Supporting Information Contents

for

A Convergent Total Synthesis of the Potent Cephalostatin/ Ritterazine hybrid - 25-*epi* Ritterostatin G_N1_N

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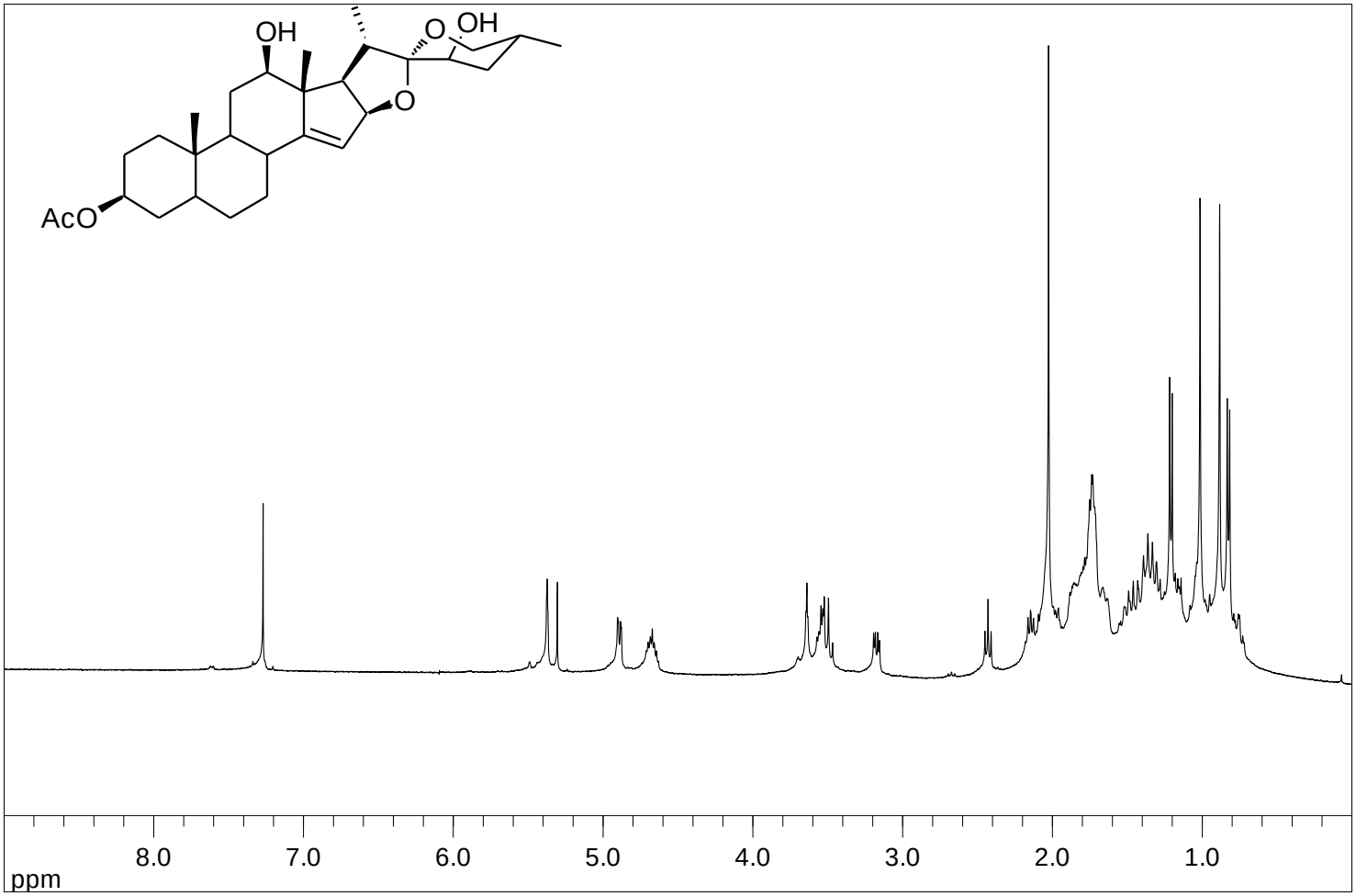
1).Table 1. Details on yields for synthesis (Schemes 1-3, manuscript)

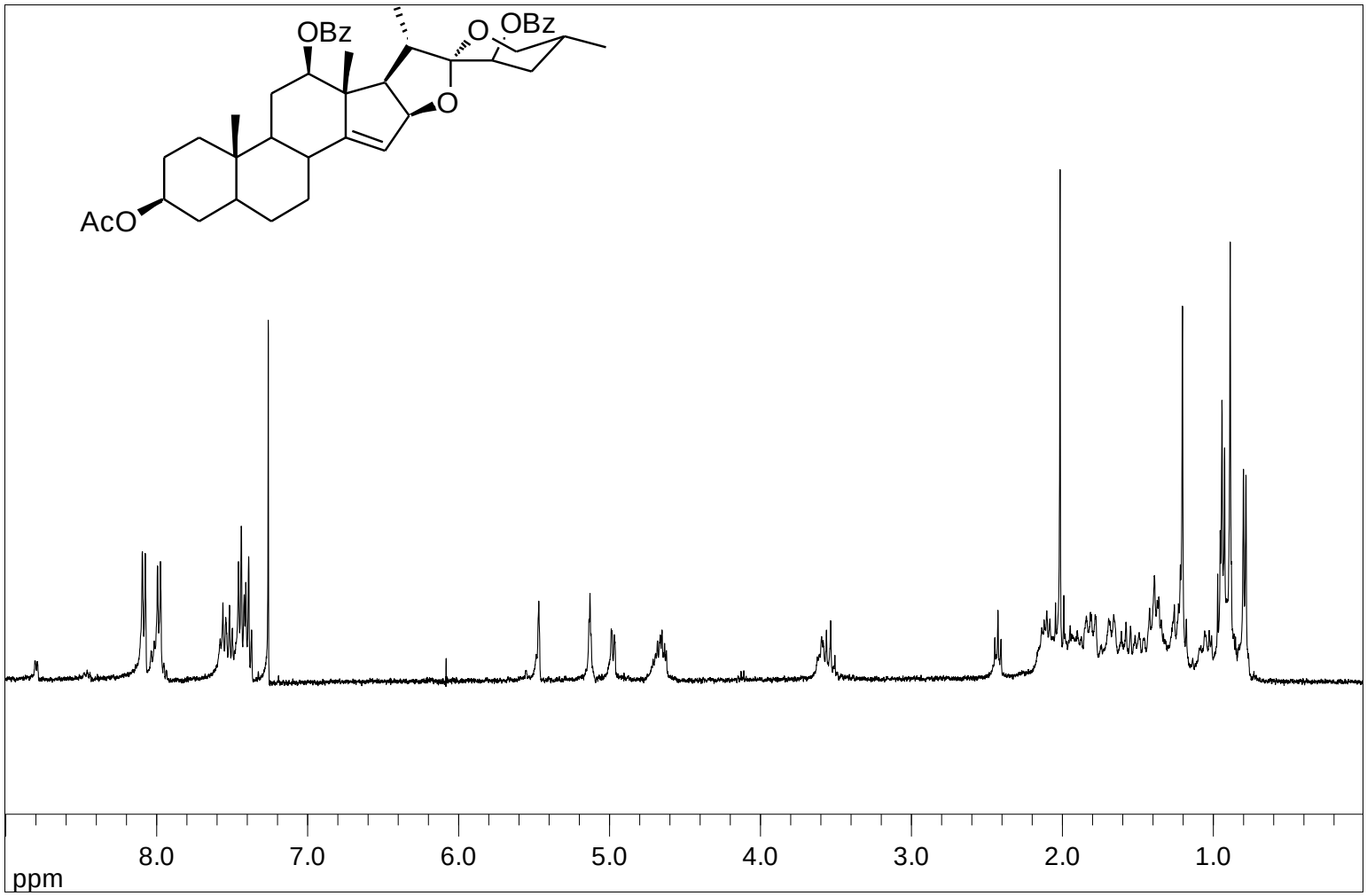
Reactant	Product	Yield (%)
6	**7**	85
7	**9**	82
9	**11**	86
11	**12**	72
12	**13**	88
13	**14**	80
14	**15**	70
15	**16**	85
16	**17**	81
17	**18**	95
18	**19**	100
19	**21**	74
21	**22**	68
22	**23**	71
23	**24**	75
24	**25**	82
25	**26**	88
26	**27**	85
27	**28**	84
28	**29**	81
29, 30	**31**	58

31	**5**	95

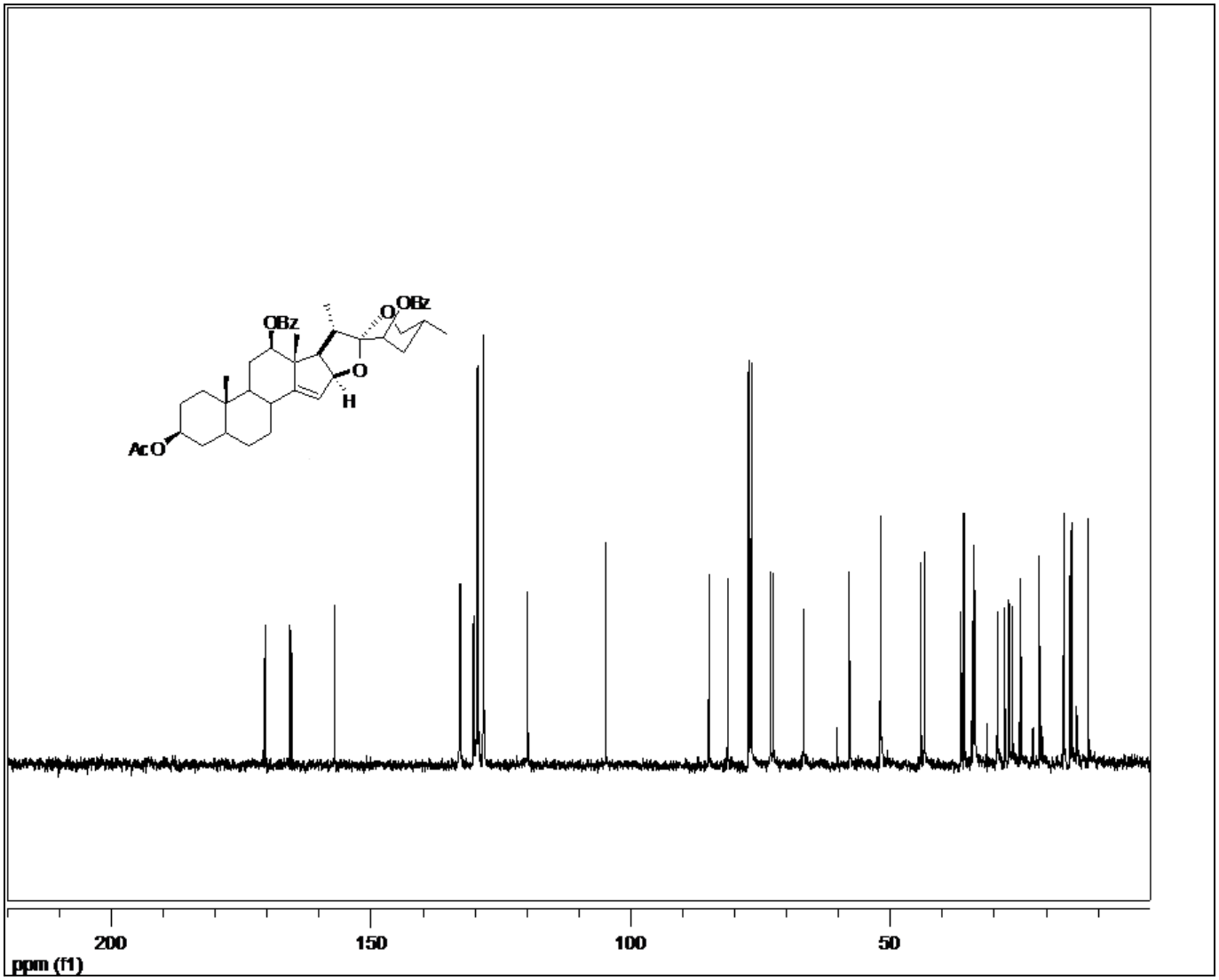
3. Spectral data



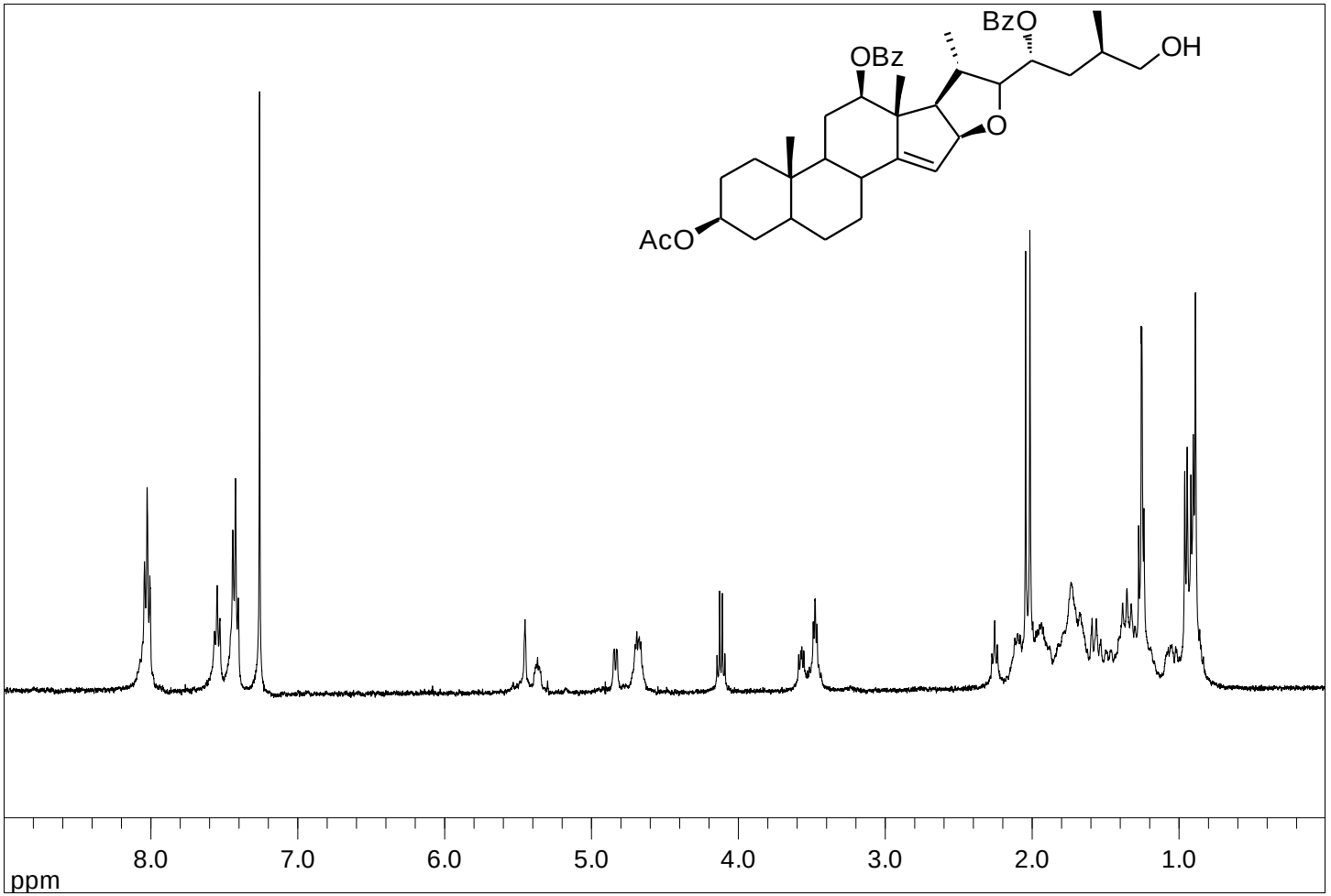
^{1}H-NMR (400 MHz, $CDCl_3$) of compound 10



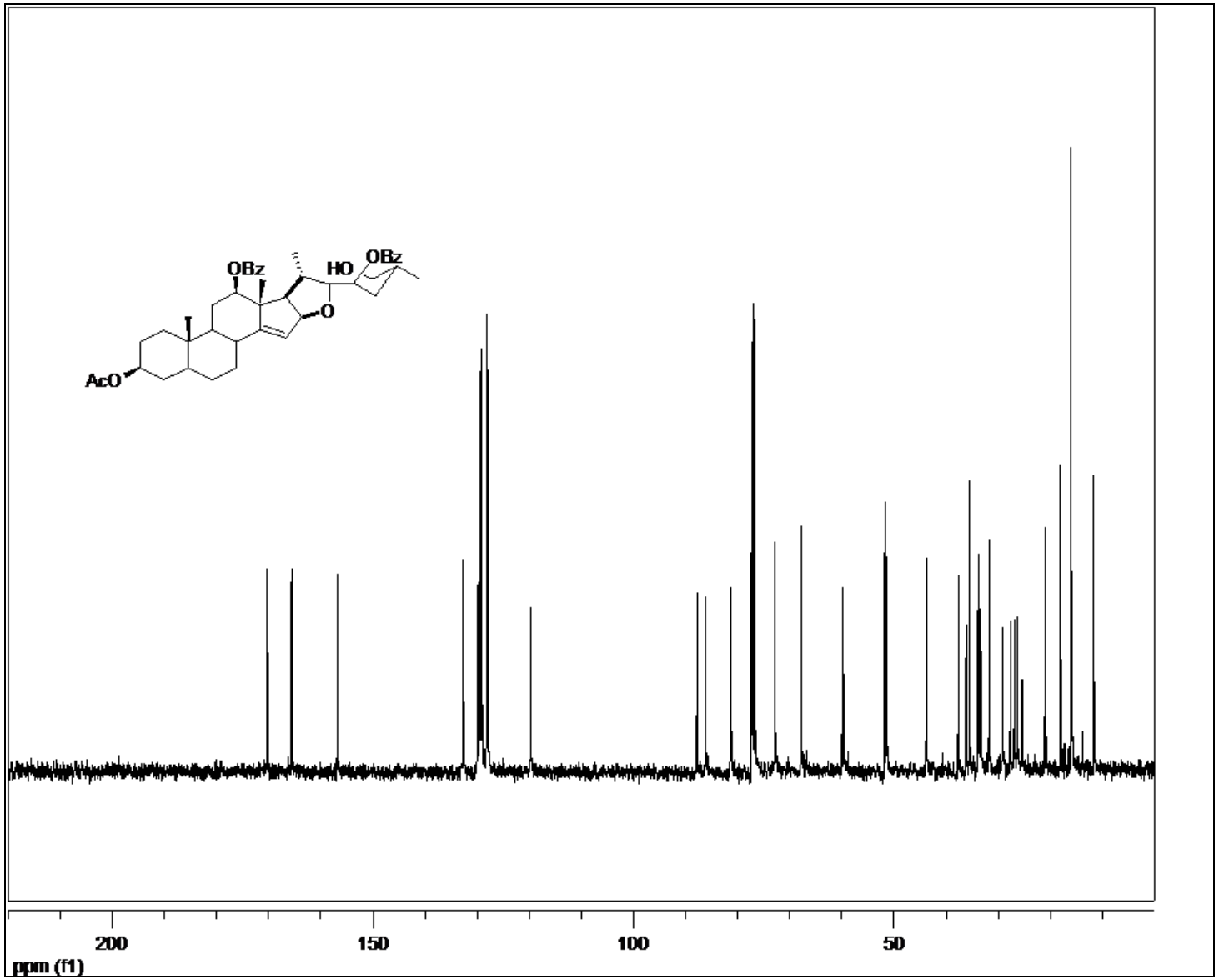
^{1}H-NMR (400 MHz, $CDCl_3$) of compound 11



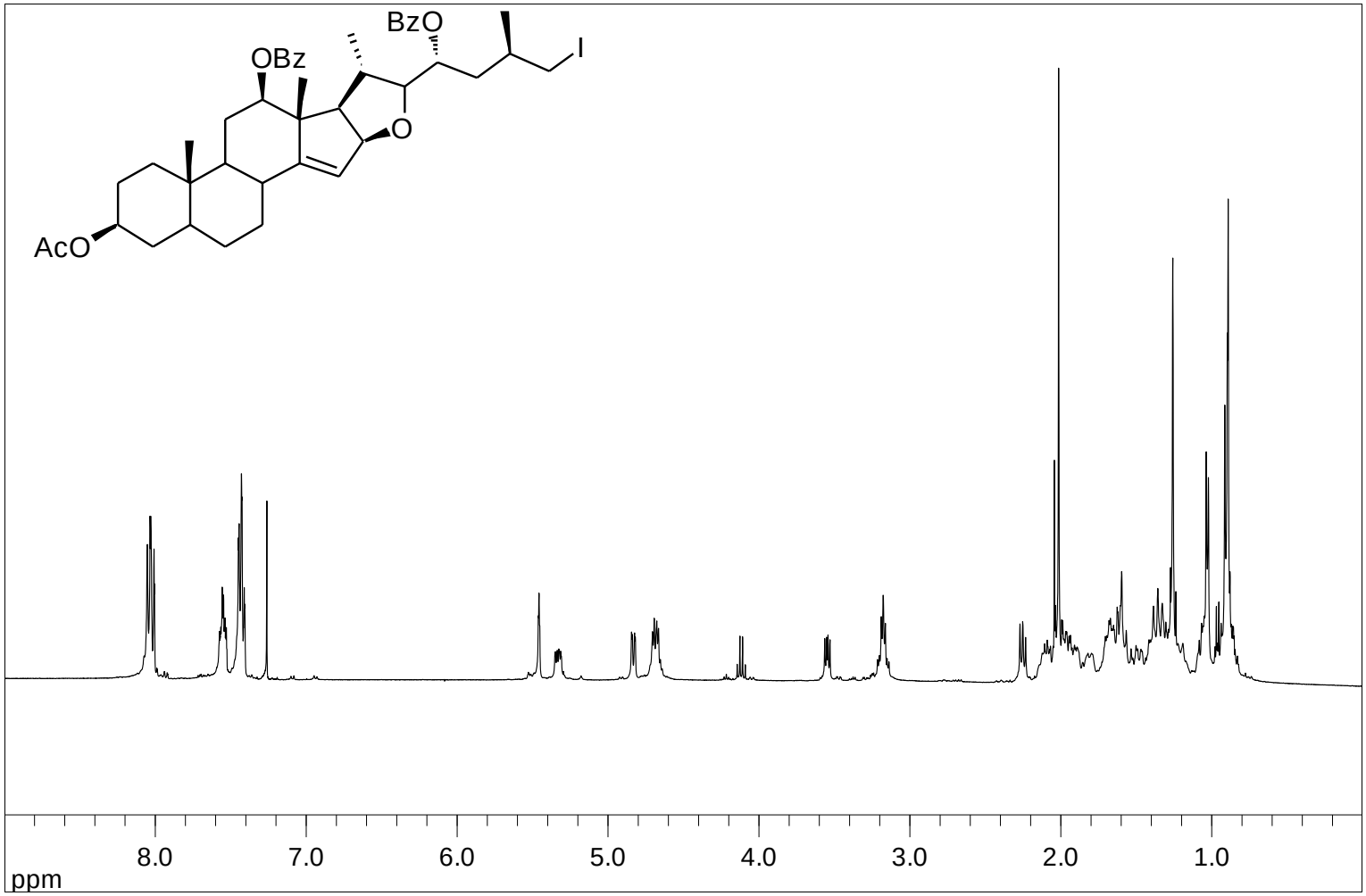
^{13}C NMR (100 MHz, $CDCl_3$) of compound 11



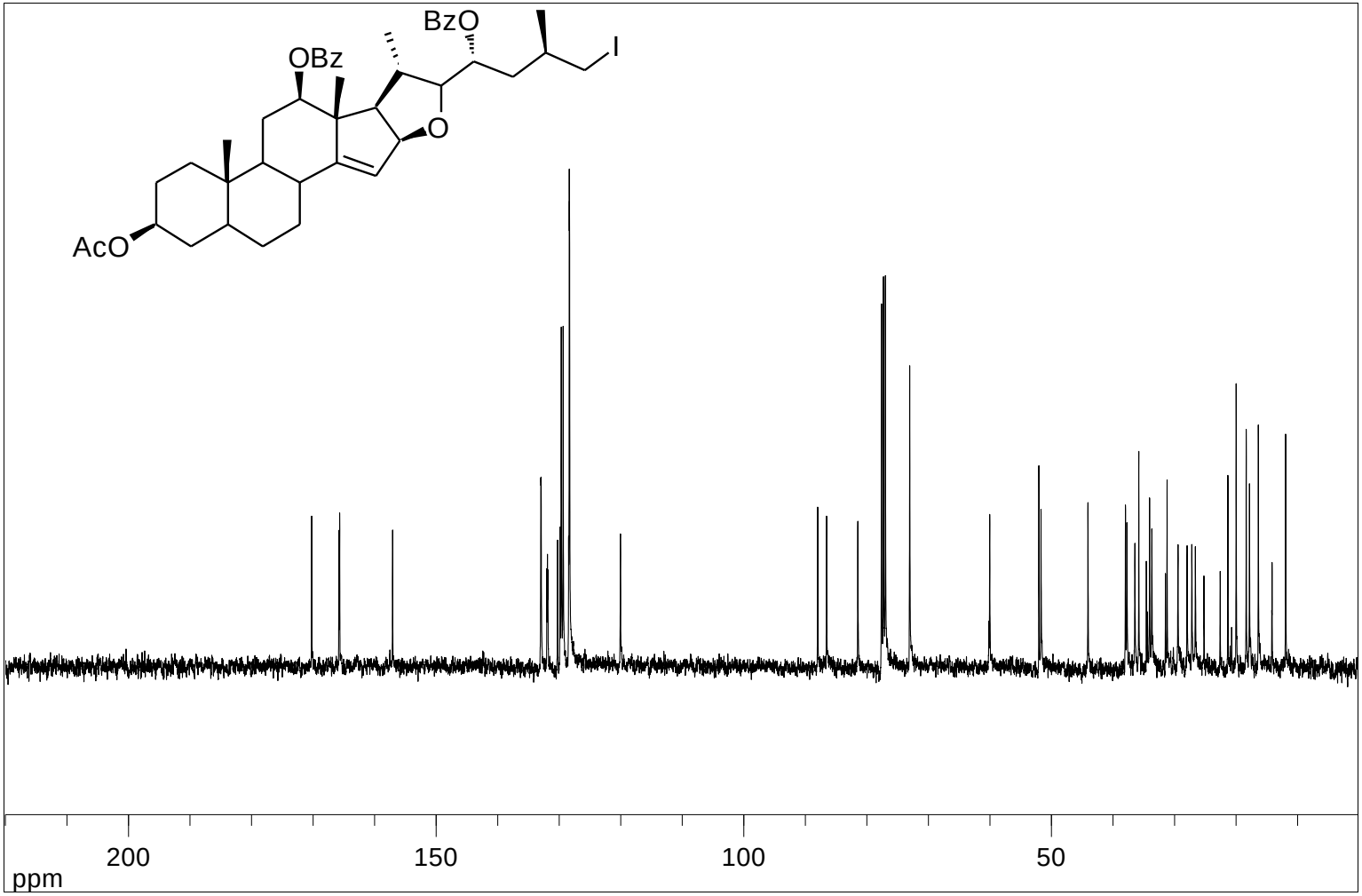
^{1}H-NMR (400 MHz, $CDCl_3$) of compound 12



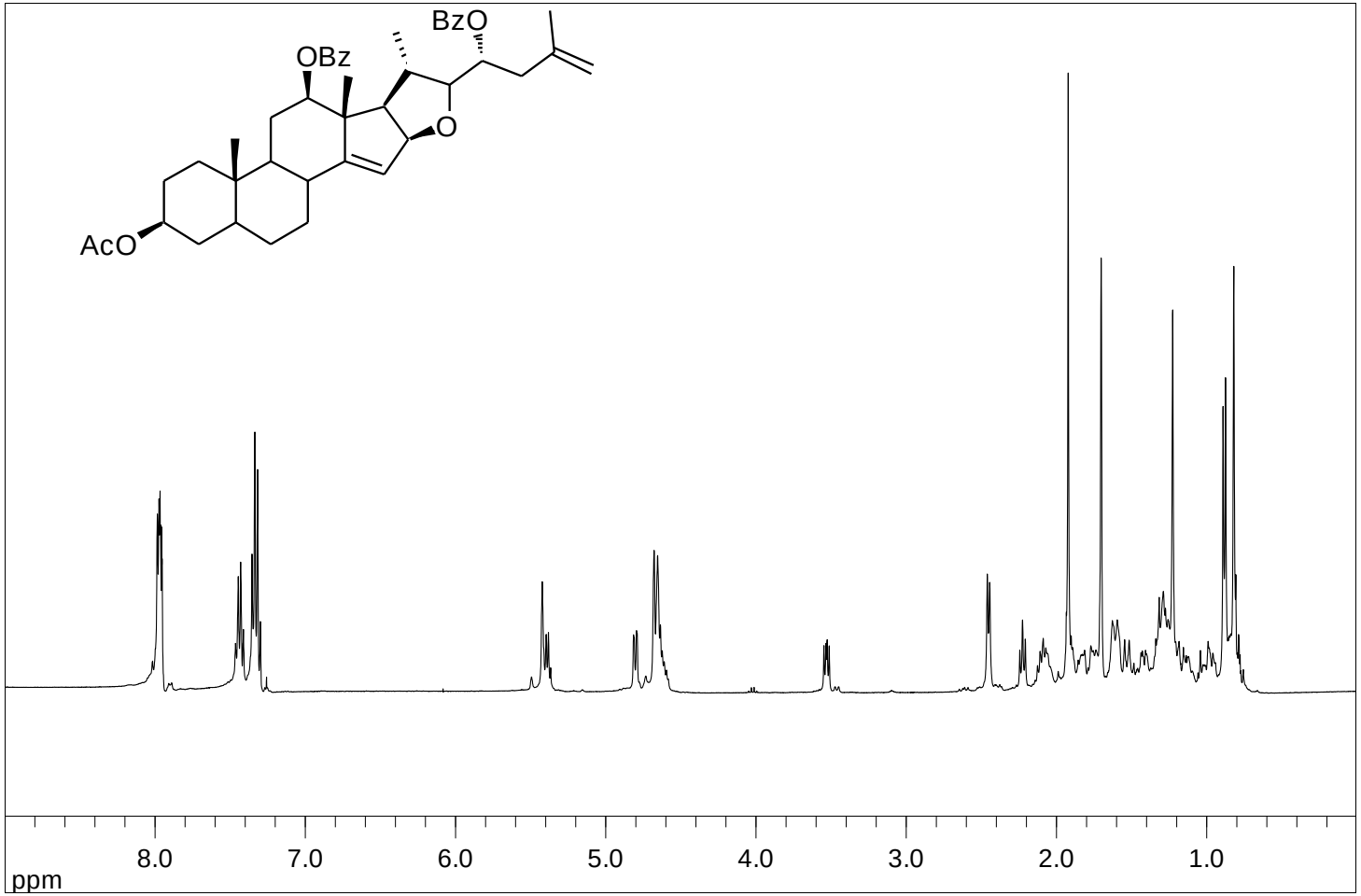
^{13}C NMR (100 MHz, $CDCl_3$) of compound 12



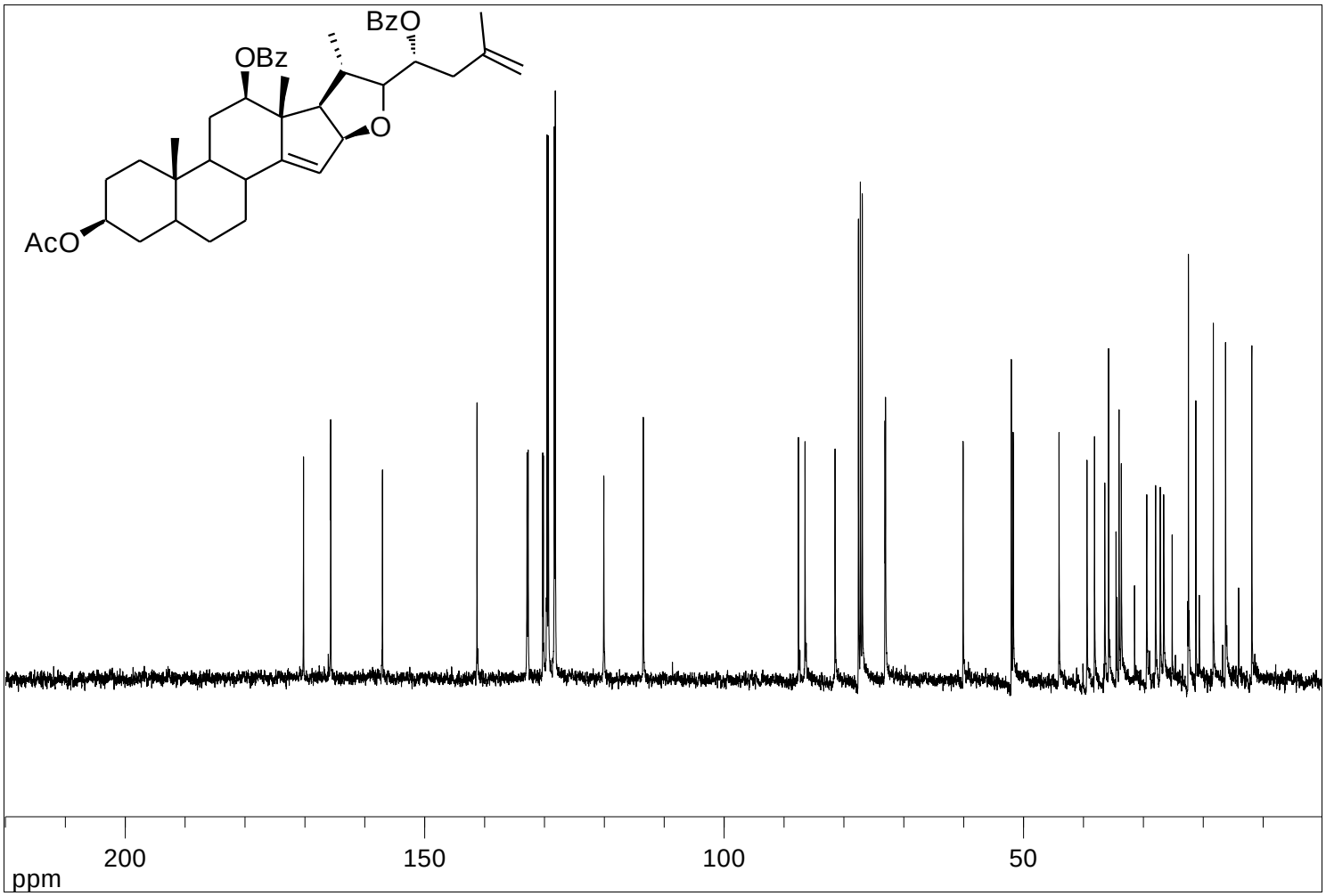
^{1}H-NMR (400 MHz, $CDCl_3$) of compound 13



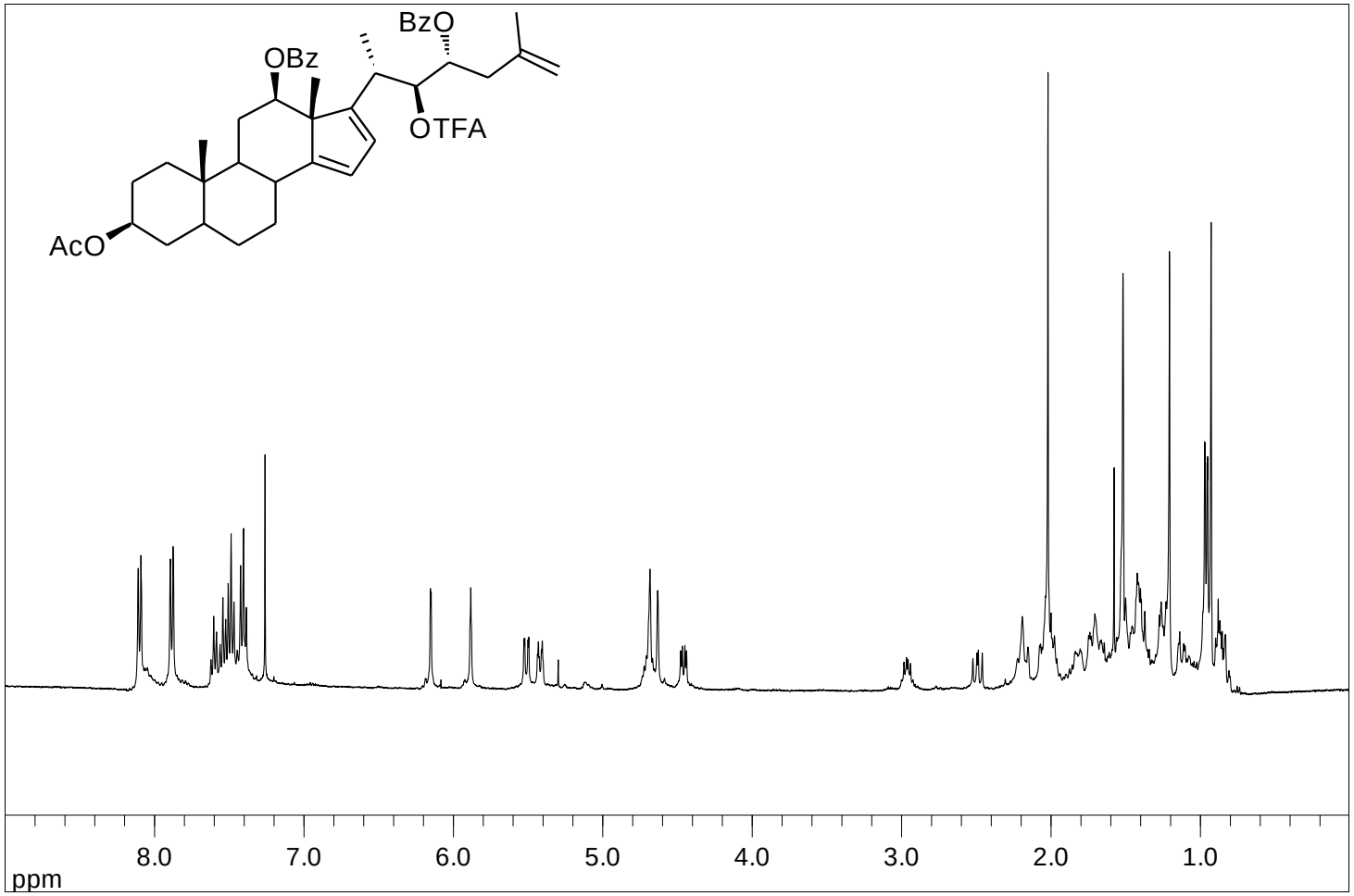
^{13}C NMR (125 MHz, $CDCl_3$) of compound 13



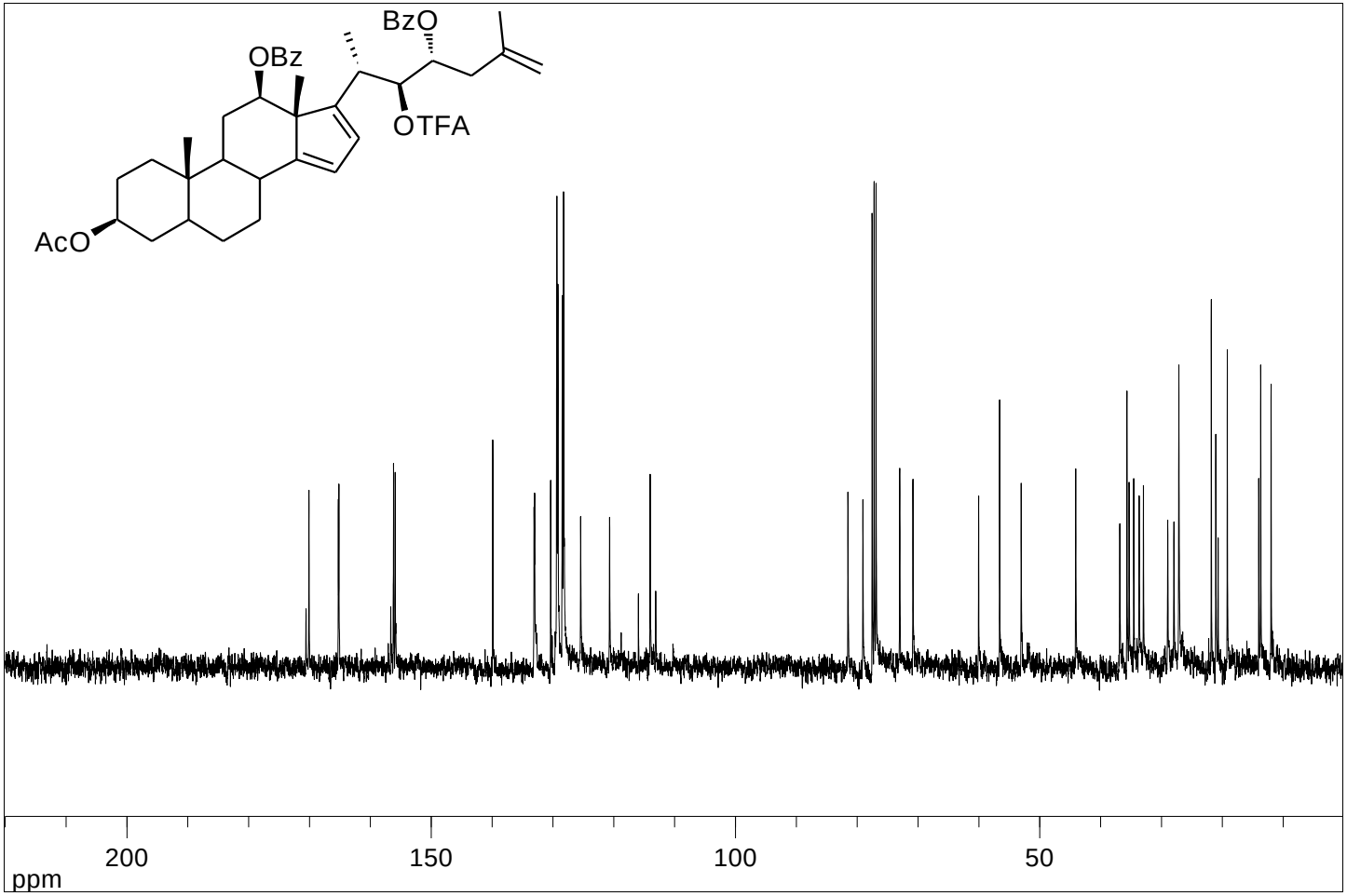
^{1}H-NMR (400 MHz, $CDCl_3$) of compound 14



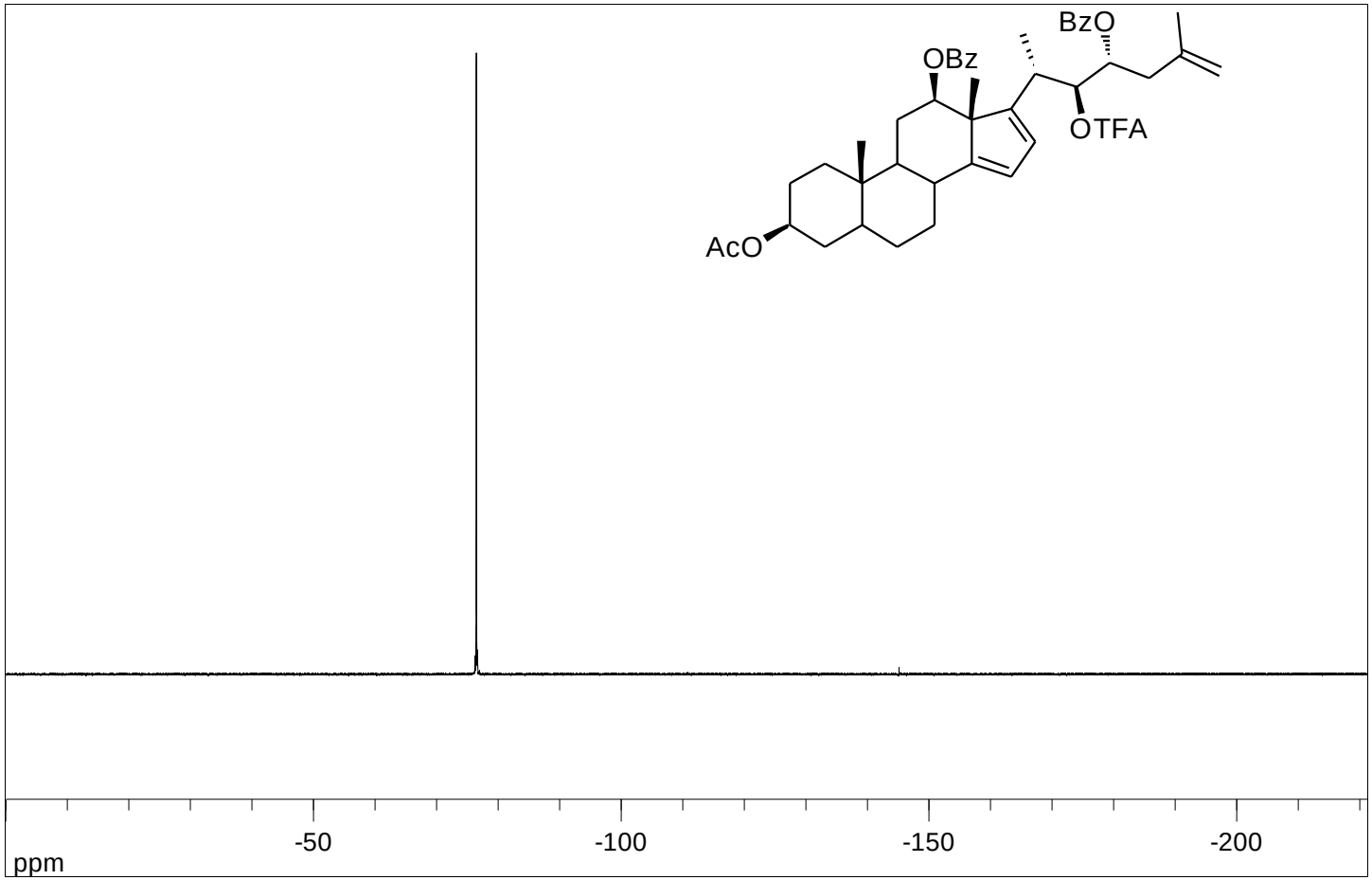
^{13}C NMR (125 MHz, $CDCl_3$) of compound 14



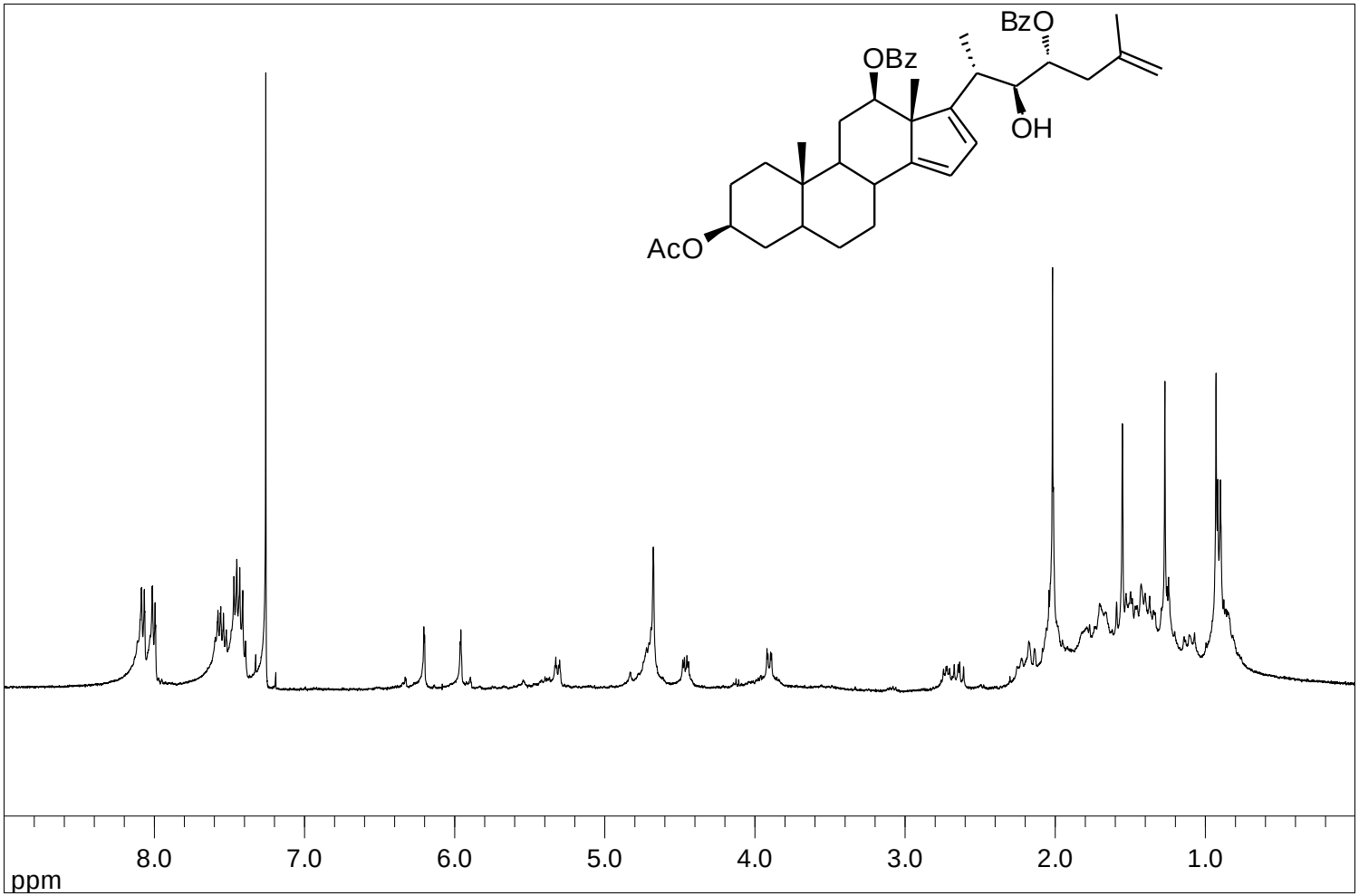
^{1}H-NMR (400 MHz, $CDCl_3$) of compound 15



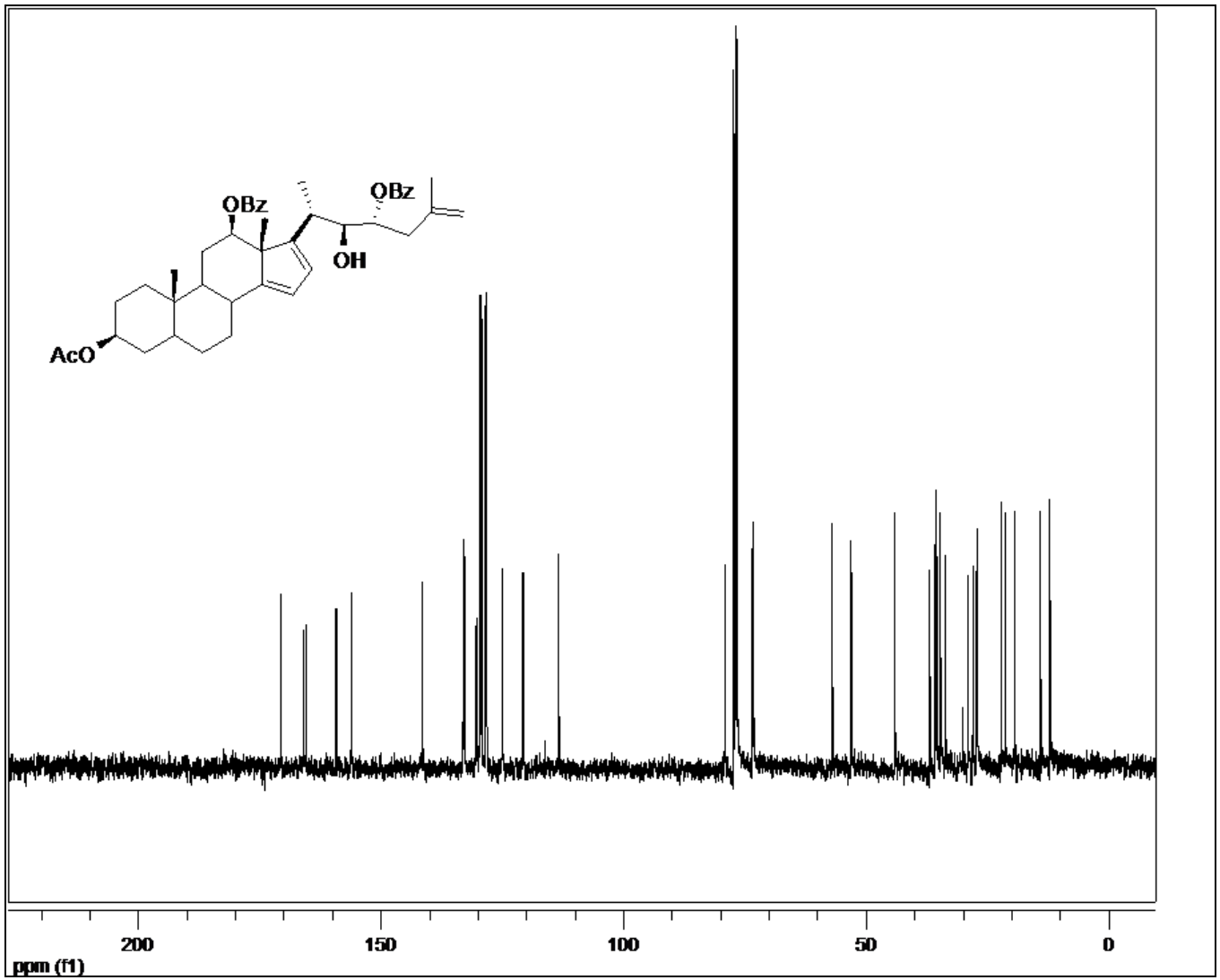
^{13}C NMR (125 MHz, $CDCl_3$) of compound 15



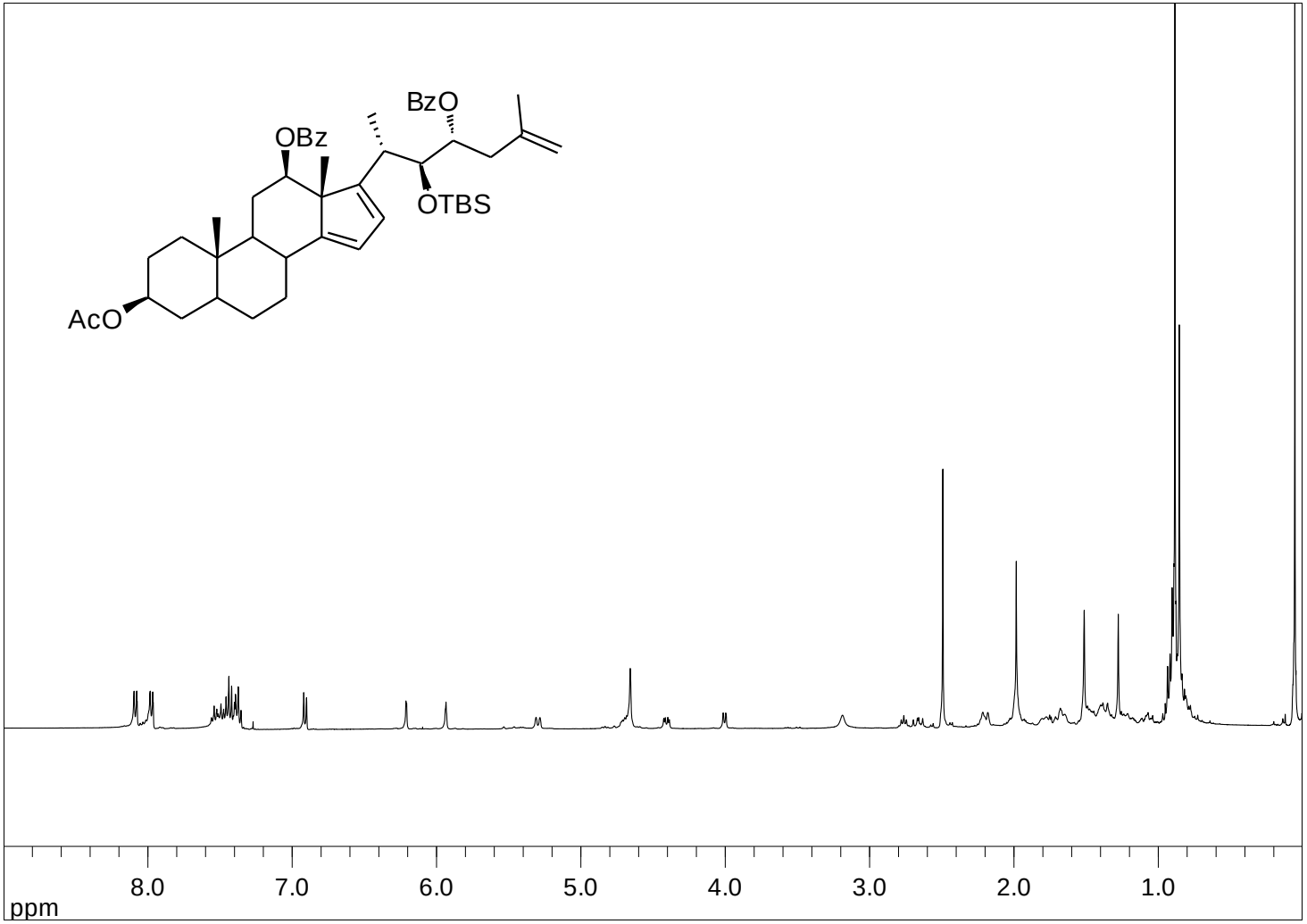
^{19}F NMR (376.49 MHz, $CDCl_3$) of compound 15



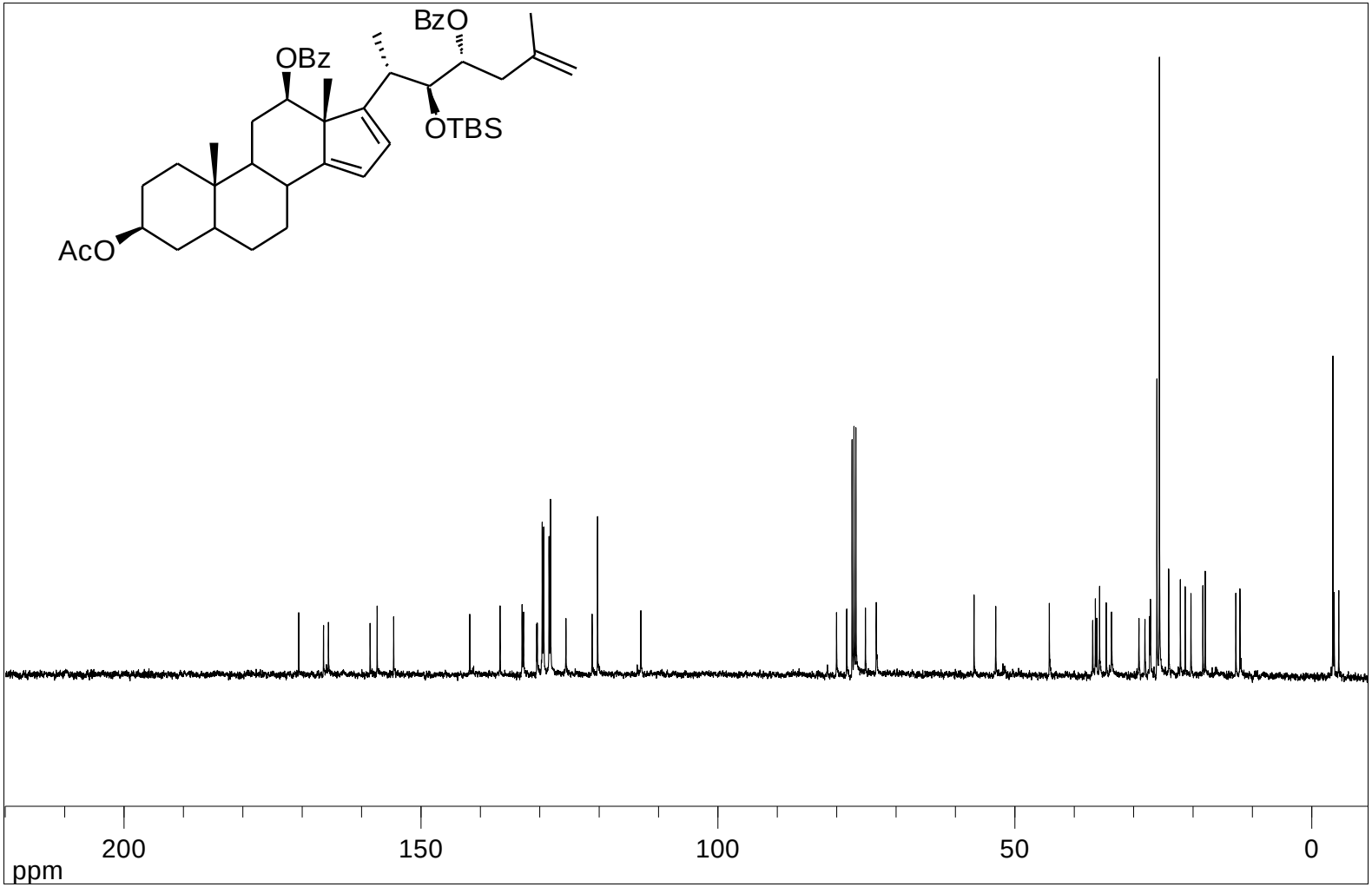
^{1}H-NMR (400 MHz, $CDCl_3$) of compound 16



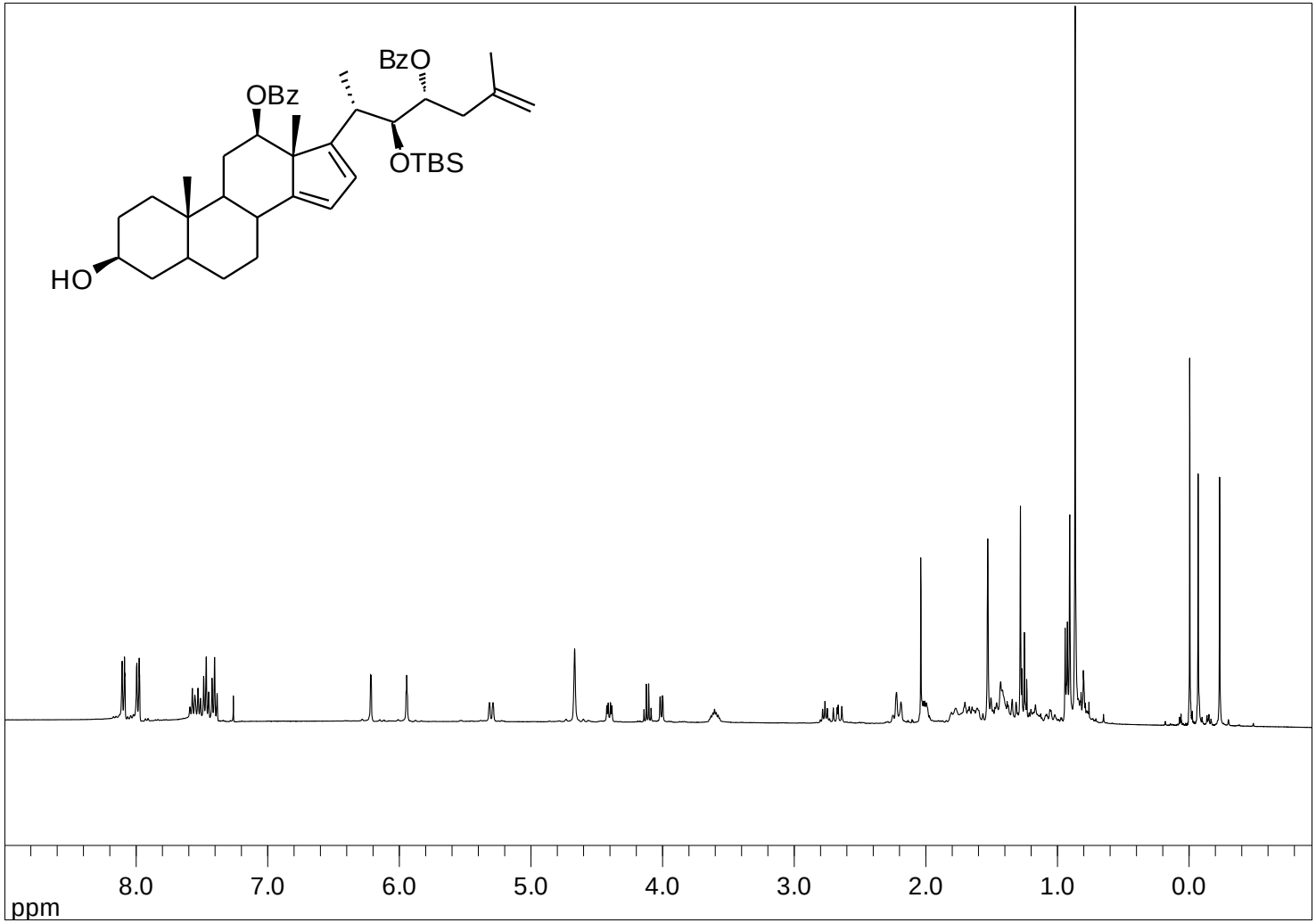
^{13}C NMR (100 MHz, $CDCl_3$) of compound 16



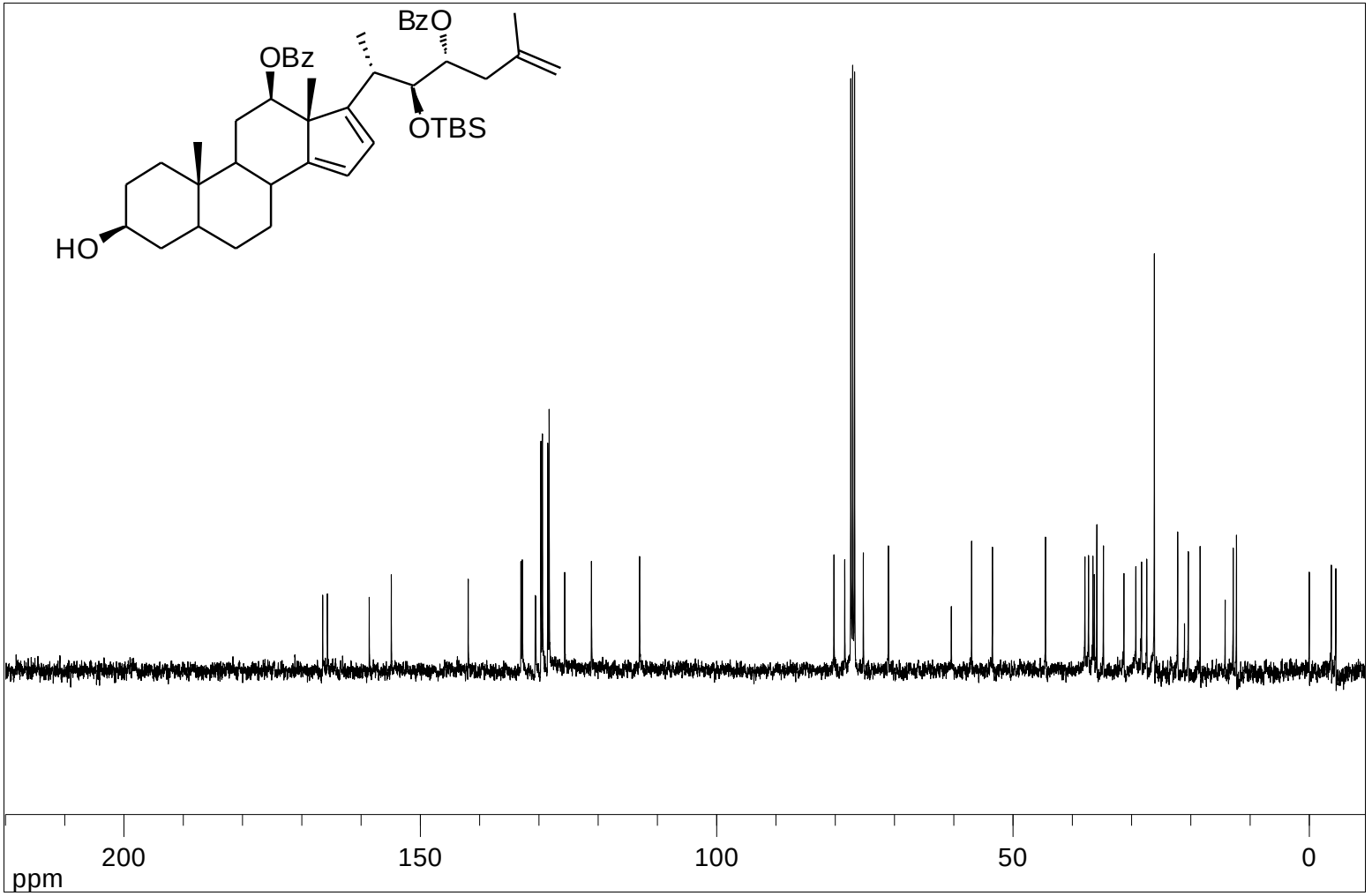
^{1}H-NMR (400 MHz, $CDCl_3$) of compound 17



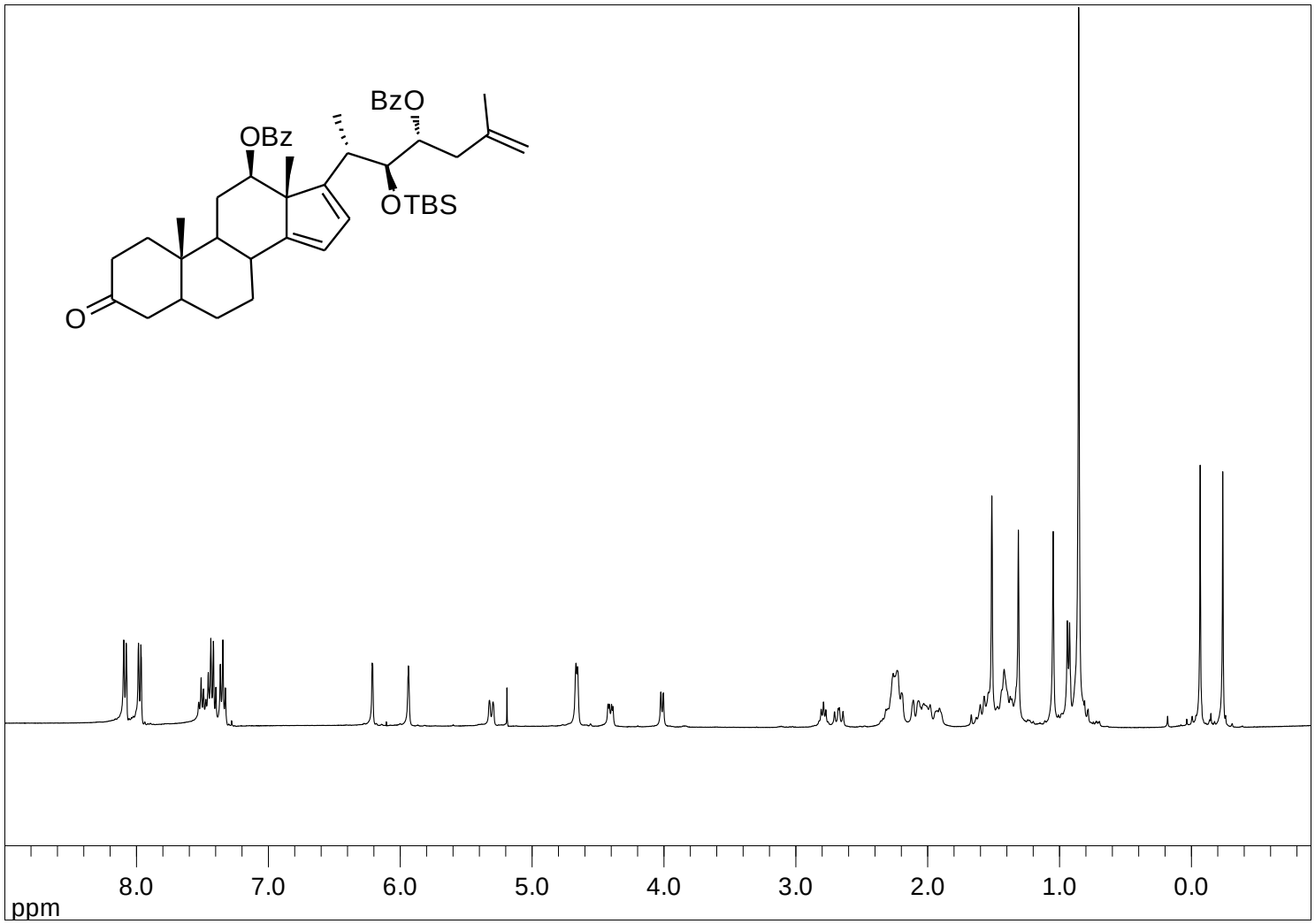
^{13}C NMR (125 MHz, $CDCl_3$) of compound 17



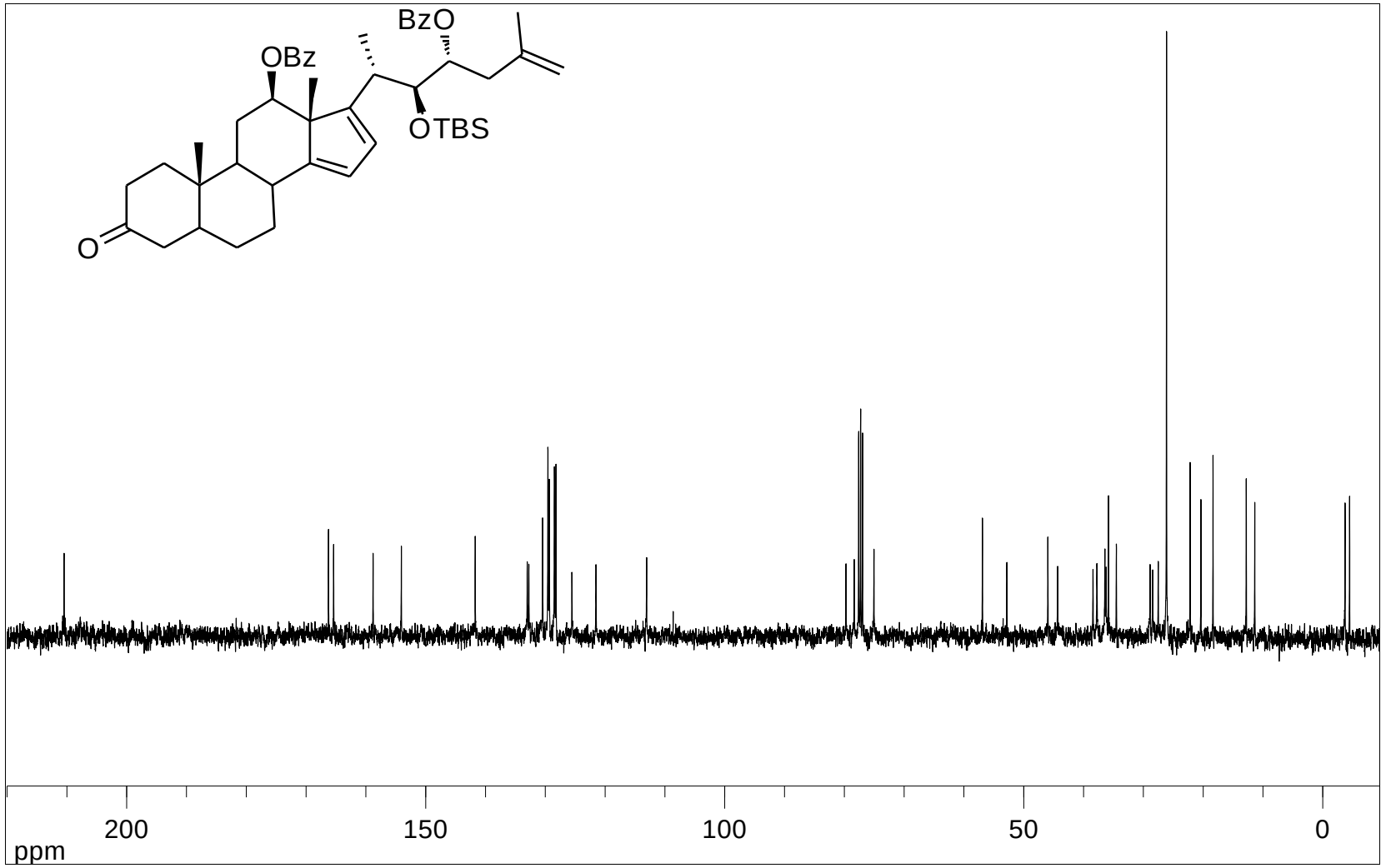
^{1}H-NMR (400 MHz, $CDCl_3$) of compound 18



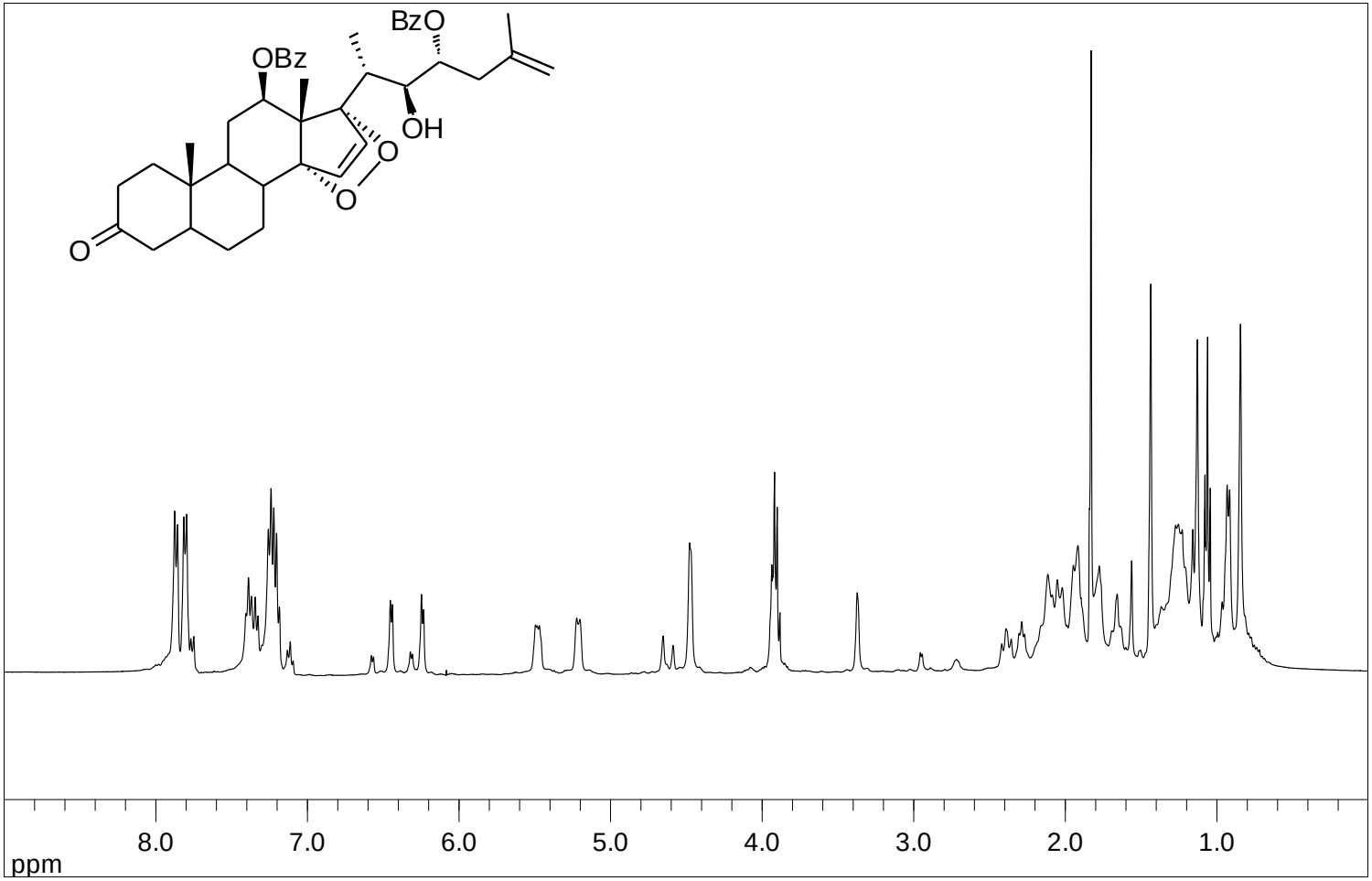
^{13}C NMR (125 MHz, $CDCl_3$) of compound 18



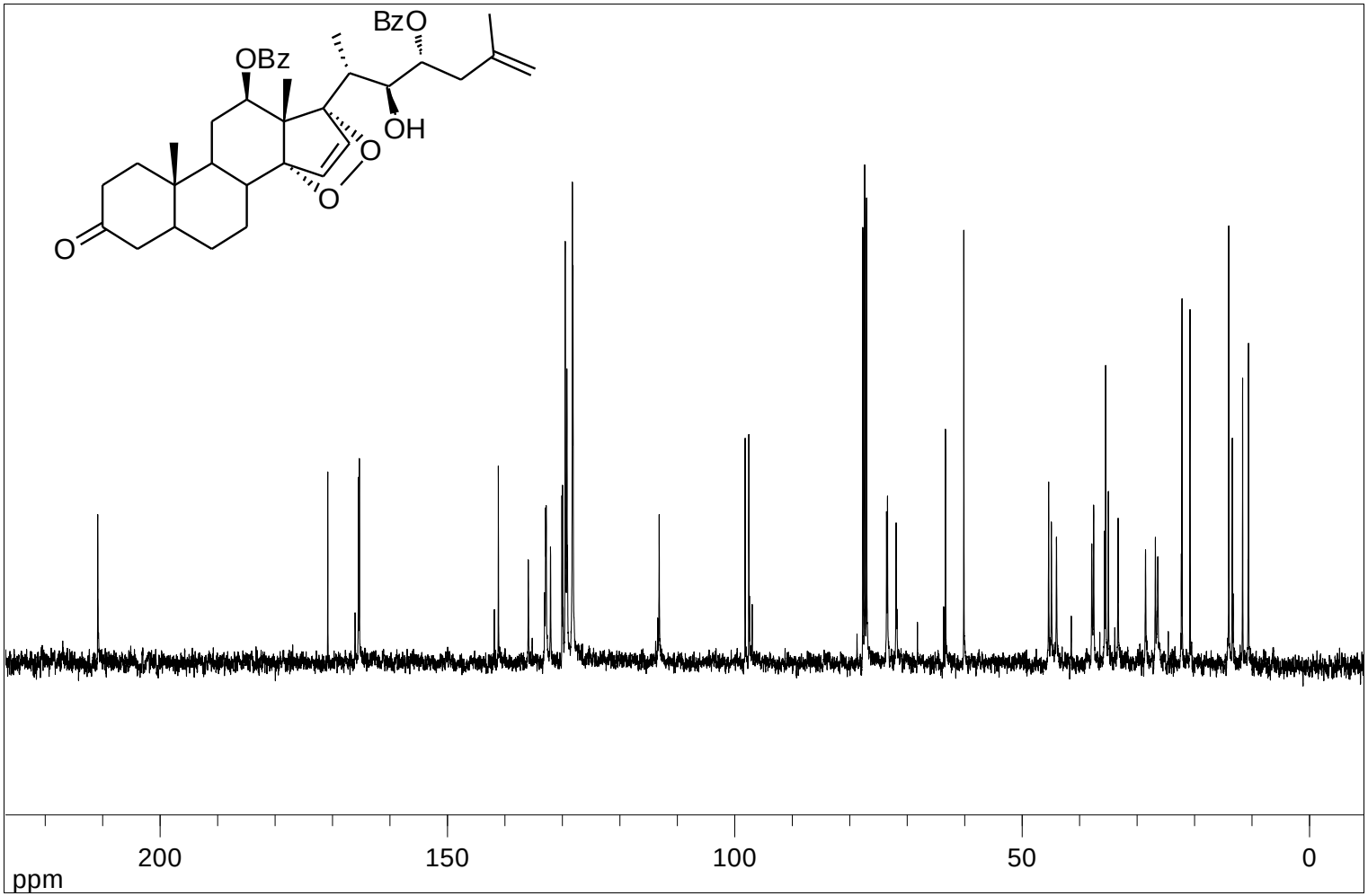
^{1}H-NMR (400 MHz, $CDCl_3$) of compound 19



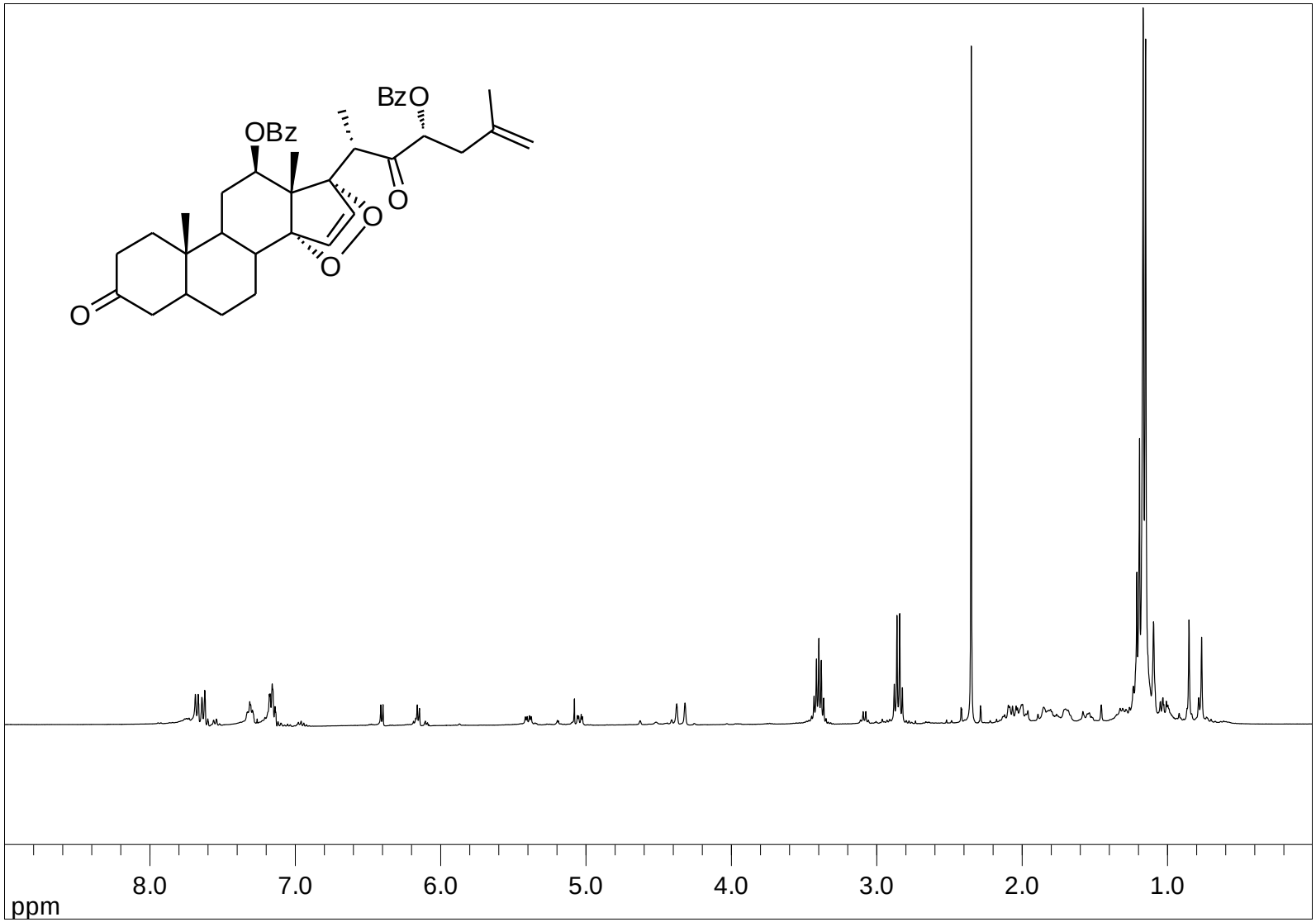
^{13}C NMR (125 MHz, $CDCl_3$) of compound 19



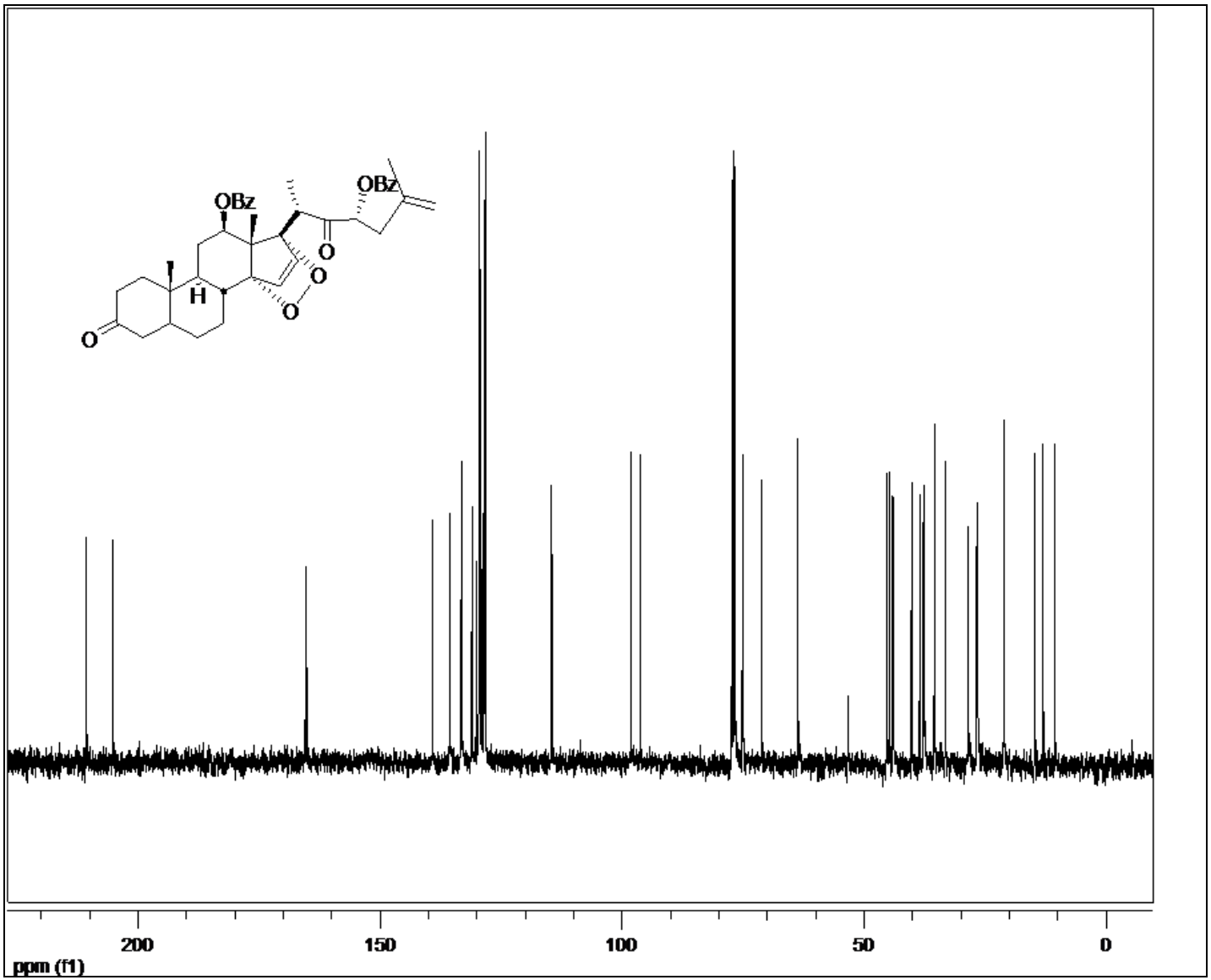
^{1}H-NMR (400 MHz, $CDCl_3$) of compound 21


BzO
OBz
OH
O
O
O
200
150
100
50
0
ppm

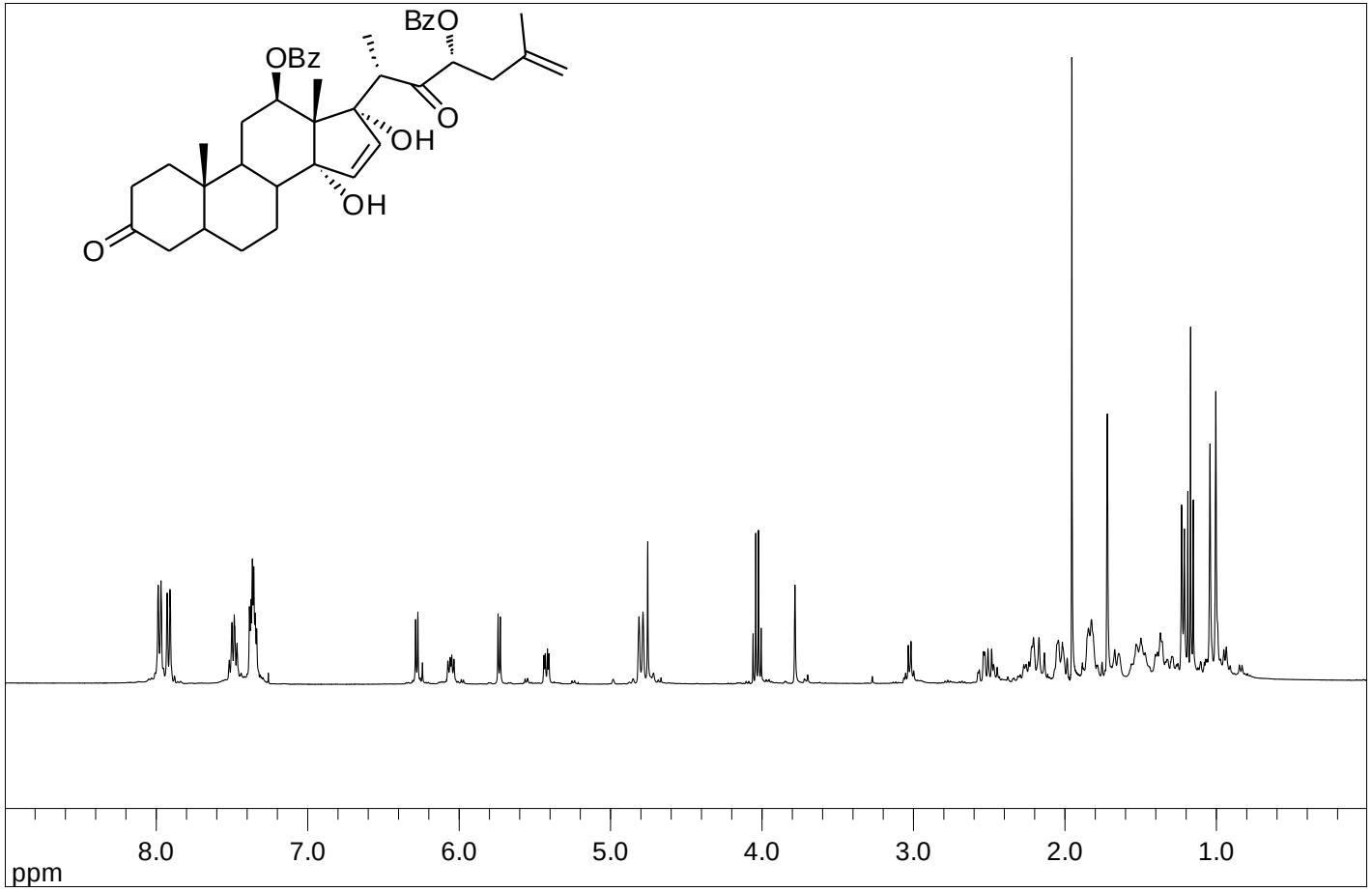
^{13}C NMR (125 MHz, $CDCl_3$) of compound 21



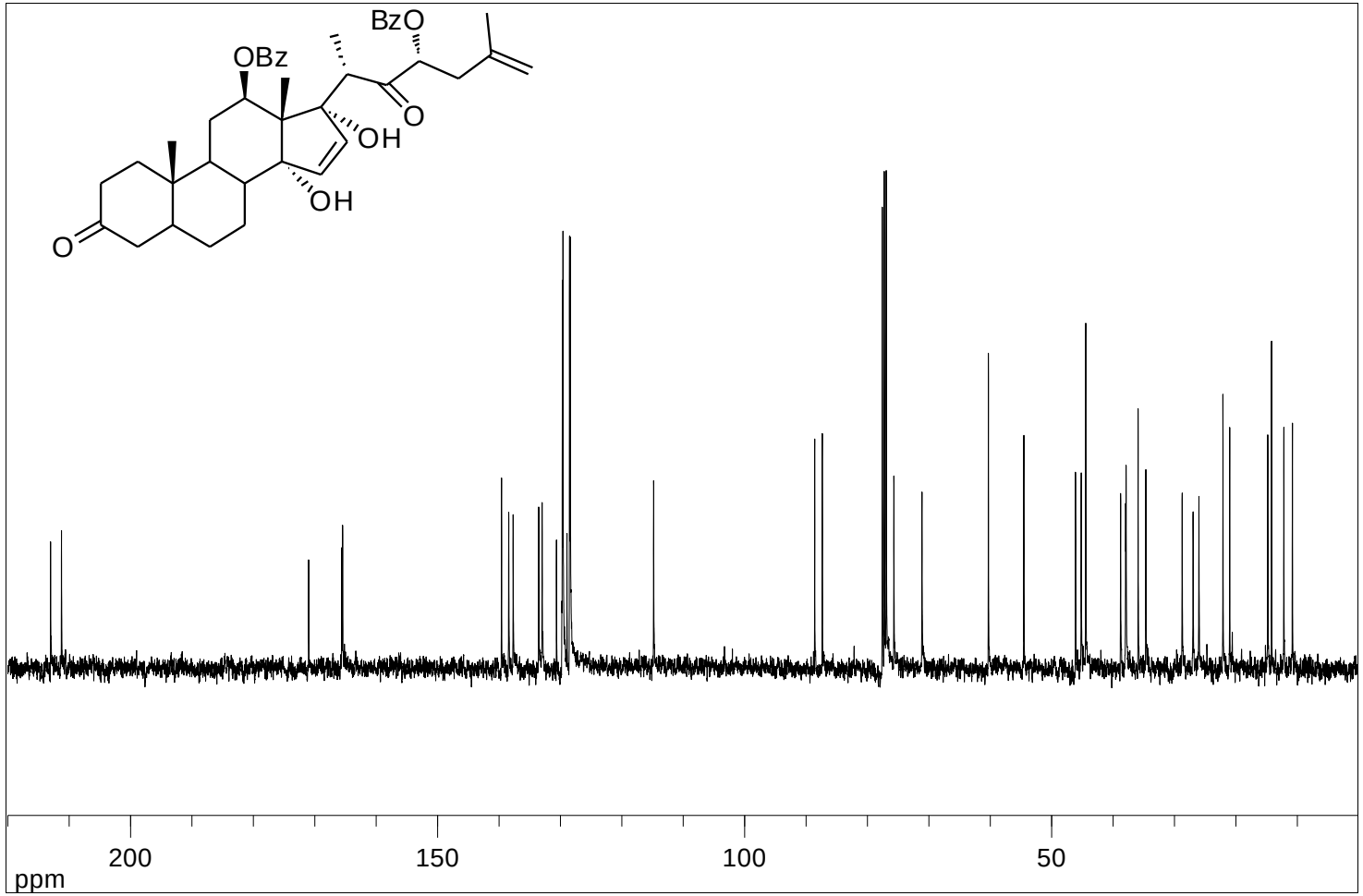
^{1}H-NMR (400 MHz, $CDCl_3$) of compound 22



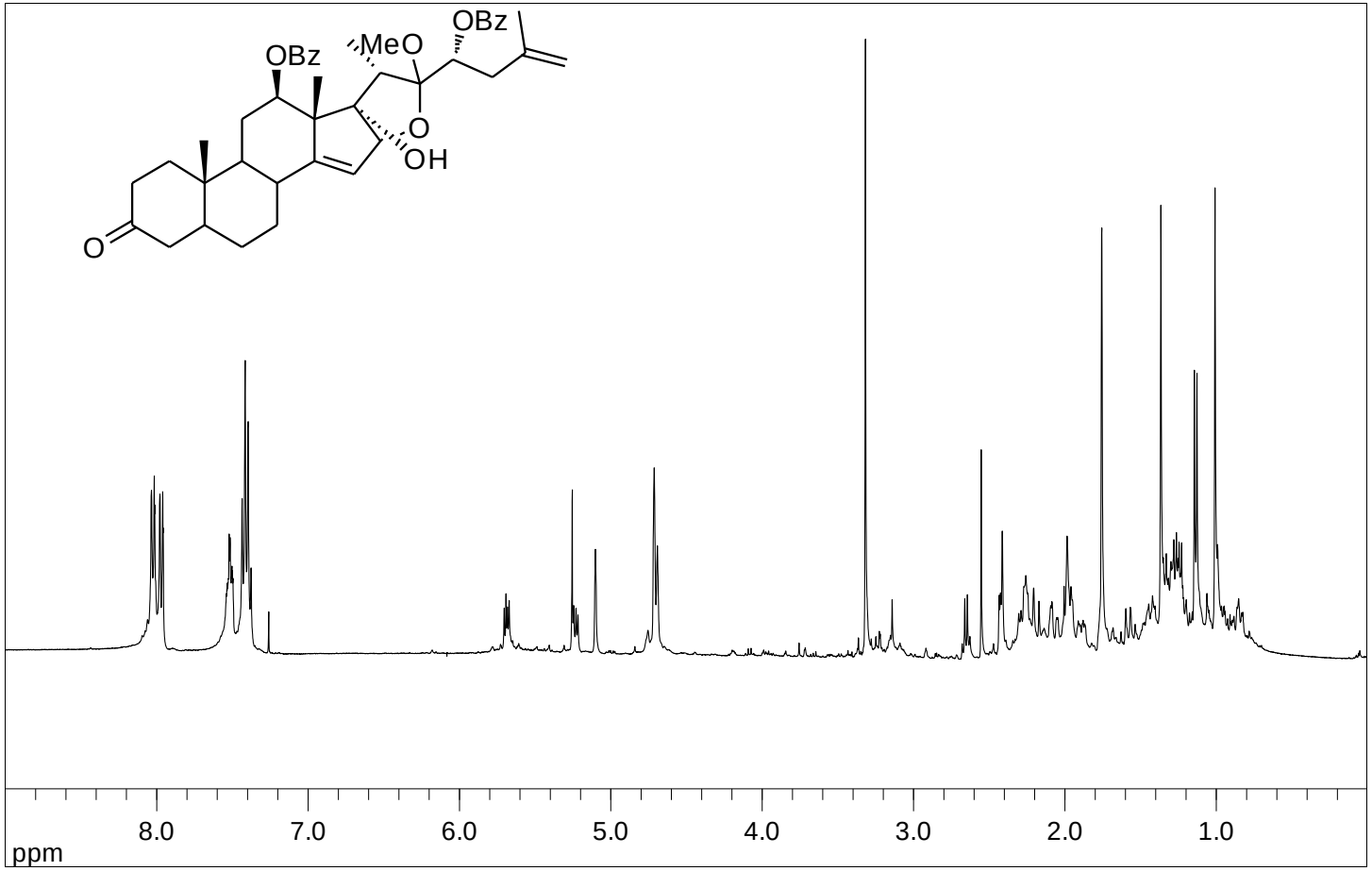
^{13}C NMR (125 MHz, $CDCl_3$) of compound 22



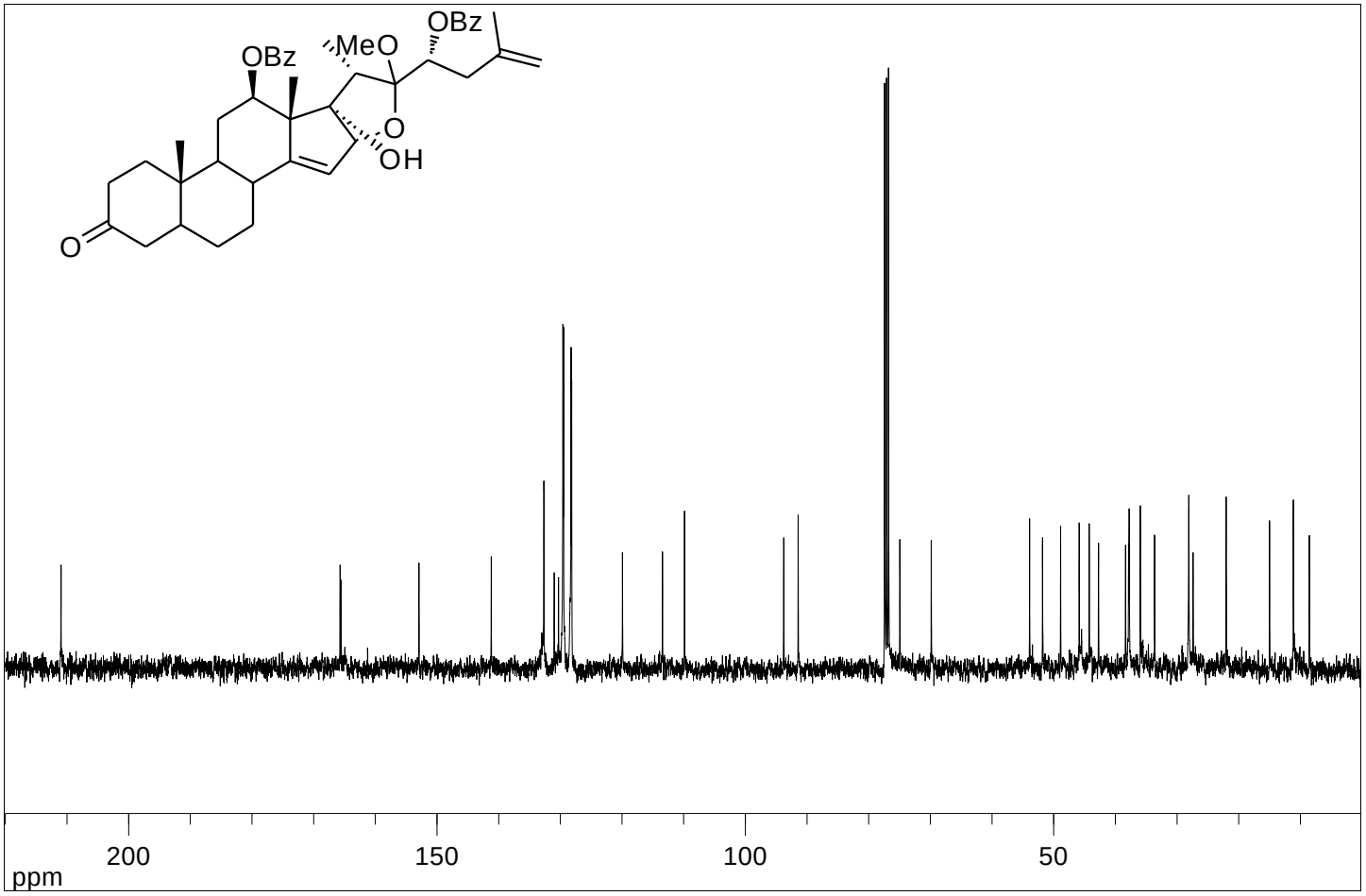
^{1}H-NMR (400 MHz, $CDCl_3$) of compound 23



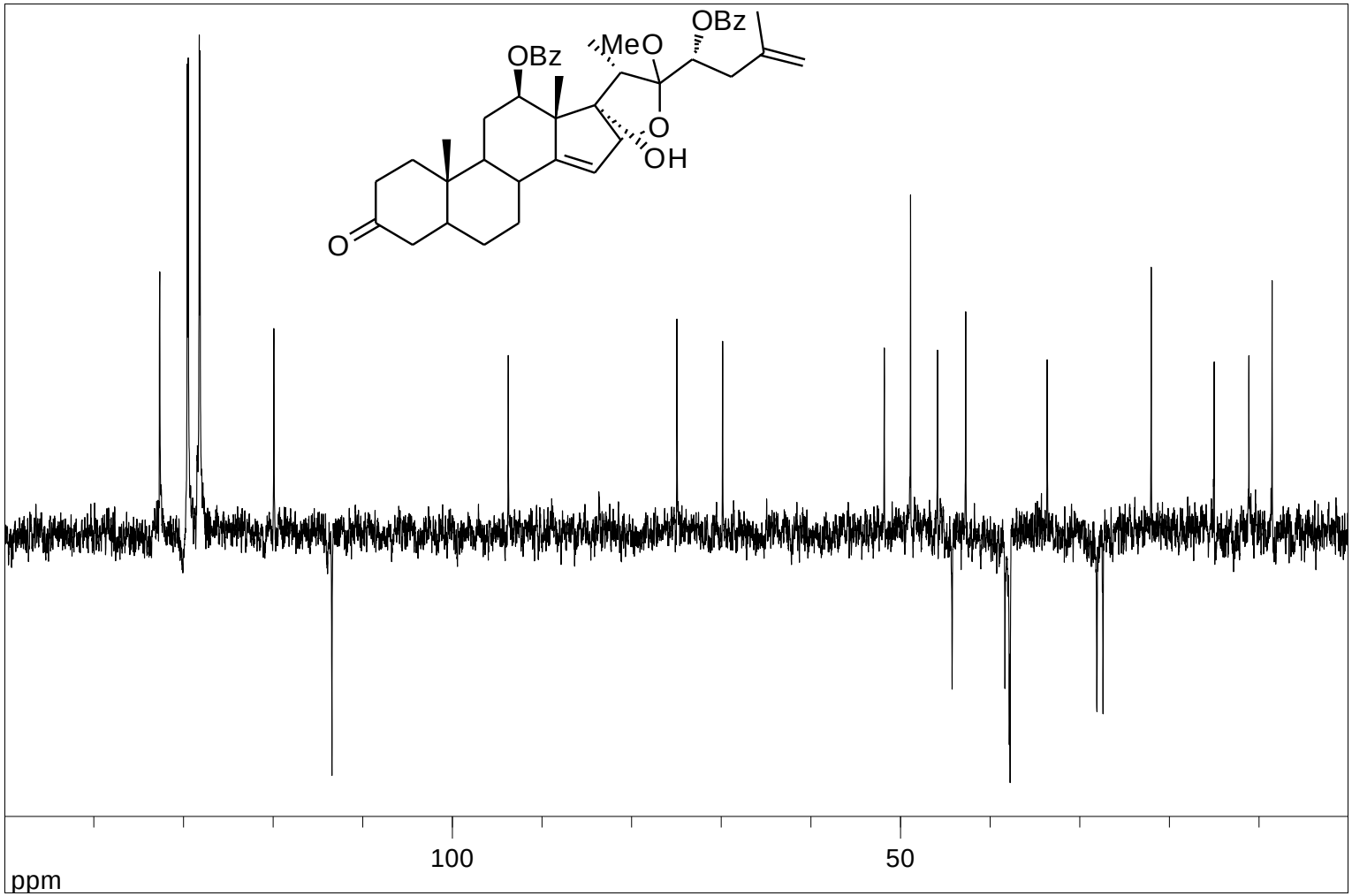
^{13}C NMR (125 MHz, $CDCl_3$) of compound 23



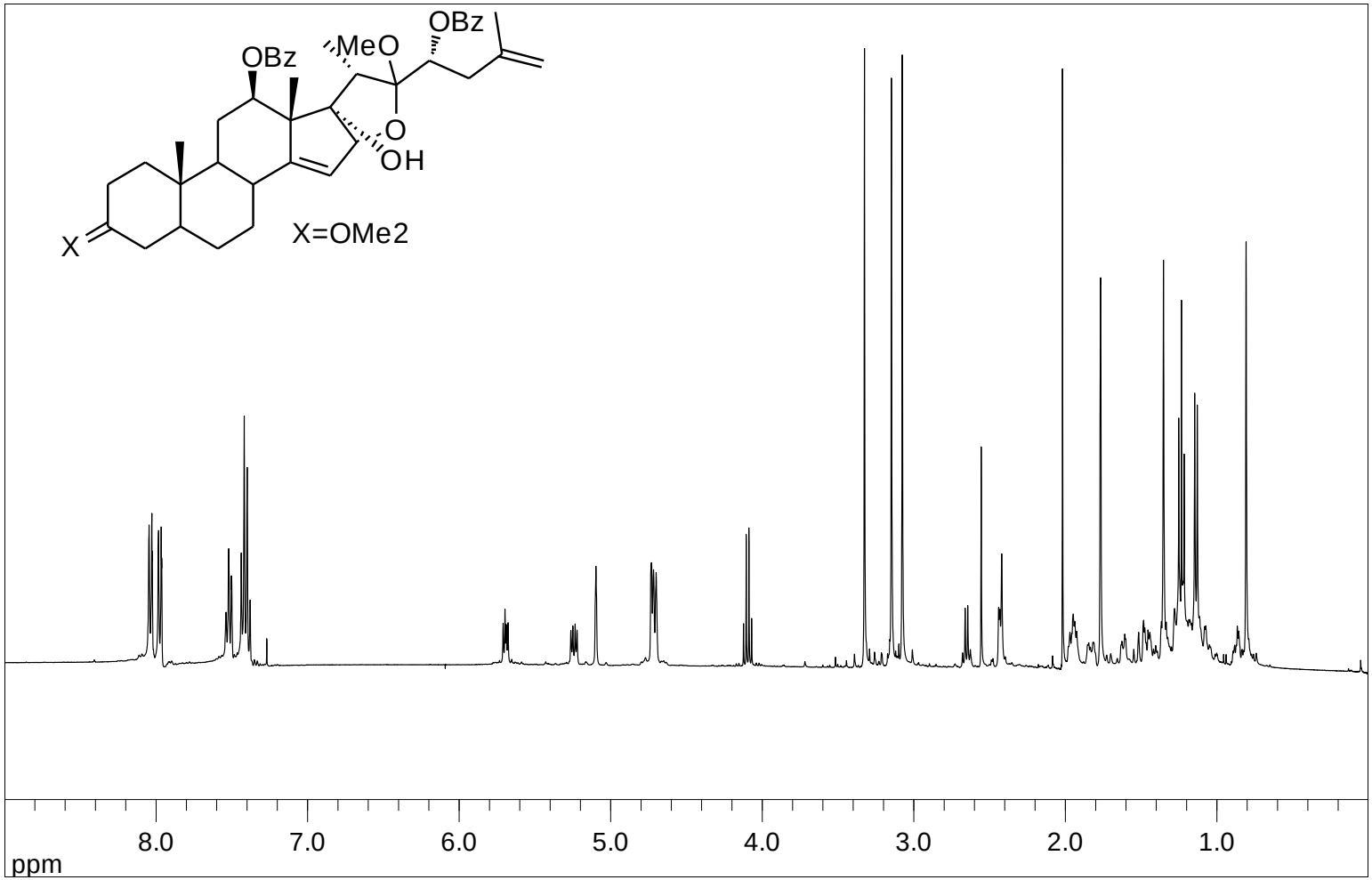
^{1}H-NMR (400 MHz, $CDCl_3$) of compound 24



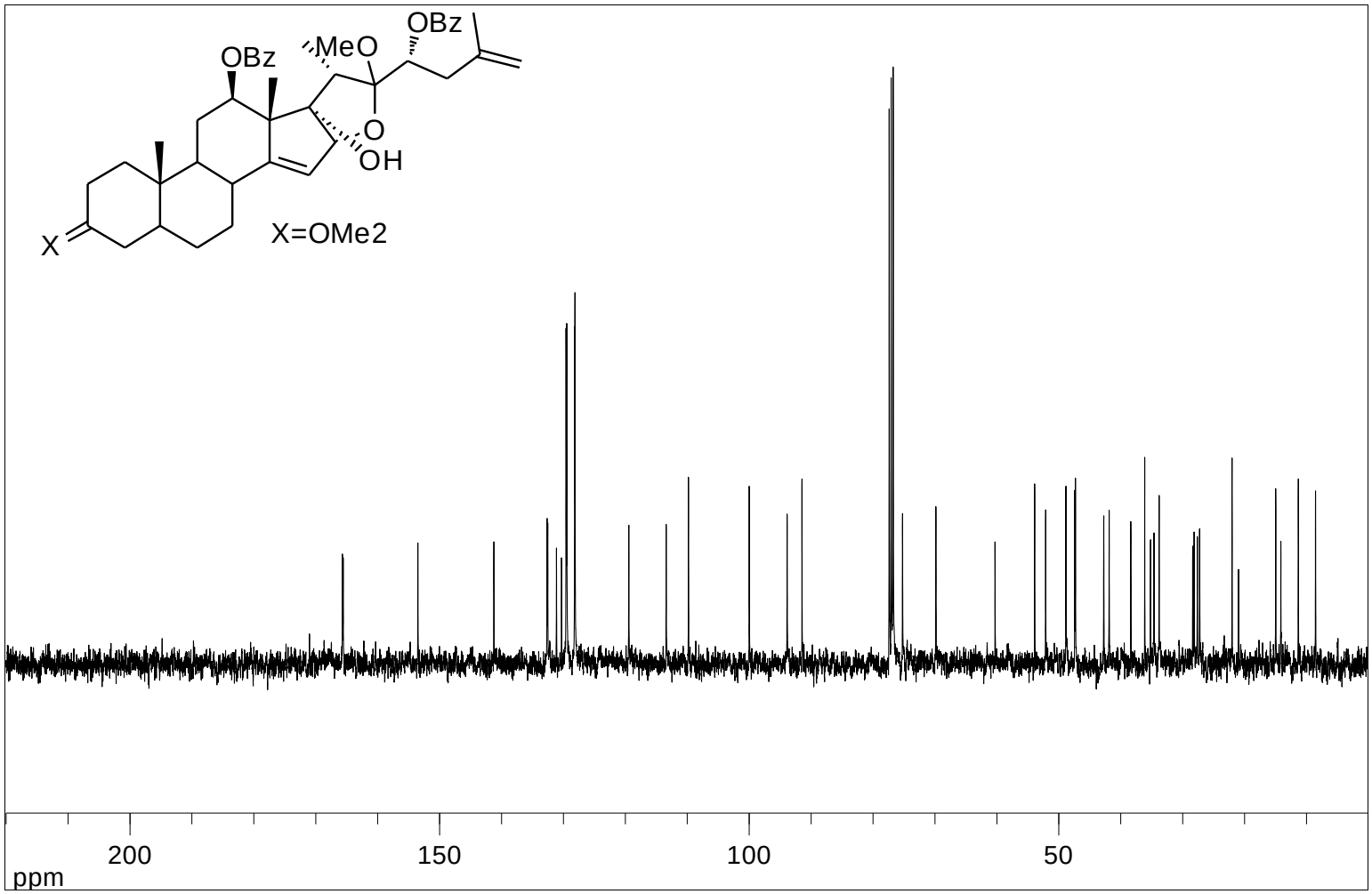
^{13}C NMR (125 MHz, $CDCl_3$) of compound 24



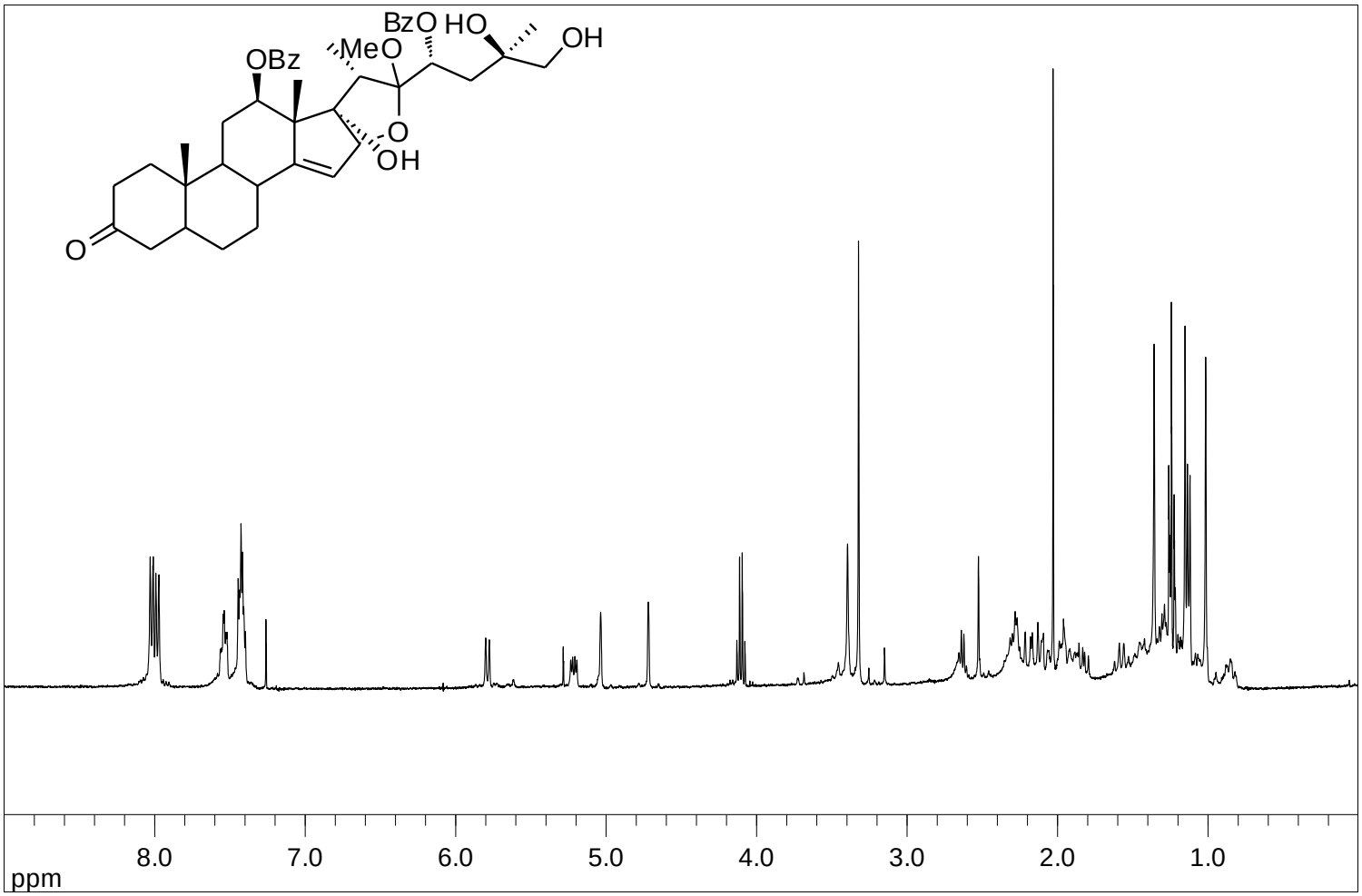
^{13}C dept 135 NMR (125 MHz, $CDCl_3$) of compound 24



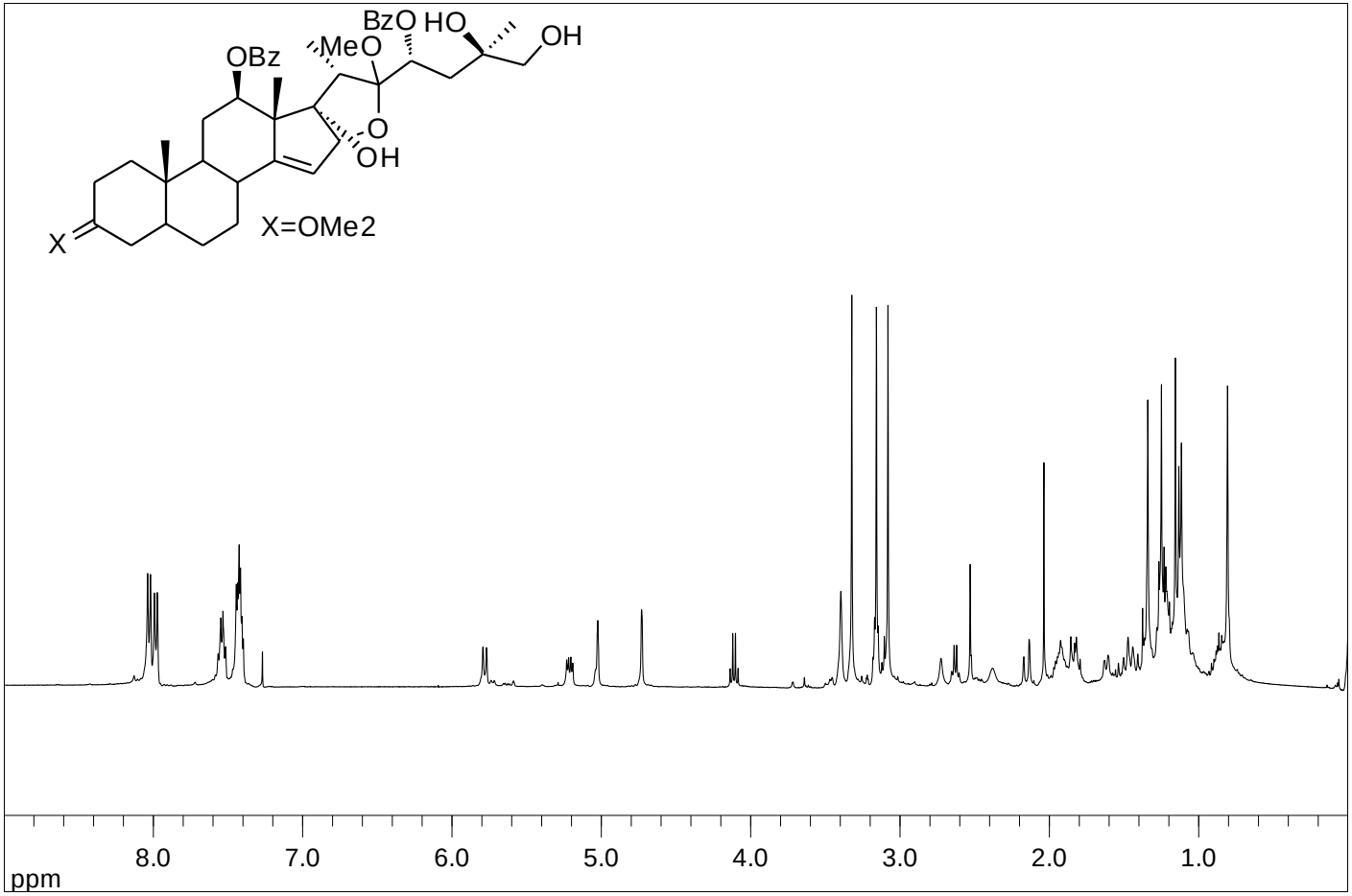
^{1}H-NMR (400 MHz, $CDCl_3$) of compound 24a


OBz
MeO
OBz
O
OH
X
X=OMe2
200
150
100
50
ppm

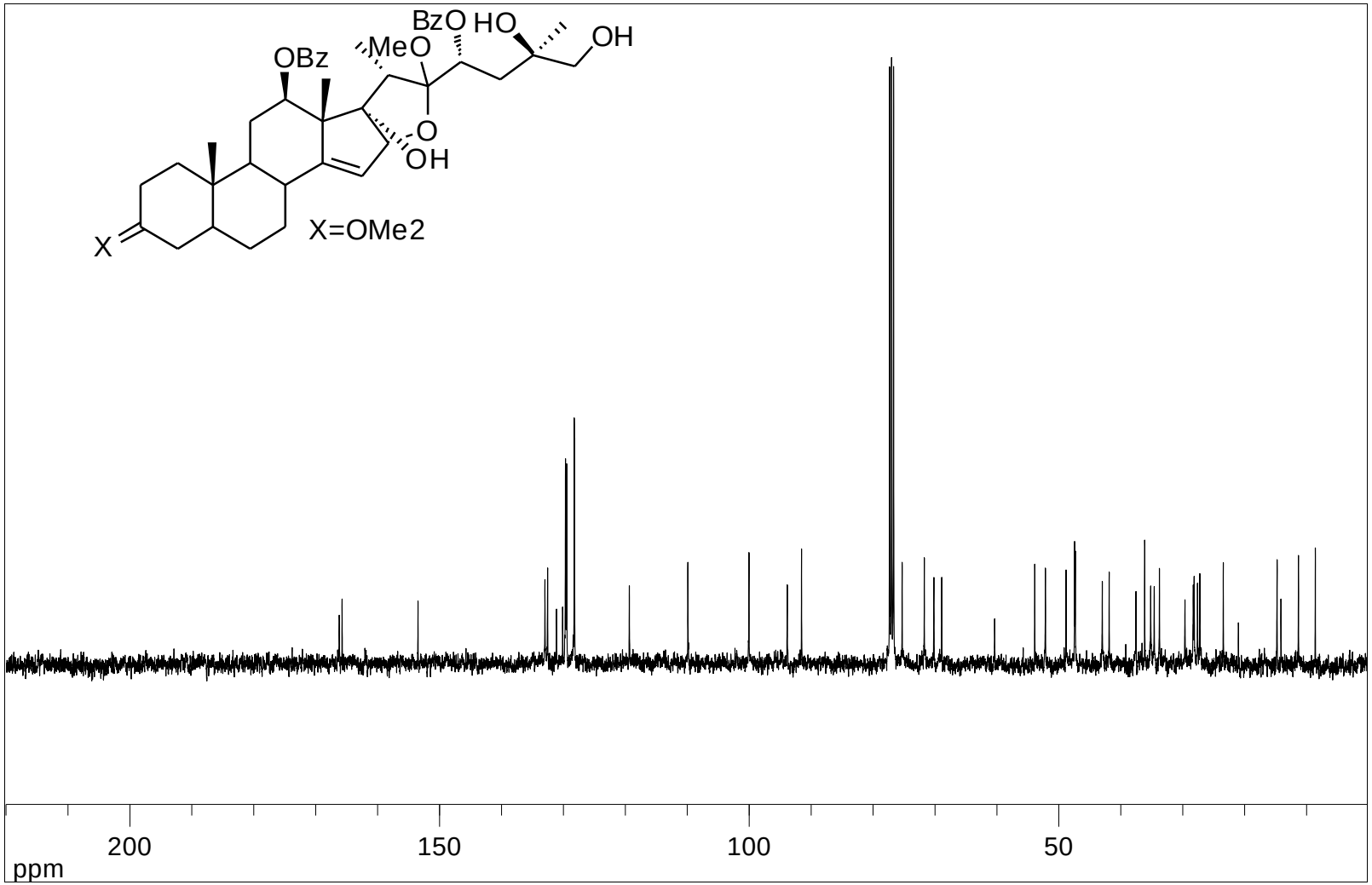
^{13}C NMR (125 MHz, $CDCl_3$) of compound 24a



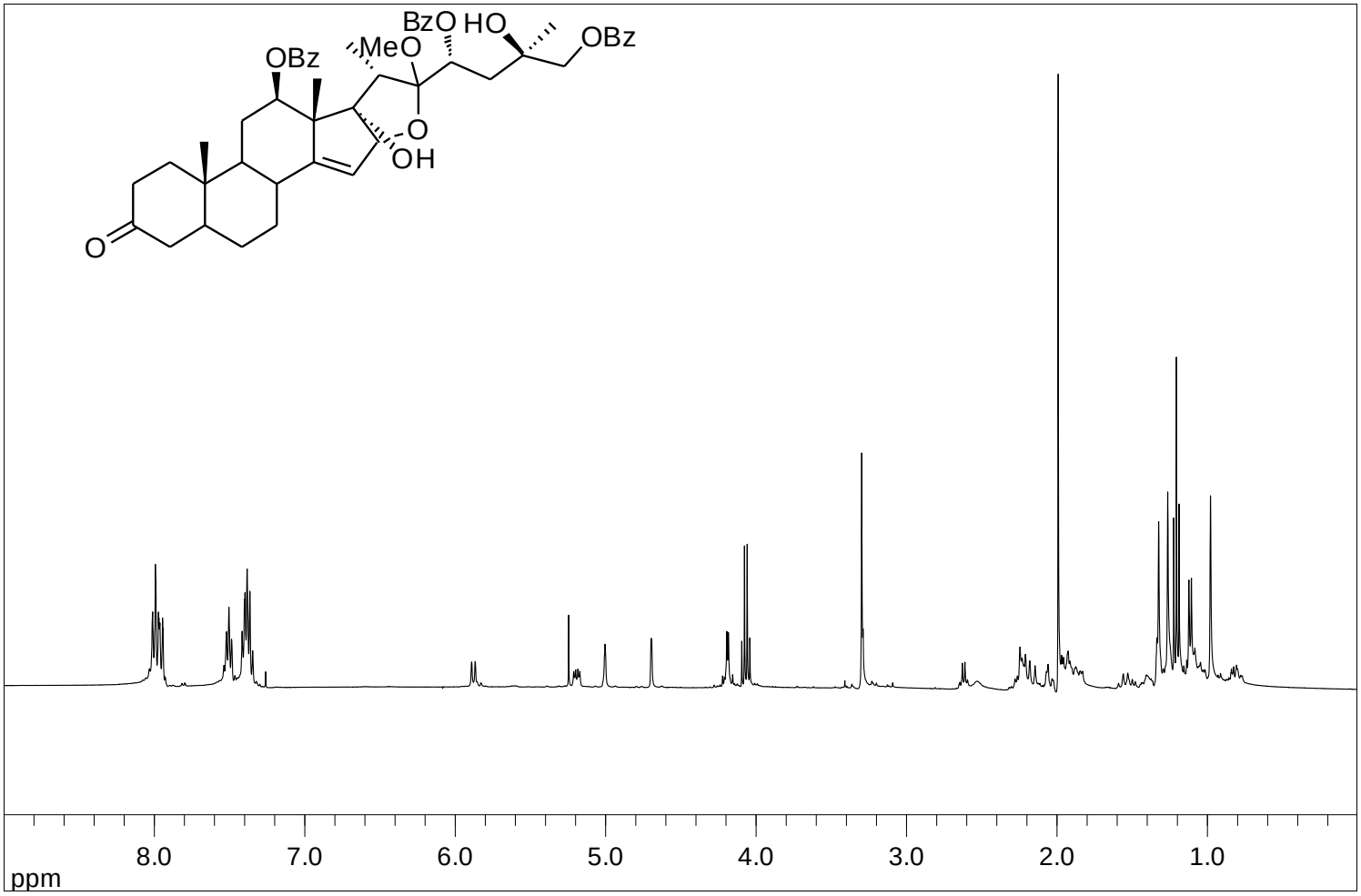
^{1}H-NMR (400 MHz, $CDCl_3$) of compound 25



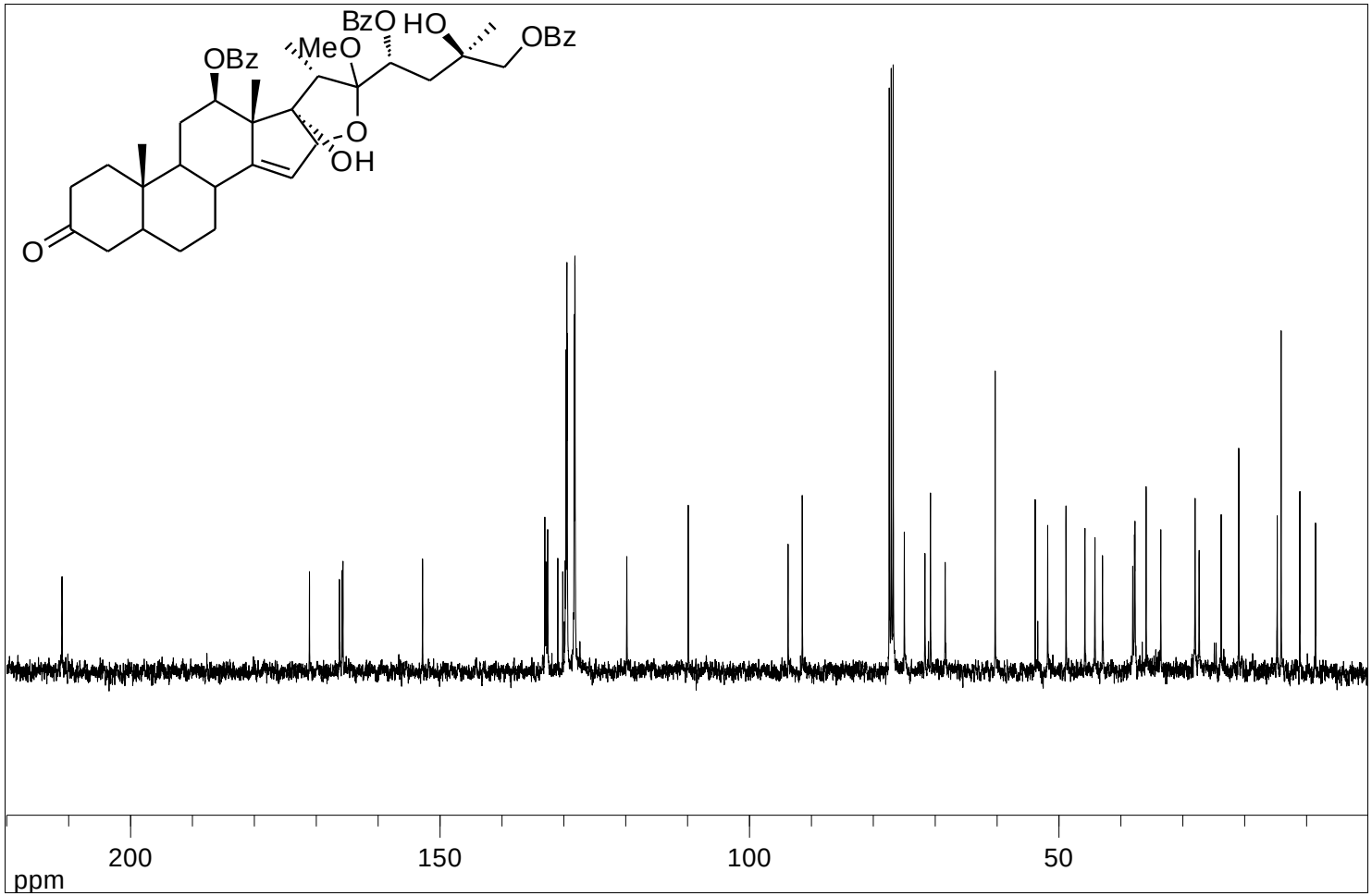
^{1}H-NMR (400 MHz, $CDCl_3$) of compound 25a



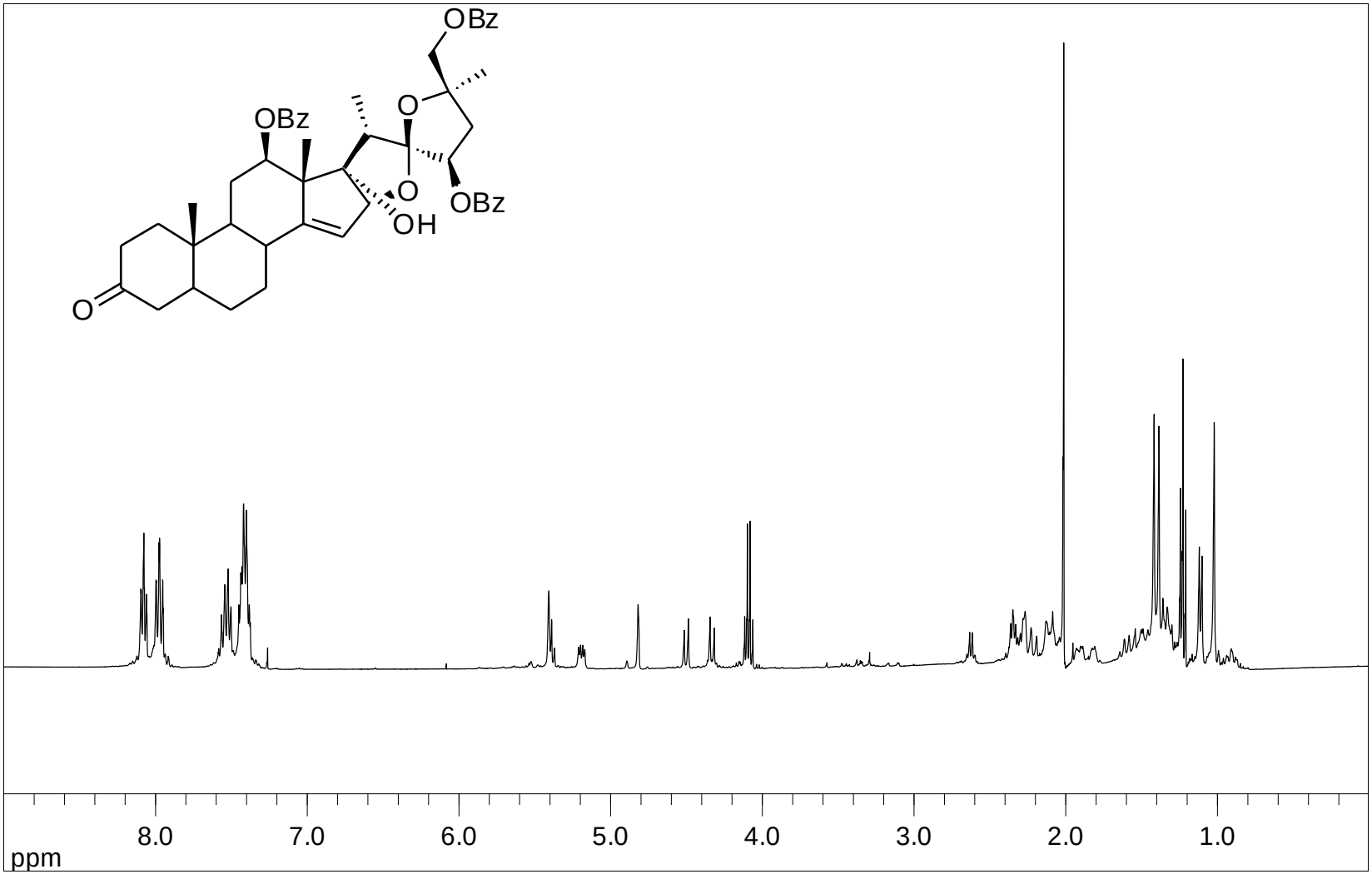
^{13}C NMR (125 MHz, $CDCl_3$) of compound 25a



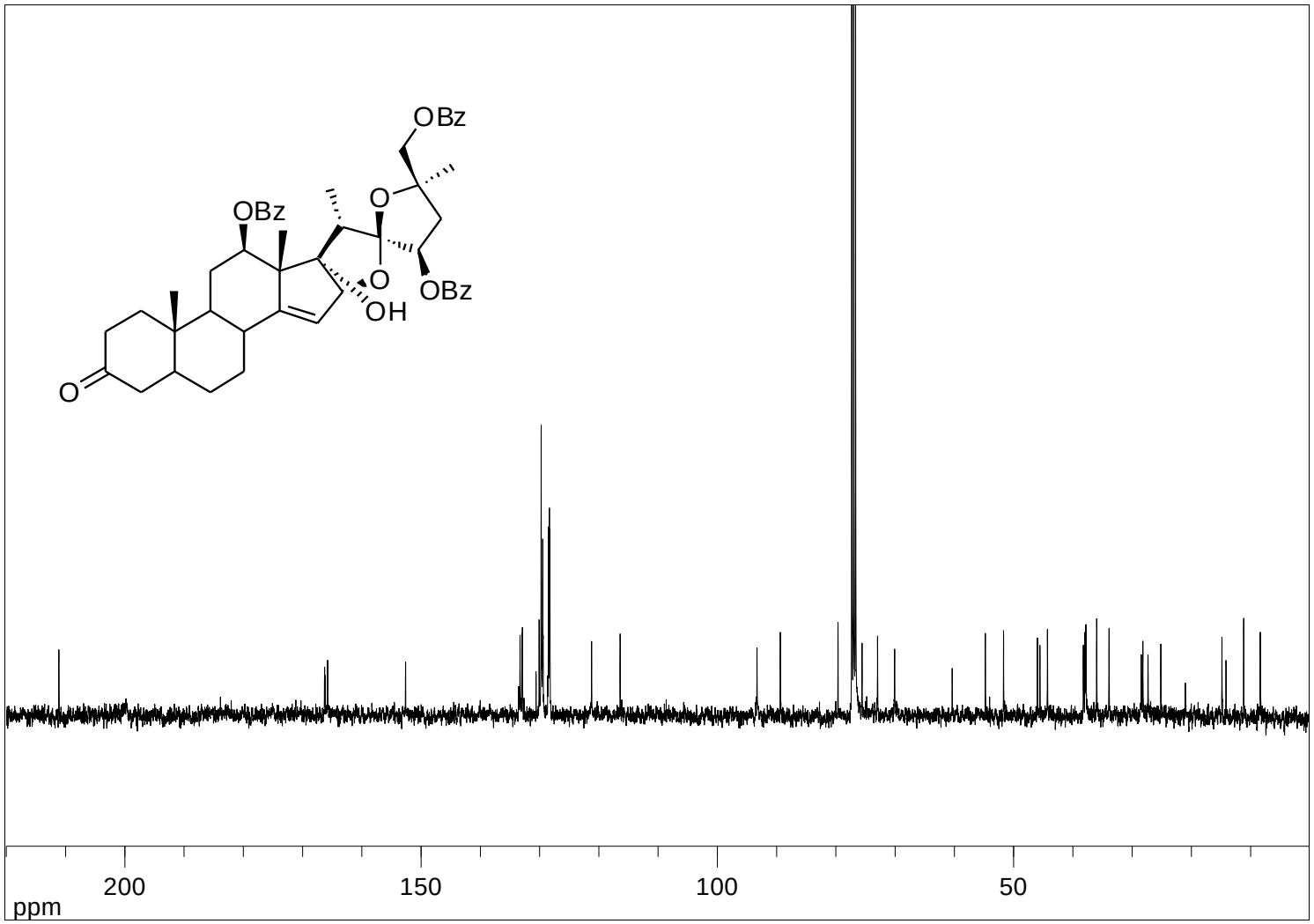
^{1}H-NMR (400 MHz, $CDCl_3$) of compound 26



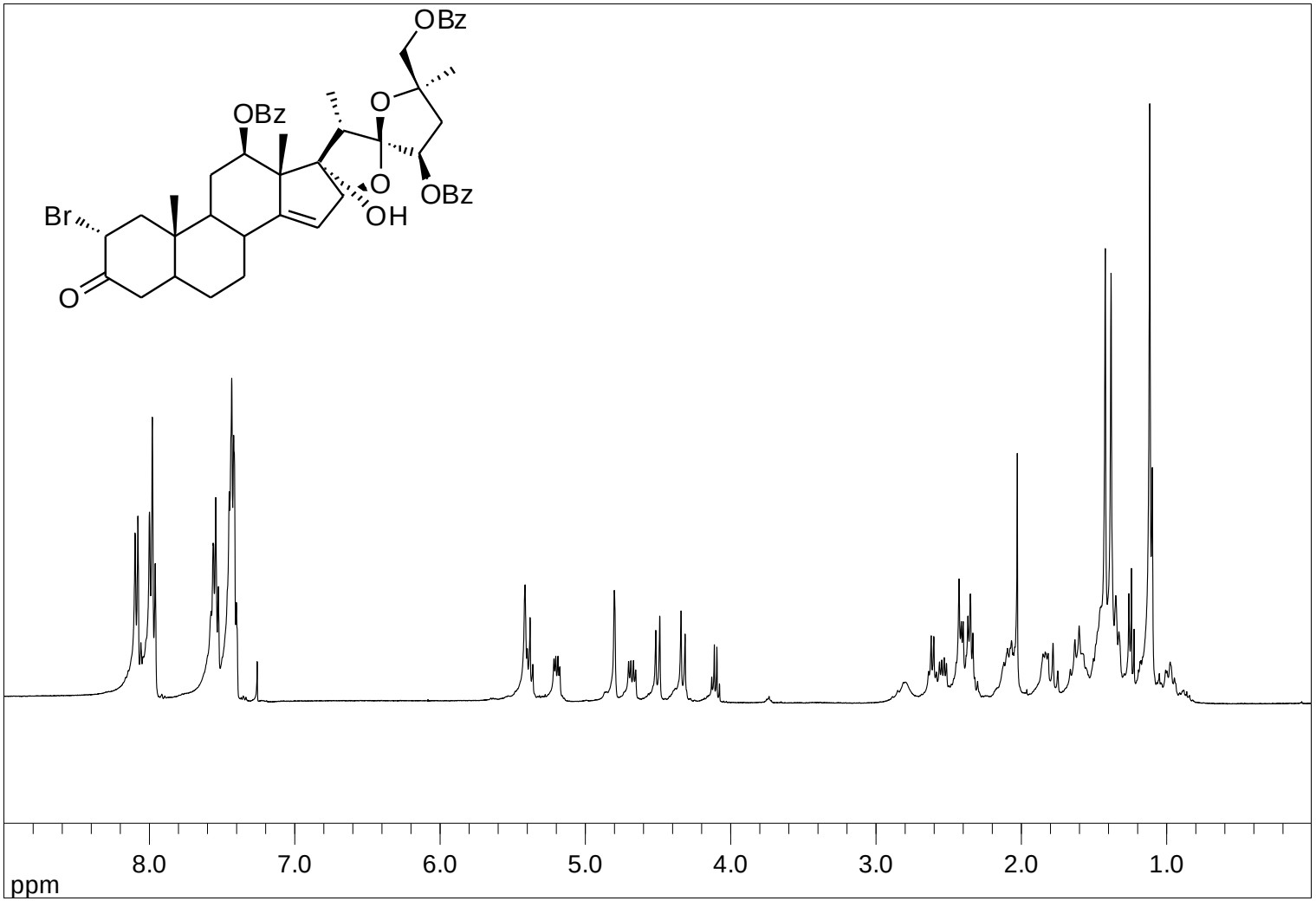
^{13}C NMR (125 MHz, $CDCl_3$) of compound 26



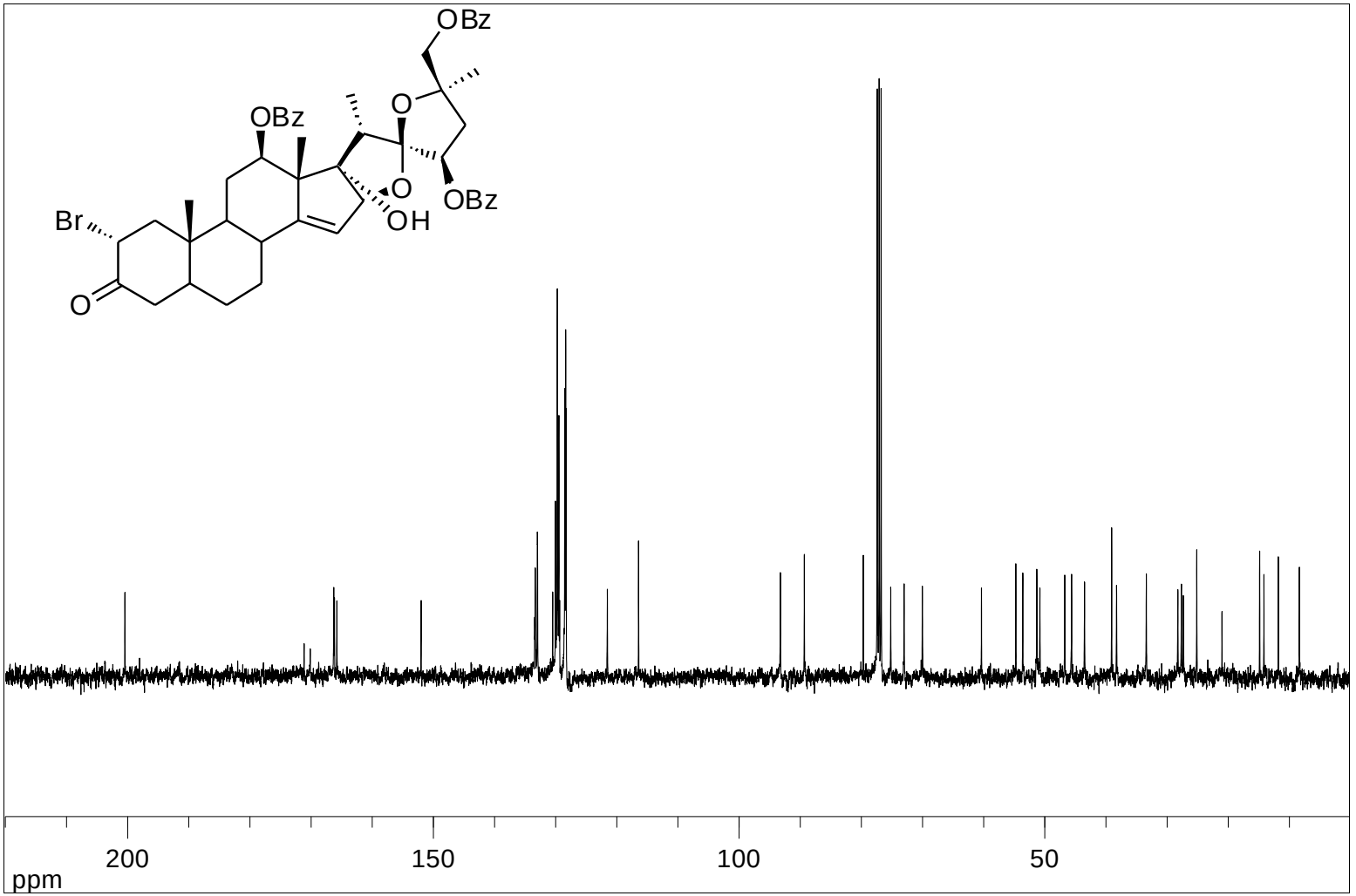
^{1}H-NMR (400 MHz, $CDCl_3$) of compound 27



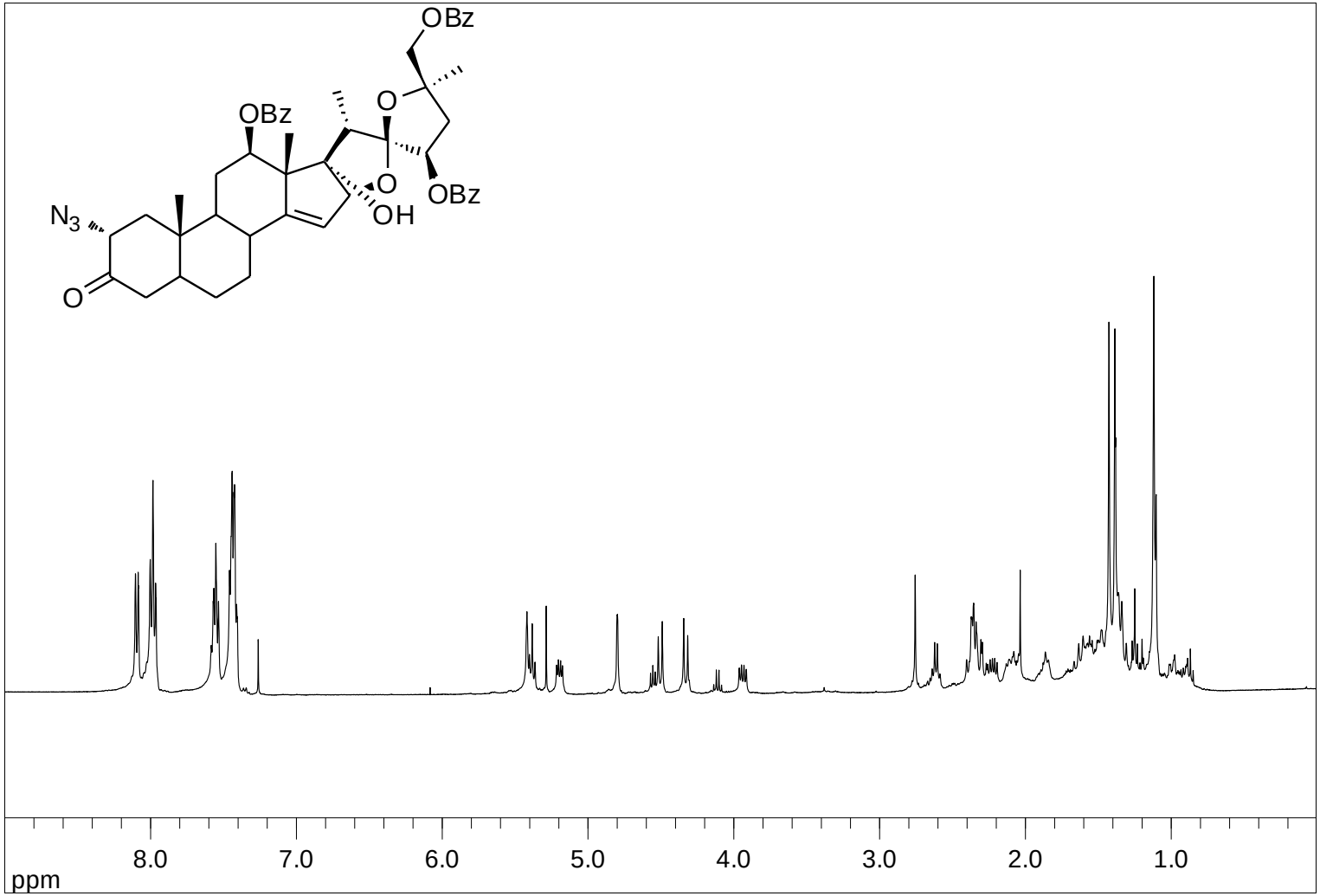
^{13}C NMR (125 MHz, $CDCl_3$) of compound 27



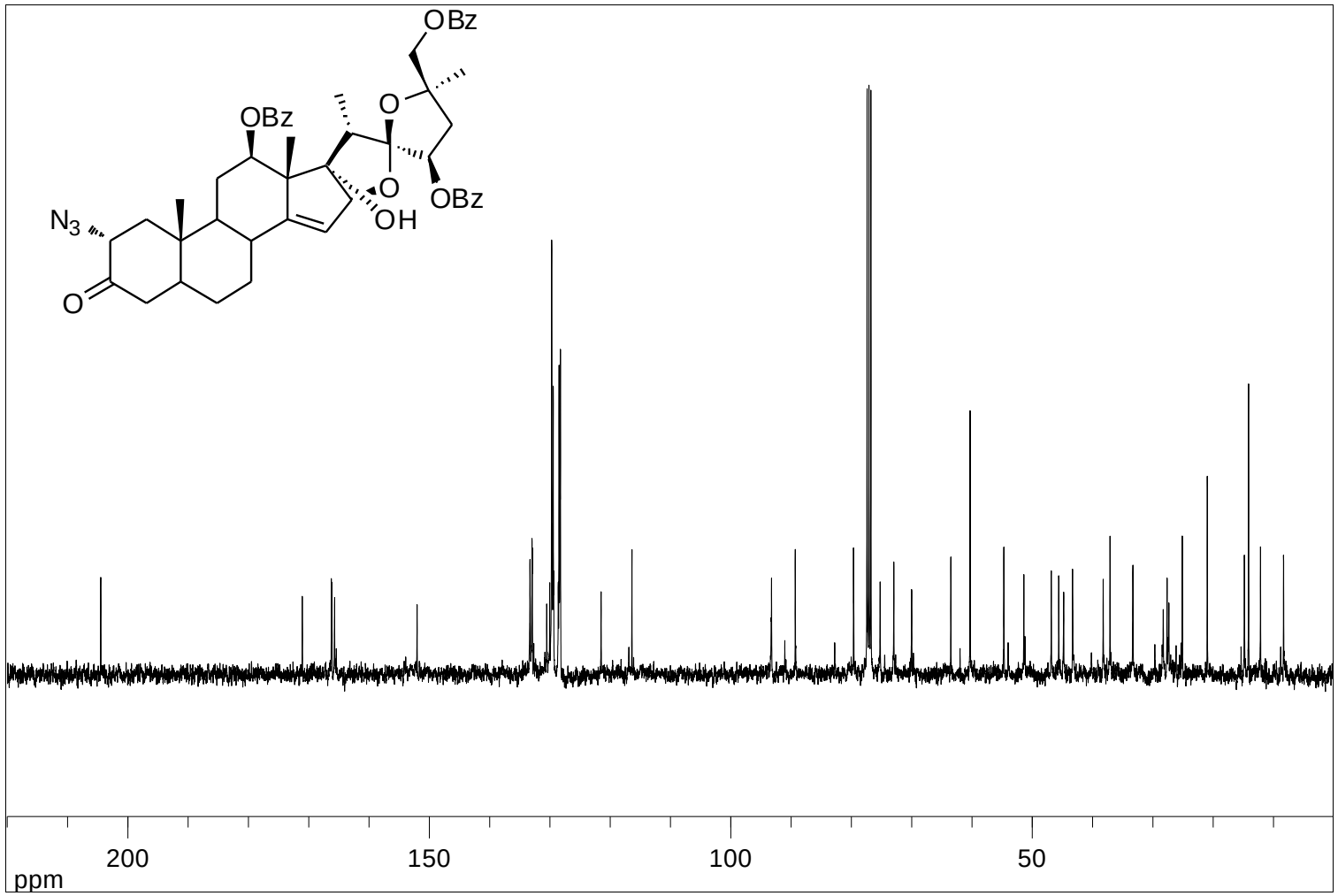
^{1}H-NMR (400 MHz, $CDCl_3$) of compound 28



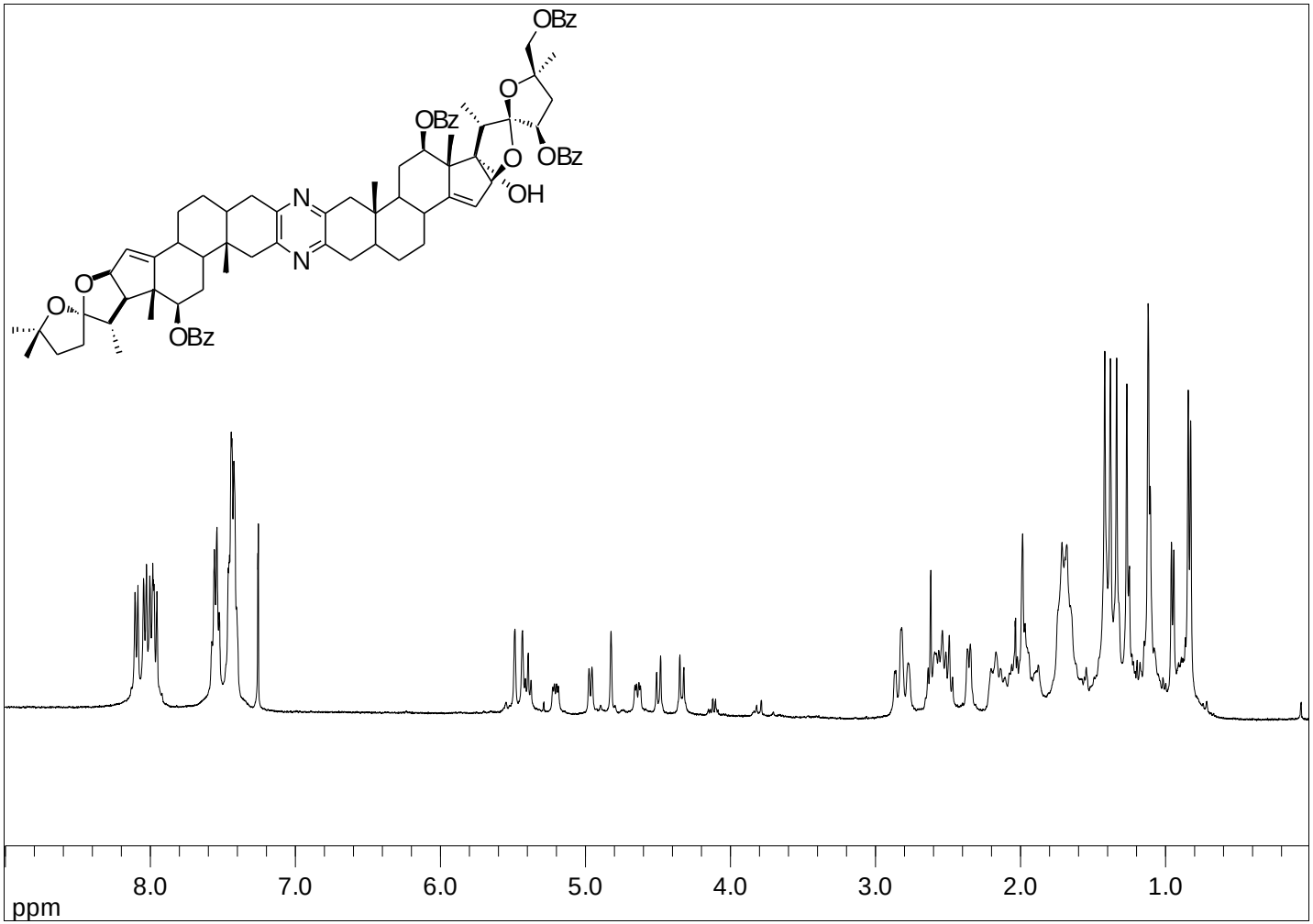
^{13}C NMR (125 MHz, $CDCl_3$) of compound 28



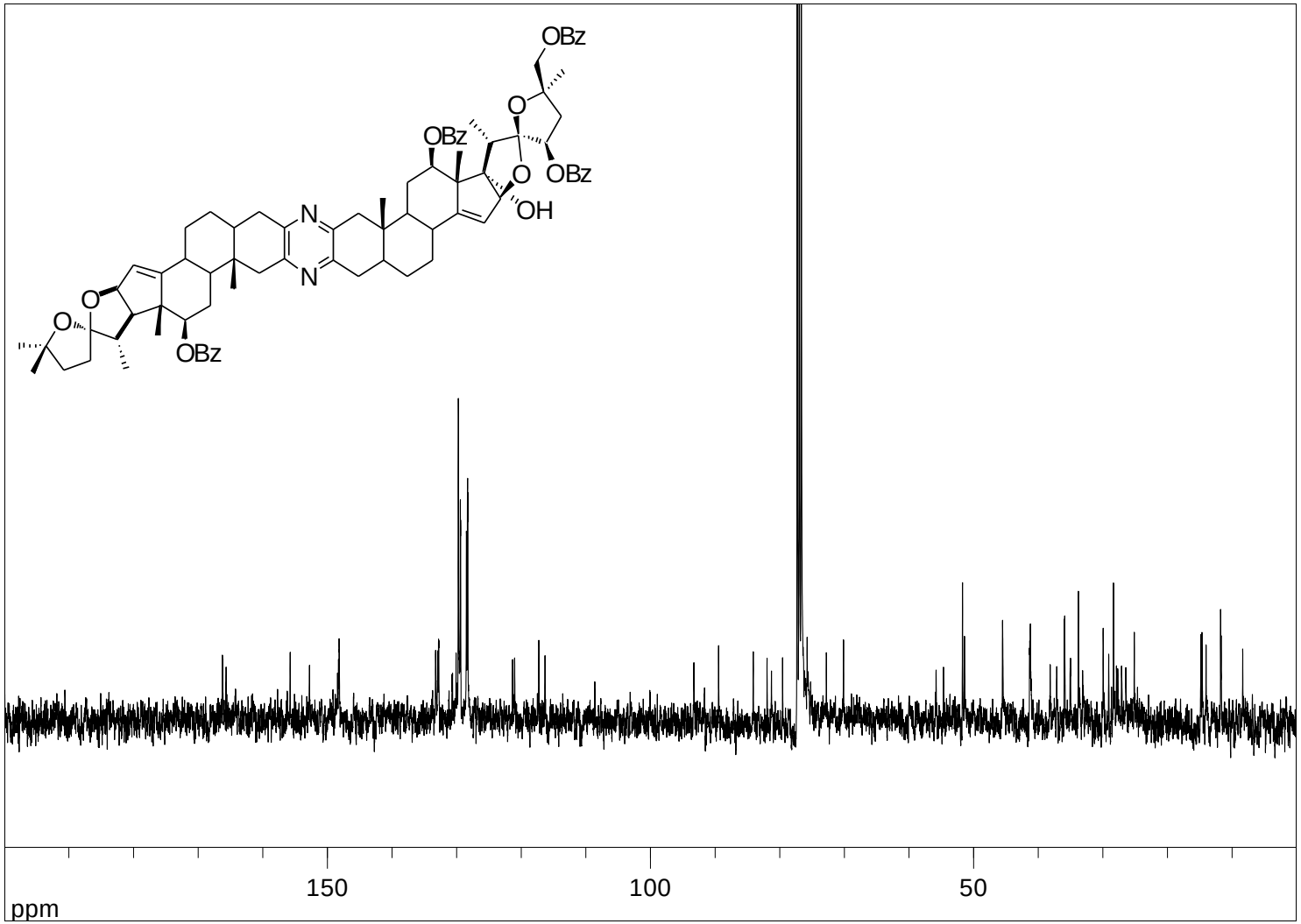
^{1}H-NMR (400 MHz, $CDCl_3$) of compound 29



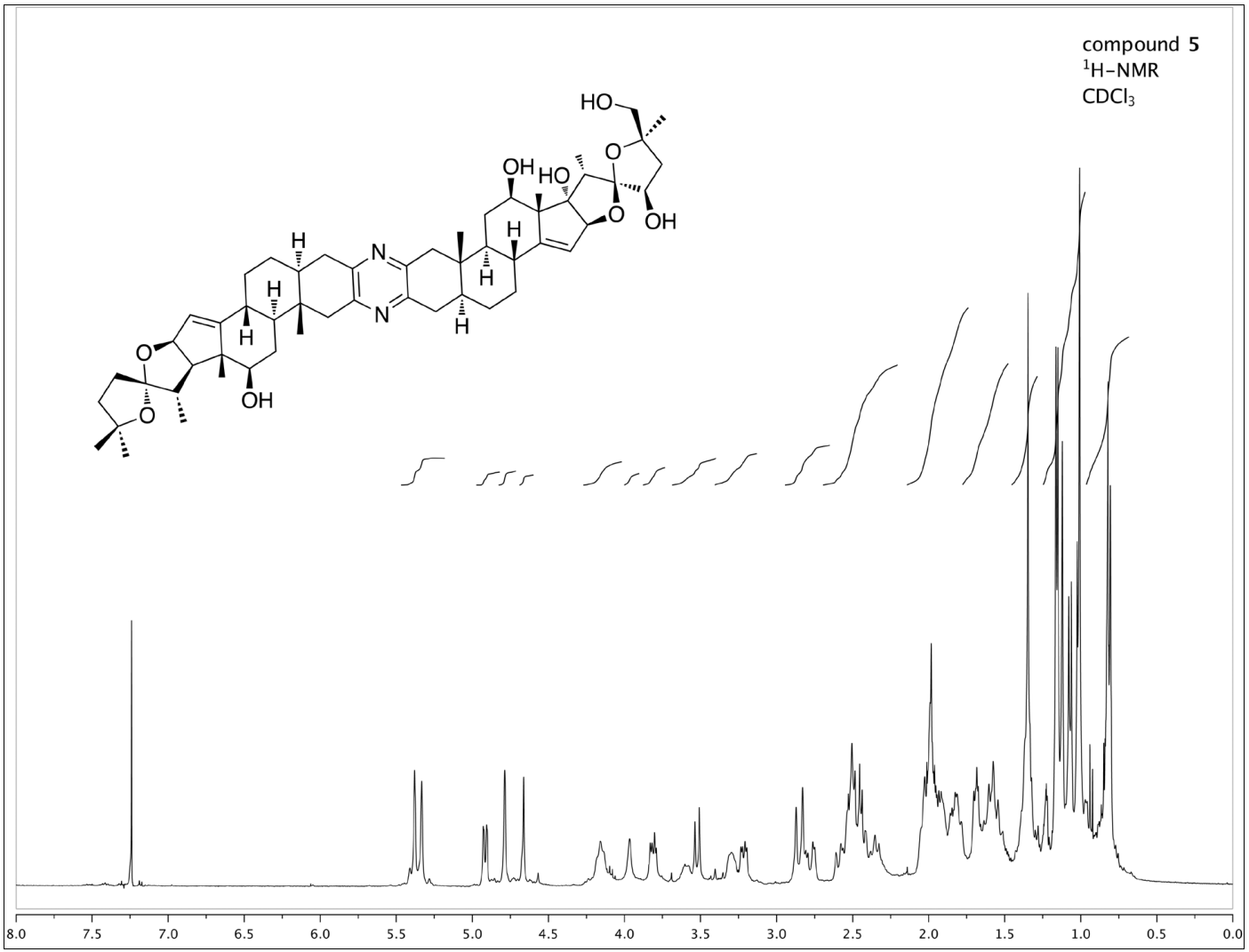
^{13}C NMR (125 MHz, $CDCl_3$) of compound 29



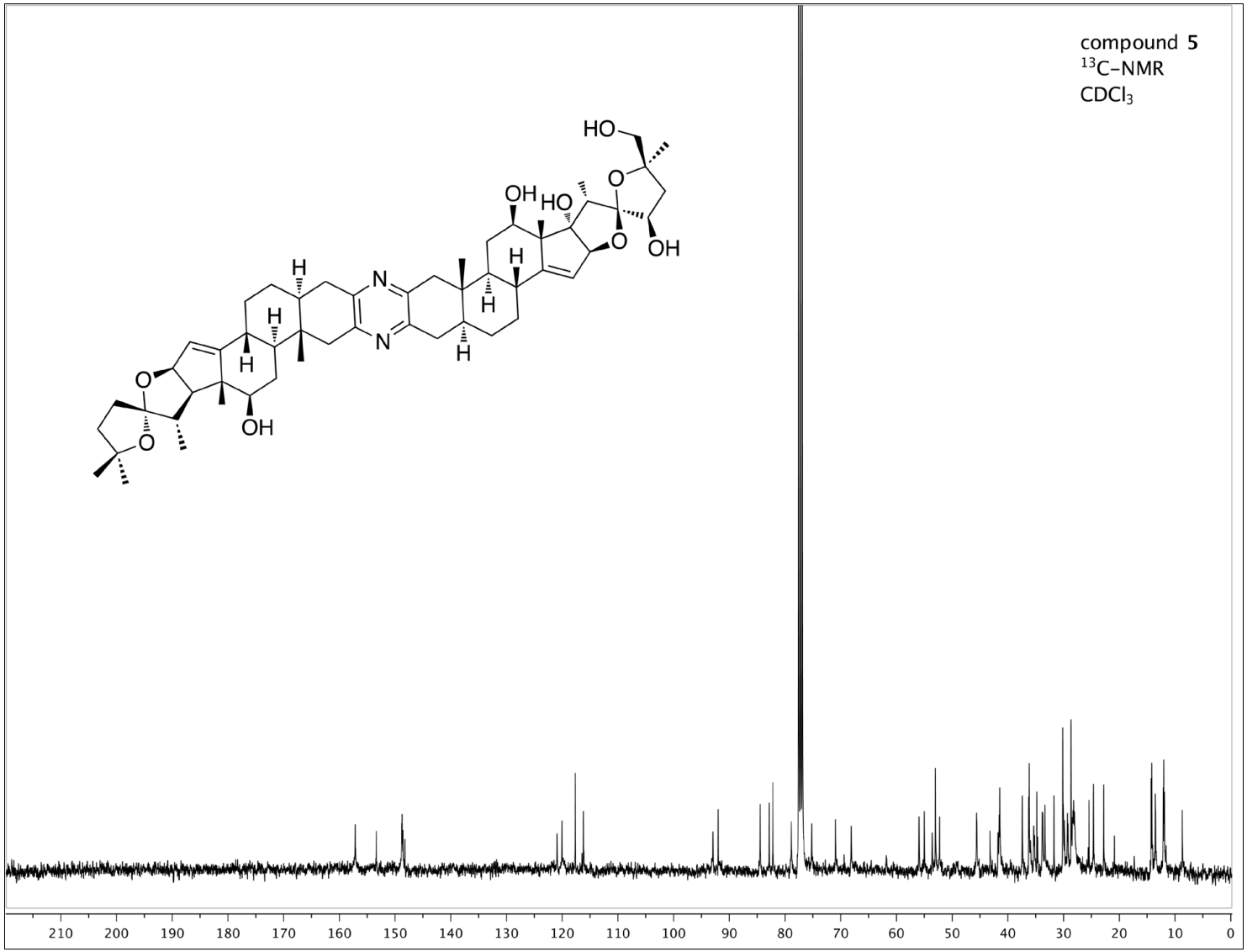
^{1}H-NMR (400 MHz, $CDCl_3$) of compound 31



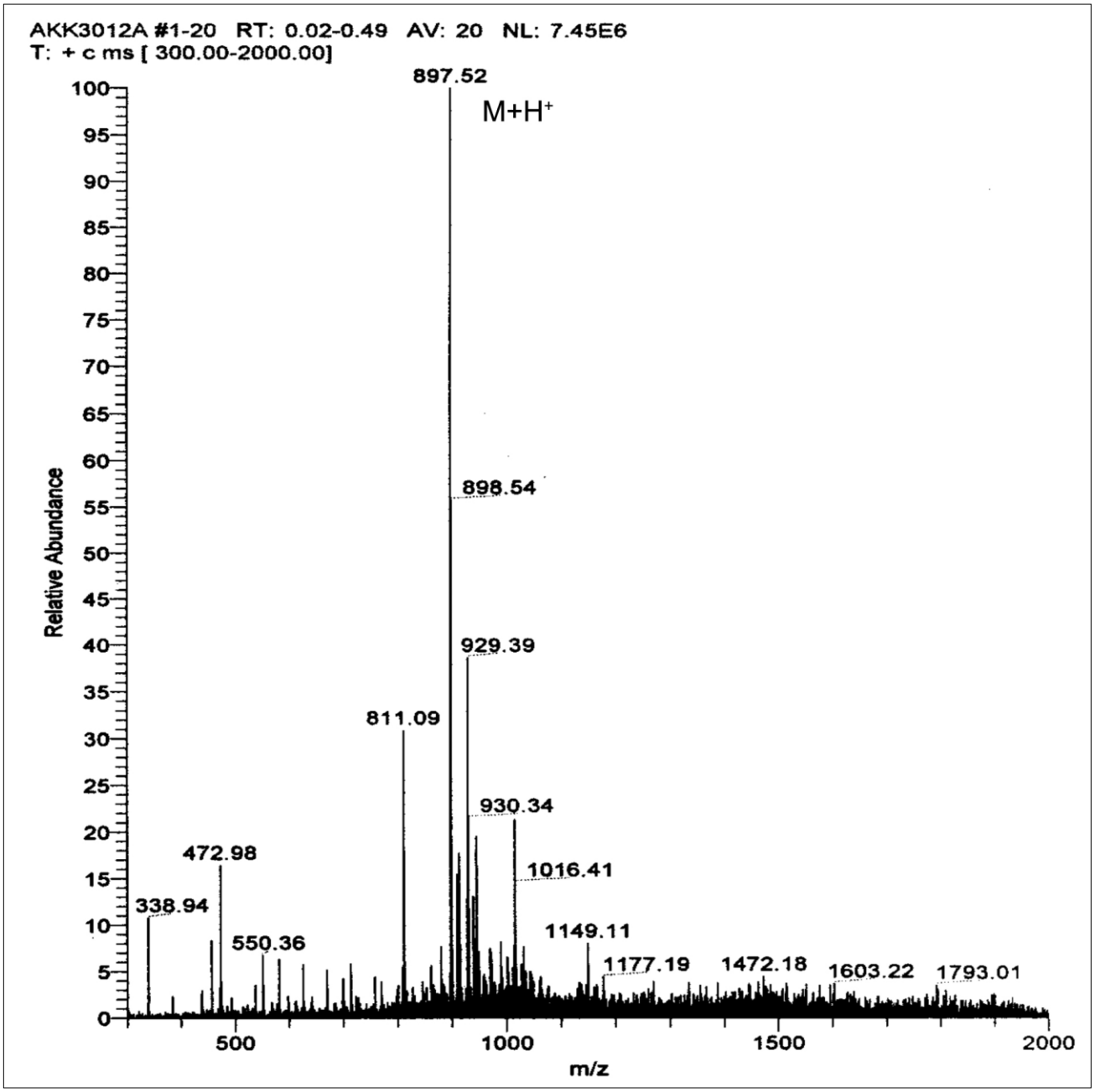
^{13}C NMR (125 MHz, $CDCl_3$) of compound 31



^{1}H-NMR (400 MHz, $CDCl_3$) of compound 5



^{13}C NMR (125 MHz, $CDCl_3$) of compound 5

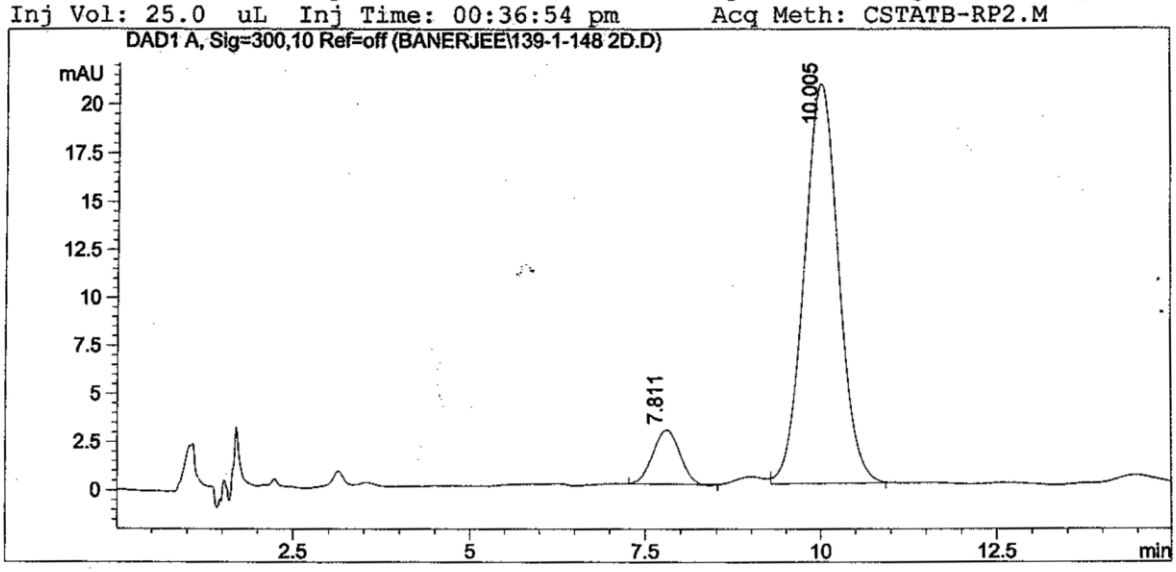


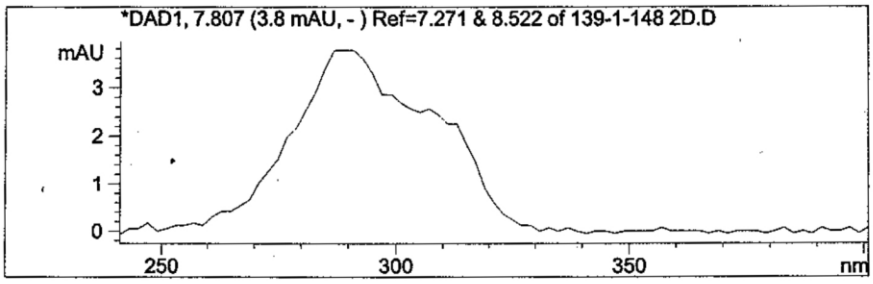
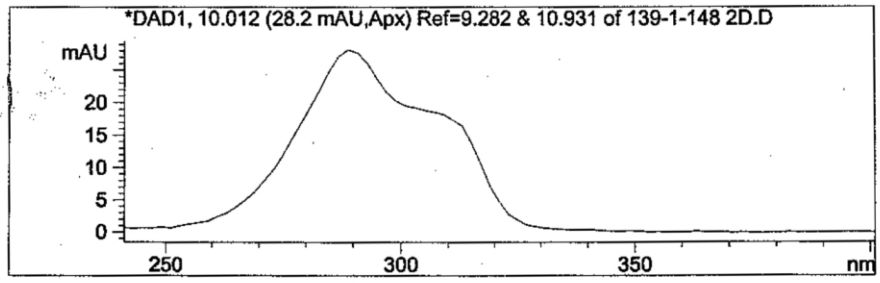
LR-ESI Mass spectral data of 25-*epi* Ritterostatin GN1N, 5. (HRMS also recorded)

V. HPLC data of 25-*epi* Ritterostatin GN1N, 5

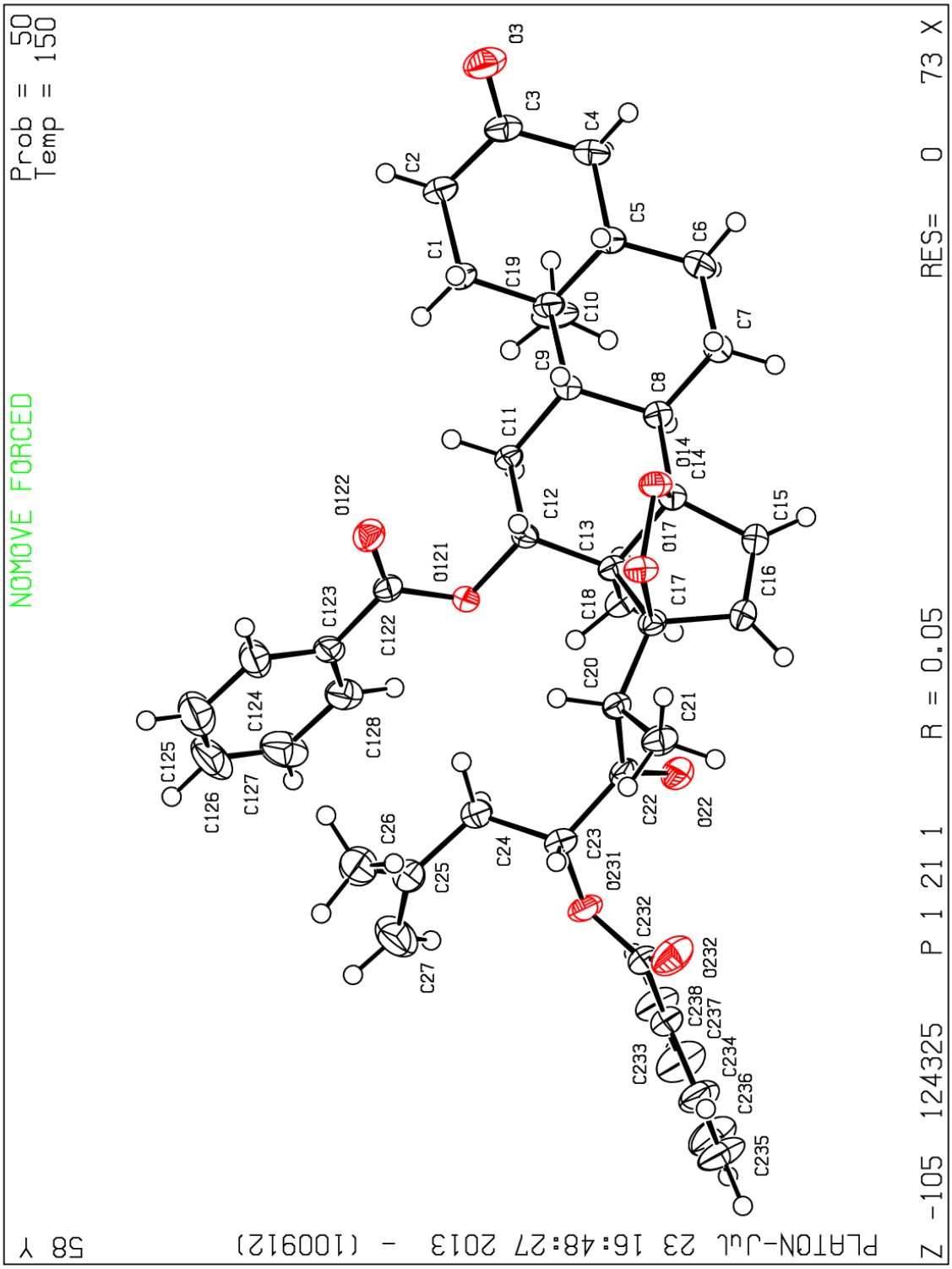
Sample Name: 139-1-148
Comments : 25-epi Ritterostatin GN1N
75/25 MeOH/H20 , 1.0mL/min
Econosphere C18 5u, 4.6x150mm [606020586.1], no guard

Vial No: 50 Inj Date: 07/23/2008 Operator: Douglas Lantrip
Inj Vol: 25.0 uL Inj Time: 00:36:54 pm Acq Meth: CSTATB-RP2.M



RT(min)	Area	Area%	Spectra
7.81	73	9.2	
10.01	715	90.8	

VI. X-Ray crystal structure data for compound 22:



Bond precision:	C-C = 0.0032 A		Wavelength=0.71073
Cell:	a=5.9908(1)	b=21.9862(6)	c=13.1580(4)
	alpha=90	beta=94.8749(10)	gamma=90
Temperature:	150 K		

	Calculated	Reported
Volume	1726.84(8)	1726.84(8)
Space group	P 21	P 1 21 1
Hall group	P 2yb	P 2yb
Moiety formula	C41 H46 O8	C41 H46 O8
Sum formula	C41 H46 O8	C41 H46 O8
Mr	666.78	666.82
Dx,g cm-3	1.282	1.282
Z	2	2
Mu (mm-1)	0.088	0.082
F000	712.0	712.0
F000'	712.36	
h,k,lmax	7,28,17	7,28,17
Nref	7923[4065]	7290
Tmin,Tmax	0.989,0.993	0.968,0.994
Tmin'	0.969	

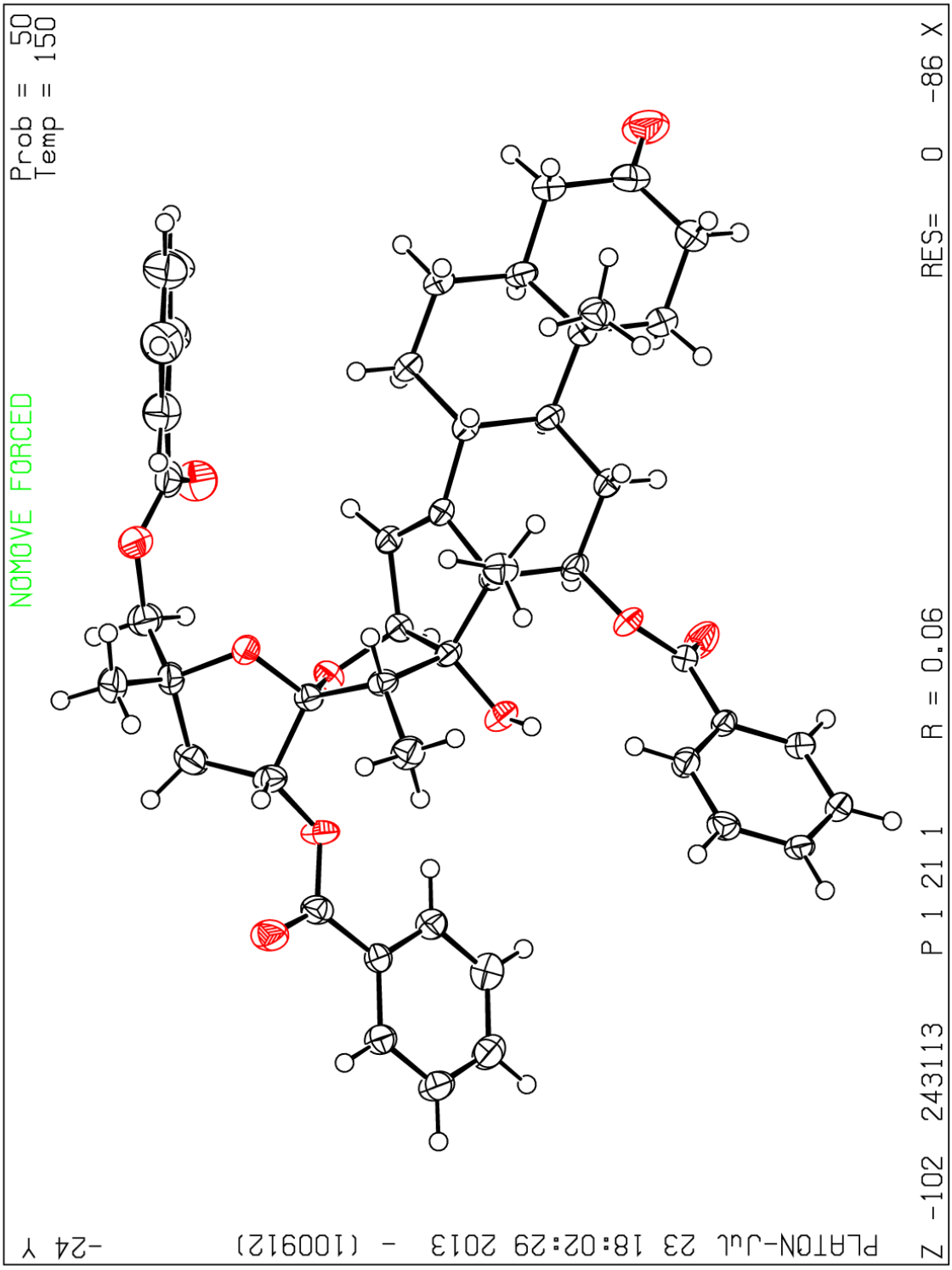
Correction method= MULTI-SCAN

Data completeness= 1.79/0.92 Theta(max)= 27.480

R(reflections)= 0.0490(6058) wR2(reflections)= 0.0940(7290)

S = 1.061 Npar= 446

VI. X-Ray crystal structures for compound 27:



Bond precision:	C-C = 0.0044 A		Wavelength=0.71073
Cell:	a=11.2106(3)	b=6.3133(2)	c=28.577(1)
	alpha=90	beta=96.8071(12)	gamma=90
Temperature:	150 K		

	Calculated	Reported
Volume	2008.31(11)	2008.30(11)
Space group	P 21	P 1 21 1
Hall group	P 2yb	P 2yb
Moiety formula	C48 H52 O10	C48 H52 O10
Sum formula	C48 H52 O10	C48 H52 O10
Mr	788.90	788.94
Dx,g cm-3	1.305	1.305
Z	2	2
Mu (mm-1)	0.091	0.085
F000	840.0	840.0
F000'	840.43	
h,k,lmax	13,7,35	13,7,35
Nref	7881[4321]	7001
Tmin,Tmax	0.982,0.989	0.966,0.989
Tmin'	0.971	

Correction method= MULTI-SCAN

Data completeness= 1.62/0.89 Theta(max)= 26.000

R(reflections)= 0.0570(5560) wR2(reflections)= 0.1030(7001)

S = 1.104 Npar= 528