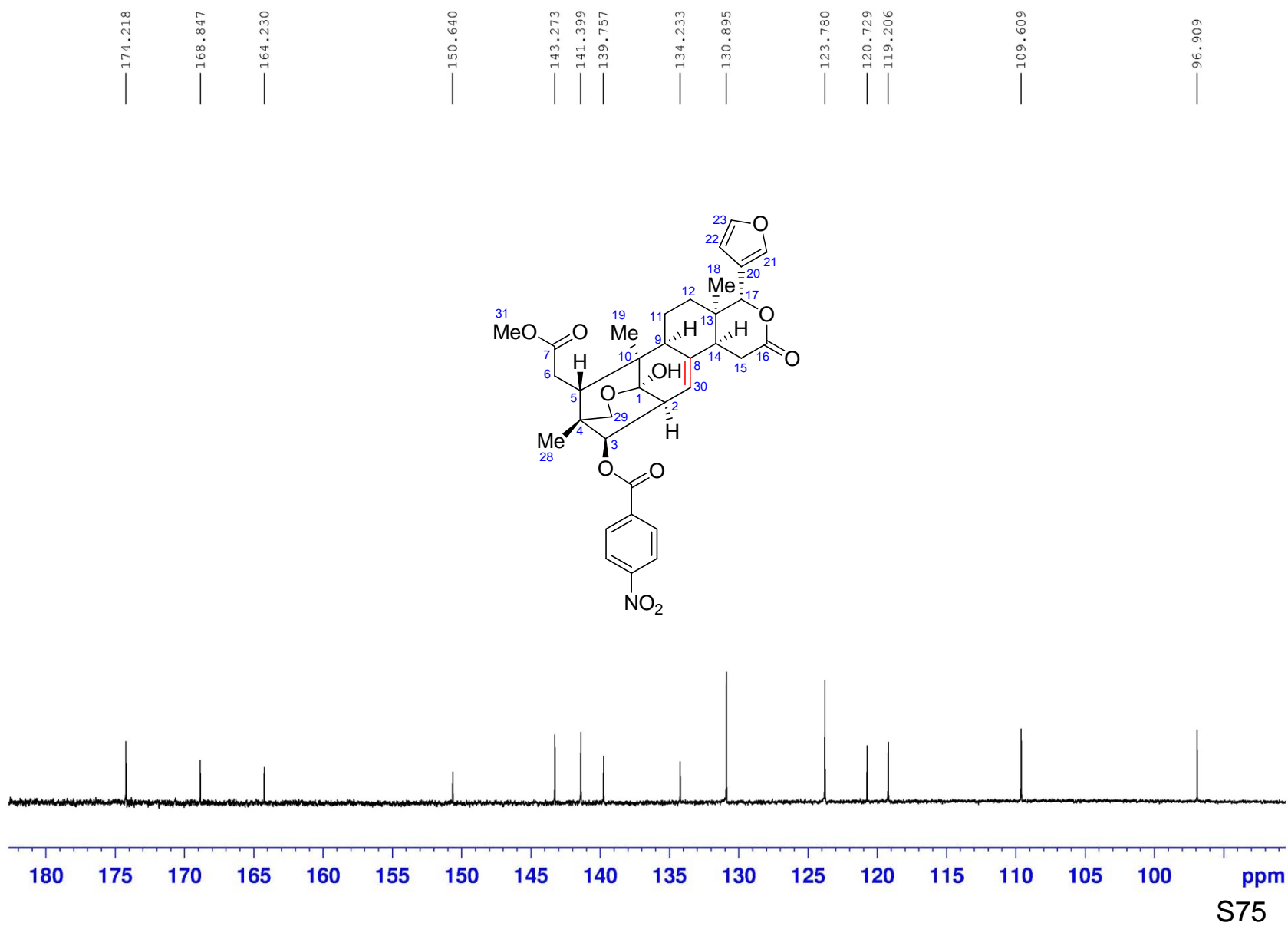
```

NAME      czc-1-CH3-duixia
EXPNO     2
PROCNO    1
Date_     20170923
Time      8.42
INSTRUM   spect
PROBHD    5 mm CPPBBO BB
PULPROG   zgpg30
TD        65536
SOLVENT   CDC13
NS        10000
DS        4
SWH       24038.461 E
FIDRES    0.366798 E
AQ        1.3631988 s
RG        130.26
DW        20.800 u
DE        18.00 u
TE        297.0 K
D1        2.00000000 s
D11       0.03000000 s
TD0       1
    
```

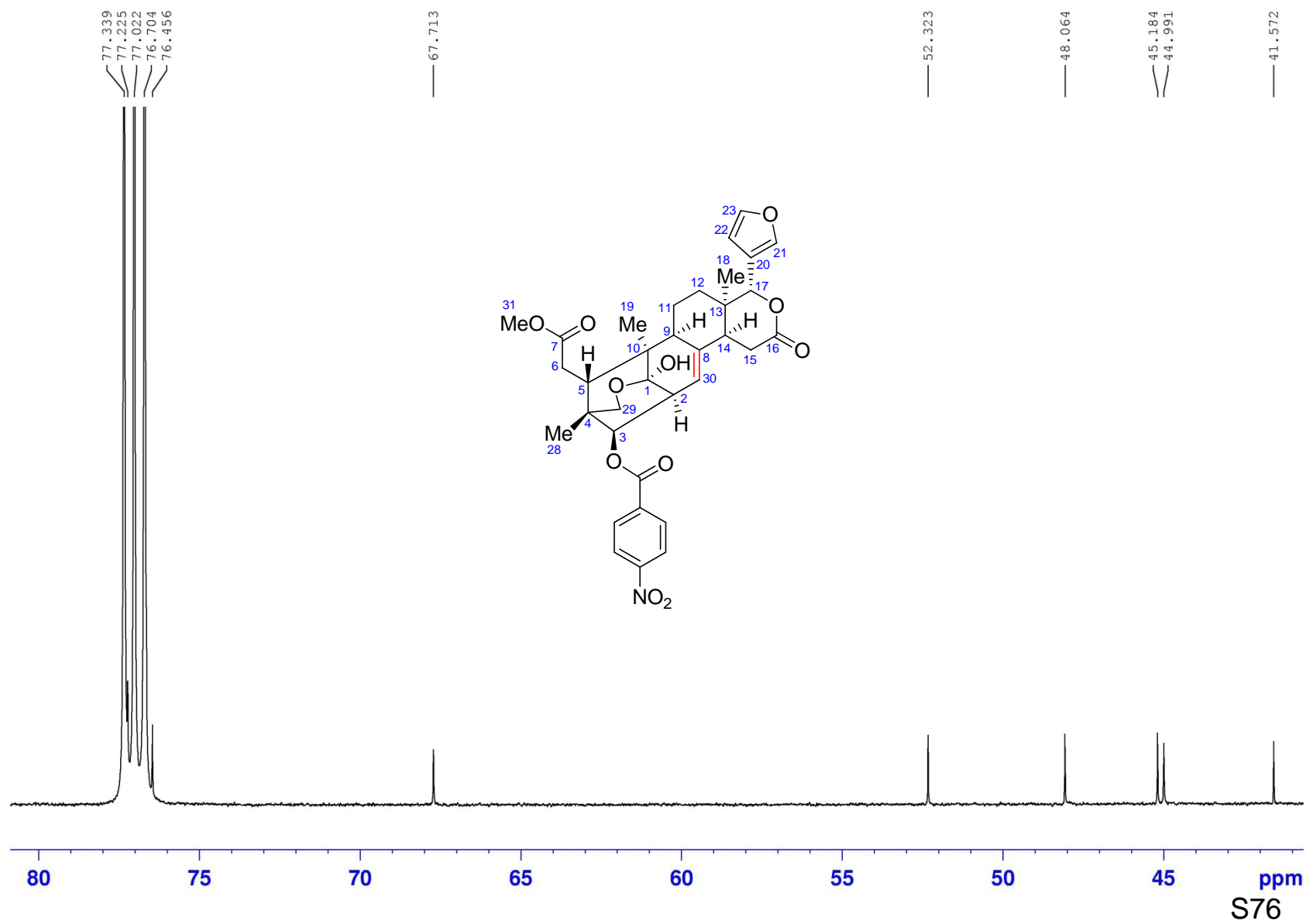
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===== CHANNEL f1 =====
SFO1      100.6233324 M
NUC1      13C
P1        10.00 u
SI        32768
SF        100.6127690 M
WDW       EM
SSB       0
LB        1.00 E
GB        0
PC        1.40
    
```

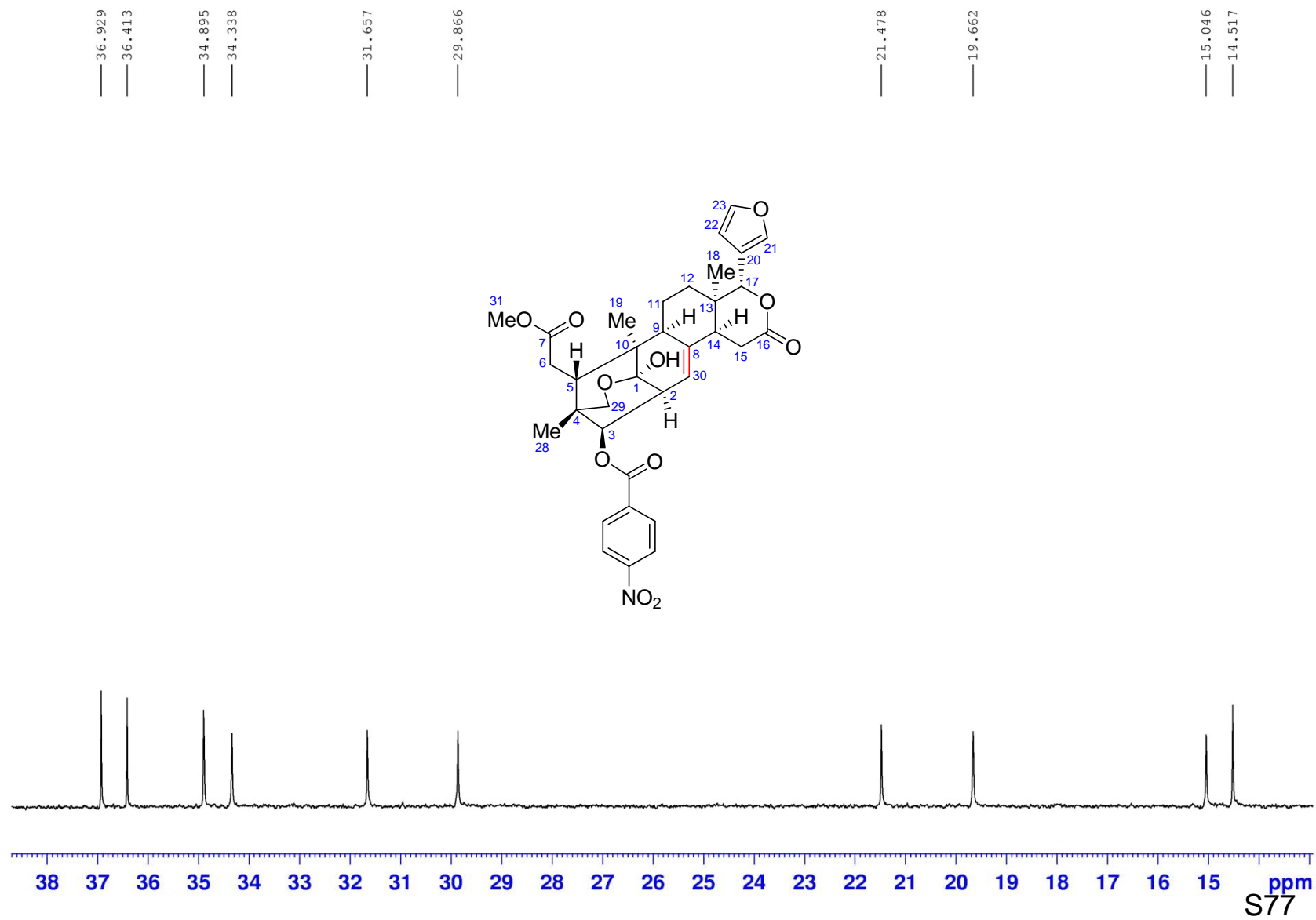

^{13}C NMR (100 MHz) spectrum of **8d** in CDCl_3



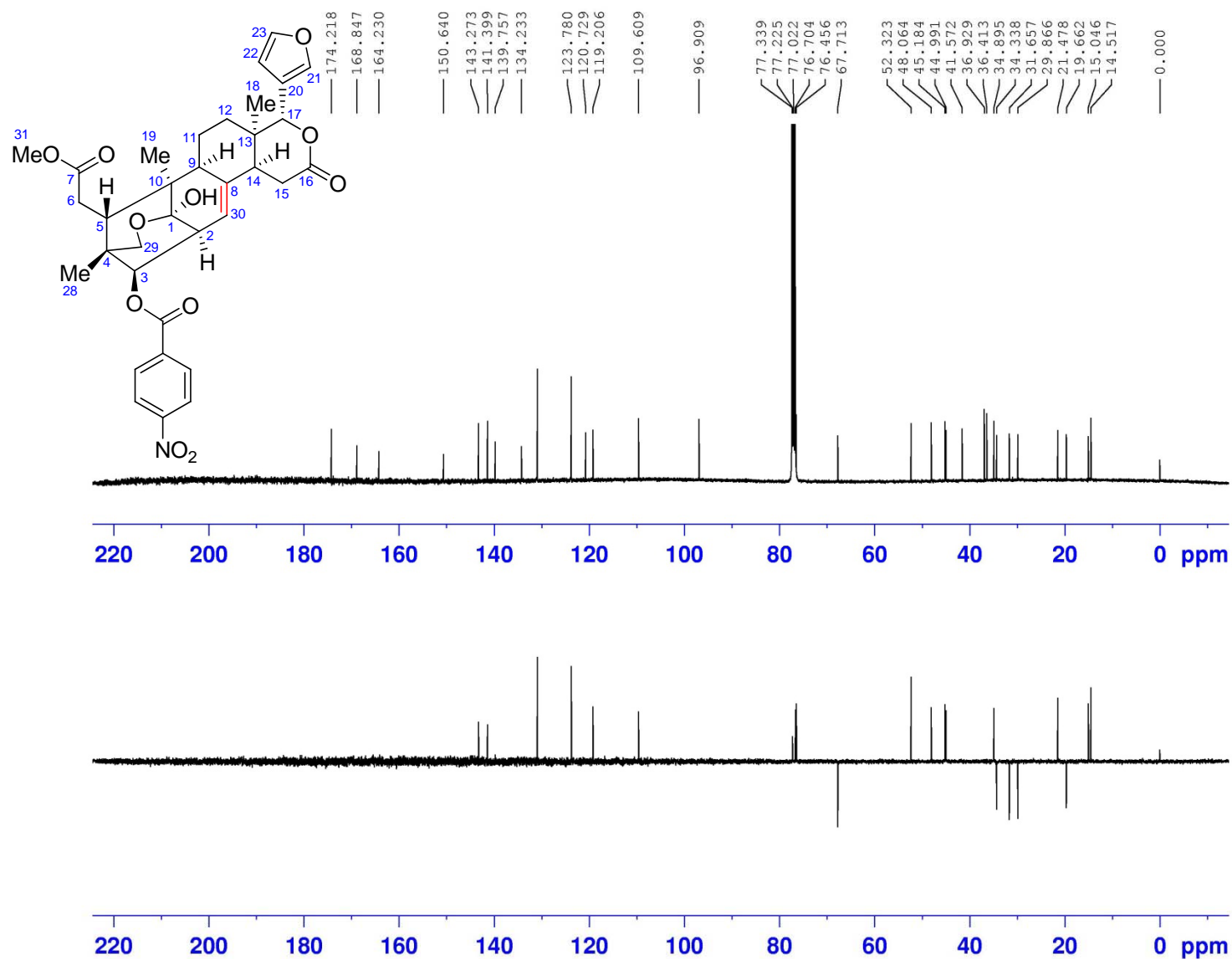
^{13}C NMR (100 MHz) spectrum of **8d** in CDCl_3



^{13}C NMR (100 MHz) spectrum of **8d** in CDCl_3



DEPT 135 spectrum of **8d** in CDCl₃



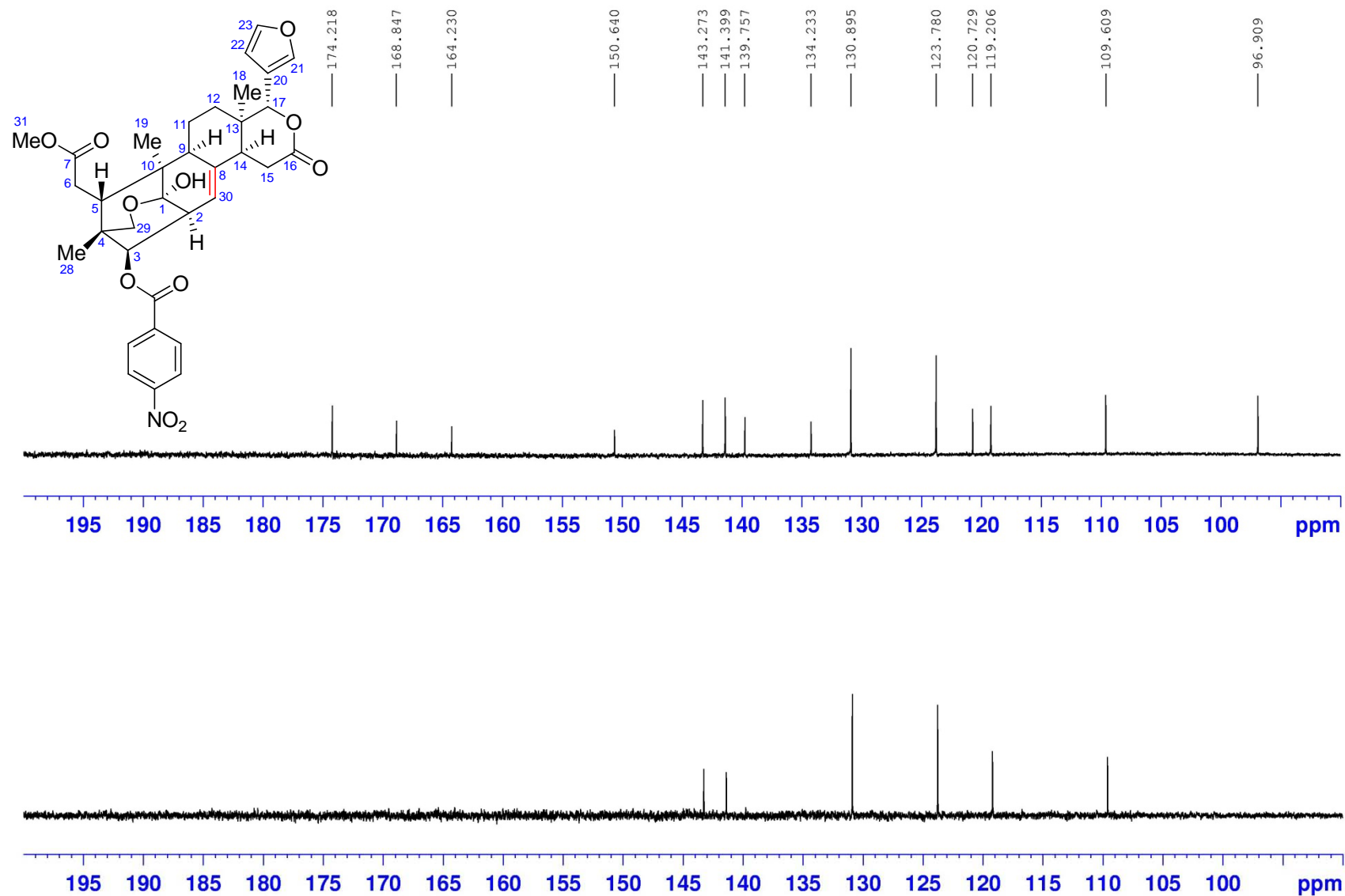
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NAME      czc-1-CH3-duixia
EXPNO     3
PROCNO    1
Date_     20170923
Time      11.06
INSTRUM   spect
PROBHD    5 mm CPPBBO BB
PULPROG   deptsp135
TD        65536
SOLVENT   CDCl3
NS        2500
DS        4
SWH       24038.461 MHz
FIDRES    0.366798 Hz
AQ        1.3631988 s
RG        130.26
DW        20.800 us
DE        18.00 us
TE        297.0 K
CNST2     145.0000000
D1        2.00000000 s
D2        0.00344828 s
D12       0.00002000 s
TD0       1
    
```

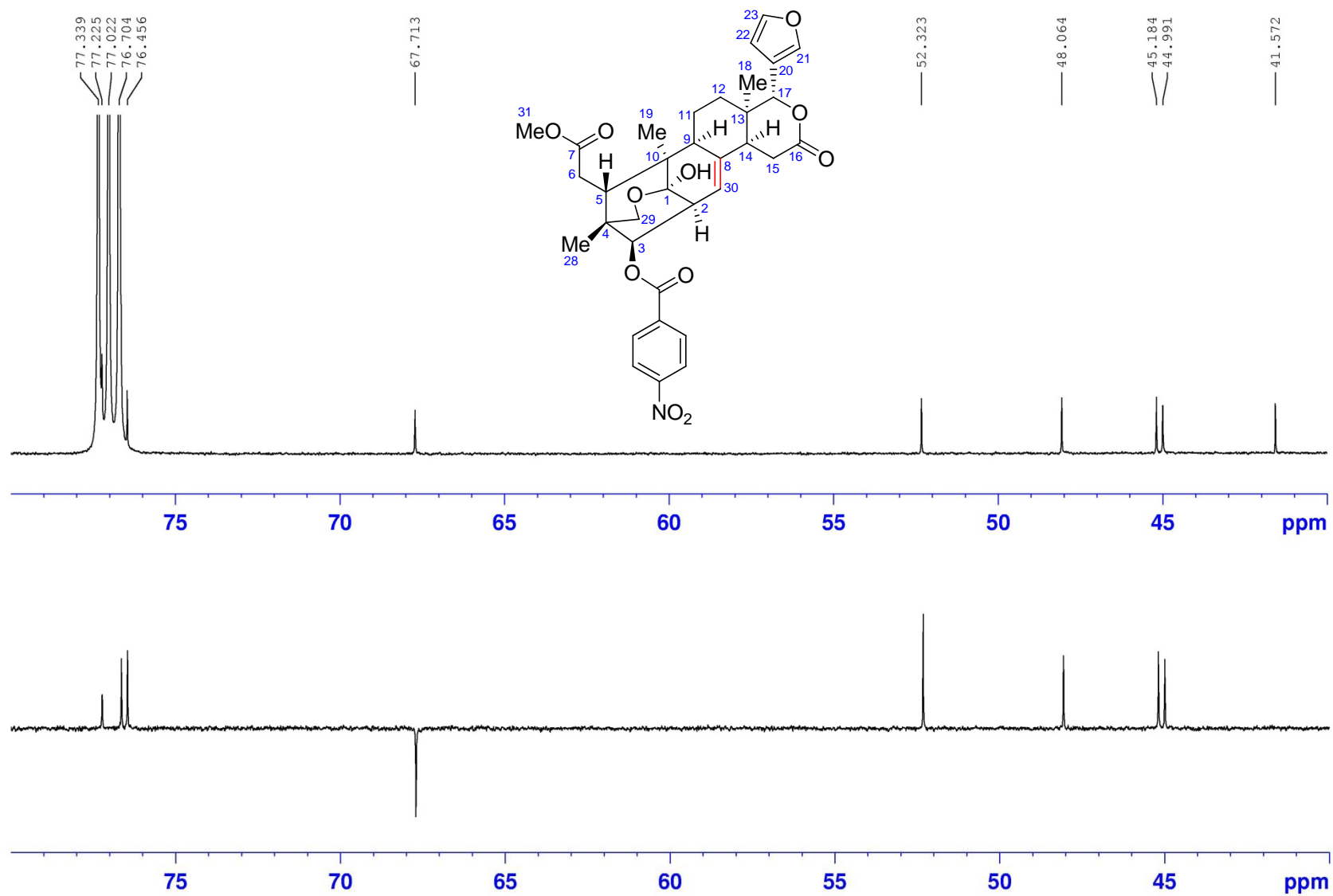
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===== CHANNEL f1 =====
SFO1     100.6233324 MHz
NUC1     13C
P1       10.00 us
P13      2000.00 us
SI       32768
SF       100.6127691 MHz
WDW      EM
SSB      0
LB       1.00 MHz
GB       0
PC       1.40
    
```

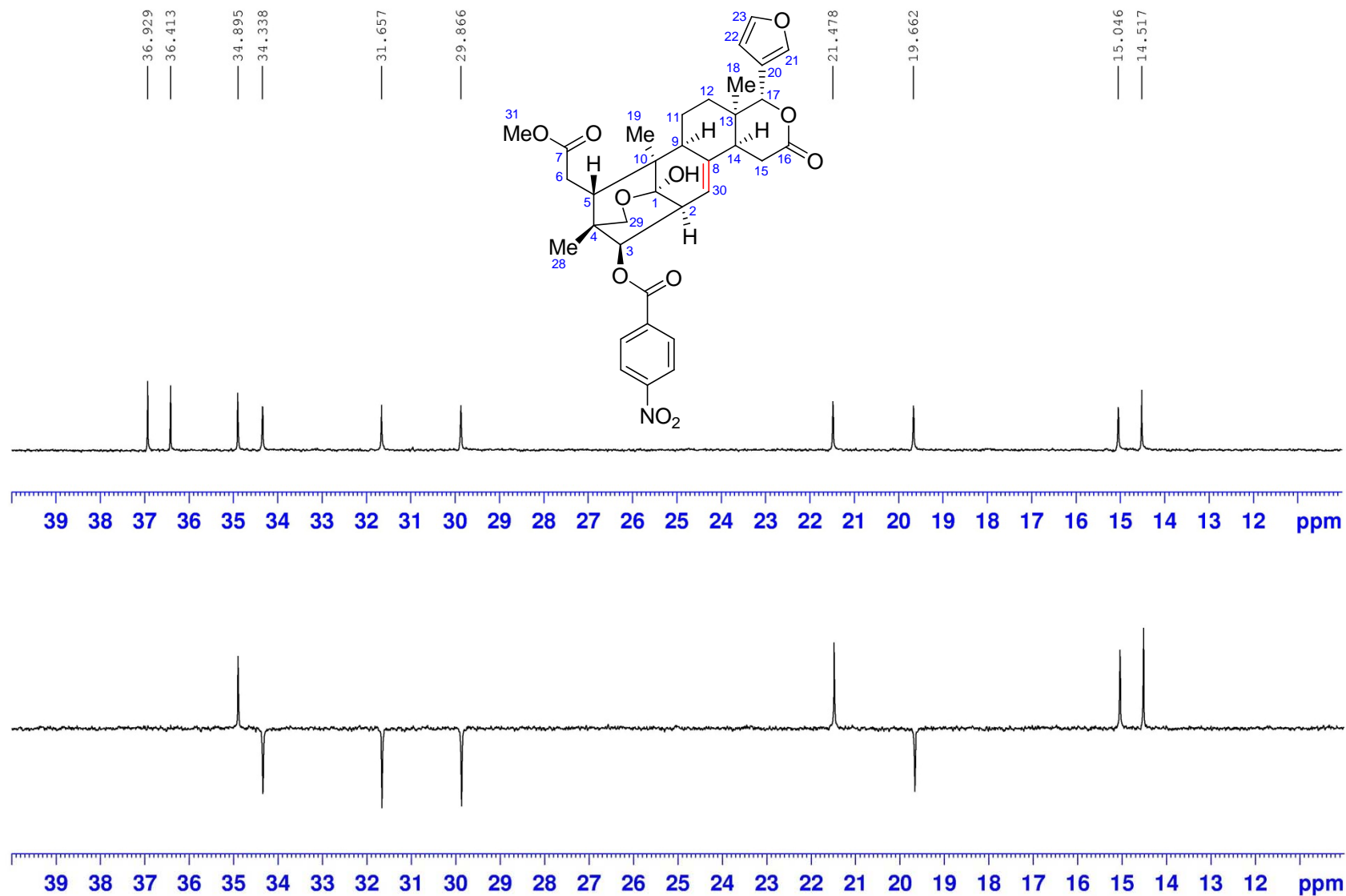
DEPT 135 spectrum of **8d** in CDCl₃



DEPT 135 spectrum of **8d** in CDCl₃



DEPT 135 spectrum of **8d** in CDCl₃



HR-ESIMS for compound **8e**

Generic Display Report

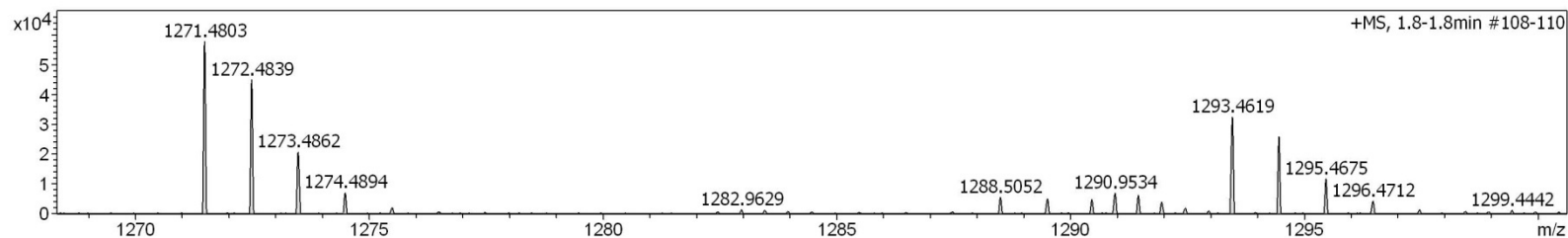
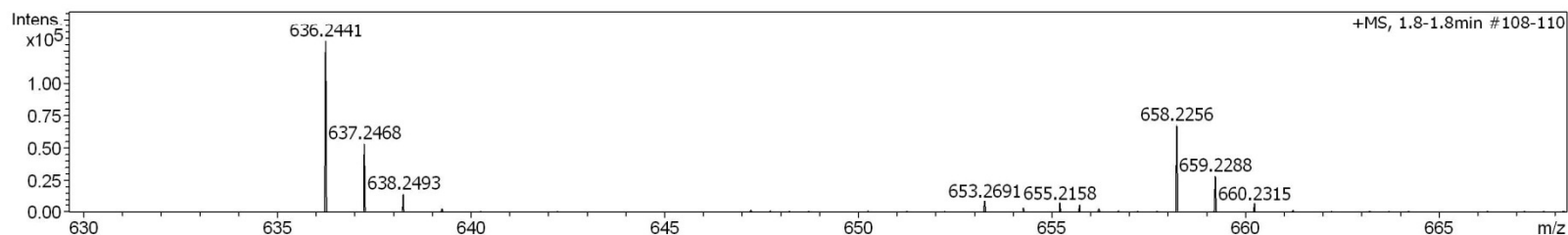
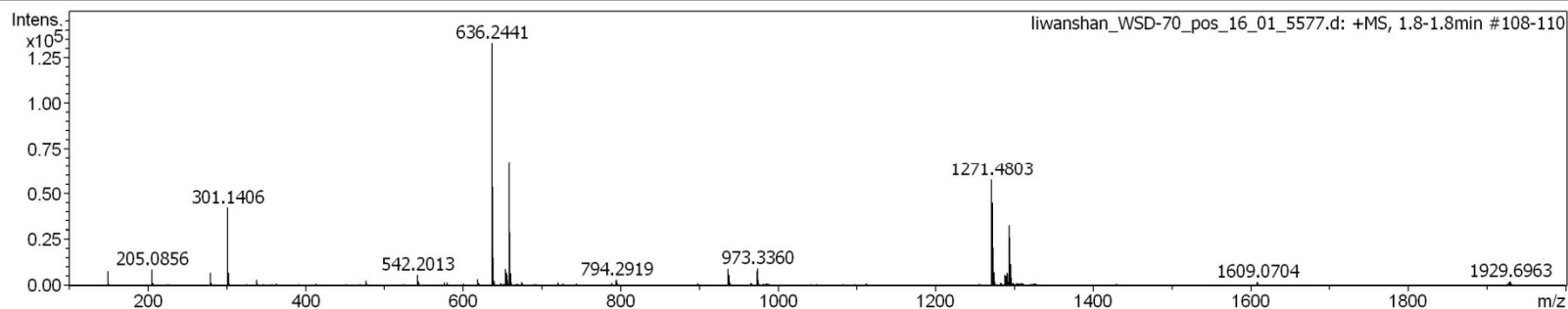
Analysis Info

Analysis Name D:\Data\MS\data\201809\liwanshan_WSD-70_pos_16_01_5577.d
Method LC_Direct Infusion_pos_100-1000mz.m
Sample Name liwanshan_WSD-70_pos
Comment

Acquisition Date 9/30/2018 6:12:23 PM

Operator SCSIO

Instrument maXis



HR-ESIMS for compound **8e**

Mass Spectrum SmartFormula Report

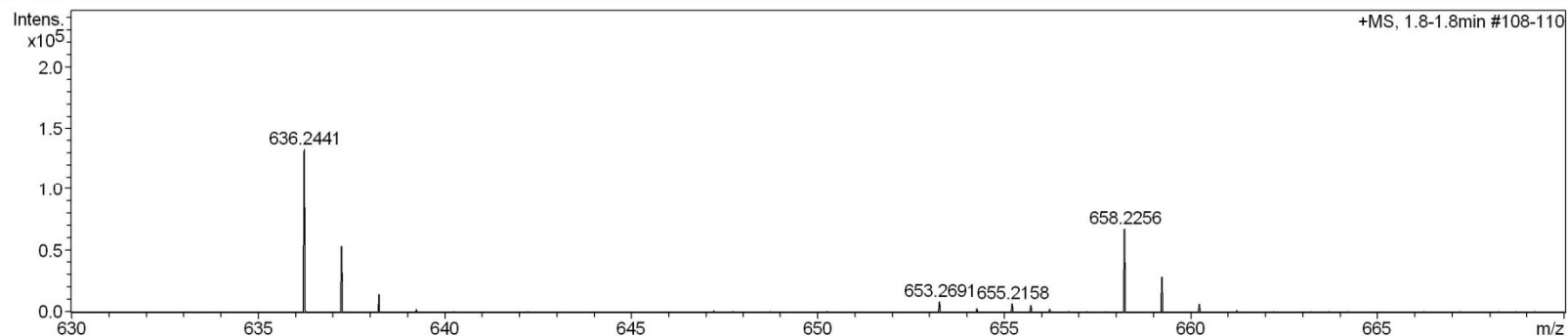
Analysis Info

Analysis Name D:\Data\MS\data\201809\liwanshan_WSD-70_pos_16_01_5577.d
 Method LC_Direct Infusion_pos_100-1000mz.m
 Sample Name liwanshan_WSD-70_pos
 Comment

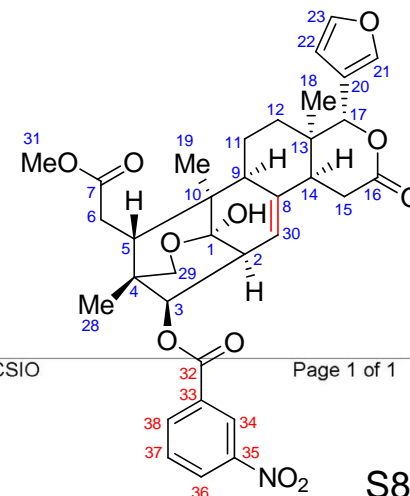
Acquisition Date 9/30/2018 6:12:23 PM
 Operator SCSIO
 Instrument maXis 255552.00029

Acquisition Parameter

Source Type	ESI	Ion Polarity	Positive	Set Nebulizer	0.4 Bar
Focus	Active	Set Capillary	4500 V	Set Dry Heater	180 °C
Scan Begin	100 m/z	Set End Plate Offset	-500 V	Set Dry Gas	4.0 l/min
Scan End	2000 m/z	Set Charging Voltage	0 V	Set Divert Valve	Waste
		Set Corona	0 nA	Set APCI Heater	0 °C



Meas. m/z	#	Ion Formula	Score	m/z	err [ppm]	err [mDa]	mSigma	rdb	e ⁻ Conf	N-Rule
636.2441	1	C ₃₄ H ₃₈ NO ₁₁	100.00	636.2439	0.3	0.2	16.1	16.5	even	ok
658.2256	1	C ₃₄ H ₃₇ NNaO ₁₁	100.00	658.2259	0.5	0.3	22.4	16.5	even	ok
1271.4803	1	C ₆₈ H ₇₅ N ₂ O ₂₂	100.00	1271.4806	-0.2	-0.3	15.4	32.5	even	ok
1293.4619	1	C ₆₈ H ₇₄ N ₂ NaO ₂₂	100.00	1293.4625	-0.5	-0.7	23.2	32.5	even	ok



liwanshan_WSD-70_pos_16_01_5577.d
 Bruker Compass DataAnalysis 4.1

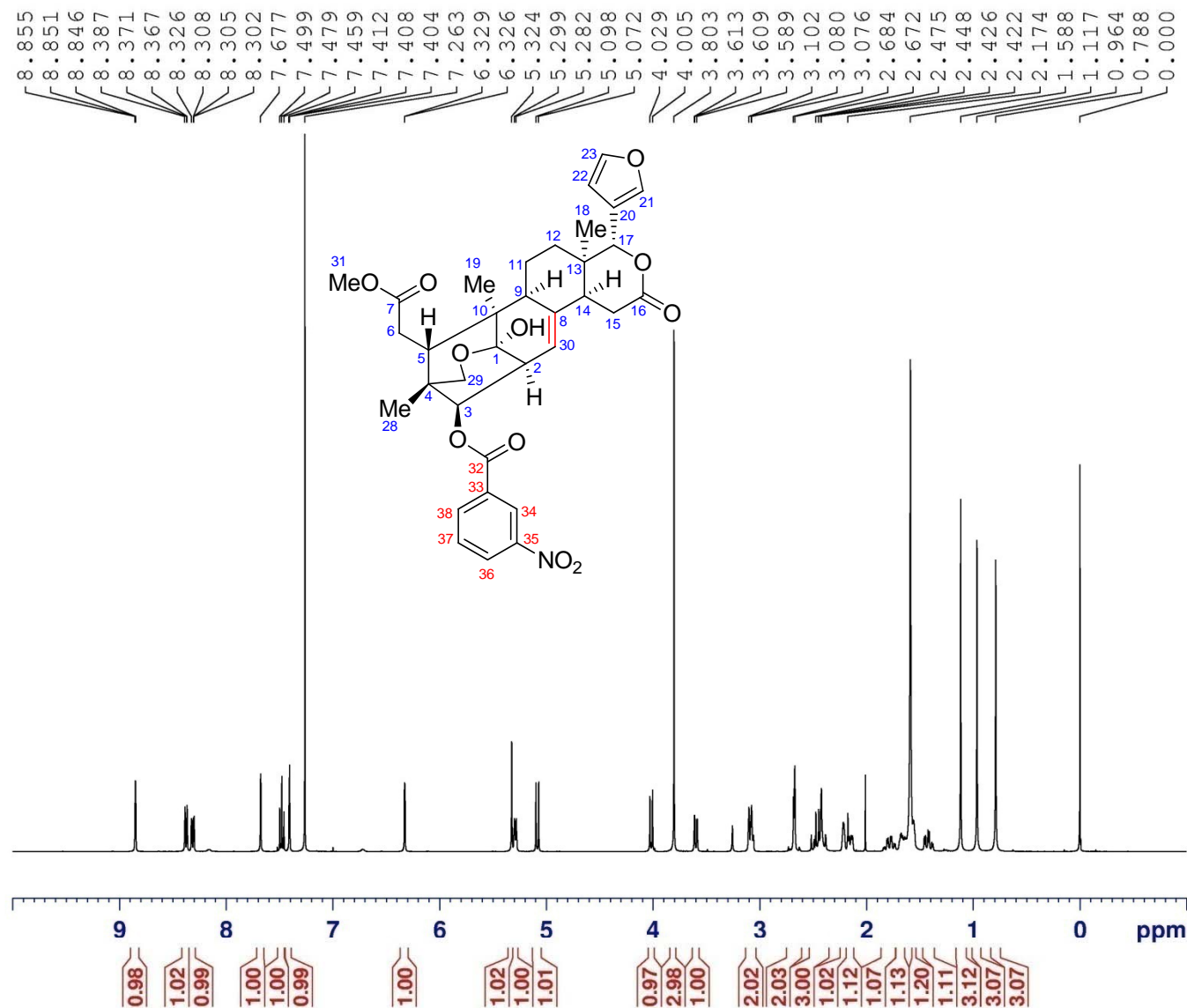
printed: 9/30/2018 6:27:25 PM

by: SCSIO

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S83

¹H NMR (400 MHz) spectrum of **8e** in CDCl₃

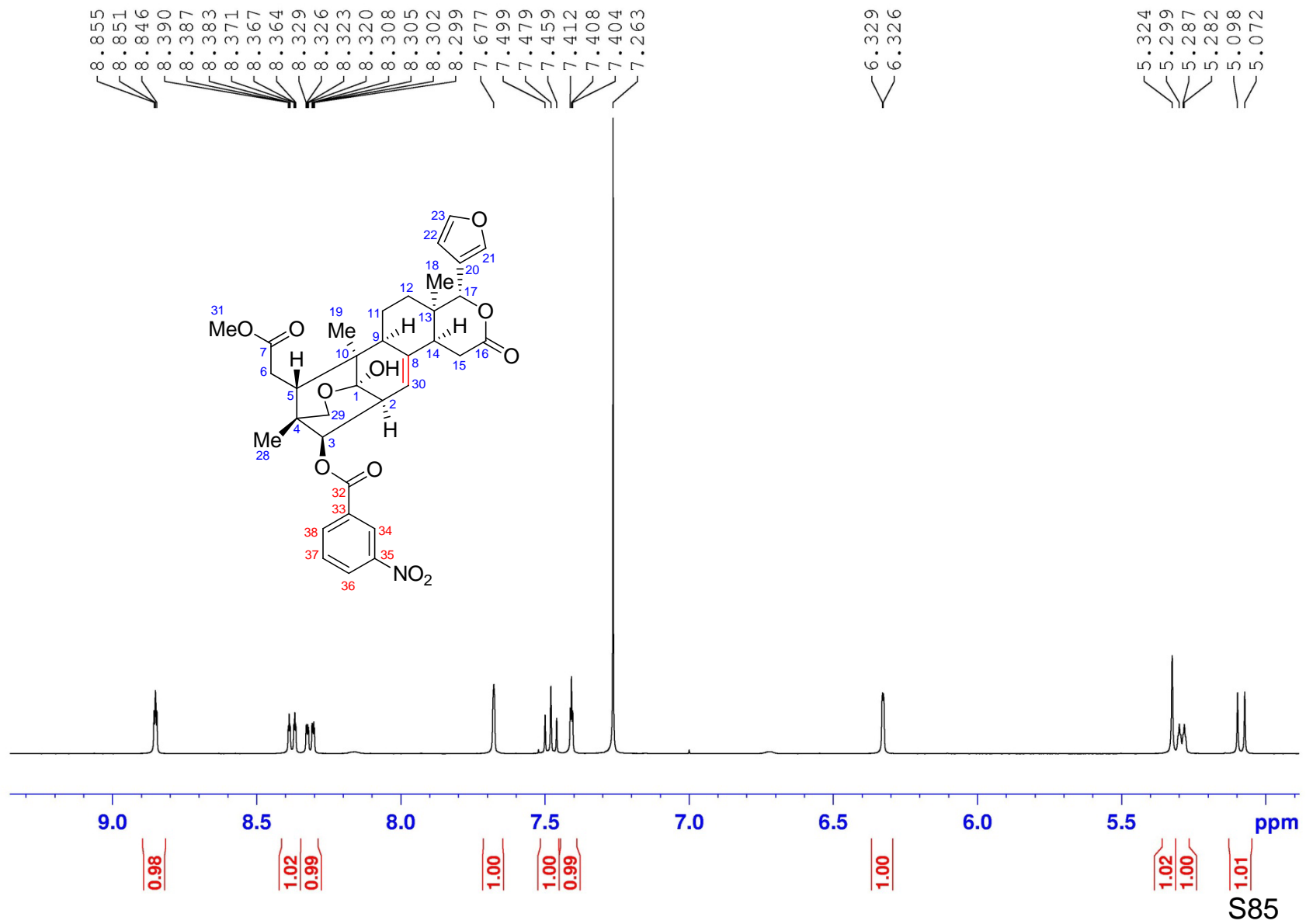


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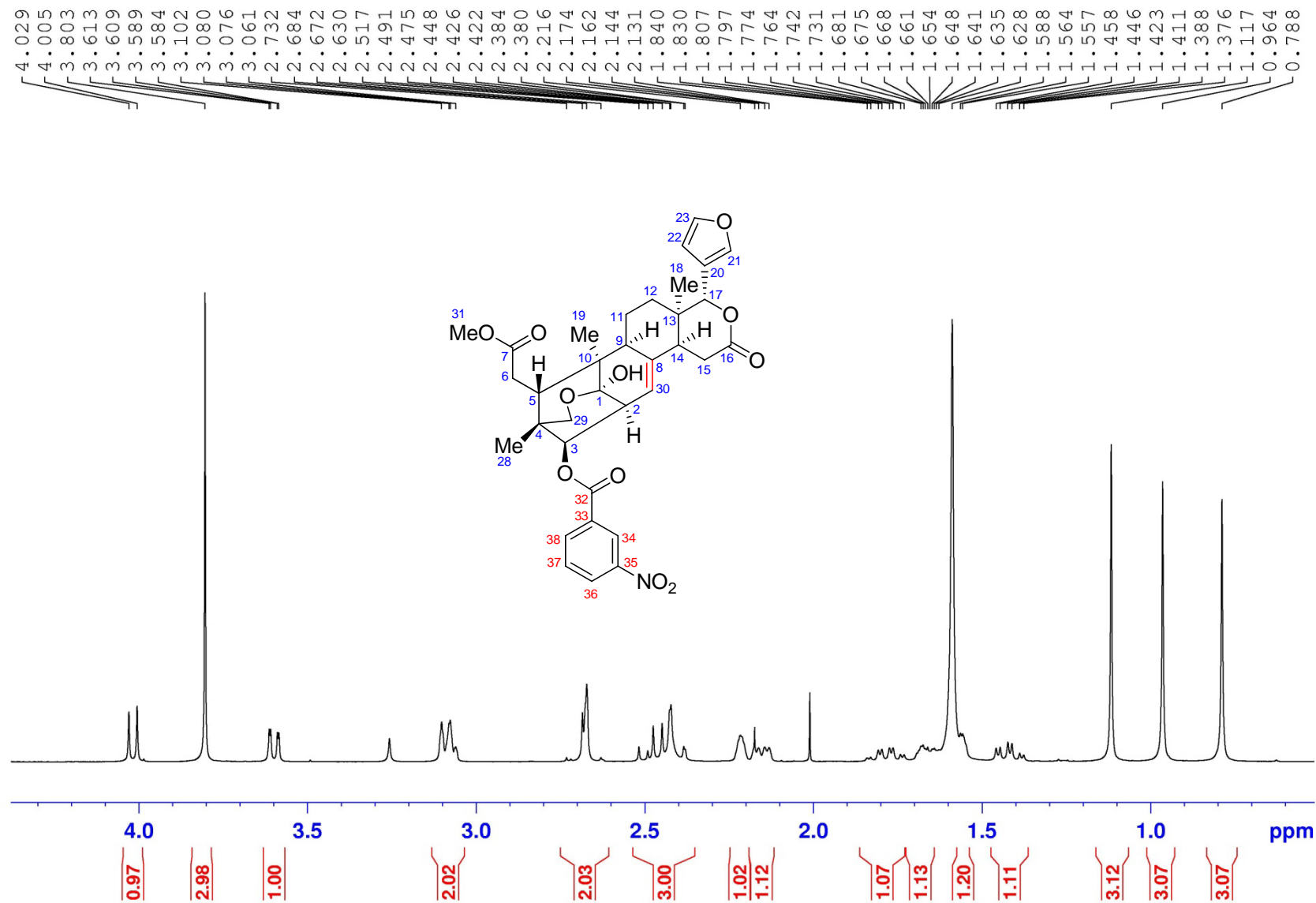
NAME      czc-1-CH3-jianxiao
EXPNO     1
PROCNO    1
Date_     20171016
Time      15.25
INSTRUM   spect
PROBHD    5 mm CPMBO BB
PULPROG   zg30
TD        65536
SOLVENT   CDCl3
NS         16
DS         2
SWH        8223.685 Hz
FIDRES     0.125483 Hz
AQ         3.9846387 sec
RG         208.5
DW         60.800 usec
DE         10.00 usec
TE         297.0 K
D1         1.00000000 sec
TD0        1
    
```

```

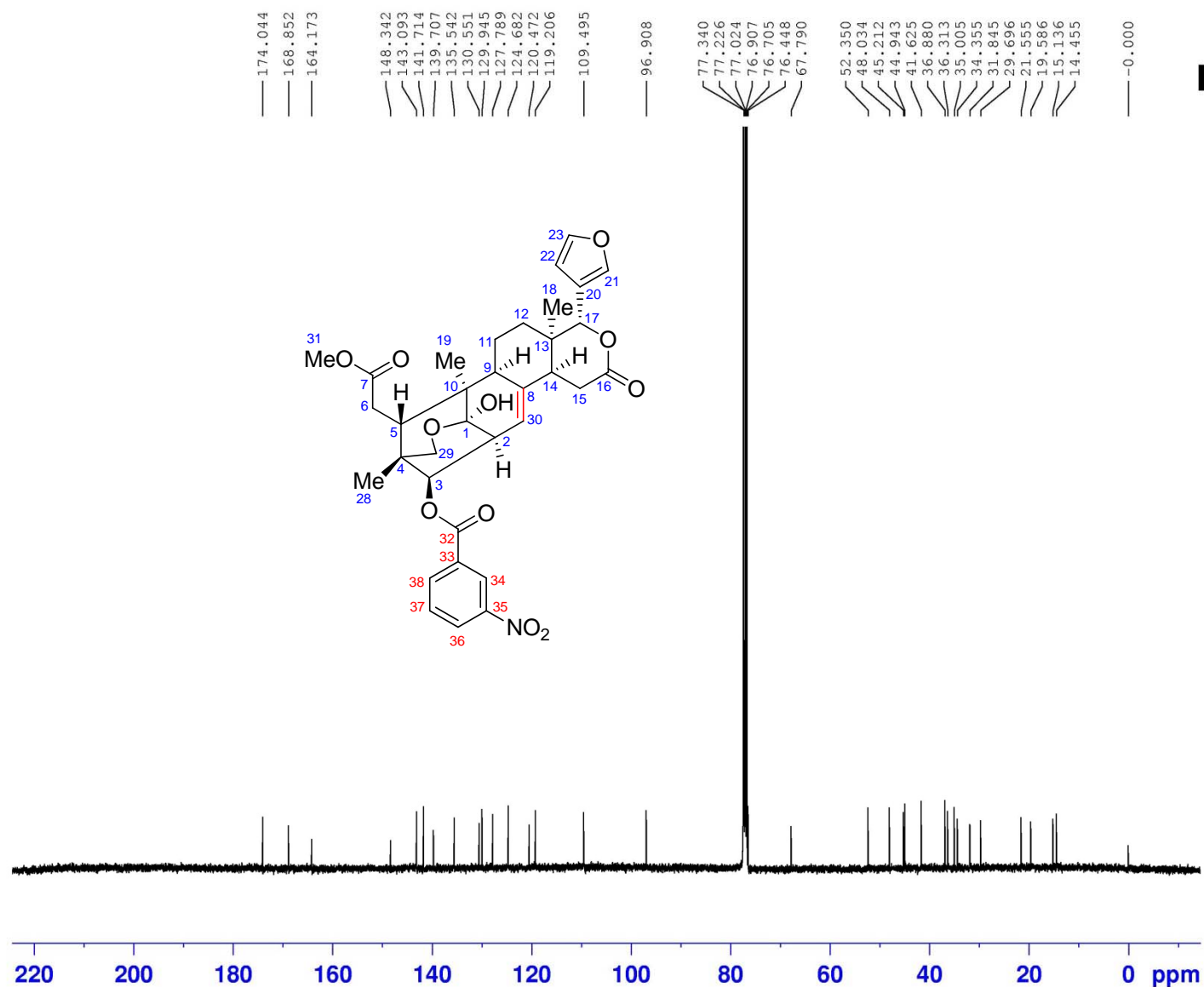
===== CHANNEL f1 =====
SFO1      400.1324710 MHz
NUC1      1H
P1        11.50 usec
SI        65536
SF        400.1300083 MHz
WDW        EM
SSB        0
LB         0.30 Hz
GB         0
PC         1.00
    
```

^1H NMR (400 MHz) spectrum of **8e** in CDCl_3 

^1H NMR (400 MHz) spectrum of **8e** in CDCl_3



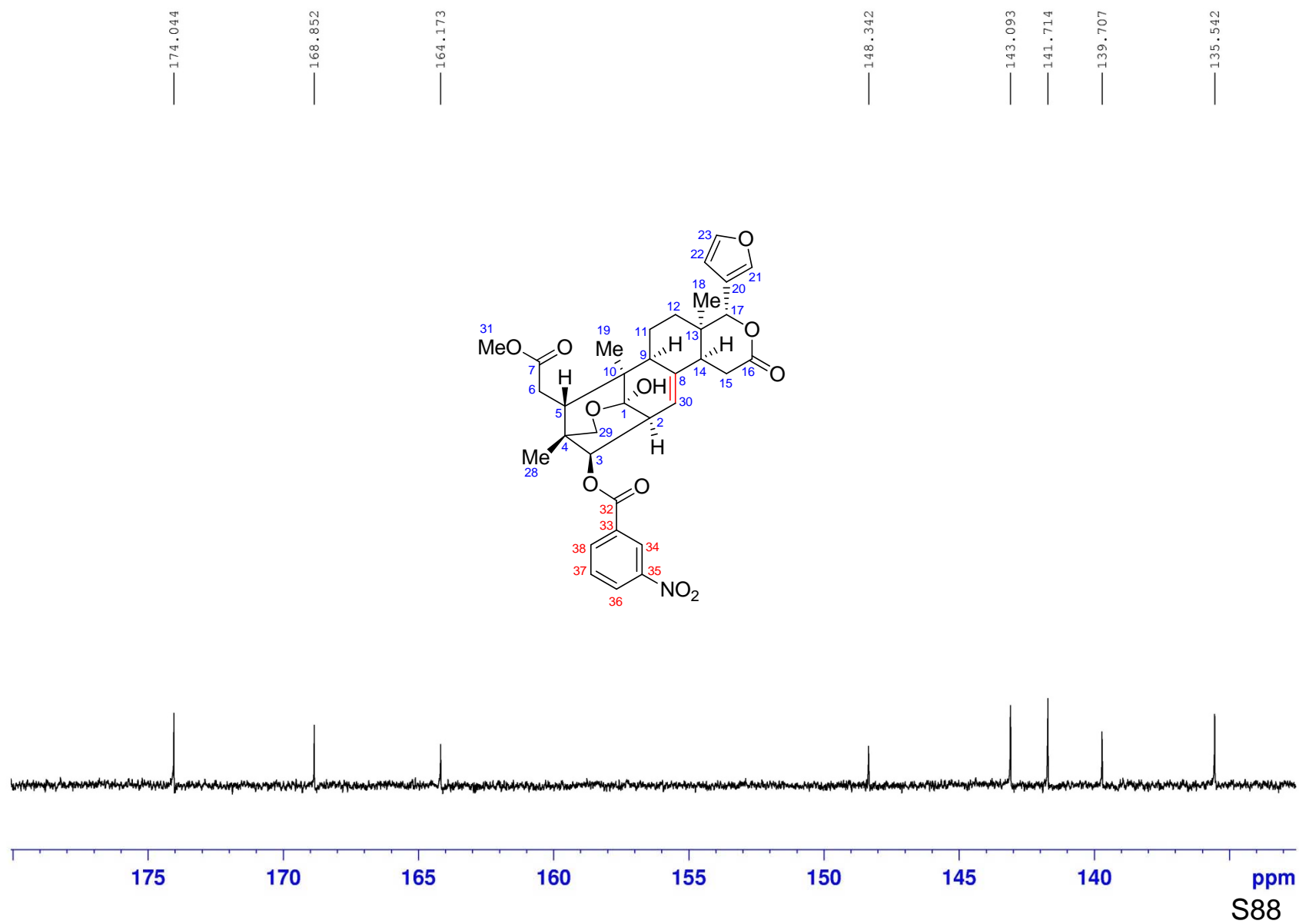
^{13}C NMR (100 MHz) spectrum of **8e** in CDCl_3



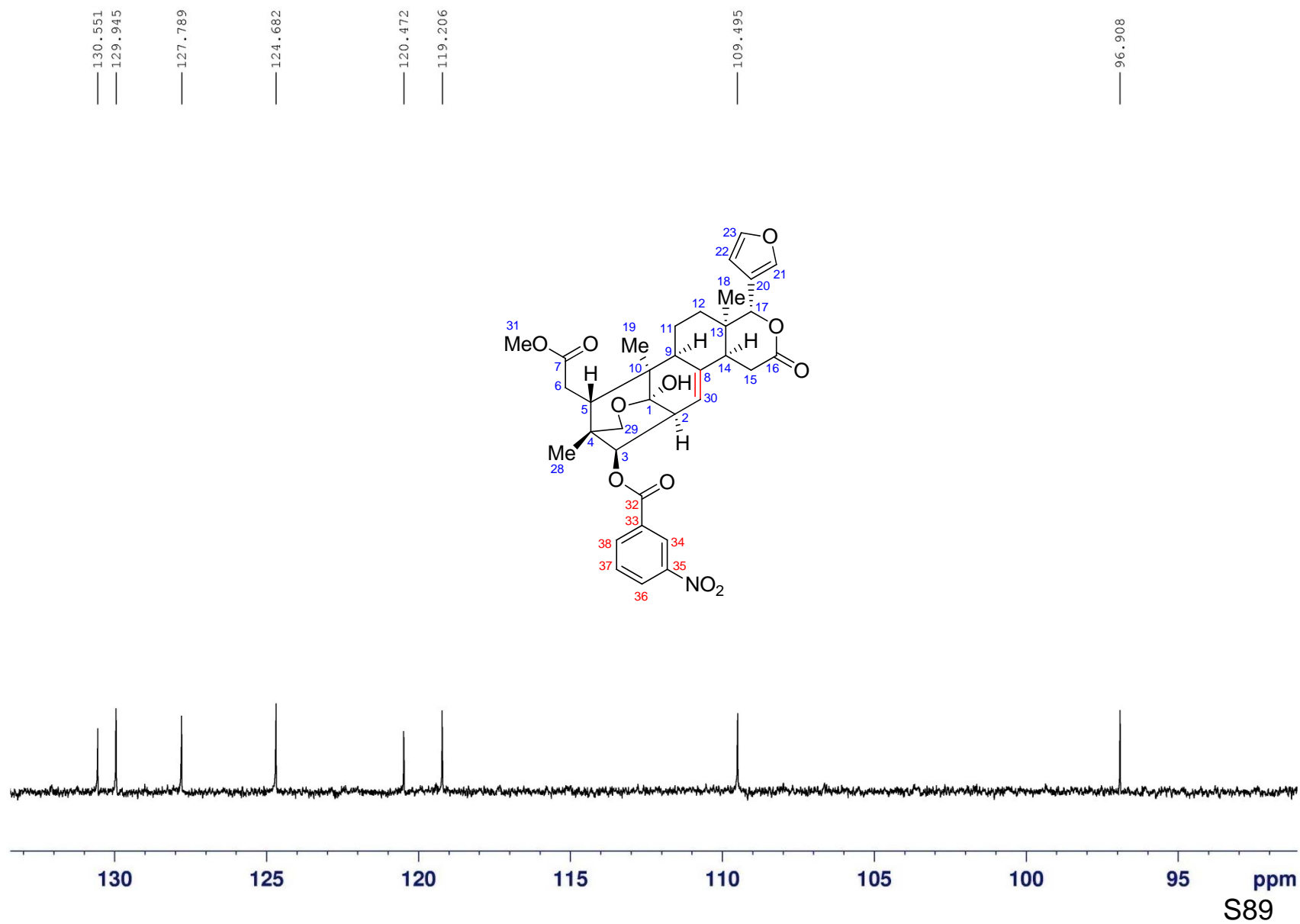
NAME czc-1-CH3-jianxi:
 EXPNO 102
 PROCNO 1
 Date_ 20171016
 Time 20.11
 INSTRUM spect
 PROBHD 5 mm CFPBBO BB
 PULPROG zgpg30
 TD 65536
 SOLVENT CDCl3
 NS 1024
 DS 4
 SWH 24038.461 H:
 FIDRES 0.366798 H:
 AQ 1.3631988 s
 RG 130.26
 DW 20.800 u:
 DE 18.00 u:
 TE 297.0 K
 D1 2.00000000 s
 D11 0.03000000 s
 TD0 1

===== CHANNEL f1 =====
 SF01 100.6233324 MHz
 NUC1 ^{13}C
 P1 10.00 u:
 SI 32768
 SF 100.6127690 MHz
 WDW EM
 SSB 0
 LB 1.00 H:
 GB 0
 PC 1.40

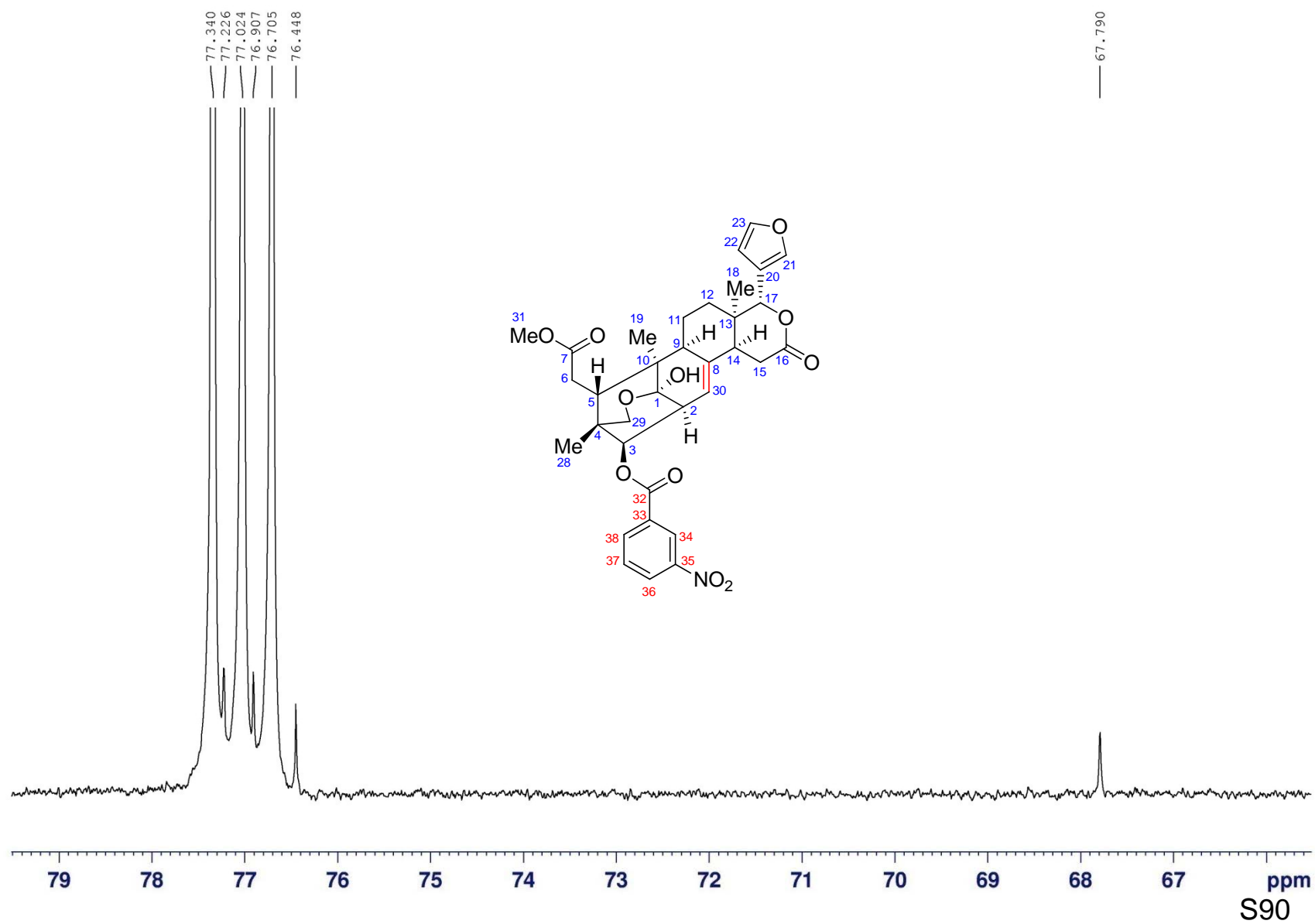
^{13}C NMR (100 MHz) spectrum of **8e** in CDCl_3



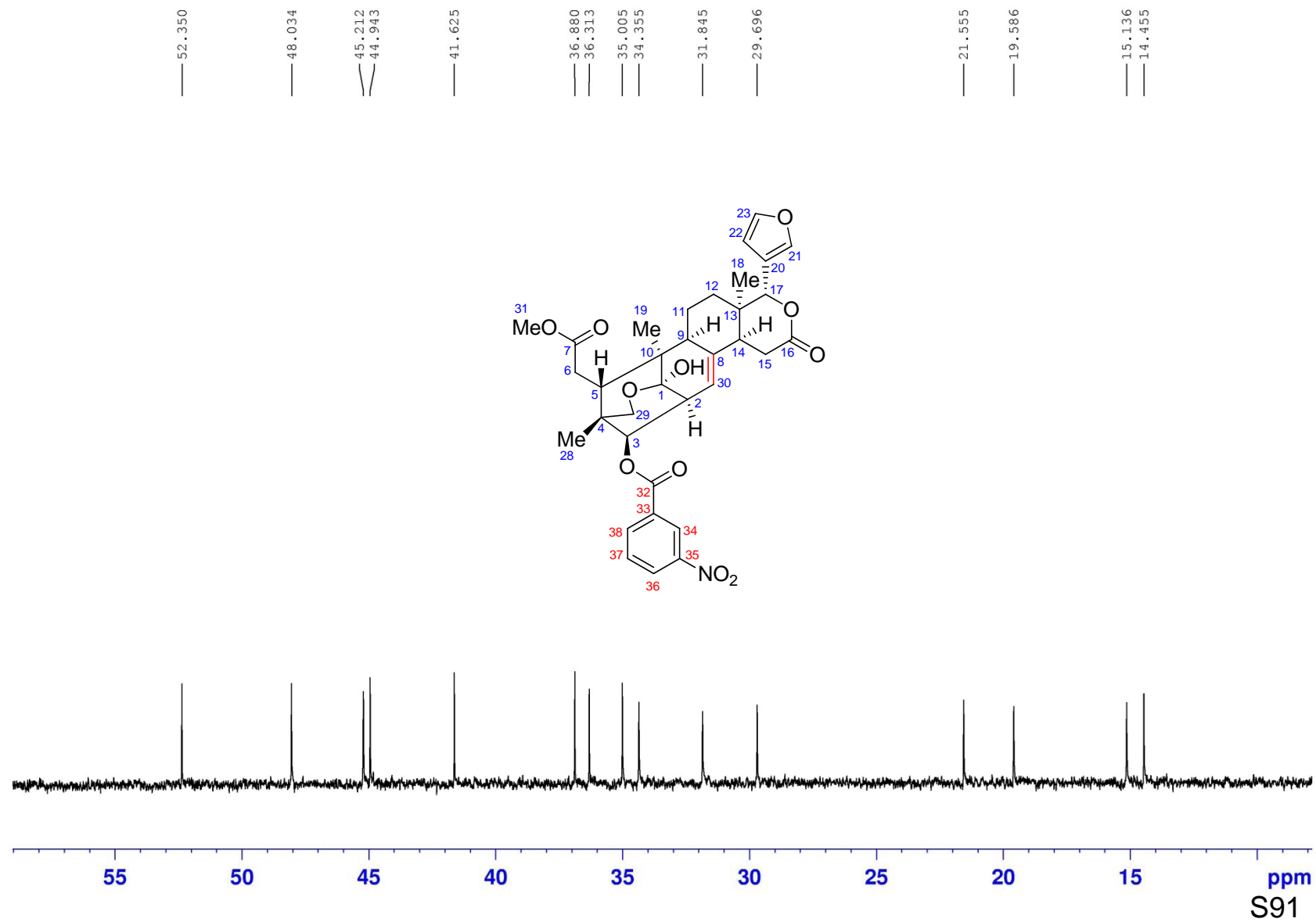
¹³C NMR (100 MHz) spectrum of **8e** in CDCl₃



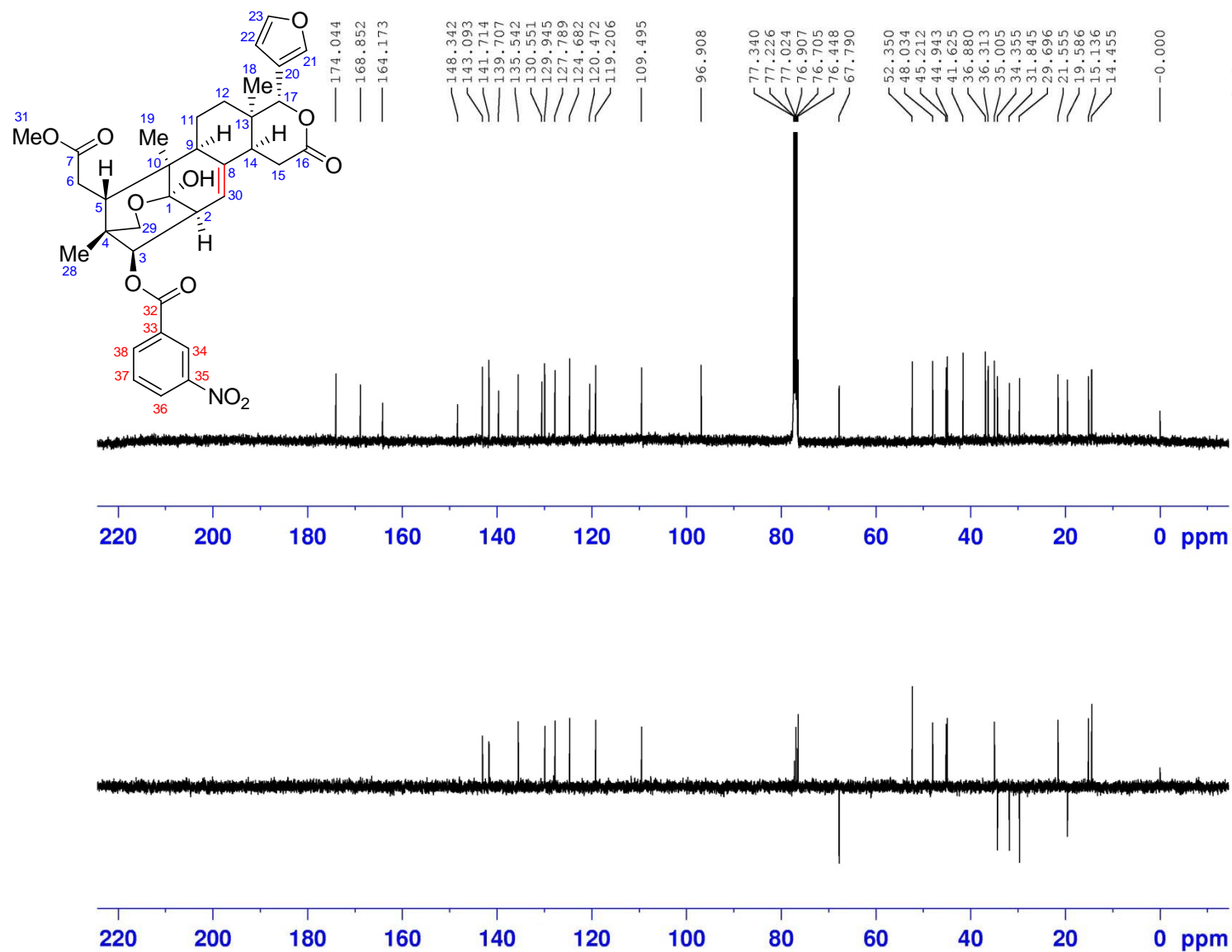
^{13}C NMR (100 MHz) spectrum of **8e** in CDCl_3



^{13}C NMR (100 MHz) spectrum of **8e** in CDCl_3



DEPT 135 spectrum of **8e** in CDCl₃



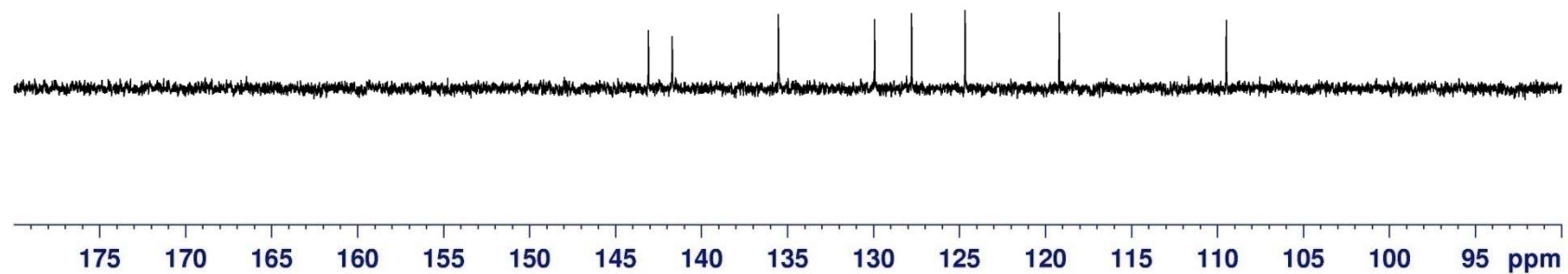
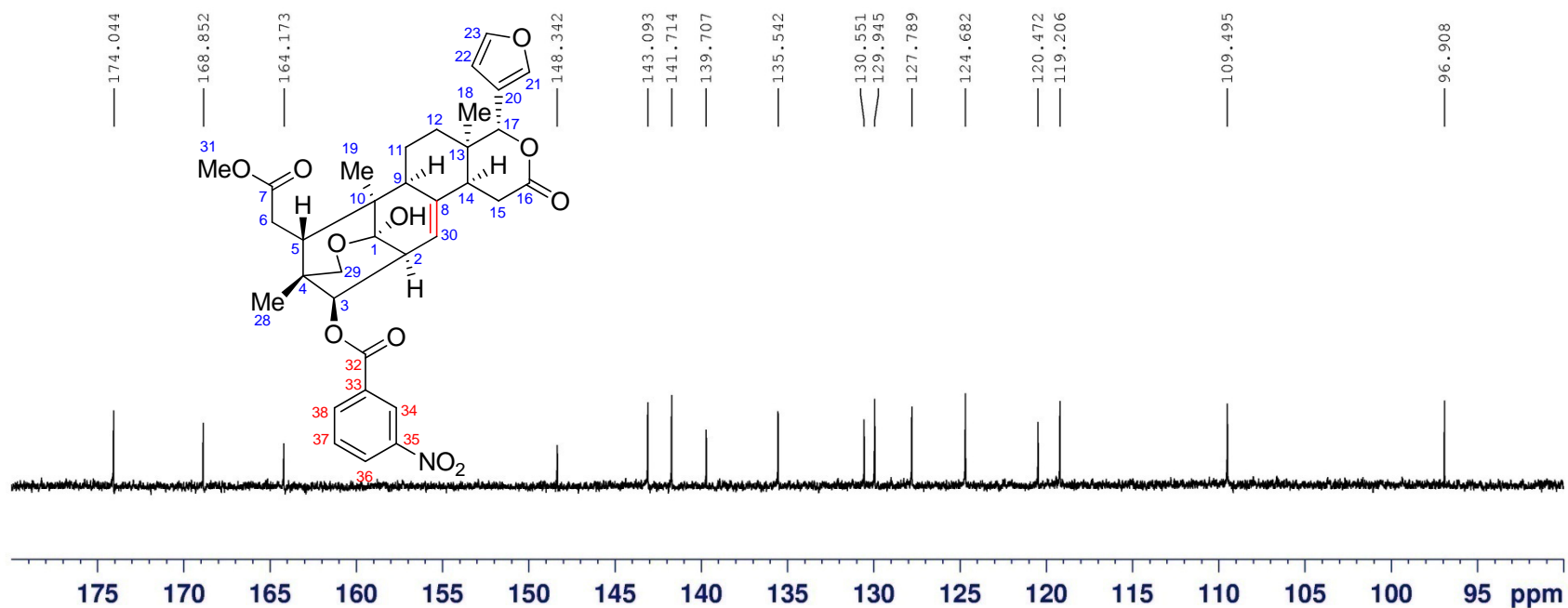
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NAME      czc-1-CH3-jianx:
EXPNO      3
PROCNO     1
Date_      20171016
Time       19.06
INSTRUM    spect
PROBHD     5 mm CPPBBO BB
PULPROG    depts135
TD         65536
SOLVENT    CDCl3
NS         300
DS         4
SWH        24038.461 MHz
FIDRES     0.366798 MHz
AQ         1.3631988 sec
RG         73.92
DW         20.800 nsec
DE         18.00 nsec
TE         297.0 K
CNST2      145.0000000
D1         2.00000000 sec
D2         0.00344828 sec
D12        0.00002000 sec
TD0        1
    
```

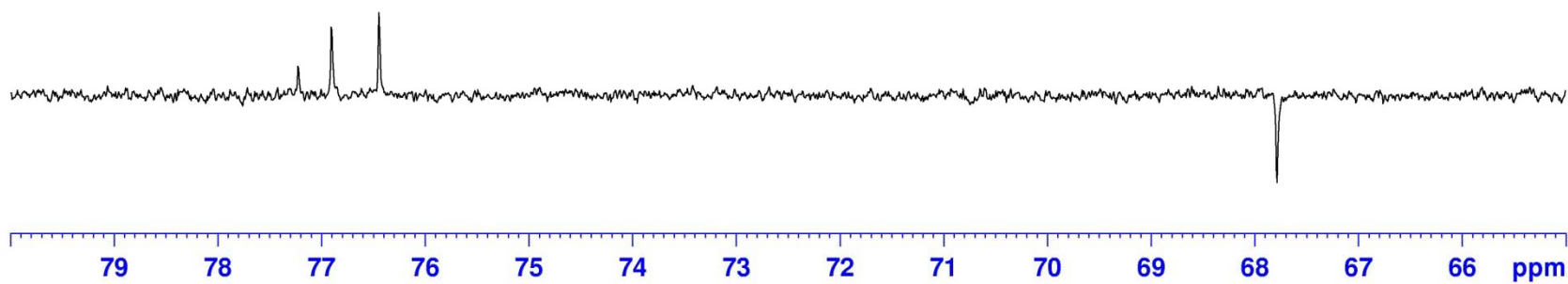
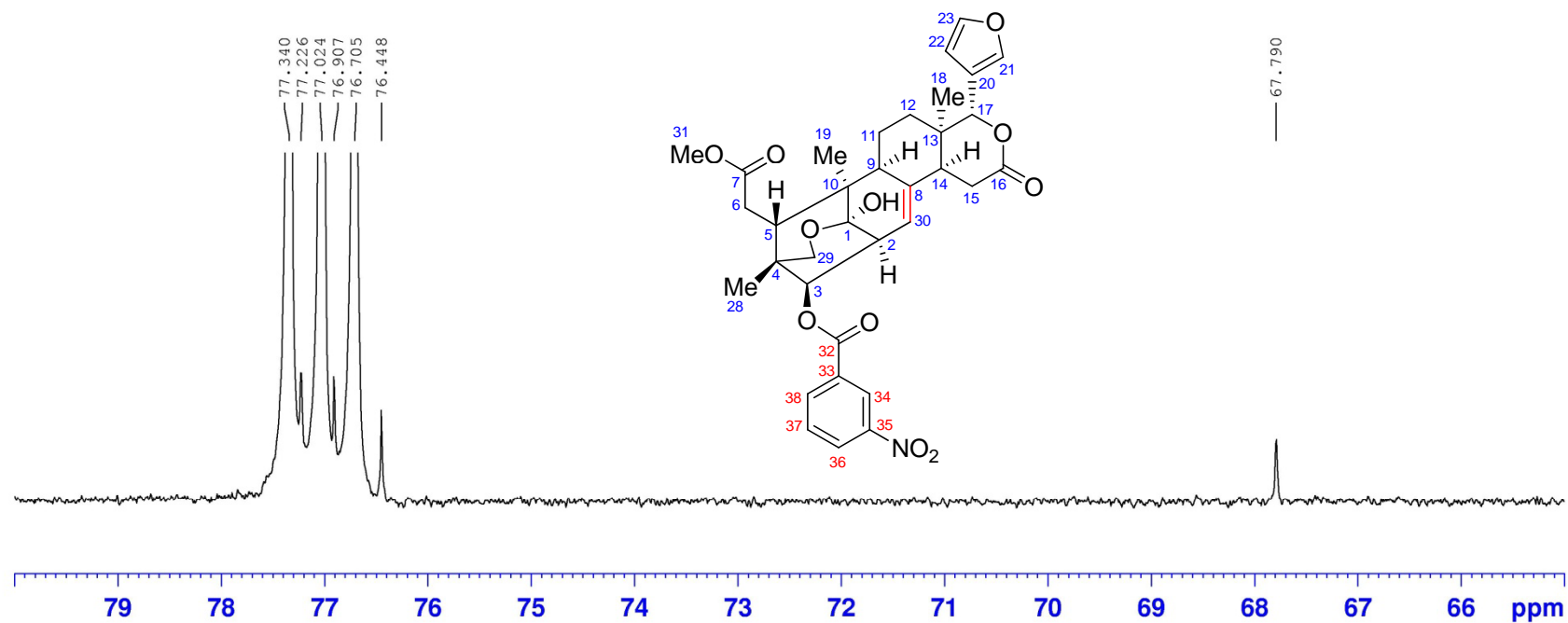
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===== CHANNEL f1 =====
SFO1      100.6233324 MHz
NUC1       13C
P1        10.00 nsec
P13       2000.00 nsec
SI        32768
SF        100.6127692 MHz
WDW       EM
SSB       0
LB        1.00 MHz
GB        0
PC        1.40
    
```

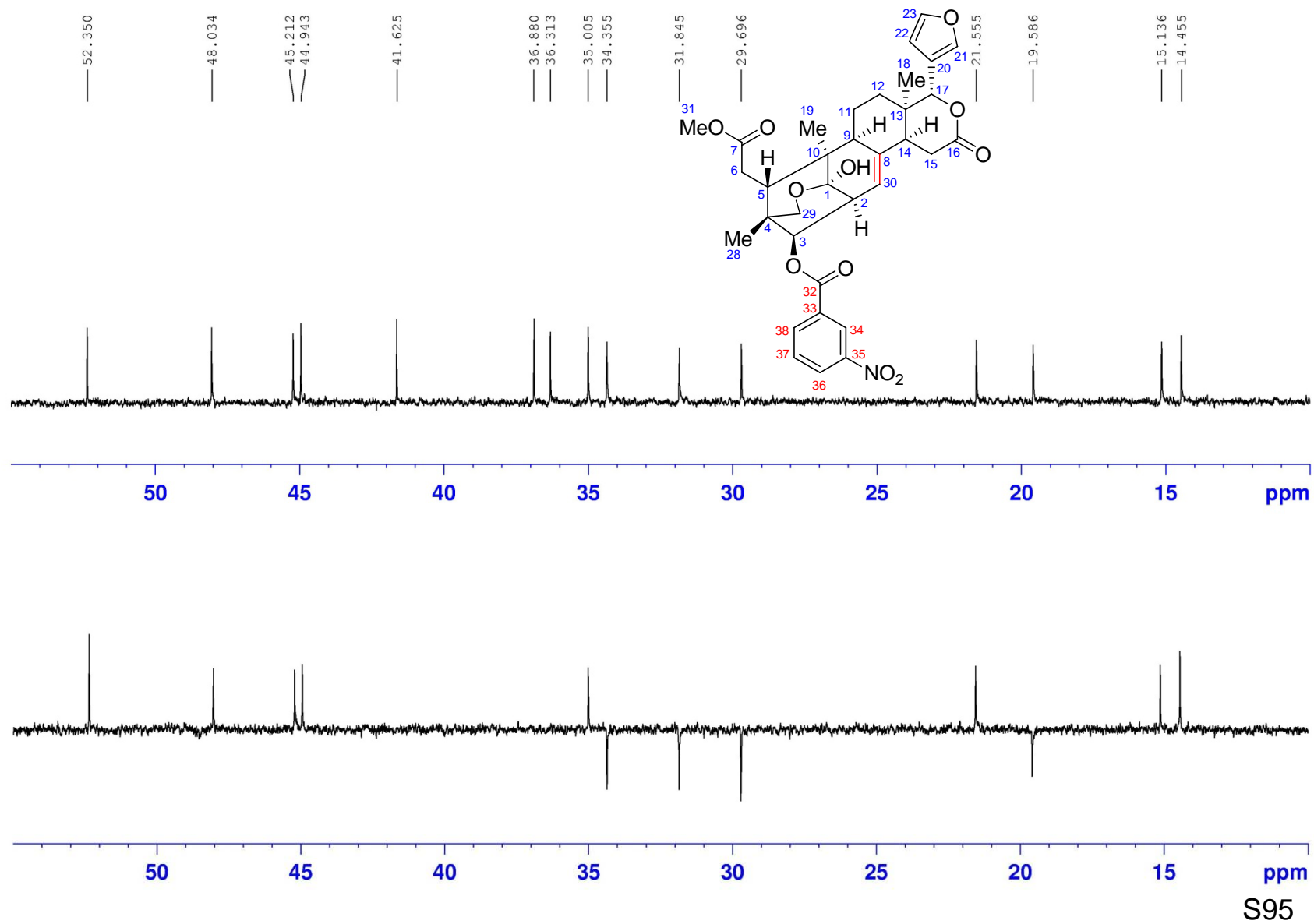
DEPT 135 spectrum of **8e** in CDCl₃



DEPT 135 spectrum of **8e** in CDCl₃



DEPT 135 spectrum of **8e** in CDCl₃



HR-ESIMS for compound **8f**

Generic Display Report

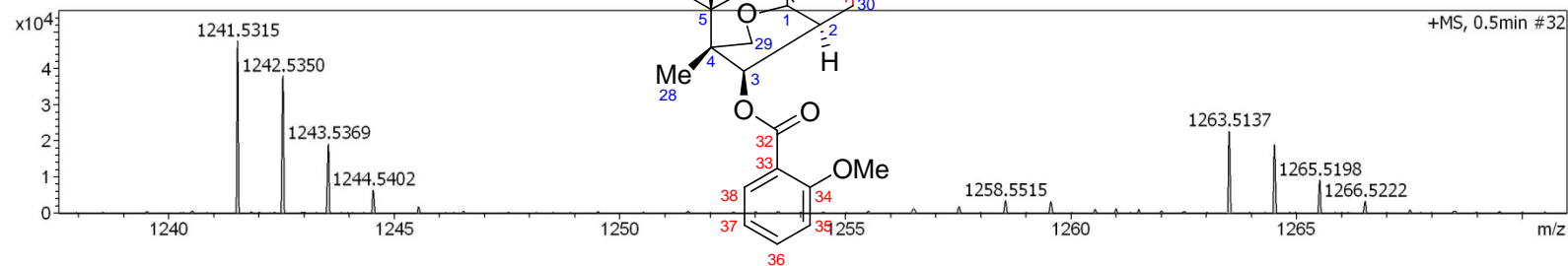
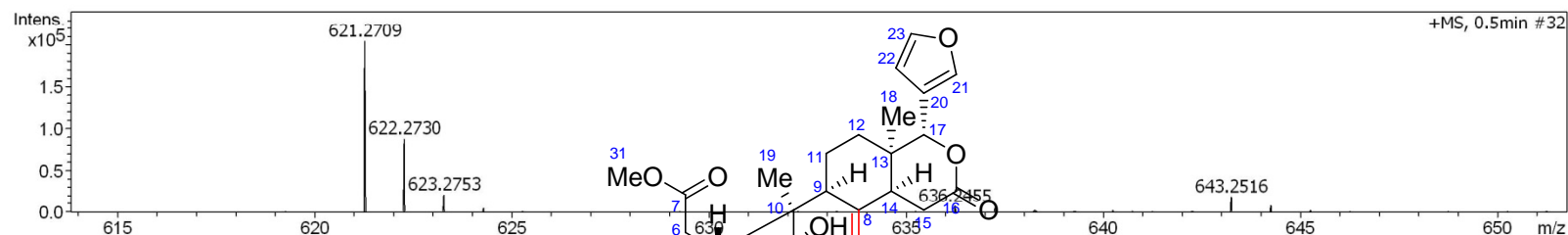
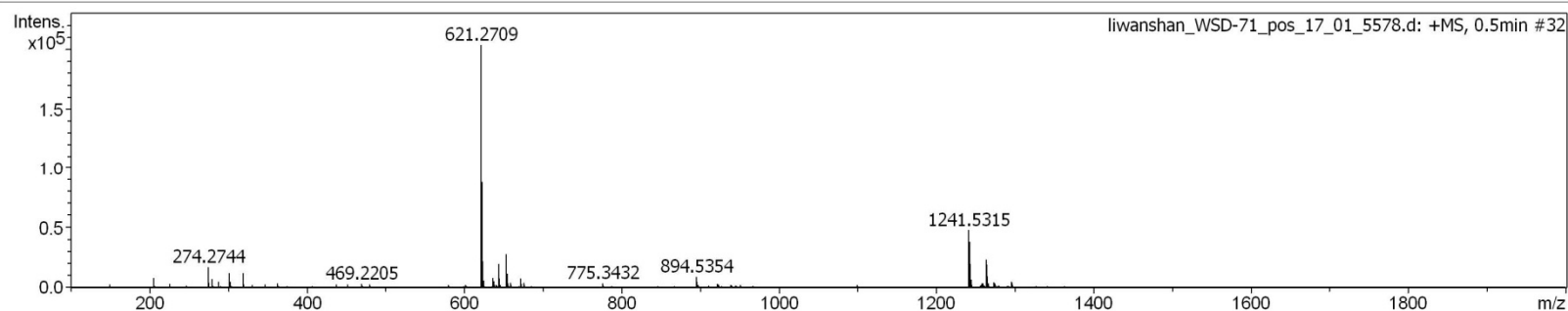
Analysis Info

Analysis Name D:\Data\MS\data\201809\liwanshan_WSD-71_pos_17_01_5578.d
Method LC_Direct Infusion_pos_100-1000mz.m
Sample Name liwanshan_WSD-71_pos
Comment

Acquisition Date 9/30/2018 6:15:53 PM

Operator SCSIO

Instrument maXis



HR-ESIMS for compound **8f**

Mass Spectrum SmartFormula Report

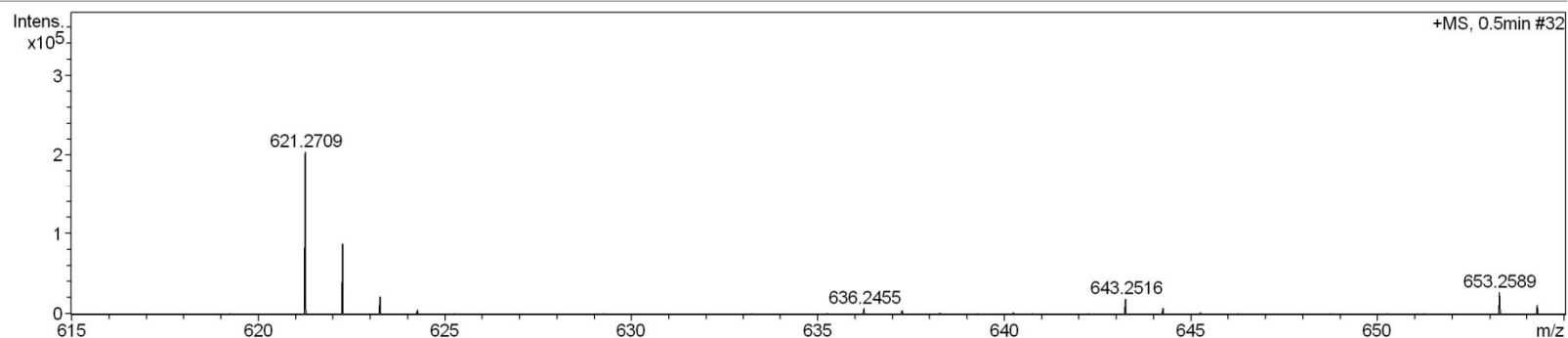
Analysis Info

Analysis Name D:\Data\MS\data\201809\liwanshan_WSD-71_pos_17_01_5578.d
 Method LC_Direct Infusion_pos_100-1000mz.m
 Sample Name liwanshan_WSD-71_pos
 Comment

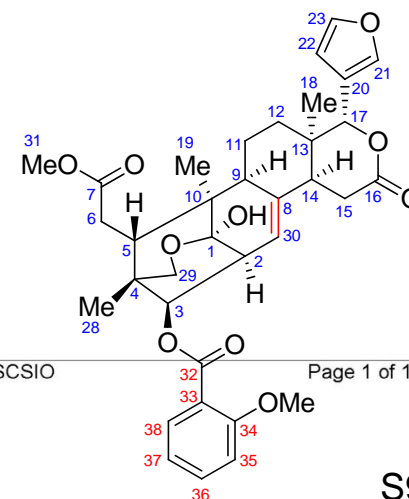
Acquisition Date 9/30/2018 6:15:53 PM
 Operator SCSIO
 Instrument maXis 255552.00029

Acquisition Parameter

Source Type	ESI	Ion Polarity	Positive	Set Nebulizer	0.4 Bar
Focus	Active	Set Capillary	4500 V	Set Dry Heater	180 °C
Scan Begin	100 m/z	Set End Plate Offset	-500 V	Set Dry Gas	4.0 l/min
Scan End	2000 m/z	Set Charging Voltage	0 V	Set Divert Valve	Waste
		Set Corona	0 nA	Set APCI Heater	0 °C



Meas. m/z	#	Ion Formula	Score	m/z	err [ppm]	err [mDa]	mSigma	rdb	e ⁻ Conf	N-Rule
621.2709	1	C35H41O10	100.00	621.2694	2.3	1.4	24.5	15.5	even	ok
643.2516	1	C35H40NaO10	100.00	643.2514	0.4	0.2	8.1	15.5	even	ok
1241.5315	1	C70H81O20	100.00	1241.5316	0.0	0.1	32.1	30.5	even	ok
1263.5137	1	C70H80NaO20	100.00	1263.5135	0.2	0.2	39.2	30.5	even	ok



liwanshan_WSD-71_pos_17_01_5578.d
 Bruker Compass DataAnalysis 4.1

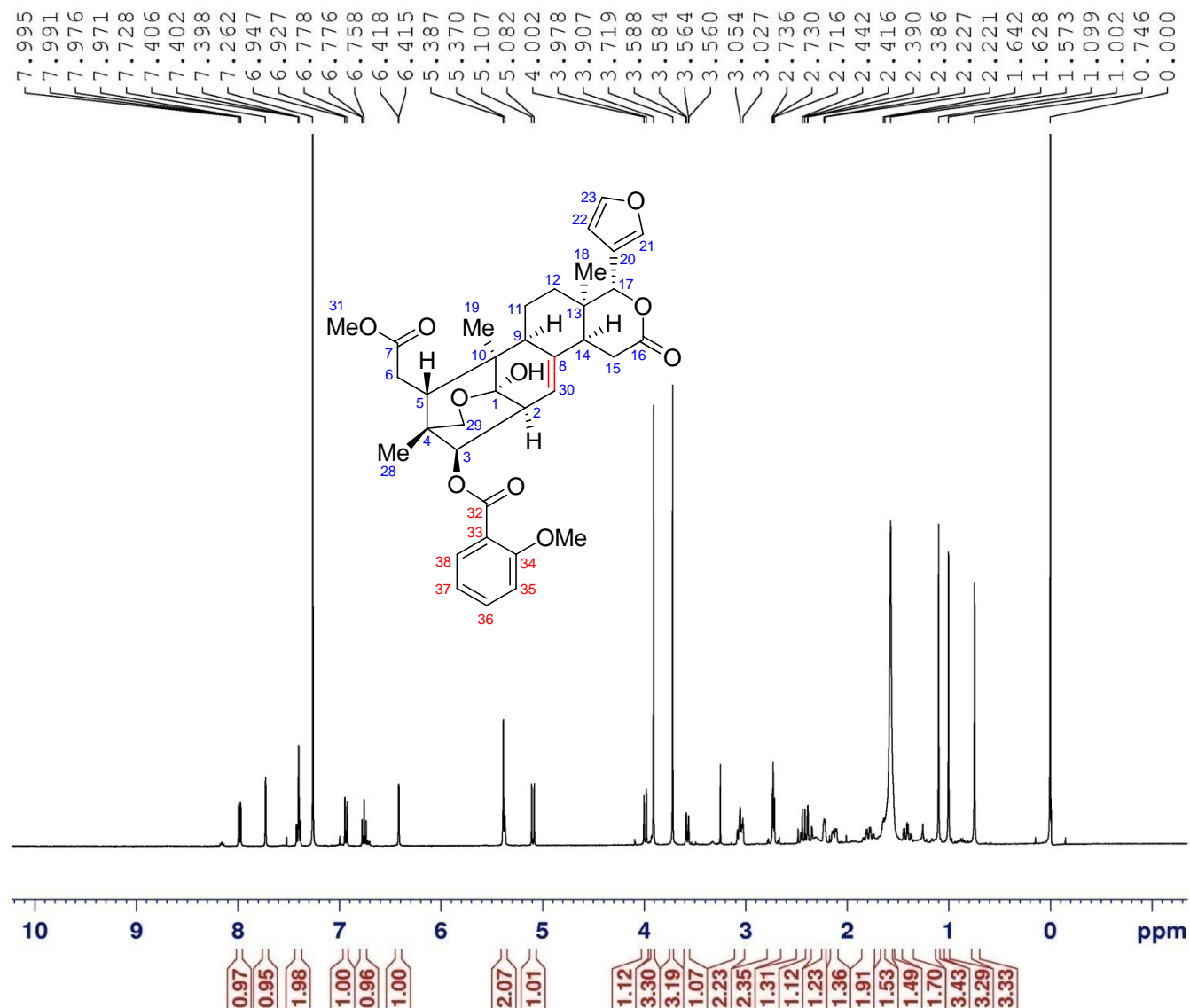
printed: 9/30/2018 6:31:46 PM

by: SCSIO

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^1H NMR (400 MHz) spectrum of **8f** in CDCl_3



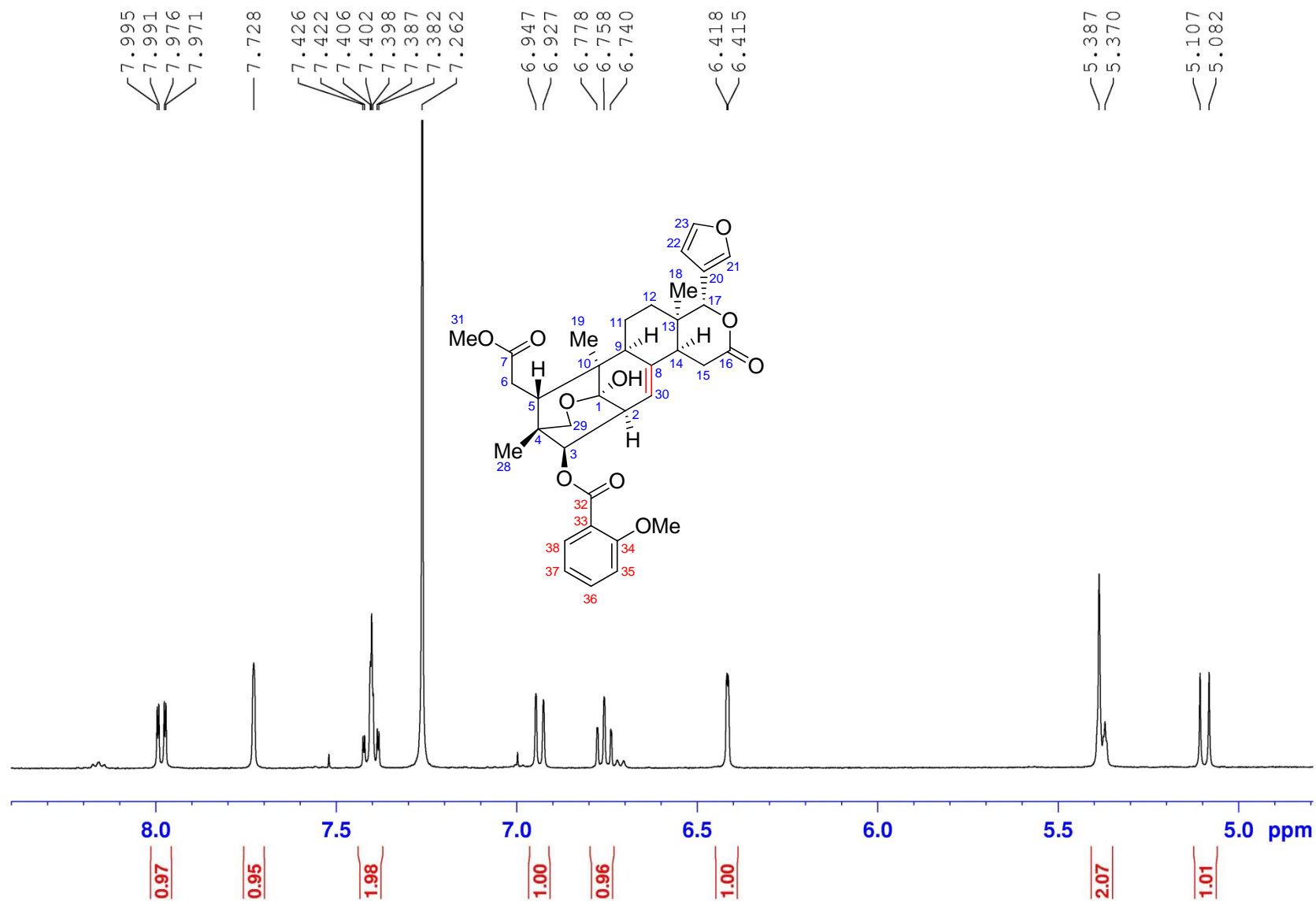
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NAME      czc-1-CH3-LINJIAYANG
EXPNO     1
PROCNO    1
Date_     20171018
Time      12.16
INSTRUM   spect
PROBHD    5 mm CPBBO BB
PULPROG   zg30
TD         65536
SOLVENT   CDCl3
NS         16
DS         2
SWH        8223.685 Hz
FIDRES     0.125483 Hz
AQ         3.9846387 sec
RG         208.5
DW         60.800 usec
DE         10.00 usec
TE         297.0 K
D1         1.00000000 sec
D10        1
  
```

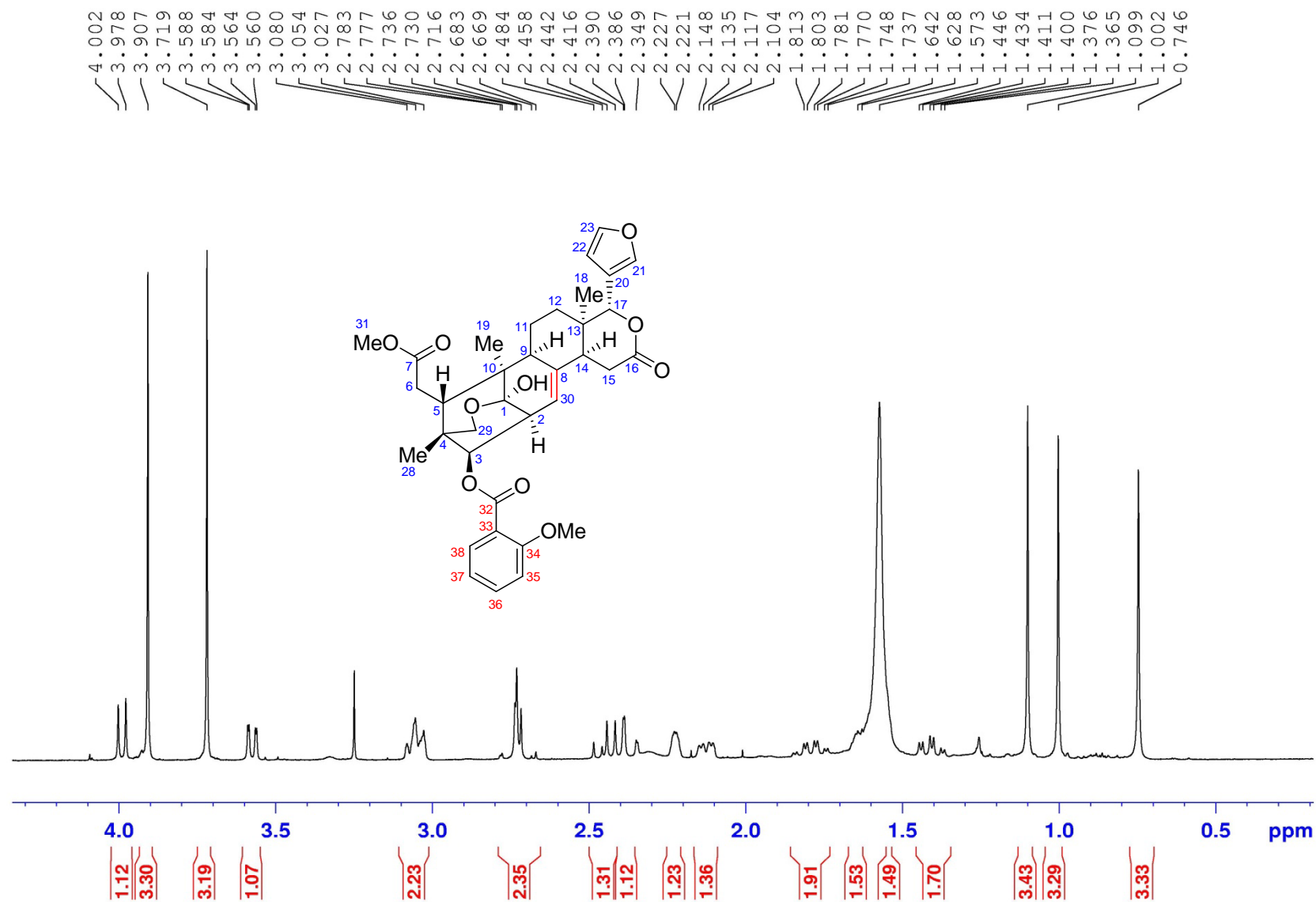
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===== CHANNEL f1 =====
SFO1      400.1324710 MHz
NUC1       1H
P1         11.50 usec
SI         65536
SF         400.1300089 MHz
WDW        EM
SSB        0
LB         0.30 Hz
GB         0
PC         1.00
  
```

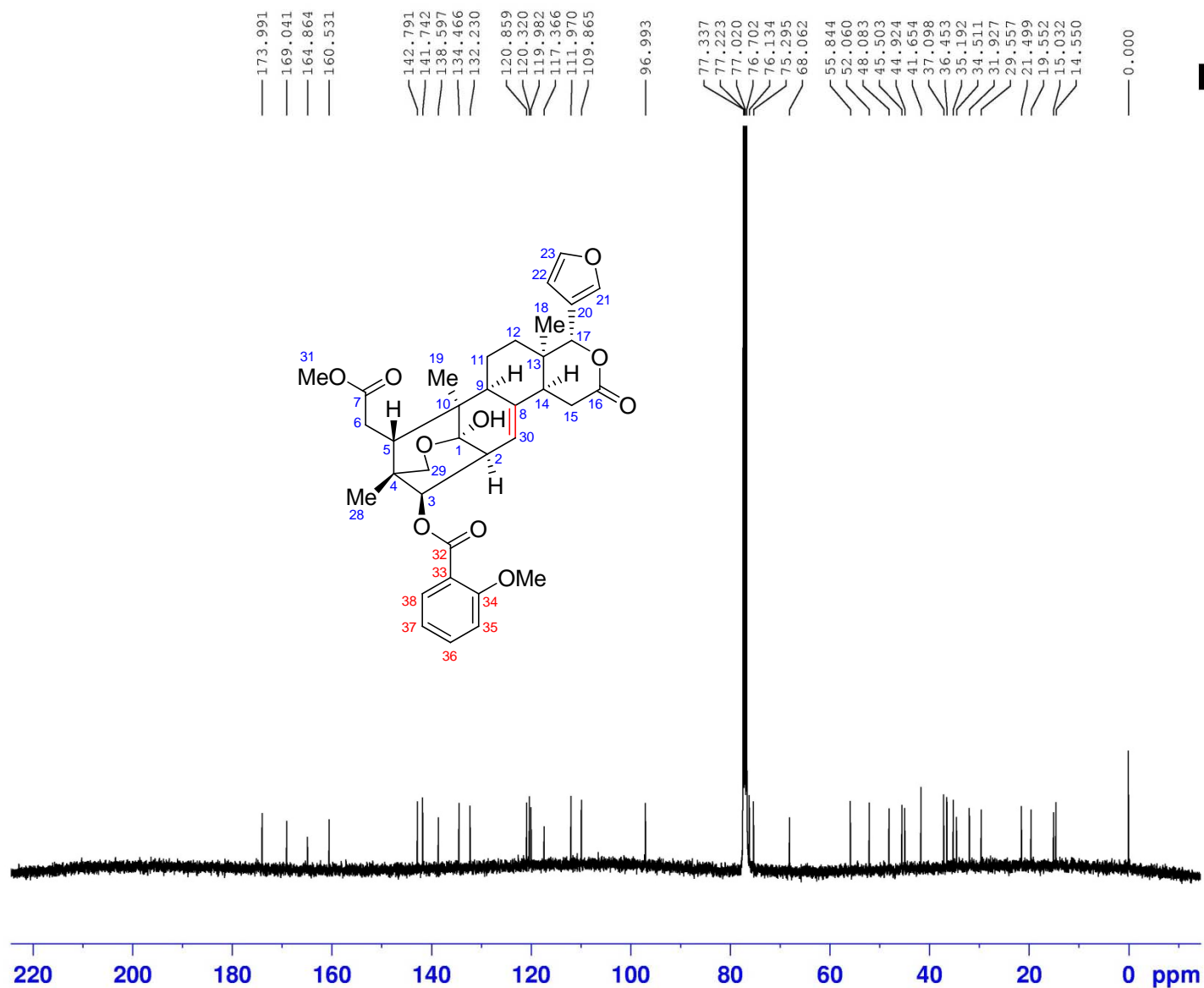

^1H NMR (400 MHz) spectrum of **8f** in CDCl_3



^1H NMR (400 MHz) spectrum of **8f** in CDCl_3



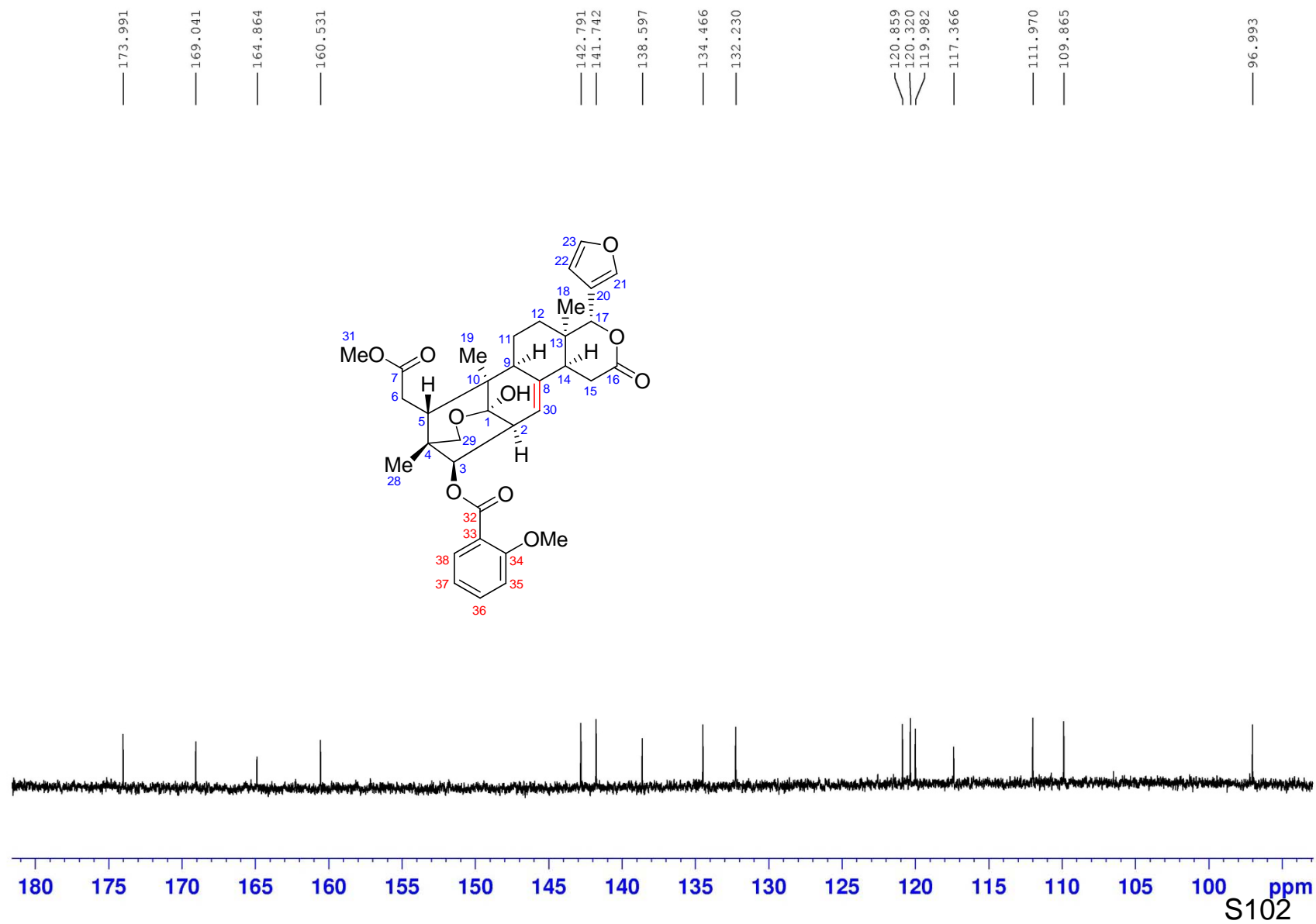
^{13}C NMR (100 MHz) spectrum of **8f** in CDCl_3



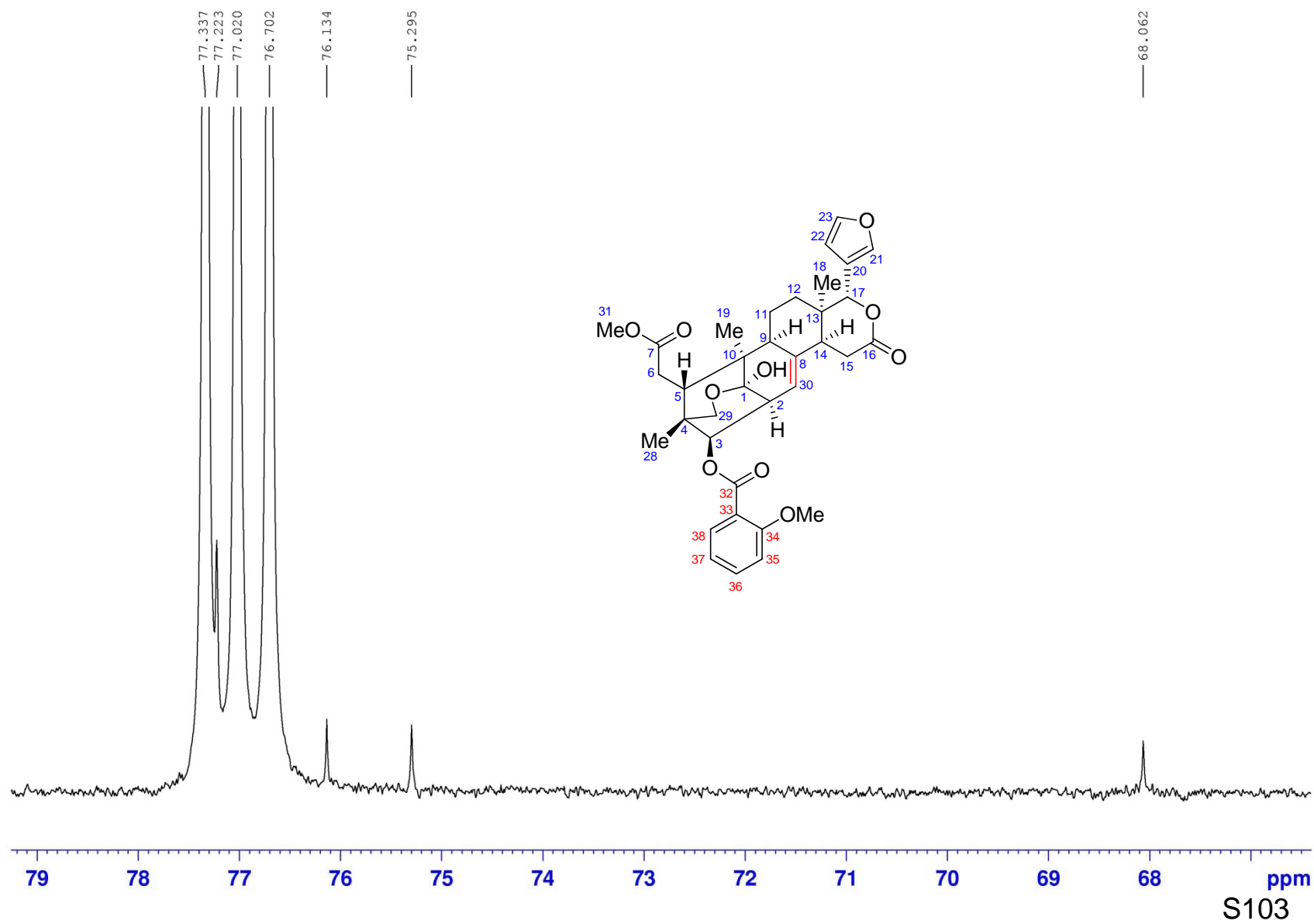
NAME czc-1-CH3-LINJIAYA
 EXPNO 102
 PROCNO 1
 Date_ 20171021
 Time 14.09
 INSTRUM spect
 PROBHD 5 mm CPPBBO BB
 PULPROG zgpg30
 TD 65536
 SOLVENT CDCl_3
 NS 3000
 DS 4
 SWH 24038.461 Hz
 FIDRES 0.366798 Hz
 AQ 1.3631988 sec
 RG 147.94
 DW 20.800 use
 DE 18.00 use
 TE 297.0 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 100.6233324 MHz
 NUC1 ^{13}C
 P1 10.00 use
 SI 32768
 SF 100.6127691 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

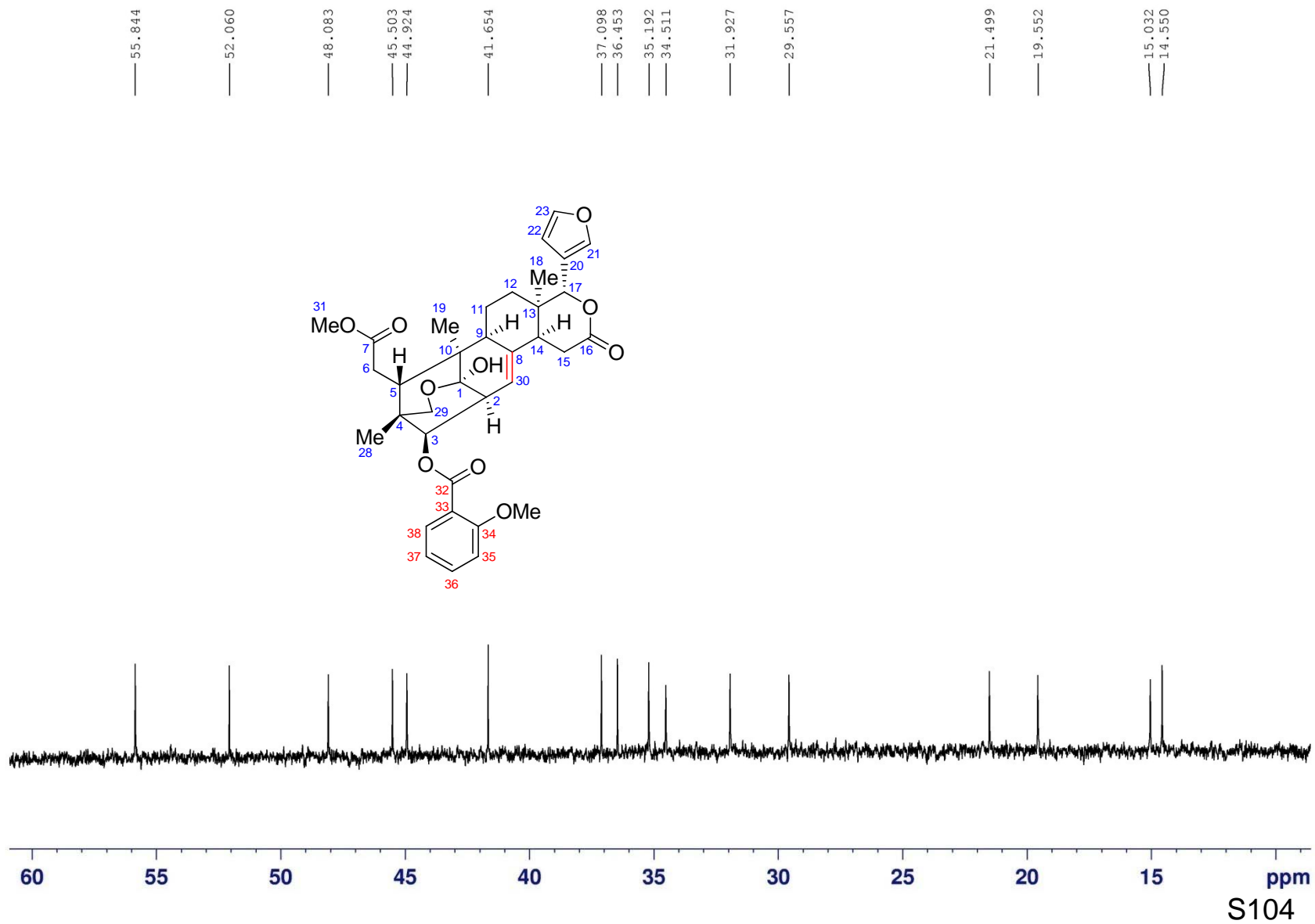
^{13}C NMR (100 MHz) spectrum of **8f** in CDCl_3



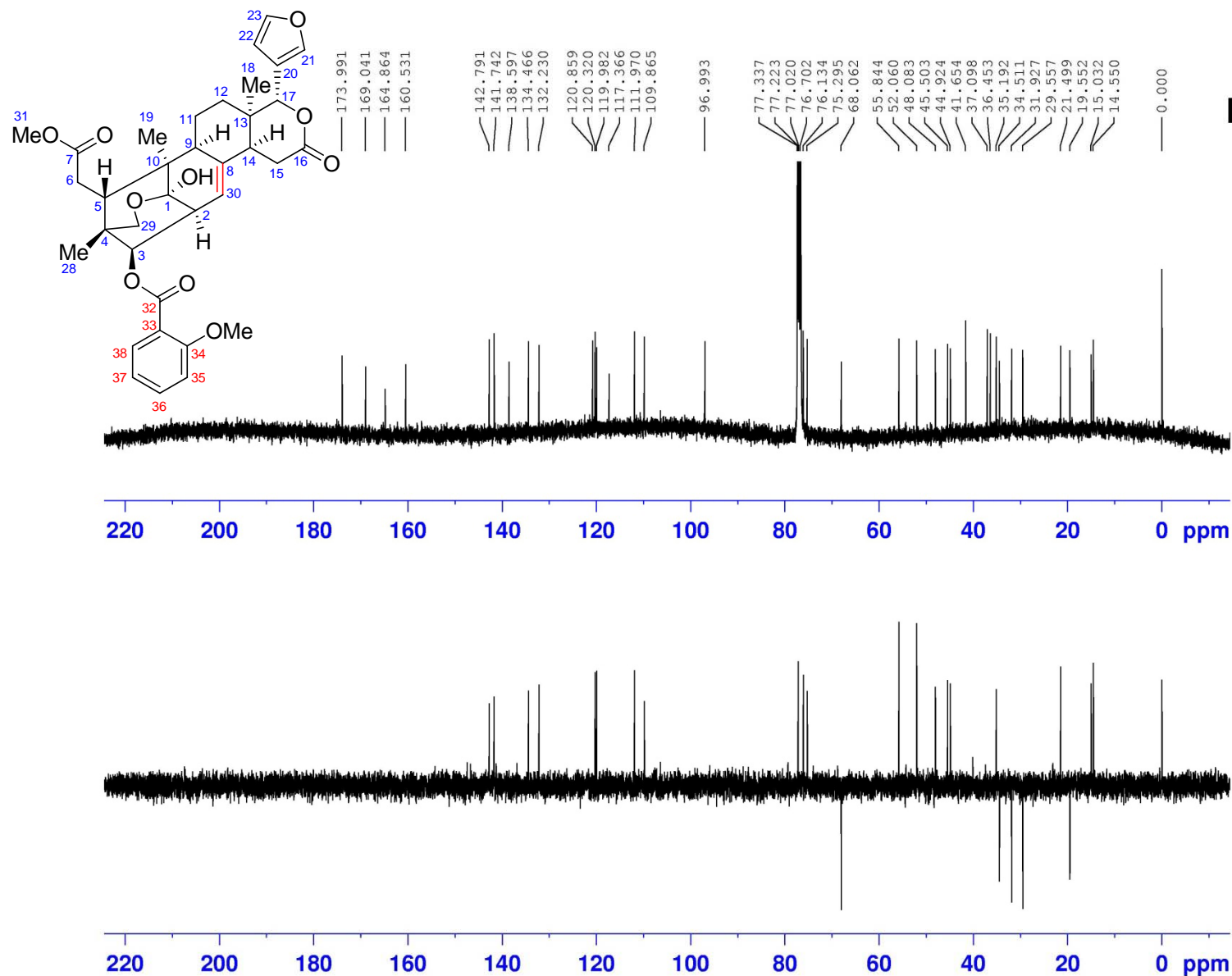
^{13}C NMR (100 MHz) spectrum of **8f** in CDCl_3



^{13}C NMR (100 MHz) spectrum of **8f** in CDCl_3



DEPT 135 spectrum of **8f** in CDCl₃



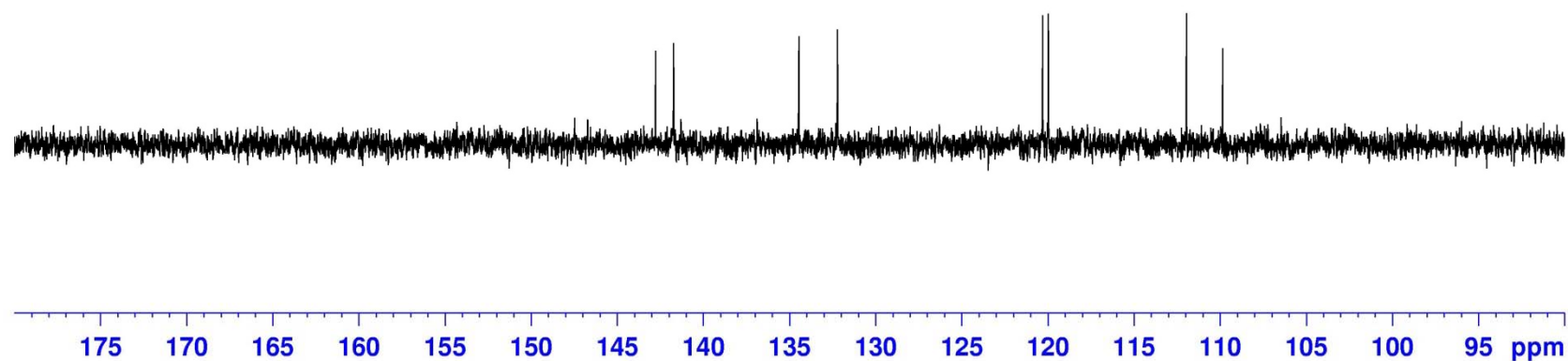
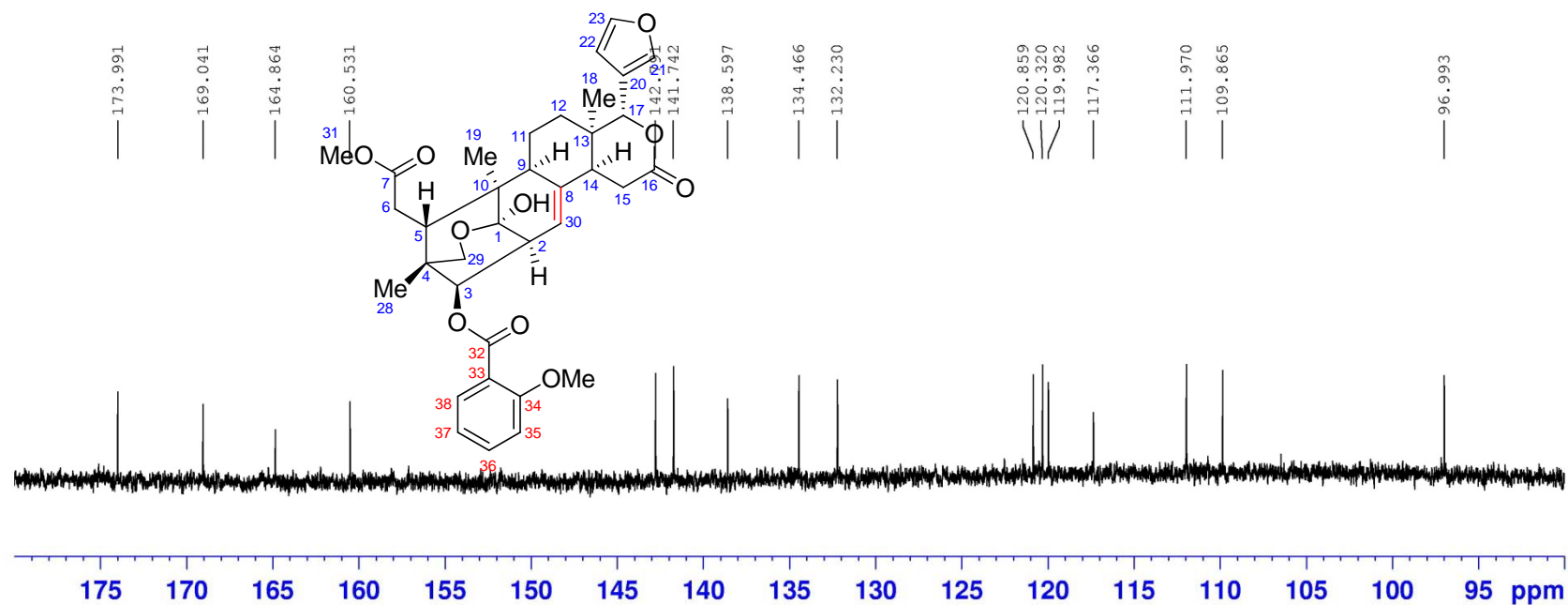
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NAME      czc-1-CH3-LINJIAY.
EXPNO     103
PROCNO    1
Date_     20171021
Time      14.56
INSTRUM   spect
PROBHD    5 mm CPPBBO BB
PULPROG   deptspl35
TD        65536
SOLVENT   CDCl3
NS         800
DS         4
SWH        24038.461 Hz
FIDRES     0.366798 Hz
AQ         1.3631988 se
RG         130.26
DW         20.800 us
DE         18.00 us
TE         297.0 K
CNST2     145.0000000
D1         2.00000000 se
D2         0.00344828 se
D12        0.00002000 se
TD0        1
    
```

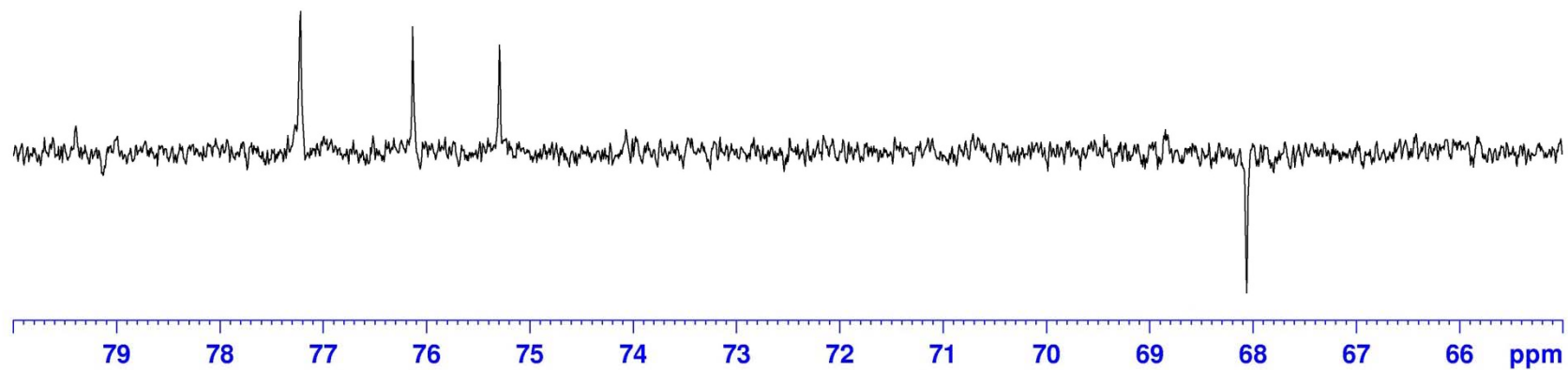
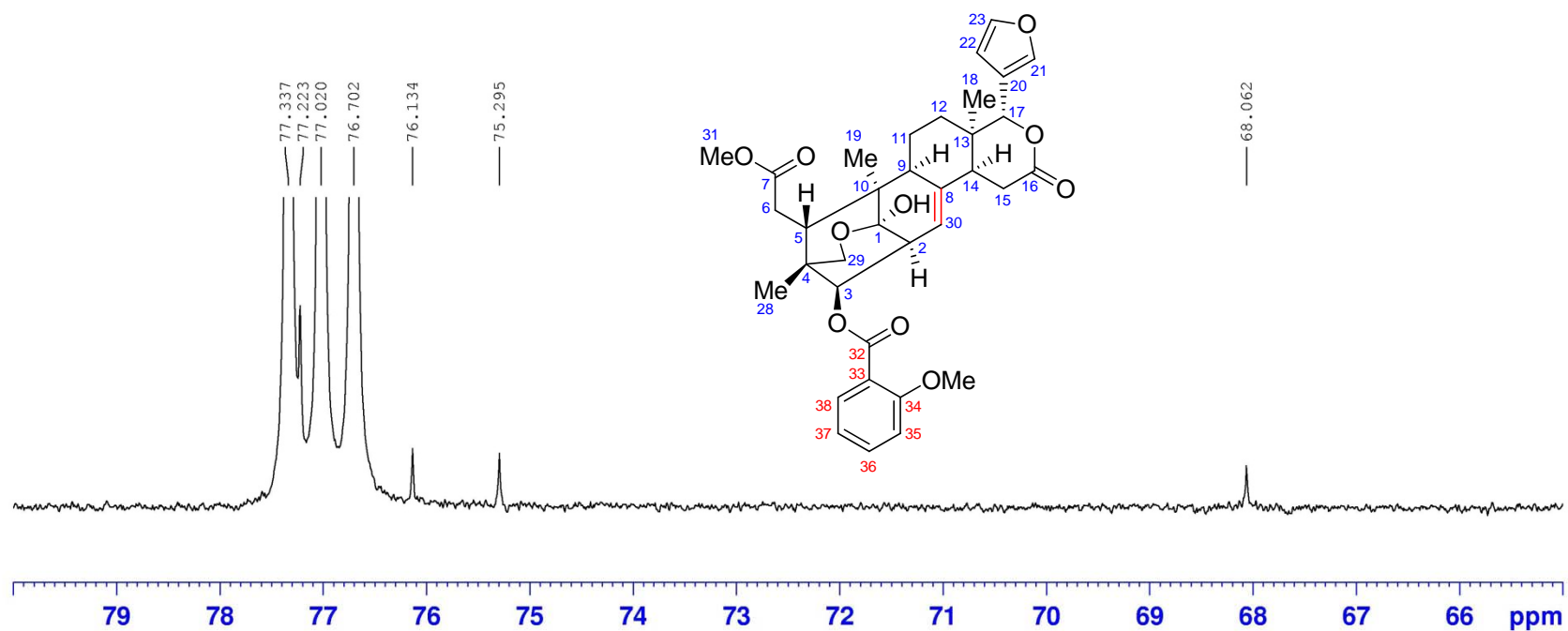
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===== CHANNEL f1 =====
SFO1     100.6233324 MH
NUC1      13C
P1        10.00 us
P13       2000.00 us
SI        32768
SF        100.6127693 MH
WDW       EM
SSB       0
LB        1.00 Hz
GB        0
PC        1.40
    
```

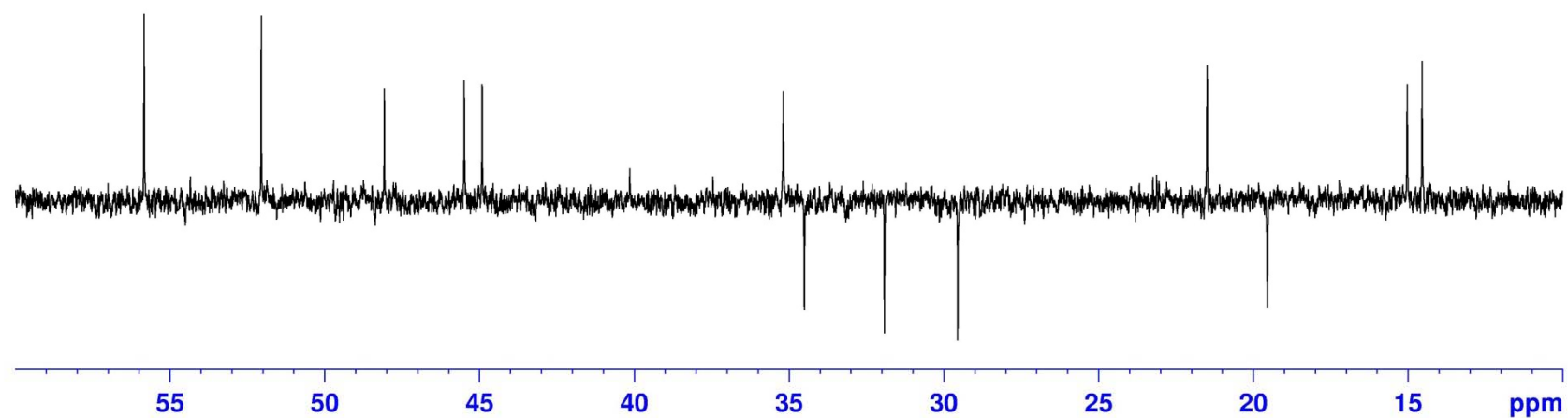
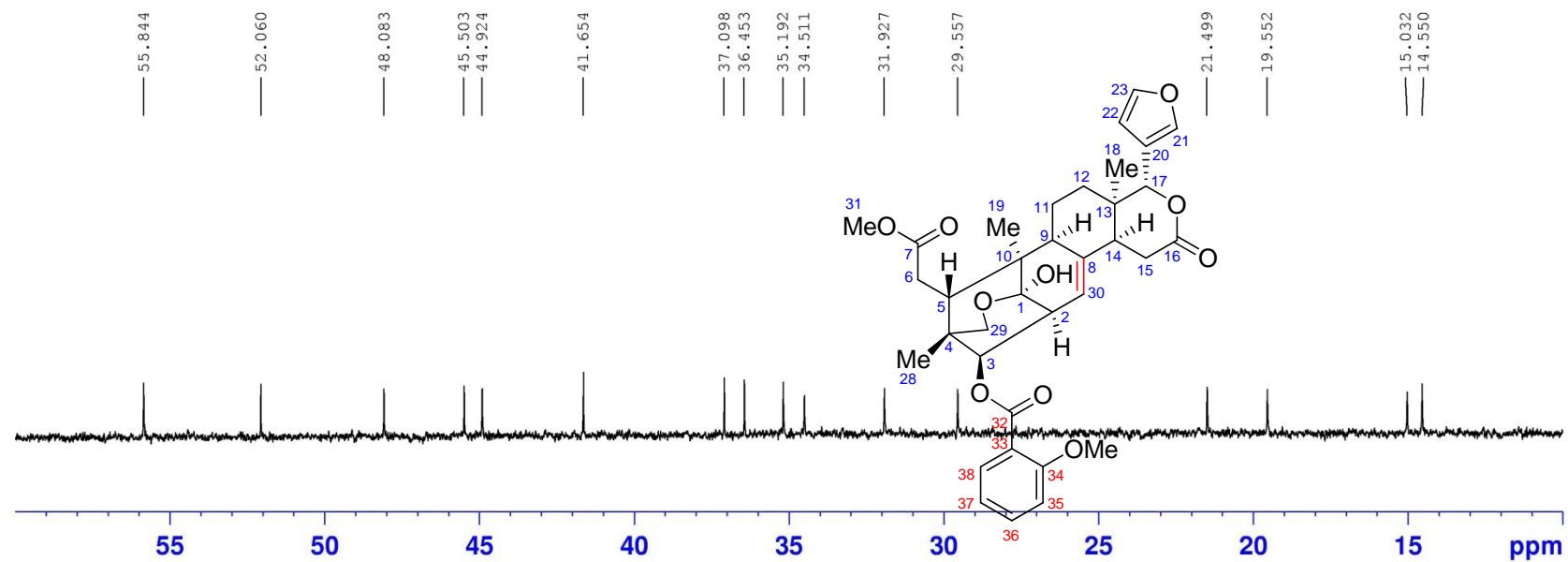
DEPT 135 spectrum of **8f** in CDCl₃



DEPT 135 spectrum of **8f** in CDCl₃



DEPT 135 spectrum of **8f** in CDCl₃



HR-ESIMS for compound **8g**

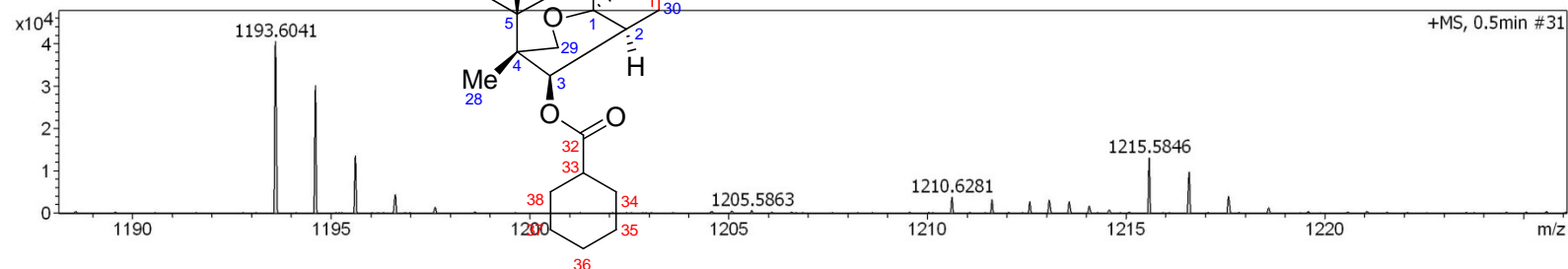
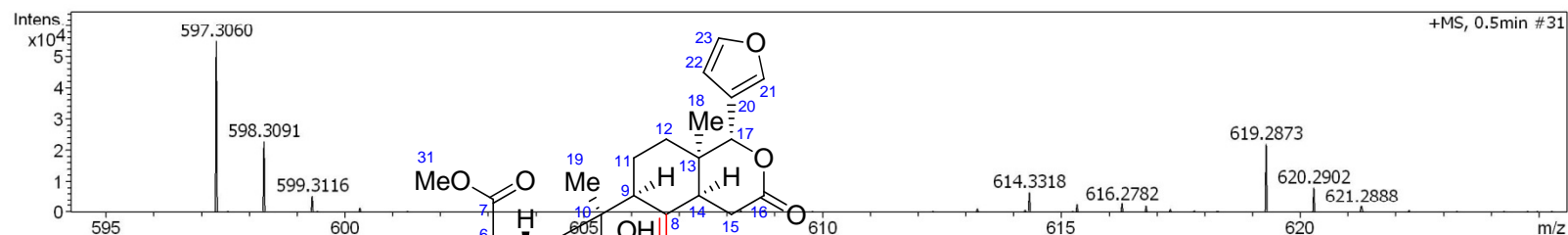
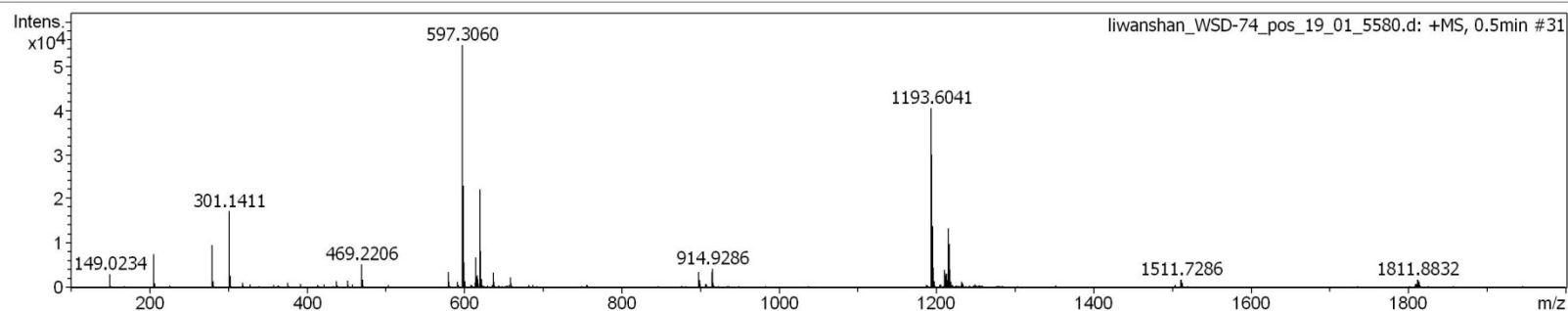
Generic Display Report

Analysis Info

Analysis Name D:\Data\MS\data\201809\liwanshan_WSD-74_pos_19_01_5580.d
Method LC_Direct Infusion_pos_100-1000mz.m
Sample Name liwanshan_WSD-74_pos
Comment

Acquisition Date 9/30/2018 6:22:50 PM

Operator SCSIO
Instrument maXis



HR-ESIMS for compound **8g**

Mass Spectrum SmartFormula Report

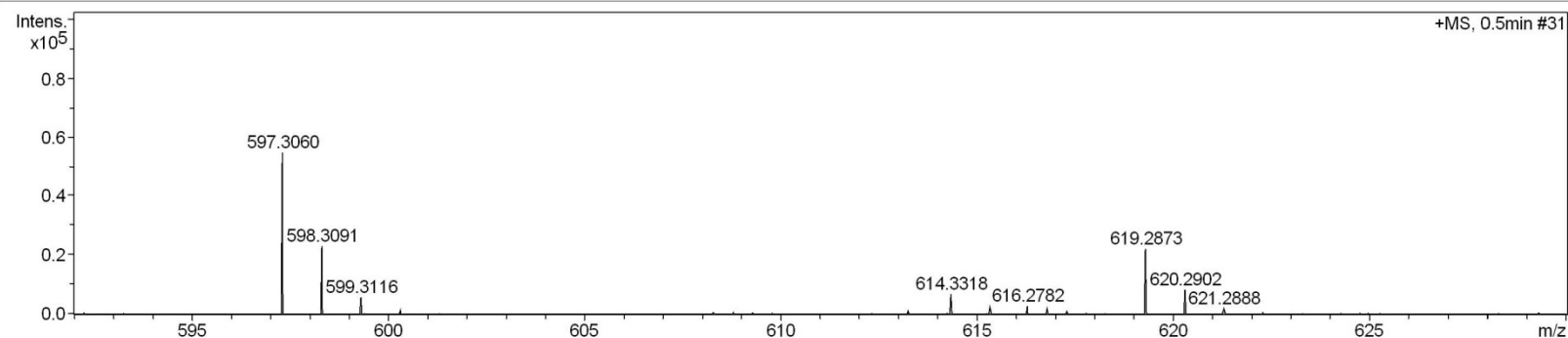
Analysis Info

Analysis Name D:\Data\MS\data\201809\liwanshan_WSD-74_pos_19_01_5580.d
 Method LC_Direct Infusion_pos_100-1000mz.m
 Sample Name liwanshan_WSD-74_pos
 Comment

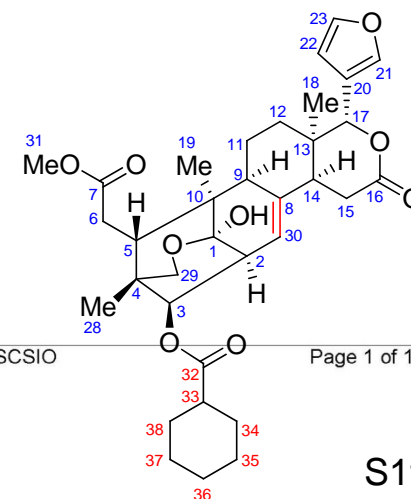
Acquisition Date 9/30/2018 6:22:50 PM
 Operator SCSIO
 Instrument maXis 255552.00029

Acquisition Parameter

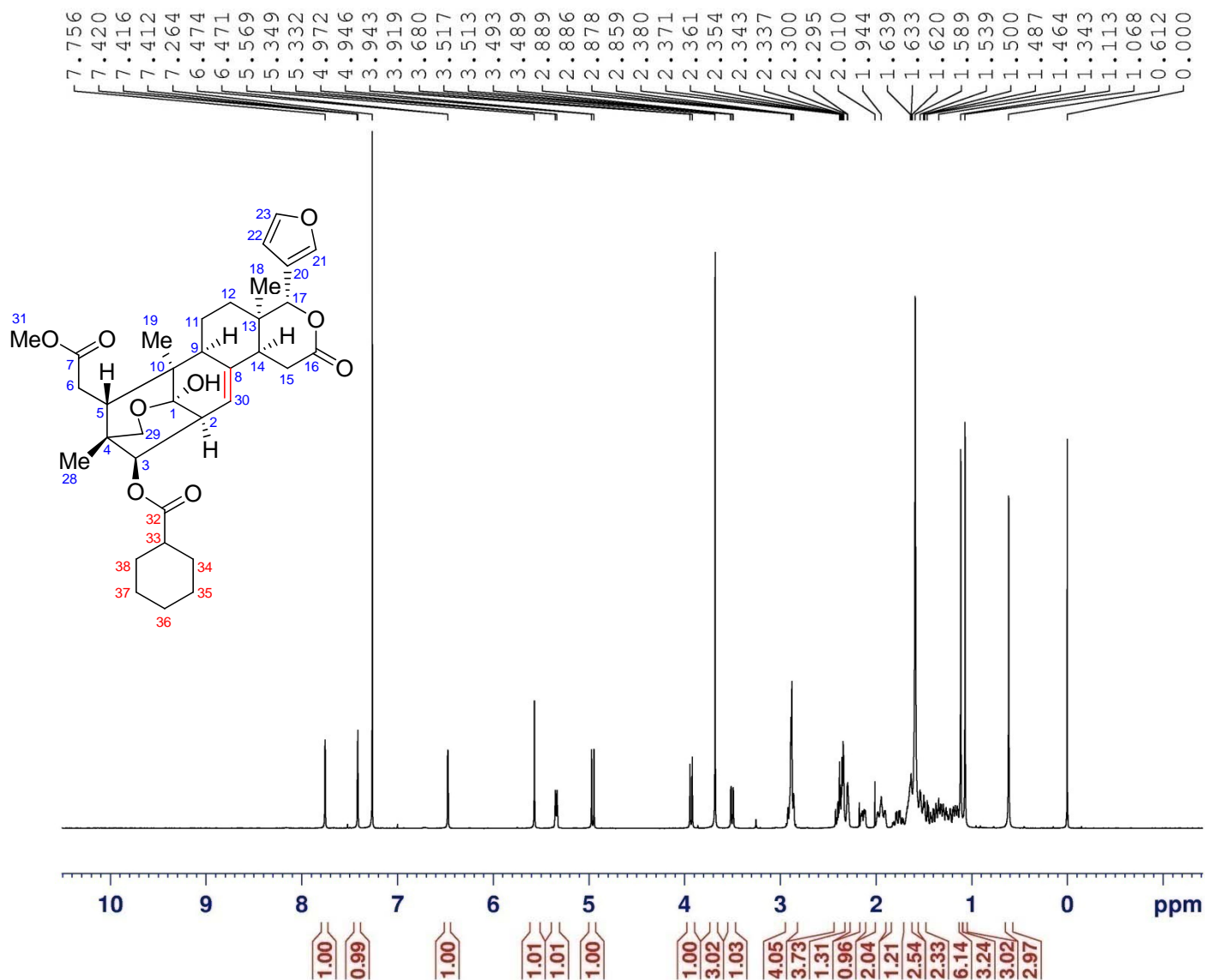
Source Type	ESI	Ion Polarity	Positive	Set Nebulizer	0.4 Bar
Focus	Active	Set Capillary	4500 V	Set Dry Heater	180 °C
Scan Begin	100 m/z	Set End Plate Offset	-500 V	Set Dry Gas	4.0 l/min
Scan End	2000 m/z	Set Charging Voltage	0 V	Set Divert Valve	Waste
		Set Corona	0 nA	Set APCI Heater	0 °C



Meas. m/z	#	Ion Formula	Score	m/z	err [ppm]	err [mDa]	mSigma	rdb	e ⁻ Conf	N-Rule
597.3060	1	C34H45O9	100.00	597.3058	-0.3	-0.2	22.1	12.5	even	ok
619.2873	1	C34H44NaO9	100.00	619.2878	-0.7	-0.5	5.8	12.5	even	ok
1193.6041	1	C68H89O18	100.00	1193.6043	-0.2	-0.2	11.3	24.5	even	ok
1215.5846	1	C68H88NaO18	100.00	1215.5863	1.4	1.7	8.7	24.5	even	ok



¹H NMR (400 MHz) spectrum of **8g** in CDCl₃

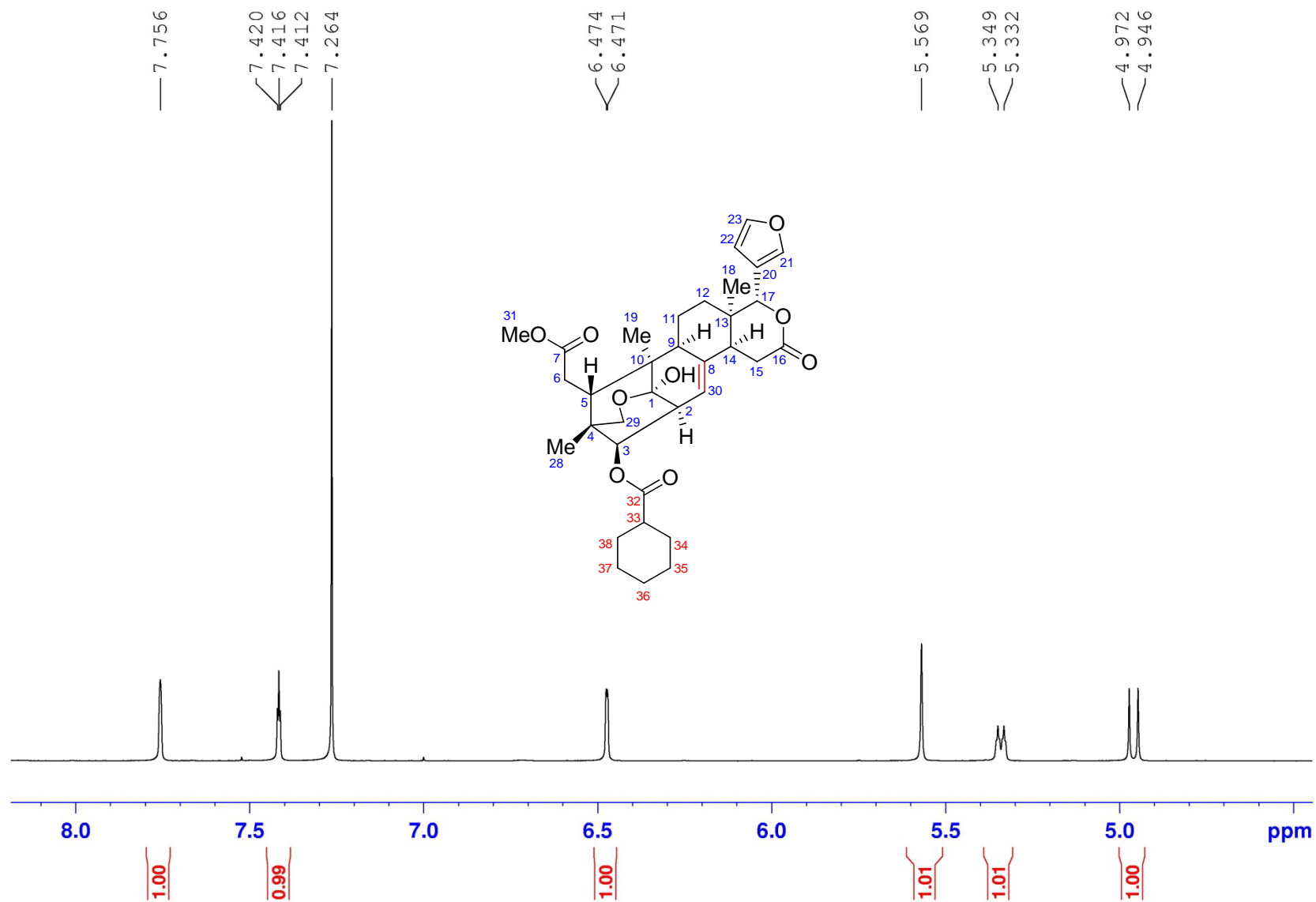


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NAME      czc-1-CH3-huanjijiasu
EXPNO     1
PROCNO    1
Date_     20171016
Time      15.33
INSTRUM   spect
PROBHD    5 mm CPPBBO BB
PULPROG   zg30
TD        65536
SOLVENT   CDCl3
NS        16
DS        2
SWH       8223.685 Hz
FIDRES    0.125483 Hz
AQ        3.9846387 sec
RG        208.5
DW        60.800 usec
DE        10.00 usec
TE        297.0 K
D1        1.00000000 sec
TD0       1

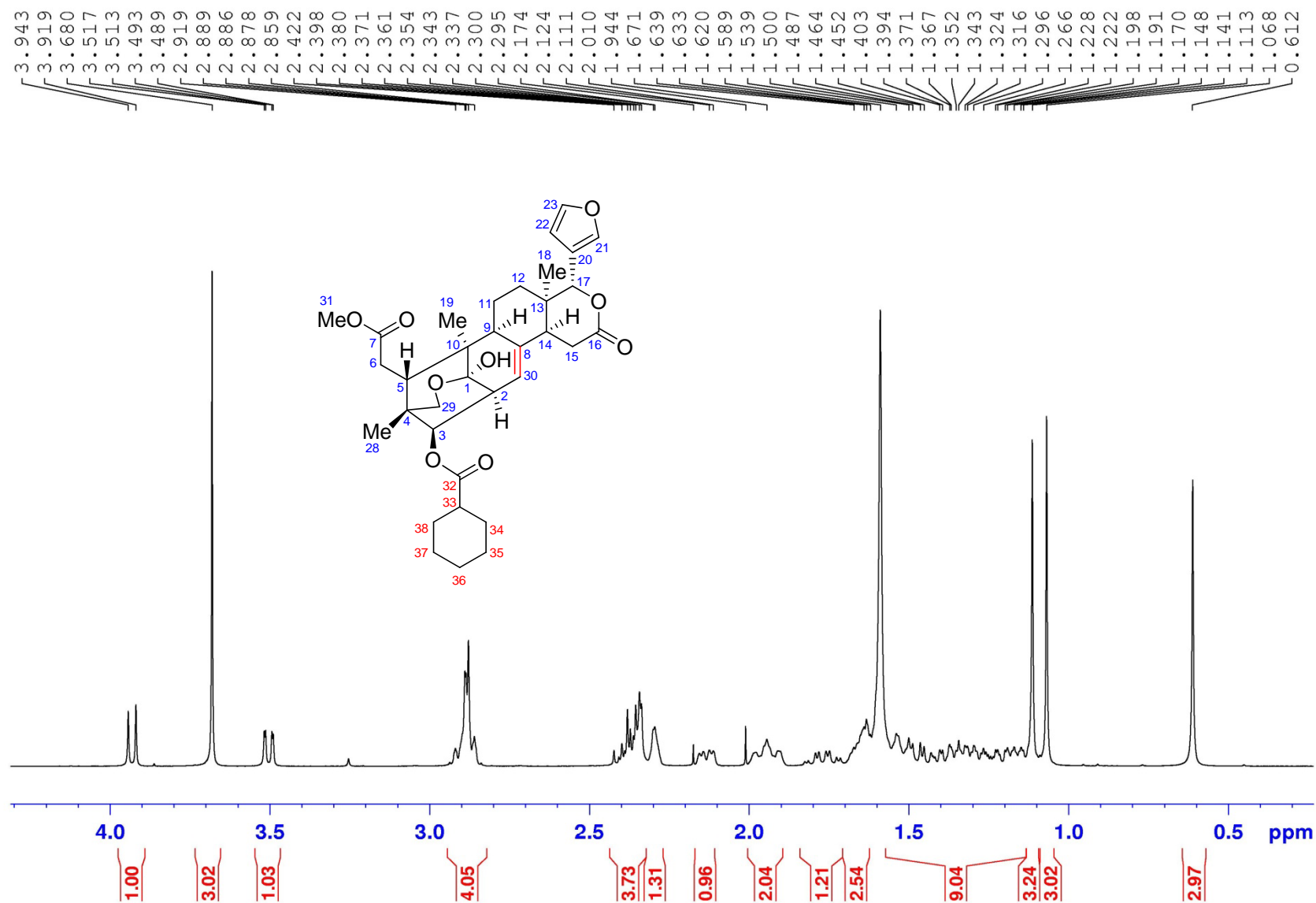
===== CHANNEL f1 =====
SFO1      400.1324710 MHz
NUC1      1H
P1        11.50 usec
SI        65536
SF        400.1300082 MHz
WDW       EM
SSB       0
LB        0.30 Hz
GB        0
PC        1.00
    
```

^1H NMR (400 MHz) spectrum of **8g** in CDCl_3



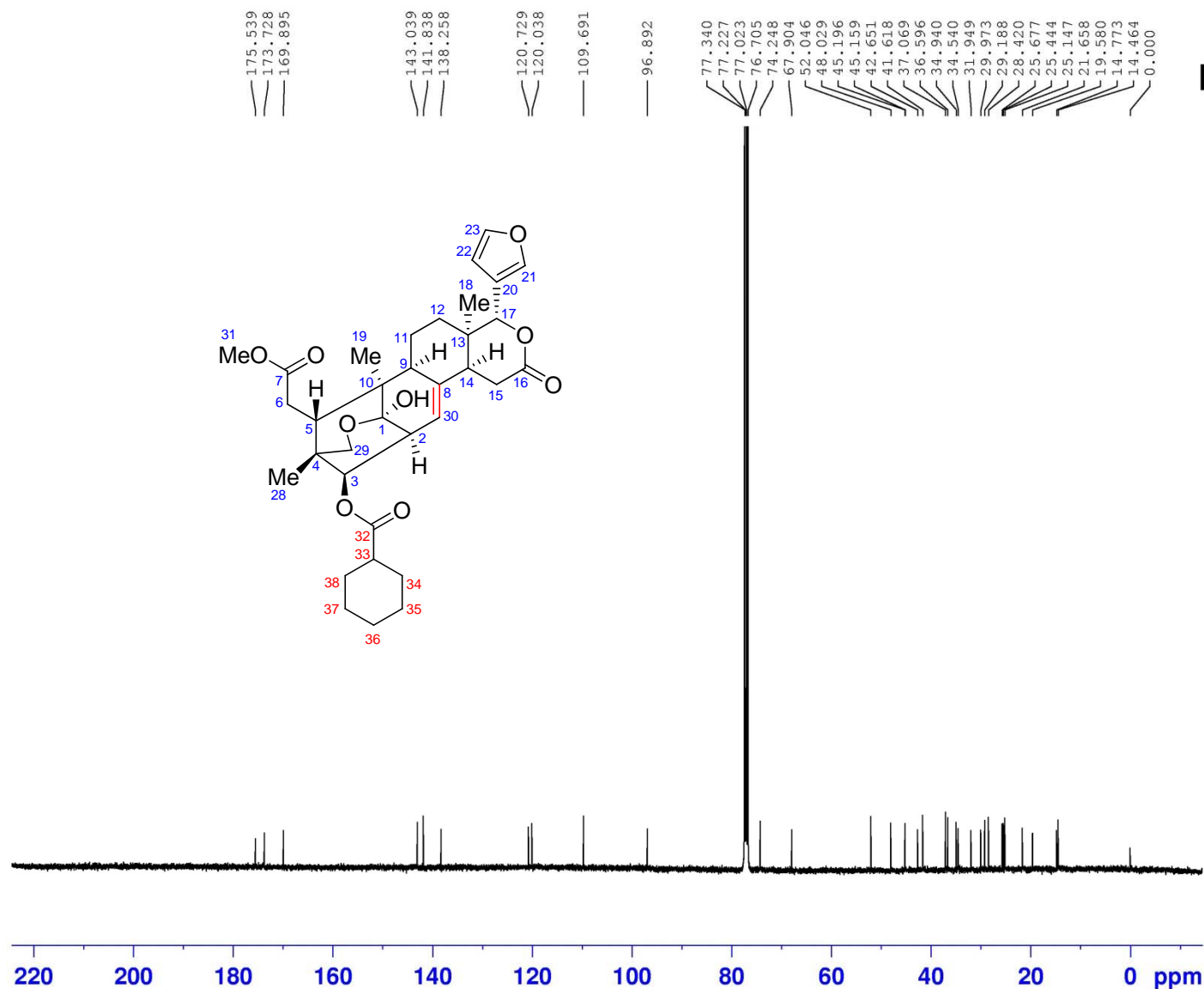
S112

^1H NMR (400 MHz) spectrum of **8g** in CDCl_3



S113

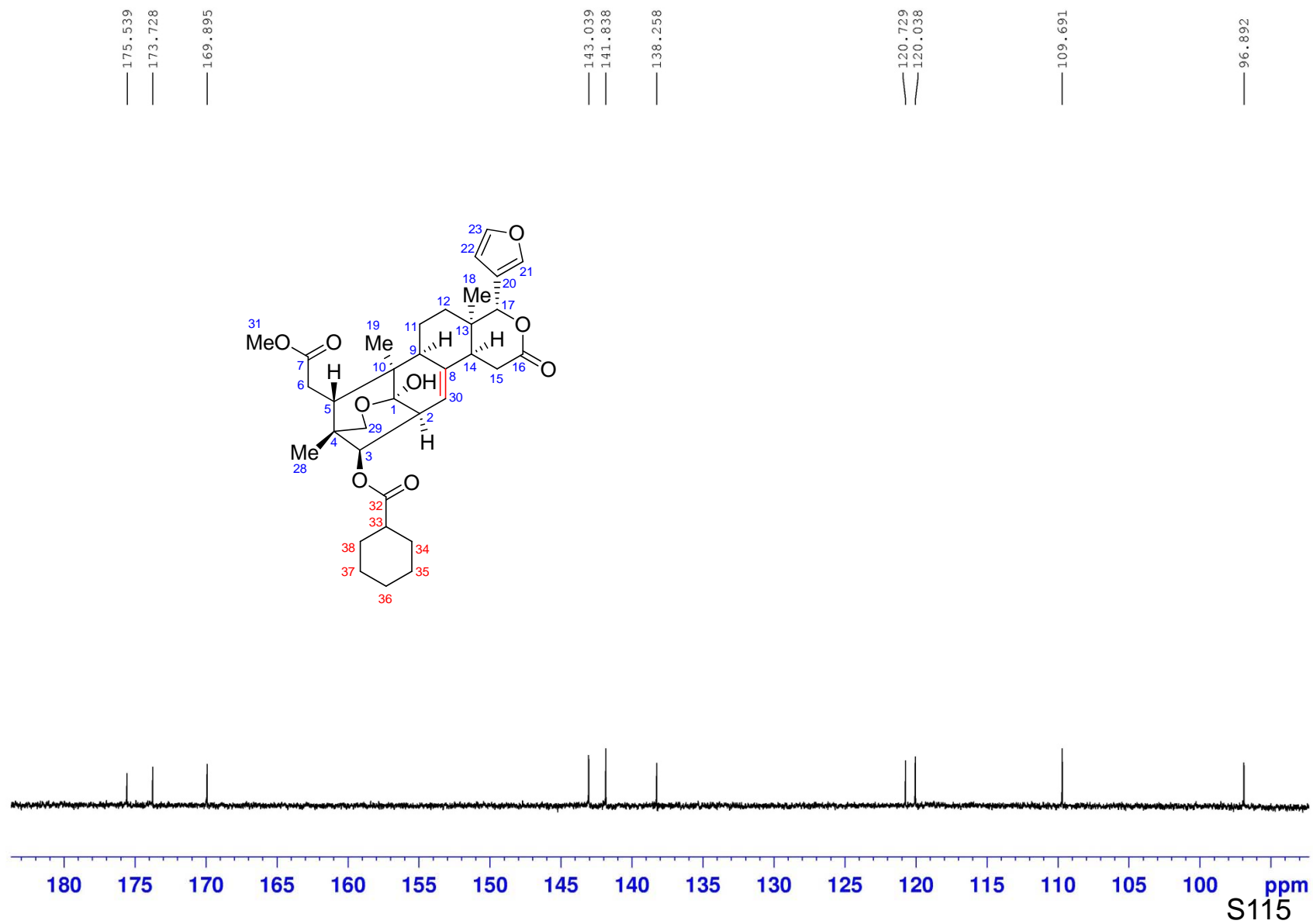
^{13}C NMR (100 MHz) spectrum of **8g** in CDCl_3



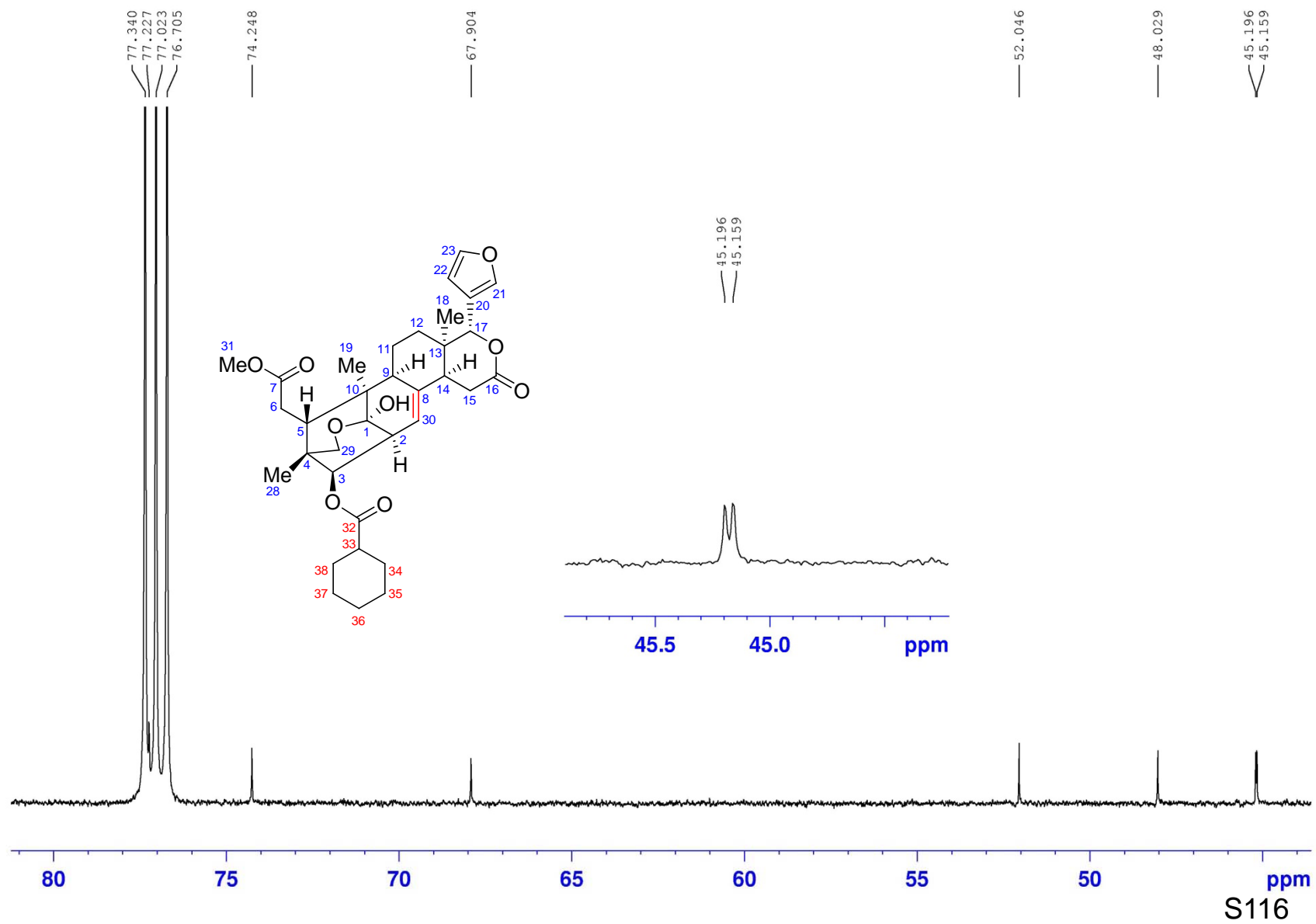
NAME czc-1-CH3-huanjijia
 EXPNO 2
 PROCNO 1
 Date_ 20171016
 Time 22.33
 INSTRUM spect
 PROBHD 5 mm CPPBBO BB
 PULPROG zgpg30
 TD 65536
 SOLVENT CDCl_3
 NS 1024
 DS 4
 SWH 24038.461 Hz
 FIDRES 0.366798 Hz
 AQ 1.3631988 sec
 RG 85.34
 DW 20.800 usec
 DE 18.00 usec
 TE 297.0 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 TD0 1

===== CHANNEL f1 =====
 SF01 100.623324 MHz
 NUC1 ^{13}C
 P1 10.00 usec
 SI 32768
 SF 100.6127689 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

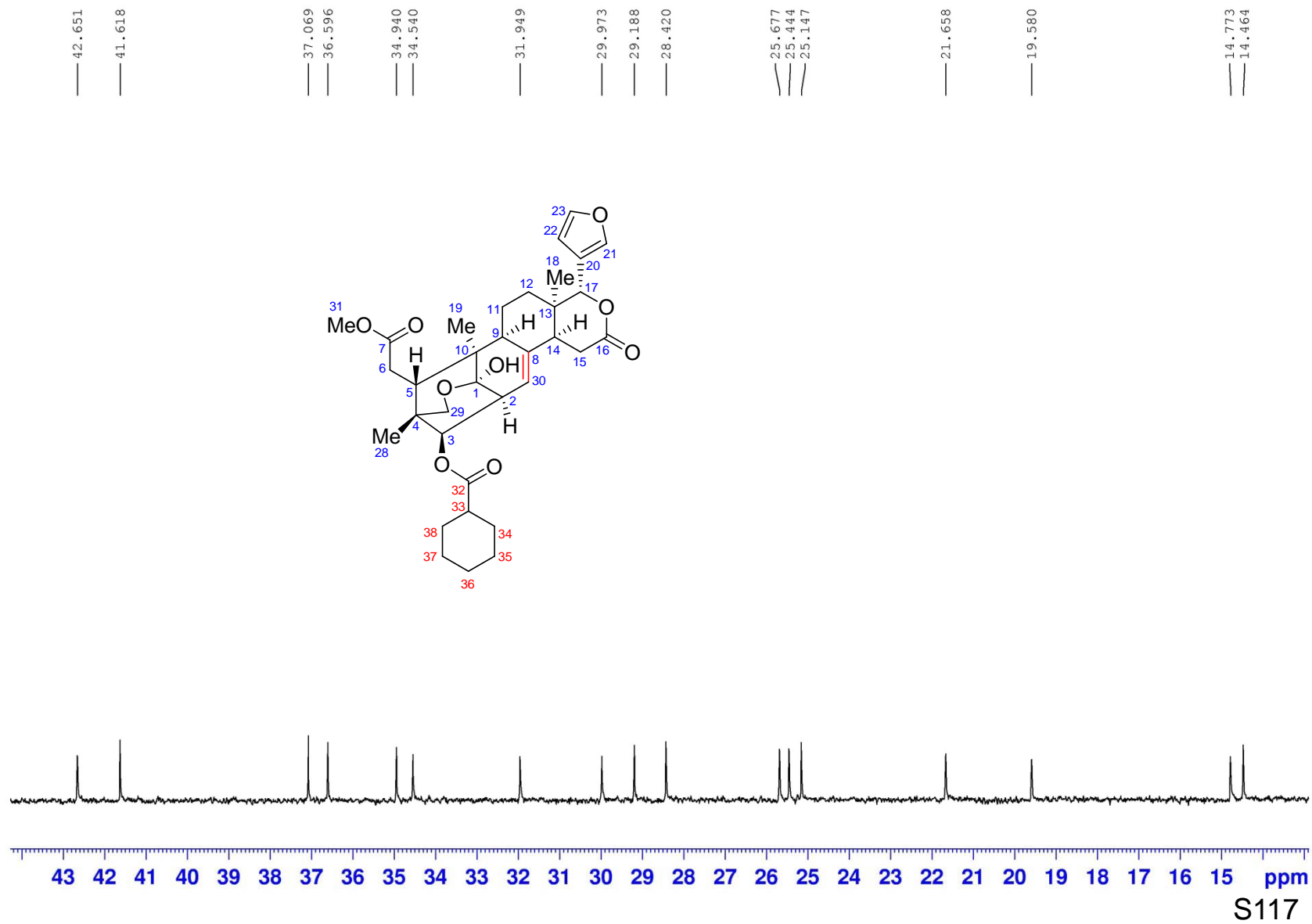
^{13}C NMR (100 MHz) spectrum of **8g** in CDCl_3



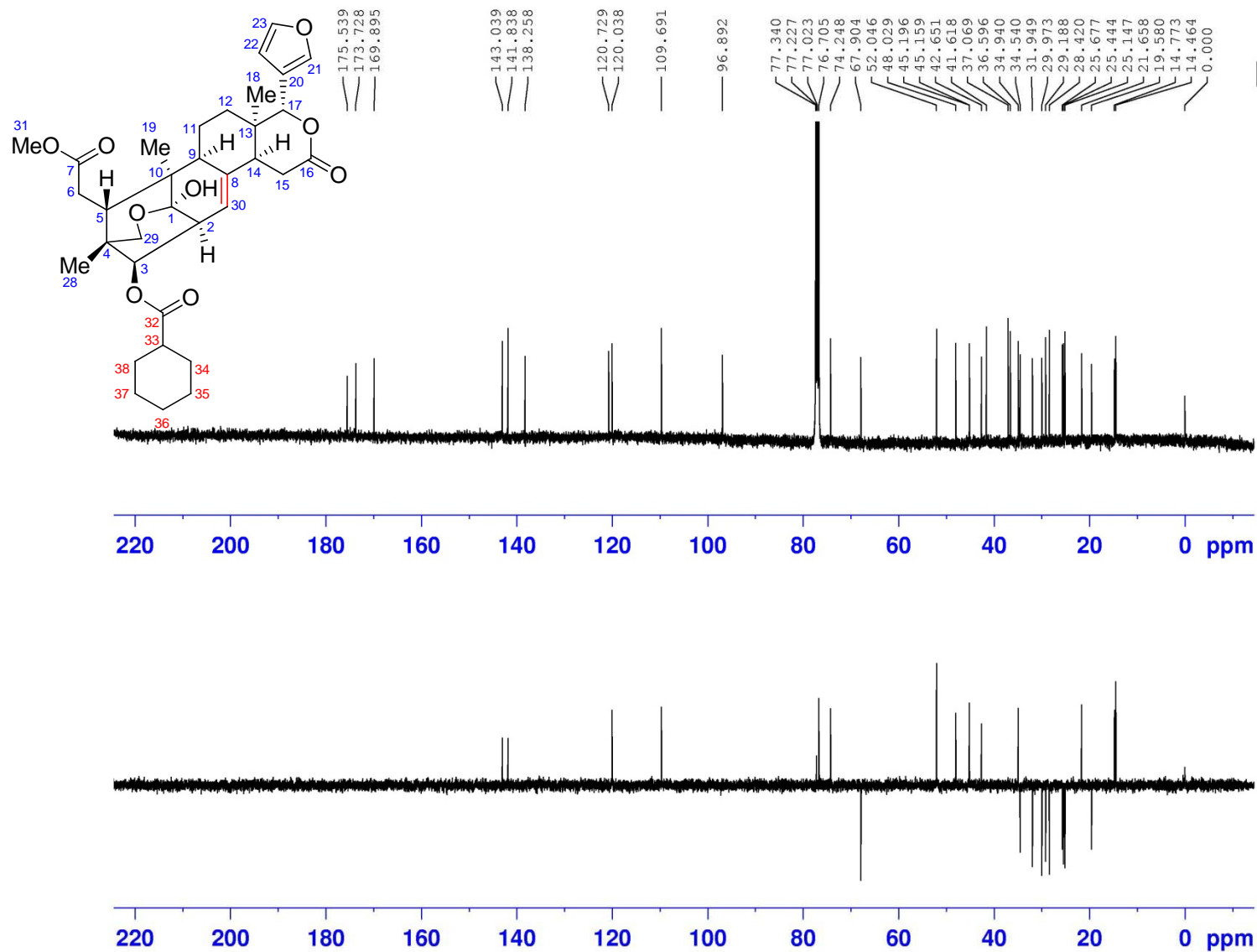
^{13}C NMR (100 MHz) spectrum of **8g** in CDCl_3



^{13}C NMR (100 MHz) spectrum of **8g** in CDCl_3



DEPT 135 spectrum of **8g** in CDCl₃



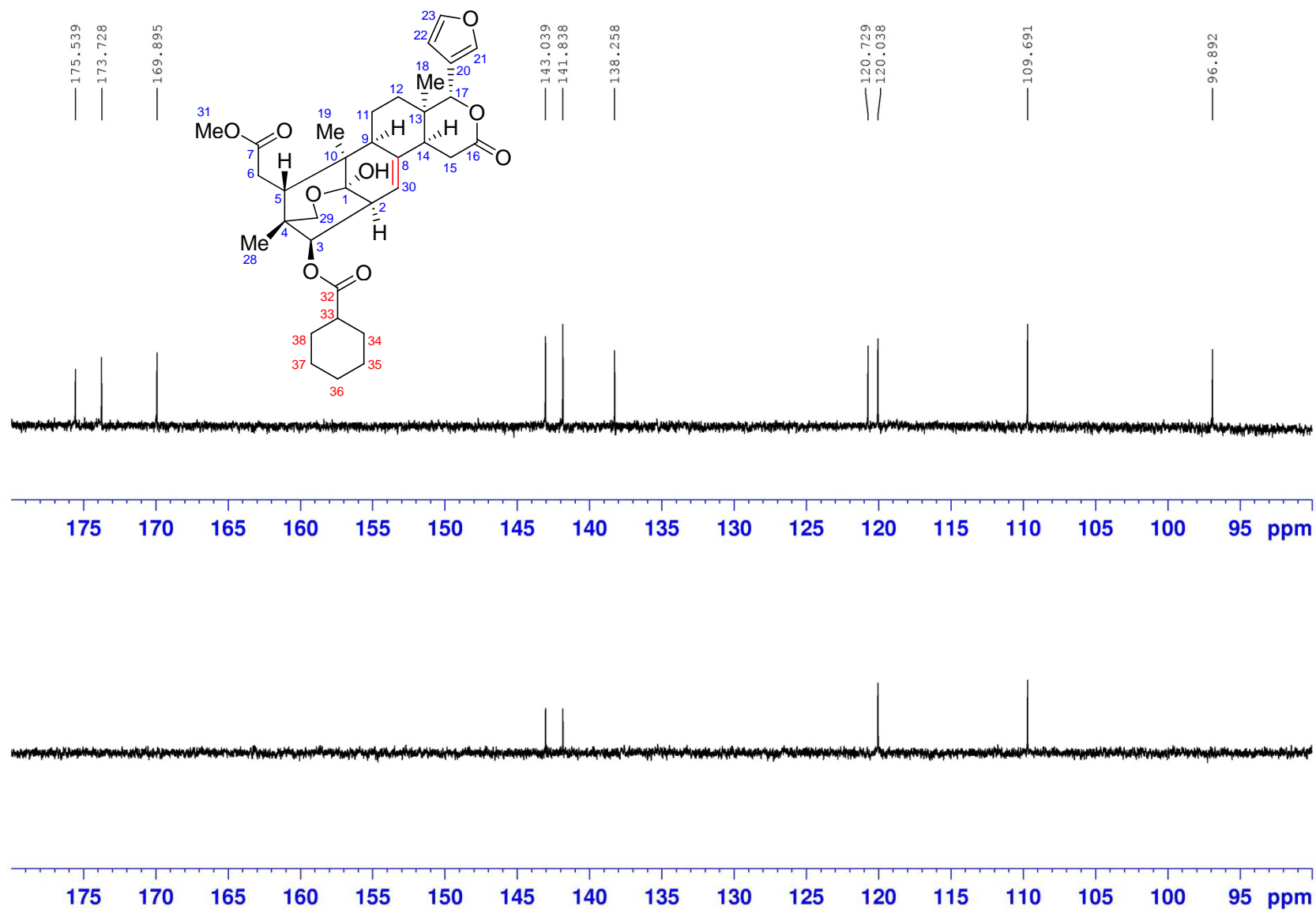
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NAME      czc-1-CH3-huanji
EXPNO     3
PROCNO    1
Date_     20171016
Time      22.51
INSTRUM   spect
PROBHD    5 mm CPPBBO BB
PULPROG   deptsp135
TD        65536
SOLVENT   CDCl3
NS        300
DS        4
SWH       24038.461 Hz
FIDRES    0.366798 Hz
AQ        1.3631988 sec
RG        130.26
DW        20.800 use
DE        18.00 use
TE        297.0 K
CNST2     145.0000000
D1        2.00000000 sec
D2        0.00344828 sec
D12       0.00002000 sec
TD0       1
    
```

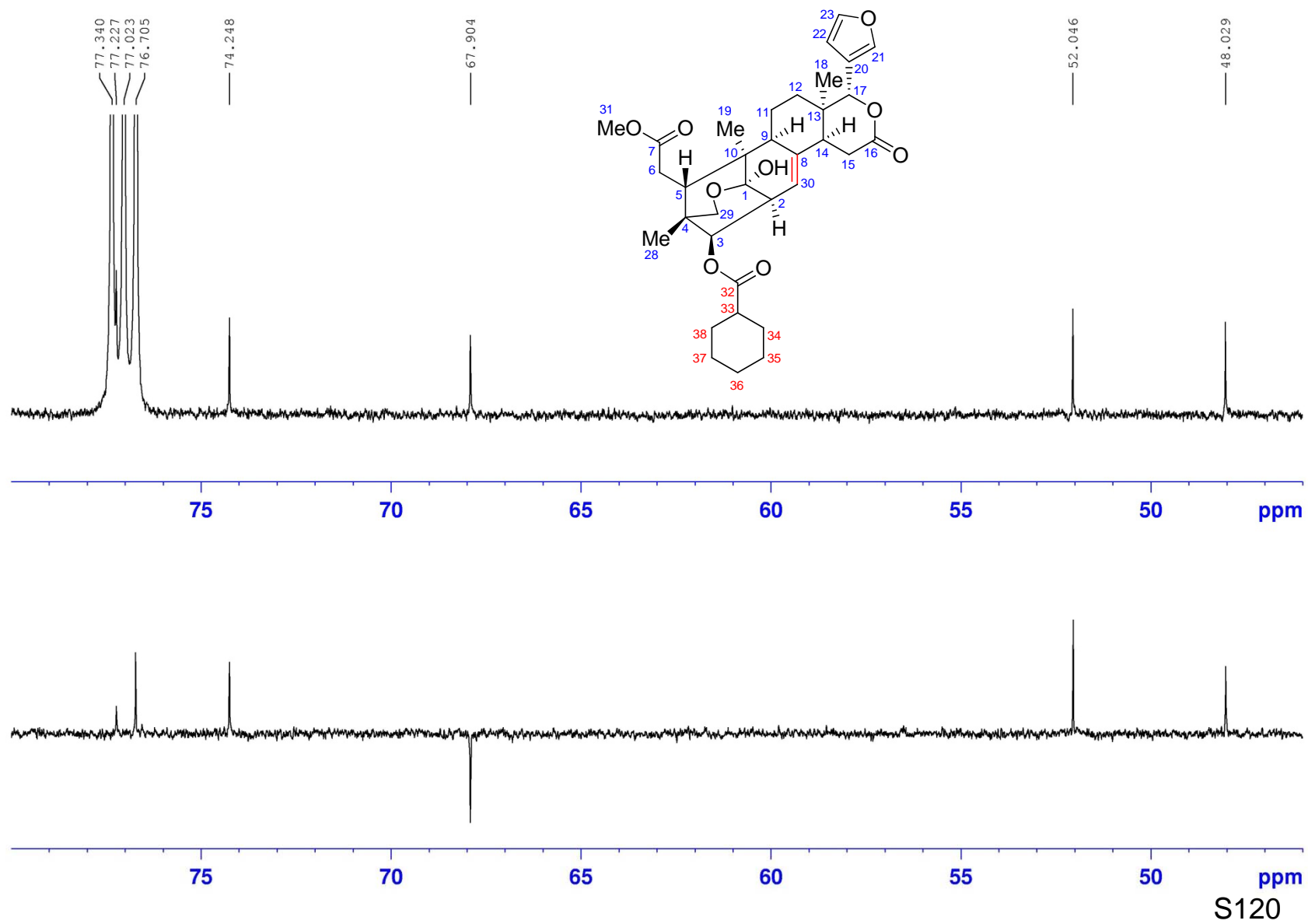
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===== CHANNEL f1 =====
SF01    100.6233324 MHz
NUC1     13C
P1       10.00 use
P13      2000.00 use
SI       32768
SF       100.6127691 MHz
WDW      EM
SSB      0
LB       1.00 Hz
GB       0
PC       1.40
    
```

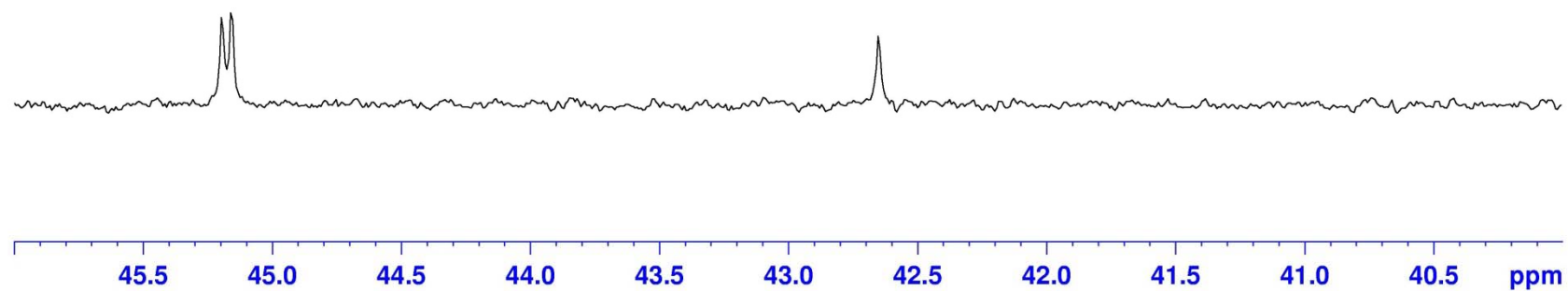
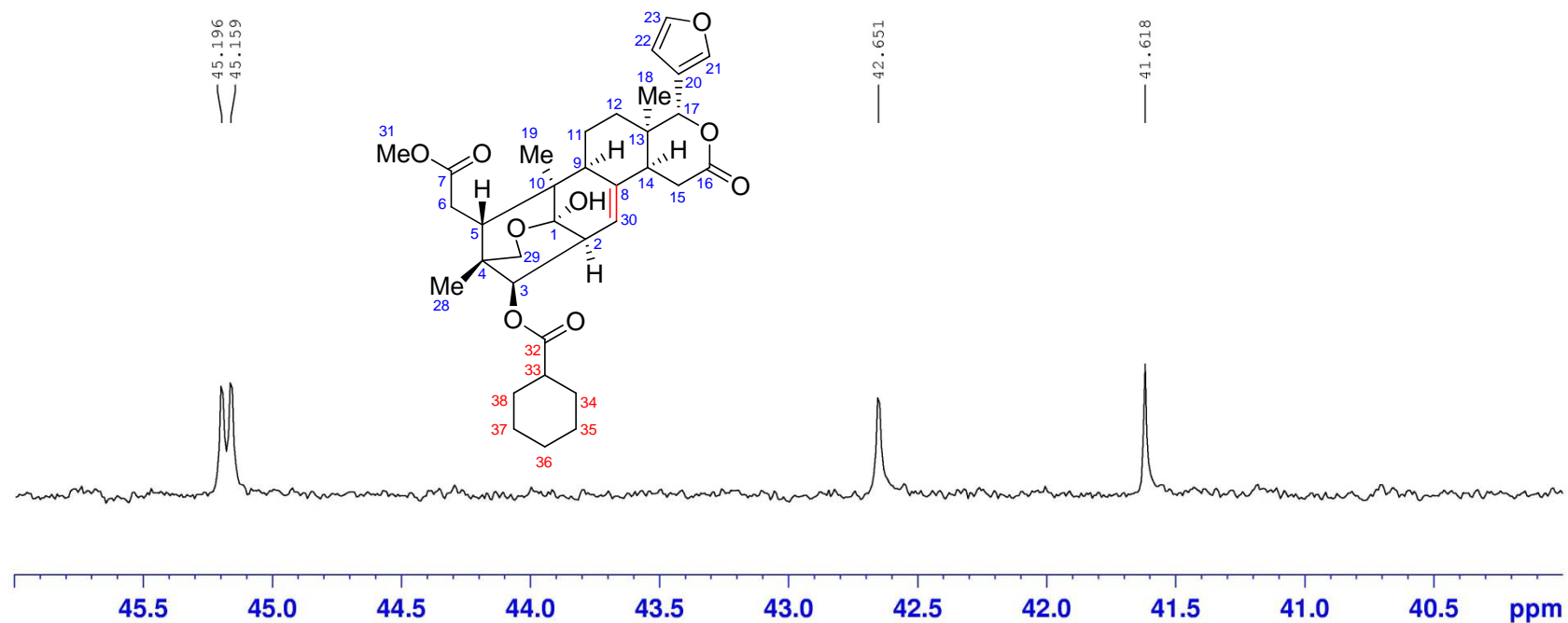
DEPT 135 spectrum of **8g** in CDCl₃



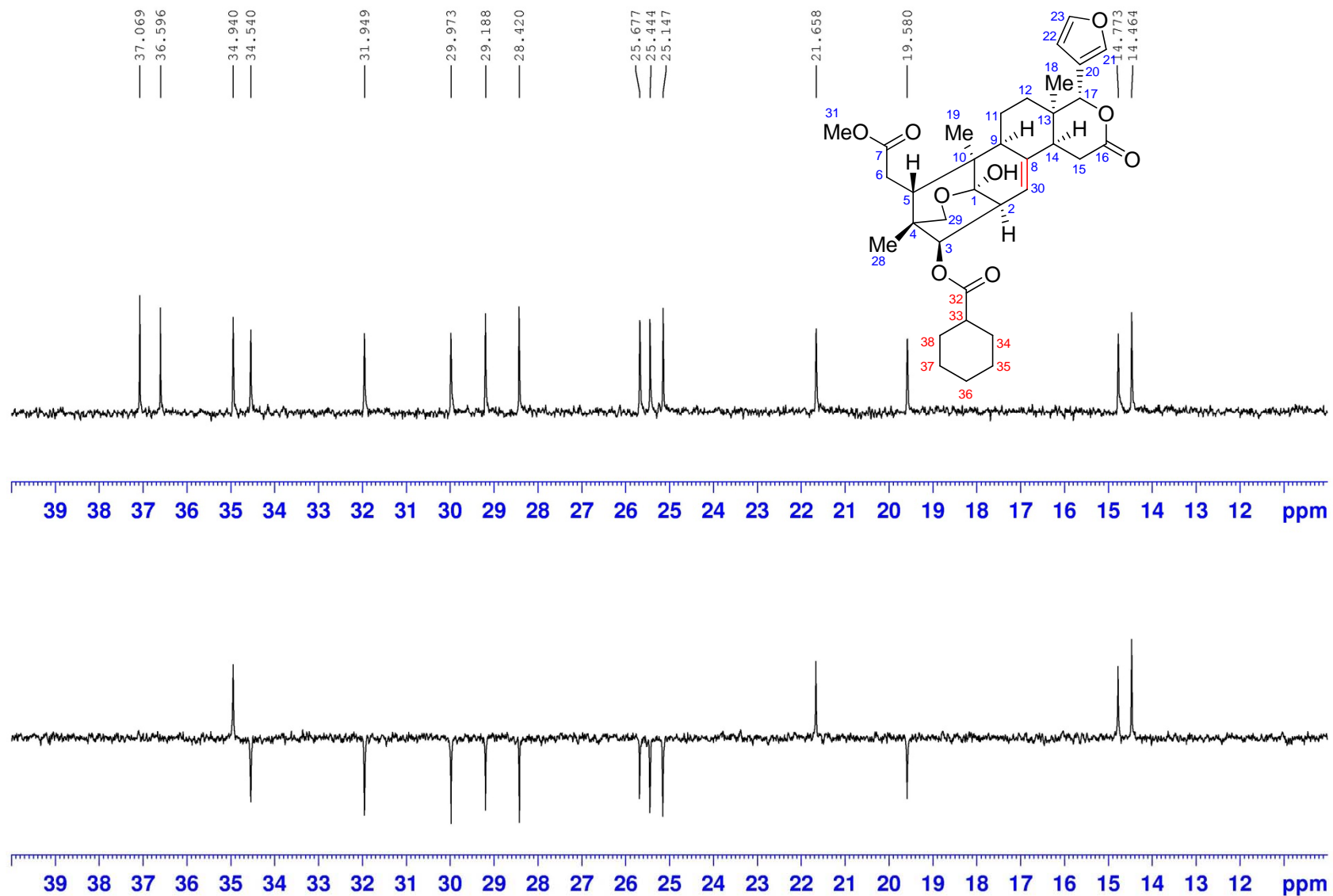
DEPT 135 spectrum of **8g** in CDCl₃



DEPT 135 spectrum of **8g** in CDCl_3



DEPT 135 spectrum of **8g** in CDCl₃



HR-ESIMS for compound **8h**

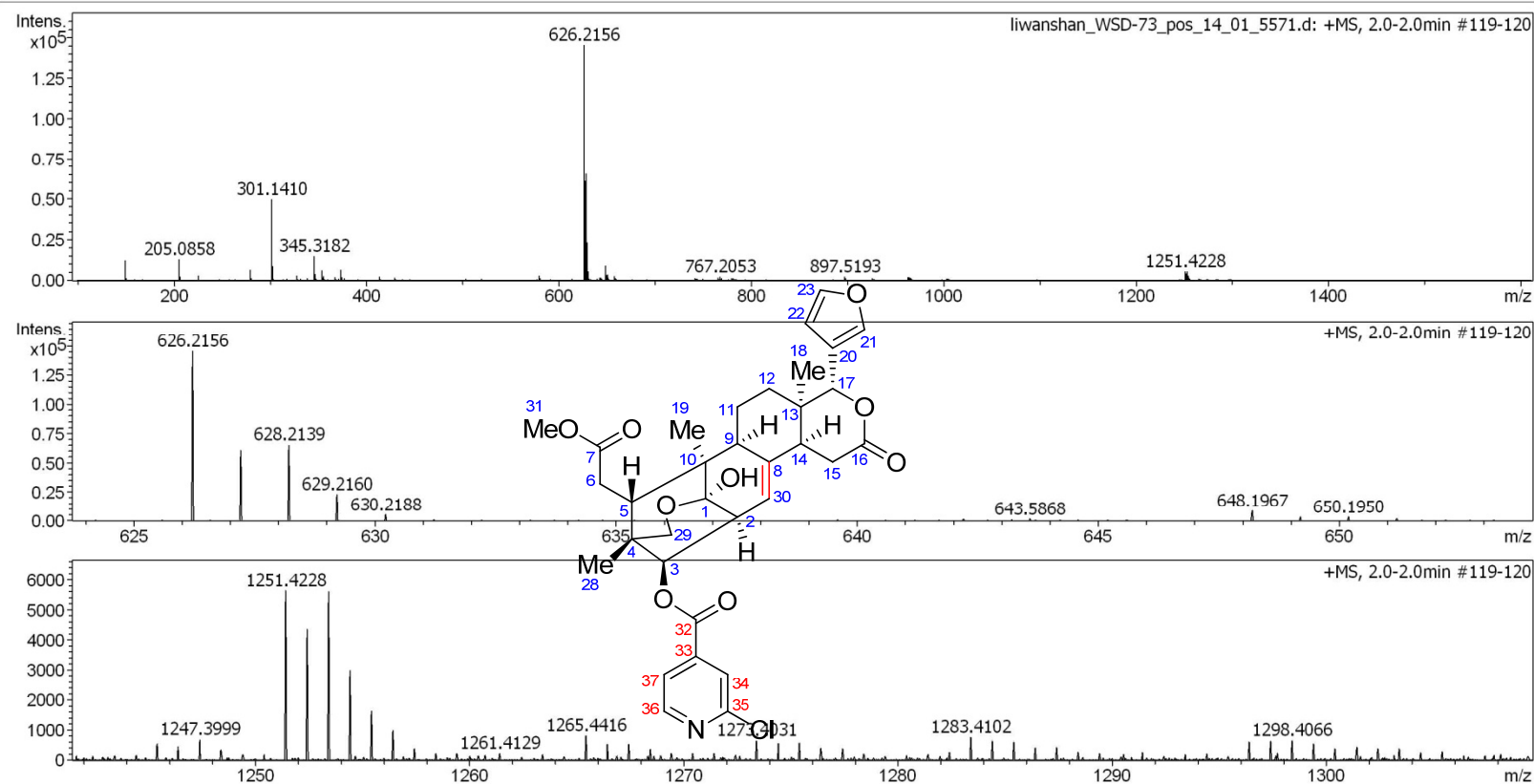
Generic Display Report

Analysis Info

Analysis Name D:\Data\MS\data\201809\liwanshan_WSD-73_pos_14_01_5571.d
Method LC_Direct Infusion_pos_100-1000mz.m
Sample Name liwanshan_WSD-73_pos
Comment

Acquisition Date 9/30/2018 4:07:58 PM

Operator SCSIO
Instrument maXis



HR-ESIMS for compound **8h**

Mass Spectrum SmartFormula Report

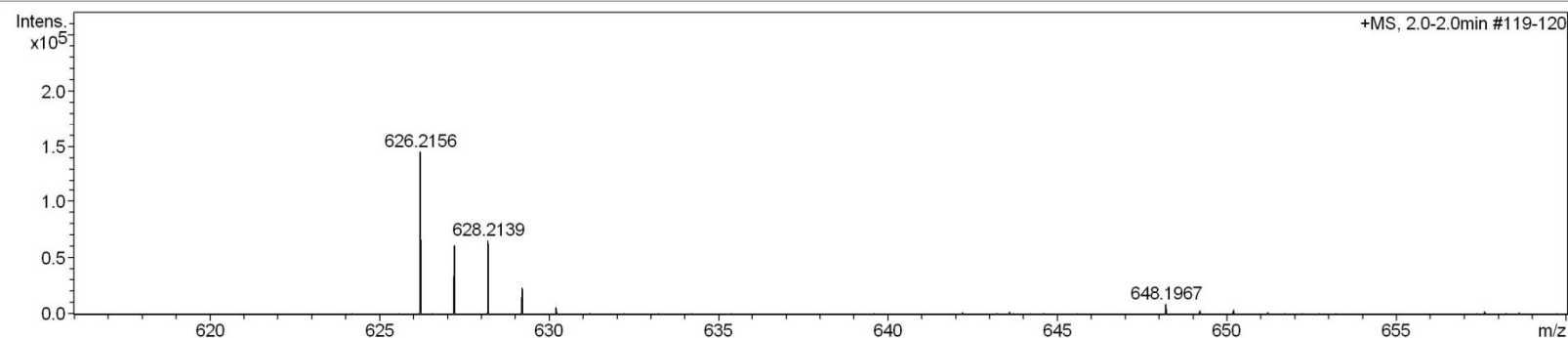
Analysis Info

Analysis Name D:\Data\MS\data\201809\liwanshan_WSD-73_pos_14_01_5571.d
 Method LC_Direct Infusion_pos_100-1000mz.m
 Sample Name liwanshan_WSD-73_pos
 Comment

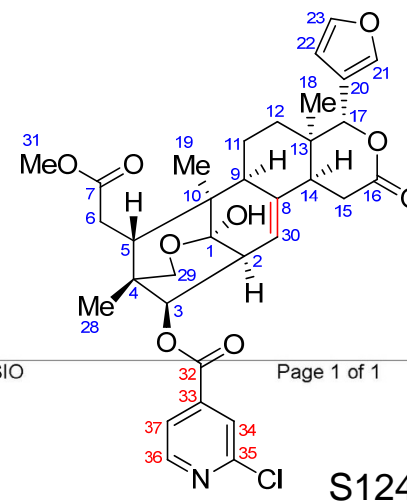
Acquisition Date 9/30/2018 4:07:58 PM
 Operator SCSIO
 Instrument maXis 255552.00029

Acquisition Parameter

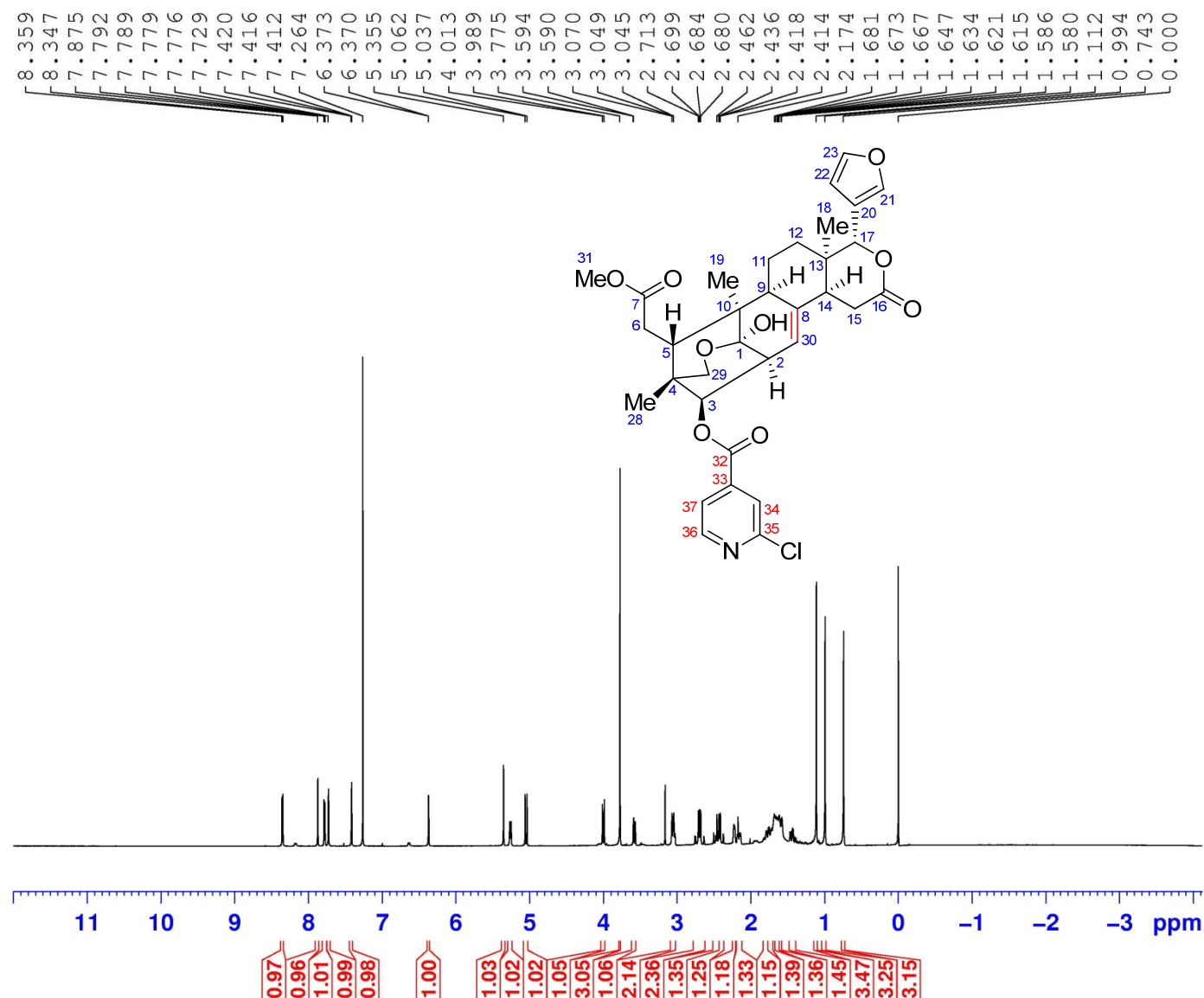
Source Type	ESI	Ion Polarity	Positive	Set Nebulizer	0.4 Bar
Focus	Active	Set Capillary	4500 V	Set Dry Heater	180 °C
Scan Begin	100 m/z	Set End Plate Offset	-500 V	Set Dry Gas	4.0 l/min
Scan End	2000 m/z	Set Charging Voltage	0 V	Set Divert Valve	Waste
		Set Corona	0 nA	Set APCI Heater	0 °C



Meas. m/z	#	Ion Formula	Score	m/z	err [ppm]	err [mDa]	mSigma	rdb	e ⁻ Conf	N-Rule
626.2156	1	C33H37ClNO9	100.00	626.2151	-0.8	-0.5	31.6	15.5	even	ok
648.1967	1	C33H36ClNNaO9	100.00	648.1971	0.5	0.3	26.0	15.5	even	ok



^1H NMR (400 MHz) spectrum of **8h** in CDCl_3

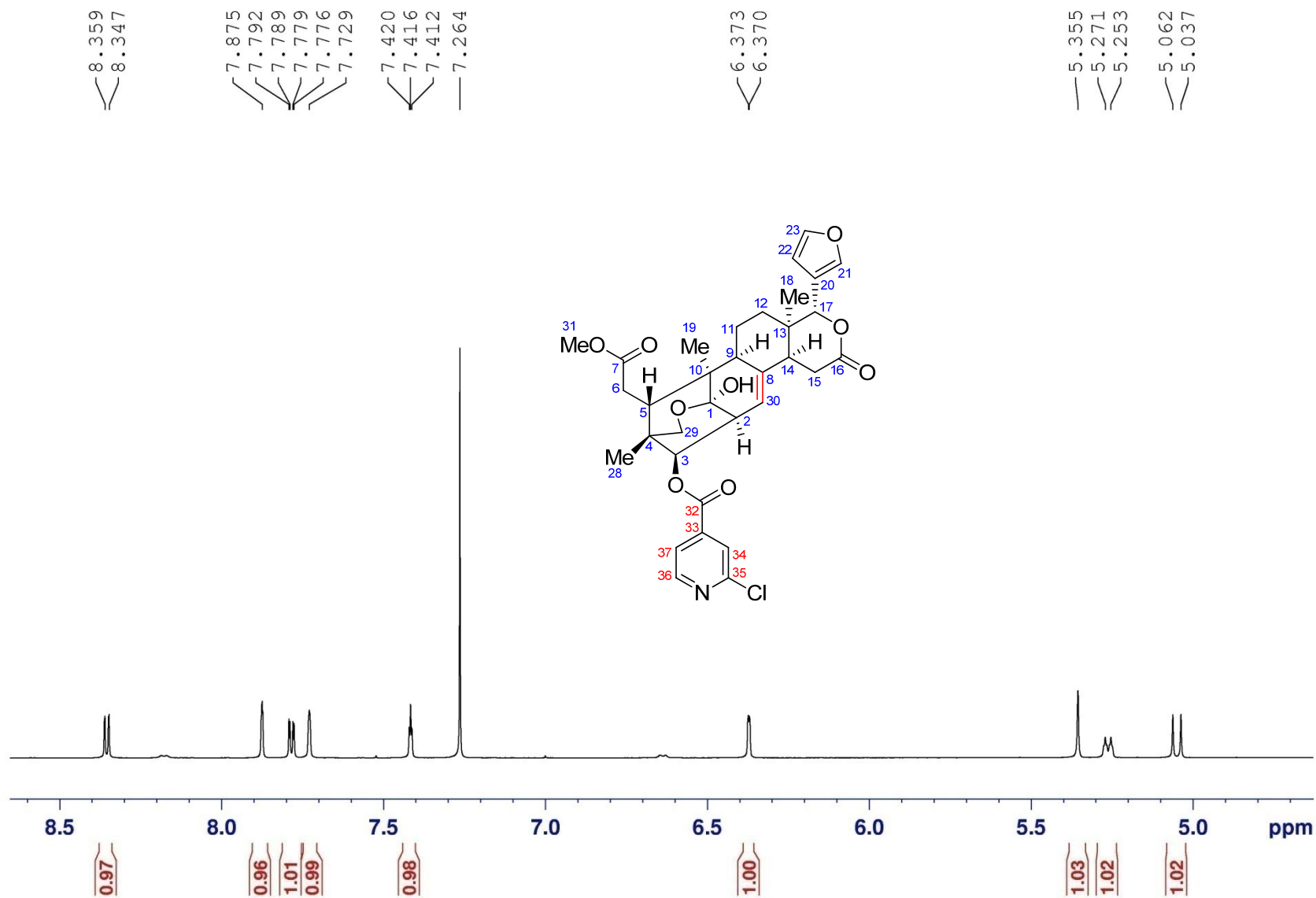


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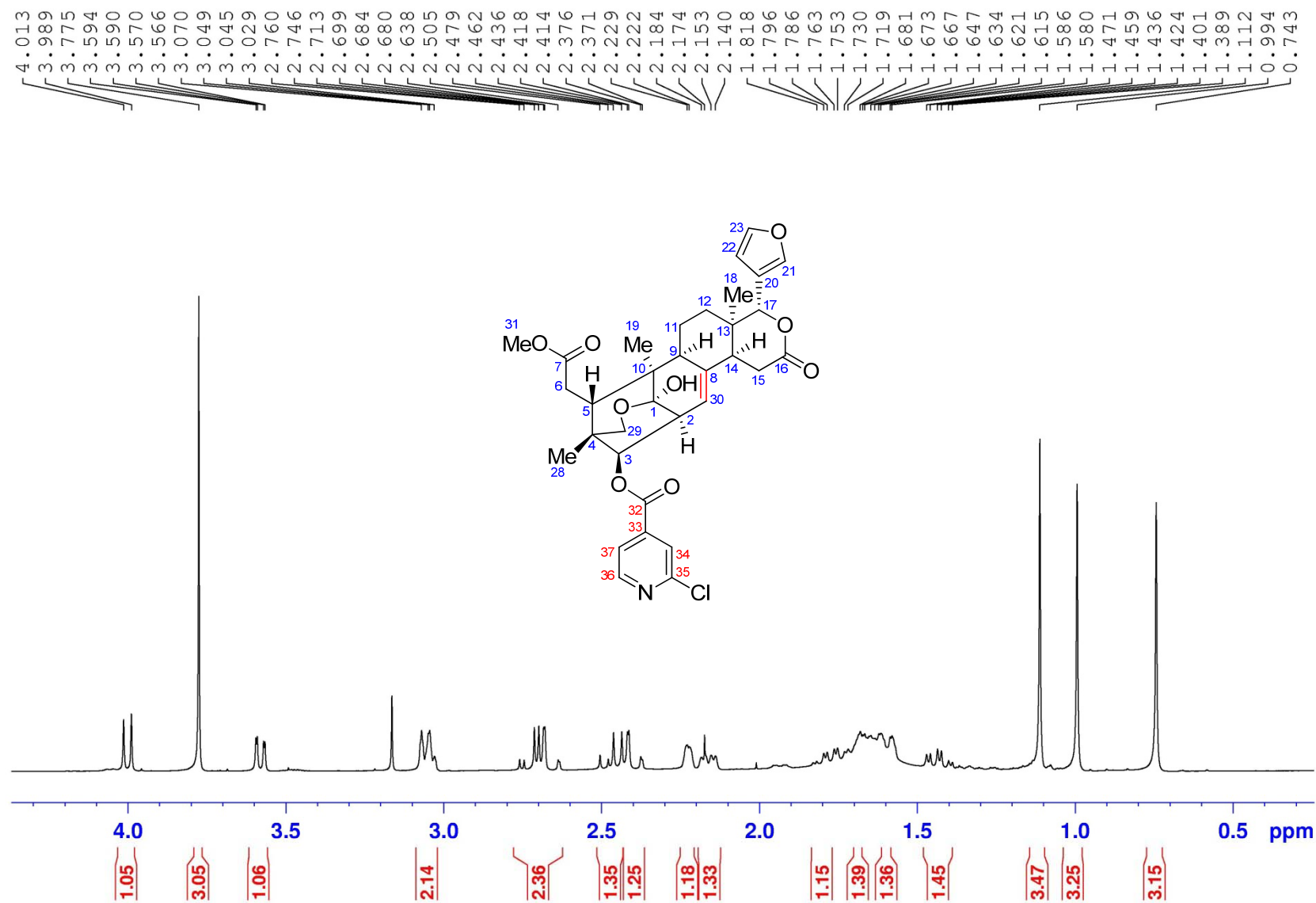
NAME      czc-1-CH3-2-Cl-yiyansuan
EXPNO     1
PROCNO    1
Date_     20171016
Time      15.29
INSTRUM   spect
PROBHD    5 mm CFPBBO BB
PULPROG   zg30
TD        65536
SOLVENT   CDCl3
NS        16
DS        2
SWH        8223.685 Hz
FIDRES     0.125483 Hz
AQ        3.9846387 sec
RG         208.5
DW         60.800 usec
DE         10.00 usec
TE         297.0 K
D1         1.00000000 sec
TD0        1

===== CHANNEL f1 =====
SFO1      400.1324710 MHz
NUC1      1H
P1        11.50 usec
SI        65536
SF        400.1300082 MHz
WDW        EM
SSB        0
LB         0.30 Hz
GB         0
PC         1.00
    
```

^1H NMR (400 MHz) spectrum of **8h** in CDCl_3

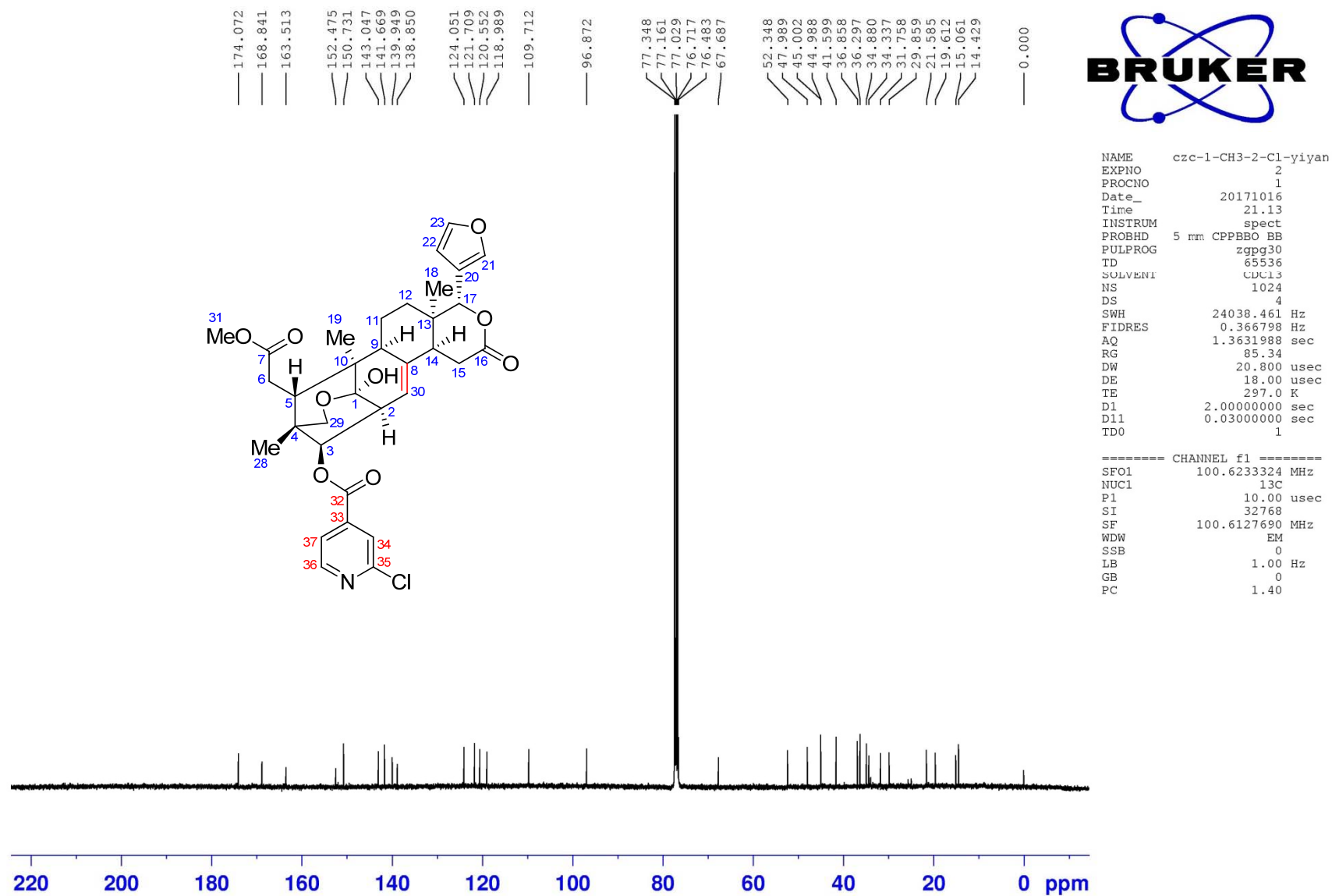


^1H NMR (400 MHz) spectrum of **8h** in CDCl_3

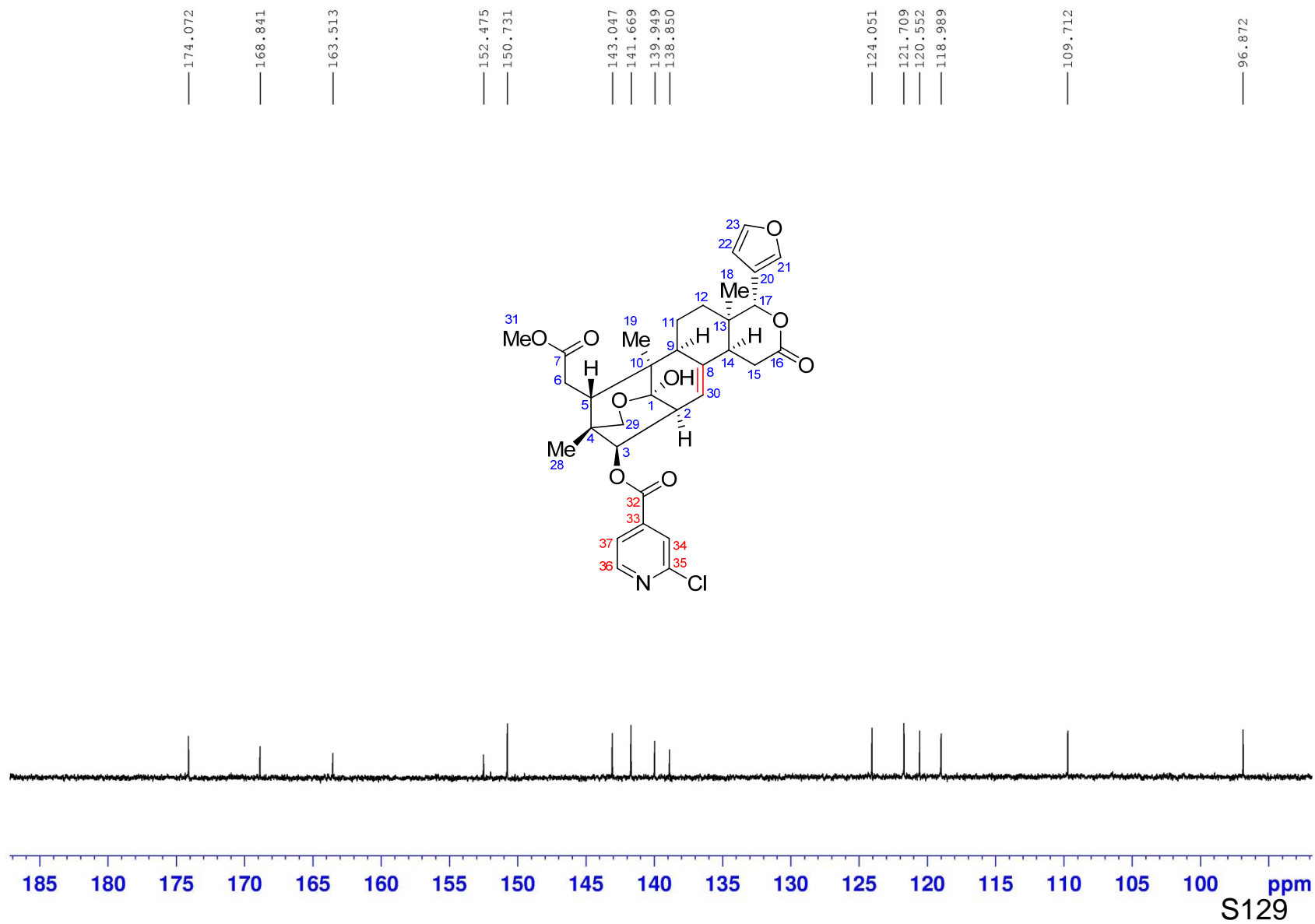


S127

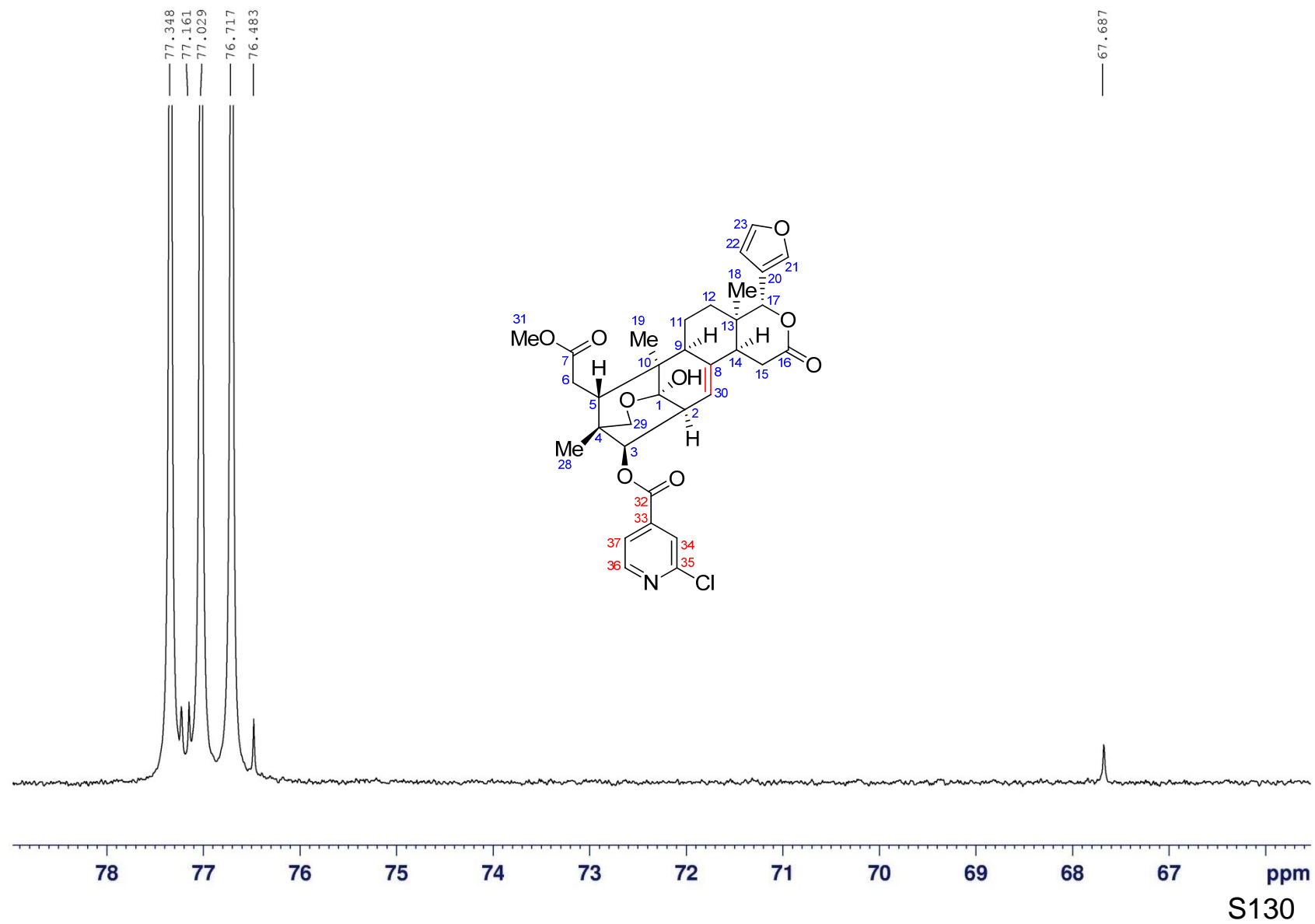
^{13}C NMR (100 MHz) spectrum of **8h** in CDCl_3



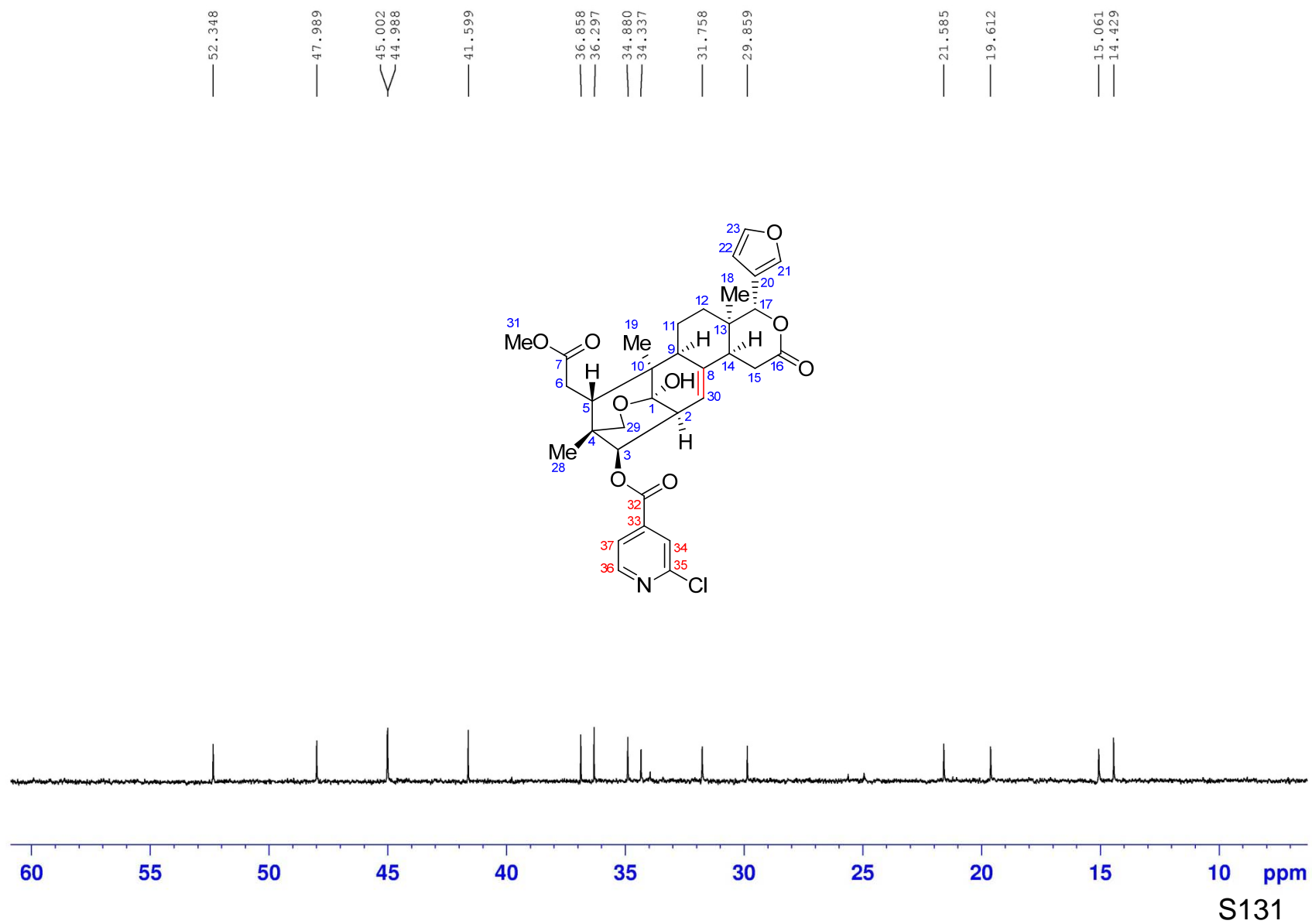
^{13}C NMR (100 MHz) spectrum of **8h** in CDCl_3



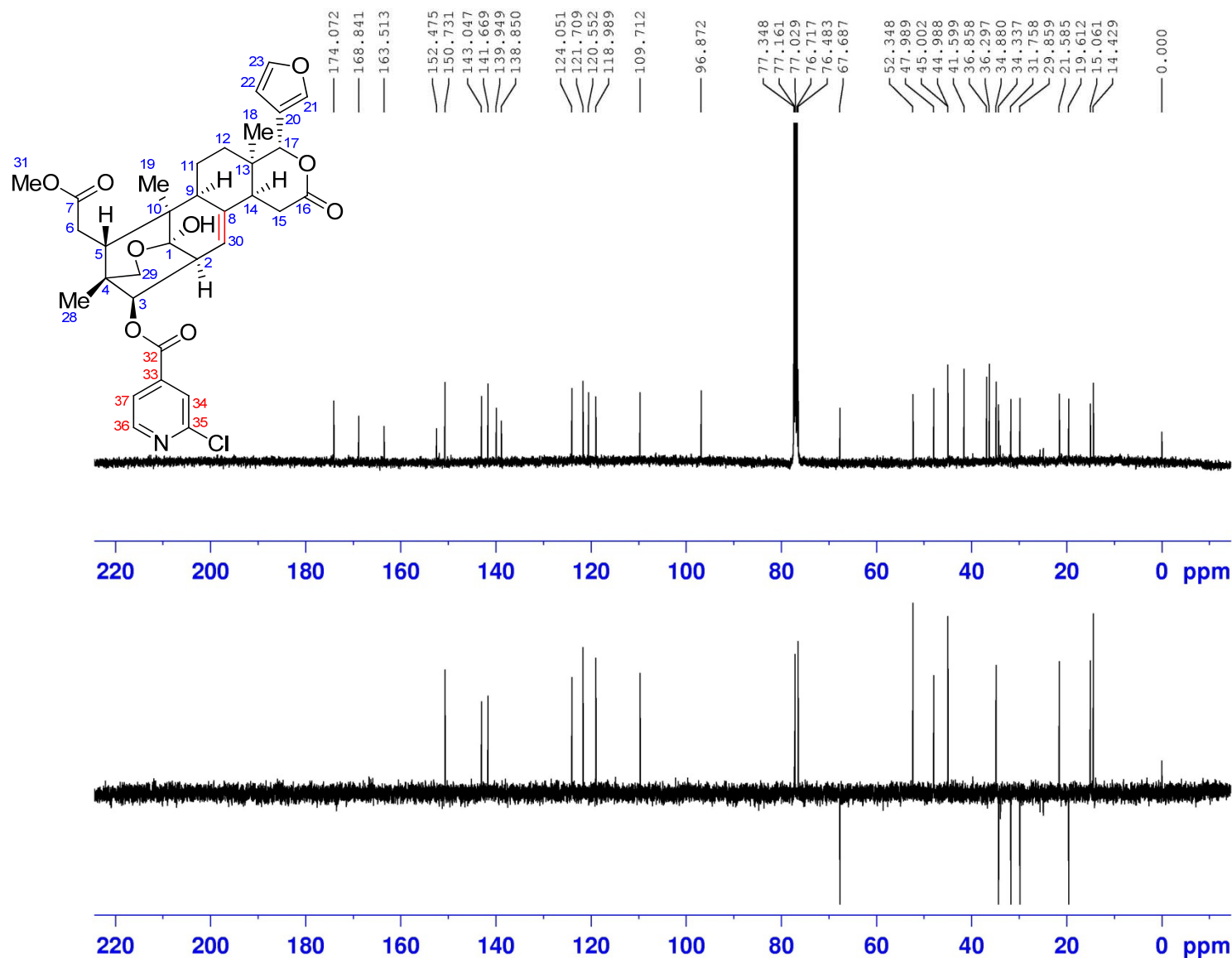
^{13}C NMR (100 MHz) spectrum of **8h** in CDCl_3



^{13}C NMR (100 MHz) spectrum of **8h** in CDCl_3



DEPT 135 spectrum of **8h** in CDCl₃



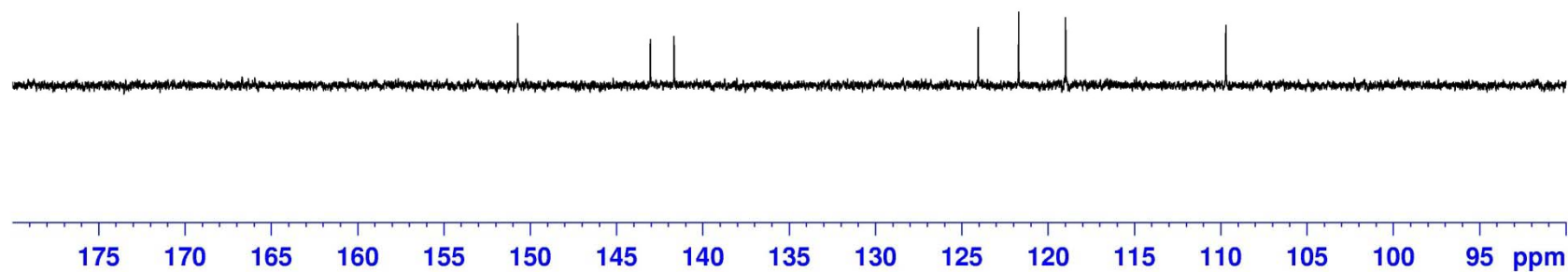
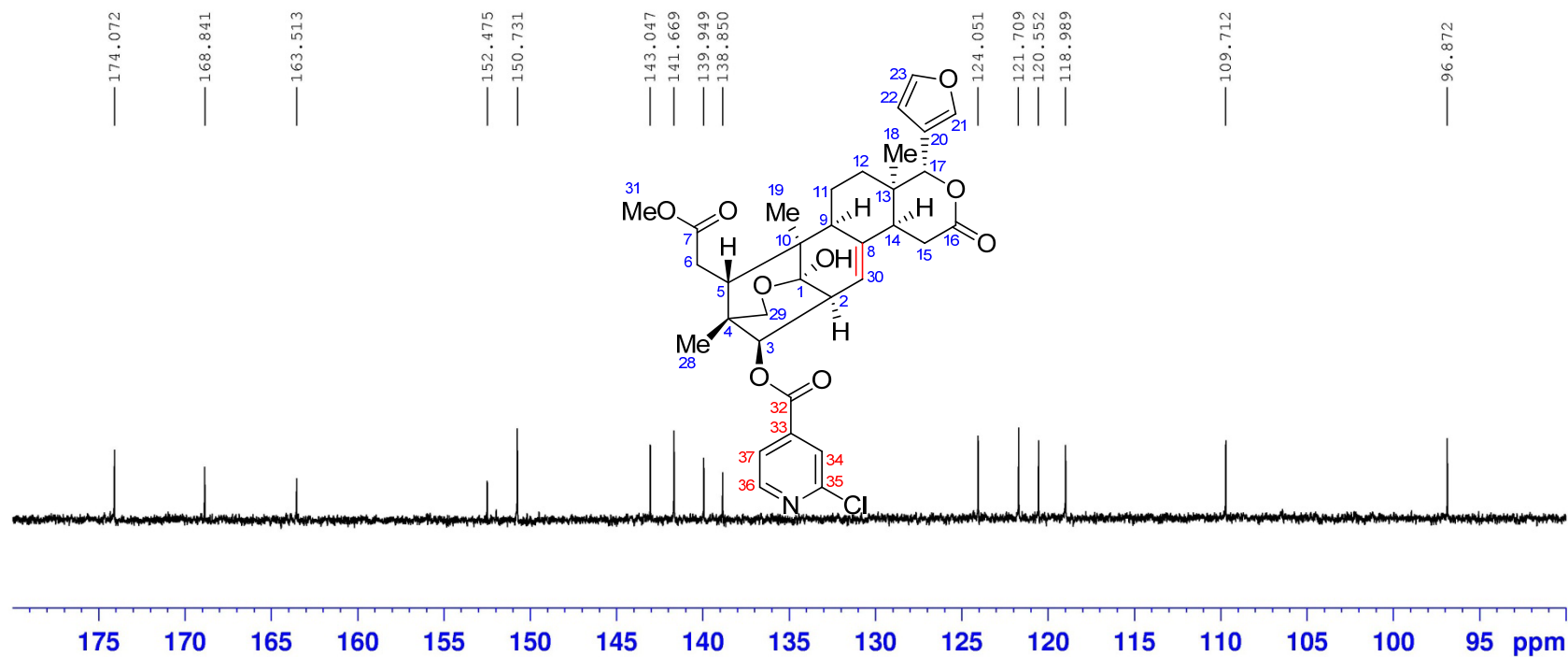
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NAME      czc-1-CH3-2-Cl-yiya
EXPNO     3
PROCNO    1
Date_     20171016
Time      21.31
INSTRUM   spect
PROBHD    5 mm CPPBBO BB
PULPROG   deptsp135
TD         65536
SOLVENT   CDCl3
NS         300
DS         4
SWH        24038.461 Hz
FIDRES     0.366798 Hz
AQ         1.3631988 sec
RG         130.26
DW         20.800 usec
DE         18.00 usec
TE         297.0 K
CNSTZ     145.0000000
D1         2.00000000 sec
D2         0.00344828 sec
D12        0.00002000 sec
TD0        1
    
```

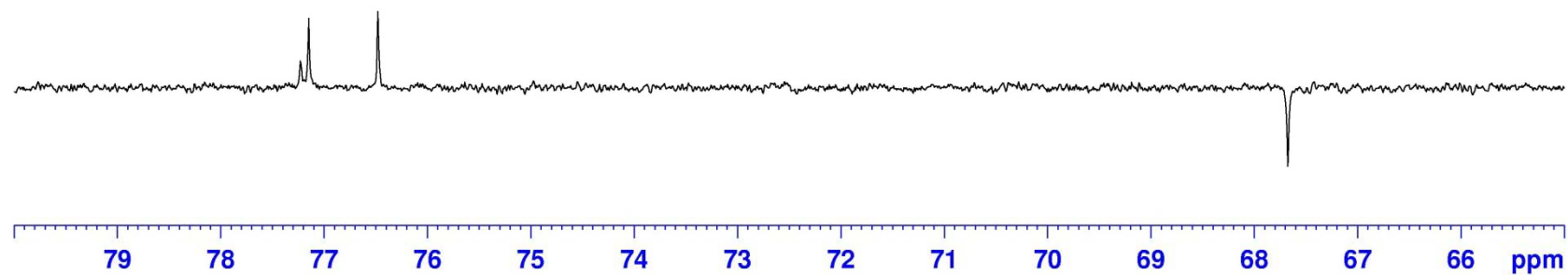
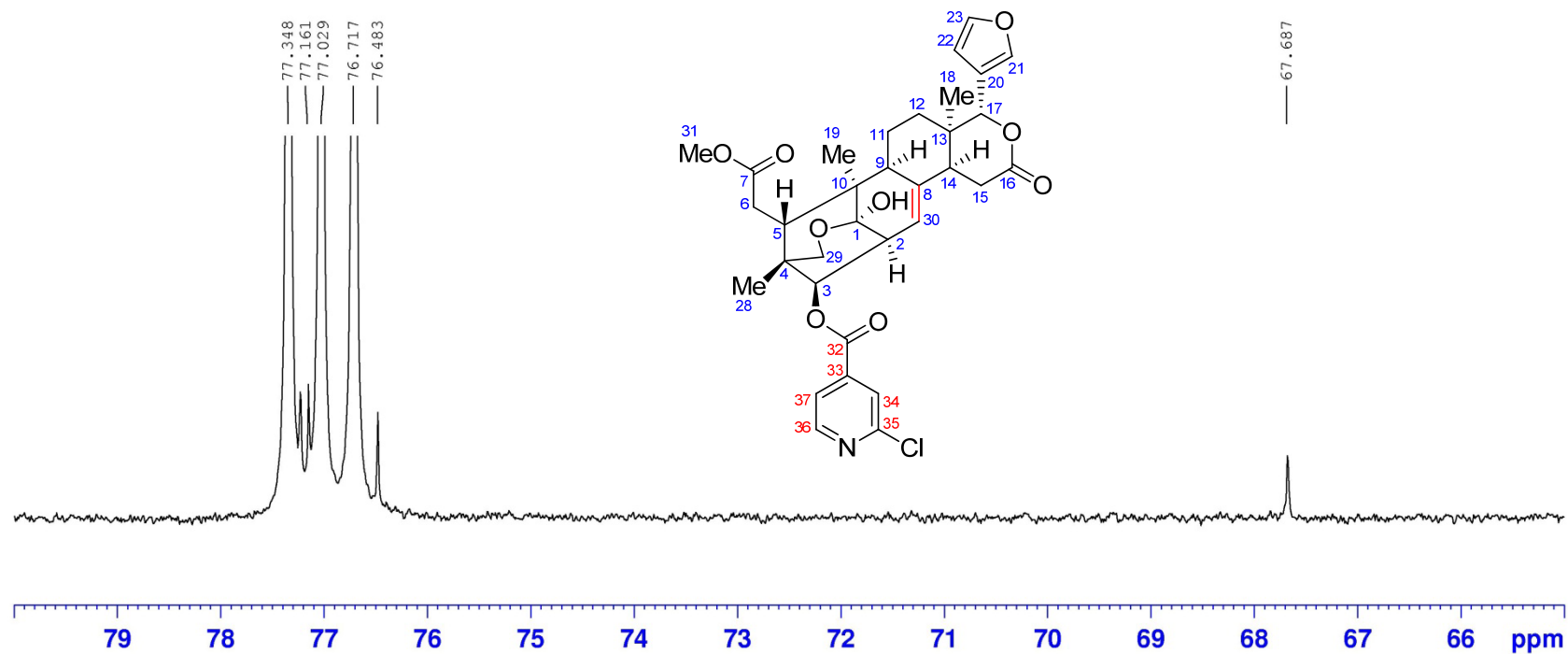
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===== CHANNEL f1 =====
SF01      100.6233324 MHz
NUC1       13C
P1         10.00 usec
P13        2000.00 usec
SI         32768
SF         100.6127691 MHz
WDW        EM
SSB        0
LB         1.00 Hz
GB         0
PC         1.40
    
```

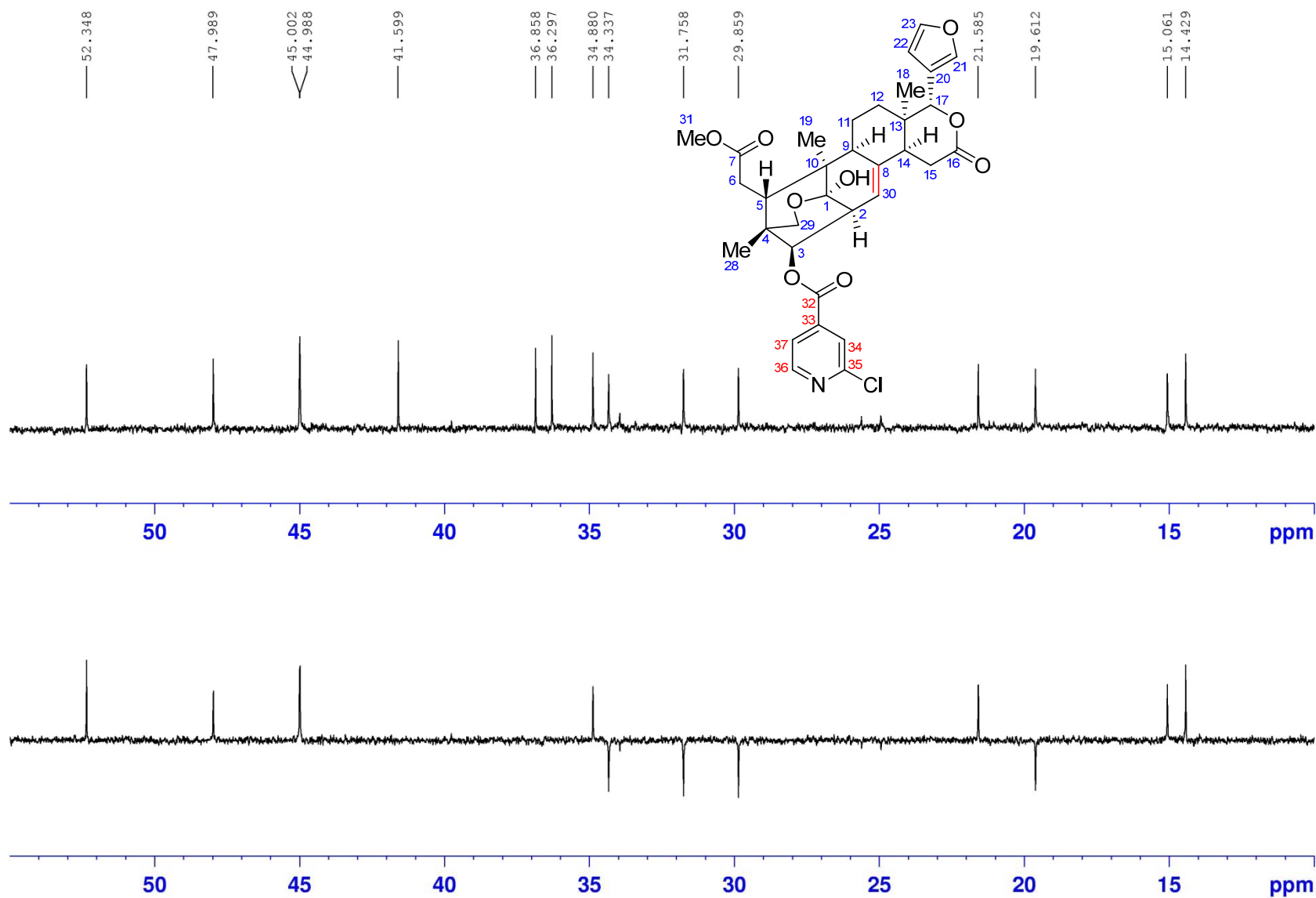
DEPT 135 spectrum of **8h** in CDCl₃



DEPT 135 spectrum of **8h** in CDCl_3



DEPT 135 spectrum of **8h** in CDCl₃



HR-ESIMS for compound **8i**

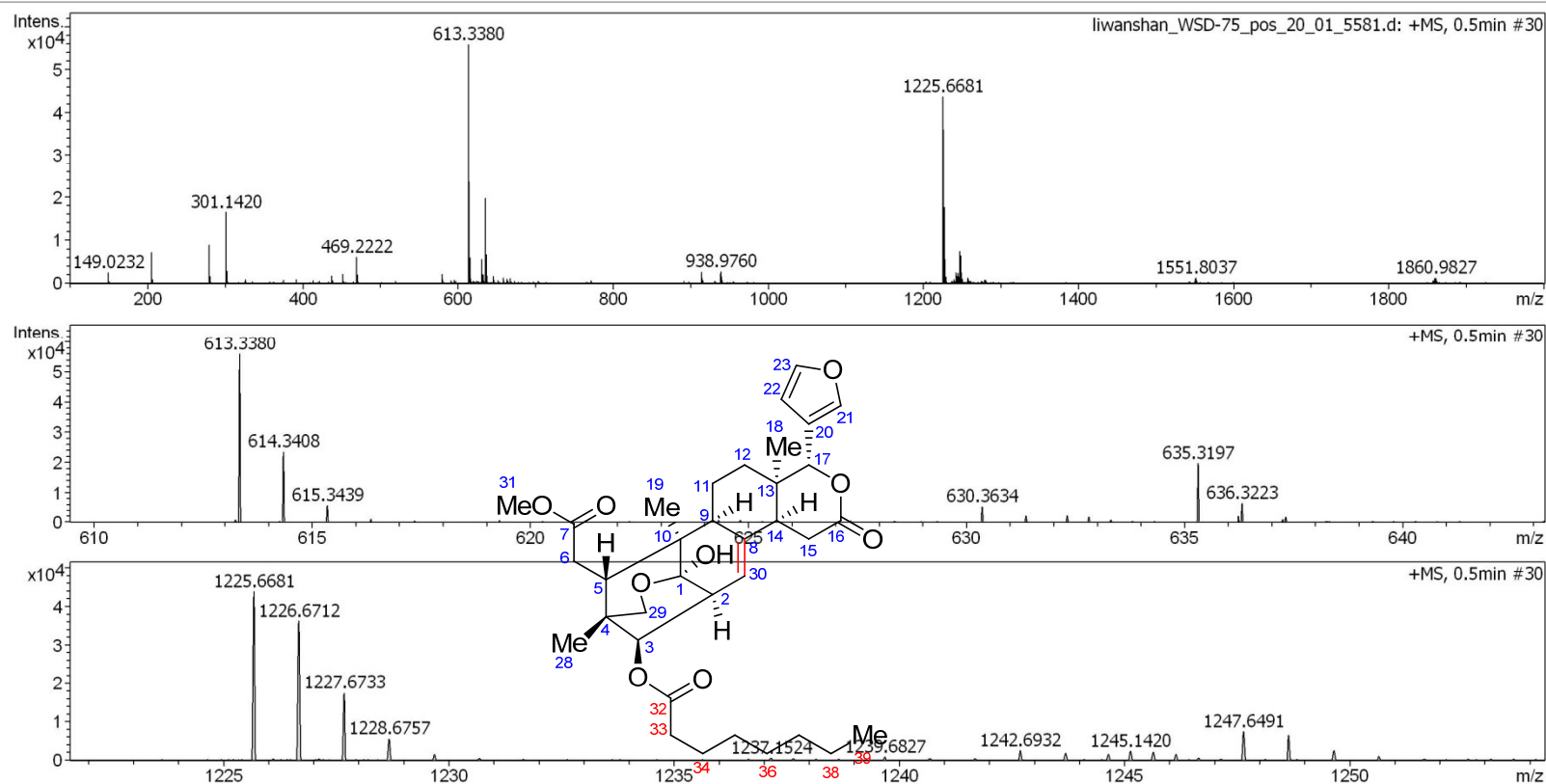
Generic Display Report

Analysis Info

Analysis Name D:\Data\MS\data\201809\liwanshan_WSD-75_pos_20_01_5581.d
Method LC_Direct Infusion_pos_100-1000mz.m
Sample Name liwanshan_WSD-75_pos
Comment

Acquisition Date 9/30/2018 6:26:21 PM

Operator SCSIO
Instrument maXis



HR-ESIMS for compound **8i**

Mass Spectrum SmartFormula Report

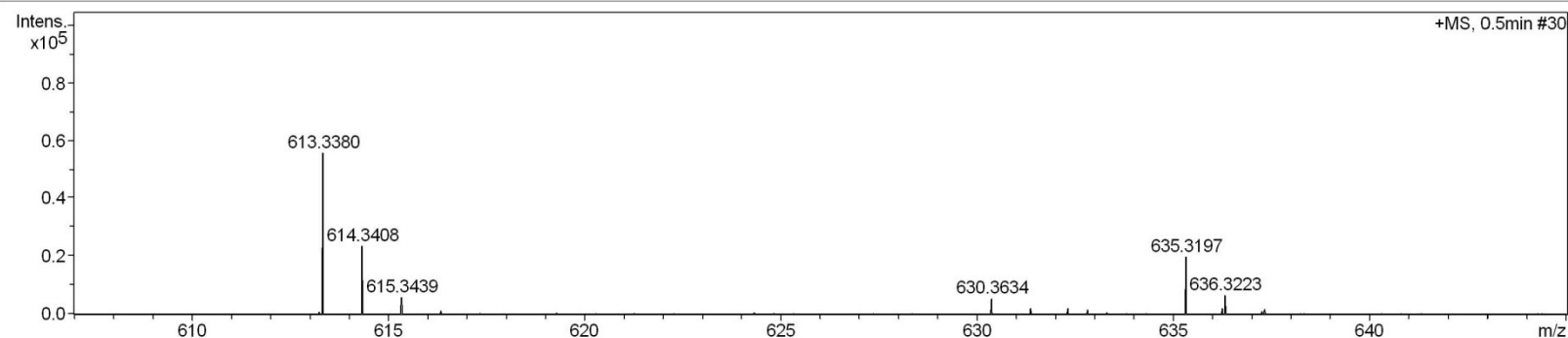
Analysis Info

Analysis Name D:\Data\MS\data\201809\liwanshan_WSD-75_pos_20_01_5581.d
 Method LC_Direct Infusion_pos_100-1000mz.m
 Sample Name liwanshan_WSD-75_pos
 Comment

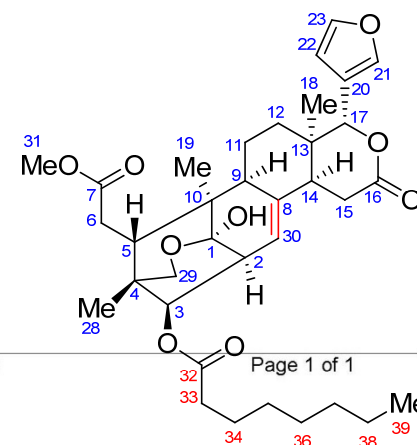
Acquisition Date 9/30/2018 6:26:21 PM
 Operator SCSIO
 Instrument maXis 255552.00029

Acquisition Parameter

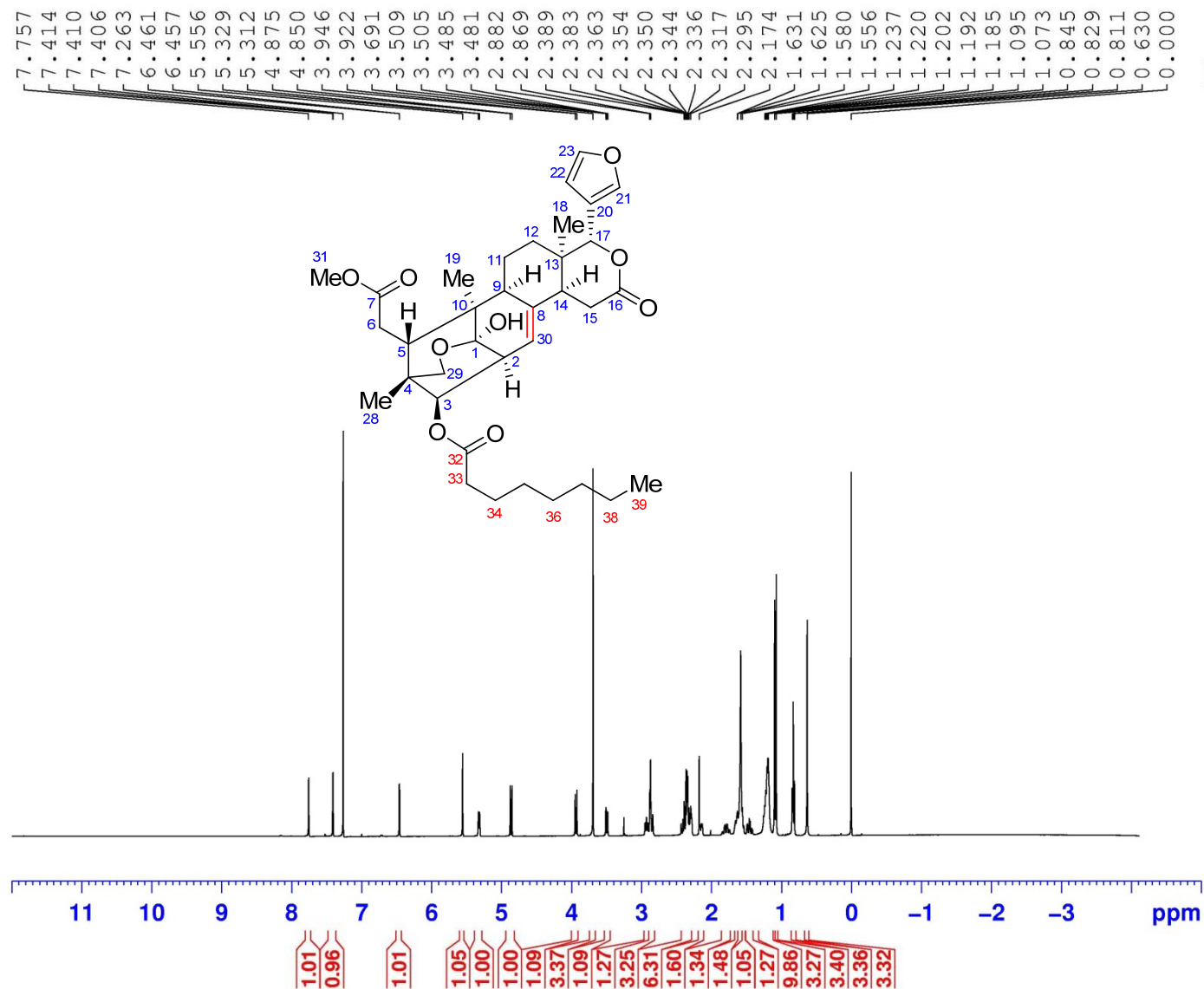
Source Type	ESI	Ion Polarity	Positive	Set Nebulizer	0.4 Bar
Focus	Active	Set Capillary	4500 V	Set Dry Heater	180 °C
Scan Begin	100 m/z	Set End Plate Offset	-500 V	Set Dry Gas	4.0 l/min
Scan End	2000 m/z	Set Charging Voltage	0 V	Set Divert Valve	Waste
		Set Corona	0 nA	Set APCI Heater	0 °C



Meas. m/z	#	Ion Formula	Score	m/z	err [ppm]	err [mDa]	mSigma	rdb	e ⁻ Conf	N-Rule
613.3380	1	C35H49O9	100.00	613.3371	-1.5	-0.9	19.6	11.5	even	ok
635.3197	1	C35H48NaO9	100.00	635.3191	-1.0	-0.6	25.4	11.5	even	ok
1225.6681	1	C70H97O18	100.00	1225.6669	-1.0	-1.2	36.0	22.5	even	ok
1247.6491	1	C70H96NaO18	100.00	1247.6489	-0.2	-0.3	39.1	22.5	even	ok



^1H NMR (400 MHz) spectrum of **8i** in CDCl_3

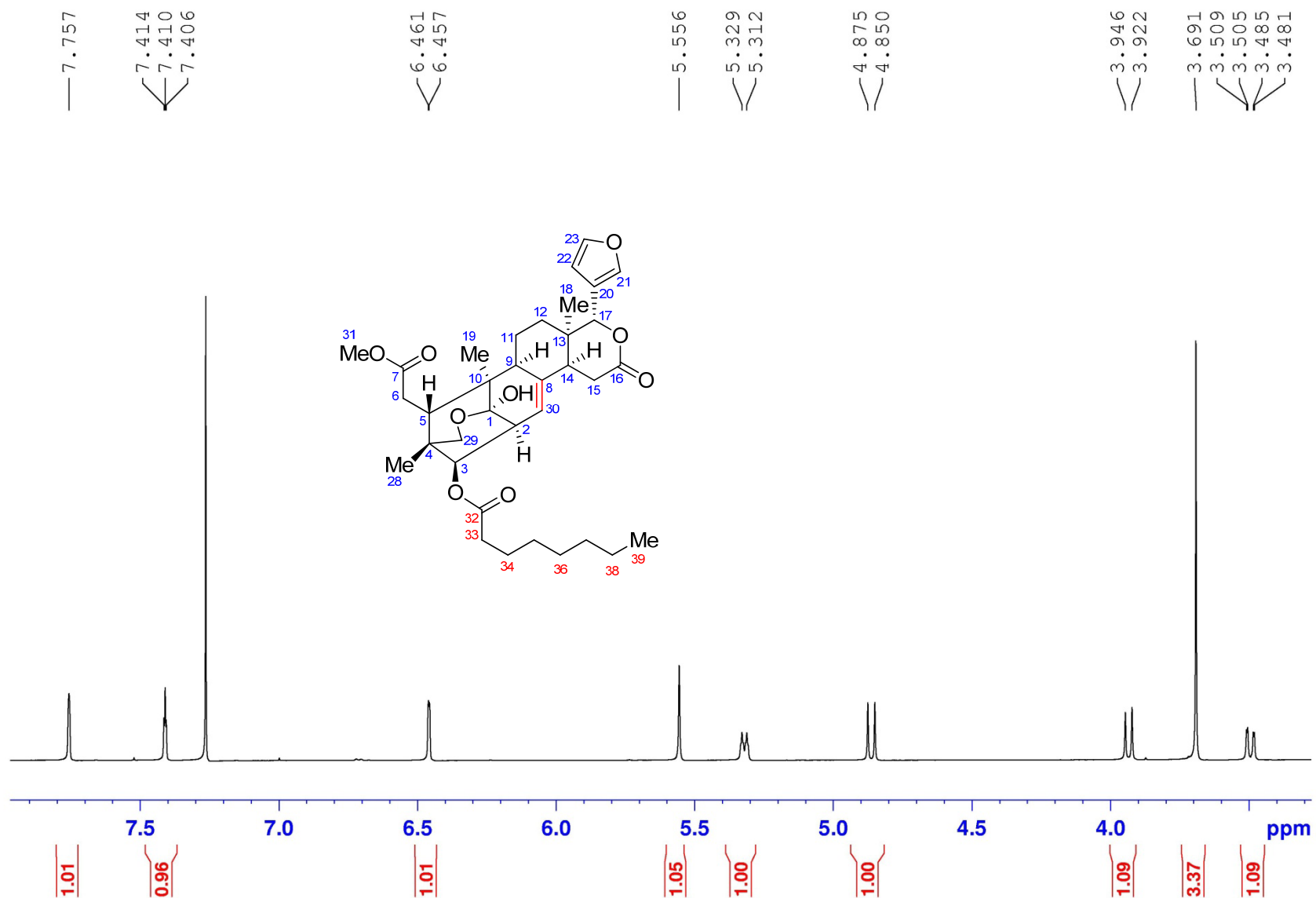


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NAME      czc-1-CH3-XINSUAN
EXPNO     1
PROCNO    1
Date_     20171017
Time      15.47
INSTRUM   spect
PROBHD    5 mm CPPBBO BB
PULPROG   zg30
TD        65536
SOLVENT   CDCl3
NS         16
DS         2
SWH       8223.685 Hz
FIDRES    0.125483 Hz
AQ        3.9846387 sec
RG         208.5
DW        60.800 usec
DE        10.00 usec
TE        297.0 K
D1        1.00000000 sec
TD0        1

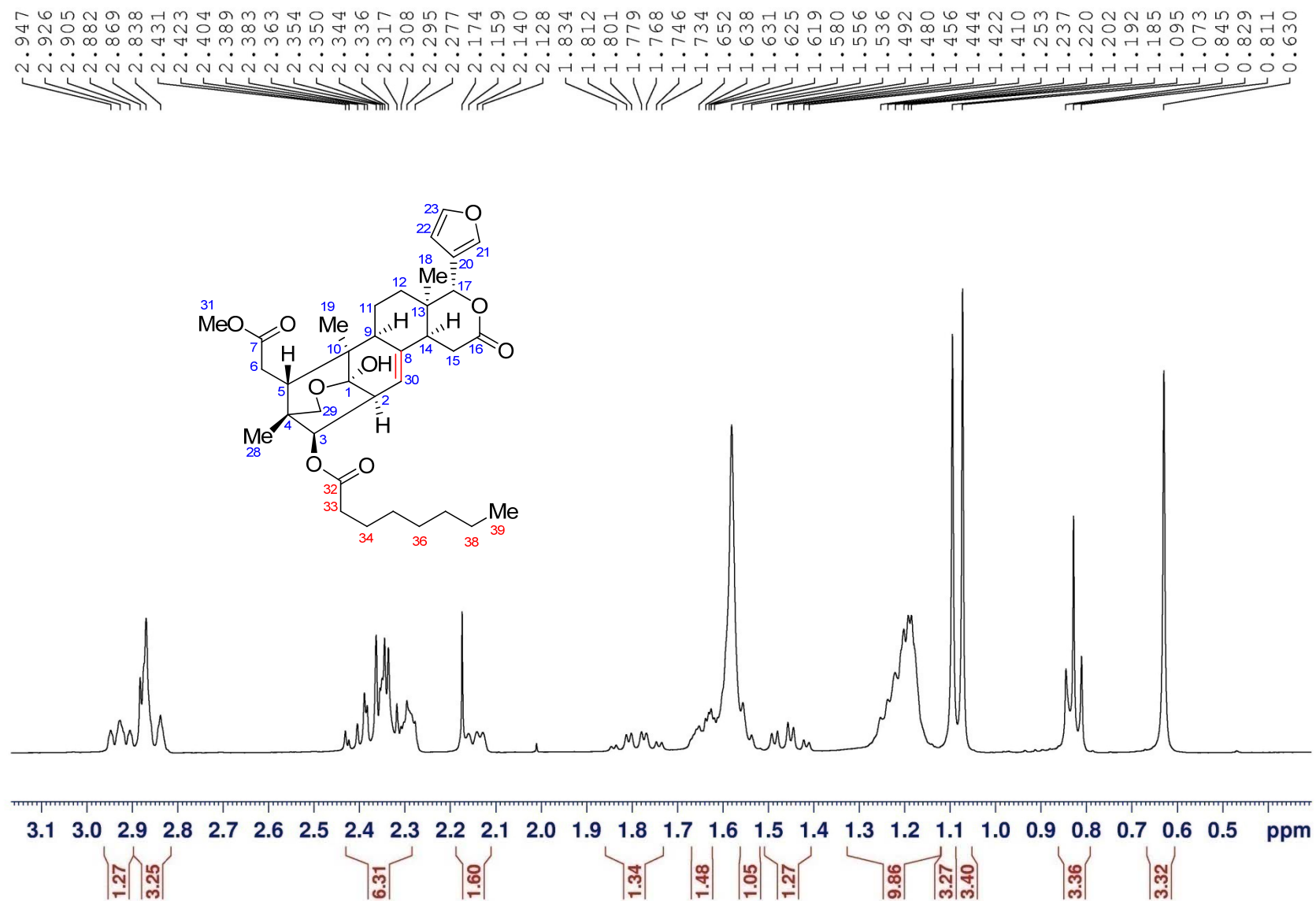
===== CHANNEL f1 =====
SF01      400.1324710 MHz
NUC1       1H
P1        11.50 usec
SI        65536
SF        400.1300085 MHz
WDW        EM
SSB        0
LB         0.30 Hz
GB         0
PC         1.00
    
```


^1H NMR (400 MHz) spectrum of **8i** in CDCl_3

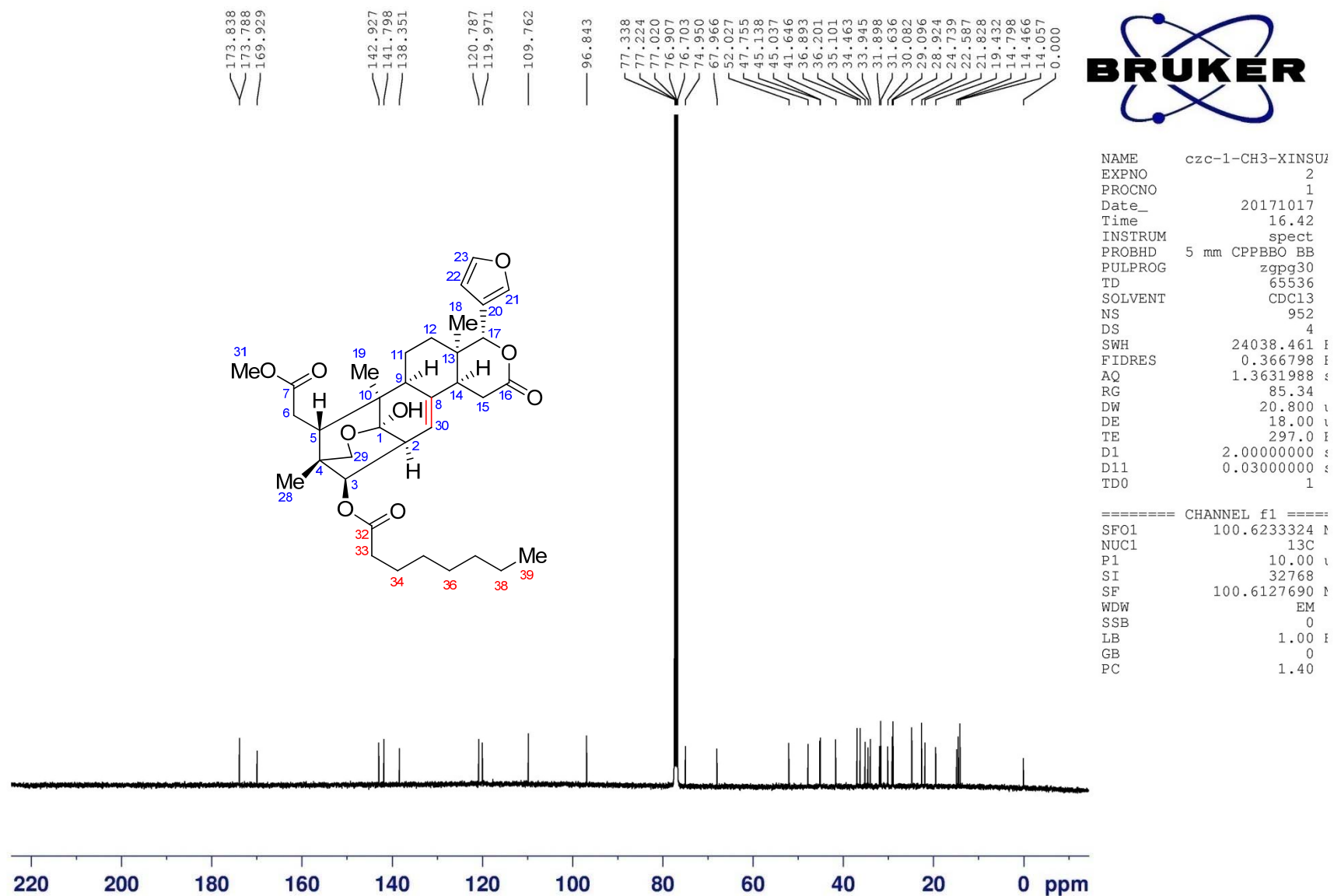


S139

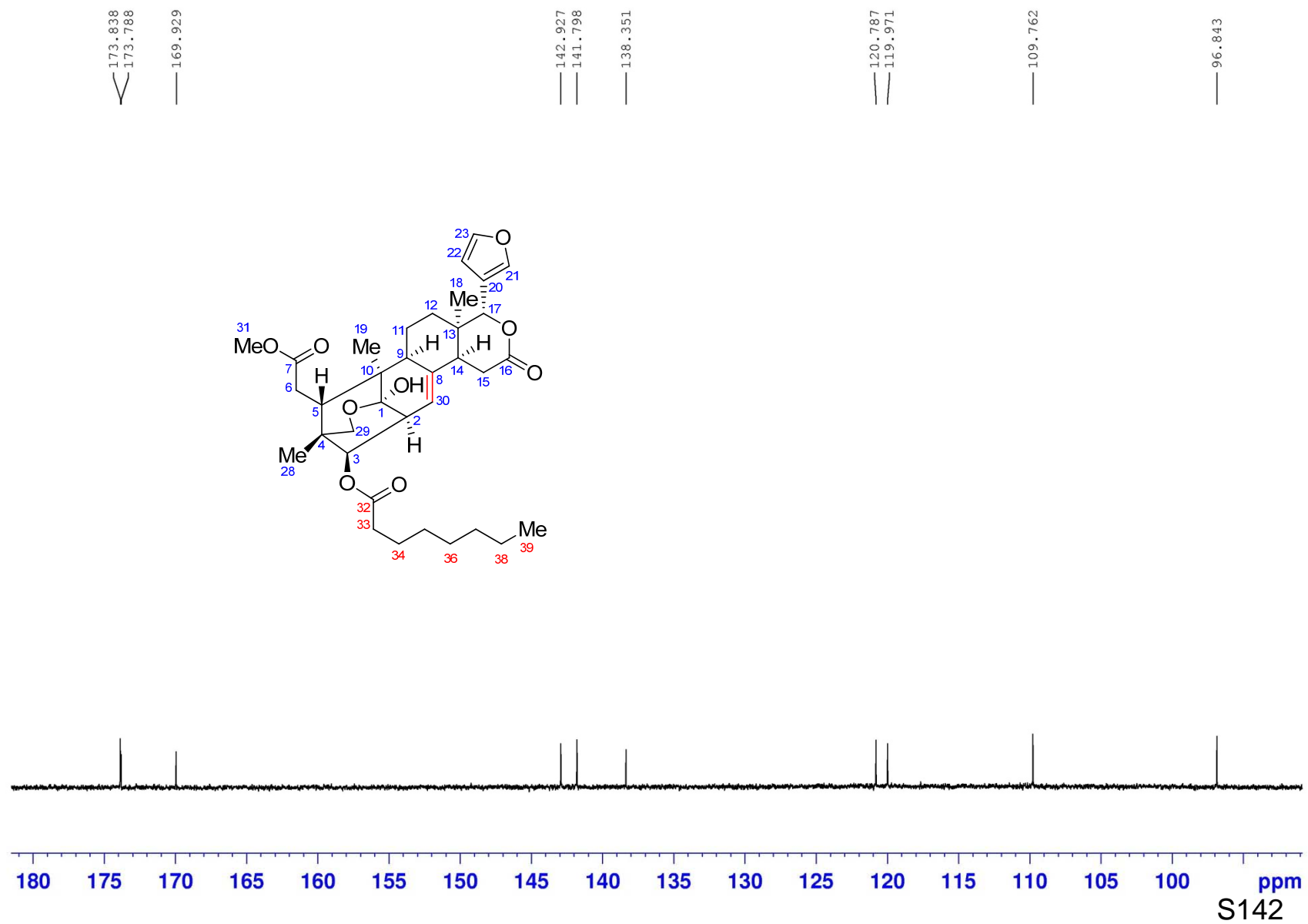
^1H NMR (400 MHz) spectrum of **8i** in CDCl_3



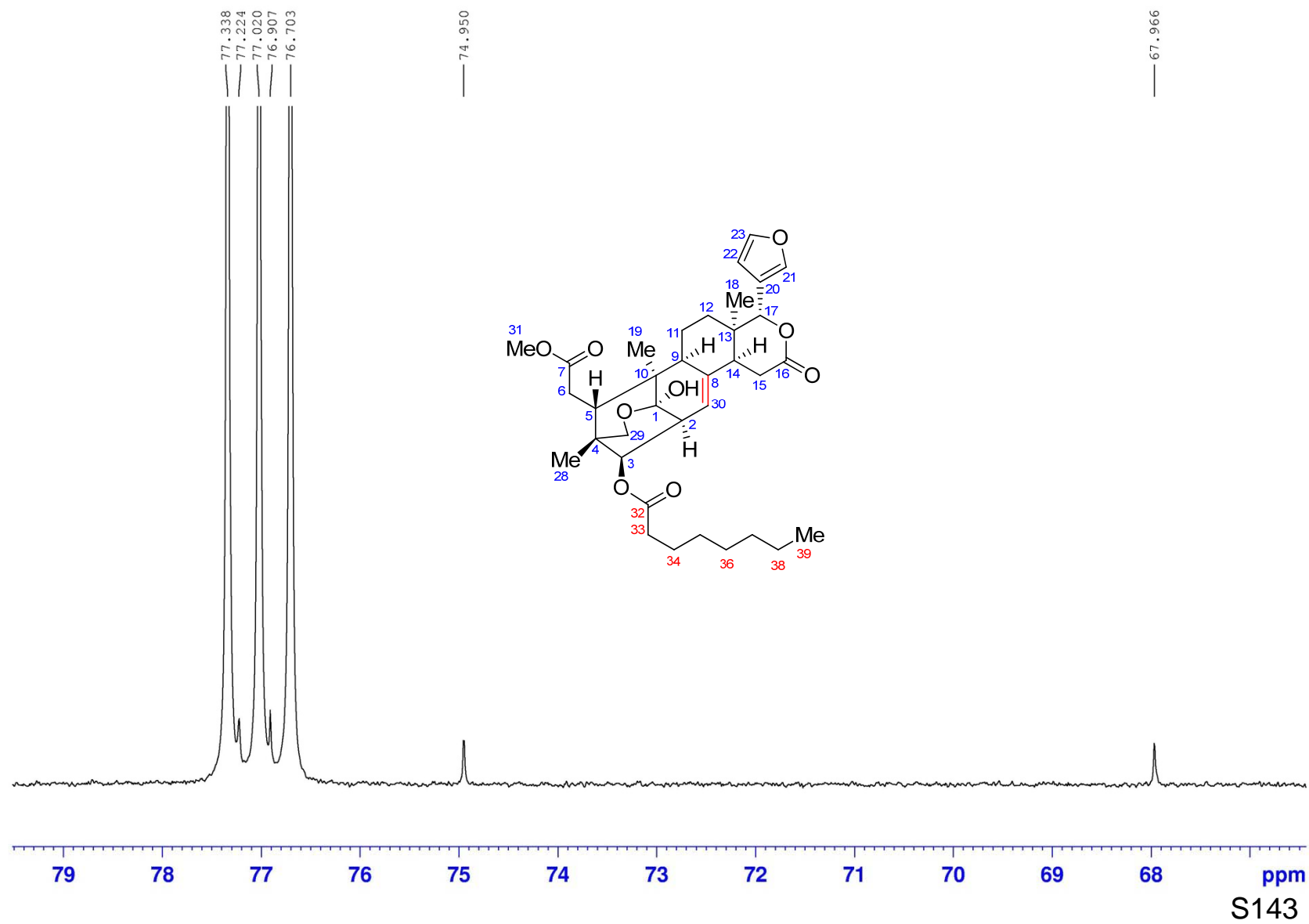
^{13}C NMR (100 MHz) spectrum of **8i** in CDCl_3



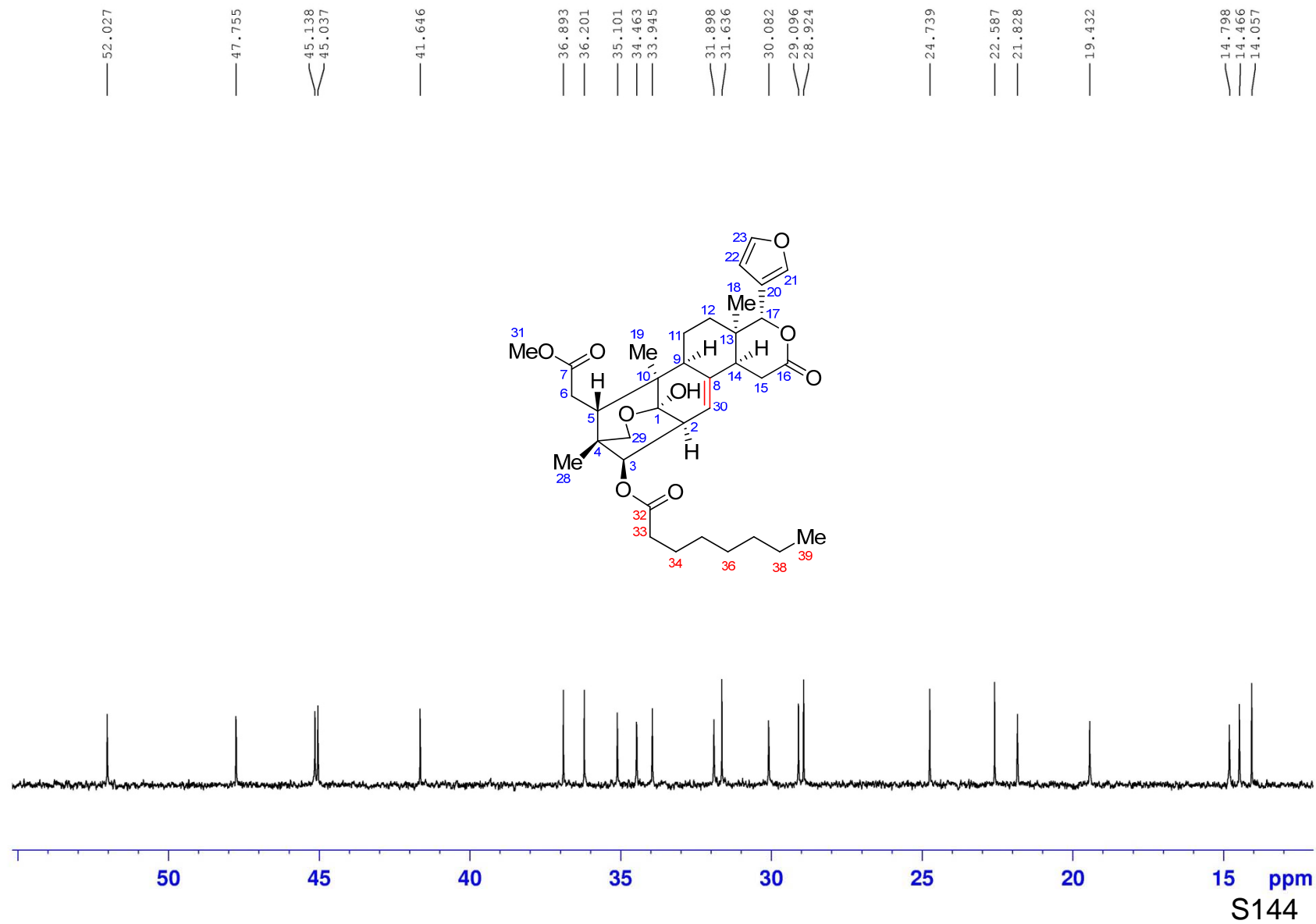
^{13}C NMR (100 MHz) spectrum of **8i** in CDCl_3



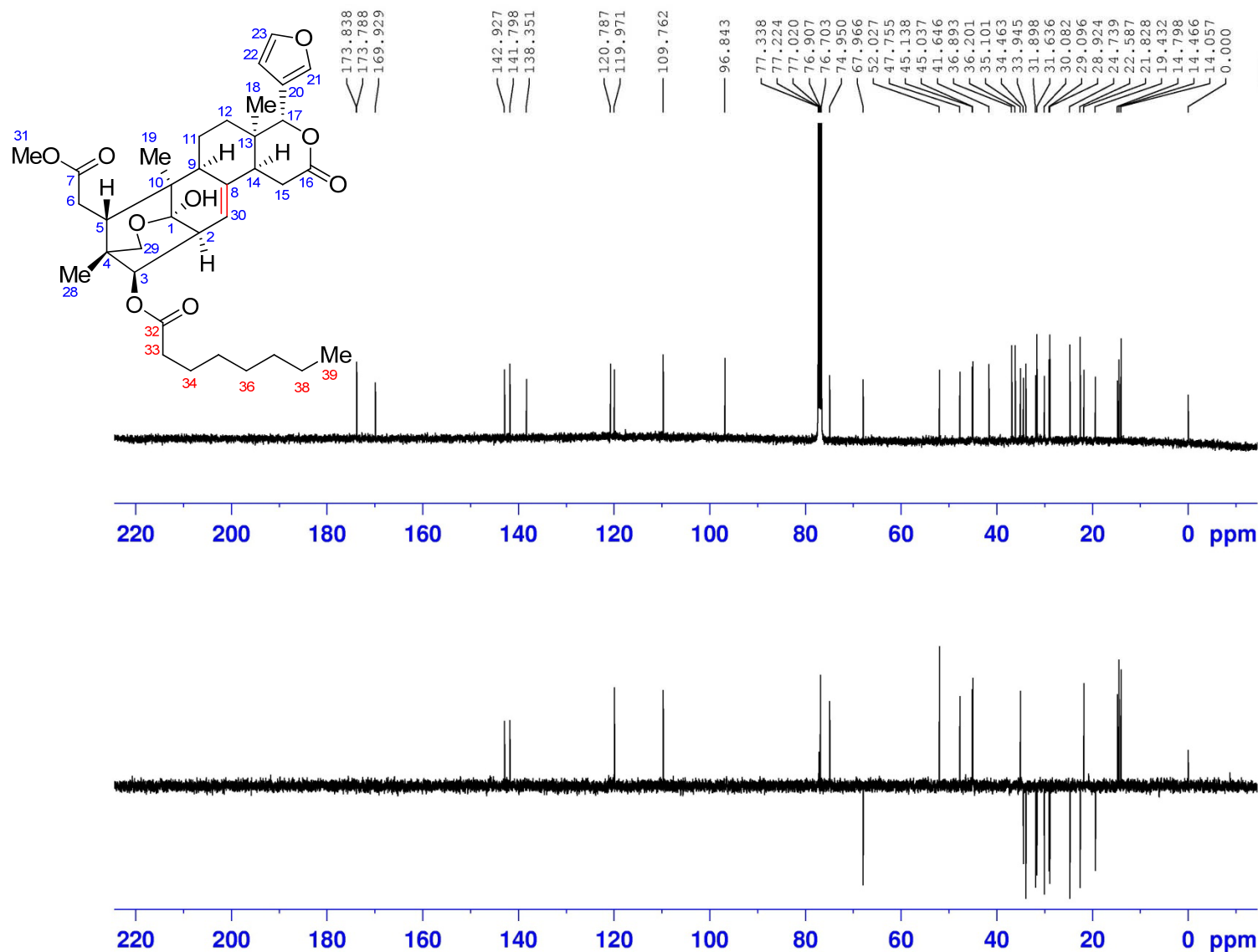
^{13}C NMR (100 MHz) spectrum of **8i** in CDCl_3



^{13}C NMR (100 MHz) spectrum of **8i** in CDCl_3



DEPT 135 spectrum of **8i** in CDCl₃



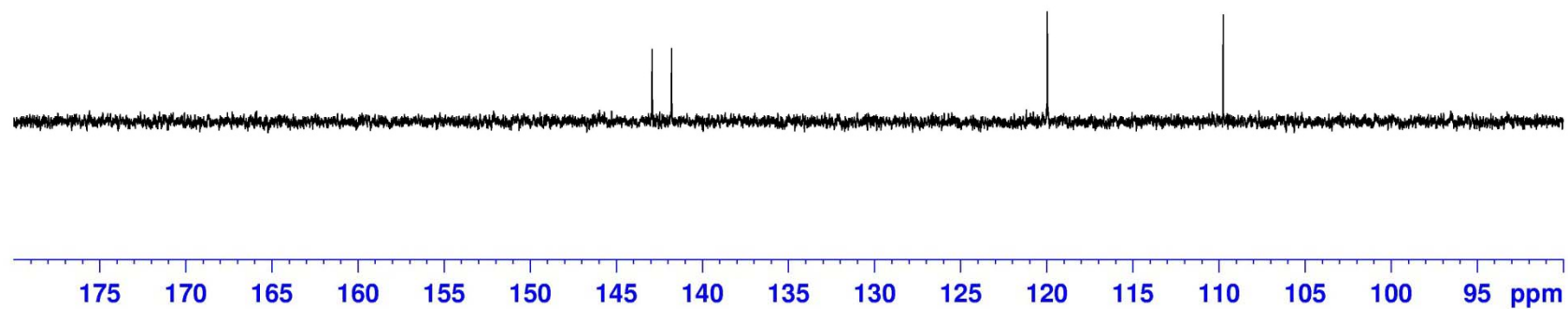
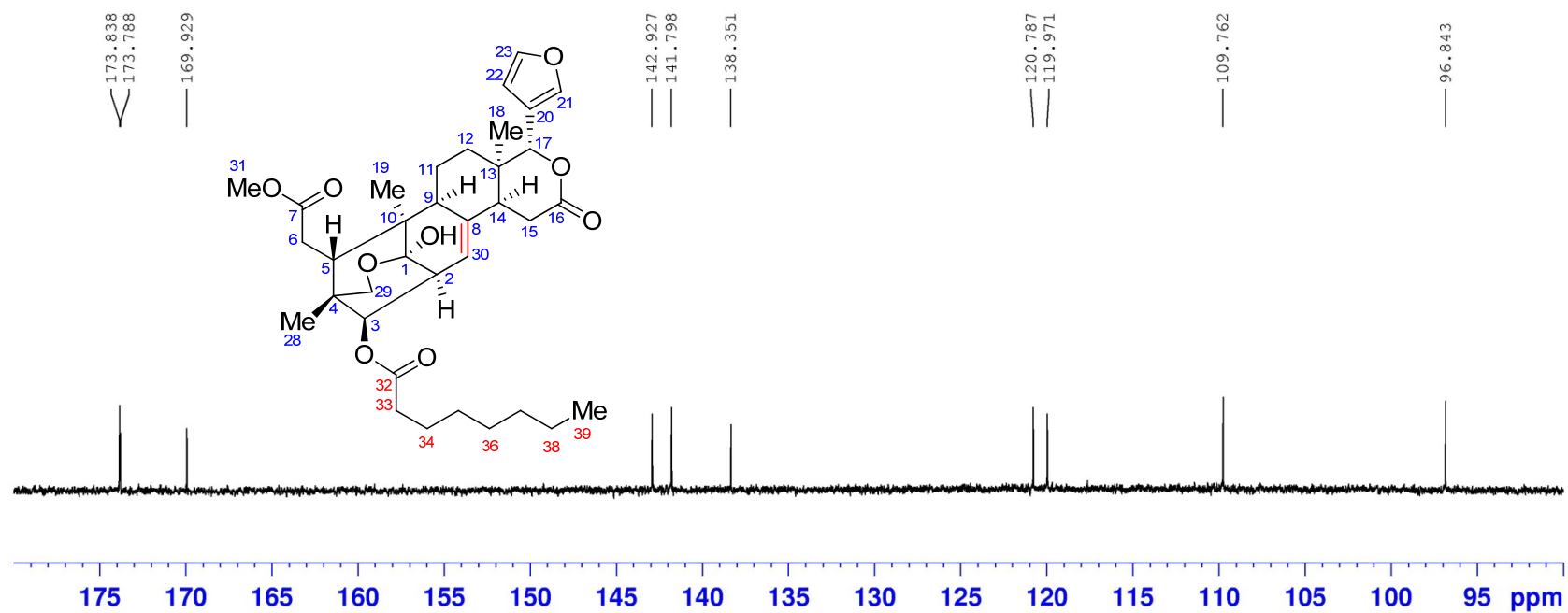
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NAME      czc-1-CH3-XINSU
EXPNO      3
PROCNO     1
Date_      20171017
Time       16.44
INSTRUM    spect
PROBHD     5 mm CPPBBO BB
PULPROG    deptsp135
TD         65536
SOLVENT    CDCl3
NS         300
DS         4
SWH         24038.461
FIDRES     0.366798
AQ         1.3631988
RG         85.34
DW         20.800
DE         18.00
TE         297.0
CNST2      145.0000000
D1         2.00000000
D2         0.00344828
D12        0.00002000
TD0        1
    
```

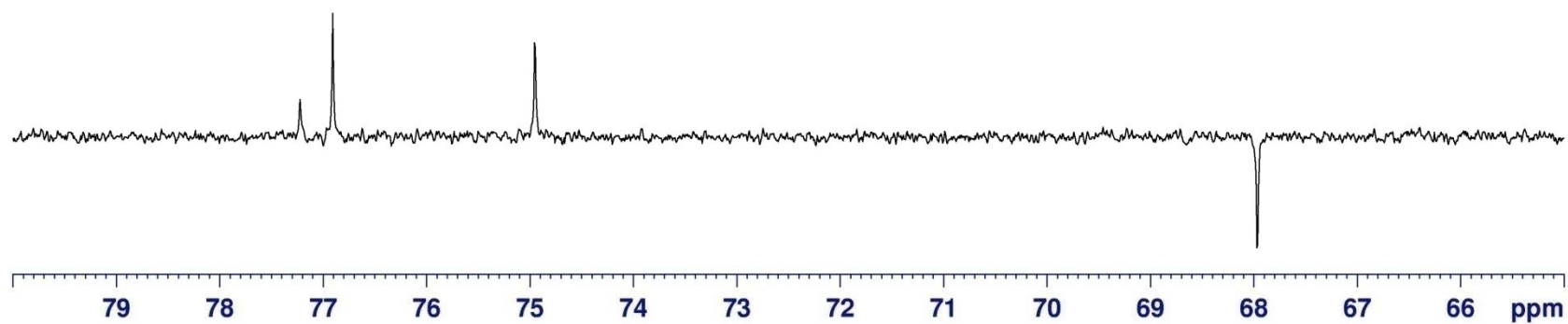
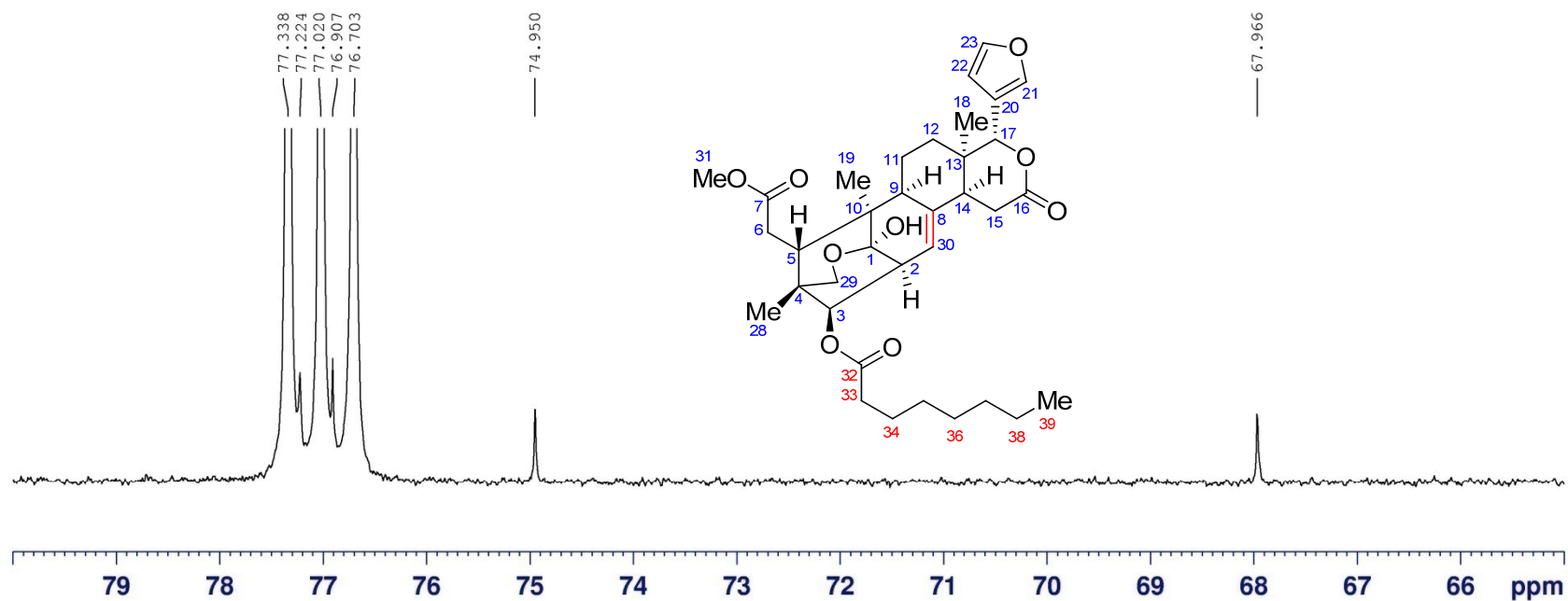
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===== CHANNEL f1 =====
SF01      100.6233324
NUC1       13C
P1         10.00
P13        2000.00
SI         32768
SF         100.6127690
WDW        EM
SSB        0
LB         1.00
GB         0
PC         1.40
    
```

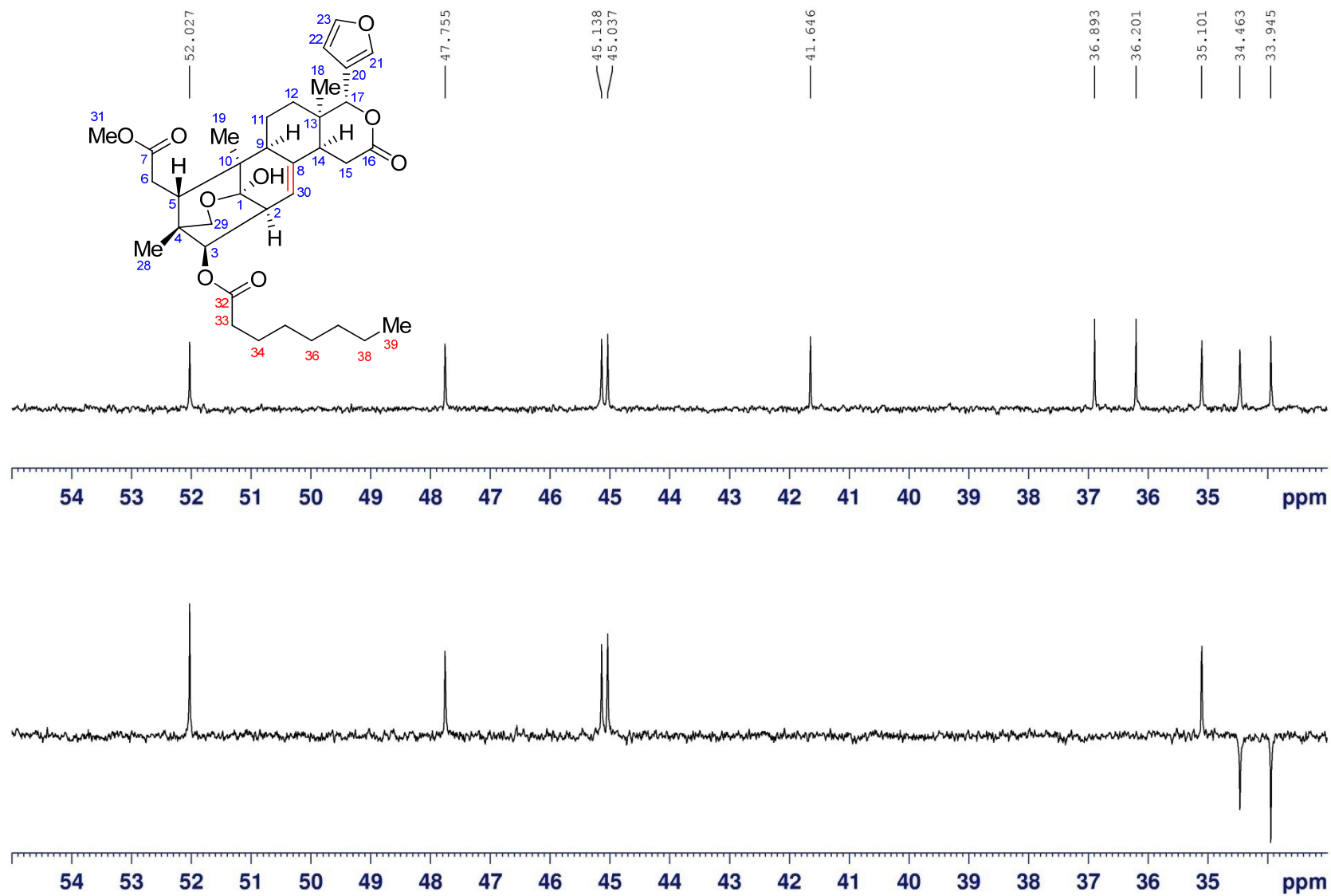
DEPT 135 spectrum of **8i** in CDCl₃



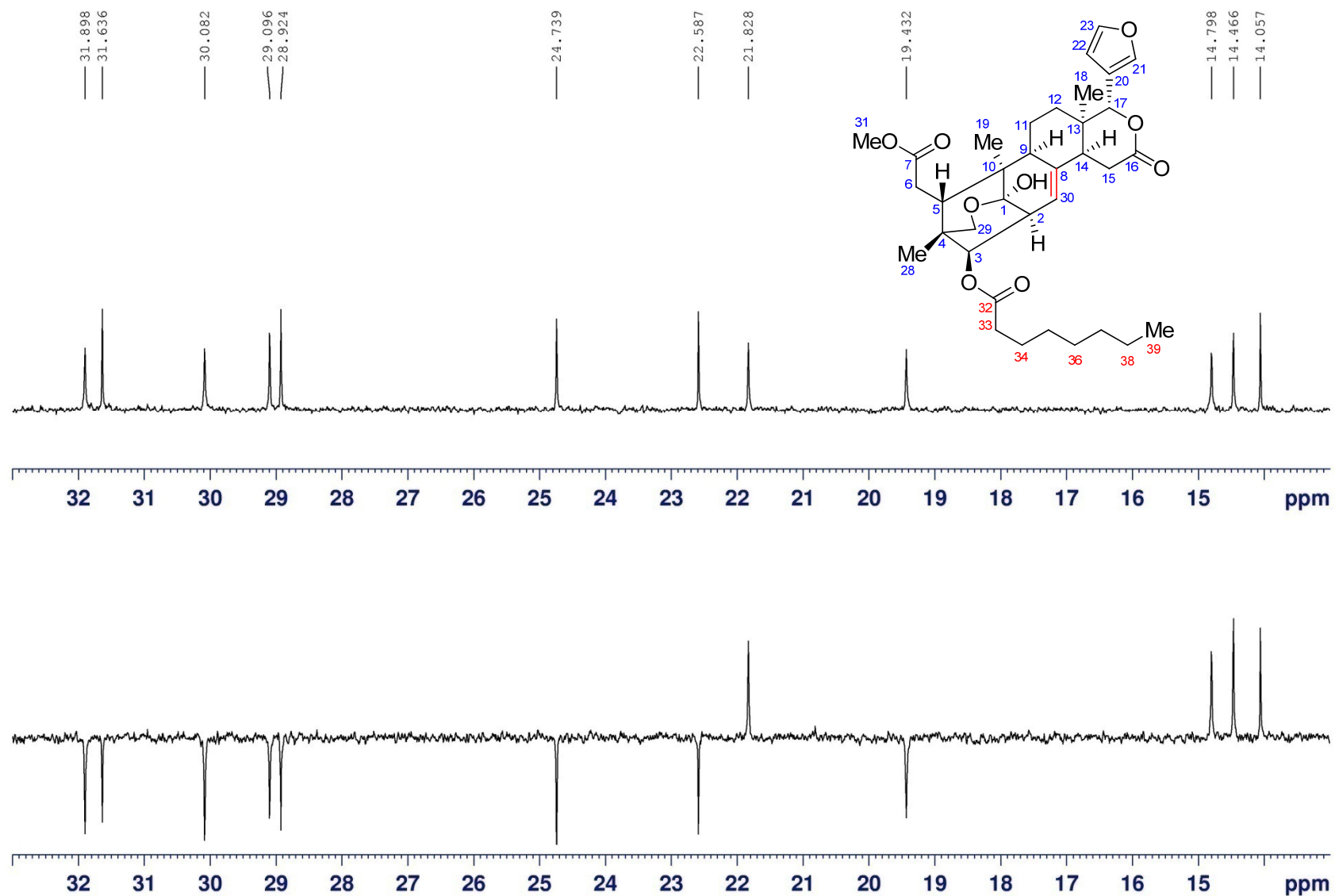
DEPT 135 spectrum of **8i** in CDCl₃



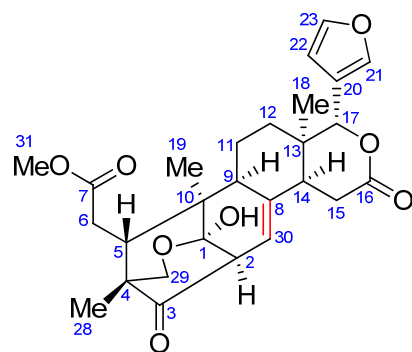
DEPT 135 spectrum of **8i** in CDCl₃



DEPT 135 spectrum of **8i** in CDCl₃

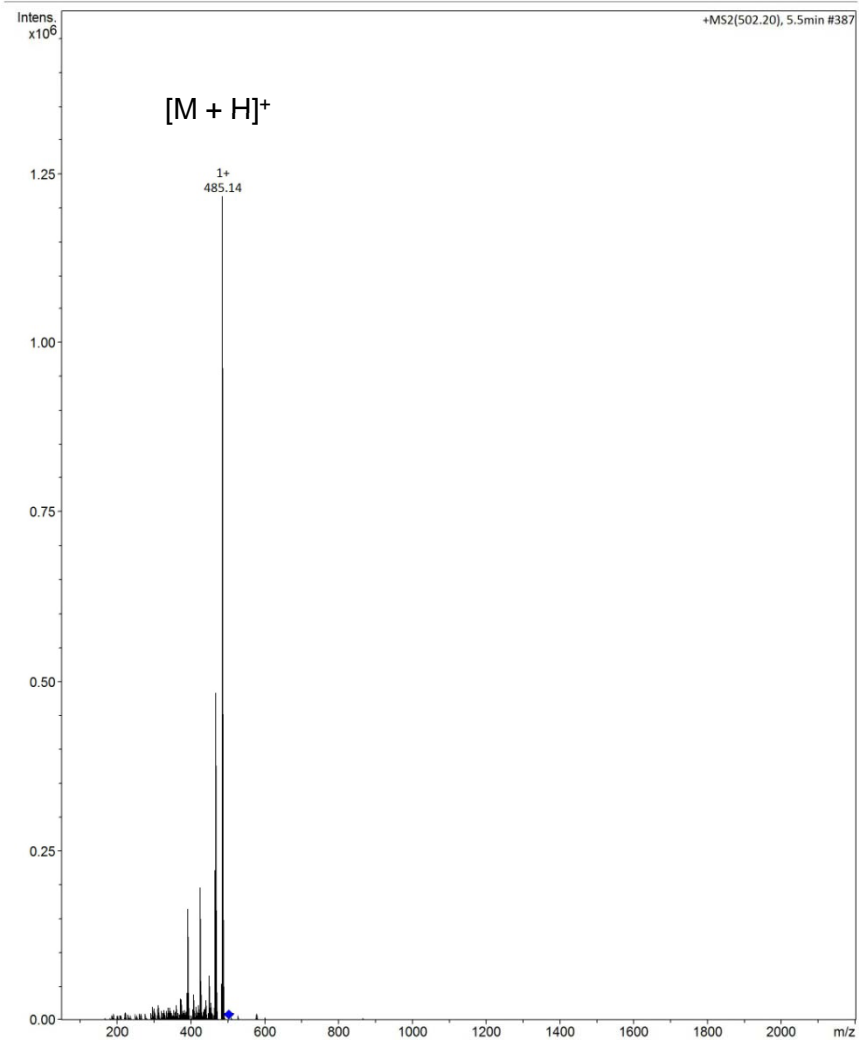


LR-ESIMS for compound **9**



Generic Display Report

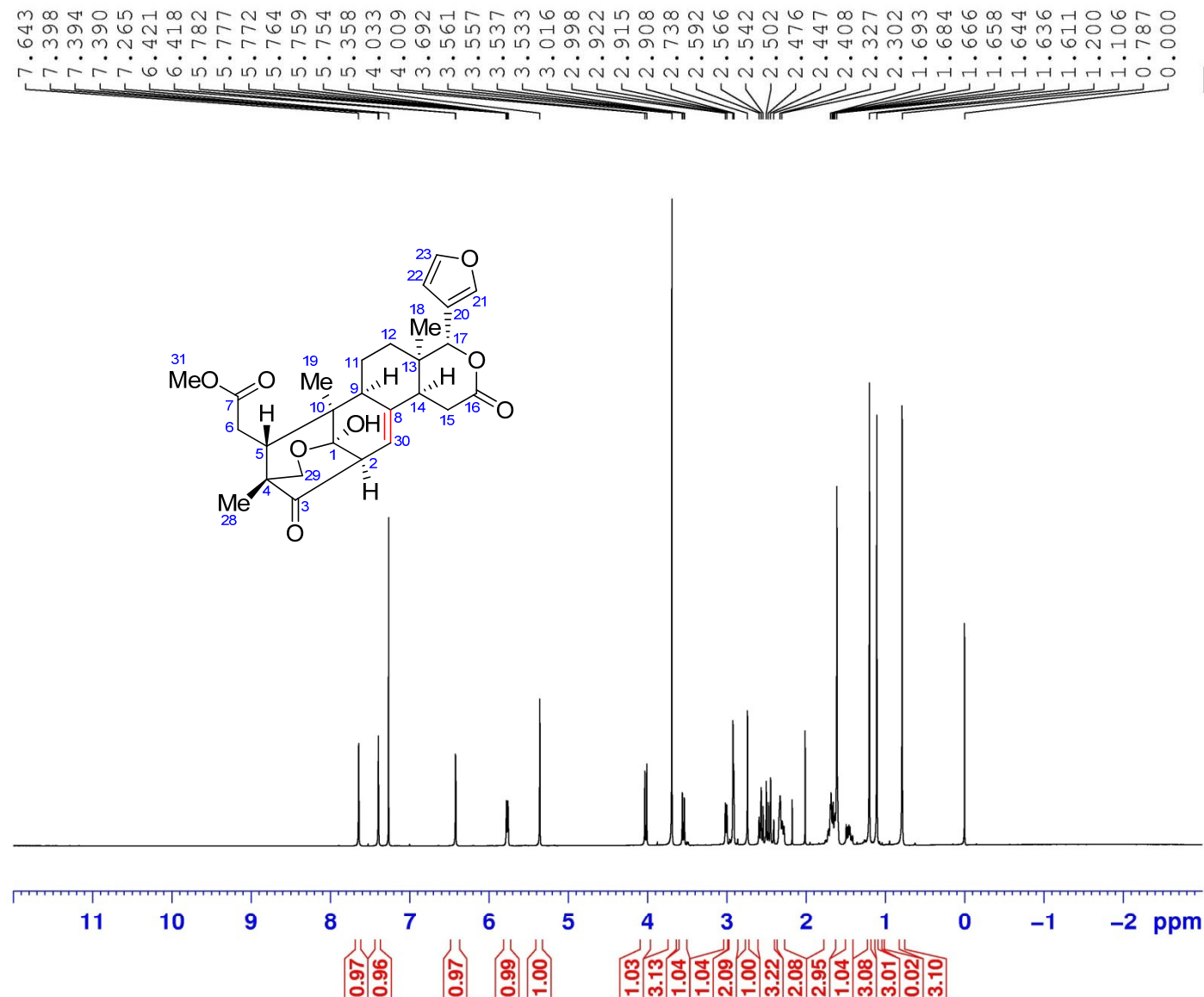
Analysis Info		Acquisition D 2018/9/21 11:55:41	
Analysis Name D:\MS\RJL\9.30\64_RA1_01_1513.d			
Method	lc-7.9	Operator	bruker
Sample Name	80140922-alternating-500-50-2200-MS2_1513.m	Instrument	amaZon SL
Comment			



Bruker Compass DataAnalysis

S150

^1H NMR (400 MHz) spectrum of **9** in CDCl_3

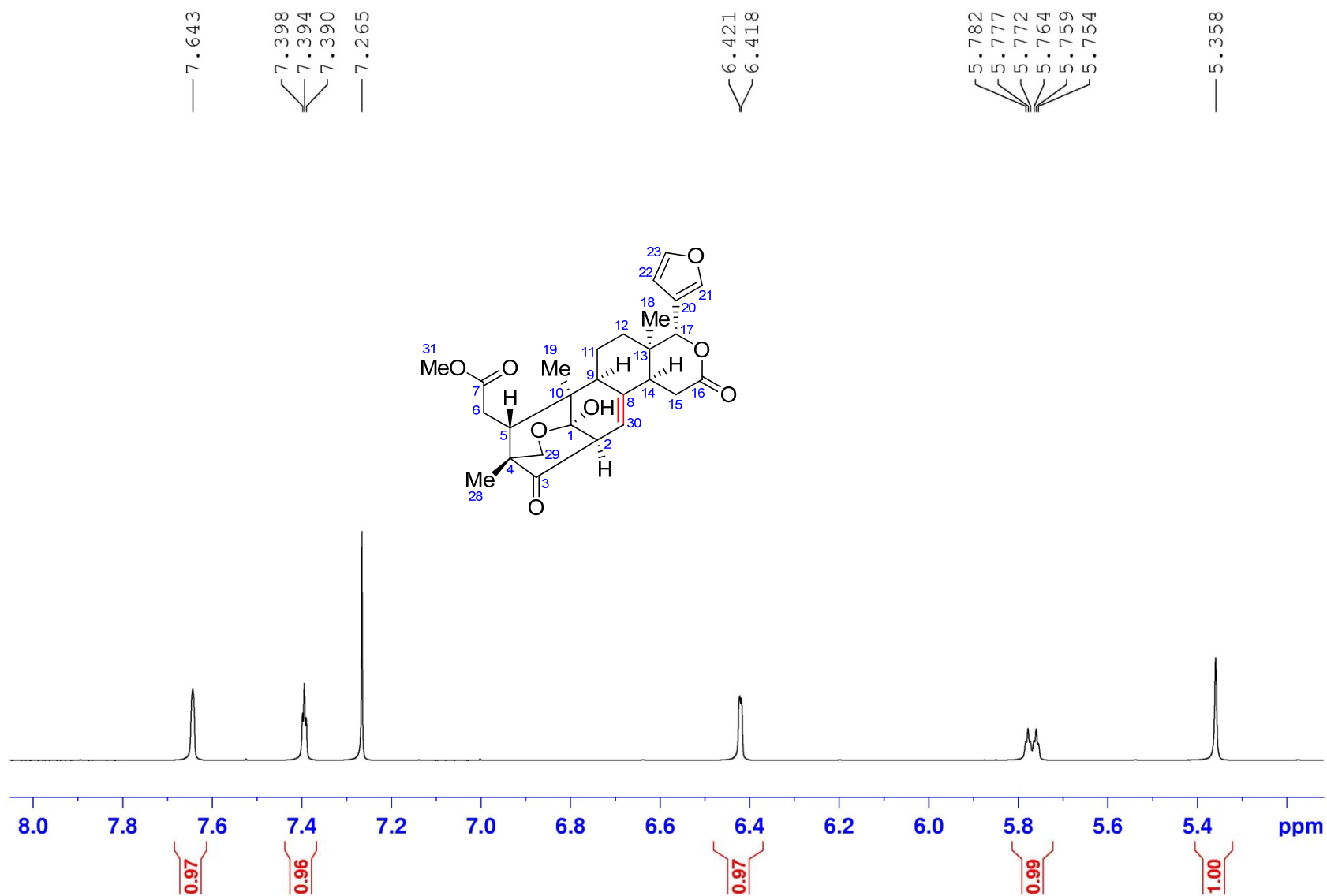


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NAME      czc-1-ibx-CH3
EXPNO     1
PROCNO    1
Date_     20170919
Time      14.57
INSTRUM   spect
PROBHD    5 mm CPPBBO BB
PULPROG   zg30
TD        65536
SOLVENT   CDCl3
NS        16
DS        2
SWH       8223.685 Hz
FIDRES    0.125483 Hz
AQ        3.9846387 sec
RG        208.5
DW        60.800 usec
DE        10.00 usec
TE        297.0 K
D1        1.00000000 sec
TD0       1

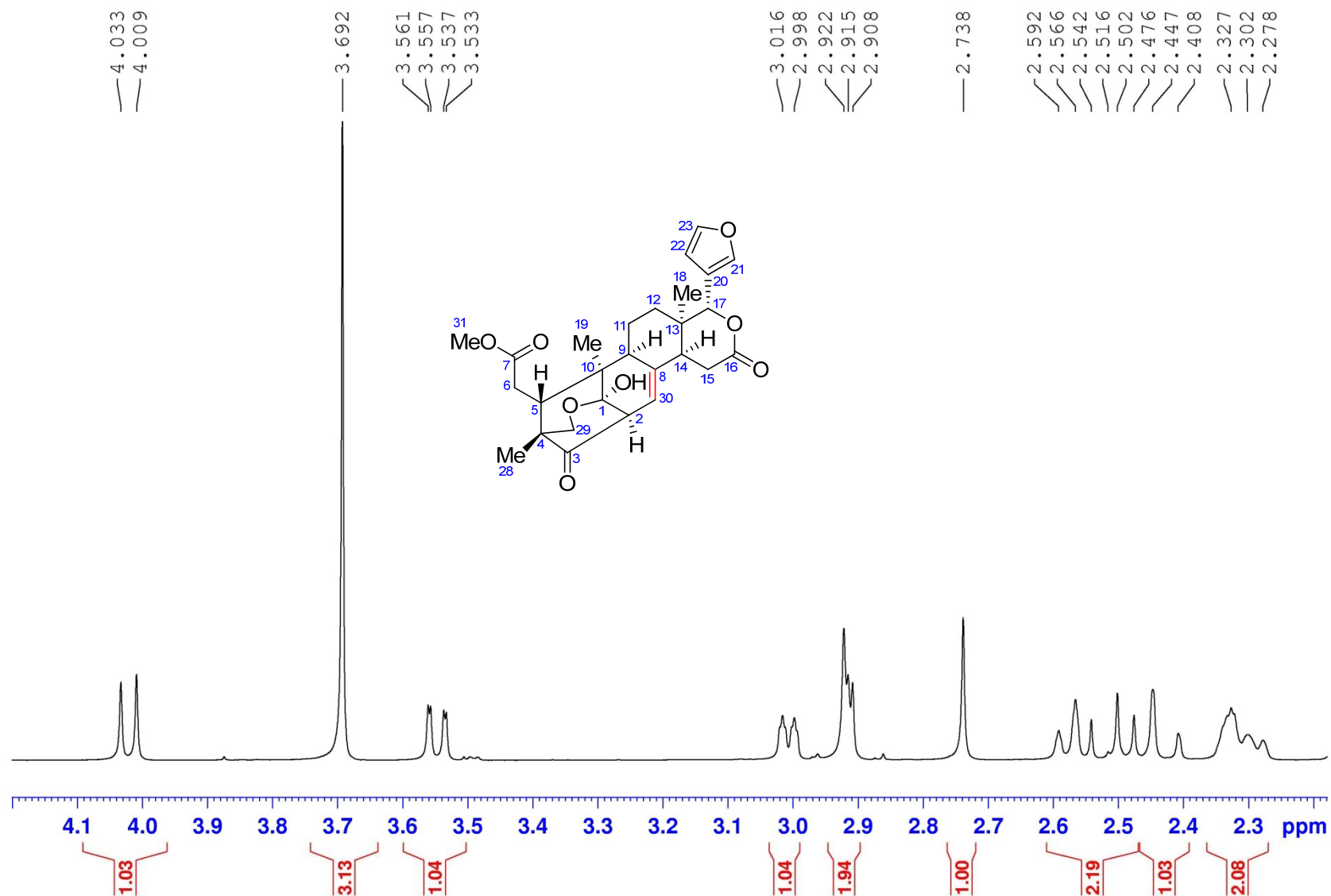
===== CHANNEL f1 =====
SFO1     400.1324710 MHz
NUC1     1H
P1       11.50 usec
SI       65536
SF       400.1300076 MHz
WDW      EM
SSB      0
LB       0.30 Hz
GB       0
PC       1.00
    
```

^1H NMR (400 MHz) spectrum of **9** in CDCl_3



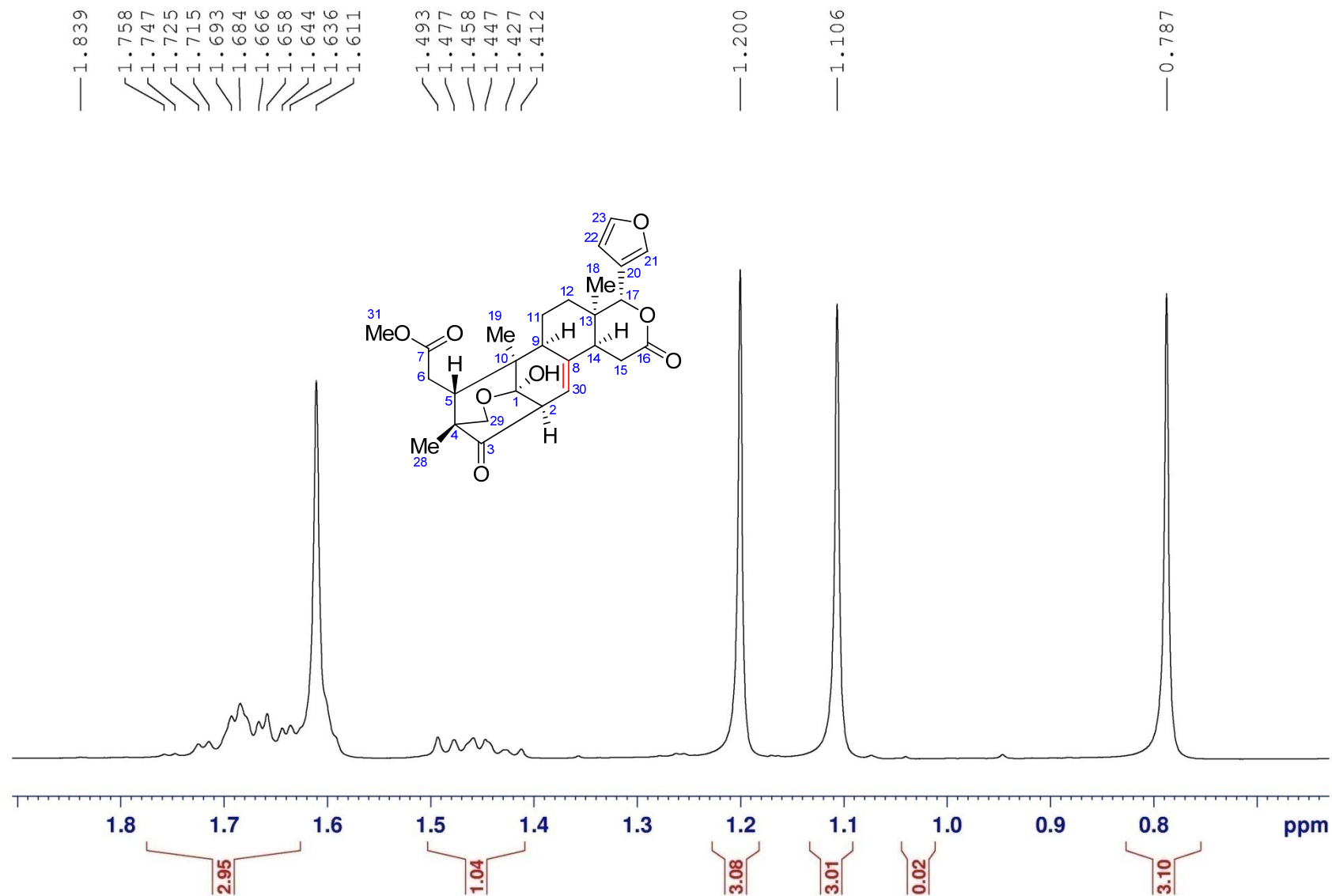
S152

^1H NMR (400 MHz) spectrum of **9** in CDCl_3

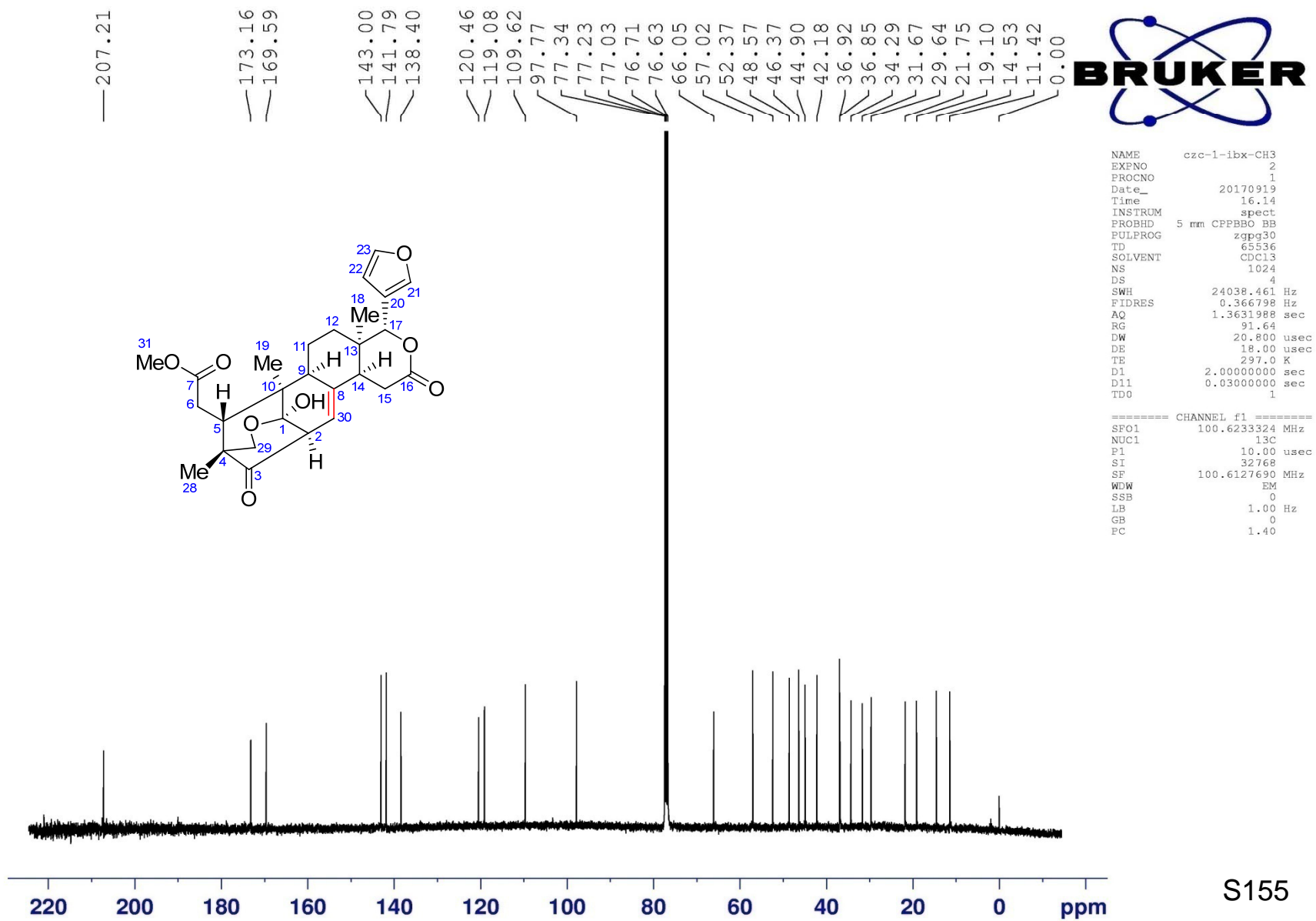


S153

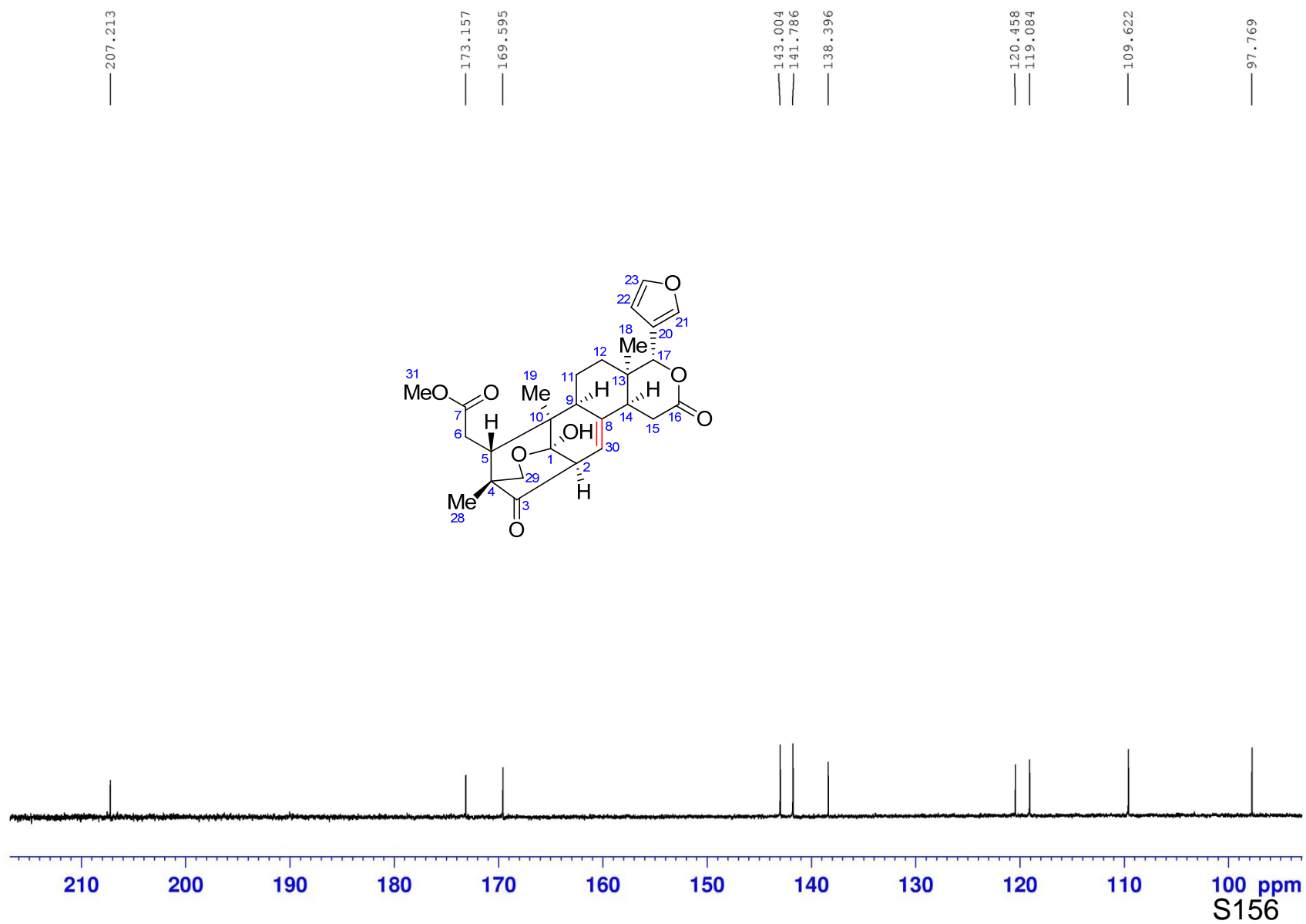
^1H NMR (400 MHz) spectrum of **9** in CDCl_3



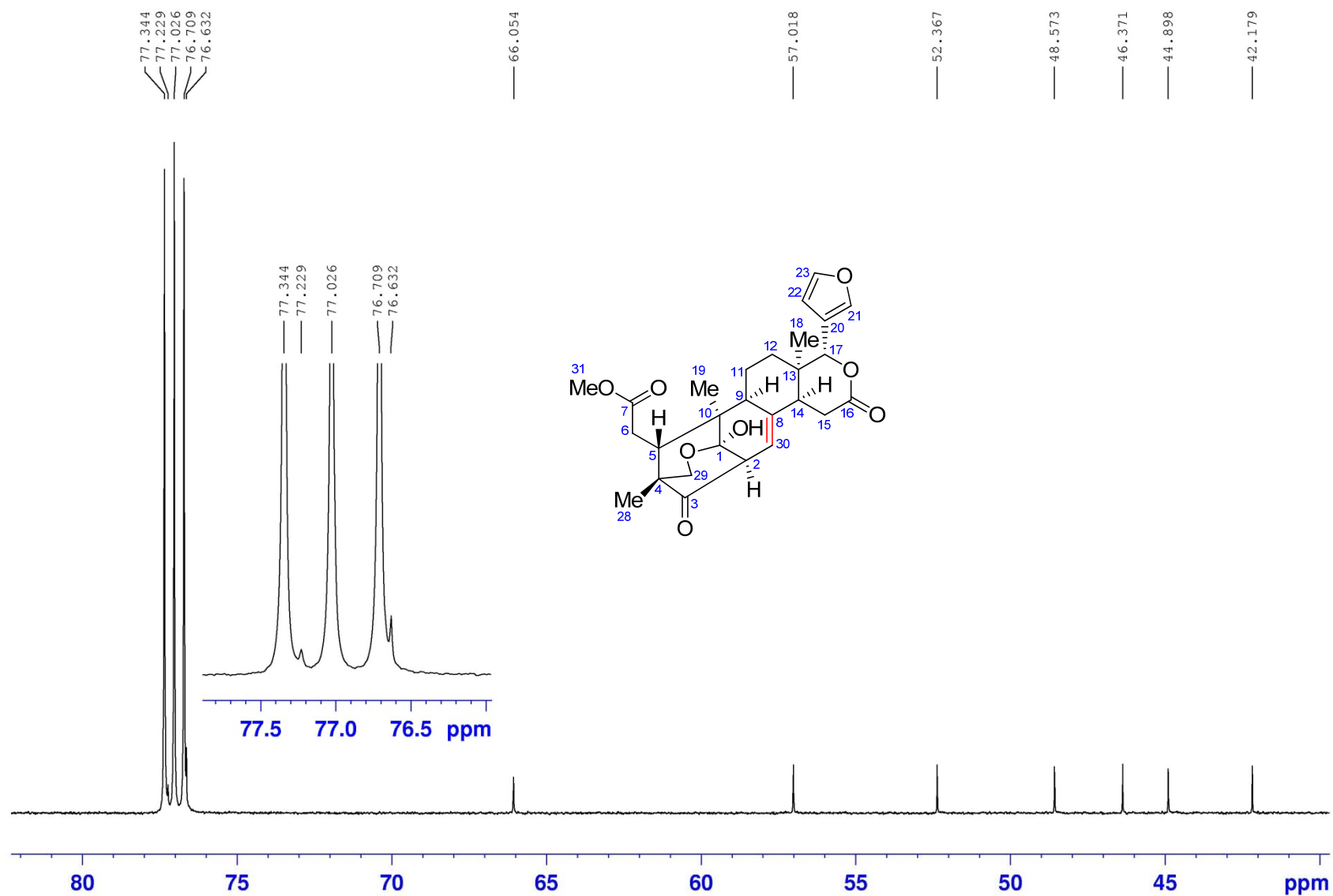
^{13}C NMR (100 MHz) spectrum of **9** in CDCl_3



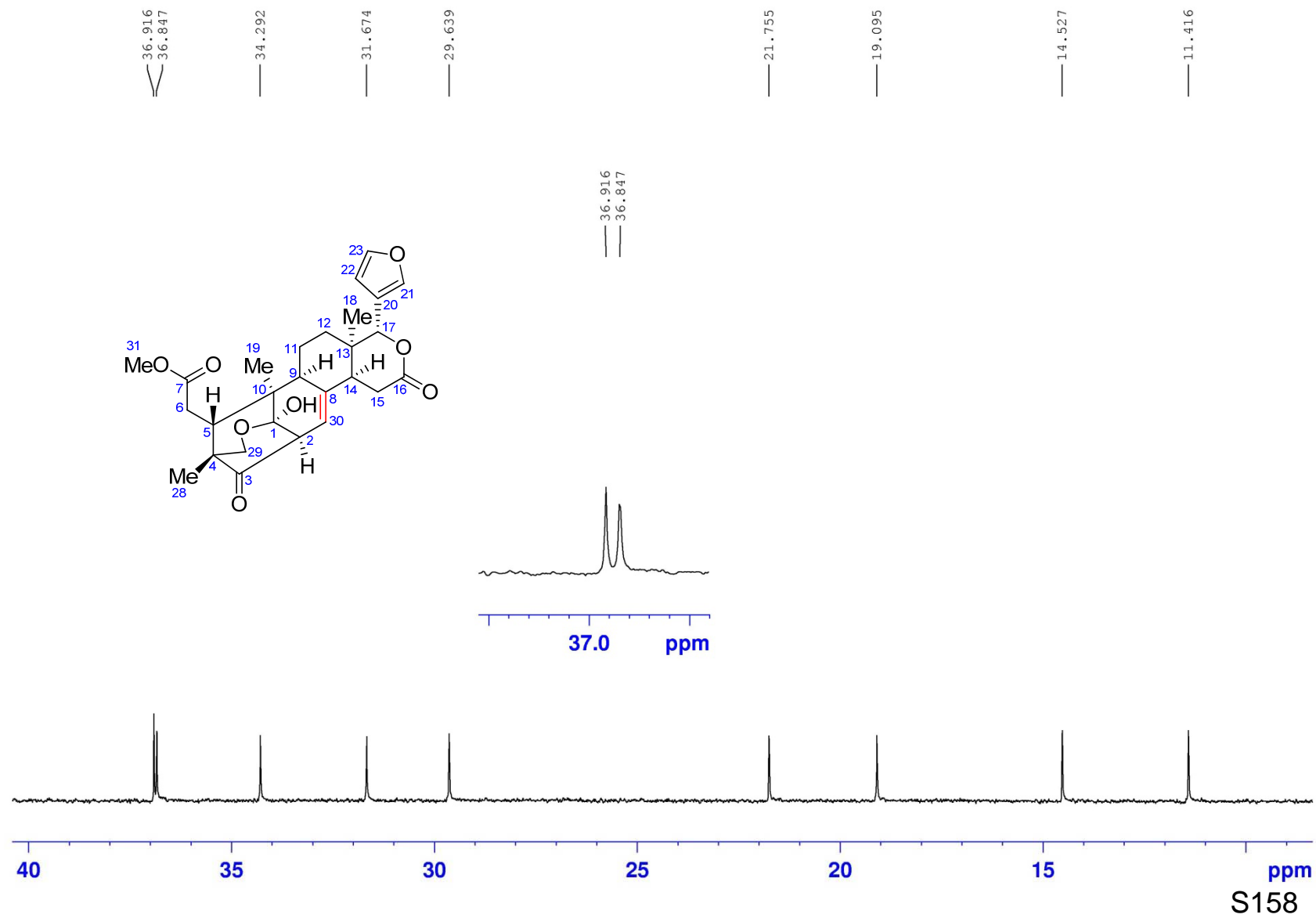
^{13}C NMR (100 MHz) spectrum of **9** in CDCl_3



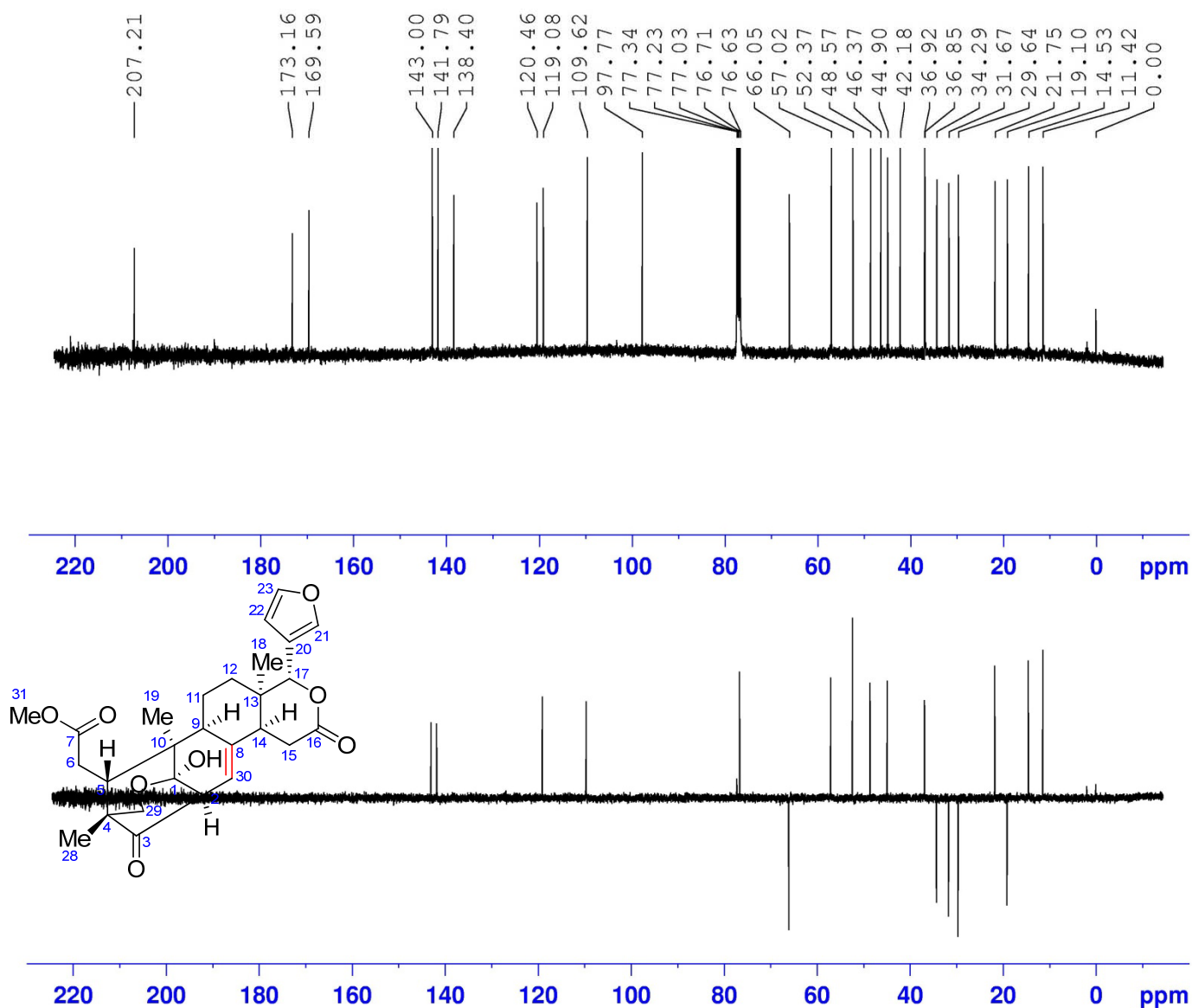
^{13}C NMR (100 MHz) spectrum of **9** in CDCl_3



^{13}C NMR (100 MHz) spectrum of **9** in CDCl_3



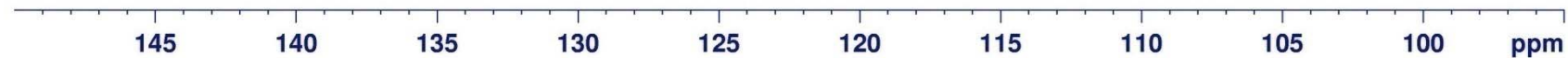
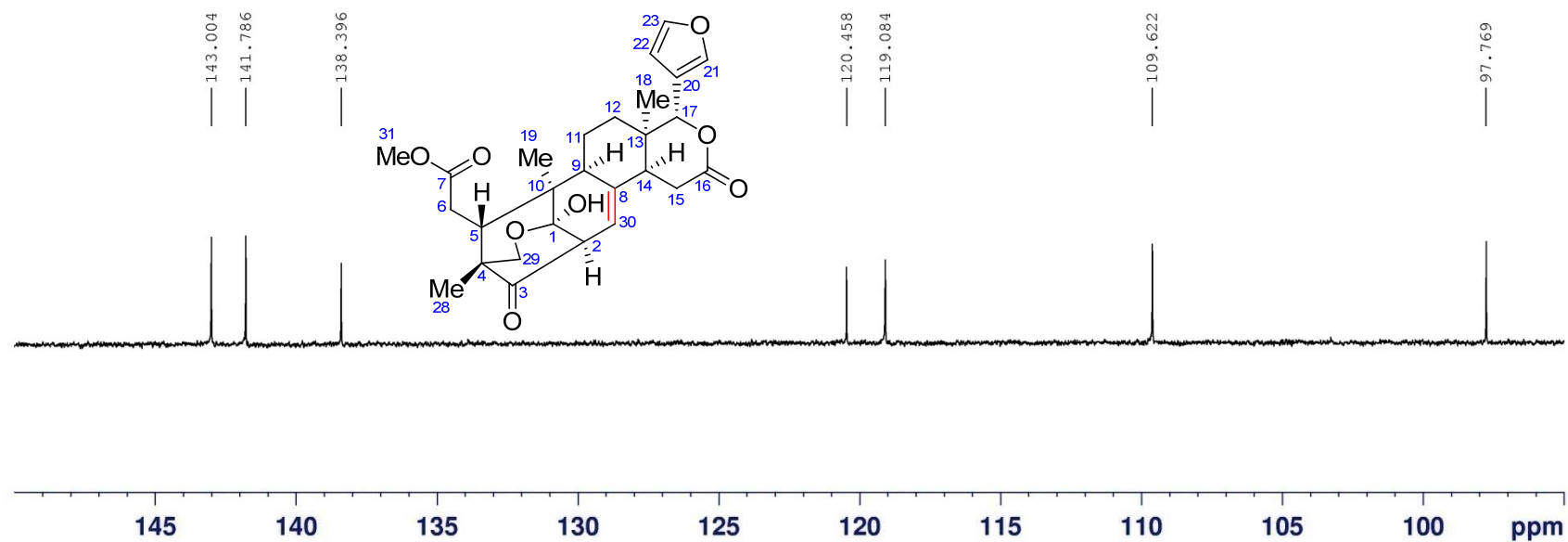
DEPT 135 spectrum of **9** in CDCl₃



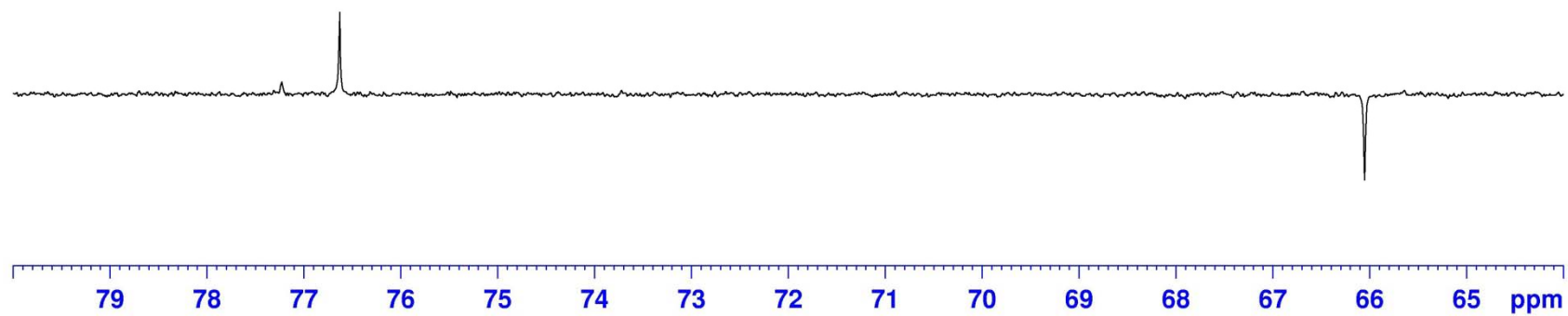
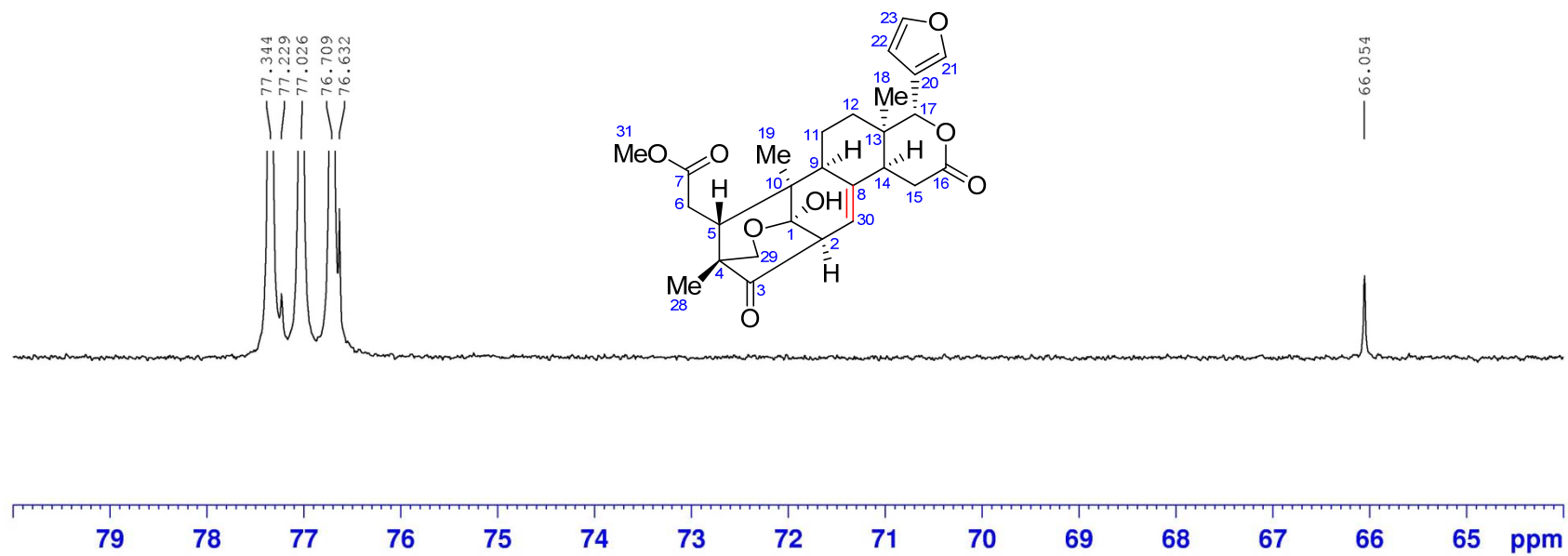
NAME czc-1-ibx-CH3
 EXPNO 3
 PROCNO 1
 Date_ 20170919
 Time 16.32
 INSTRUM spect
 PROBHD 5 mm CPPBBO BB
 PULPROG depts135
 TD 65536
 SOLVENT CDCl3
 NS 300
 DS 4
 SWH 24038.461 Hz
 FIDRES 0.366798 Hz
 AQ 1.3631988 sec
 RG 130.26
 DW 20.800 usec
 DE 18.00 usec
 TE 297.0 K
 CNST2 145.0000000
 D1 2.00000000 sec
 D2 0.00344828 sec
 D12 0.00002000 sec
 TD0 1

===== CHANNEL f1 =====
 SF01 100.6233324 MHz
 NUC1 13C
 P1 10.00 usec
 P13 2000.00 usec
 SI 32768
 SF 100.6127692 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

DEPT 135 spectrum of **9** in CDCl_3

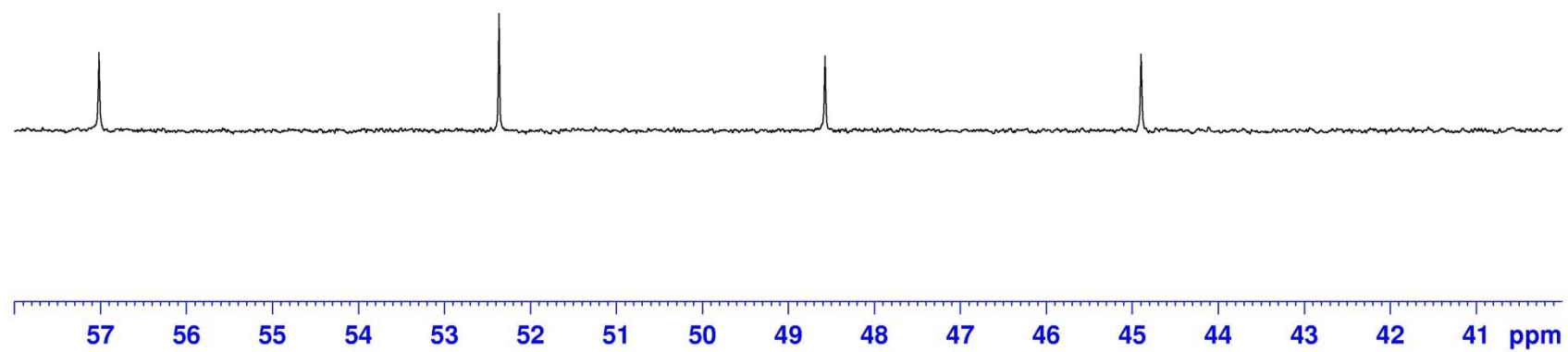
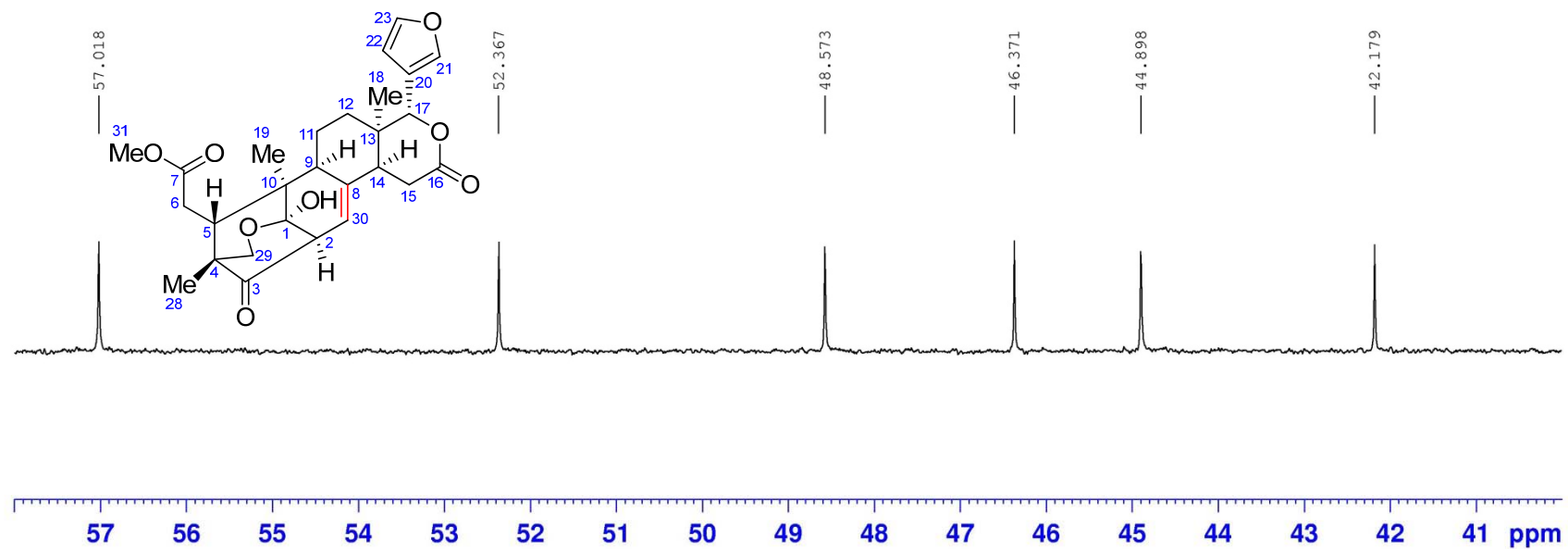


DEPT 135 spectrum of **9** in CDCl₃

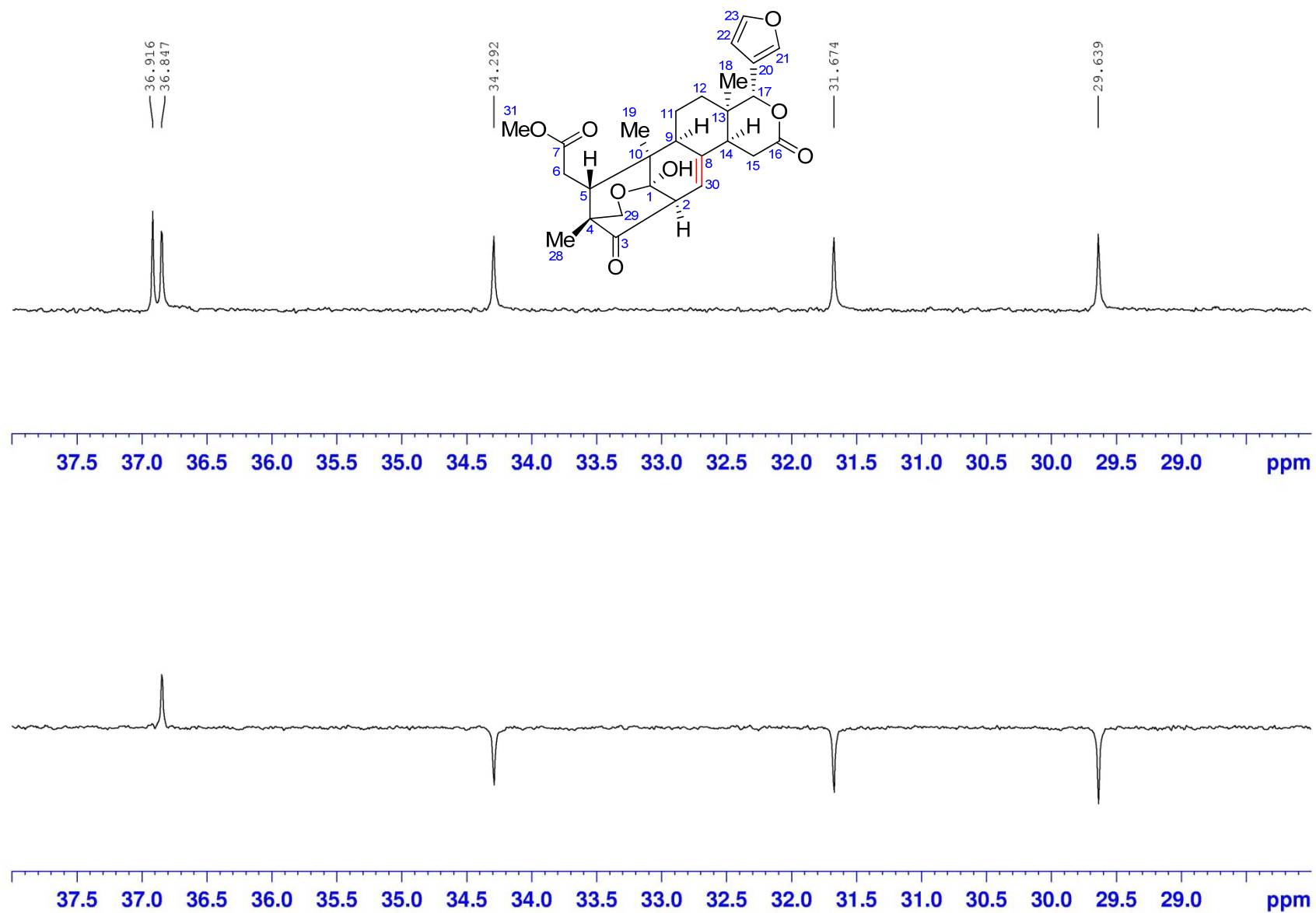


S161

DEPT 135 spectrum of **9** in CDCl_3

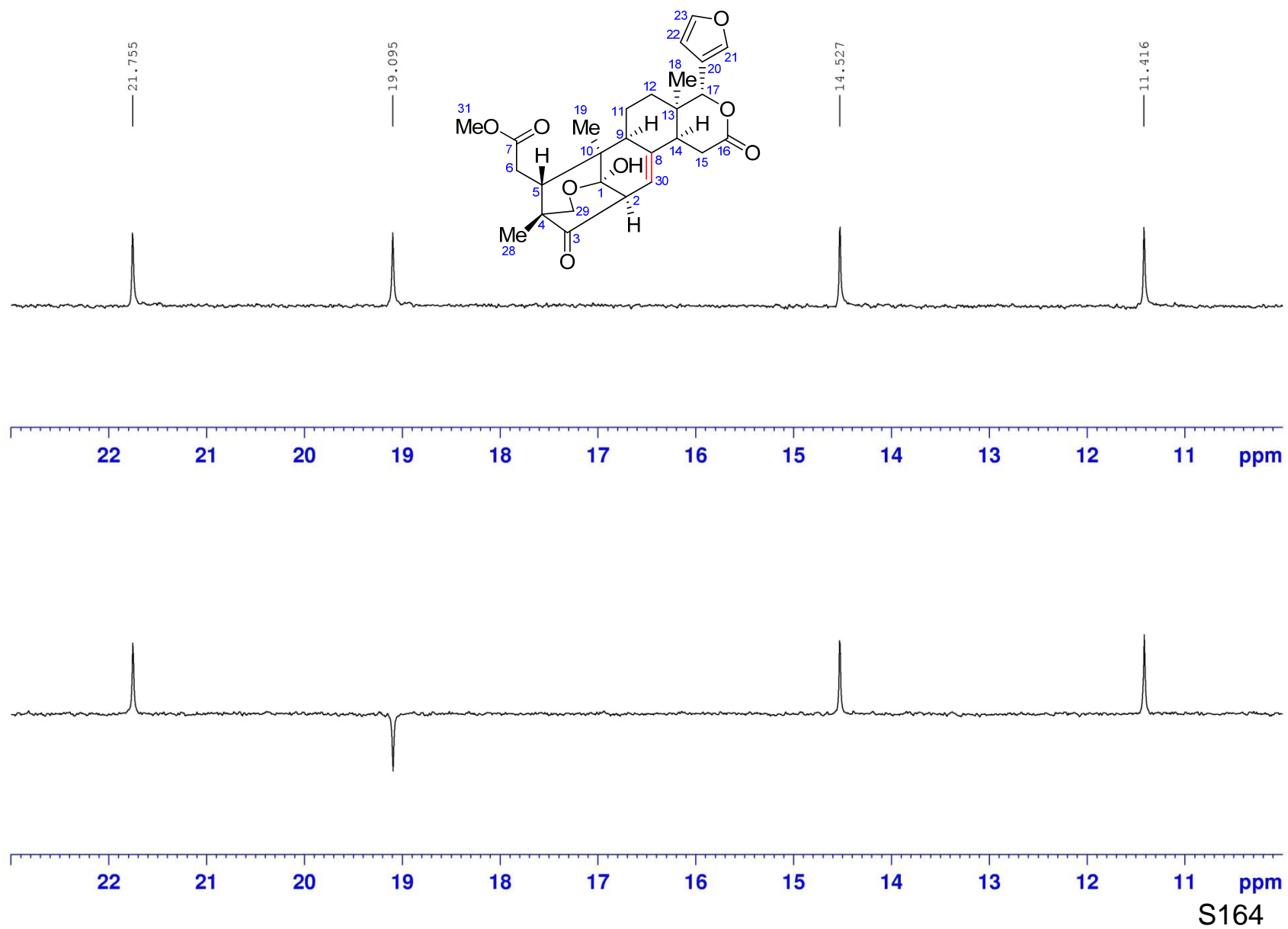


DEPT 135 spectrum of **9** in CDCl₃

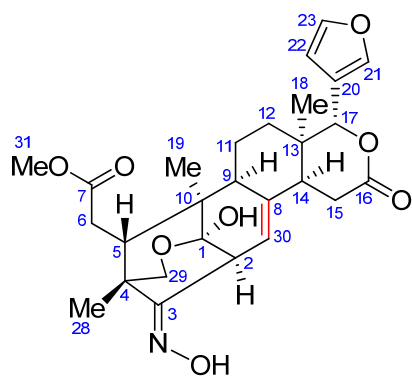


S163

DEPT 135 spectrum of **9** in CDCl_3

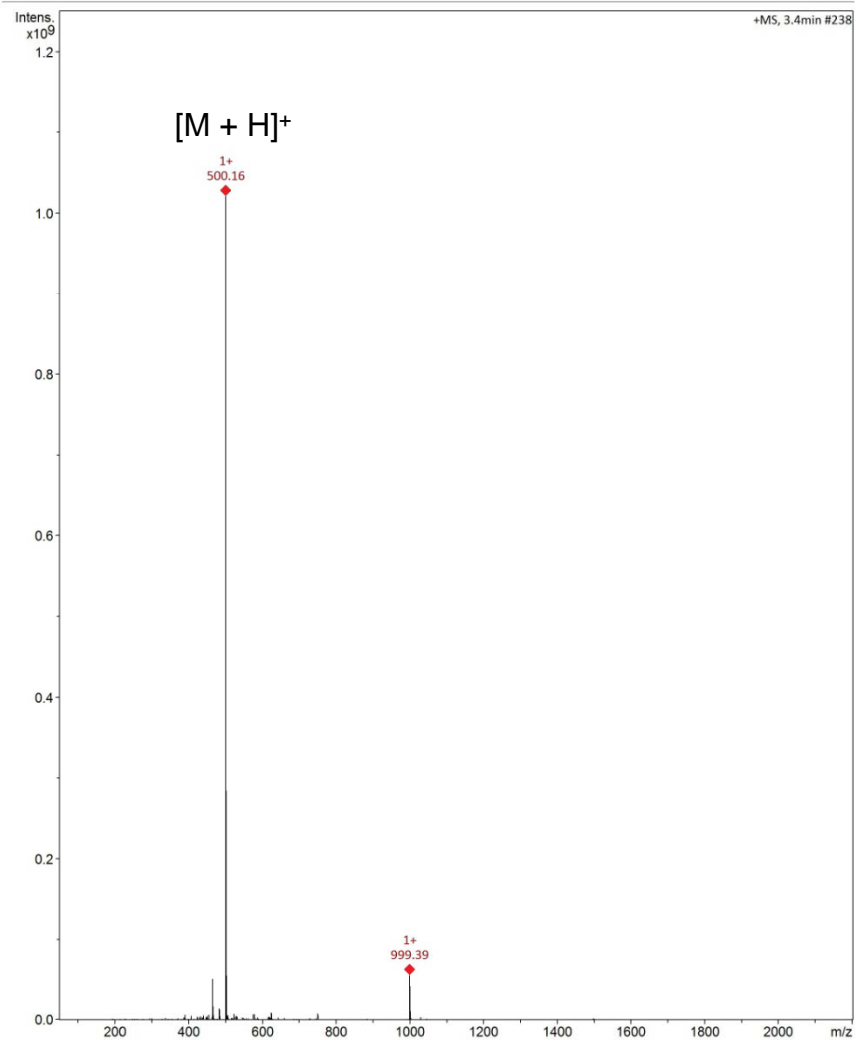


LR-ESIMS for compound **9a**



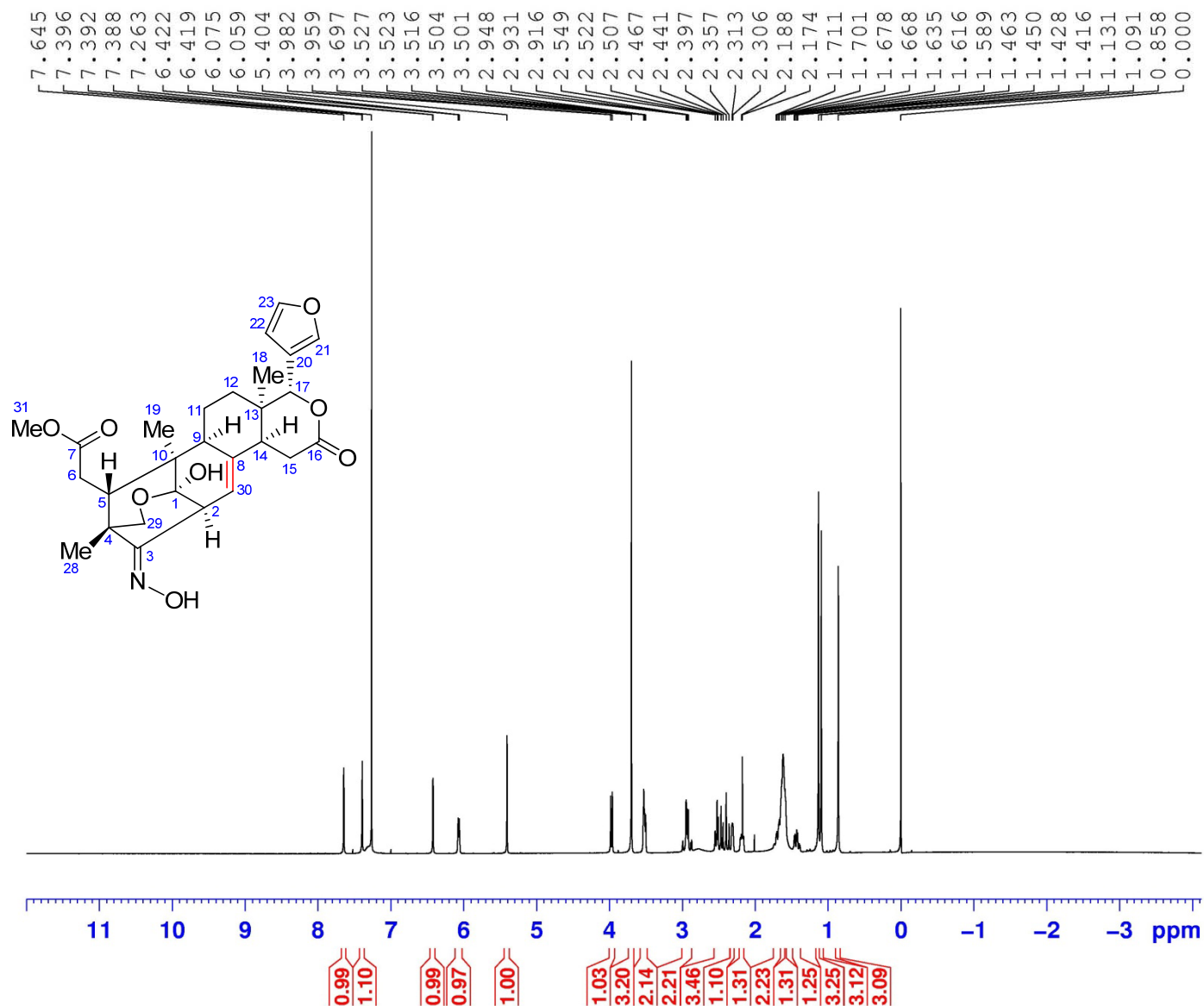
Generic Display Report

Analysis Info
Analysis Name D:\MS\RJL\20181001\66-1_RA1_01_1592.d
Method lc-7.9
Sample Name 66140922-alternating-500-50-2200-MS2_1592.m
Comment
Acquisition D 2018/10/1 20:32:42
Operator bruker
Instrument amaZon SL



Bruker Compass DataAnalysis

¹H NMR (400 MHz) spectrum of **9a** in CDCl₃

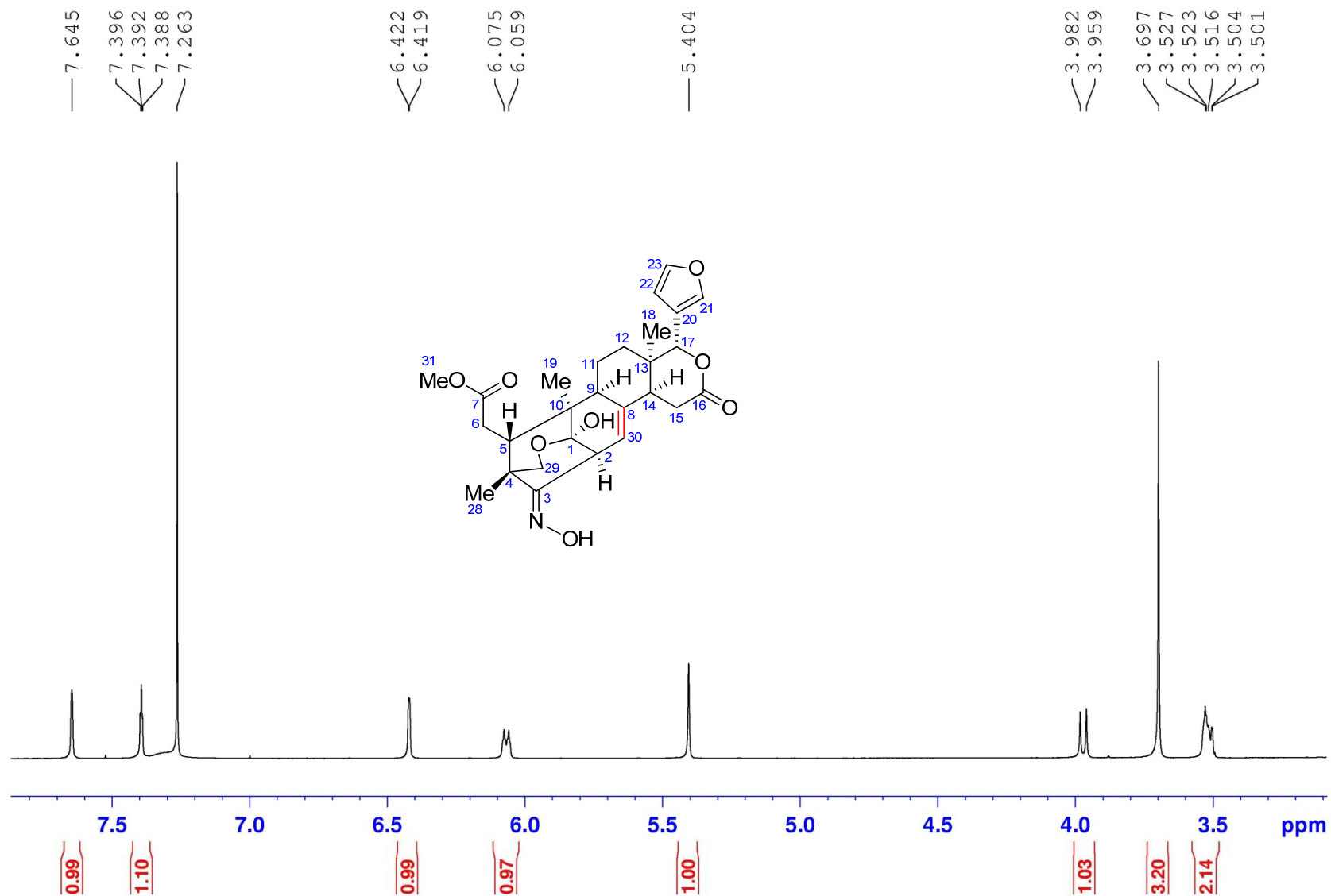


```

NAME      czc-1-ibx-CH3-yansuanqianan
EXPNO     1
PROCNO    1
Date_     20171001
Time      21.06
INSTRUM   spect
PROBHD    5 mm CFPBBO BB
PULPROG   zg30
TD         65536
SOLVENT   CDCl3
NS         16
DS         2
SWH        8223.695 Hz
FIDRES     0.125483 Hz
AQ         3.9846387 sec
RG         208.5
DW         60.800 usec
DE         10.00 usec
TE         297.0 K
D1         1.00000000 sec
TD0        1

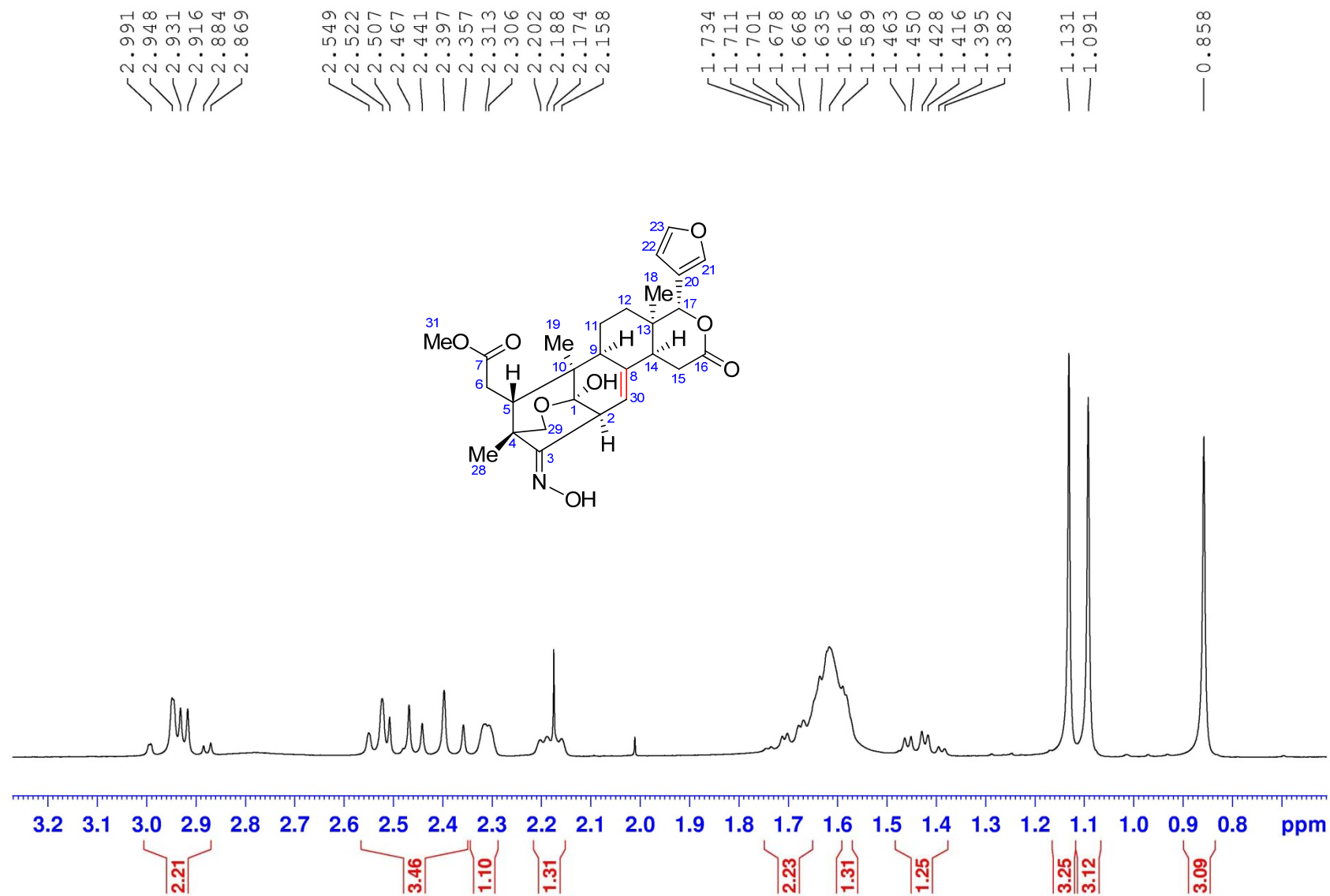
===== CHANNEL f1 =====
SFO1      400.1324710 MHz
NUC1      1H
P1        11.50 usec
SI        65536
SF        400.1300084 MHz
WDW       EM
SSB       0
LB        0.30 Hz
GB        0
PC        1.00
    
```

^1H NMR (400 MHz) spectrum of **9a** in CDCl_3

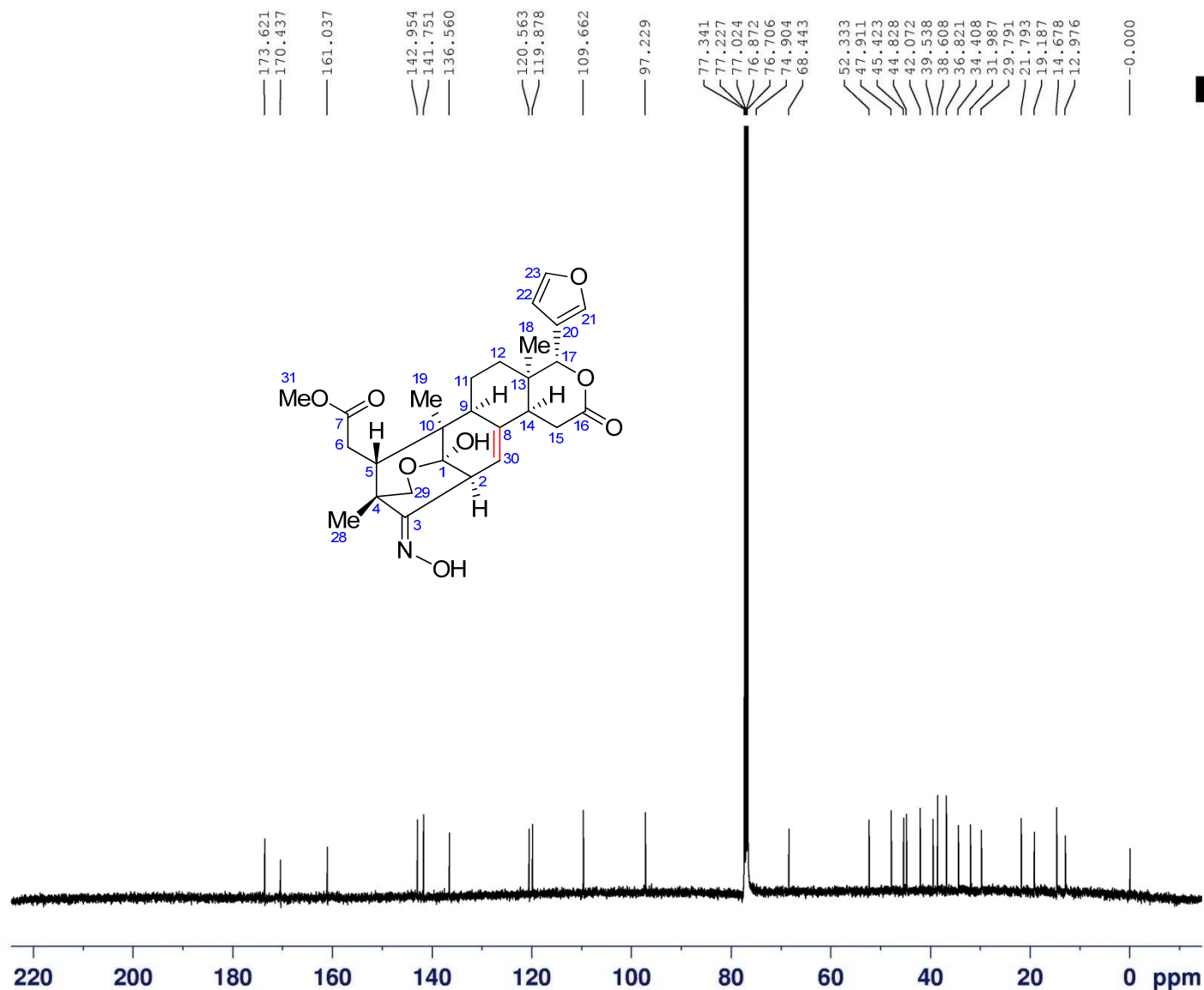


S167

^1H NMR (400 MHz) spectrum of **9a** in CDCl_3



^{13}C NMR (100 MHz) spectrum of **9a** in CDCl_3

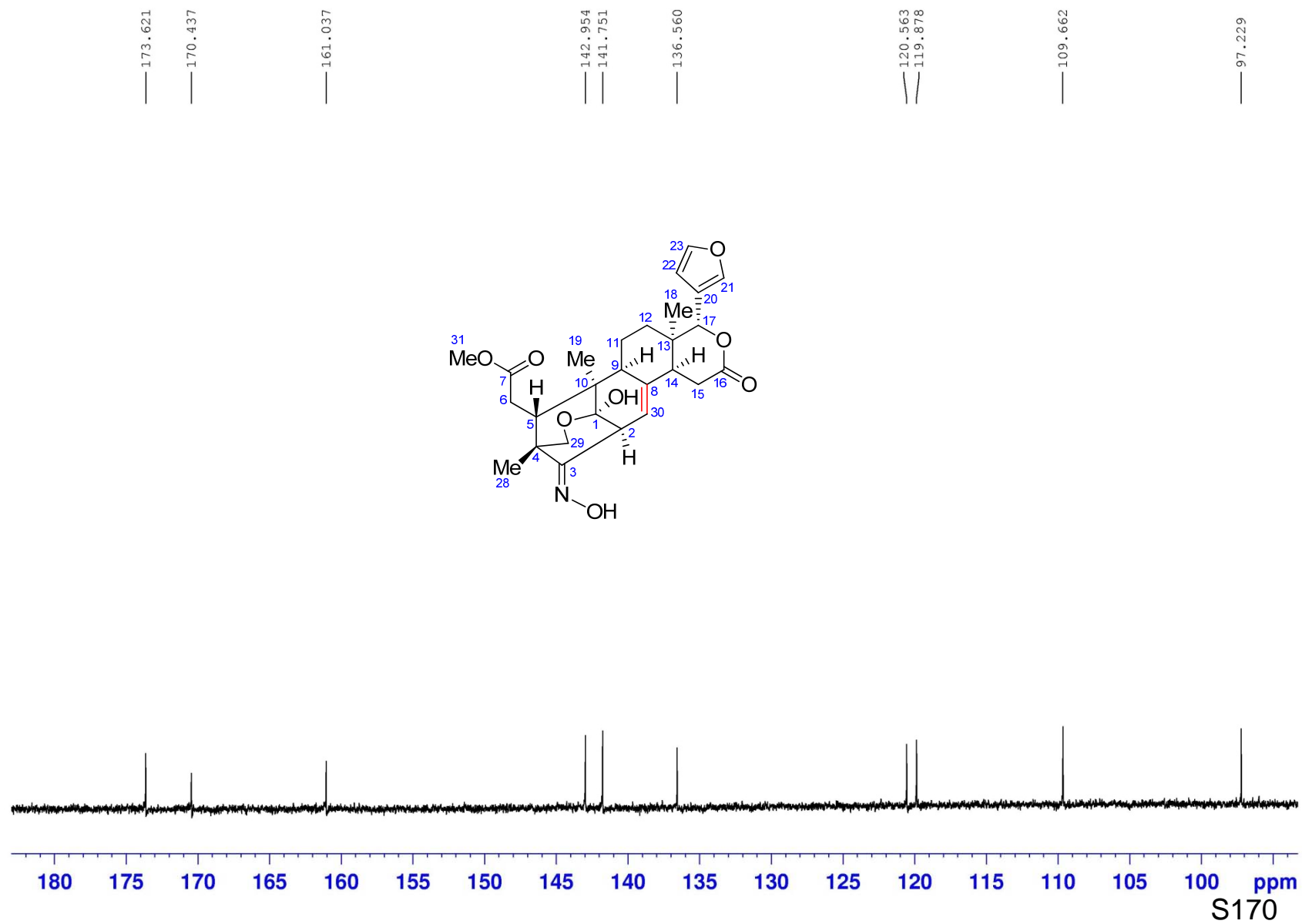


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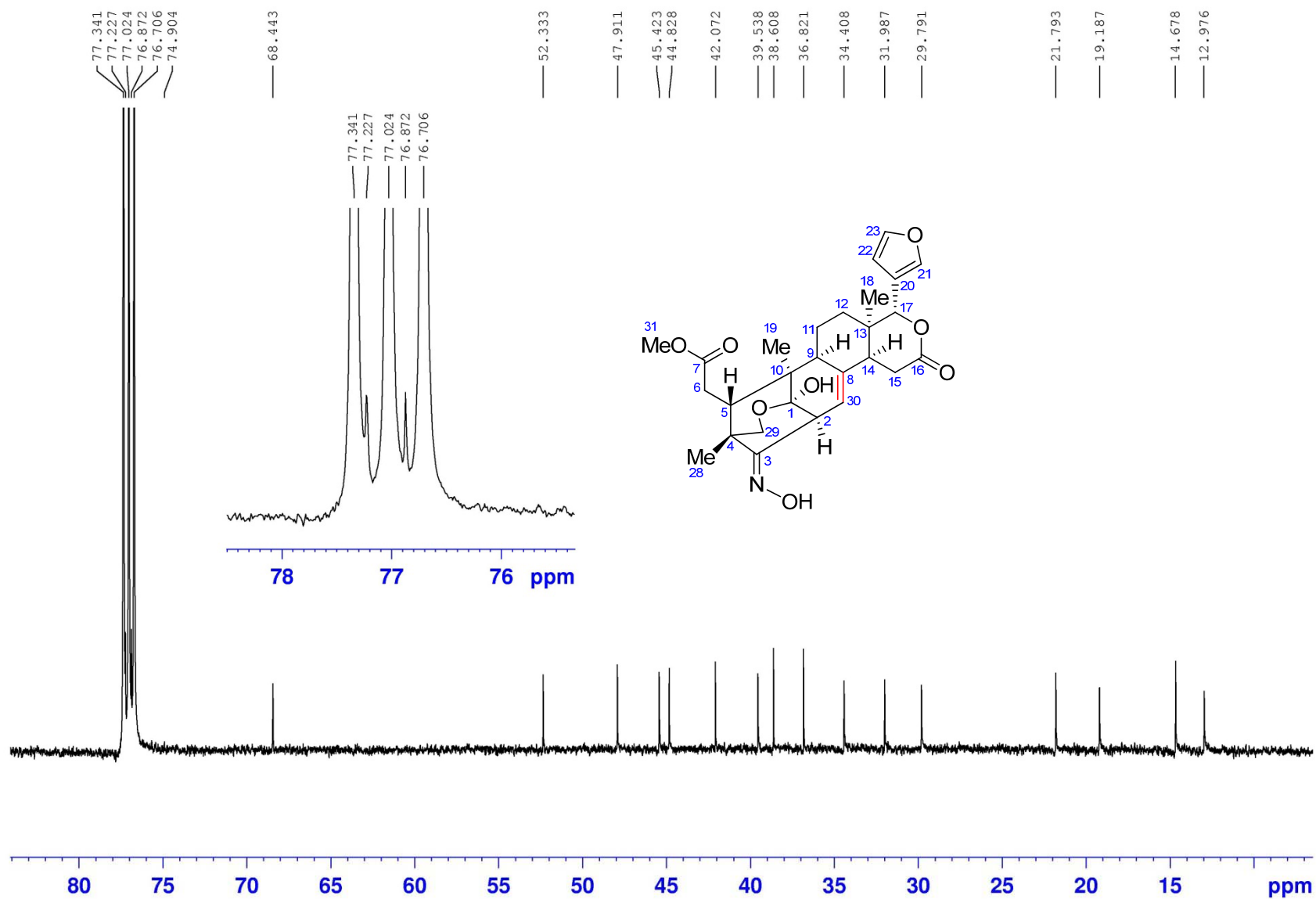
NAME      czc-1-ibx-CH3-yansuanqi
EXPNO     2
PROCNO    1
Date_     20171001
Time      22.05
INSTRUM    spect
PROBHD     5 mm CPPBBO BB
PULPROG    zgpg30
TD         65536
SOLVENT    CDCl3
NS         1024
DS         4
SWH        24038.461 Hz
FIDRES     0.366798 Hz
AQ         1.3631988 sec
RG         130.26
DW         20.800 usec
DE         18.00 usec
TE         297.0 K
D1         2.00000000 sec
D11        0.03000000 sec
TD0        1

===== CHANNEL f1 =====
SF01      100.6233324 MHz
NUC1       13C
P1         10.00 usec
SI         32768
SF         100.6127689 MHz
WDW        EM
SSB        0
LB         1.00 Hz
GB         0
PC         1.40
    
```

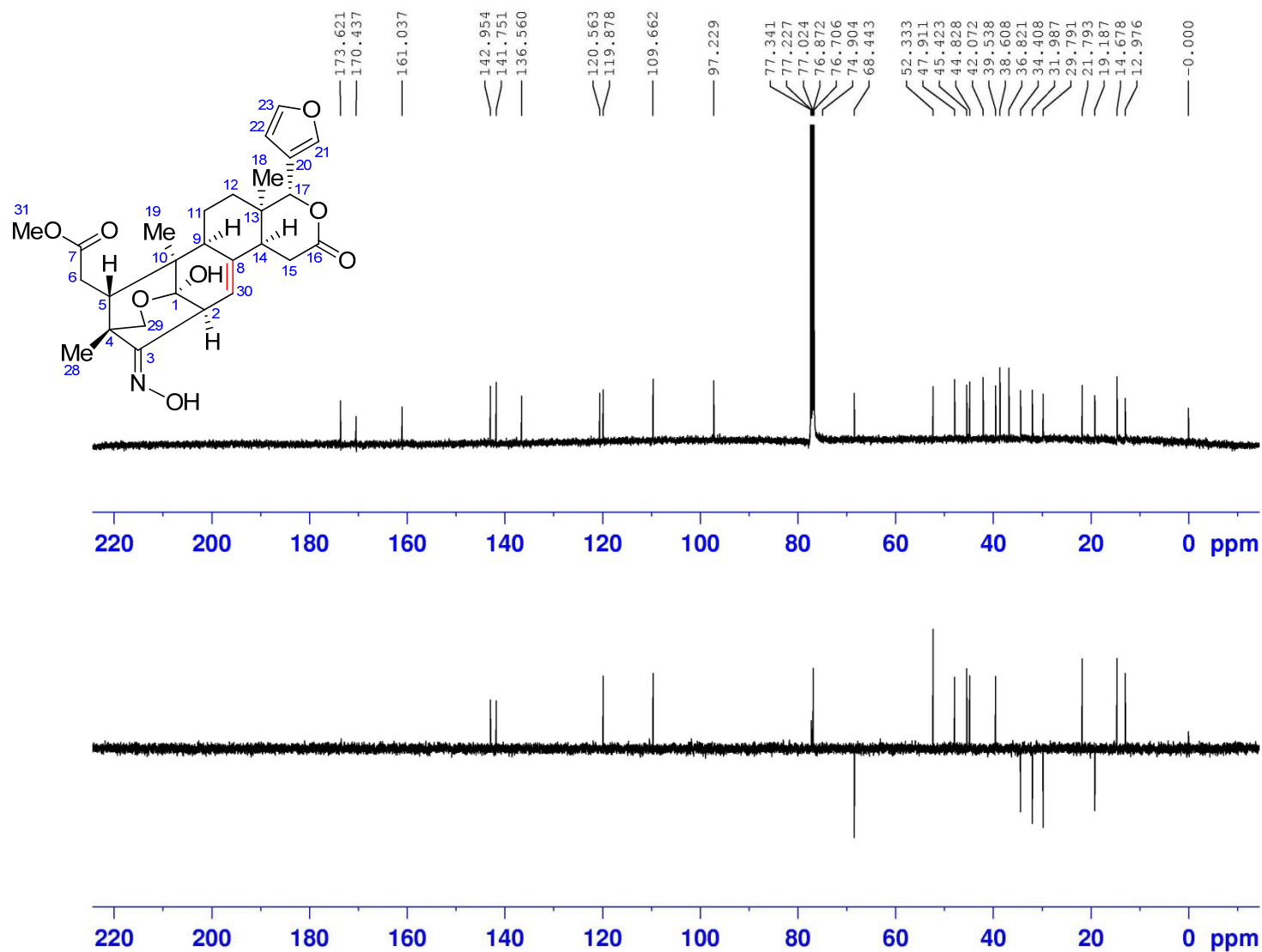
^{13}C NMR (100 MHz) spectrum of **9a** in CDCl_3



^{13}C NMR (100 MHz) spectrum of **9a** in CDCl_3



DEPT 135 spectrum of **9a** in CDCl₃



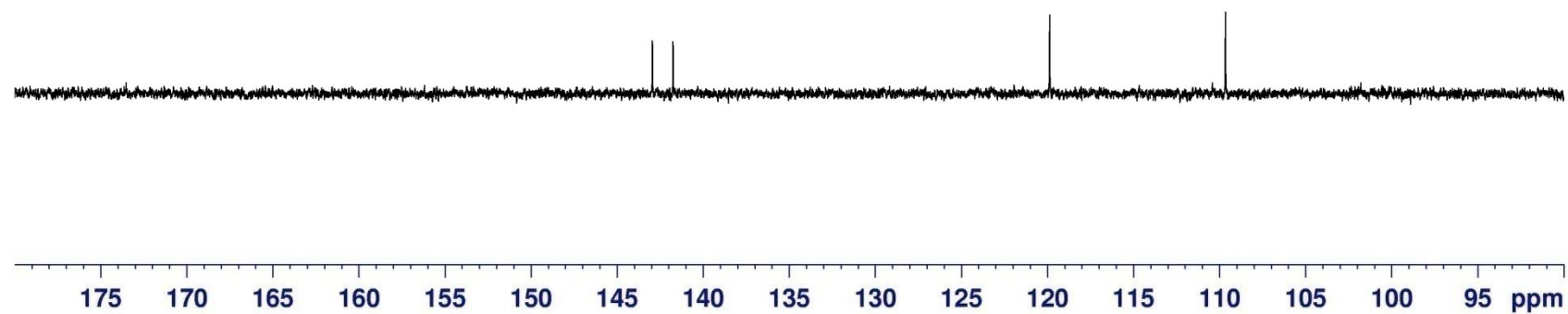
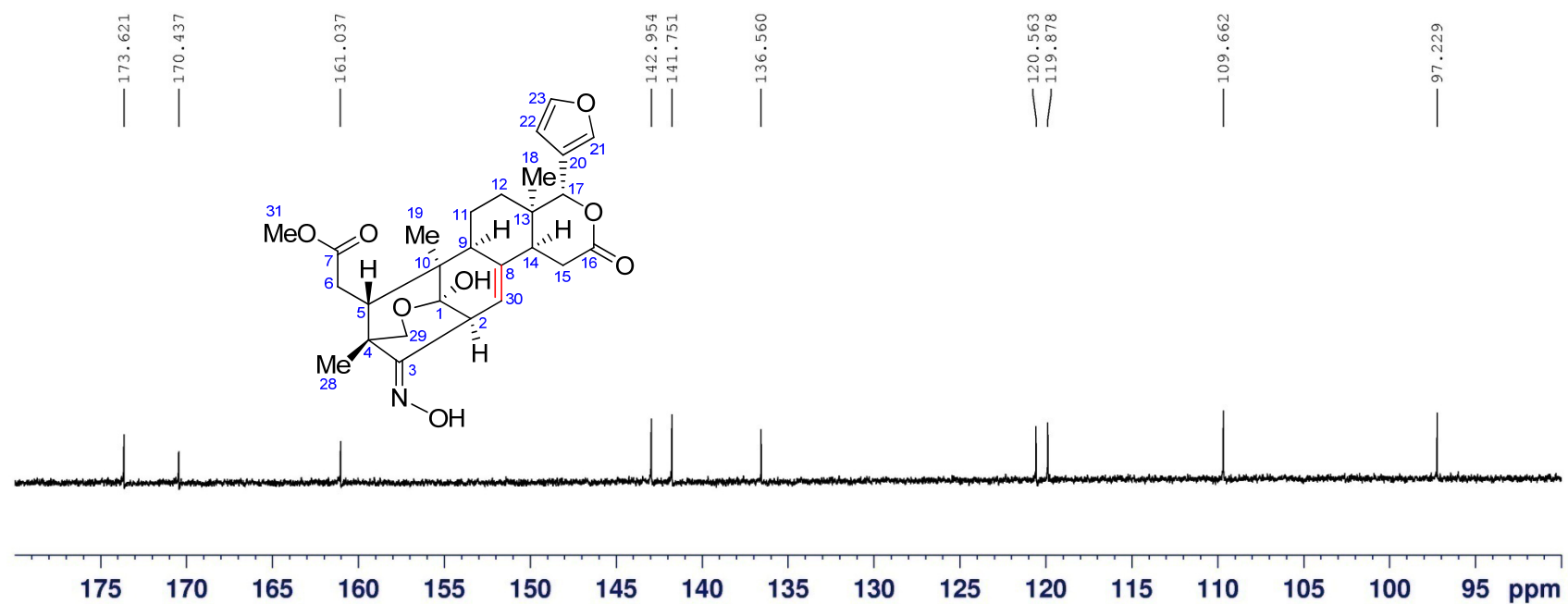
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NAME      czc-1-ibx-CH3-yansuanq:
EXPNO      3
PROCNO     1
Date_      20171001
Time       22.24
INSTRUM    spect
PROBHD     5 mm CPPBBO BB
PULPROG    deptsp135
TD         65536
SOLVENT    CDCl3
NS         300
DS         4
SWH        24038.461 Hz
FIDRES     0.366798 Hz
AQ         1.3631988 sec
RG         130.26
DW         20.800 usec
DE         18.00 usec
TE         297.0 K
CNST2      145.0000000
D1         2.00000000 sec
D2         0.00344828 sec
D12        0.00002000 sec
TD0        1
  
```

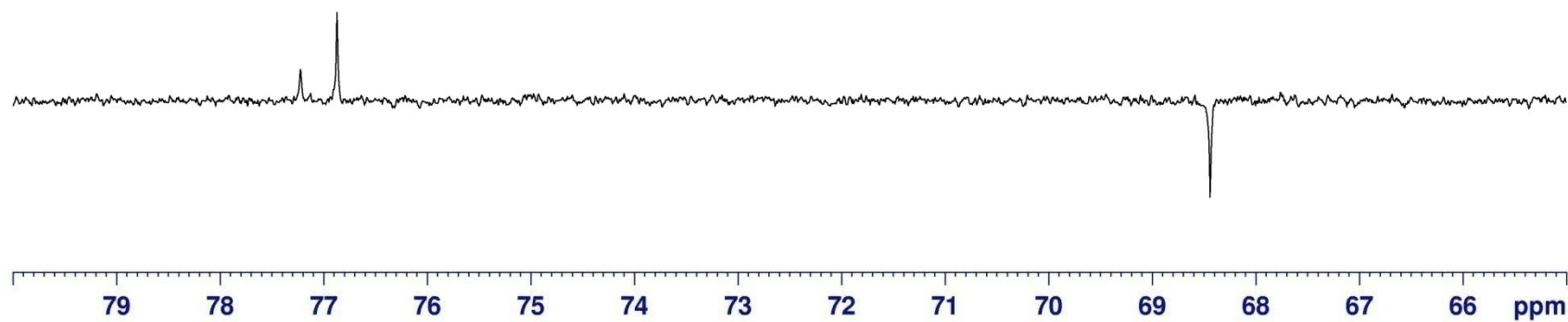
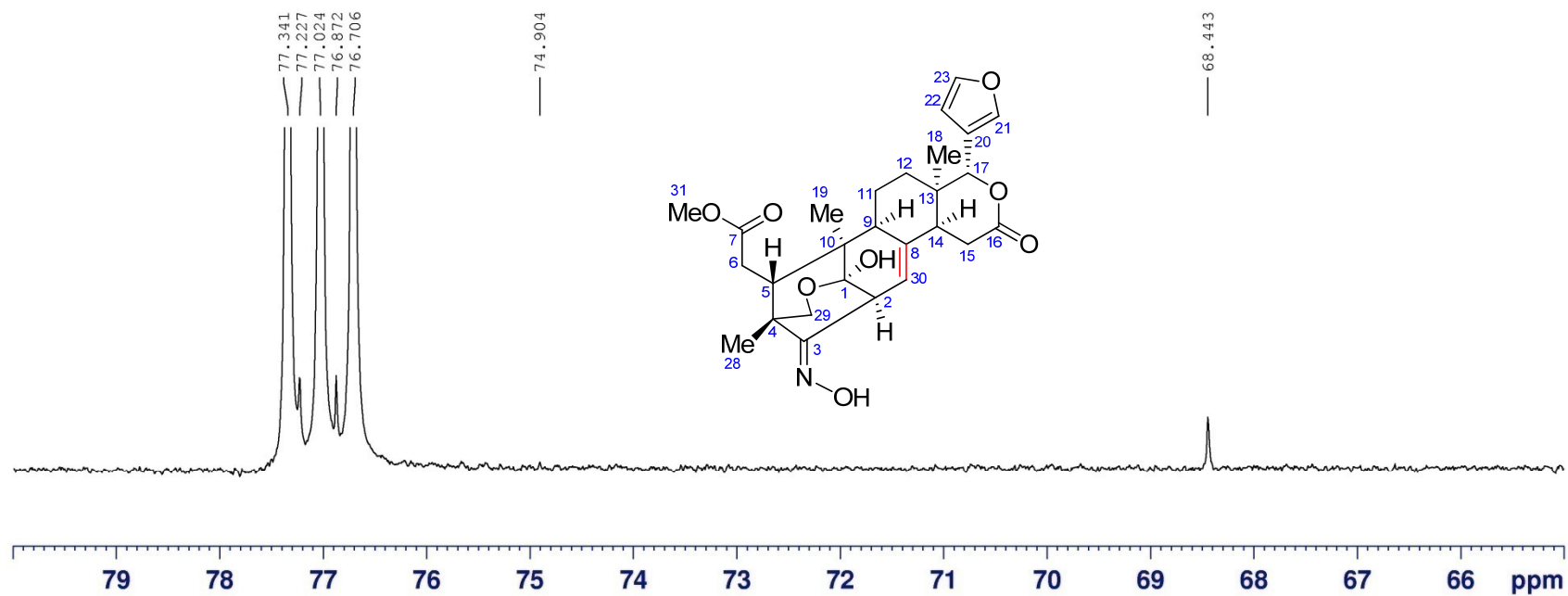
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===== CHANNEL f1 =====
SFO1      100.6233324 MHz
NUC1      13C
P1        10.00 usec
P13       2000.00 usec
SI        32768
SF        100.6127692 MHz
WDW       EM
SSB       0
LB        1.00 Hz
GB        0
PC        1.40
  
```

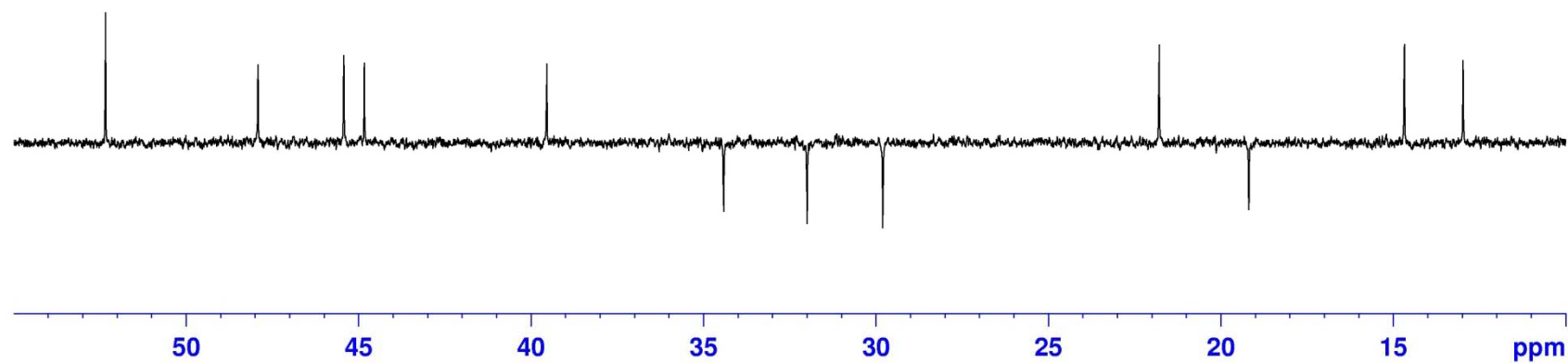
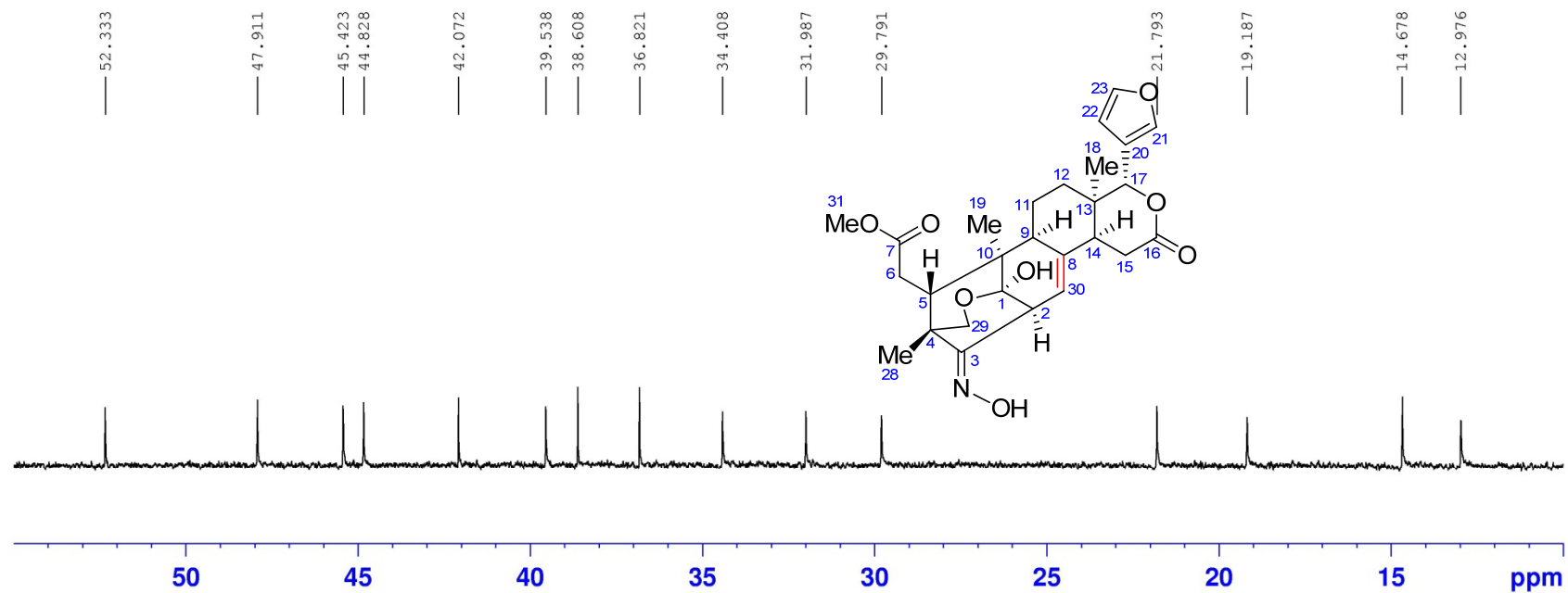
DEPT 135 spectrum of **9a** in CDCl₃



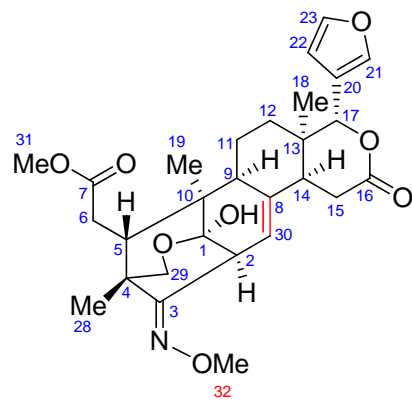
DEPT 135 spectrum of **9a** in CDCl₃



DEPT 135 spectrum of **9a** in CDCl₃



LR-ESIMS for compound **9b**



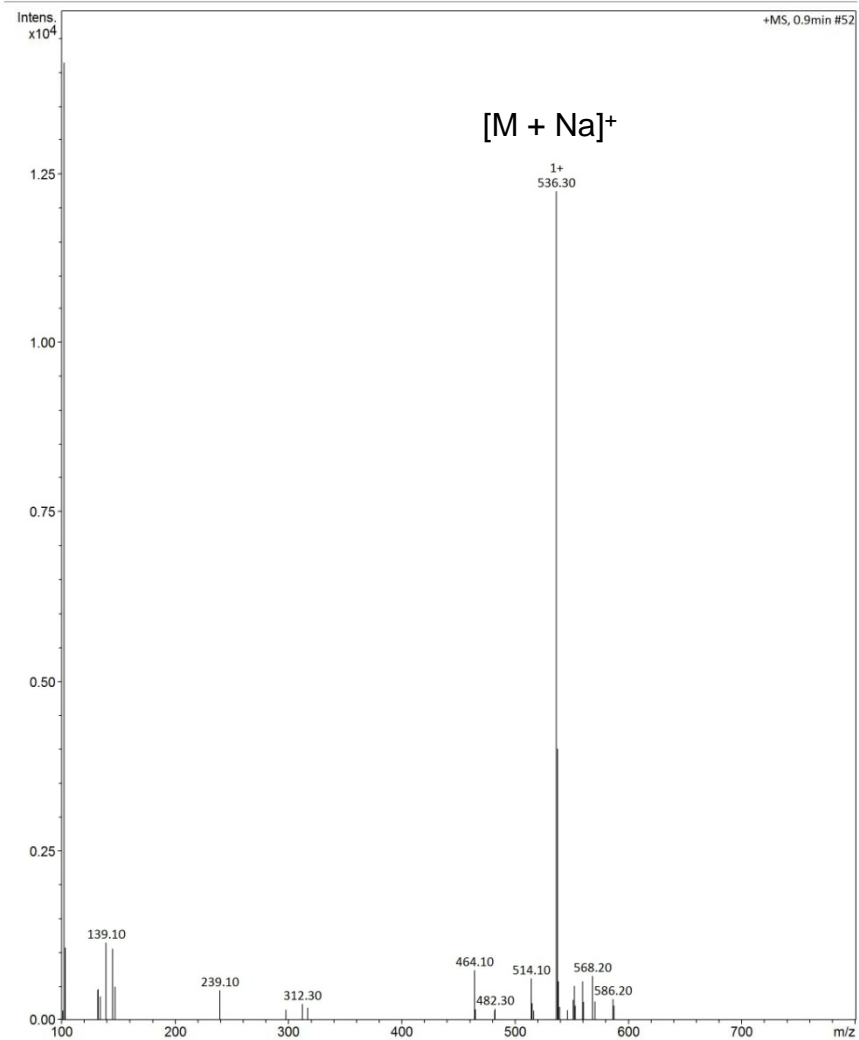
Generic Display Report

Analysis Info

Analysis Name D:\MS\RJL\180915\67-2018-09-1520-55-30.D
Method DEF_LC.M
Sample Name 67
Comment

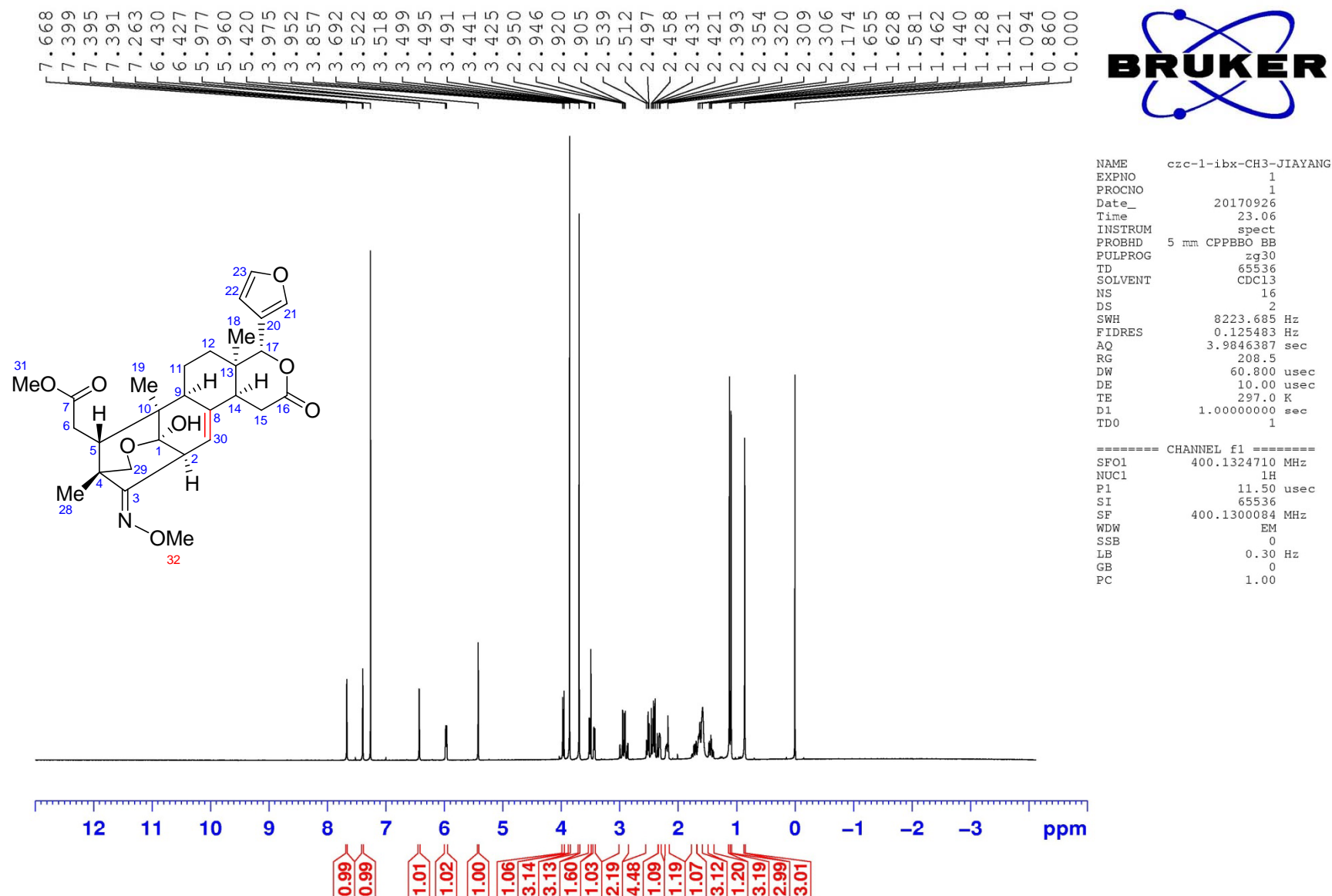
Acquisition D 2018/9/15 20:56:00

Operator
Instrument LCMSD

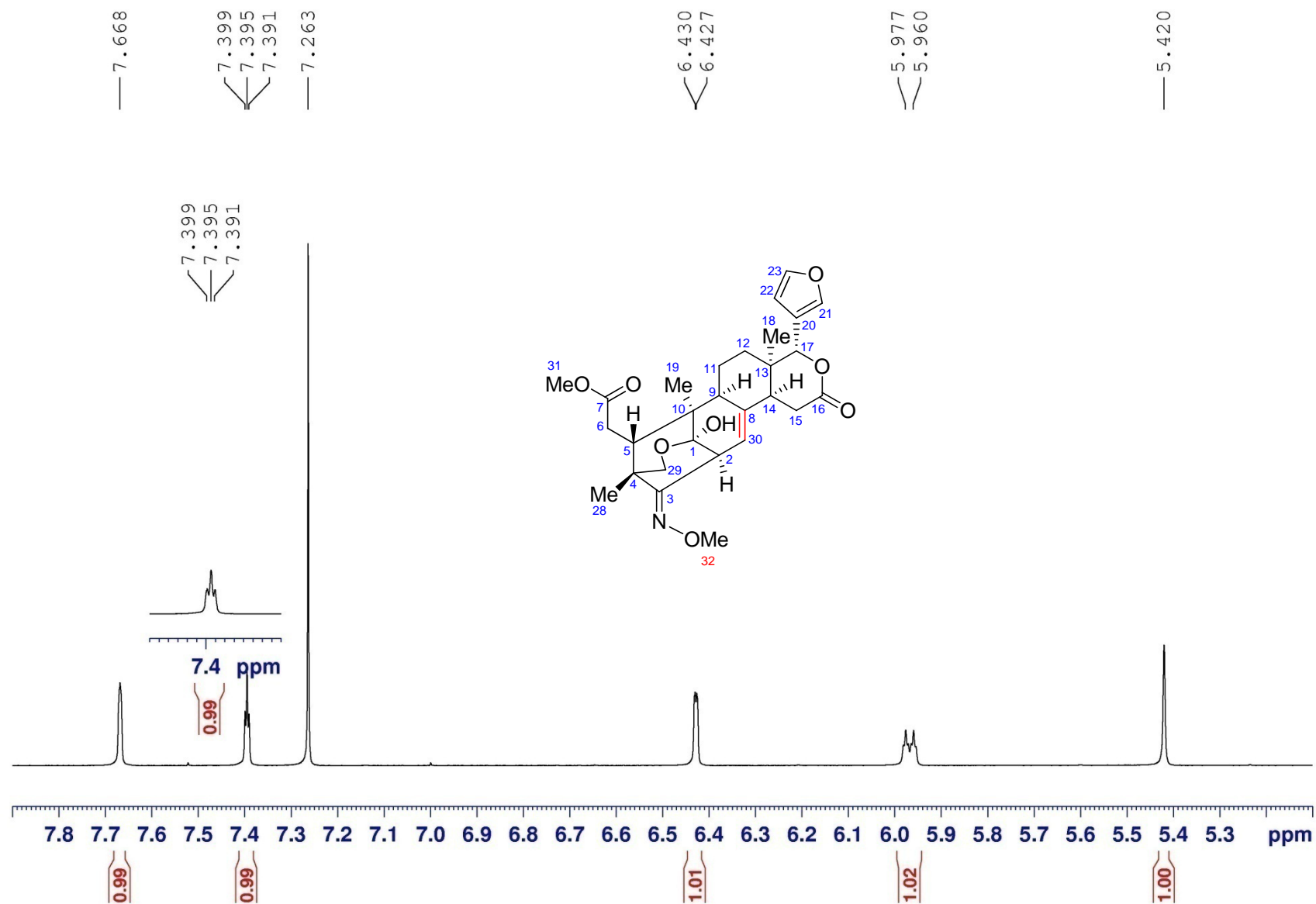


Bruker Compass DataAnalysis

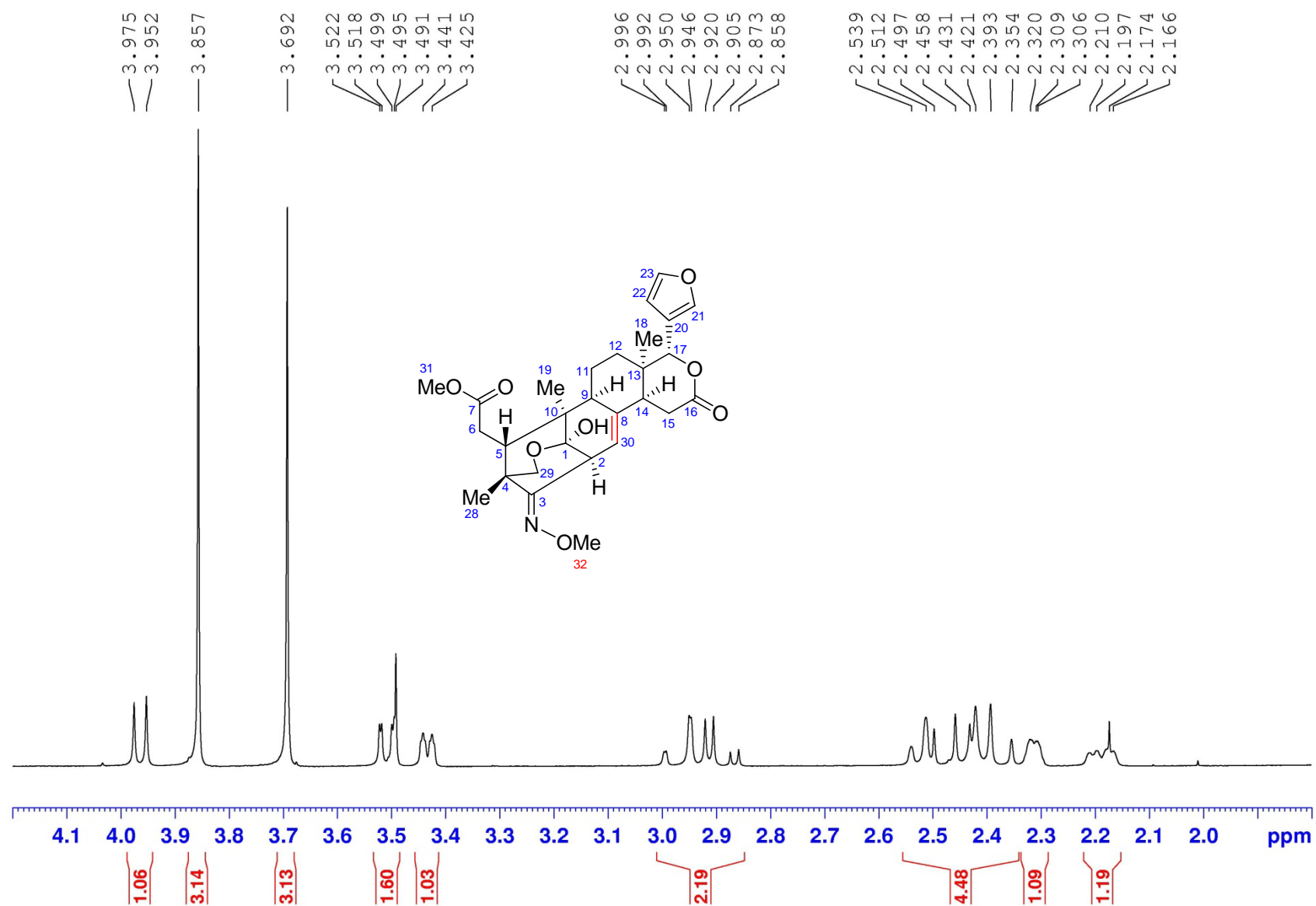
^1H NMR (400 MHz) spectrum of **9b** in CDCl_3



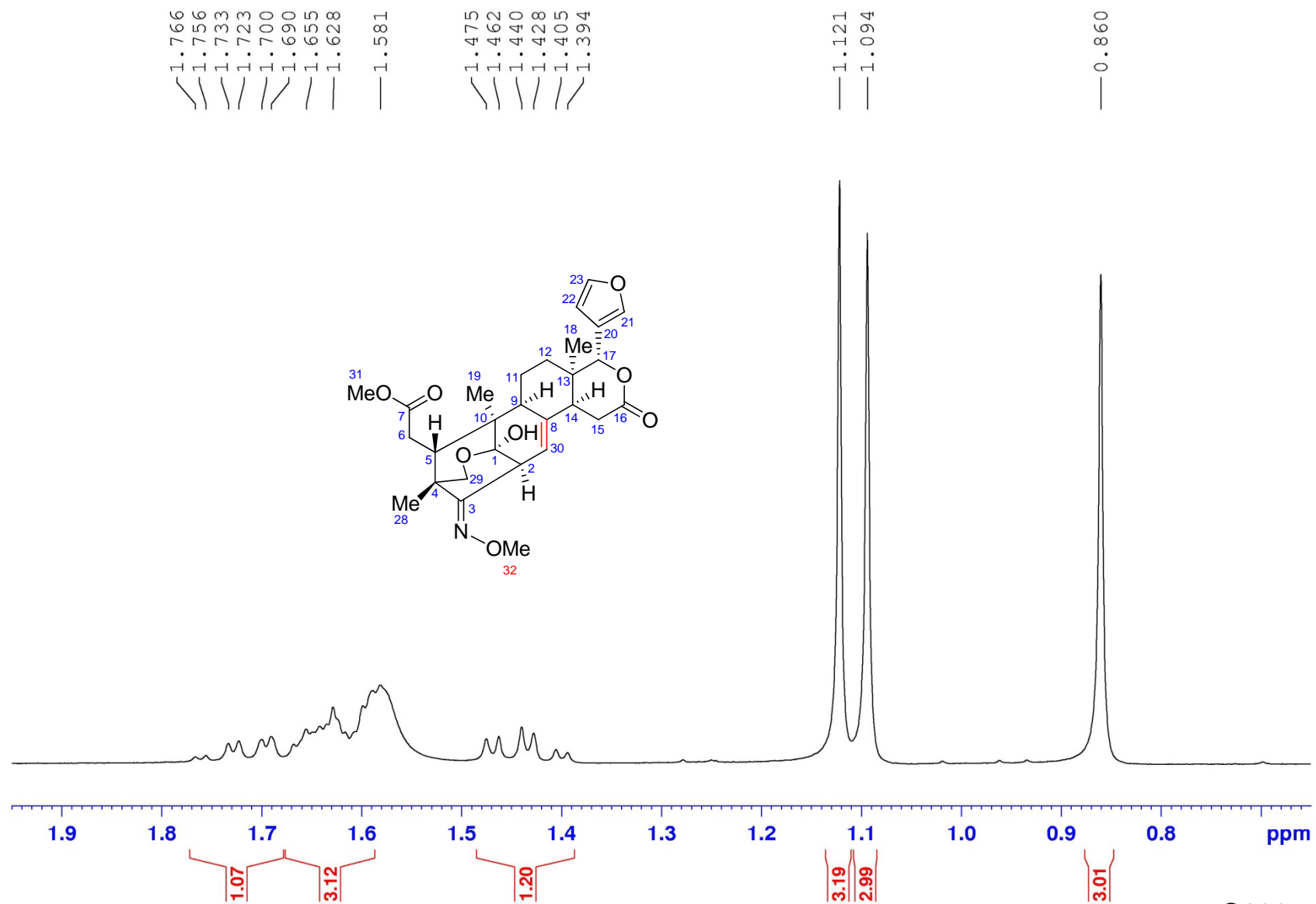
^1H NMR (400 MHz) spectrum of **9b** in CDCl_3



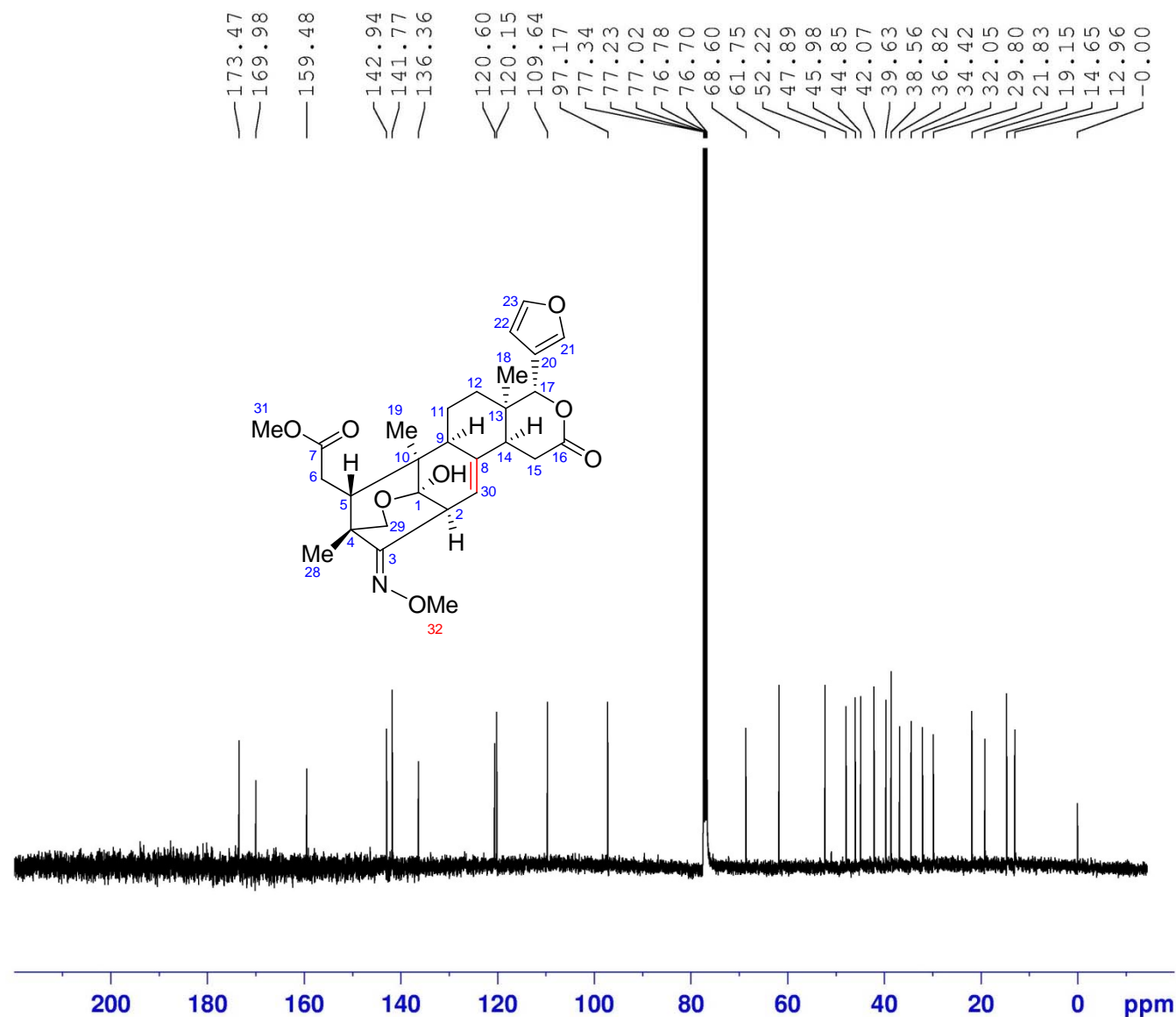
^1H NMR (400 MHz) spectrum of **9b** in CDCl_3



^1H NMR (400 MHz) spectrum of **9b** in CDCl_3



^{13}C NMR (100 MHz) spectrum of **9b** in CDCl_3



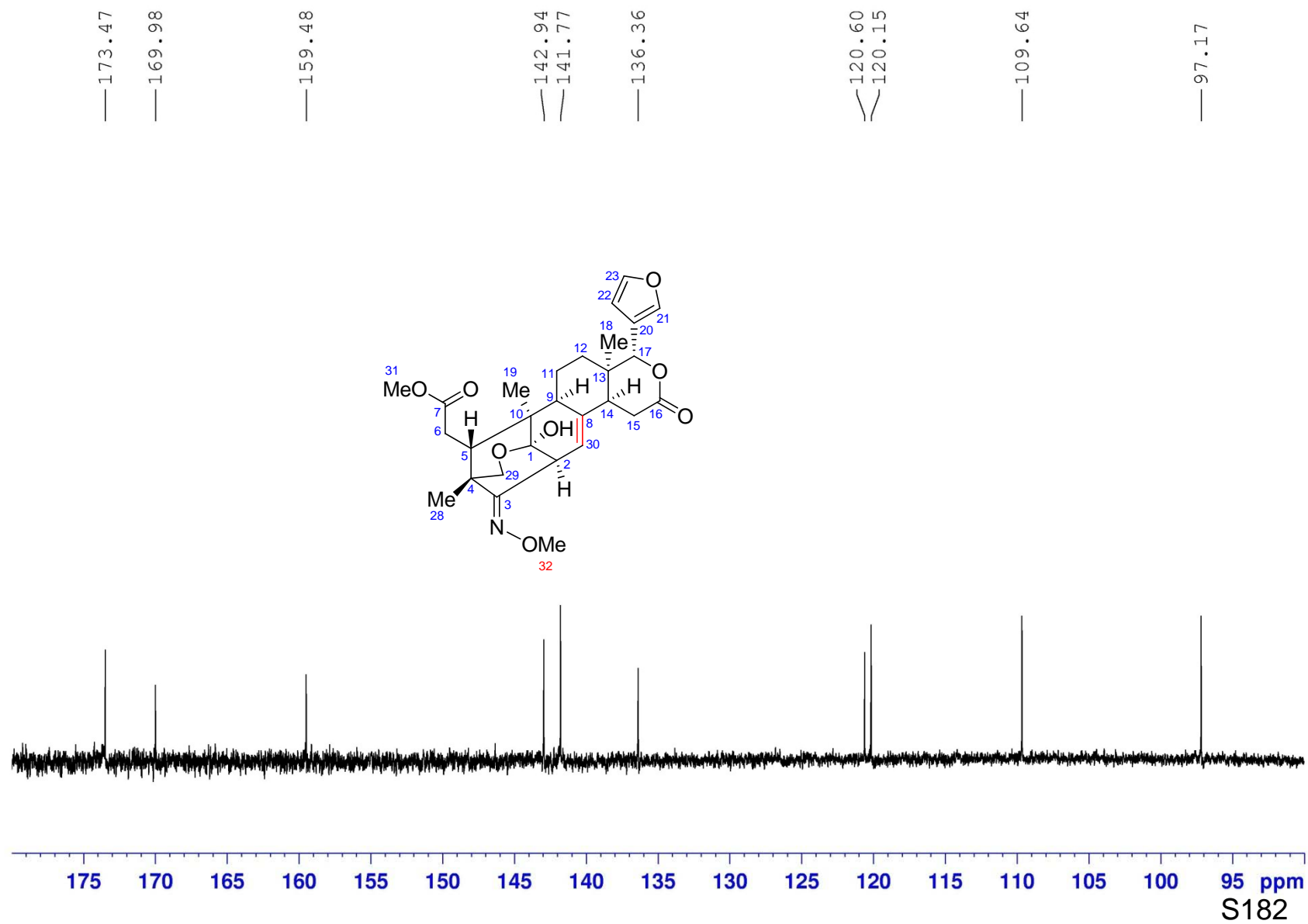
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NAME      czc-1-ibx-CH3-JIAYANG
EXPNO     2
PROCNO    1
Date_     20170927
Time      8.39
INSTRUM   spect
PROBHD    5 mm CPPBBO BB
PULPROG   zgpg30
TD        65536
SOLVENT   CDC13
NS        1024
DS        4
SWH       24038.461 Hz
FIDRES    0.366798 Hz
AQ        1.3631988 sec
RG        117.37
DW        20.800 usec
DE        18.00 usec
TE        297.0 K
D1        2.00000000 sec
D11       0.03000000 sec
TD0       1
    
```

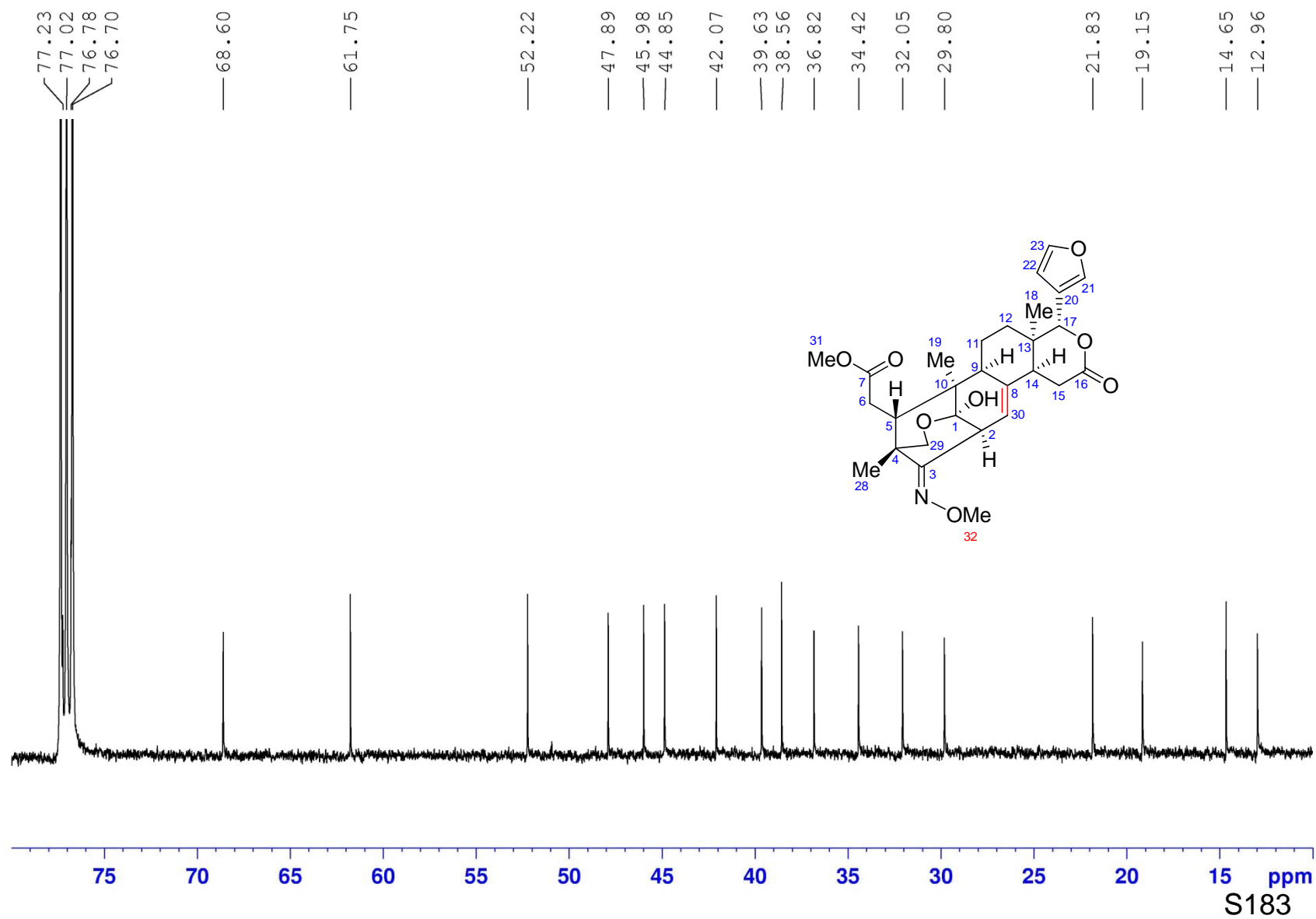
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===== CHANNEL f1 =====
SFO1    100.6233324 MHz
NUC1    13C
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SI      32768
SF      100.6127690 MHz
WDW     EM
SSB     0
LB      1.00 Hz
GB      0
PC      1.40
    
```

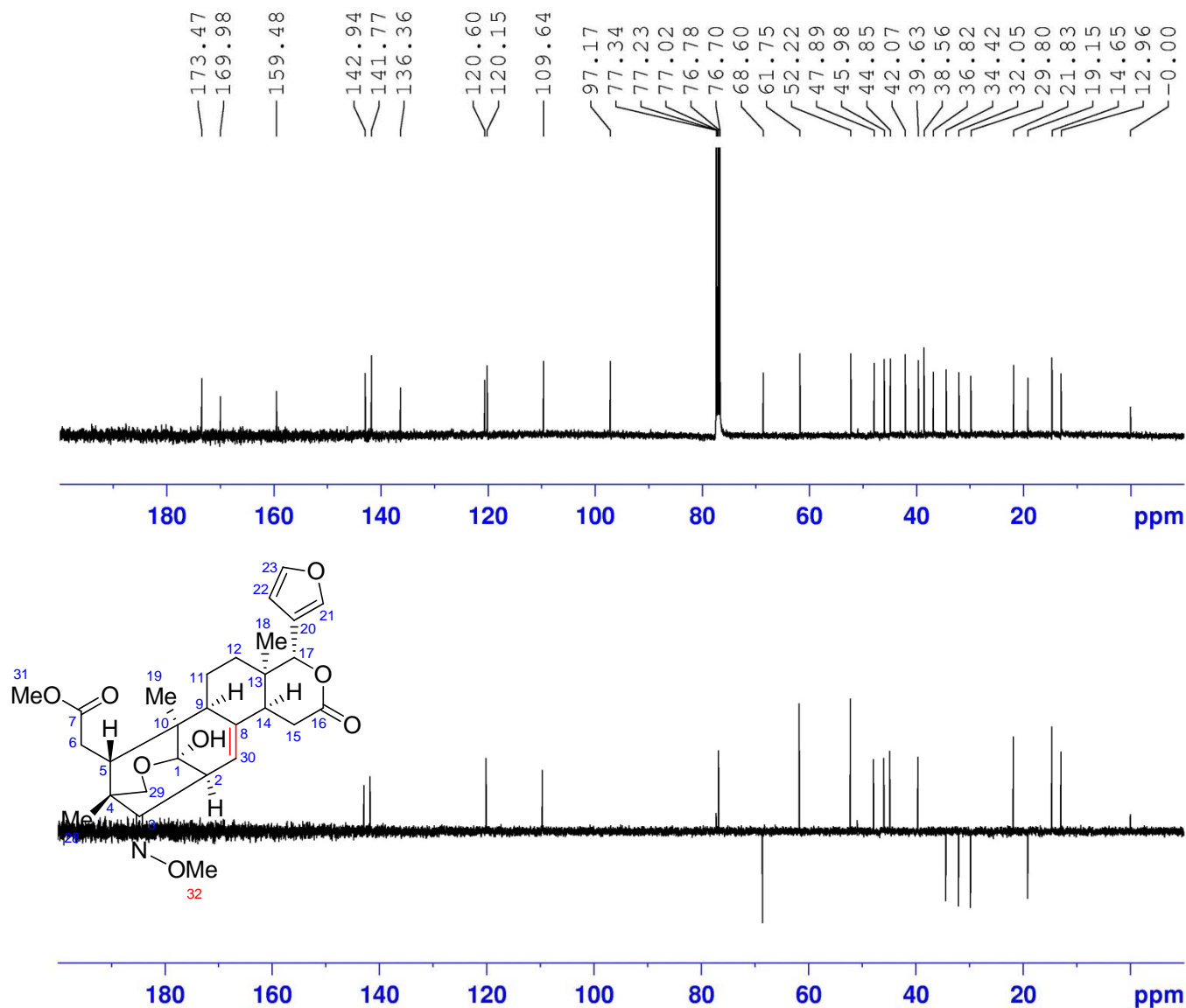
^{13}C NMR (100 MHz) spectrum of **9b** in CDCl_3



^{13}C NMR (100 MHz) spectrum of **9b** in CDCl_3



DEPT 135 spectrum of **9b** in CDCl₃



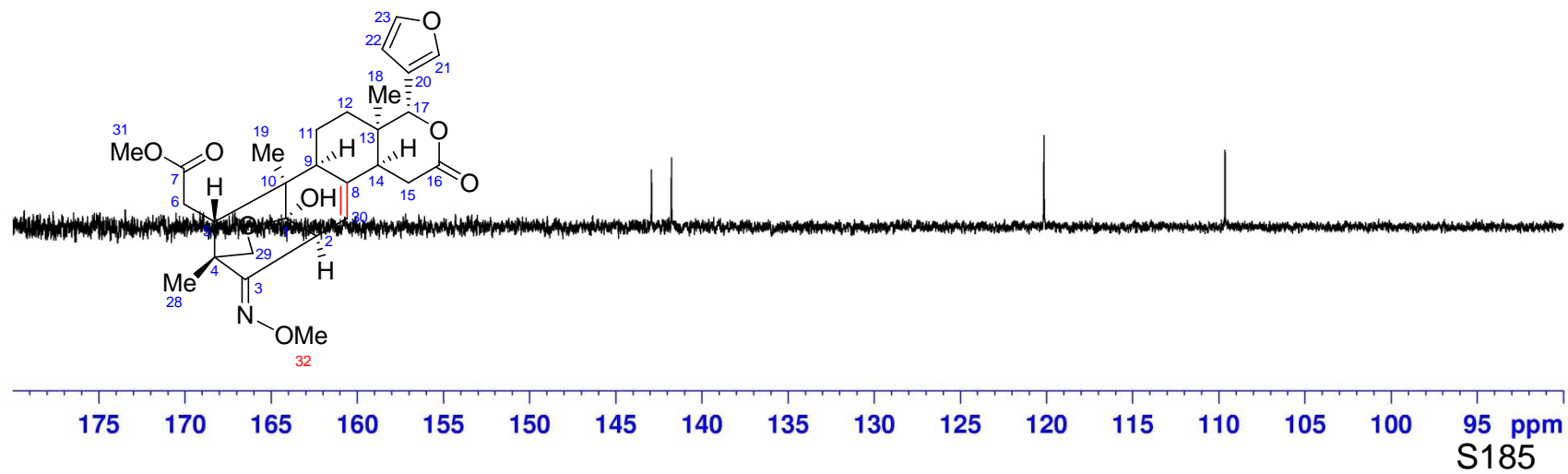
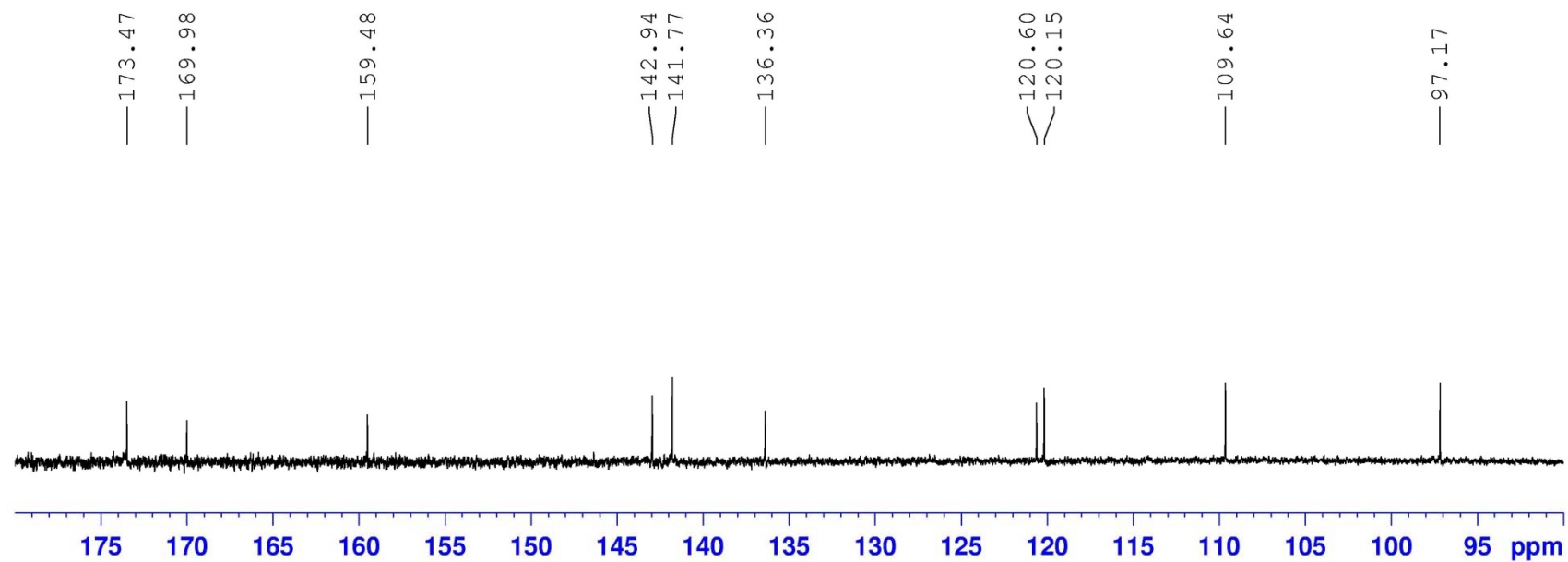
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NAME      czc-1-ibx-CH3-JIAYANG
EXPNO      2
PROCNO     1
Date_      20170927
Time       8.39
INSTRUM    spect
PROBHD     5 mm CPPBBO BB
PULPROG    zgpg30
TD         65536
SOLVENT    CDCl3
NS         1024
DS         4
SWH        24038.461 Hz
FIDRES     0.366798 Hz
AQ         1.3631988 sec
RG         117.37
DW         20.800 usec
DE         18.00 usec
TE         297.0 K
D1         2.00000000 sec
D11        0.03000000 sec
TD0        1
    
```

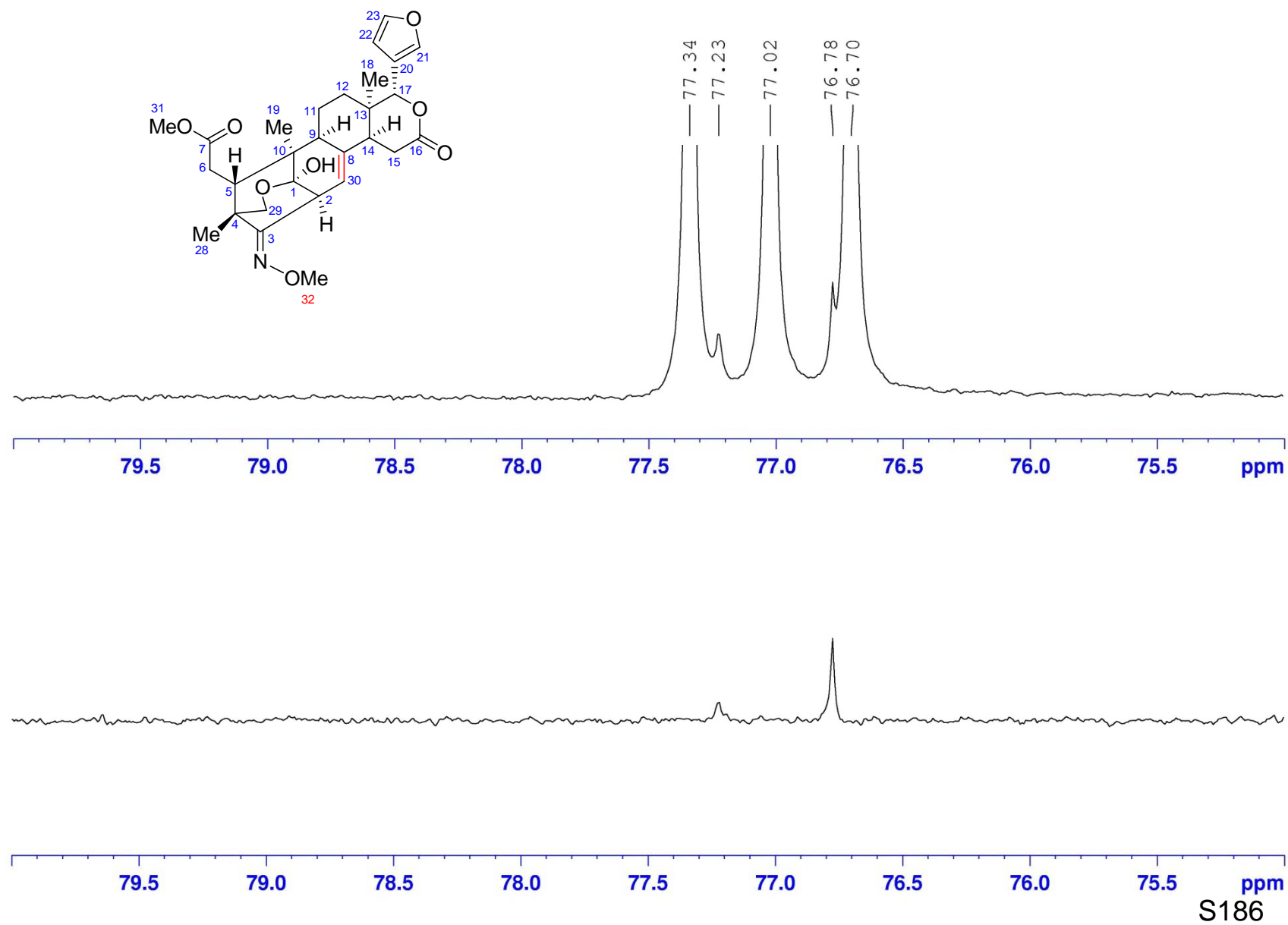
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===== CHANNEL f1 =====
SF01      100.6233324 MHz
NUC1      13C
P1        10.00 usec
SI        32768
SF        100.6127690 MHz
WDW       EM
SSB       0
LB        1.00 Hz
GB        0
PC        1.40
    
```

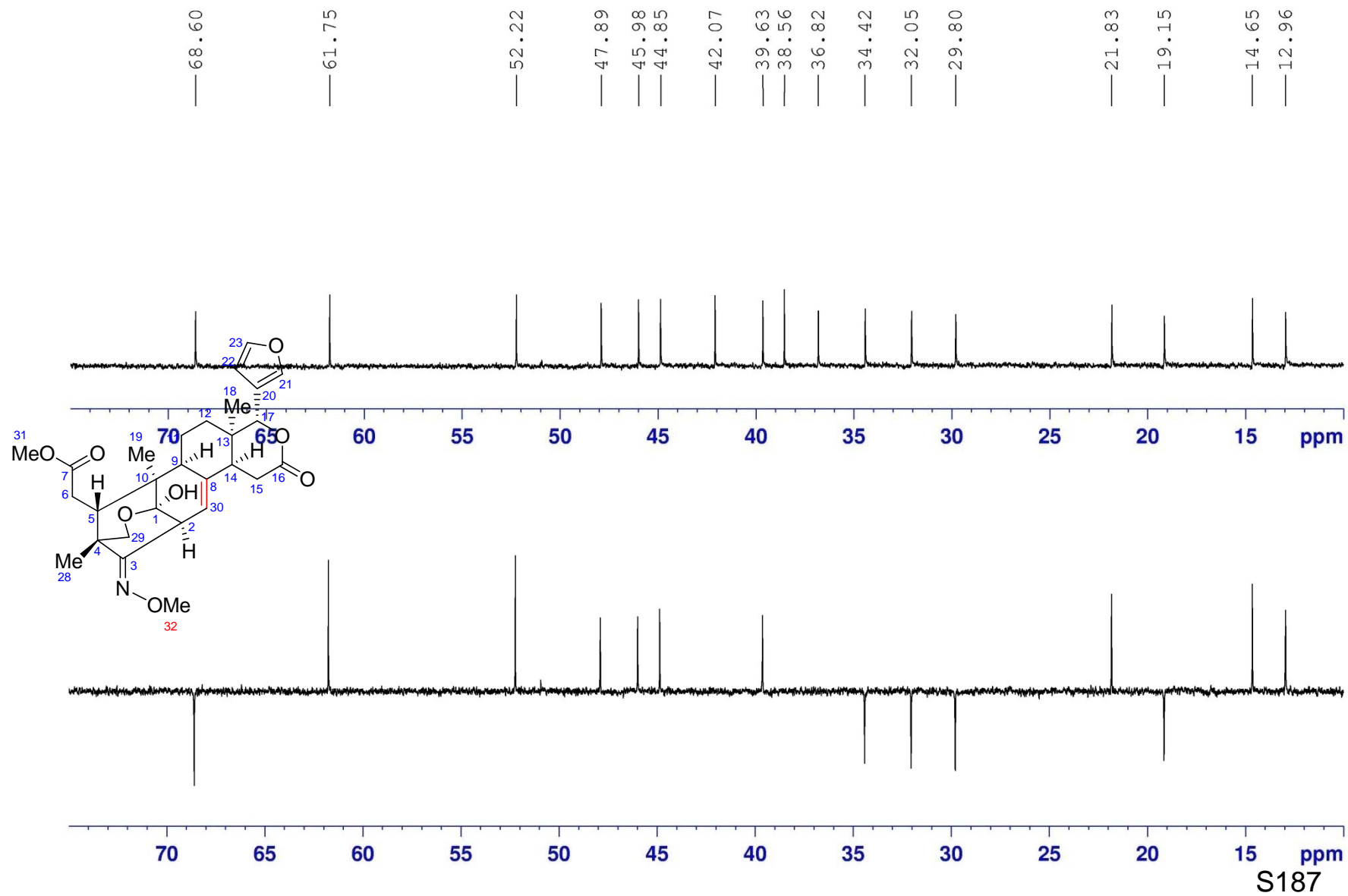
DEPT 135 spectrum of **9b** in CDCl₃



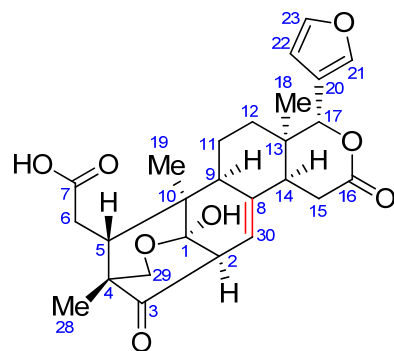
DEPT 135 spectrum of **9b** in CDCl₃



DEPT 135 spectrum of **9b** in CDCl₃



LR-ESIMS for compound **10**



Generic Display Report

Analysis Info

Analysis Name H:\9.30\65_RA1_01_1514.d

Method lc-7.9

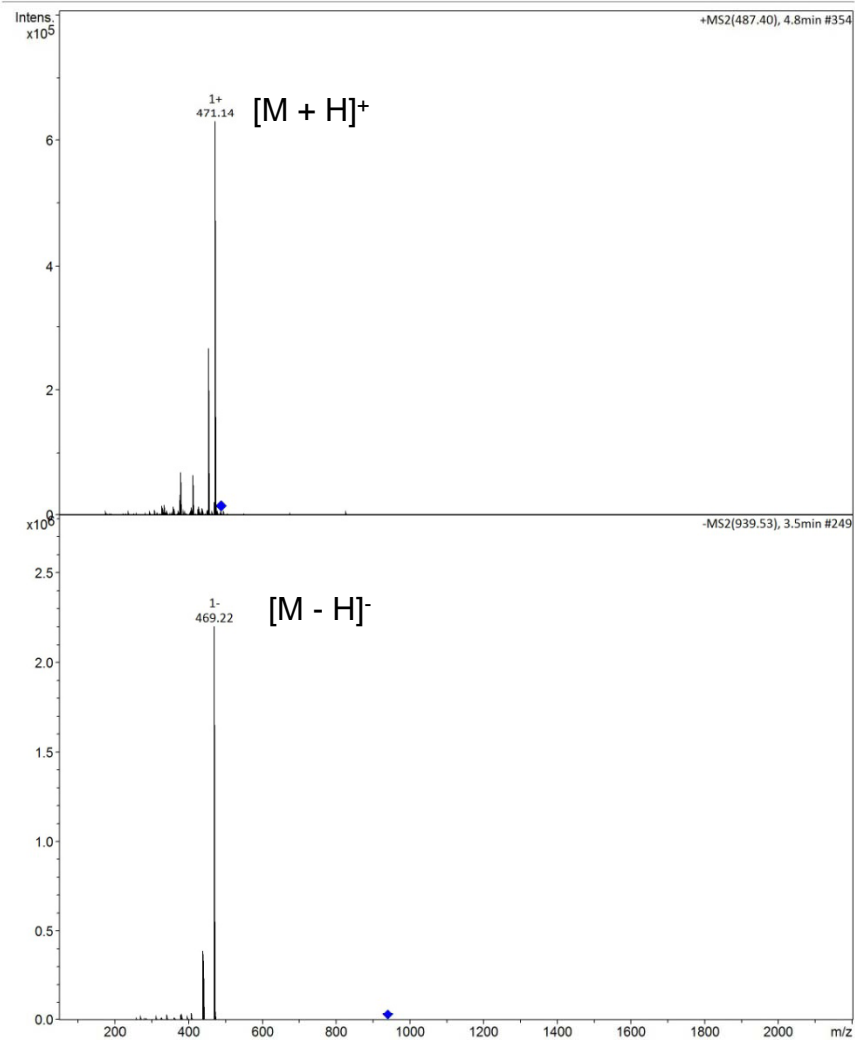
Sample Name 69140922-alternating-500-50-2200-MS2_1514.m

Comment

Acquisition D 2018/9/21 12:07:40

Operator bruker

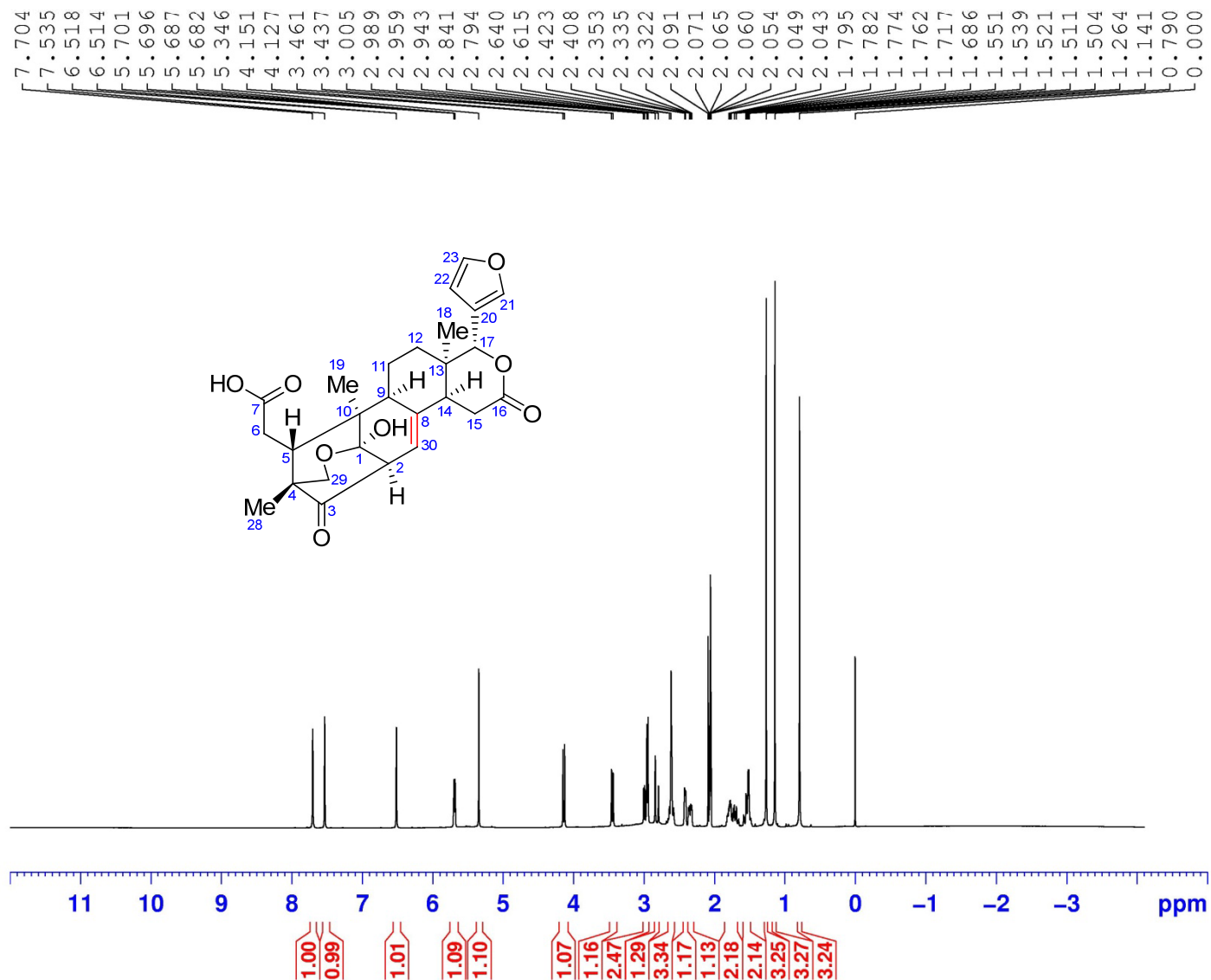
Instrument amaZon SL



Bruker Compass DataAnalysis

S188

¹H NMR (400 MHz) spectrum of **10** in (CD₃)₂CO

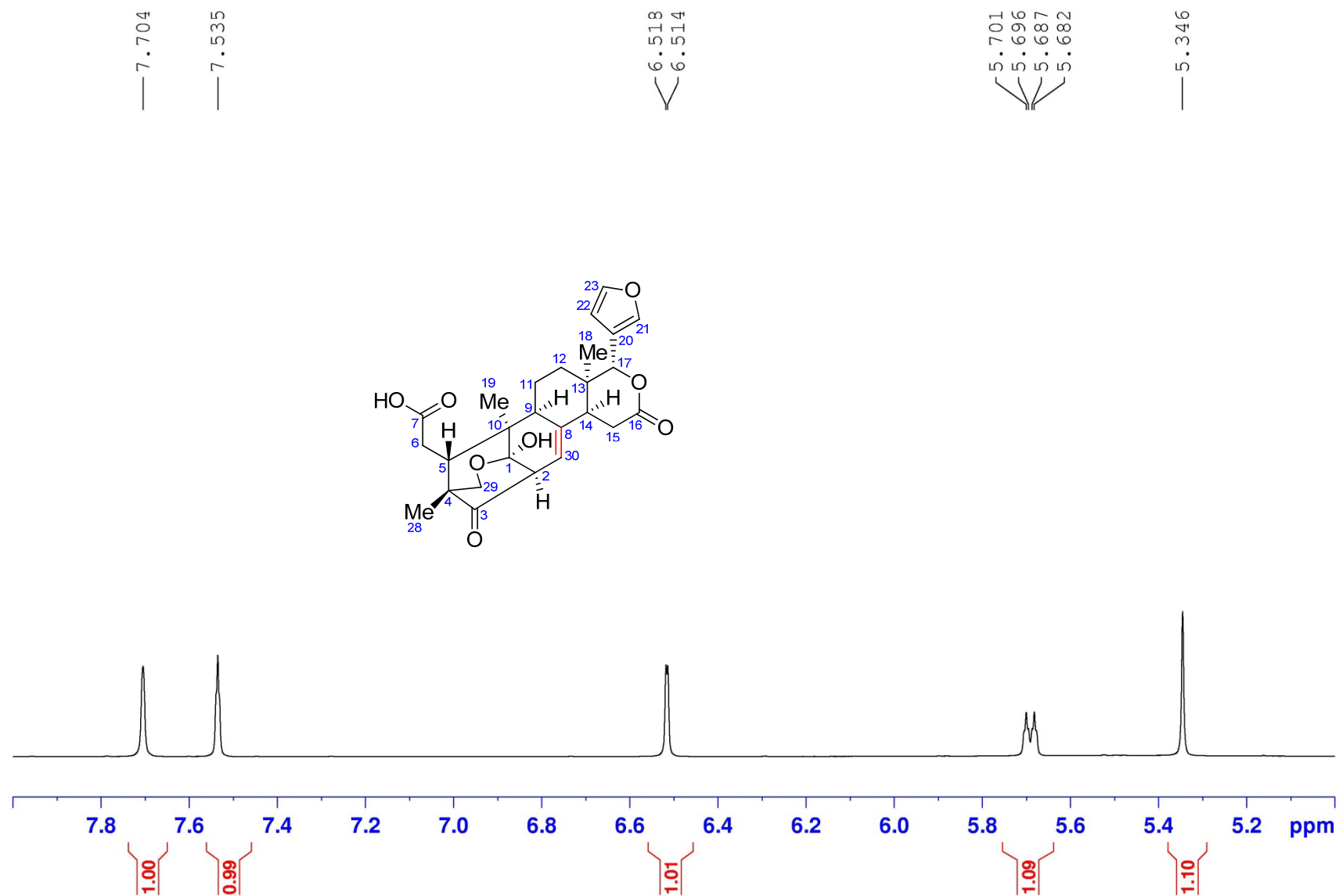


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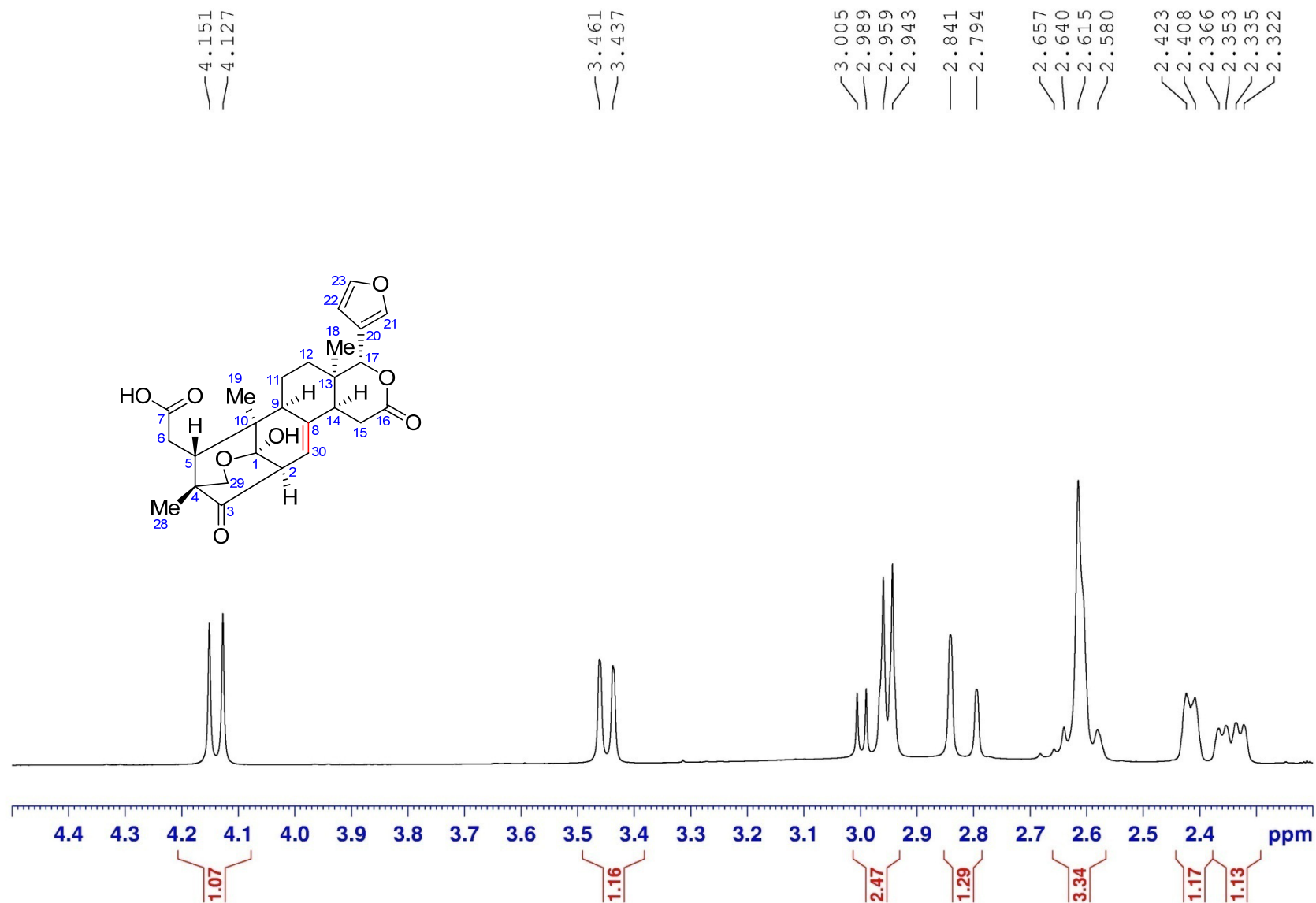
NAME      CZC-1-IBX-2
EXPNO     1
PROCNO    1
Date_     20170710
Time      15.10
INSTRUM   spect
PROBHD    5 mm CFPBBO BB
PULPROG   zg30
TD        65536
SOLVENT   Acetone
NS        16
DS        2
SWH       8223.685 Hz
FIDRES    0.125483 Hz
AQ        3.9846387 sec
RG        147.94
DW        60.800 usec
DE        10.00 usec
TE        297.0 K
D1        1.00000000 sec
TD0       1

===== CHANNEL f1 =====
SFO1      400.1324710 MHz
NUC1      1H
P1        11.50 usec
SI        65536
SF        400.1300051 MHz
WDW       EM
SSB       0
LB        0.30 Hz
GB        0
PC        1.00
    
```

^1H NMR (400 MHz) spectrum of **10** in $(\text{CD}_3)_2\text{CO}$

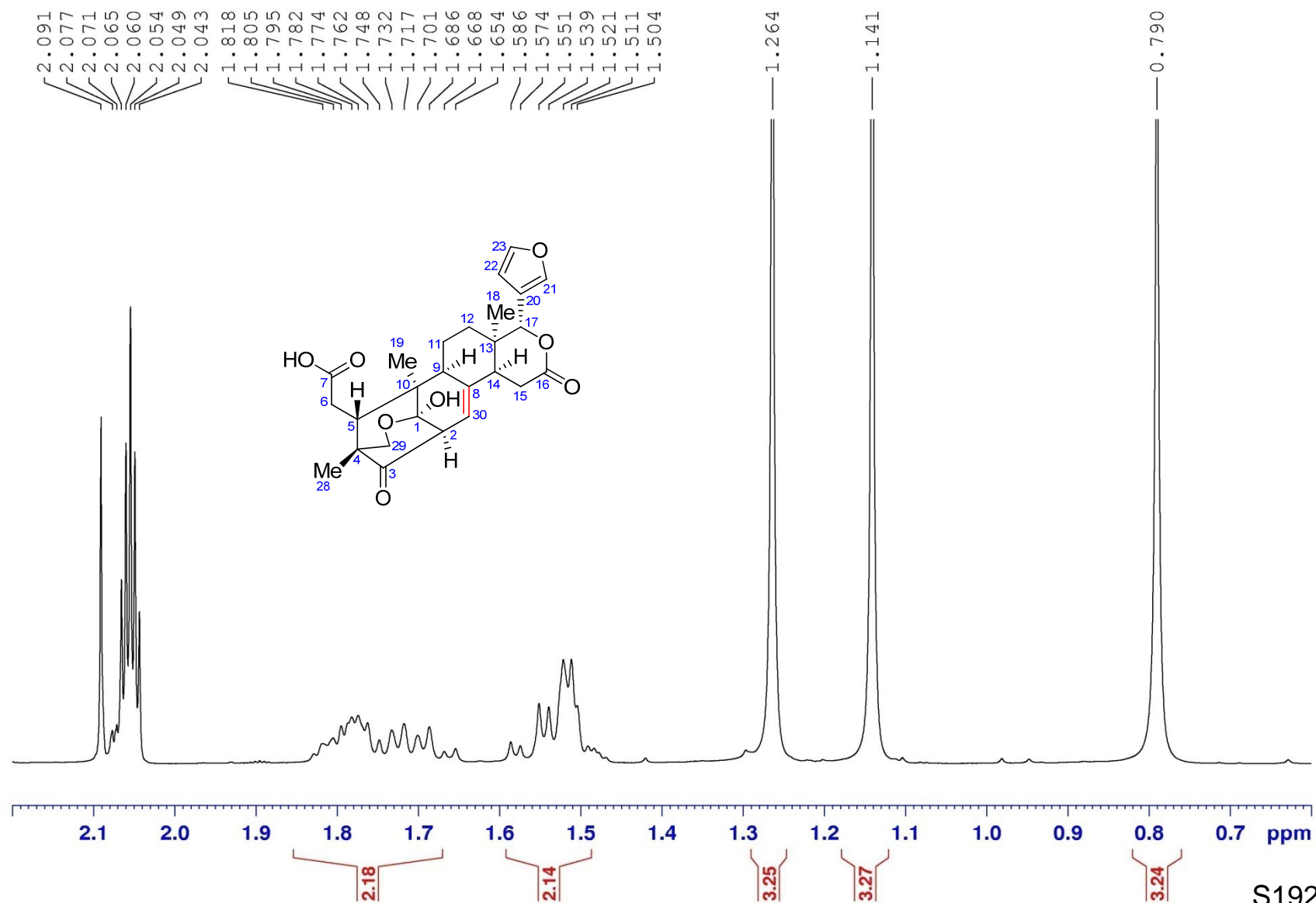


^1H NMR (400 MHz) spectrum of **10** in $(\text{CD}_3)_2\text{CO}$

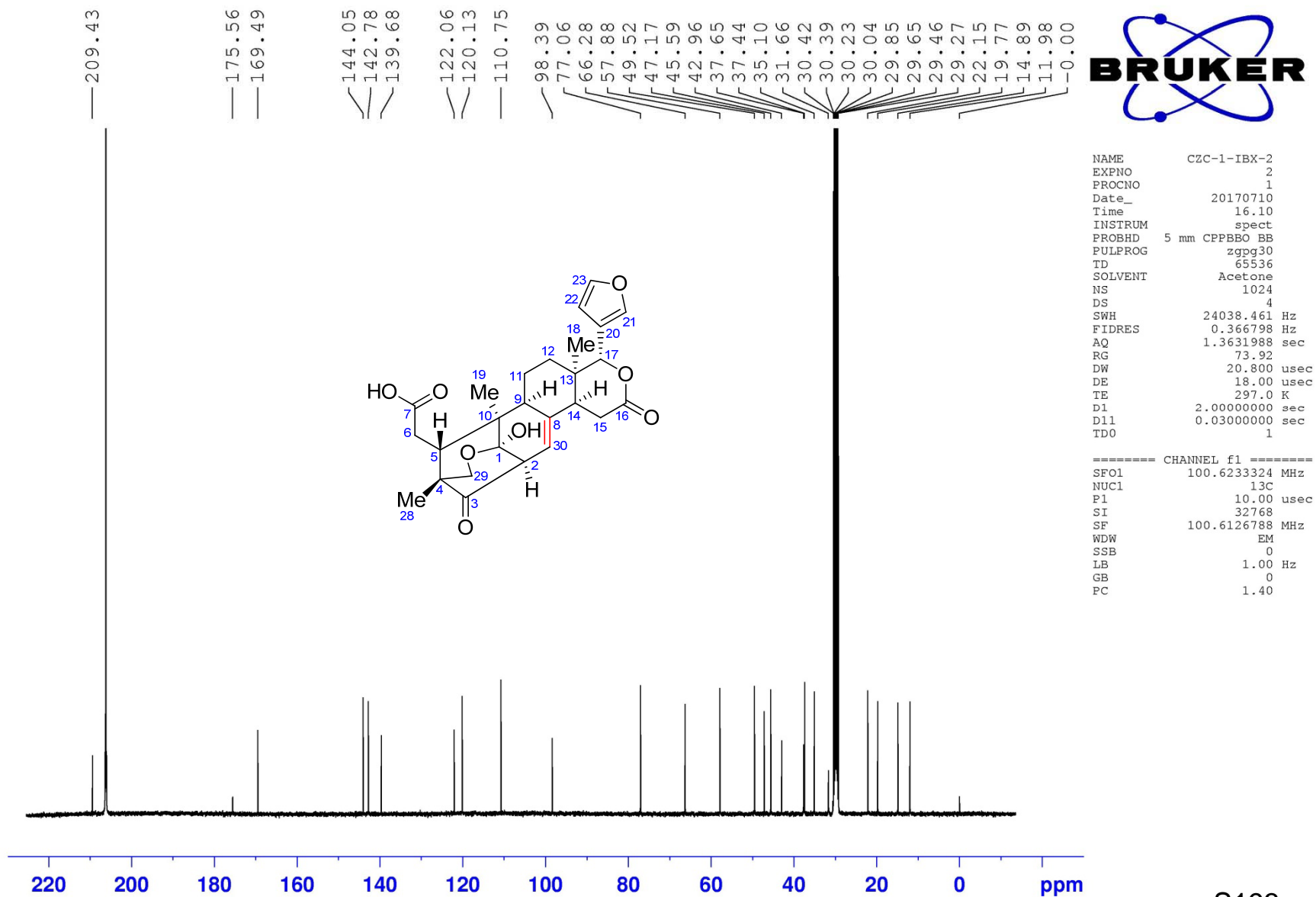


S191

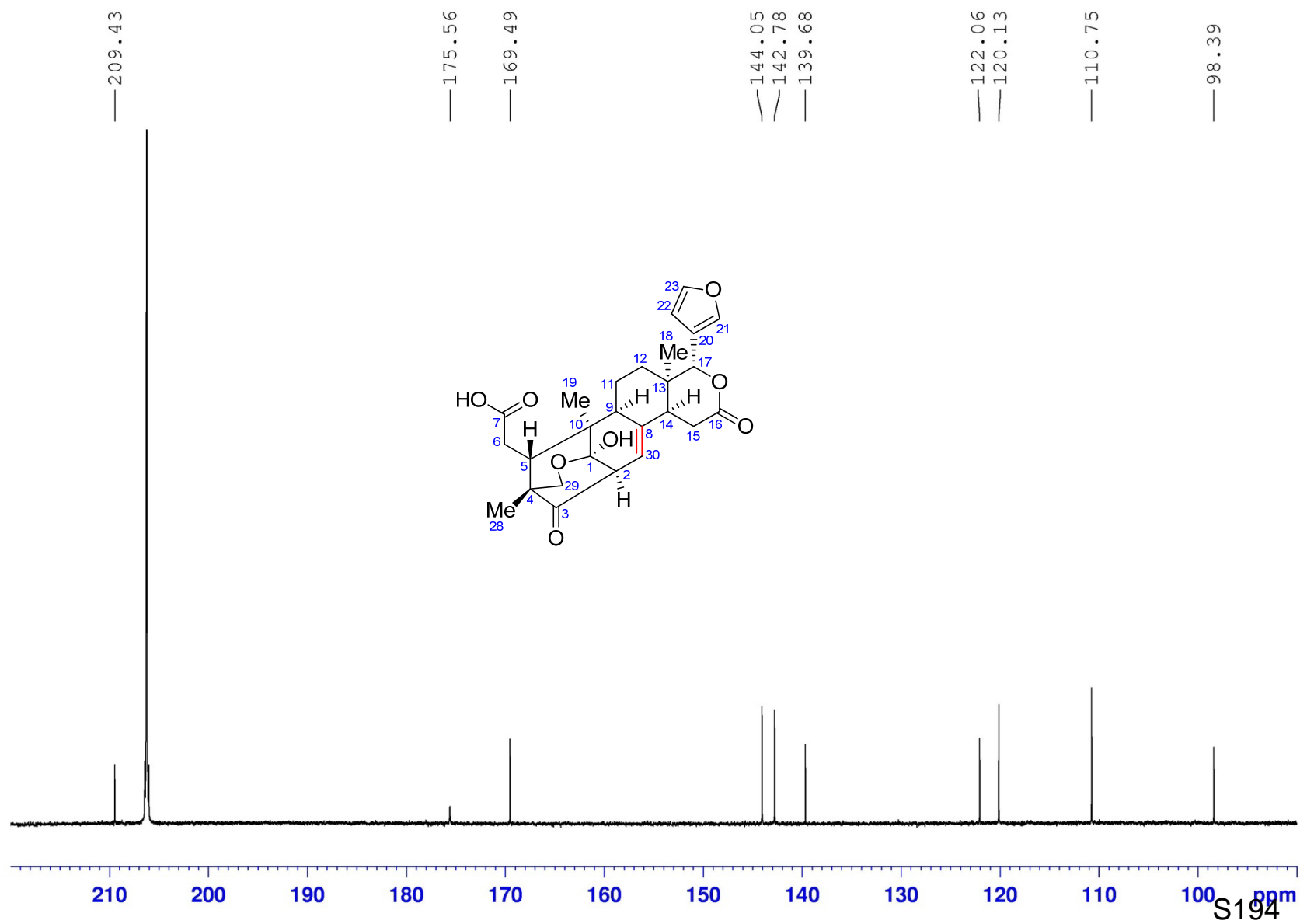
^1H NMR (400 MHz) spectrum of **10** in $(\text{CD}_3)_2\text{CO}$



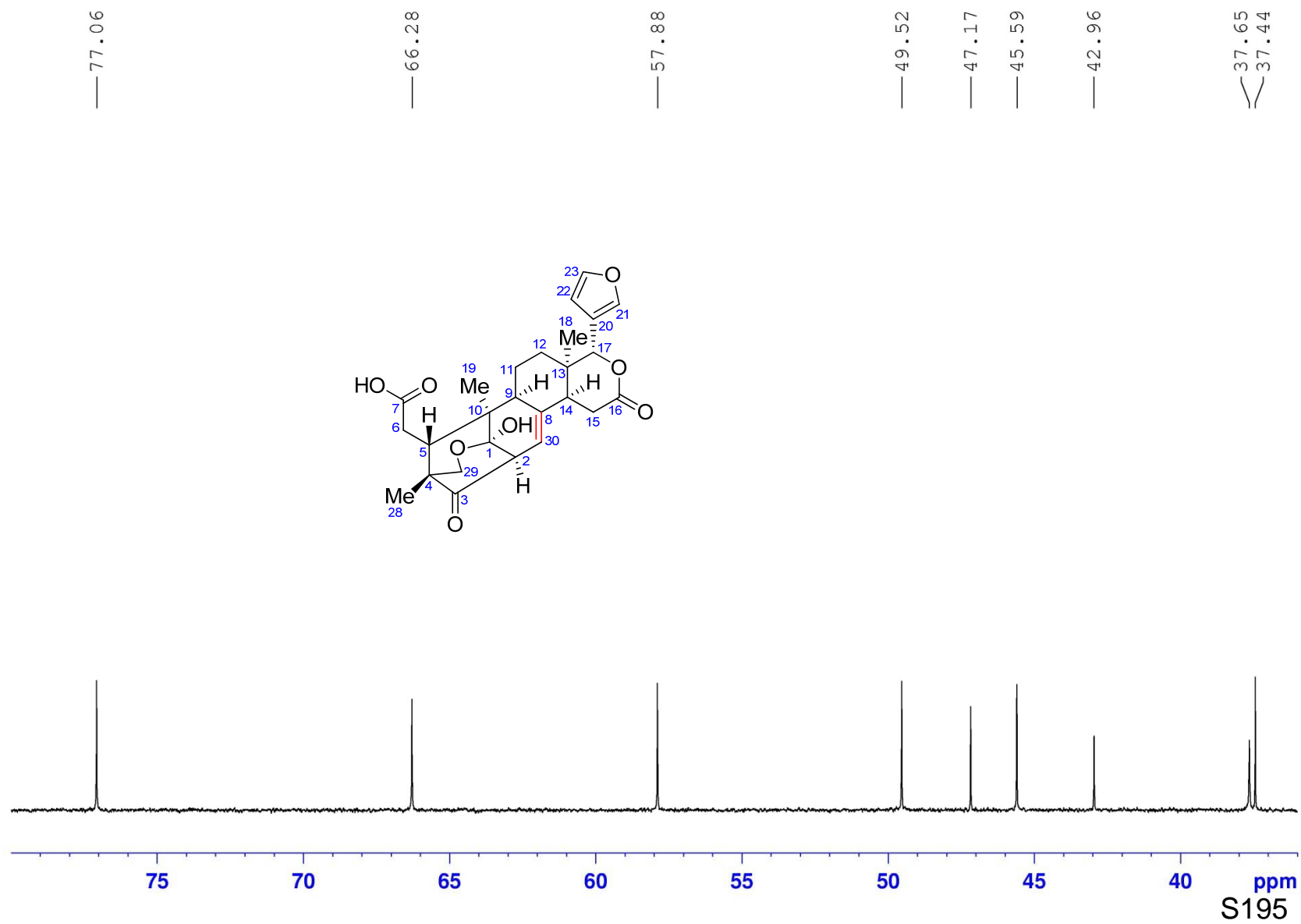
^{13}C NMR (100 MHz) spectrum of **10** in $(\text{CD}_3)_2\text{CO}$



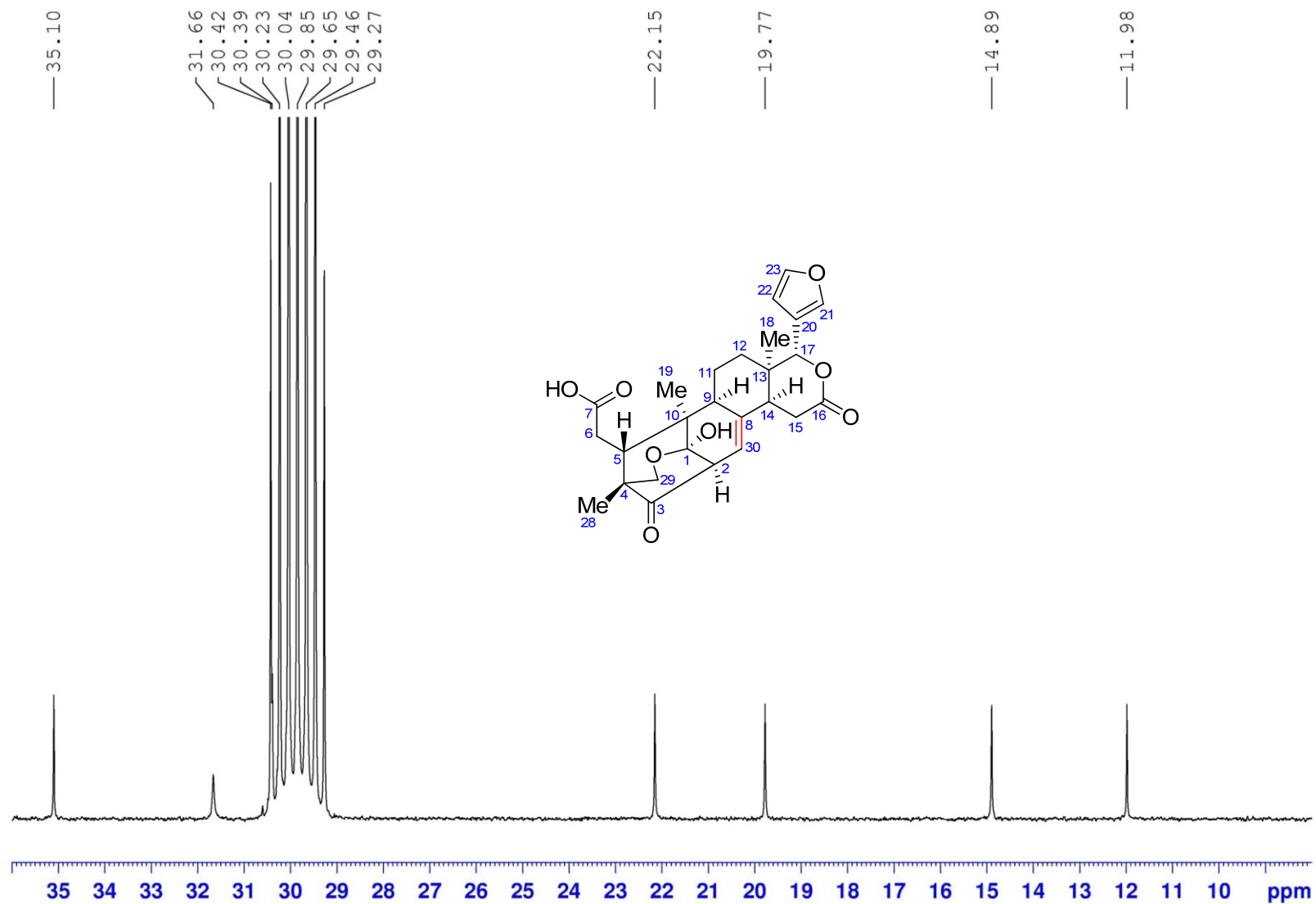
^{13}C NMR (100 MHz) spectrum of **10** in $(\text{CD}_3)_2\text{CO}$



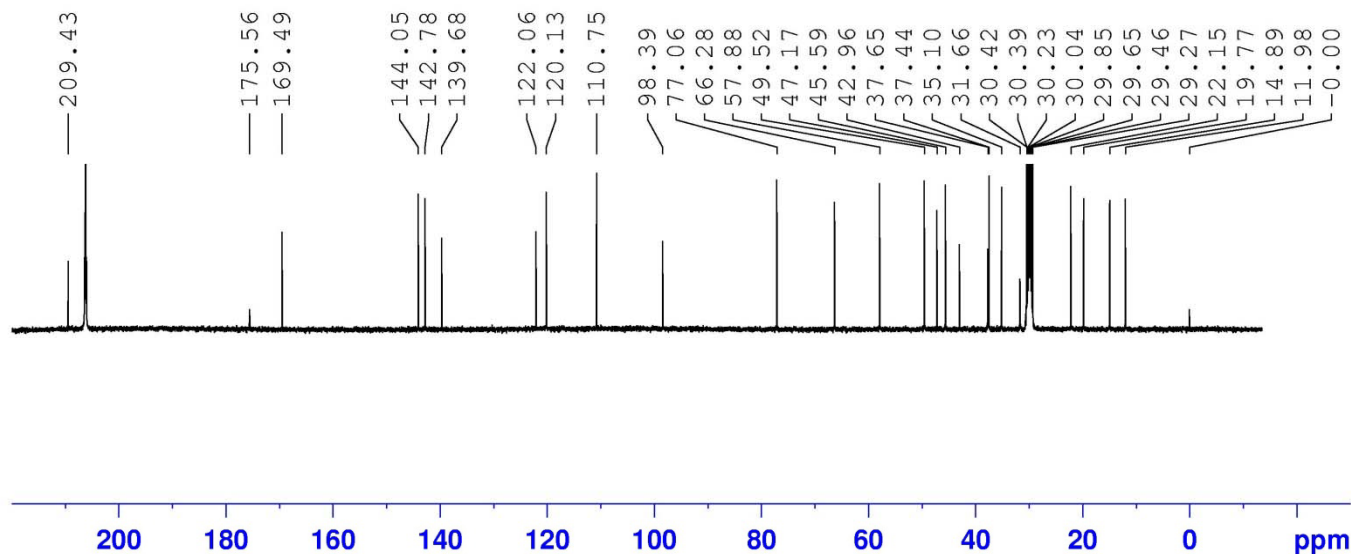
^{13}C NMR (100 MHz) spectrum of **10** in $(\text{CD}_3)_2\text{CO}$



^{13}C NMR (100 MHz) spectrum of **10** in $(\text{CD}_3)_2\text{CO}$

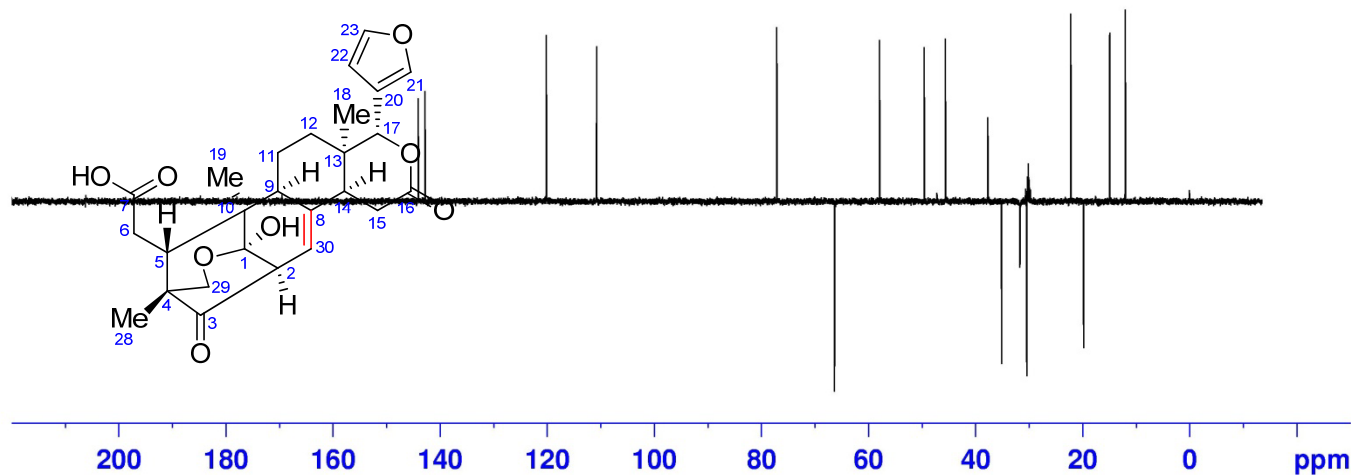


DEPT 135 spectrum of **10** in (CD₃)₂CO



```

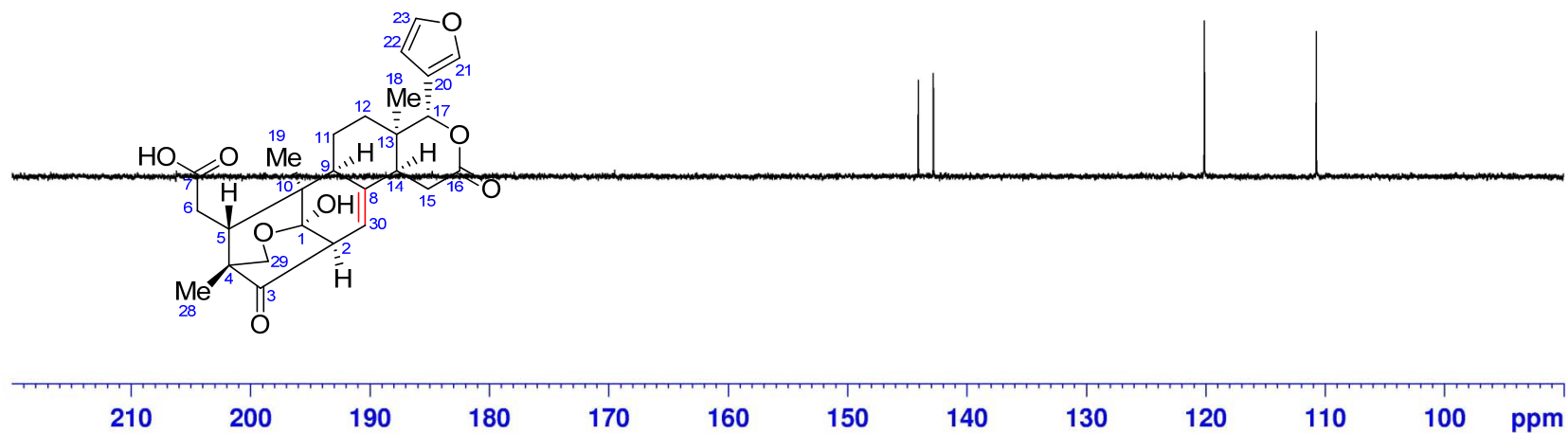
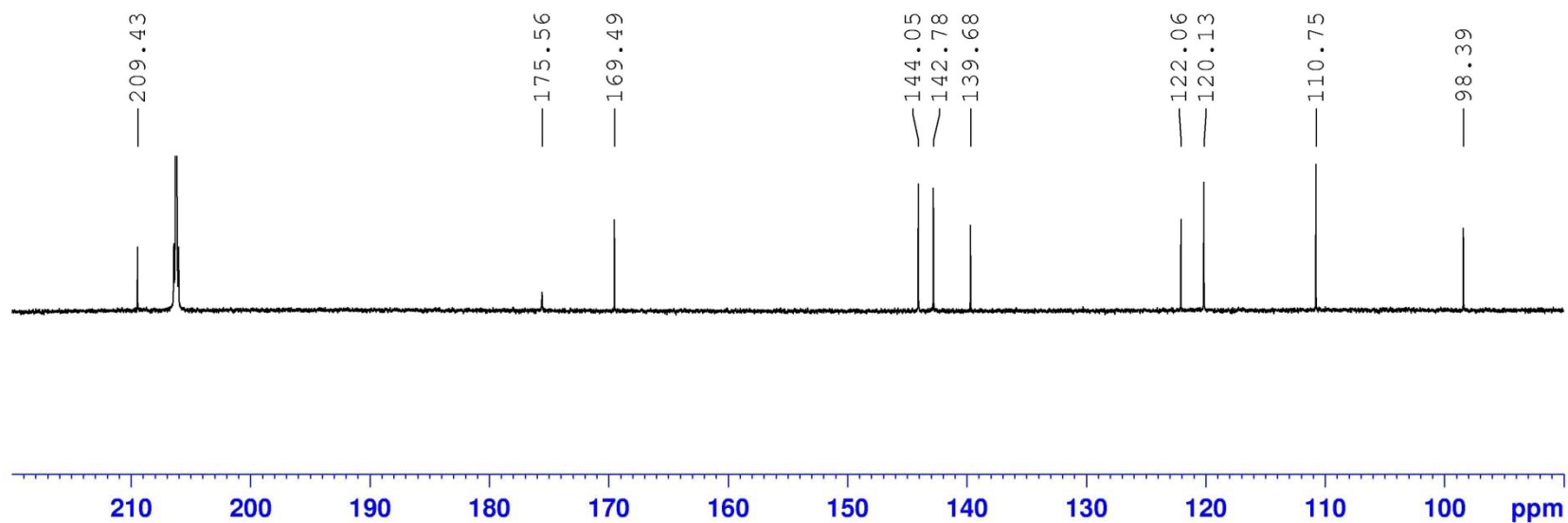
NAME      CZC-1-IBX-2
EXPNO     3
PROCNO    1
Date_     20170710
Time      16.28
INSTRUM   spect
PROBHD    5 mm CPPBBO BB
PULPROG   deptspl35
TD        65536
SOLVENT   Acetone
NS        300
DS        4
SWH       24038.461 Hz
FIDRES    0.366798 Hz
AQ        1.3631988 sec
RG        130.26
DW        20.800 usec
DE        18.00 usec
TE        297.0 K
CNST2     145.0000000
D1        2.00000000 sec
D2        0.00344828 sec
D12       0.00002000 sec
TD0       1
    
```



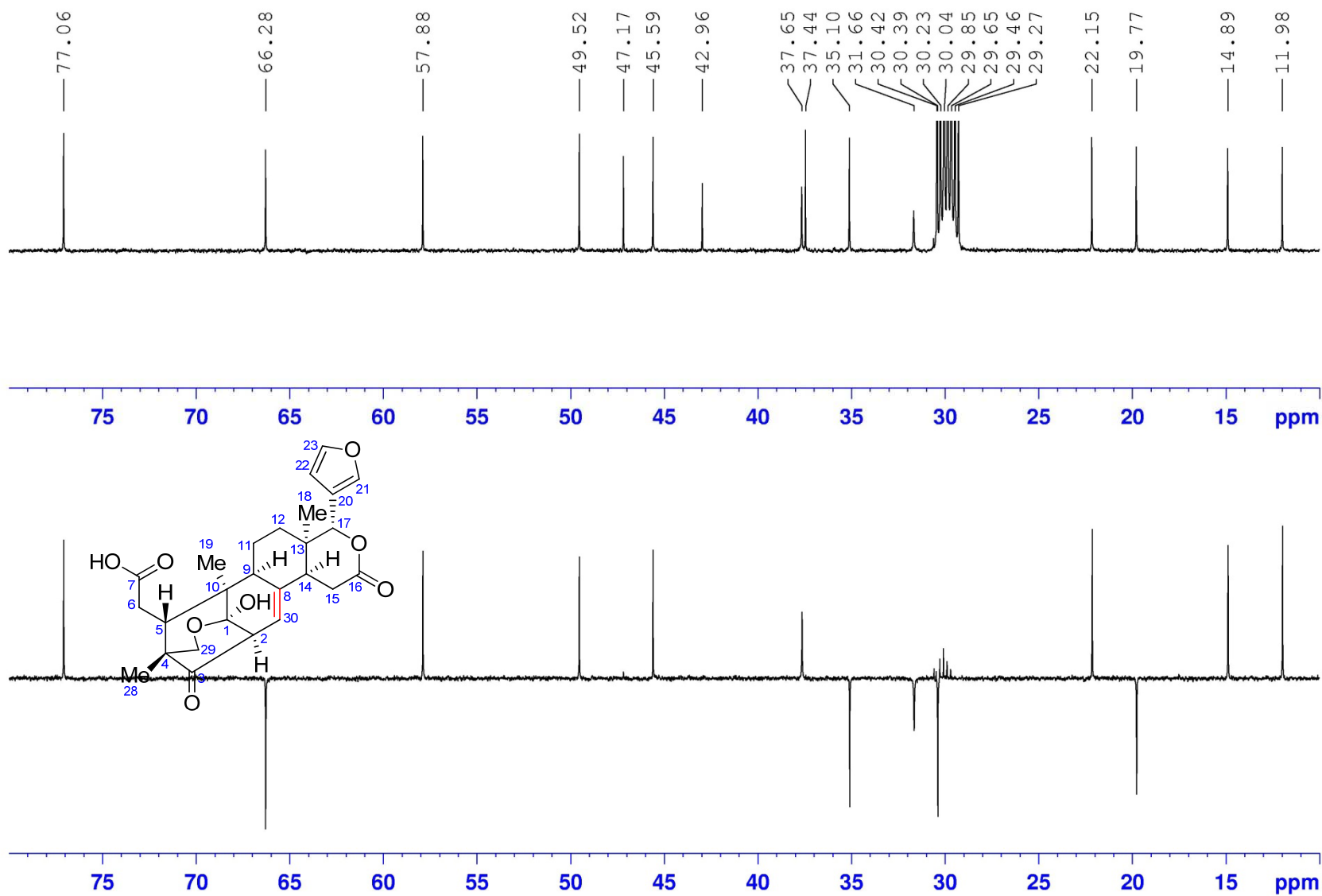
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===== CHANNEL f1 =====
SFO1     100.6233324 MHz
NUC1     13C
P1       10.00 usec
P13      2000.00 usec
SI       32768
SF       100.6126794 MHz
WDW      EM
SSB      0
LB       1.00 Hz
GB       0
PC       1.40
    
```

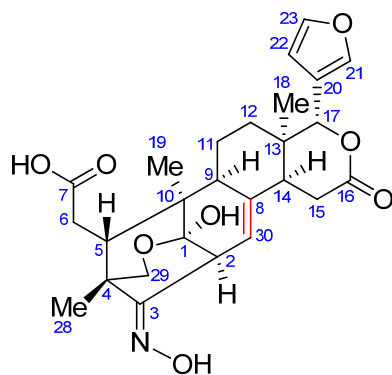
DEPT 135 spectrum of **10** in (CD₃)₂CO



DEPT 135 spectrum of **10** in $(\text{CD}_3)_2\text{CO}$

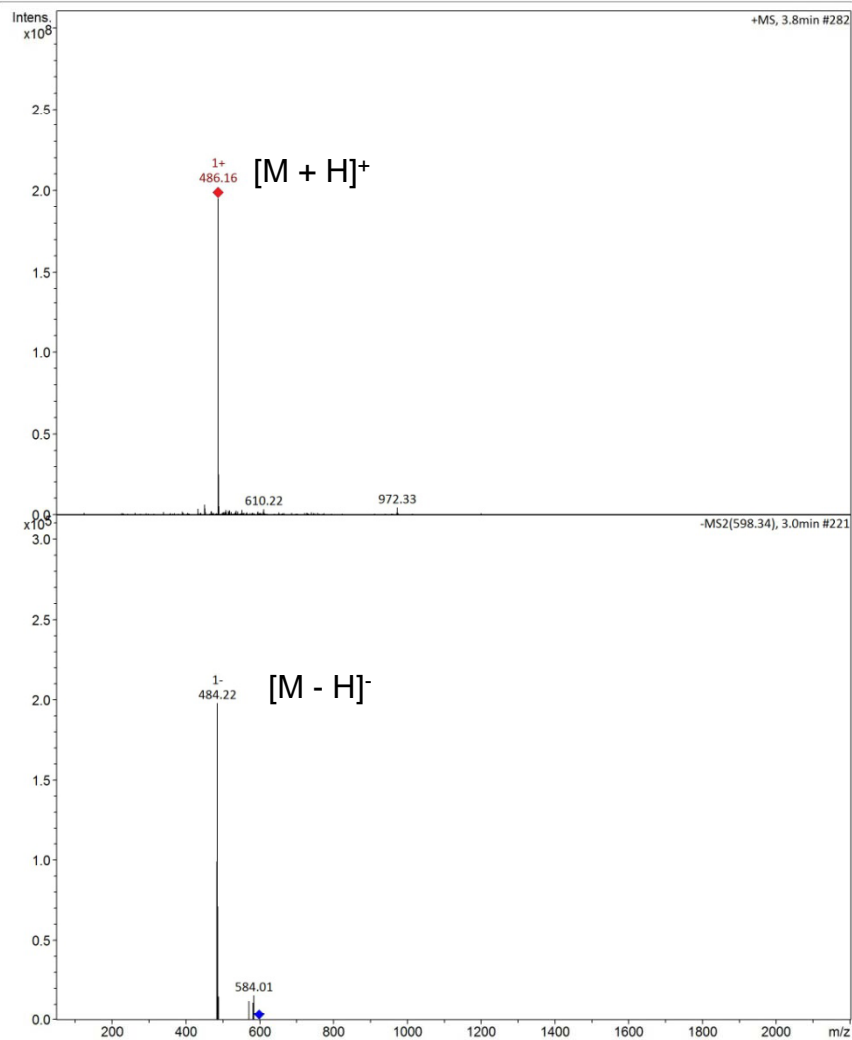


LR-ESIMS for compound **10a**



Generic Display Report

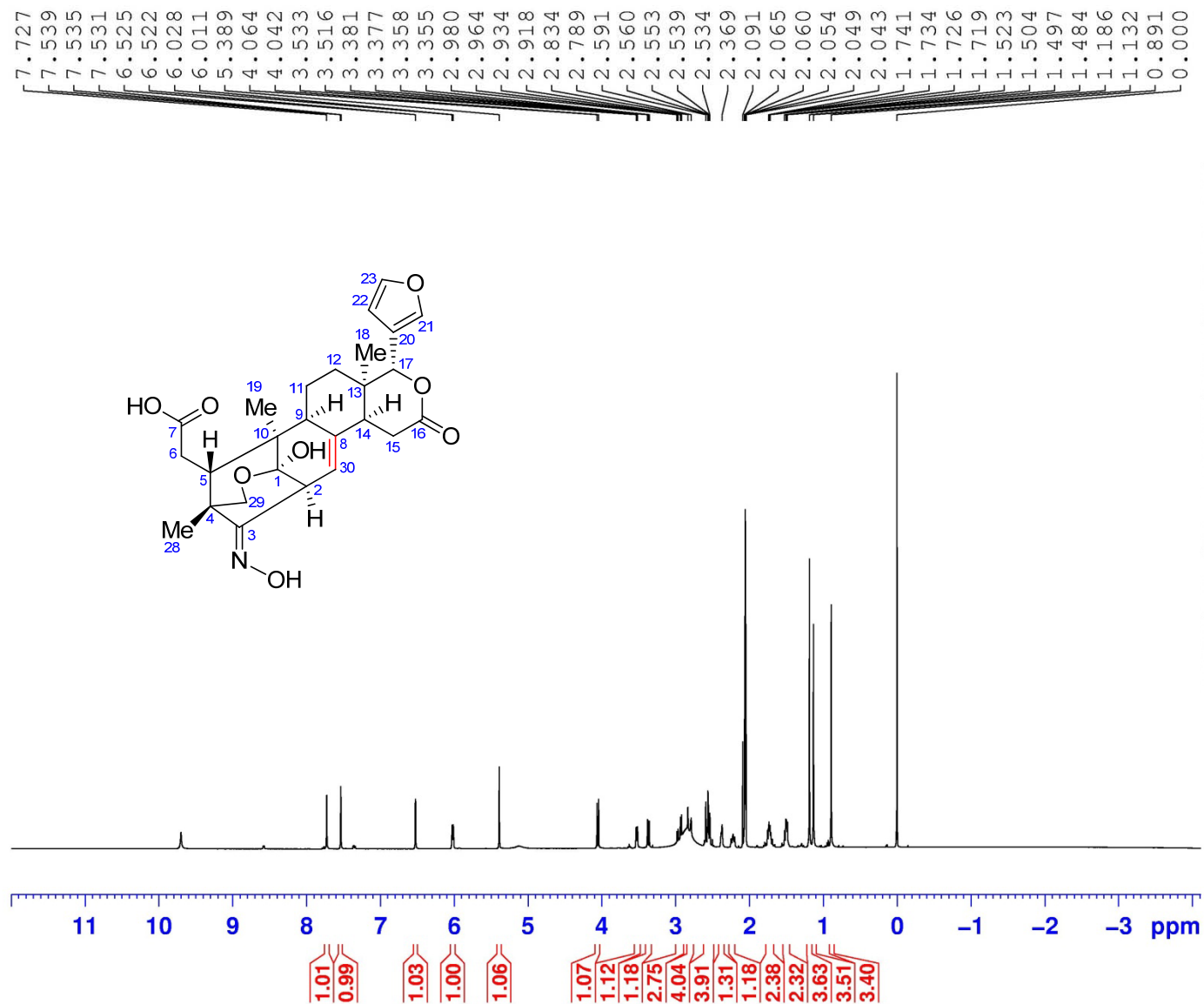
Analysis Info
Analysis Name D:\MS\RJL\20181001\78_RA1_01_1590.d
Method lc-7.9
Sample Name 99140922-alternating-500-50-2200-MS2_1590.m
Comment
Acquisition D 2018/10/1 18:37:27
Operator bruker
Instrument amaZon SL



Bruker Compass DataAnalysis

S200

¹H NMR (400 MHz) spectrum of **10a** in (CD₃)₂CO



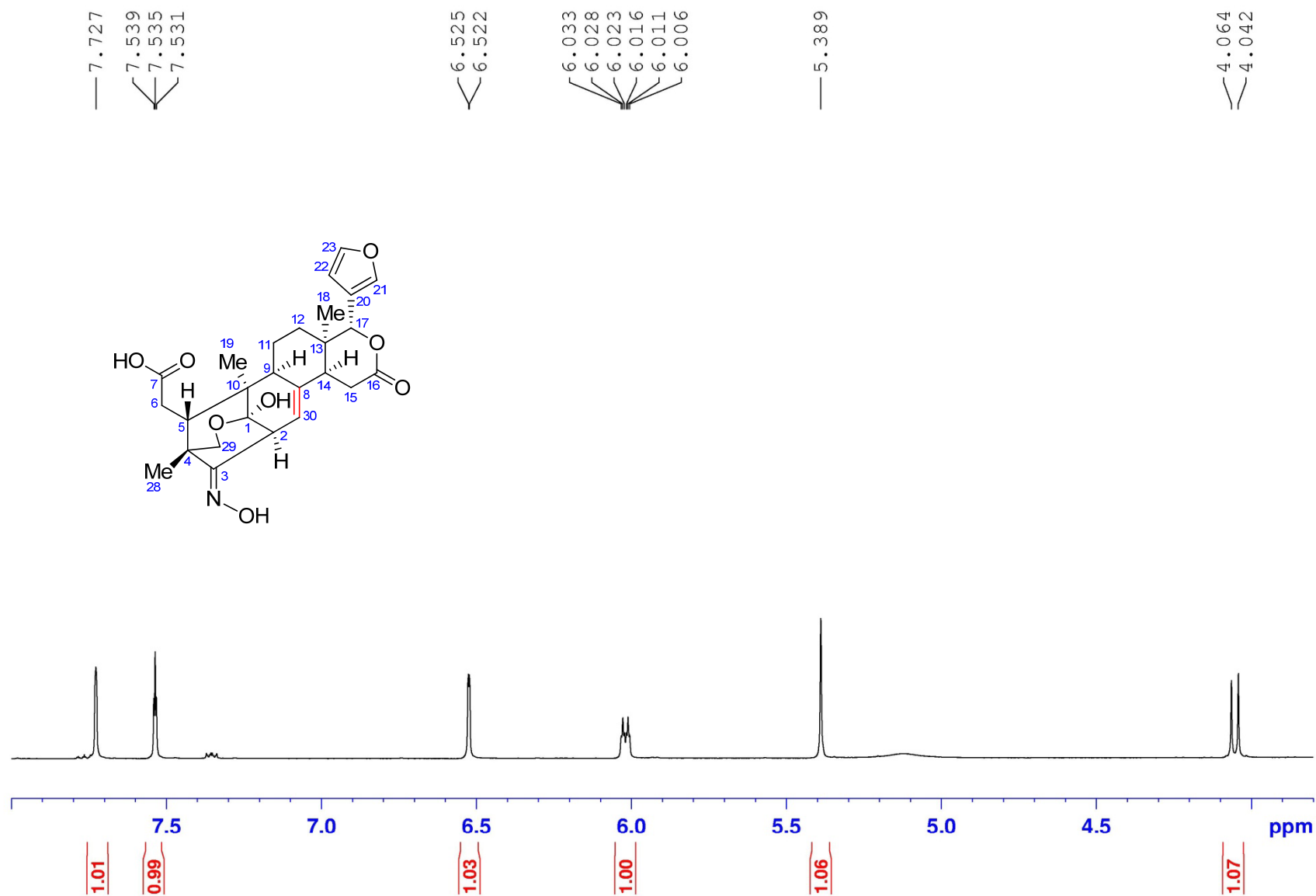
```

NAME      czc-1-ibx-qiangan-2
EXPNO     1
PROCNO    1
Date_     20170725
Time      10.29
INSTRUM   spect
PROBHD    5 mm CYPBBO BB
PULPROG   zg30
TD        65536
SOLVENT   Acetone
NS        16
DS        2
SWH       8223.685 Hz
FIDRES    0.125483 Hz
AQ        3.9846387 sec
RG        208.5
DW        60.800 usec
DE        10.00 usec
TE        297.0 K
D1        1.00000000 sec
TD0       1
    
```

```

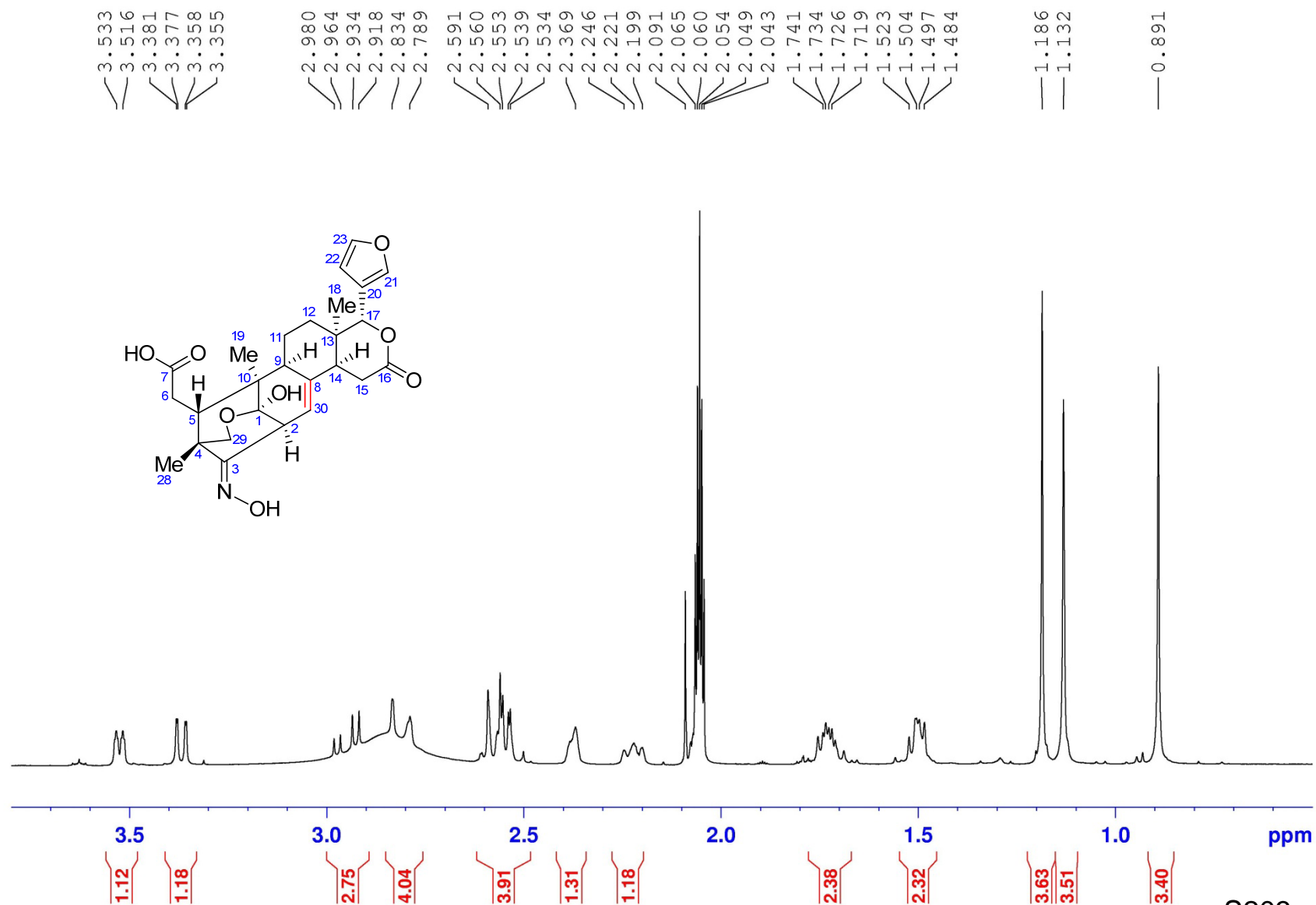
===== CHANNEL f1 =====
SF01    400.1324710 MHz
NUC1     1H
P1       11.50 usec
SI       65536
SF       400.1300052 MHz
WDW      EM
SSB      0
LB       0.30 Hz
GB       0
PC       1.00
    
```

^1H NMR (400 MHz) spectrum of **10a** in $(\text{CD}_3)_2\text{CO}$

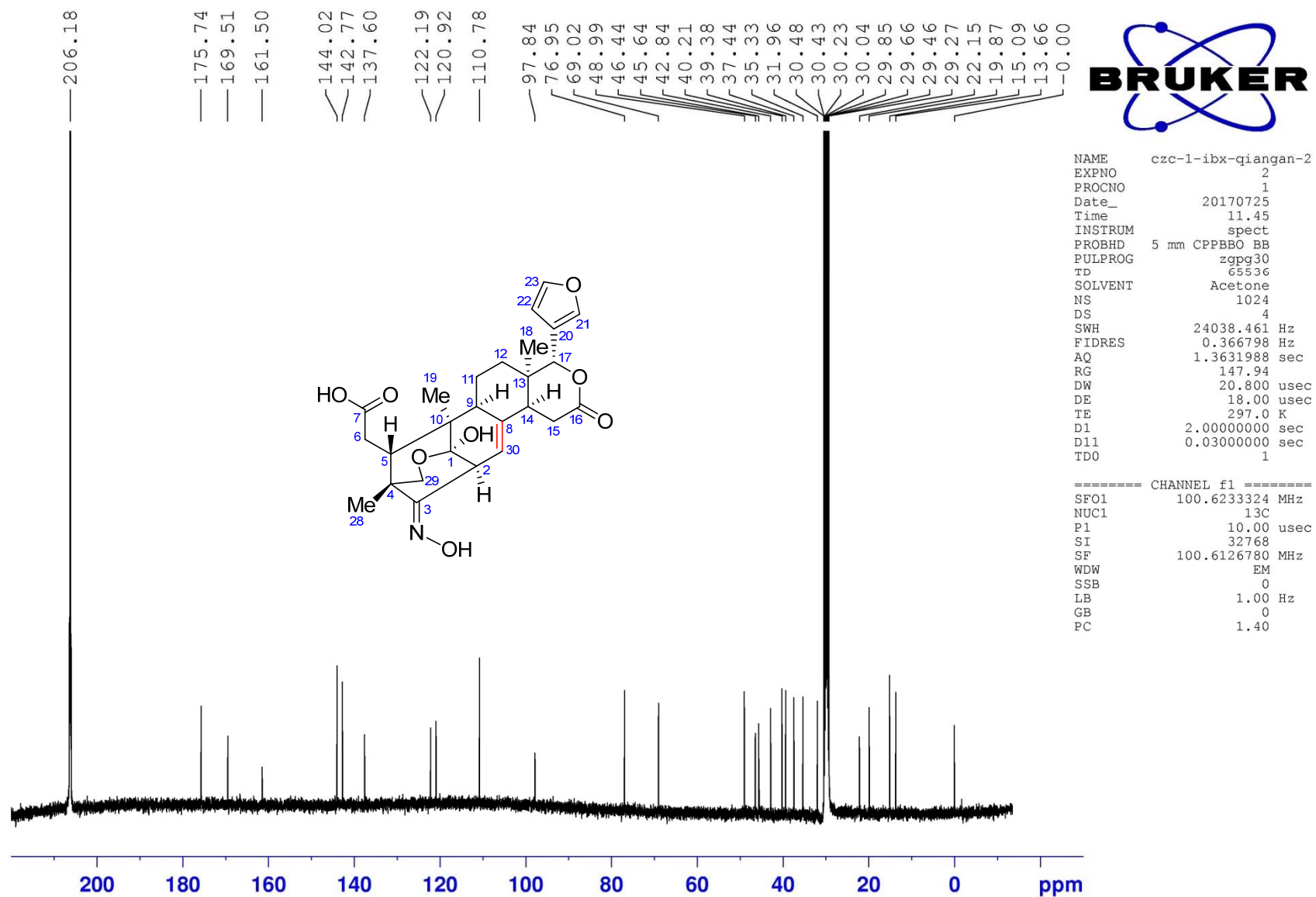


S202

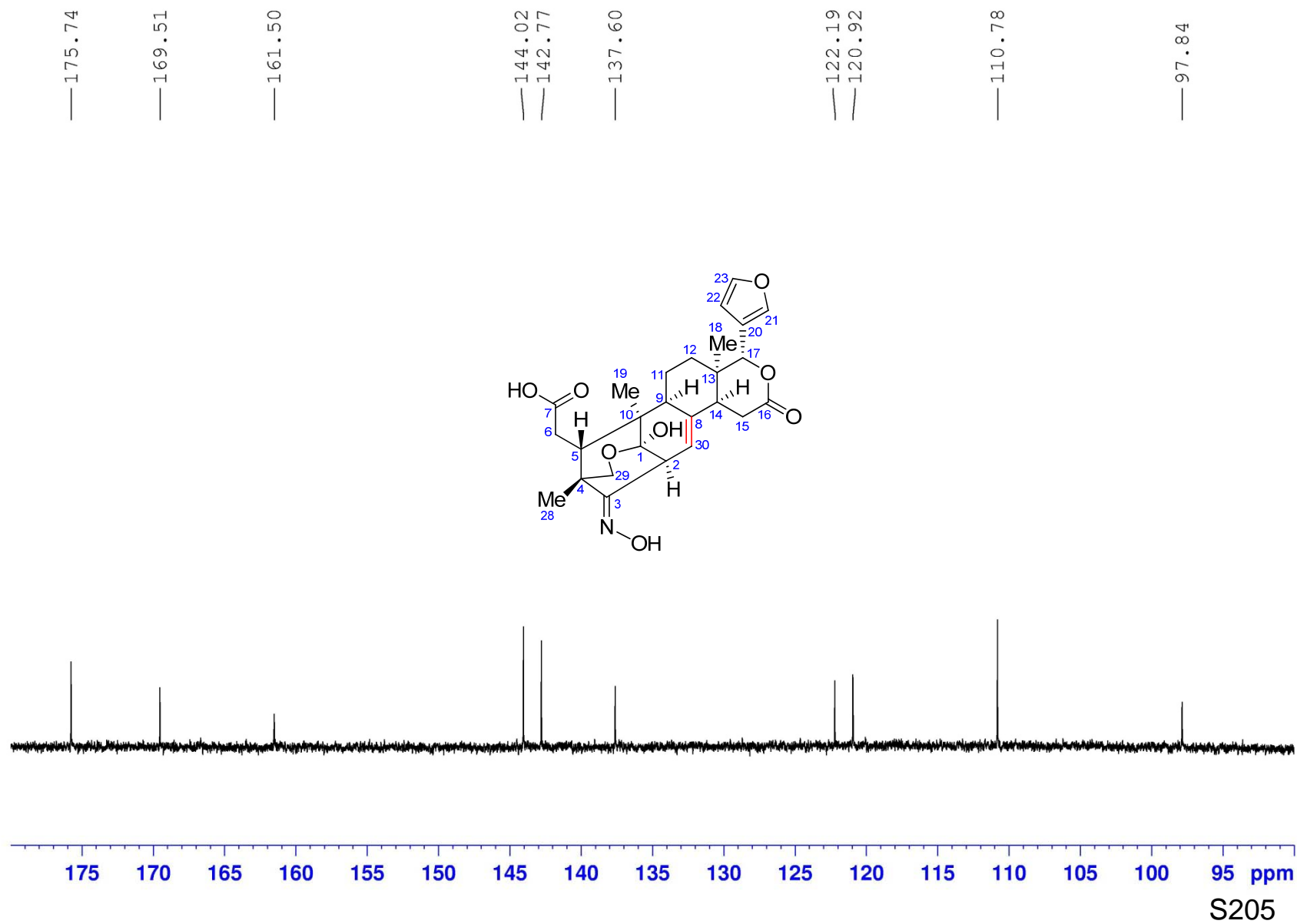
^1H NMR (400 MHz) spectrum of **10a** in $(\text{CD}_3)_2\text{CO}$



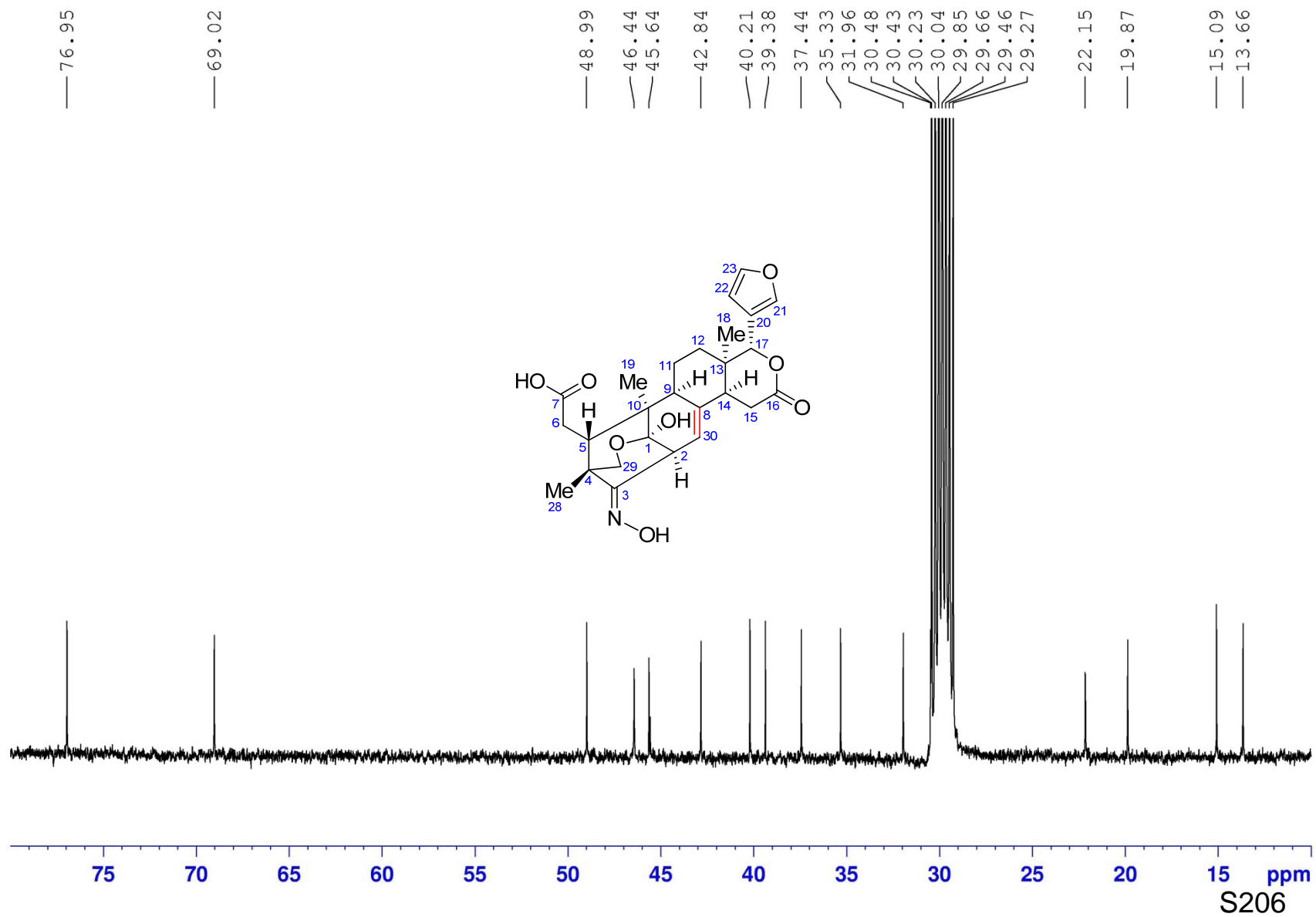
^{13}C NMR (100 MHz) spectrum of **10a** in $(\text{CD}_3)_2\text{CO}$



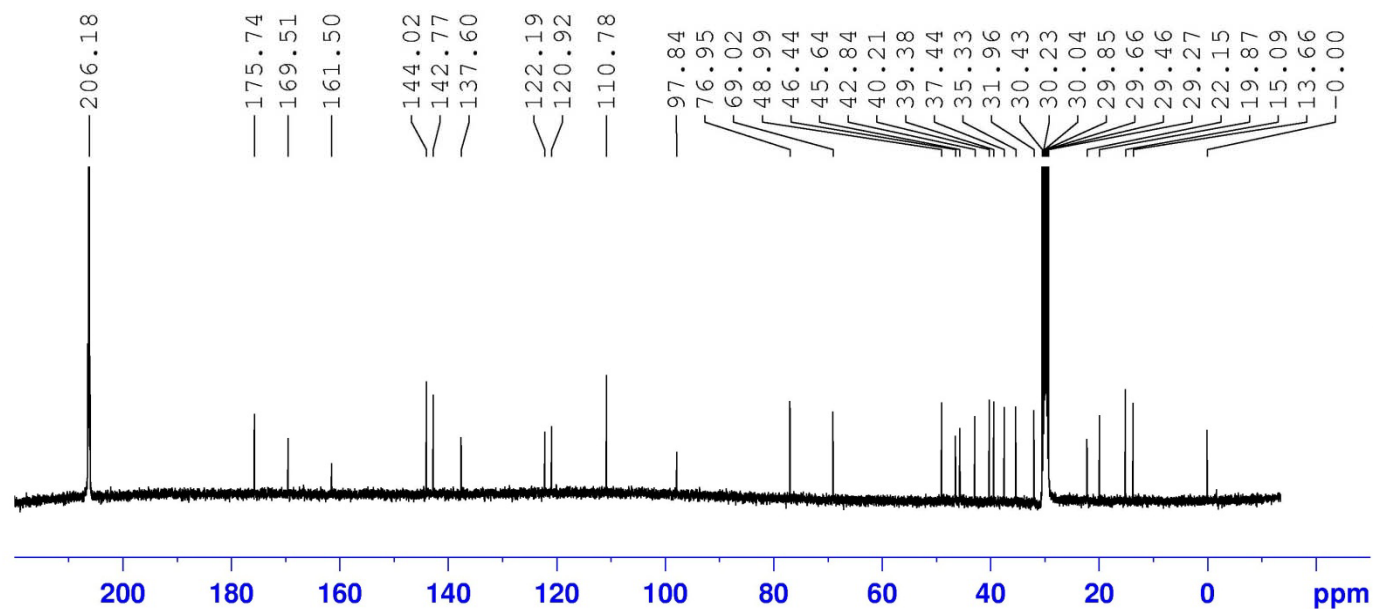
^{13}C NMR (100 MHz) spectrum of **10a** in $(\text{CD}_3)_2\text{CO}$



^{13}C NMR (100 MHz) spectrum of **10a** in $(\text{CD}_3)_2\text{CO}$

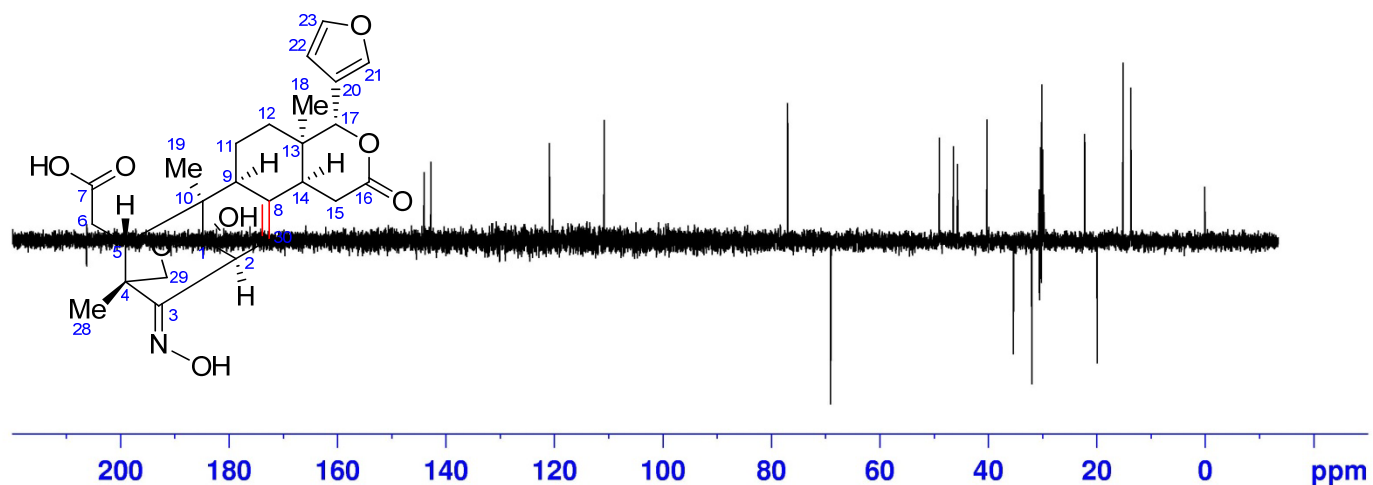


DEPT 135 spectrum of **10a** in (CD₃)₂CO



```

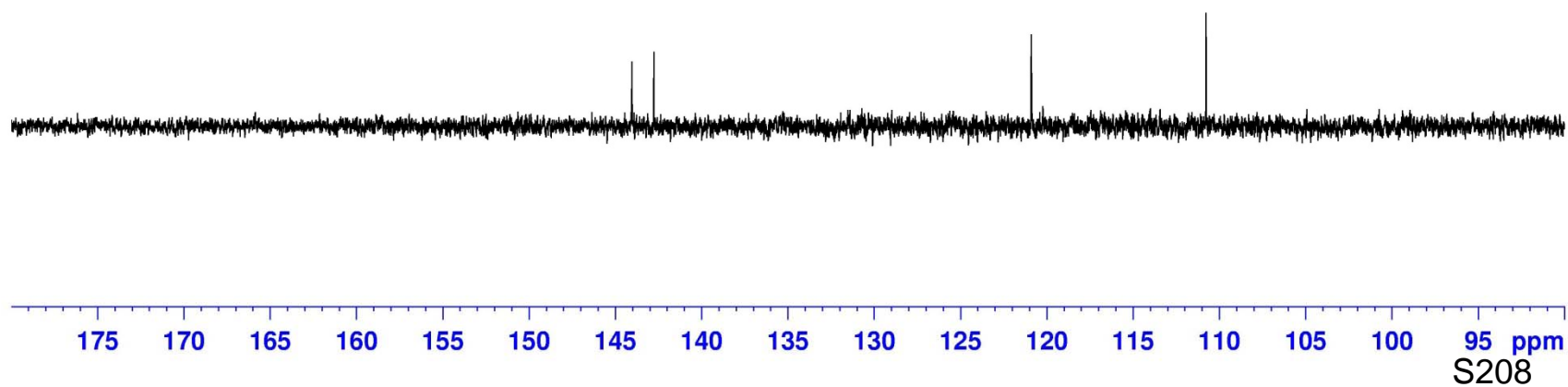
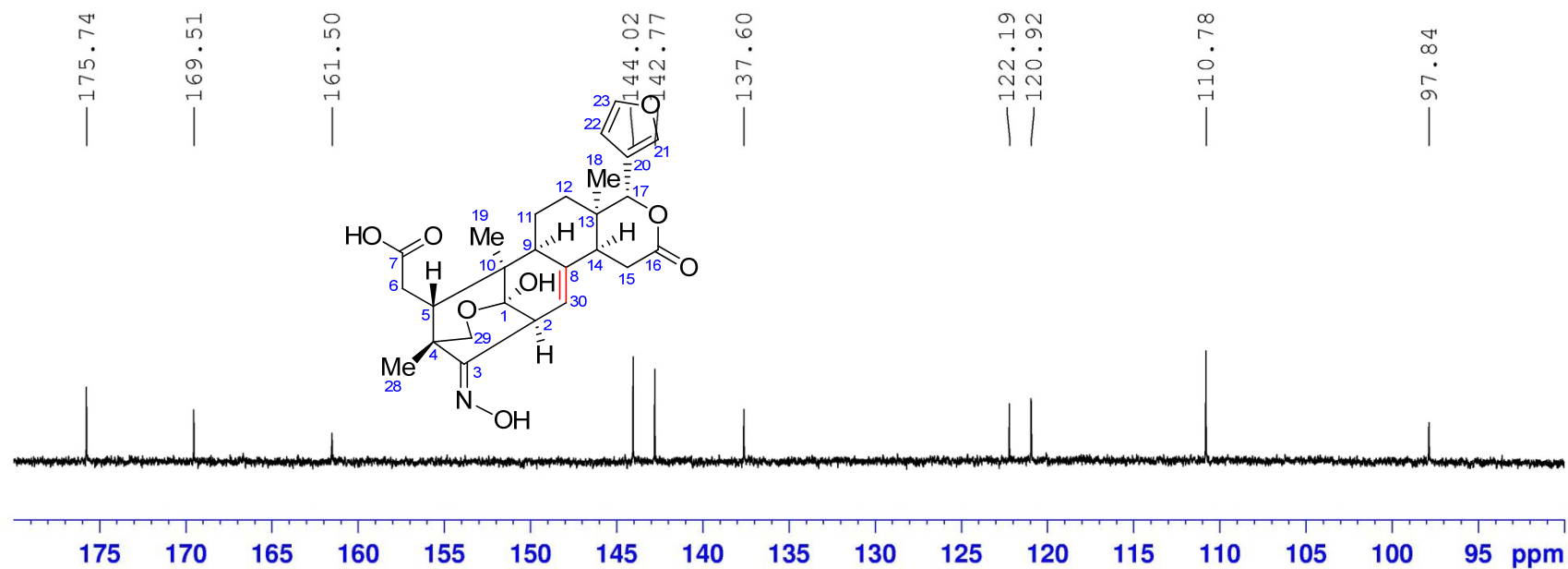
NAME      czc-1-ibx-qiangan-2
EXPNO     2
PROCNO    1
Date_     20170725
Time      11.45
INSTRUM   spect
PROBHD    5 mm CPPBBO BB
PULPROG   zgpg30
TD        65536
SOLVENT   Acetone
NS        1024
DS        4
SWH       24038.461 Hz
FIDRES    0.366798 Hz
AQ        1.3631988 sec
RG        147.94
DW        20.800 usec
DE        18.00 usec
TE        297.0 K
D1        2.00000000 sec
D11       0.03000000 sec
TD0       1
  
```



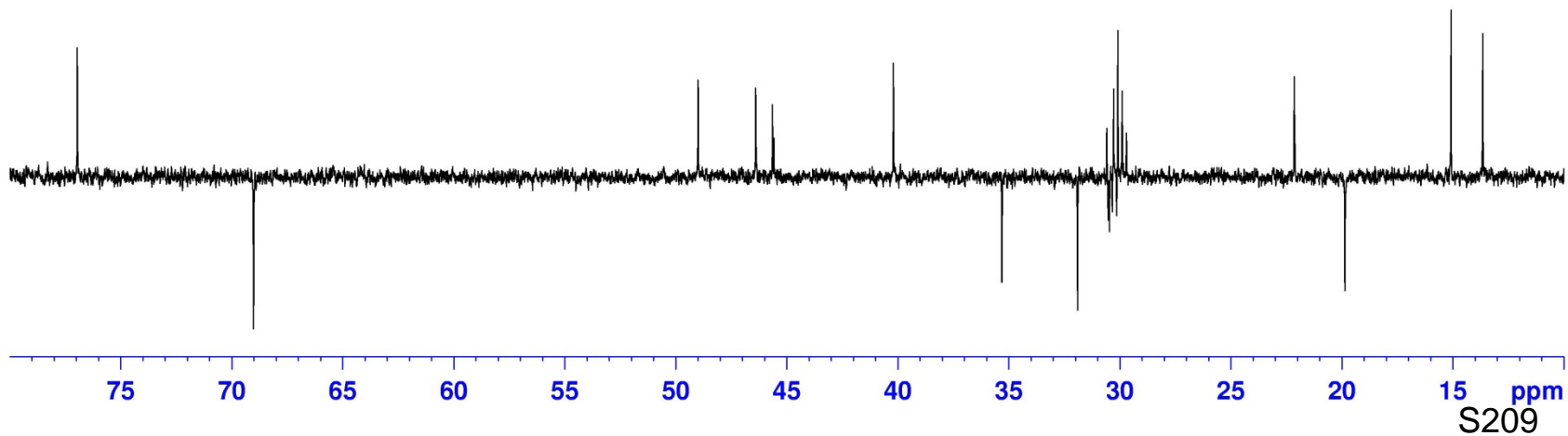
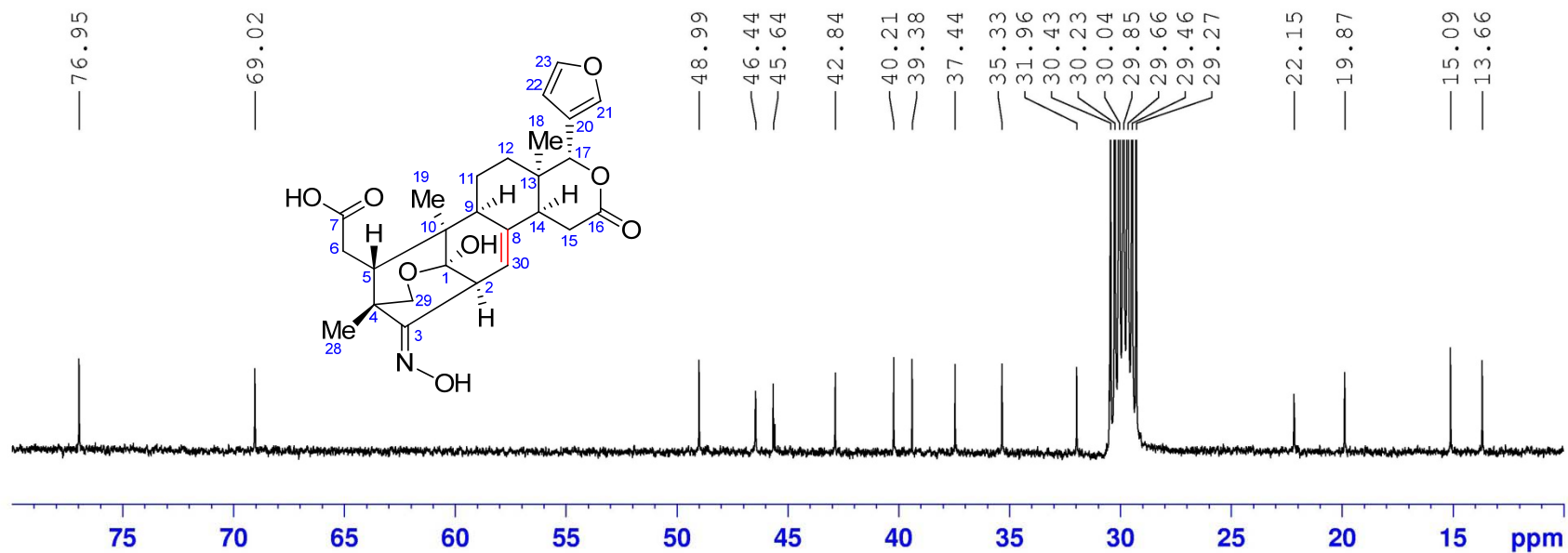
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===== CHANNEL f1 =====
SFO1      100.6233324 MHz
NUC1      13C
P1        10.00 usec
SI        32768
SF        100.6126780 MHz
WDW       EM
SSB       0
LB        1.00 Hz
GB        0
PC        1.40
  
```

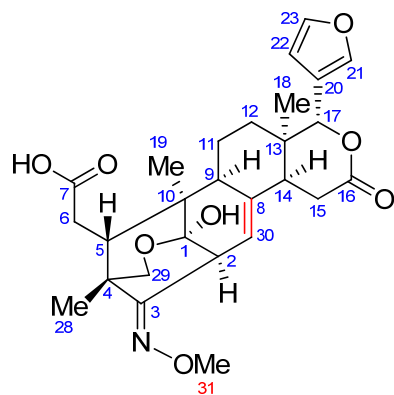
DEPT 135 spectrum of **10a** in (CD₃)₂CO



DEPT 135 spectrum of **10a** in (CD₃)₂CO



LR-ESIMS for compound **10b**



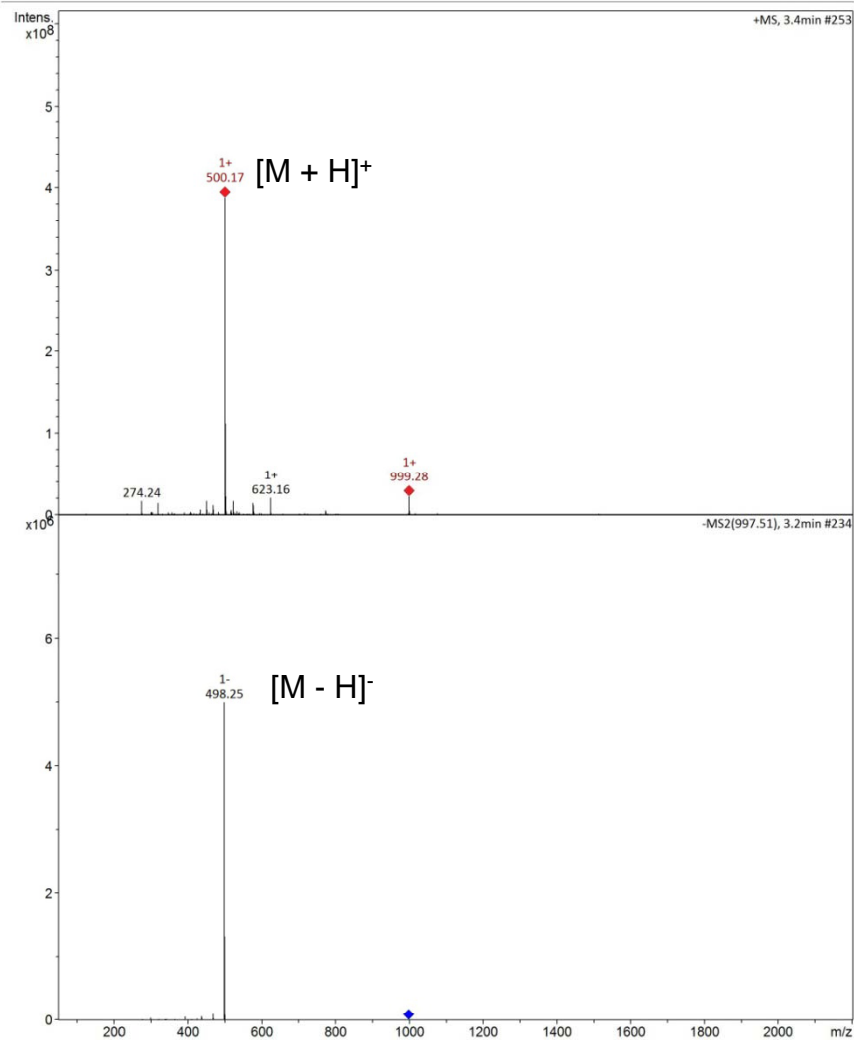
Generic Display Report

Analysis Info

Analysis Name D:\MS\RJL\20181001\79_RA1_01_1591.d
Method lc-7.9
Sample Name 99140922-alternating-500-50-2200-MS2_1591.m
Comment

Acquisition D 2018/10/1 18:49:27

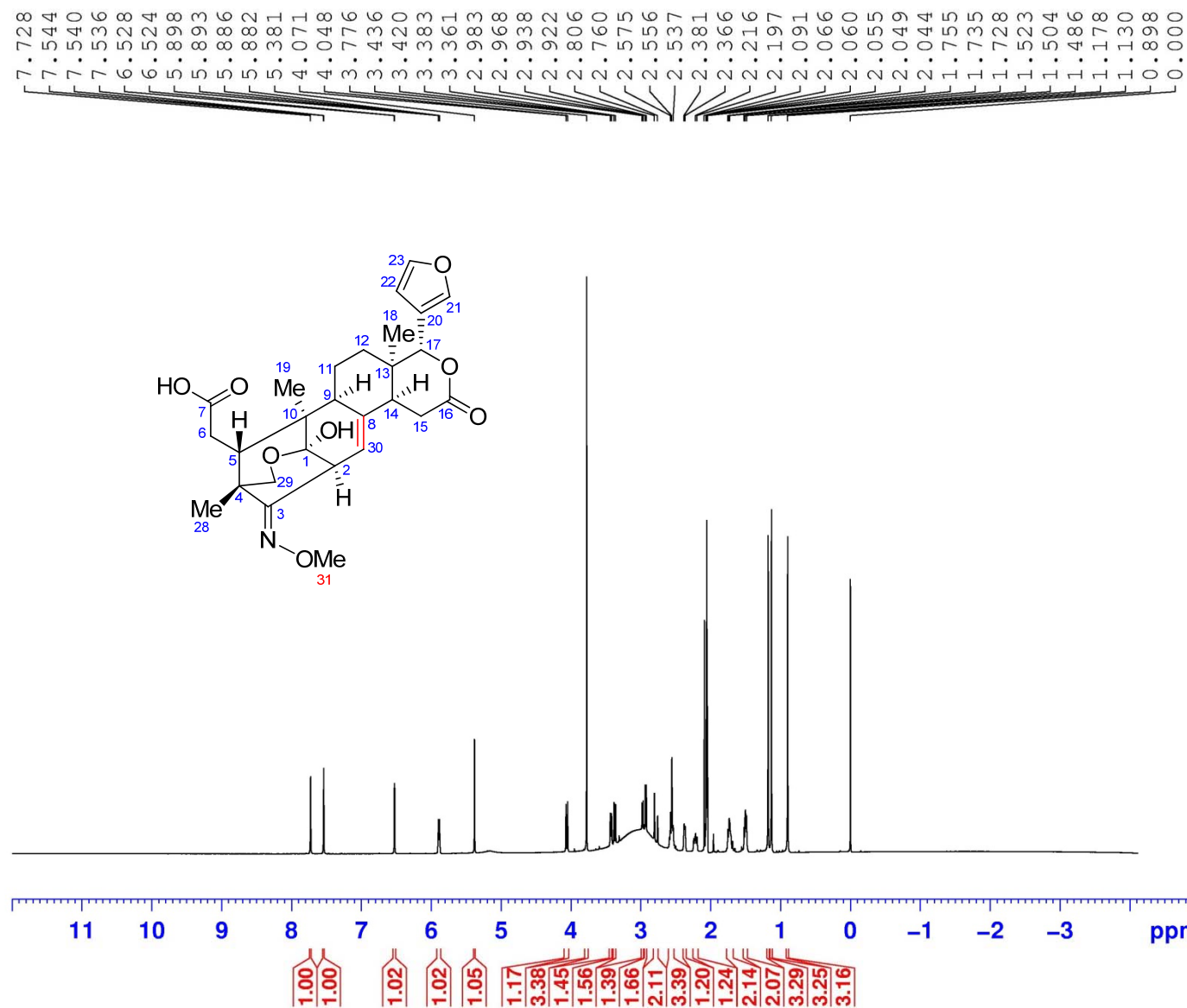
Operator bruker
Instrument amaZon SL



Bruker Compass DataAnalysis

S210

¹H NMR (400 MHz) spectrum of **10b** in (CD₃)₂CO

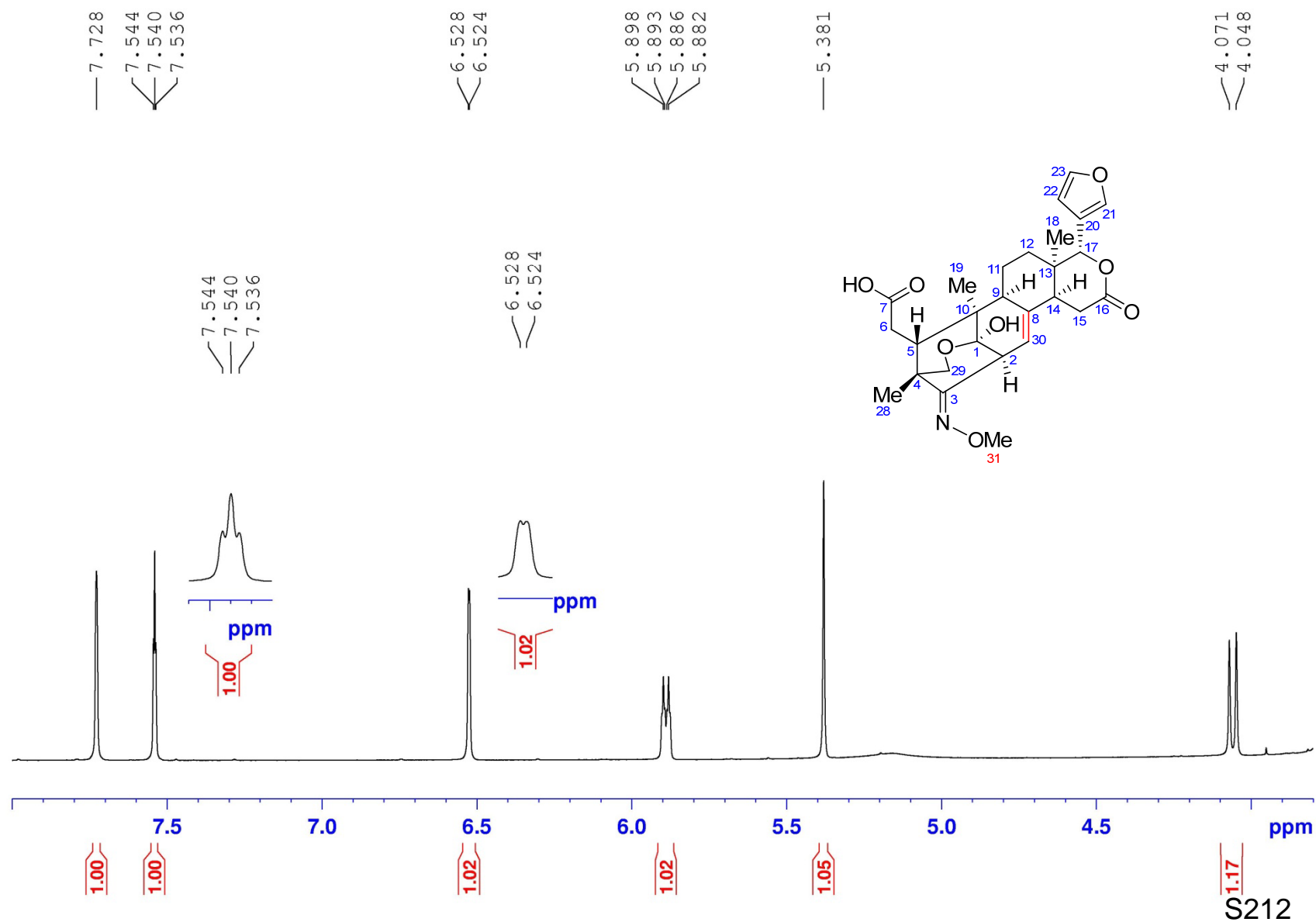


```

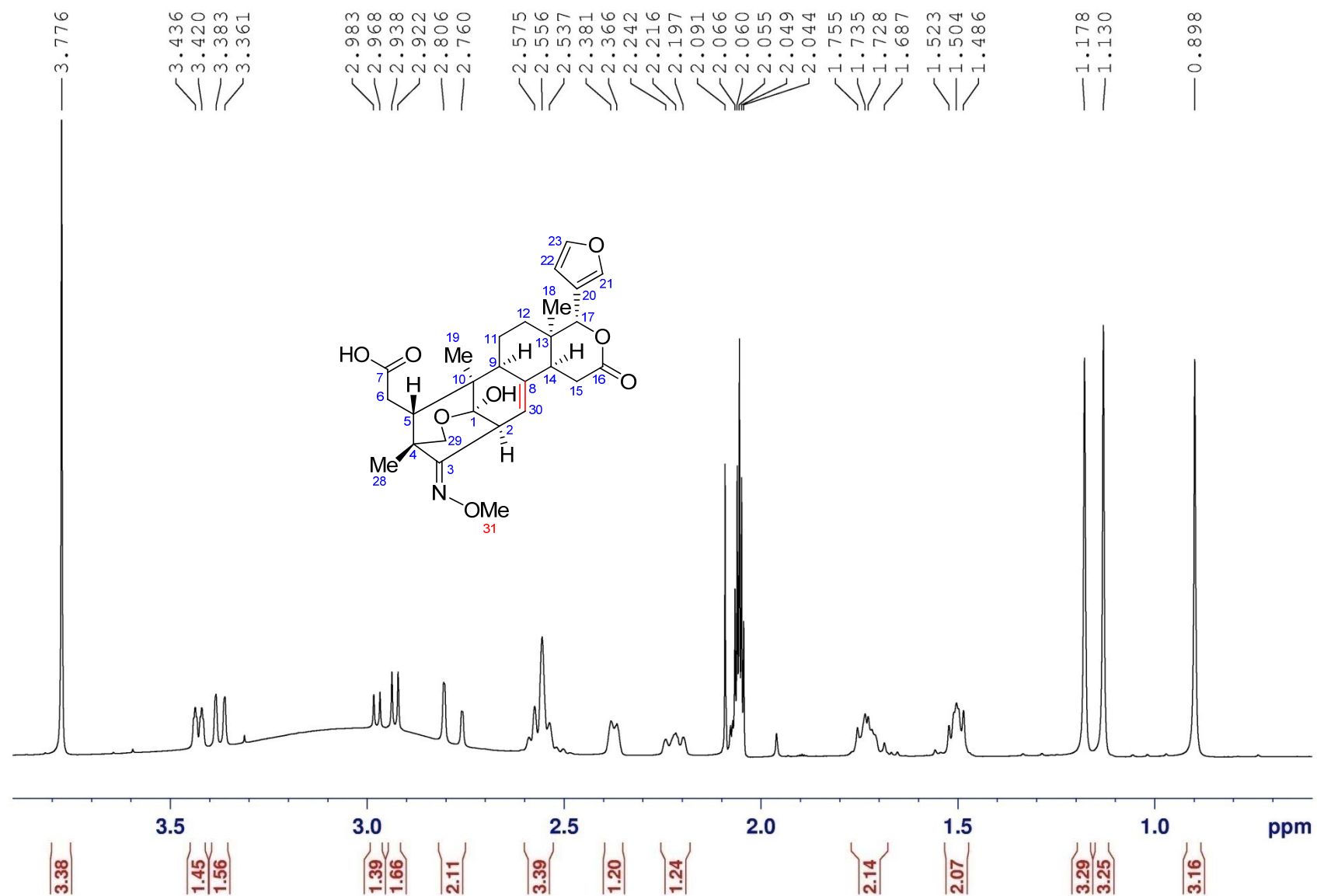
NAME      czc-1-IBX-jiaayang
EXPNO     1
PROCNO    1
Date_     20170706
Time      23.25
INSTRUM   spect
PROBHD    5 mm CPPBBO BB
PULPROG   zg30
TD        65536
SOLVENT   Acetone
NS        16
DS        2
SWH       8223.685 Hz
FIDRES    0.125483 Hz
AQ        3.9846387 sec
RG        208.5
DW        60.800 usec
DE        10.00 usec
TE        297.0 K
D1        1.00000000 sec
TD0       1

===== CHANNEL f1 =====
SF01      400.1324710 MHz
NUC1      1H
P1        11.50 usec
SI        65536
SF        400.1300049 MHz
WDW       EM
SSB       0
LB        0.30 Hz
GB        0
PC        1.00
    
```

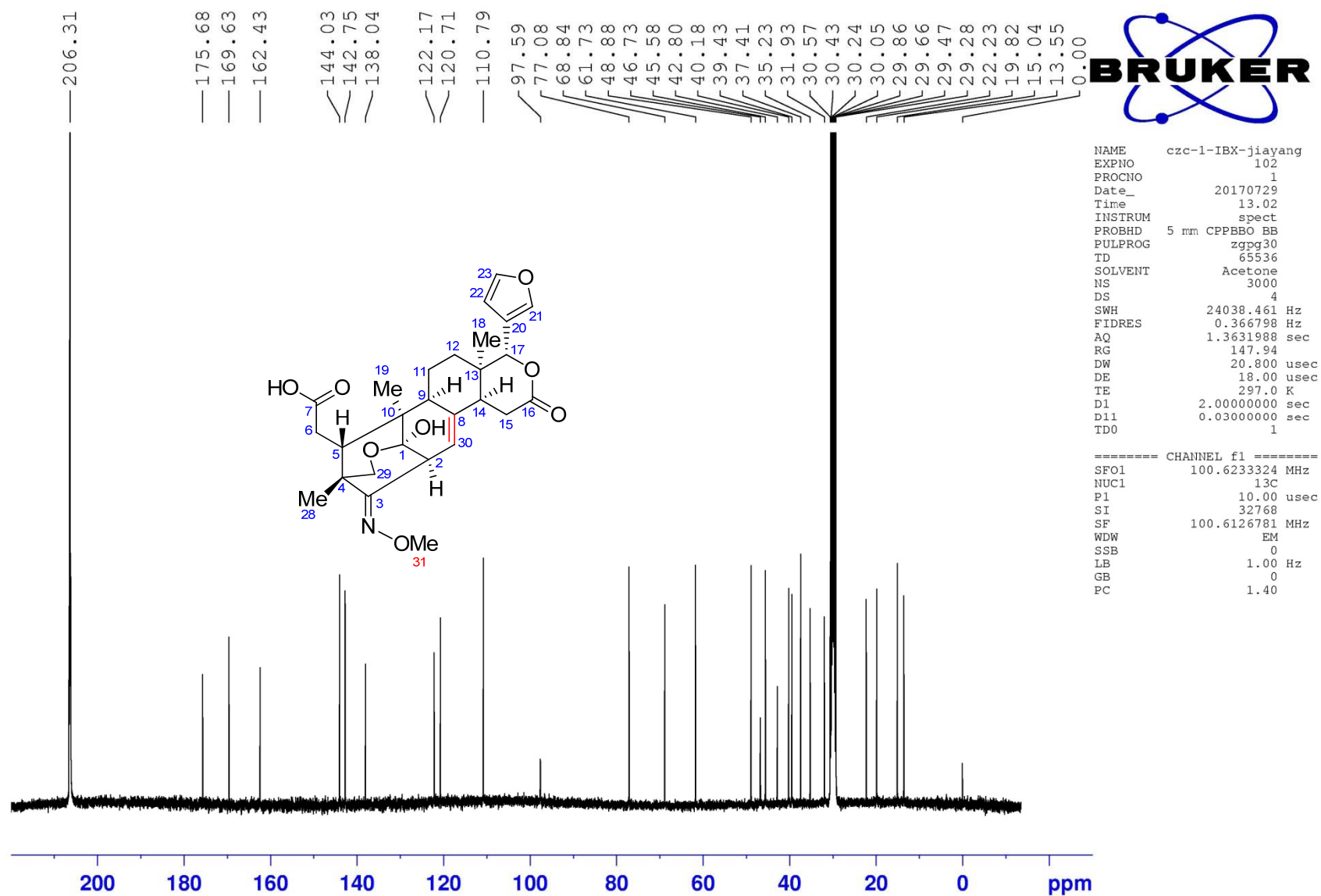
^1H NMR (400 MHz) spectrum of **10b** in $(\text{CD}_3)_2\text{CO}$



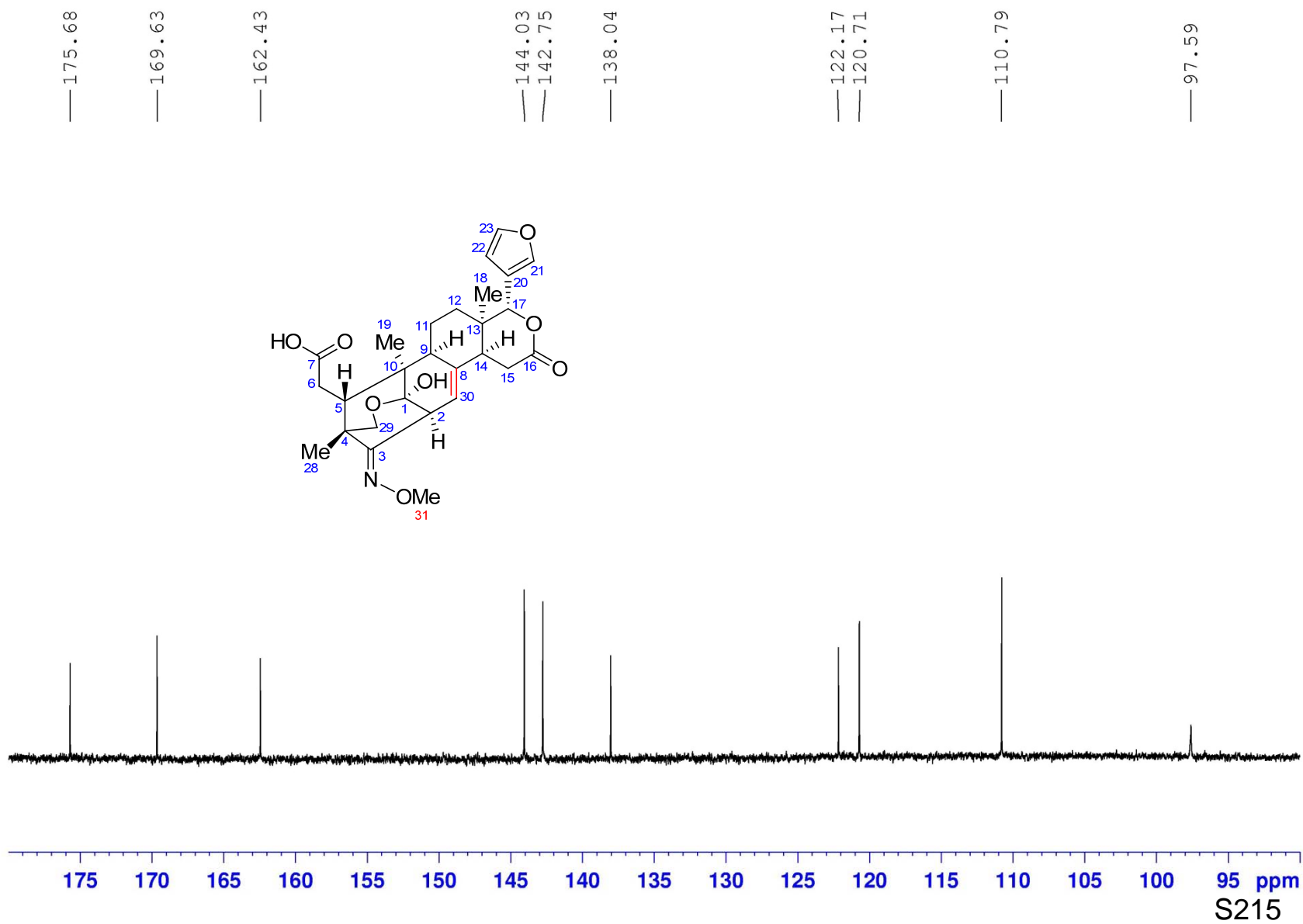
^1H NMR (400 MHz) spectrum of **10b** in $(\text{CD}_3)_2\text{CO}$



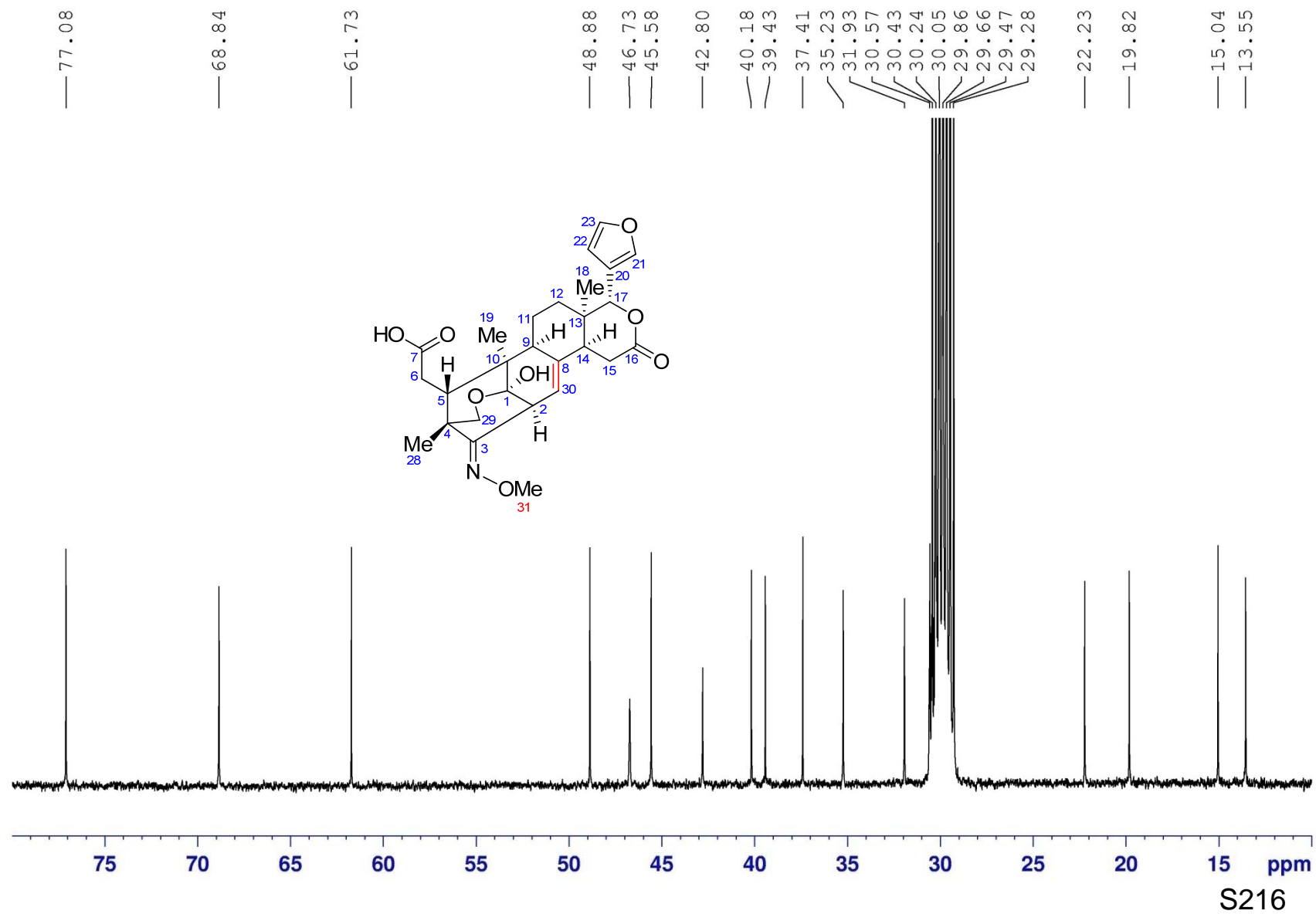
^{13}C NMR (100 MHz) spectrum of **10b** in $(\text{CD}_3)_2\text{CO}$



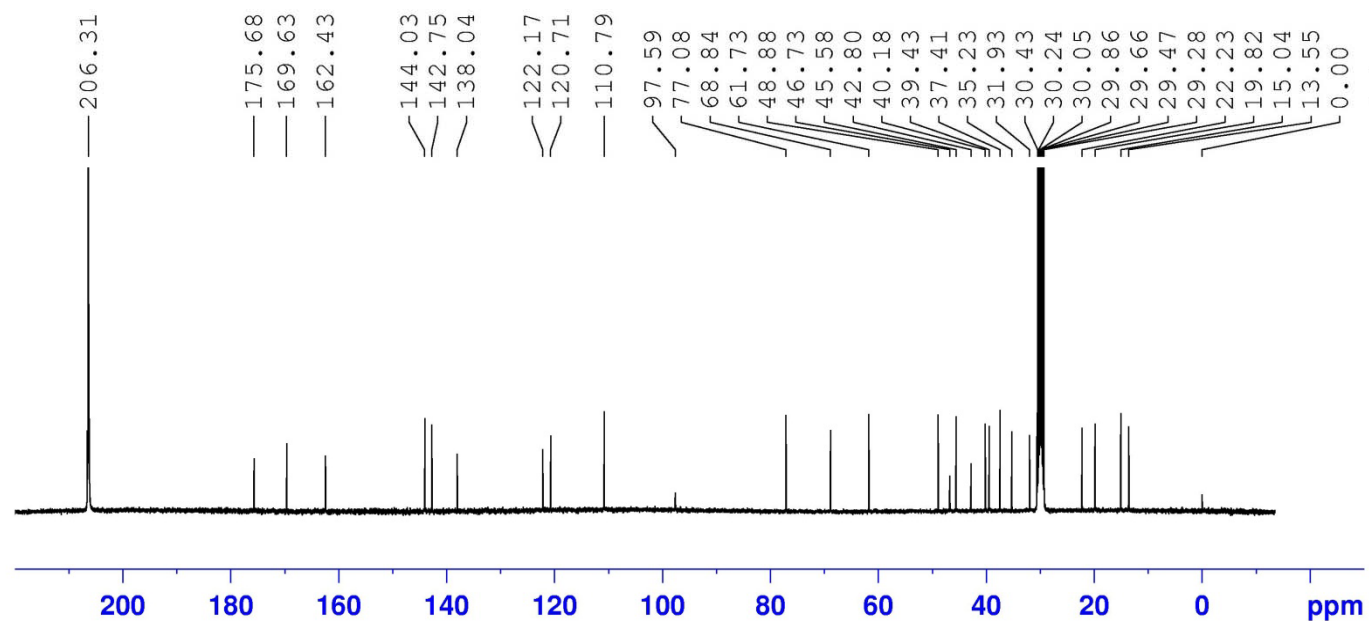
^{13}C NMR (100 MHz) spectrum of **10b** in $(\text{CD}_3)_2\text{CO}$



^{13}C NMR (100 MHz) spectrum of **10b** in $(\text{CD}_3)_2\text{CO}$

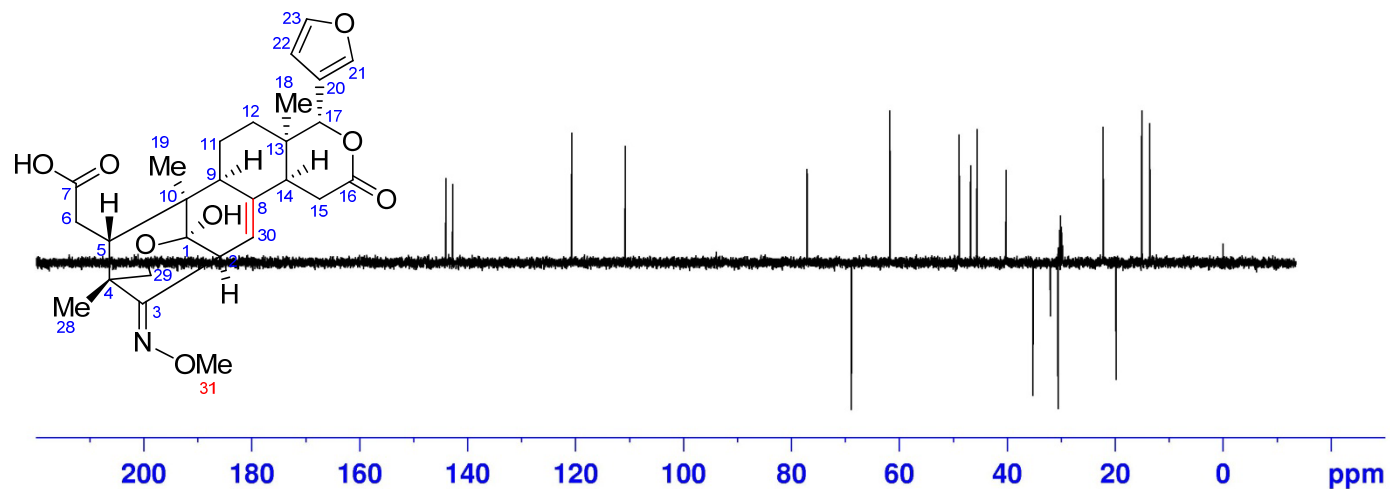


DEPT 135 spectrum of **10b** in (CD₃)₂CO

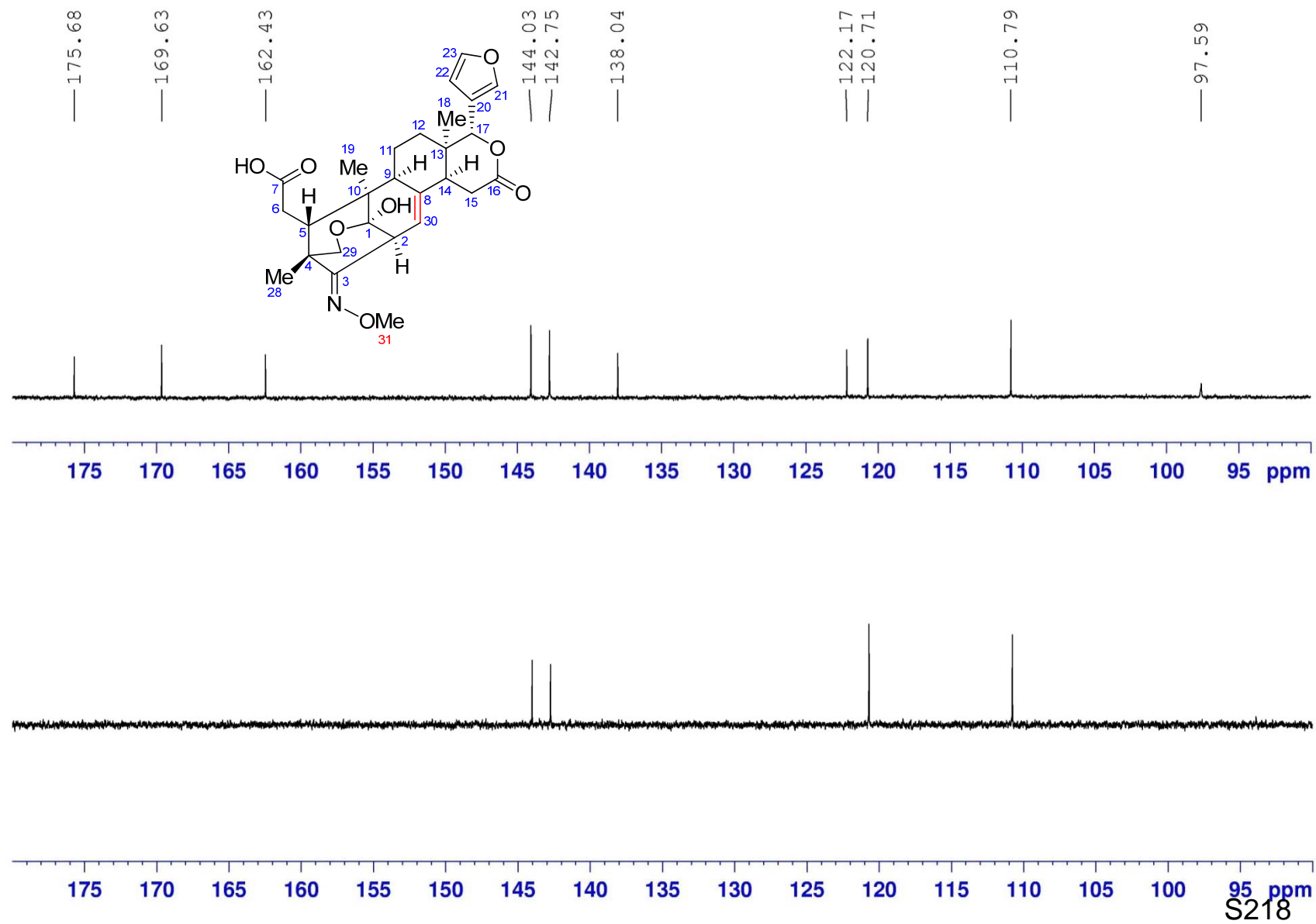


NAME czc-1-IBX-jiaayang
EXPNO 102
PROCNO 1
Date_ 20170729
Time 13.02
INSTRUM spect
PROBHD 5 mm CPPBBO BB
PULPROG zgpg30
TD 65536
SOLVENT Acetone
NS 3000
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631988 sec
RG 147.94
DW 20.800 usec
DE 18.00 usec
TE 297.0 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1

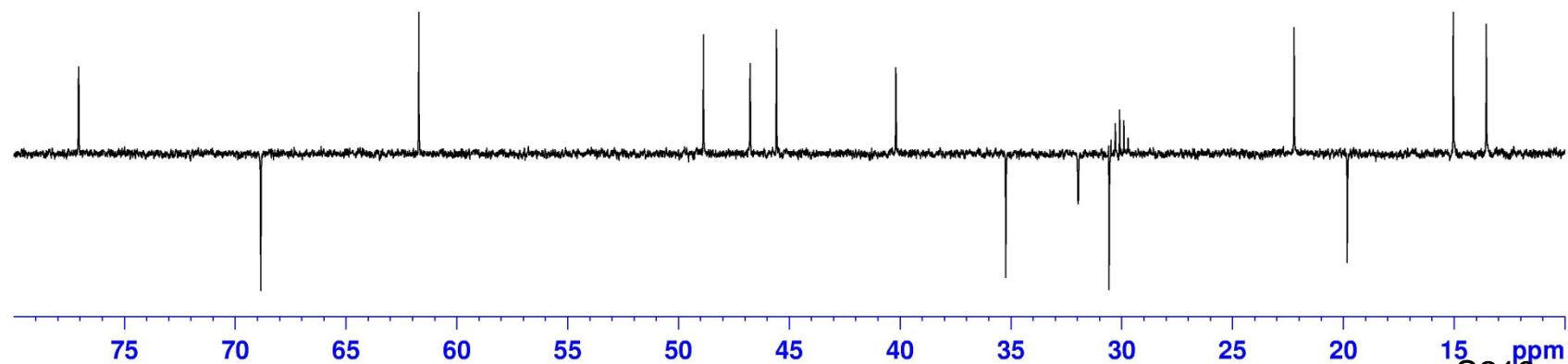
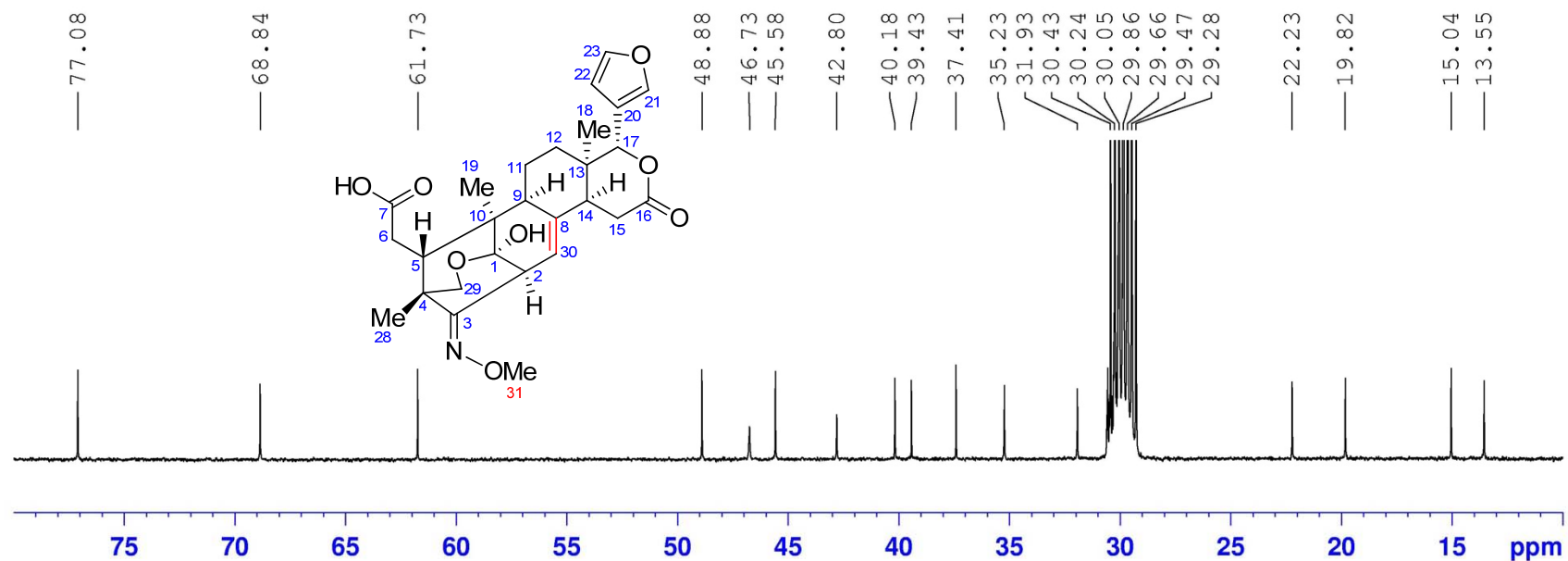
===== CHANNEL f1 =====
SF01 100.6233324 MHz
NUC1 13C
P1 10.00 usec
SI 32768
SF 100.6126781 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40



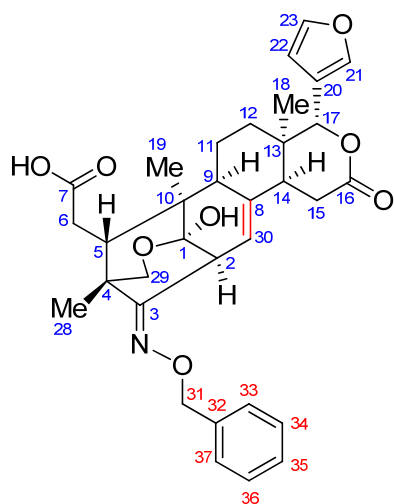
DEPT 135 spectrum of **10b** in (CD₃)₂CO



DEPT 135 spectrum of **10b** in (CD₃)₂CO



LR-ESIMS for compound **10c**



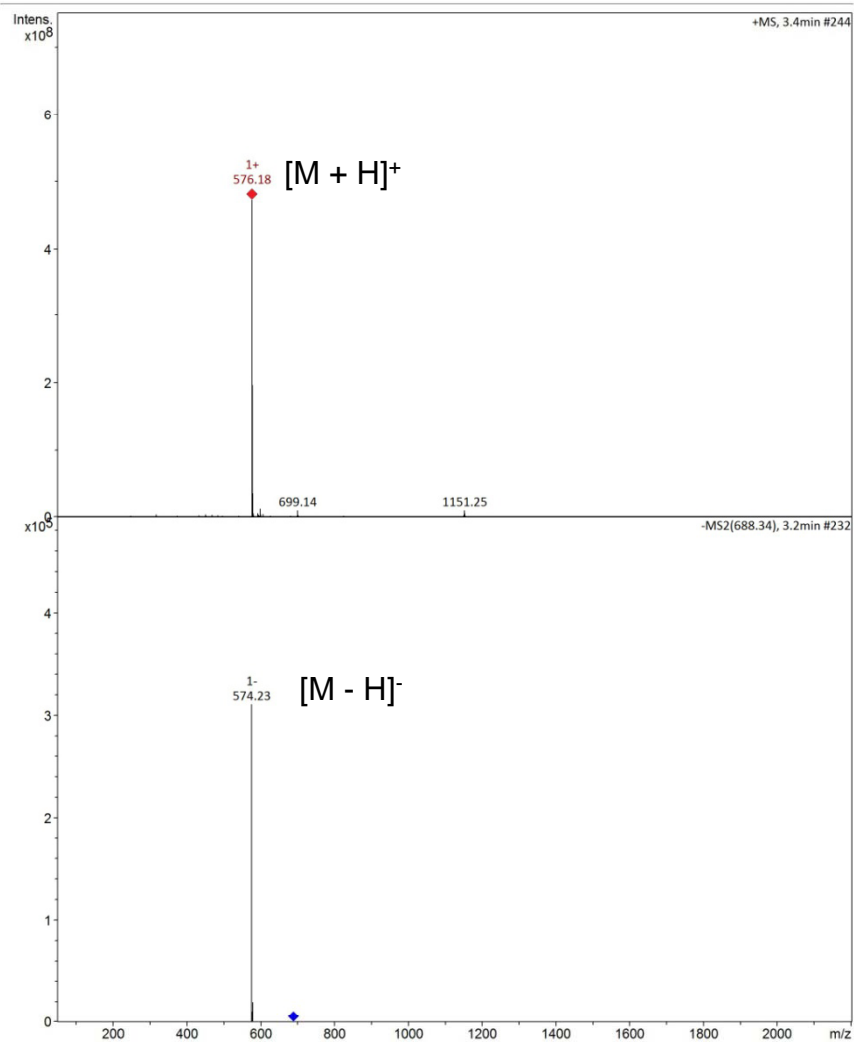
Generic Display Report

Analysis Info

Analysis Name: D:\MS\RJL\20181001\77_RA1_01_1589.d
Method: lc-7.9
Sample Name: 77140922-alternating-500-50-2200-MS2_1589.m
Comment:

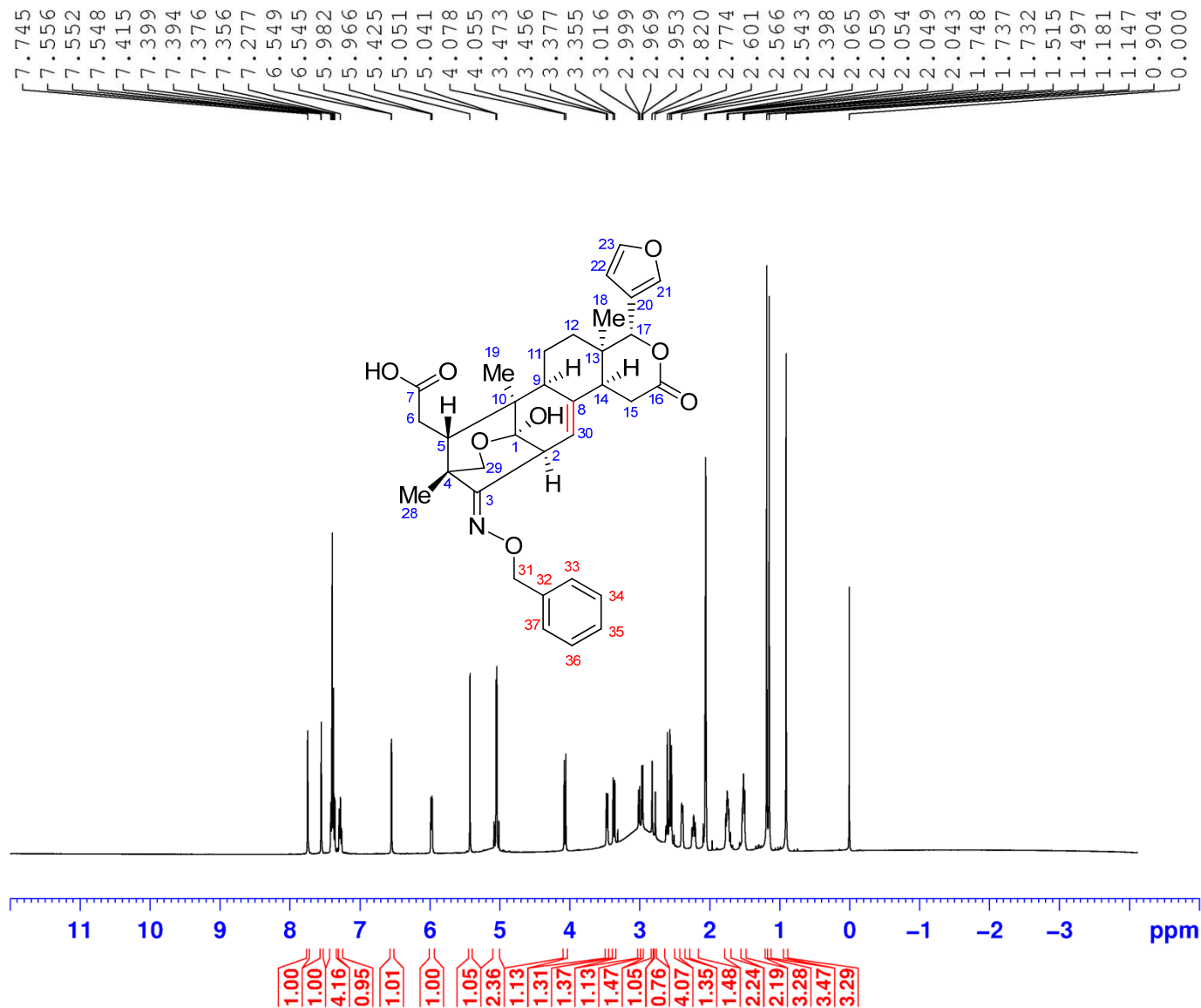
Acquisition D 2018/10/1 18:25:28

Operator: bruker
Instrument: amaZon SL



Bruker Compass DataAnalysis

¹H NMR (400 MHz) spectrum of **10c** in (CD₃)₂CO

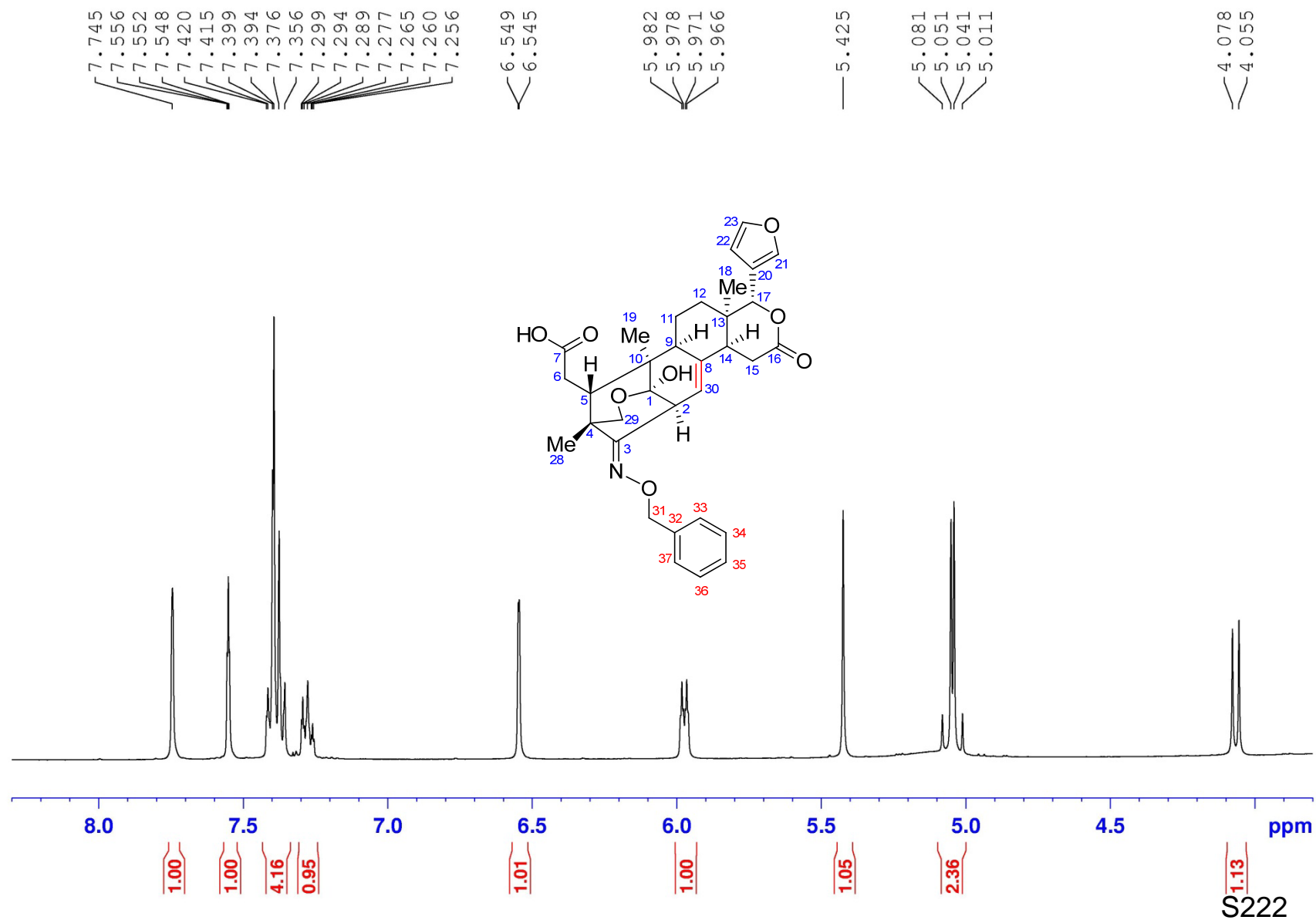


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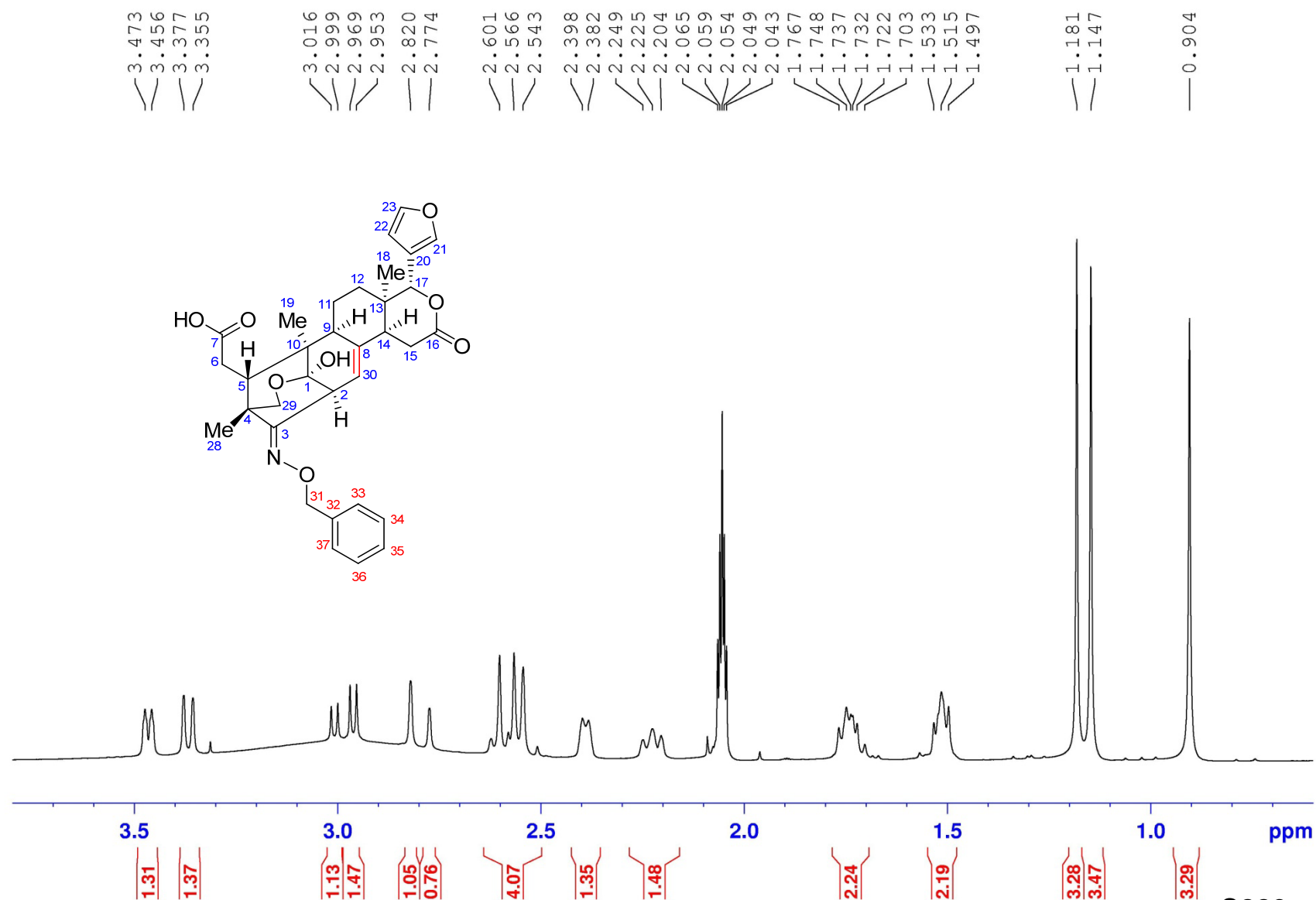
NAME      czc-1-ibx-linbianjiqiang
EXPNO     1
PROCNO    1
Date_     20170709
Time      18.45
INSTRUM   spect
PROBHD    5 mm CPPBBO BB
PULPROG   zg30
TD        65536
SOLVENT   Acetone
NS        16
DS        2
SWH       8223.685 Hz
FIDRES    0.125483 Hz
AQ        3.9846387 sec
RG        208.5
DW        60.800 usec
DE        10.00 usec
TE        297.0 K
D1        1.00000000 sec
TD0       1

===== CHANNEL f1 =====
SFO1      400.1324710 MHz
NUC1      1H
P1        11.50 usec
SI        65536
SF        400.1300053 MHz
WDW       EM
SSB       0
LB        0.30 Hz
GB        0
PC        1.00
    
```

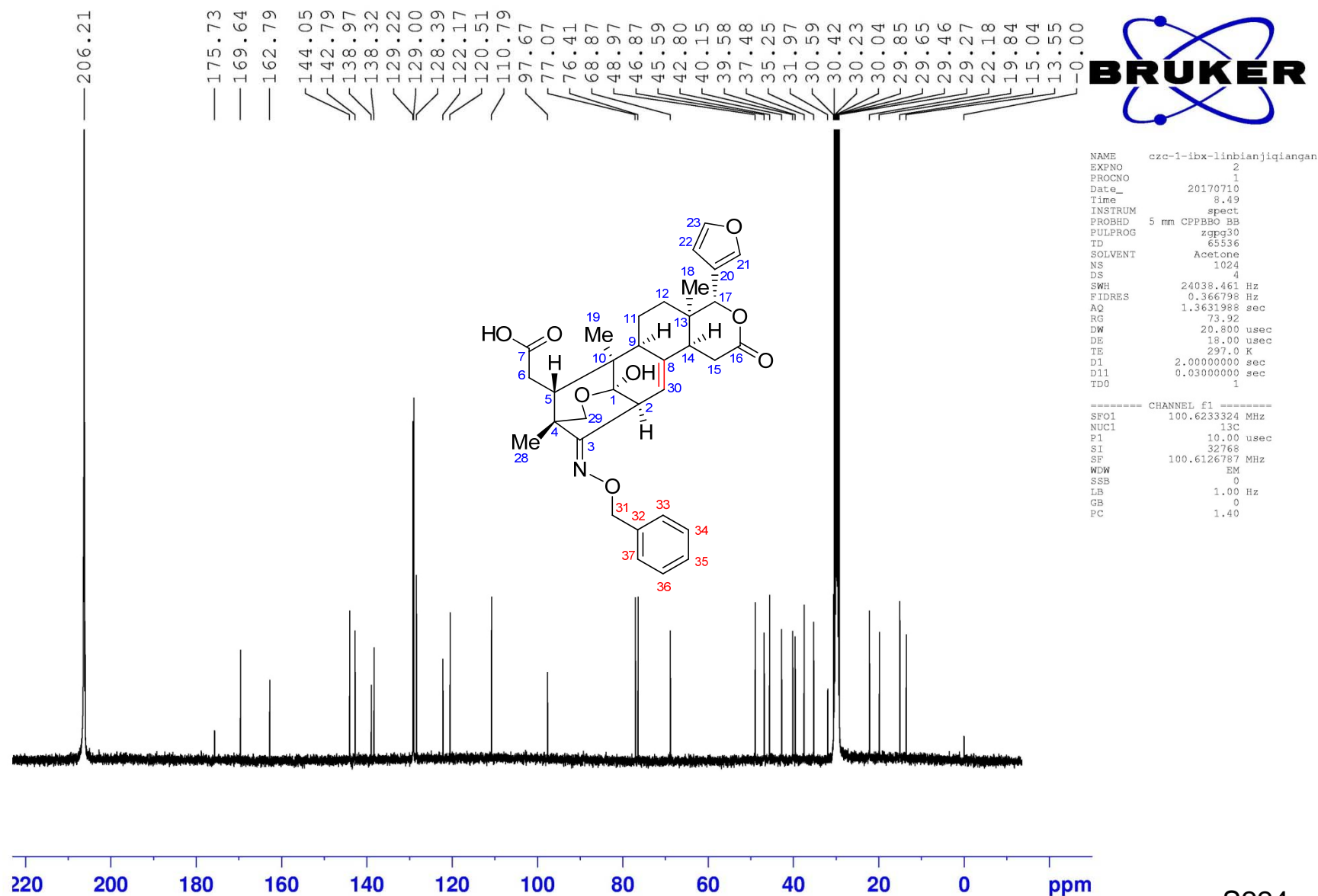
^1H NMR (400 MHz) spectrum of **10c** in $(\text{CD}_3)_2\text{CO}$



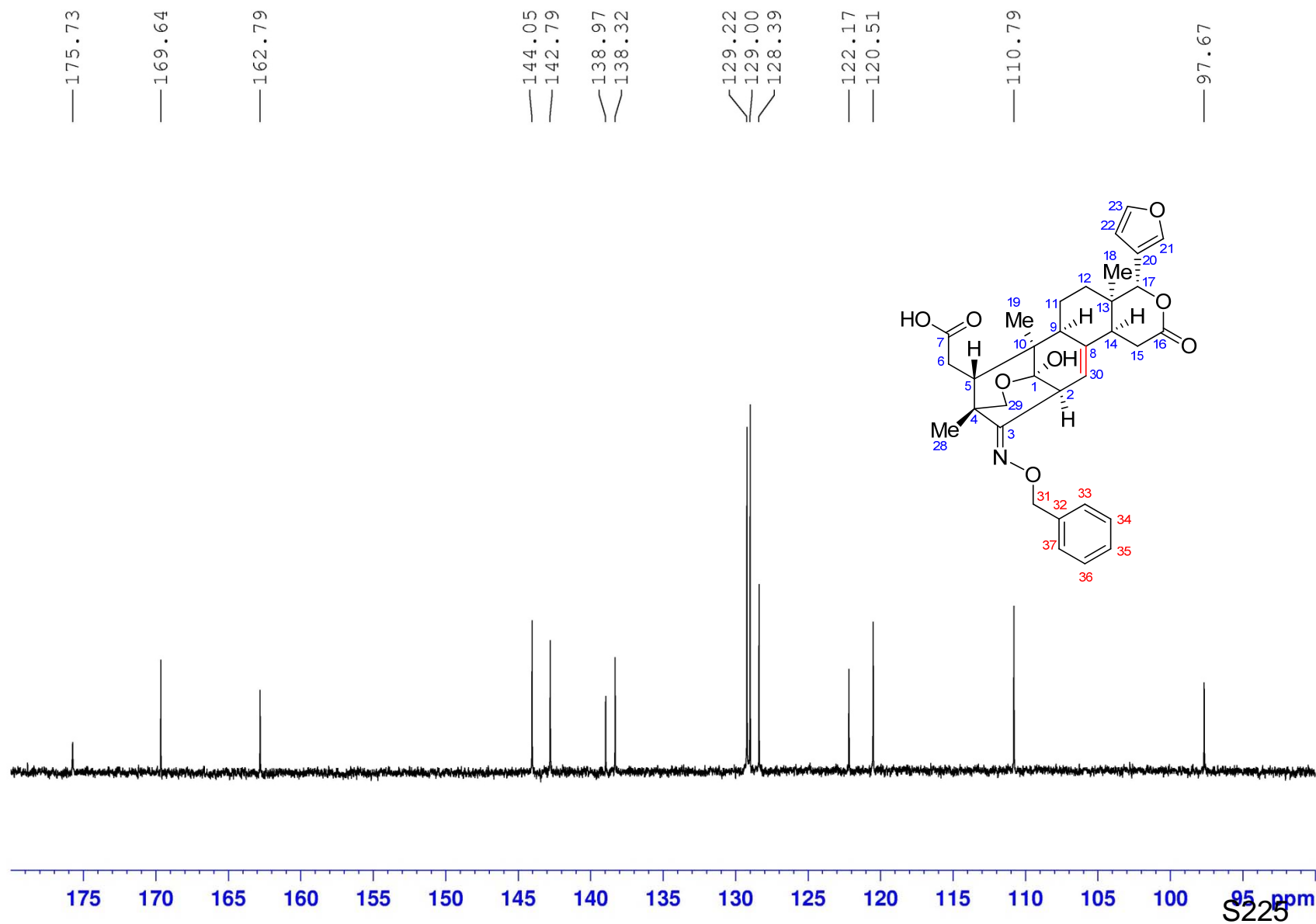
^1H NMR (400 MHz) spectrum of **10c** in $(\text{CD}_3)_2\text{CO}$



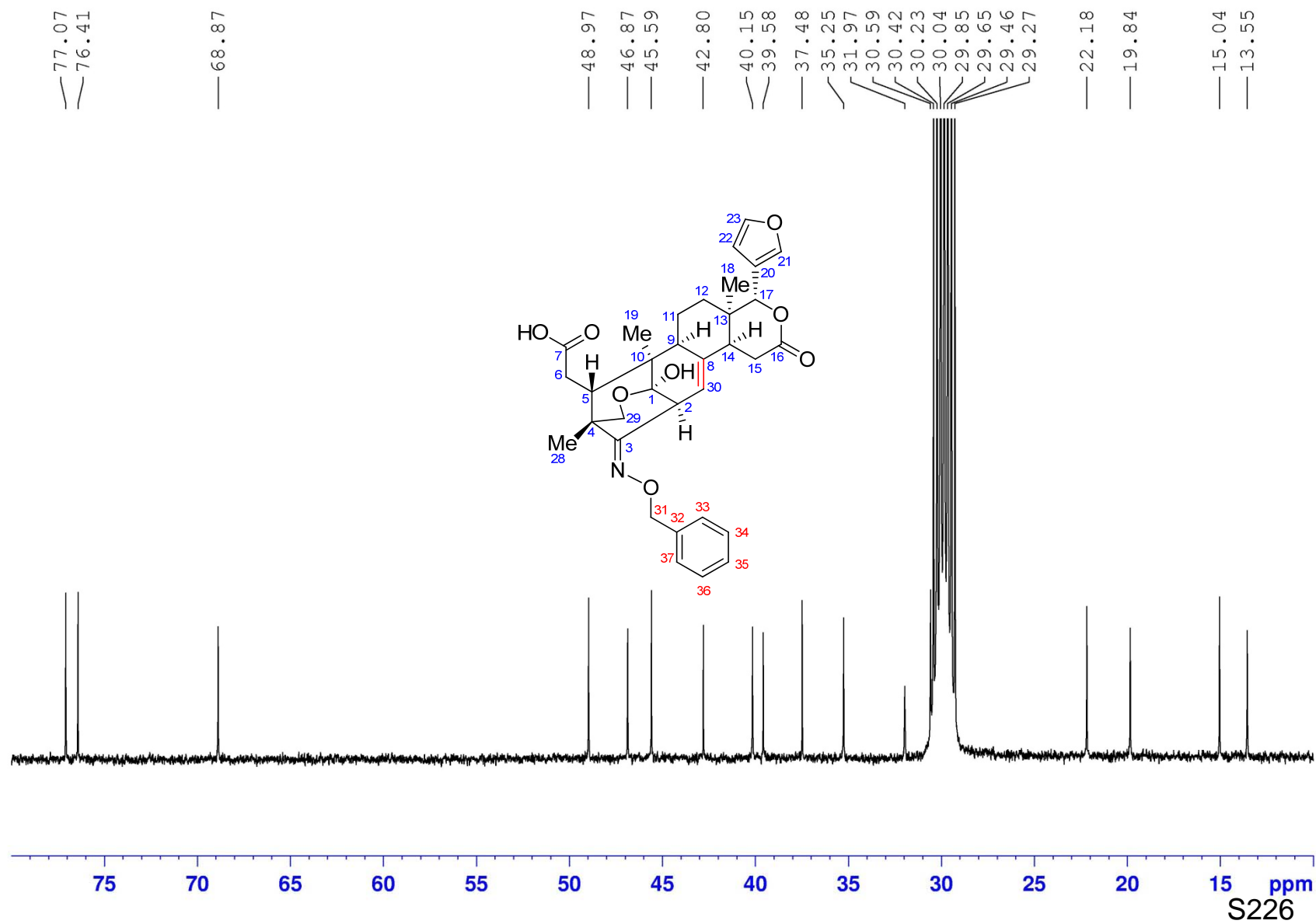
^{13}C NMR (100 MHz) spectrum of **10c** in $(\text{CD}_3)_2\text{CO}$



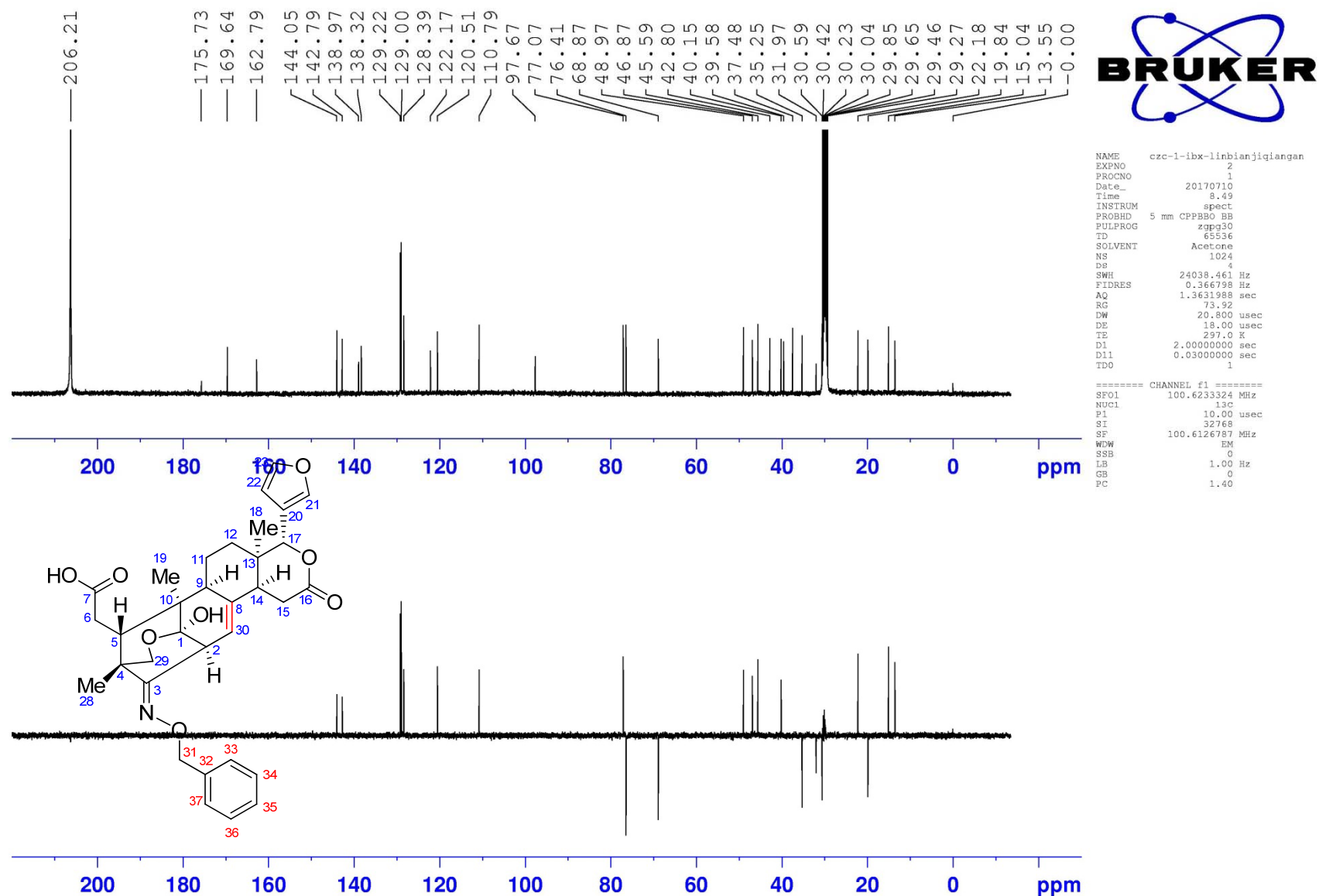
^{13}C NMR (100 MHz) spectrum of **10c** in $(\text{CD}_3)_2\text{CO}$



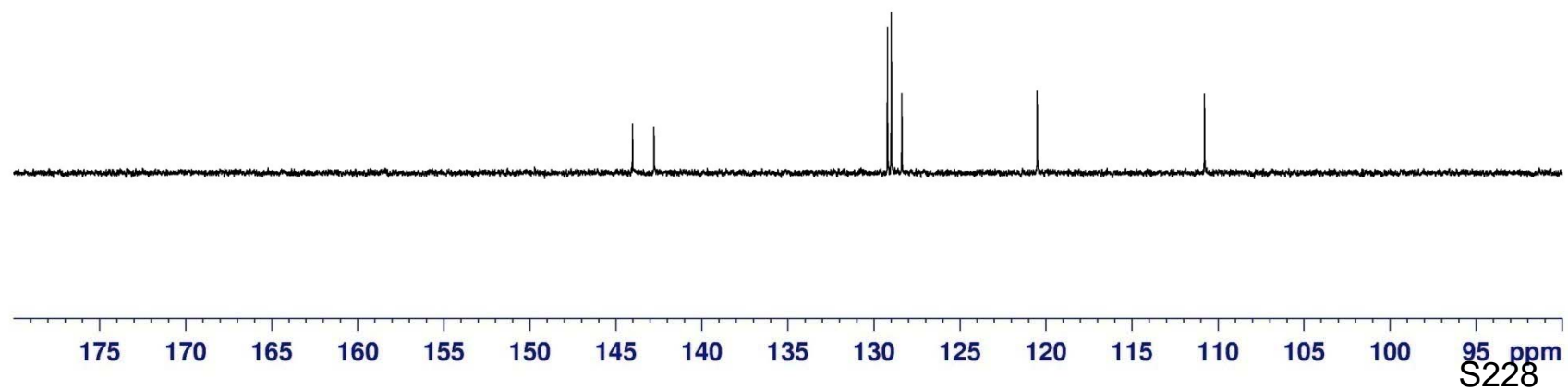
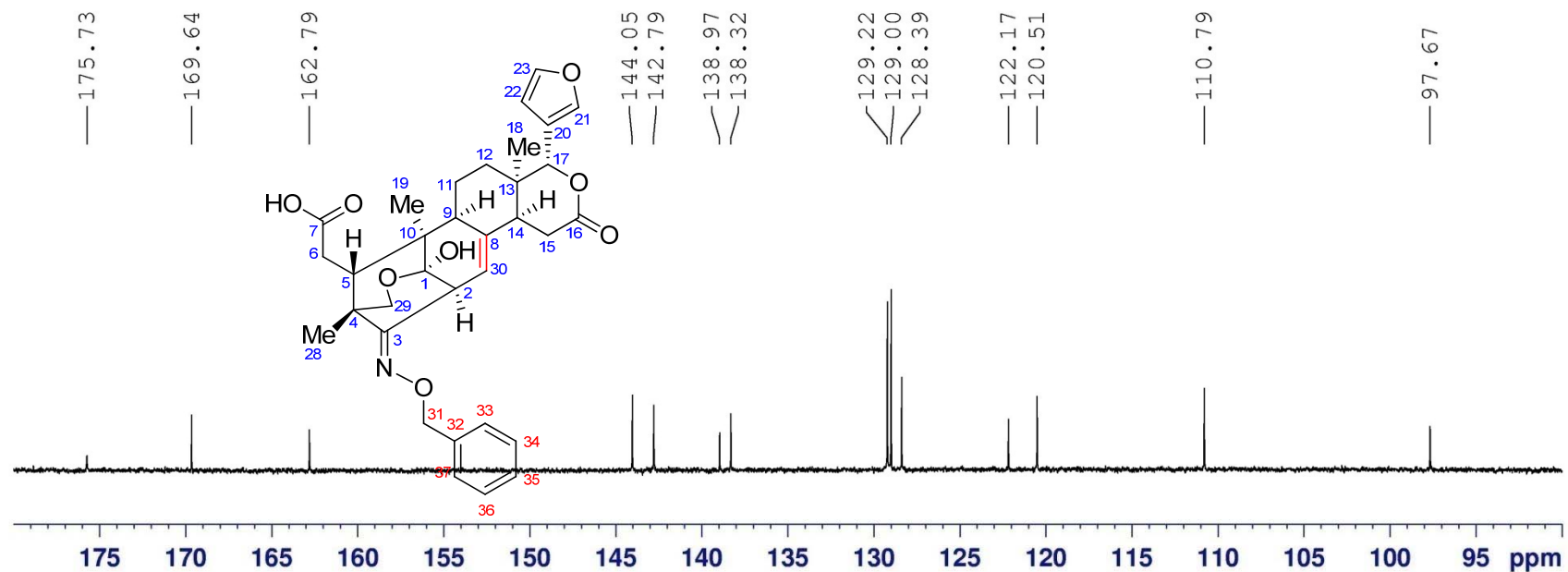
^{13}C NMR (100 MHz) spectrum of **10c** in $(\text{CD}_3)_2\text{CO}$



DEPT 135 spectrum of **10c** in (CD₃)₂CO



DEPT 135 spectrum of **10c** in (CD₃)₂CO



DEPT 135 spectrum of **10c** in (CD₃)₂CO

