Electronic Supplementary Material (ESI) for RSC Advances.

SUPPORTING INFORMATION

Synthesis, cytotoxicity and anti-inflammatory activity of rhamnose-containing ursolic and betulinic acid saponins

Balla Sylla,[a] Serge Lavoie,[b] Jean Legault,[a] Charles Gauthier,*[a,c] and André Pichette*[a]

[a] Centre de recherche sur la Boréalie (CREB), Chaire de recherche sur les agents anticancéreux d'origine naturelle, Laboratoire LASEVE, Département des Sciences Fondamentales, Université du Québec à Chicoutimi, 555, boul. de l'Université, Chicoutimi (Québec), Canada, G7H 2B1.

E-mail: andre.pichette@uqac.ca

[b]Institut des Sciences de la Forêt tempérée, Université du Québec en Outaouais, 58, rue Principale, Ripon (Québec), Canada, J0V 1V0.

[c]Centre Armand-Frappier Santé Biotechnologie, Institut national de la recherche scientifique (INRS), 531, boul. des Prairies, Laval (Québec), Canada, H7V 1B7.

E-mail: charles.gauthier@iaf.inrs.ca

Figure S1. ^{1}H NMR spectrum of **13** ($CDCl_3$, 400 MHz)

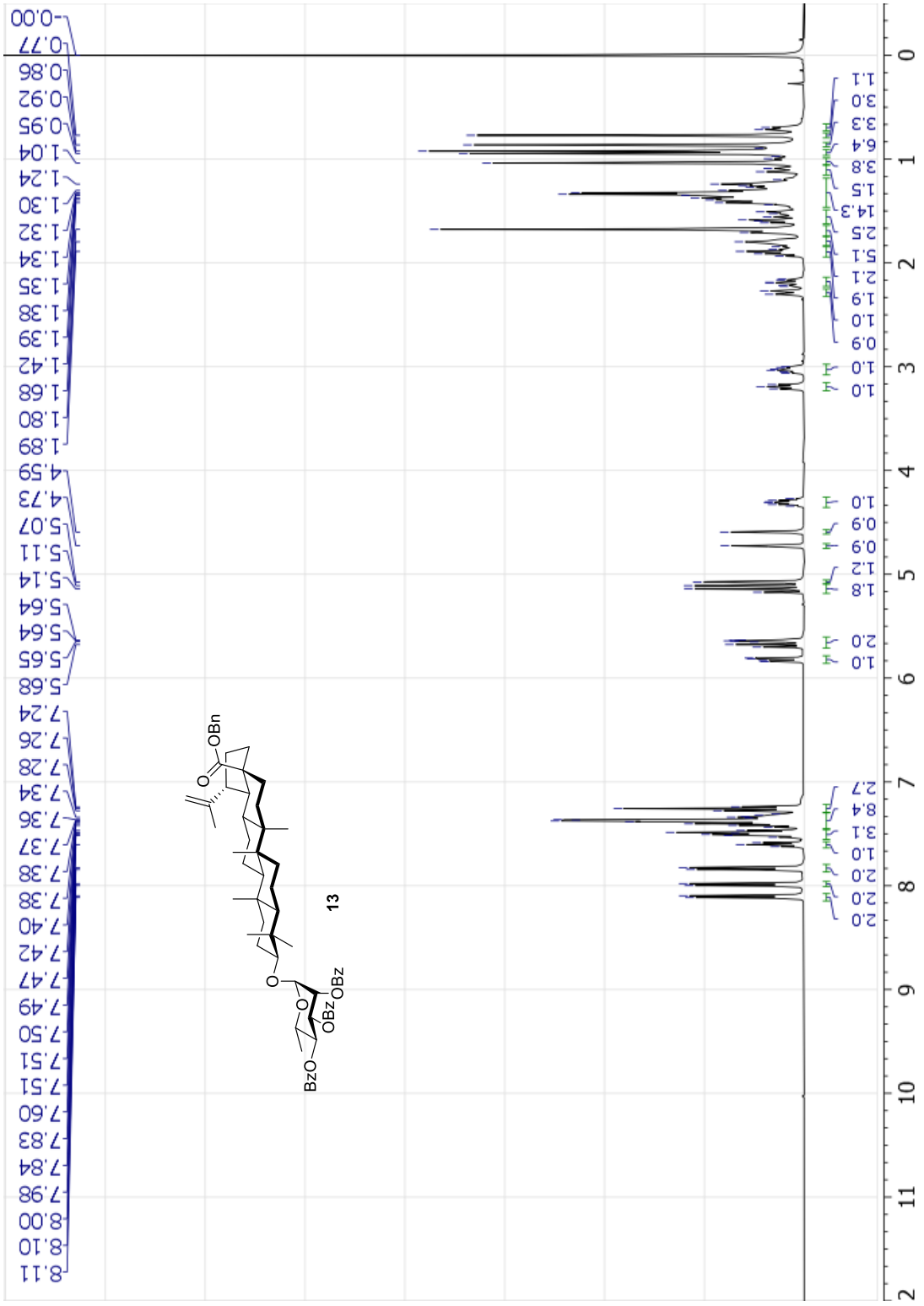


Figure S2. ^{13}C NMR spectra of **13** ($CDCl_3$, 100 MHz)

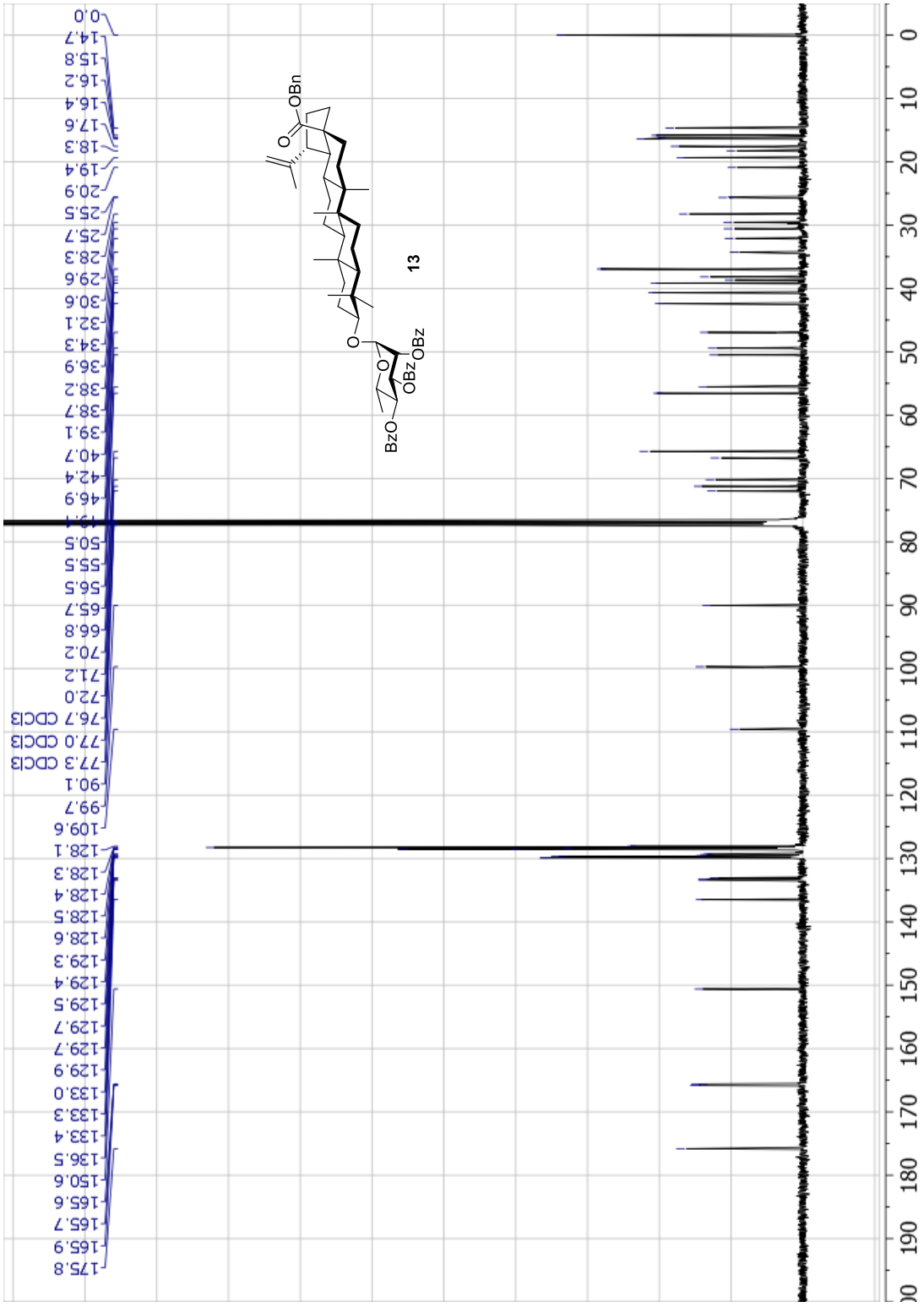
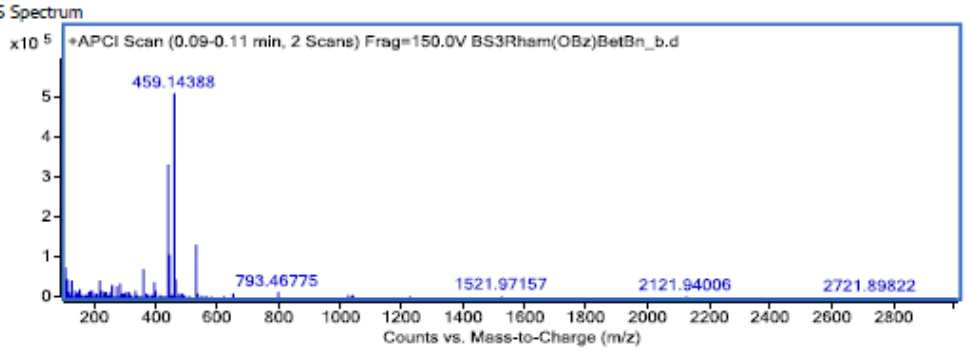


Figure S3. HRMS spectra of **13**

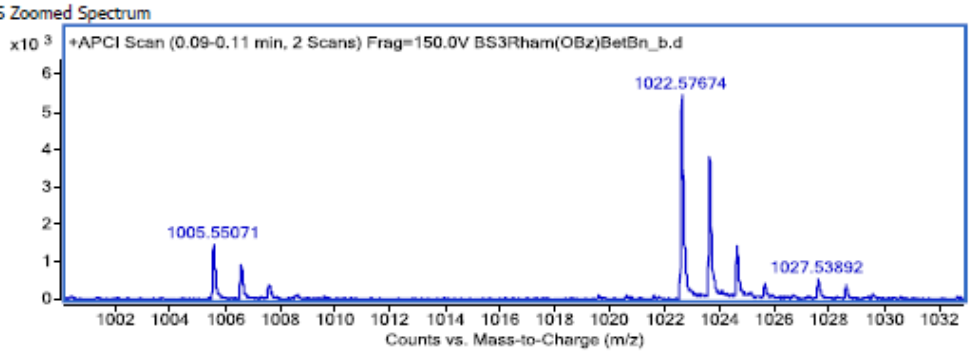
Rapport de masse exacte

Data File	BS3Rham(OBz)BetBn_b.d	**Sample Name**	BS3Rham(OBz)BetBn
Sample Type	Sample	**Position**	
Analysis Date	9/17/2019 1:48:39 PM	**User Name**	MCT
Acq Method	APCI_POS_DI.m	**InstrumentName**	TOF 6224
Comment			

MS Spectrum

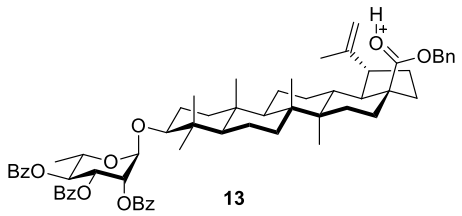


MS Zoomed Spectrum



MS Spectrum Peak List

Ion	Ion Formula	*Expe. m/z*	*Calc. m/z*	Diff(ppm)
(M+H)+	C64 H77 O10	1005.55071	1005.55113	0.41
(M+NH4)+	C64 H76 O10 Na	1022.57674	1022.57767	0.91



13

Chemical Formula: $C_{64}H_{77}O_{10}^{+}$
Exact Mass: 1005,5511
Molecular Weight: 1006,2896

Figure S4. ^{1}H NMR spectrum of **14** ($CDCl_3$, 400 MHz)

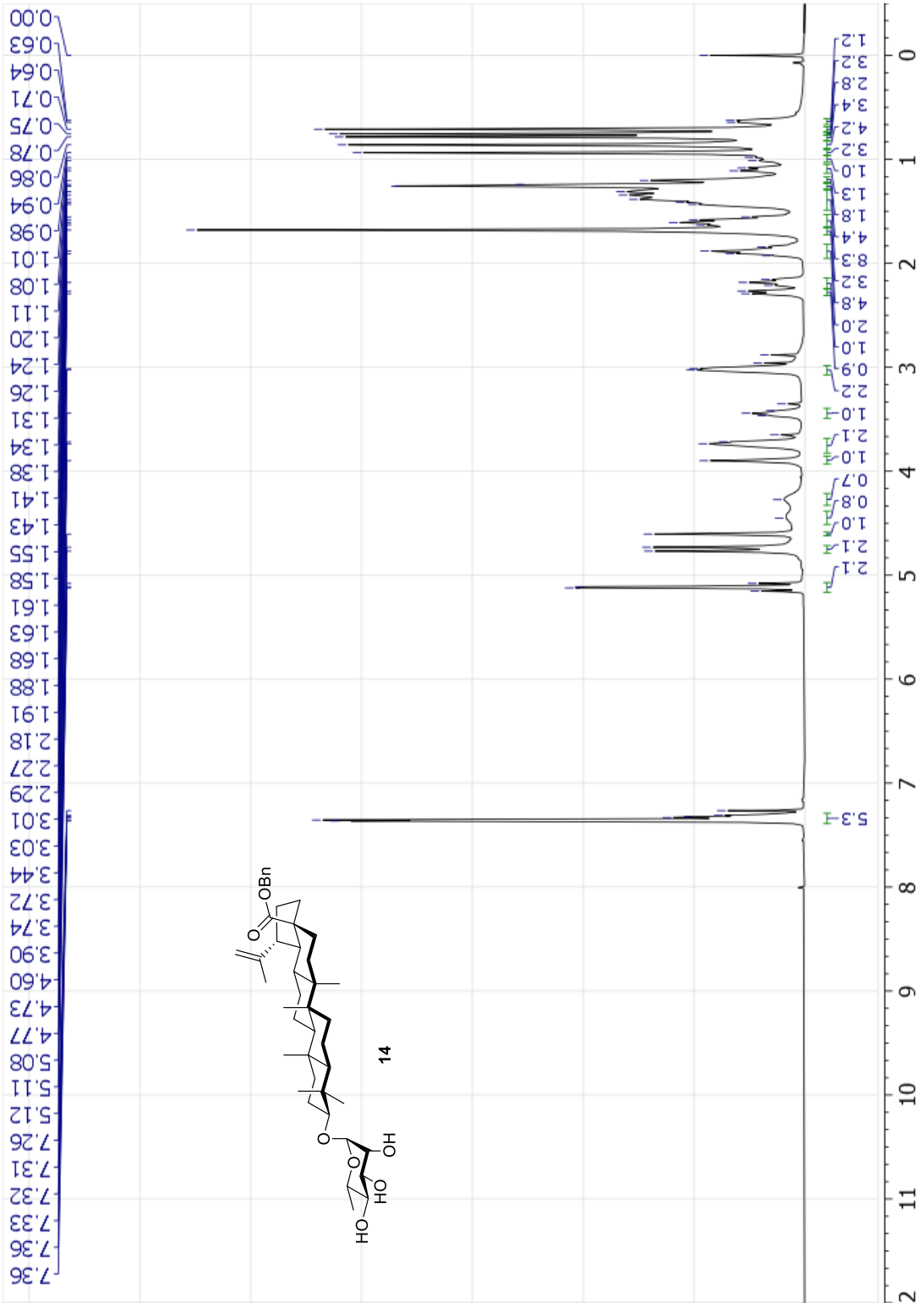


Figure S5. ^{13}C NMR spectra of **14** ($CDCl_3$, 100 MHz)

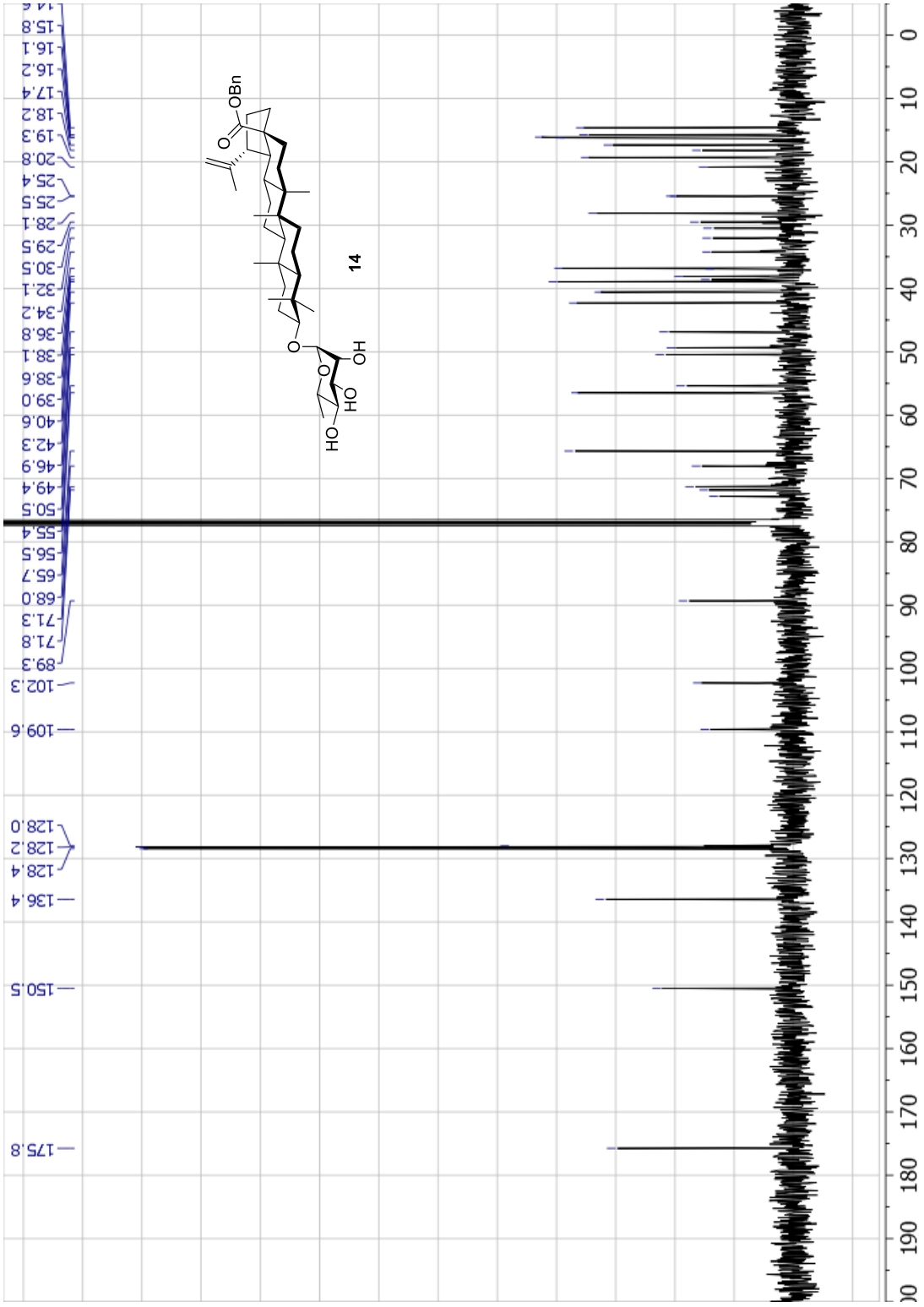
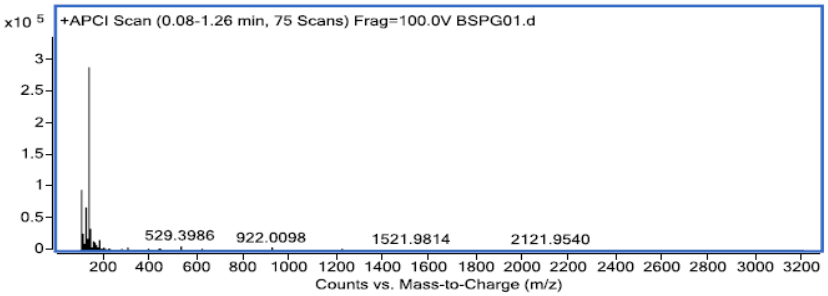


Figure S6. HRMS spectra of **14**

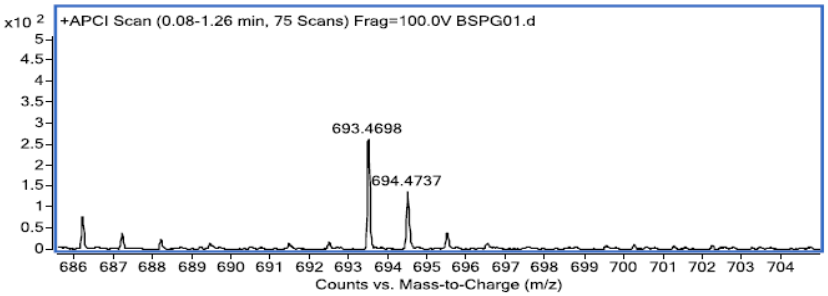
Masse Exacte

Data File	BSPG01	**Sample Name**	BSPG01
Analysis Date	May 10, 2018	**User Name**	Karine
Acq Method	APCI_POS_DI	**DA Method**	
Instrument	TOF 6220		
Comment	N/A		

MS spectrum



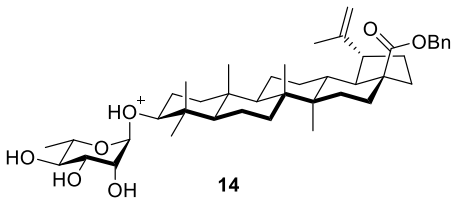
MS zoomed spectrum



Ion	Formula	Expe. m/z	Calc. m/z	Diff (ppm)
[M+H]+	C43 H64 O7	693.4698	693.4725	3.87

Université de Montréal Centre Régional de Spectrométrie de Masse

1 de 1



14

Chemical Formula: $C_{43}H_{65}O_7^+$
Exact Mass: 693.4725
Molecular Weight: 693.9855

Figure S7. ^{1}H NMR spectrum of **15** ($CDCl_3$, 400 MHz)

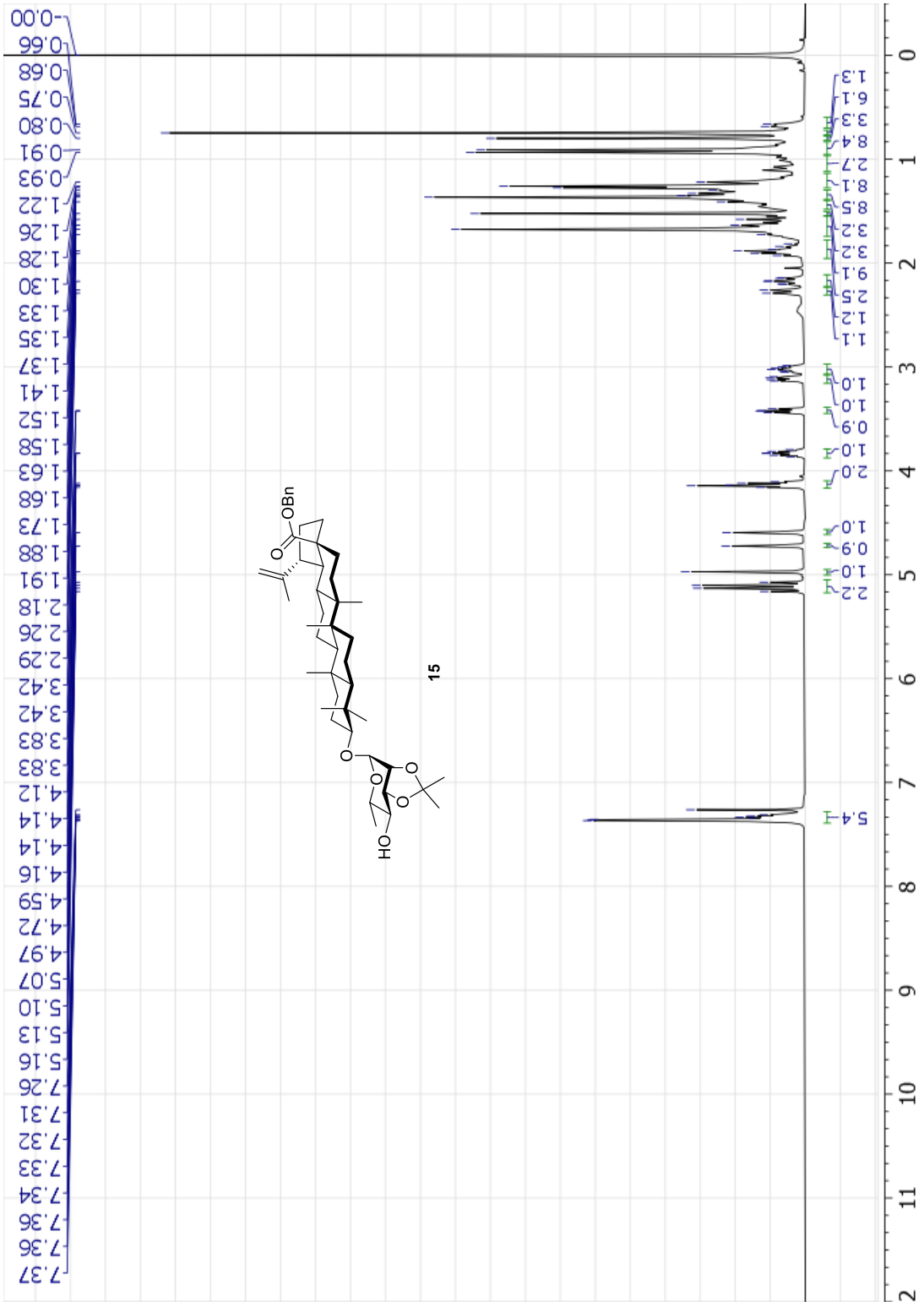


Figure S8. ^{13}C NMR spectra of **15** ($CDCl_3$, 100 MHz)

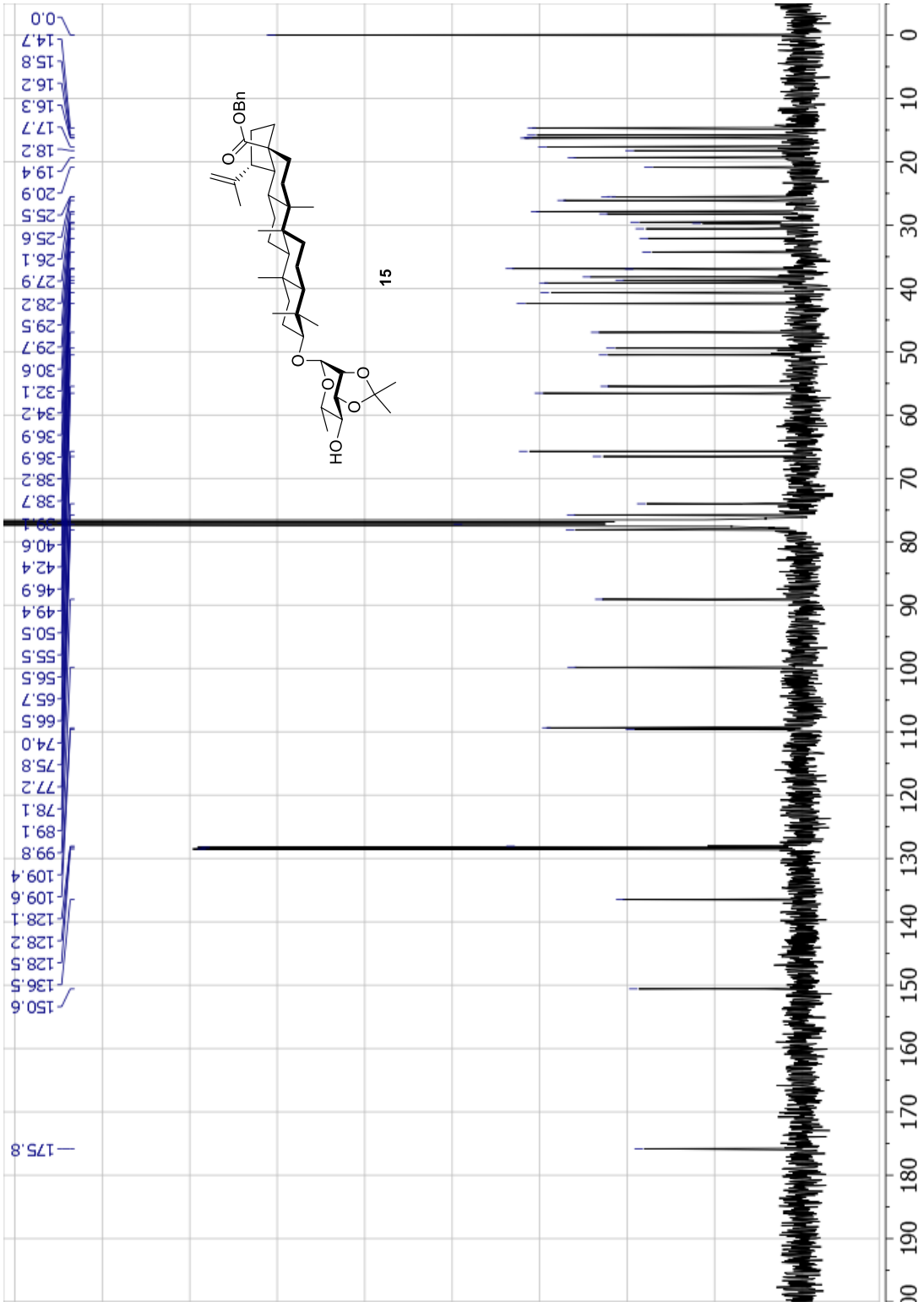
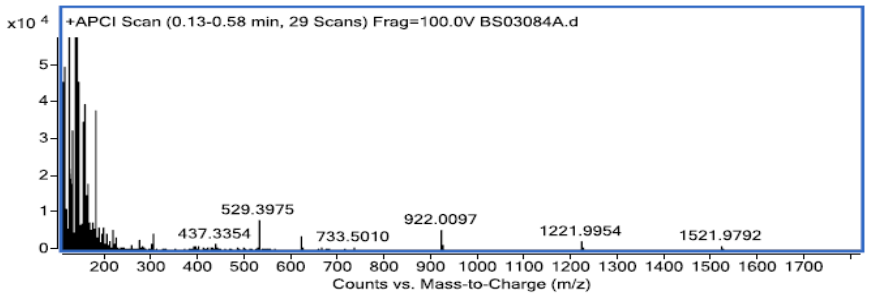


Figure S9. HRMS spectra of **15**

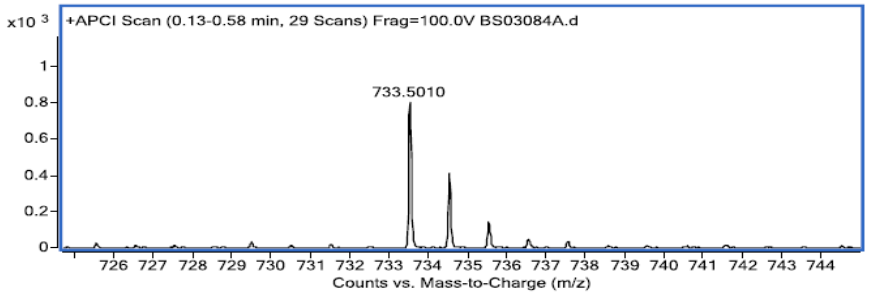
Masse Exacte

Data File	BS03084A	**Sample Name**	BS03084A
Analysis Date	May 10, 2018	**User Name**	Karine
Acq Method	APCI_POS_DI	**DA Method**	
Instrument	TOF 6220		
Comment	N/A		

MS spectrum



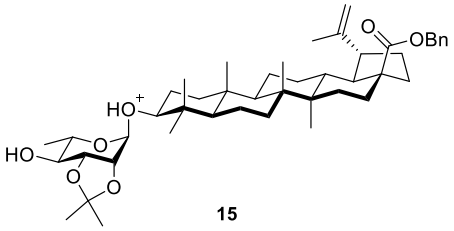
MS zoomed spectrum



Ion	Formula	Expe. m/z	Calc. m/z	Diff (ppm)
[M+H]+	C46 H68 O7	733.501	733.5038	3.79

Université de Montréal Centre Régional de Spectrométrie de Masse

1 de 1



15

Chemical Formula: $C_{46}H_{69}O_7^+$
Exact Mass: 733.5038
Molecular Weight: 734.0505

Figure S10. ^{1}H NMR spectrum of **16** ($CDCl_3$, 400 MHz)

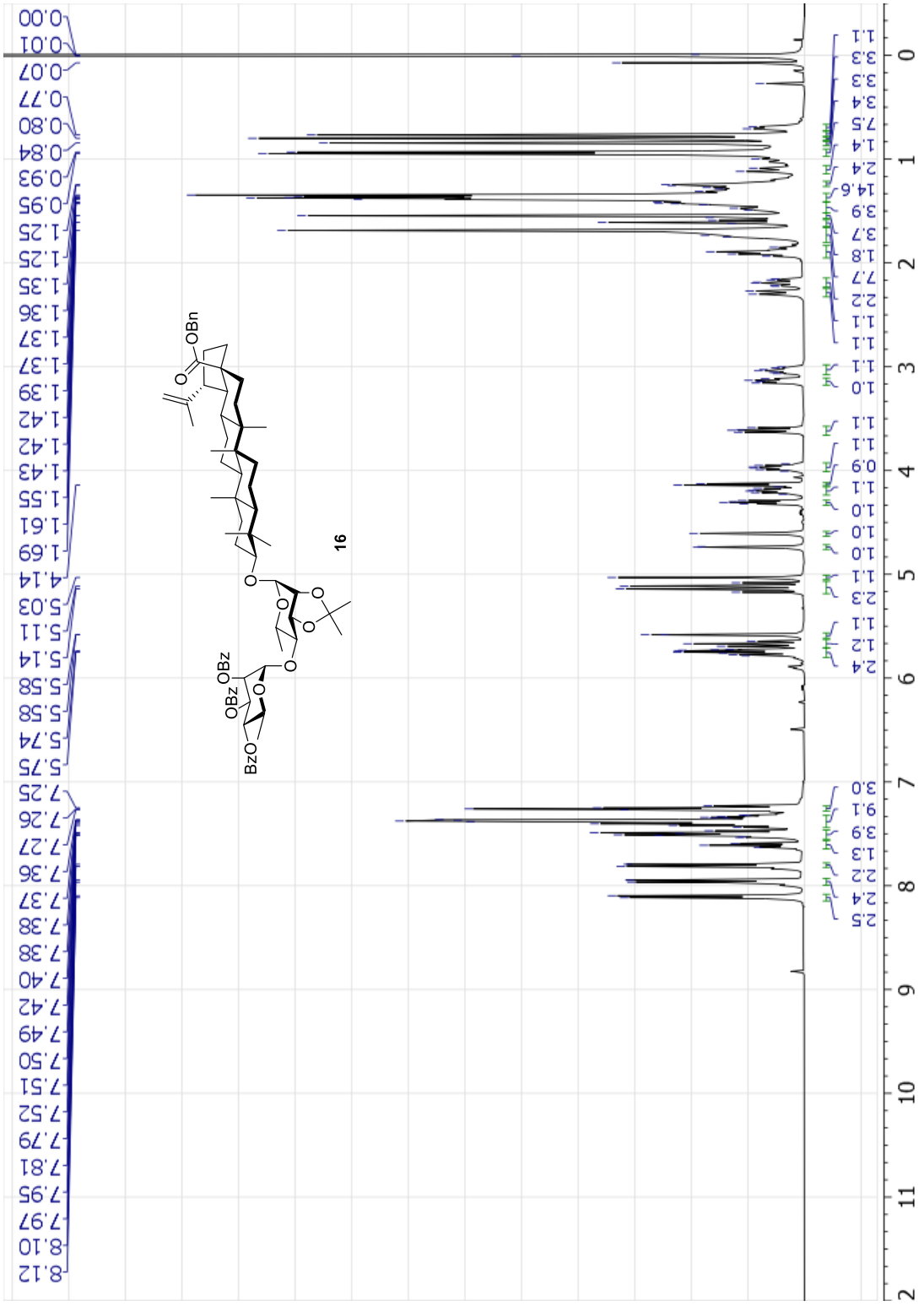


Figure S11. ^{13}C NMR spectra of **16** ($CDCl_3$, 100 MHz)

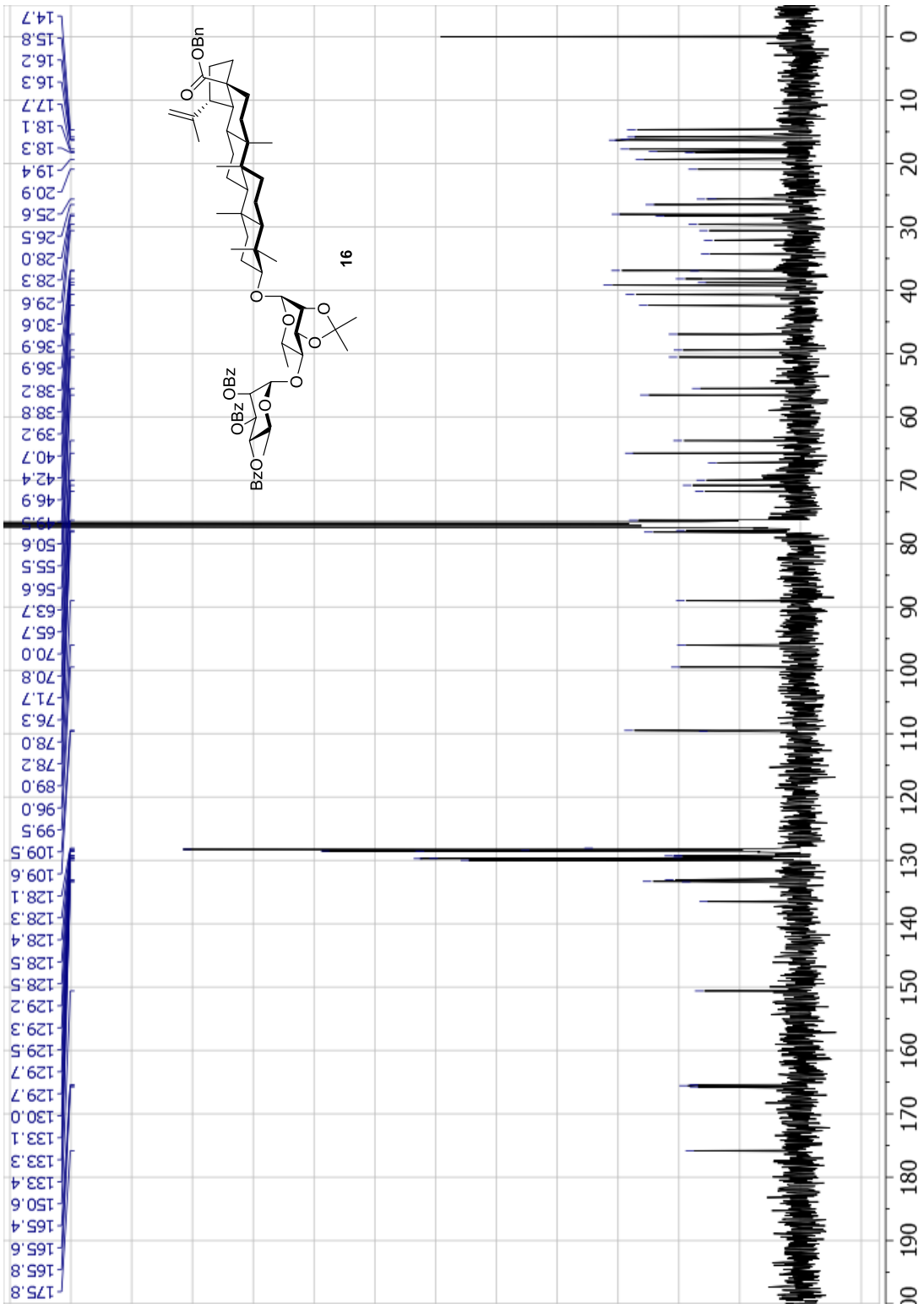
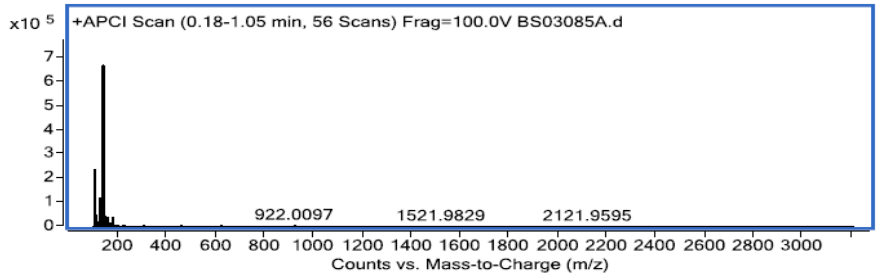


Figure S12. HRMS spectra of **16**

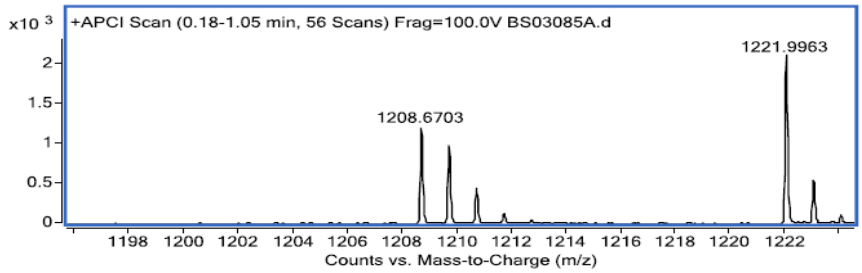
Masse Exacte

Data File	BS03085A	**Sample Name**	BS03085A
Analysis Date	May 10, 2018	**User Name**	Karine
Acq Method	APCI_POS_DI	**DA Method**	
Instrument	TOF 6220		
Comment	N/A		

MS spectrum



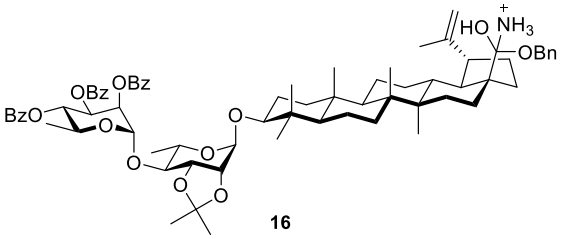
MS zoomed spectrum



Ion	Formula	Expe. m/z	Calc. m/z	Diff (ppm)
[M+NH4]+	C73 H90 O14	1208.6703	1208.6669	-2.83

Université de Montréal Centre Régional de Spectrométrie de Masse

1 de 1



16

Chemical Formula: $C_{73}H_{94}NO_{14}^{+}$
Exact Mass: 1208.6669
Molecular Weight: 1209.5475

Figure S13. ^{1}H NMR spectrum of **17** ($CDCl_3$, 400 MHz)

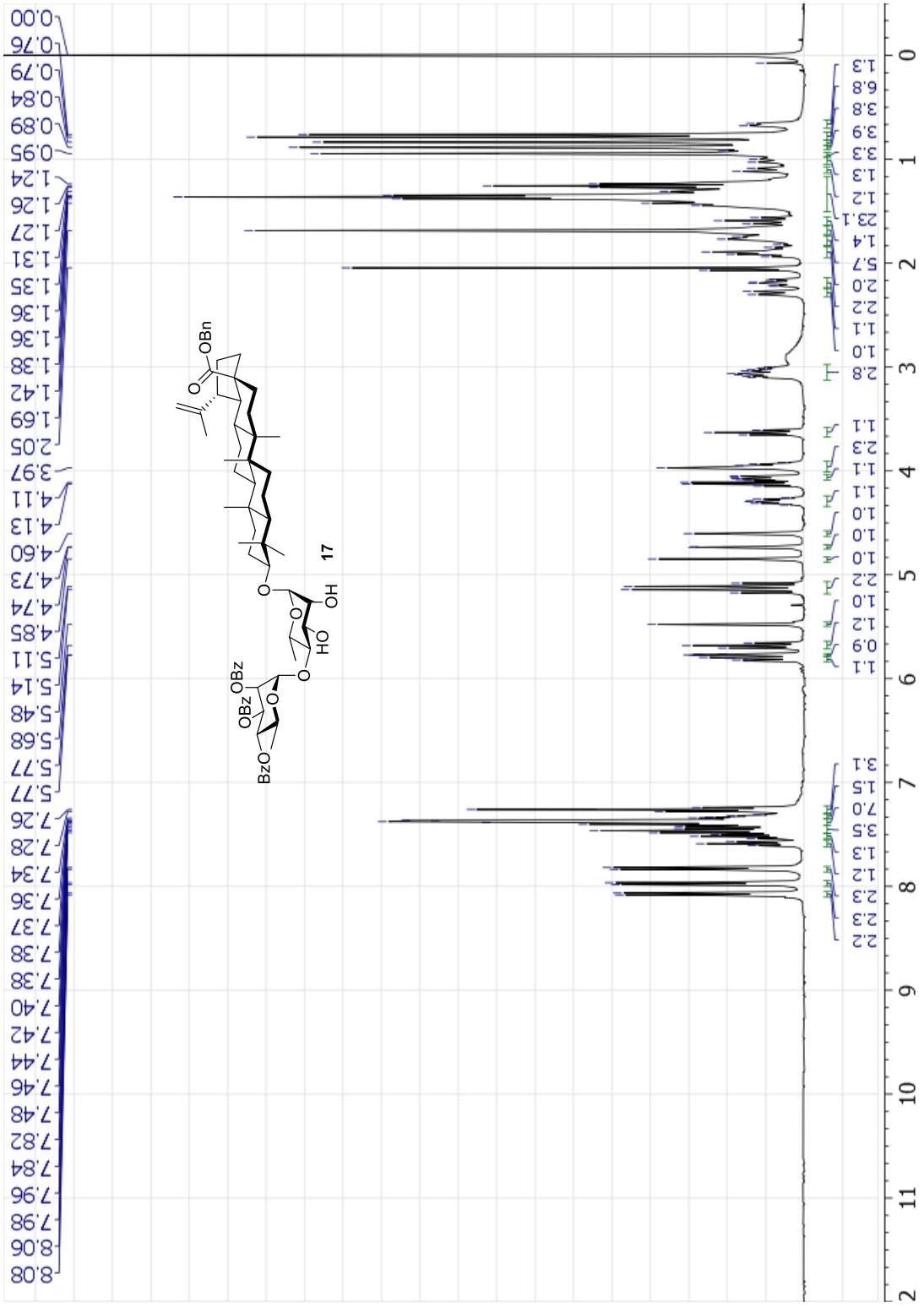


Figure S14. ^{13}C NMR spectra of **17** ($CDCl_3$, 100 MHz)

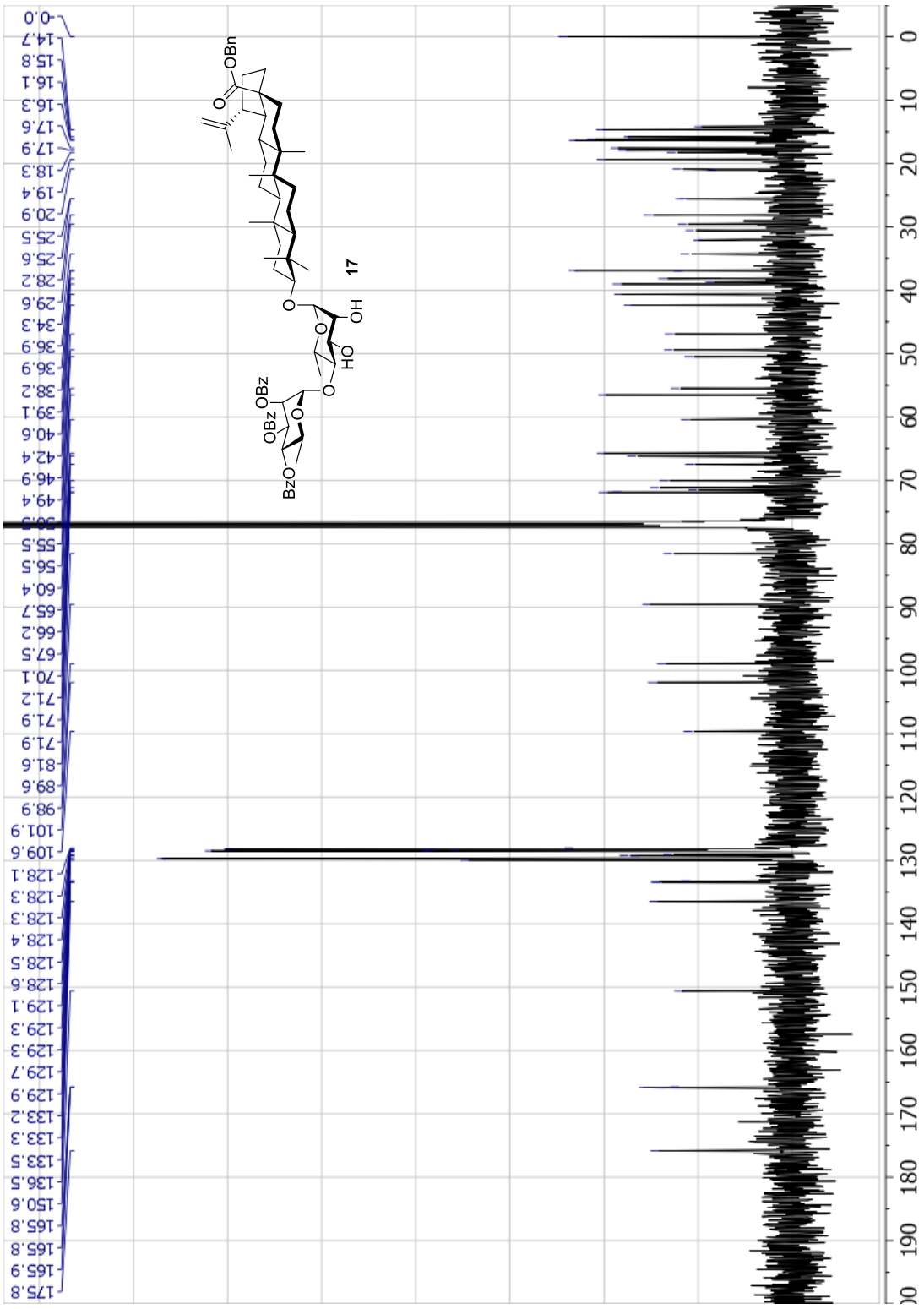
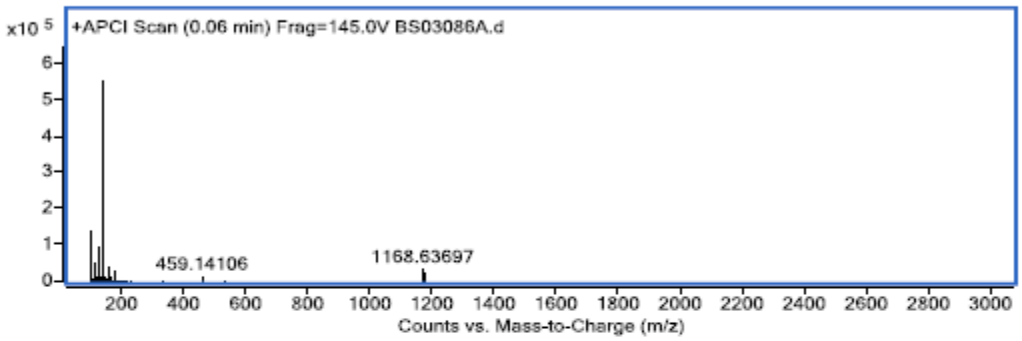


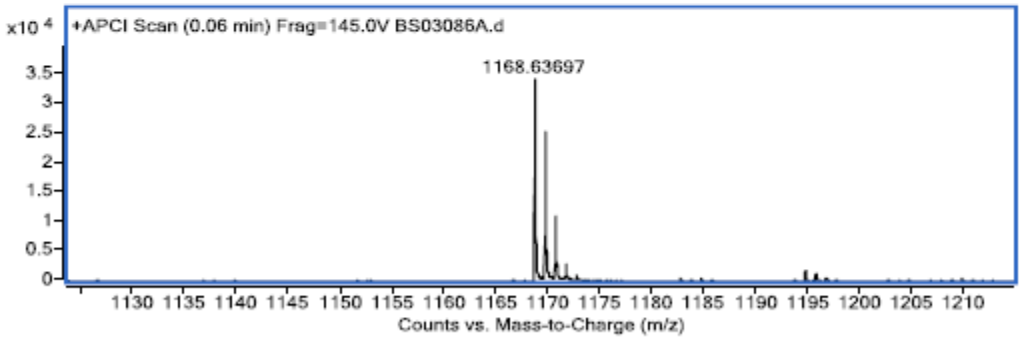
Figure S15. HRMS spectra of **17**

Data File	BS03086A	**Sample Name**	BS03086A
Analysis Date	August 31, 2018	**User Name**	KG
Acq Method	ESI_pos_DI	**DA Method**	
Instrument	TOF 6224		
Comment	N/A		

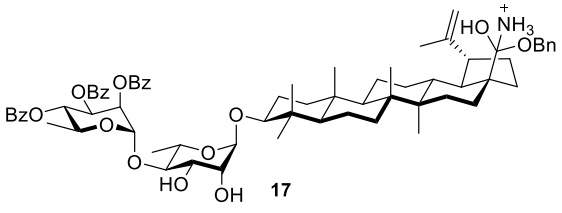
MS spectrum



MS zoomed spectrum



Ion	Formula	Expe. m/z	Calc. m/z	Diff (ppm)
[M+NH4]+	C70 H86 O14	1168.63697	1168.63558	-1.19



17

Chemical Formula: $C_{70}H_{90}NO_{14}^{+}$
Exact Mass: 1168.6356
Molecular Weight: 1169.4825

Figure S16. ^{1}H NMR spectrum of **18** ($CDCl_3$, 400 MHz)

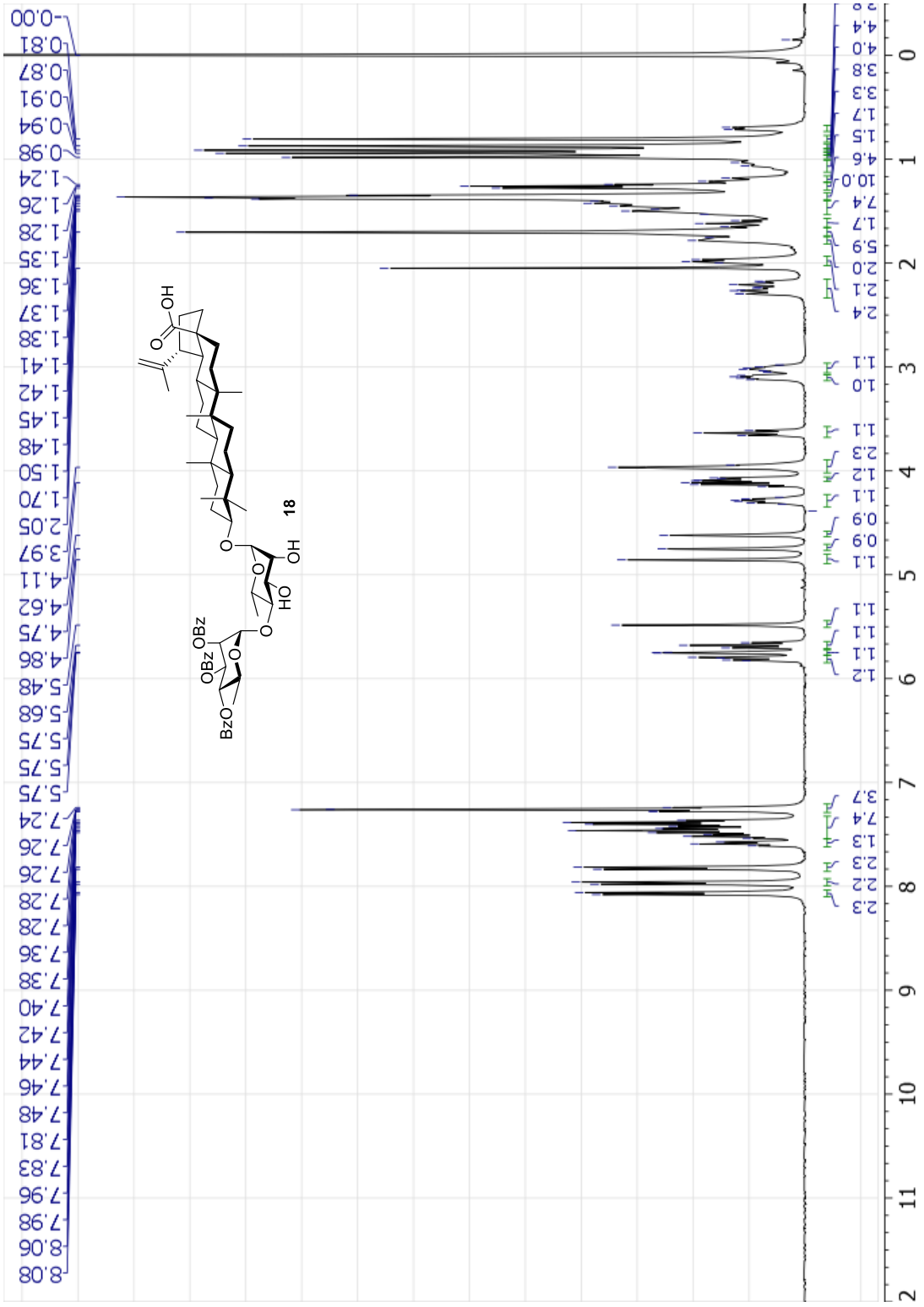


Figure S17. ^{13}C NMR spectra of **18** ($CDCl_3$, 100 MHz)

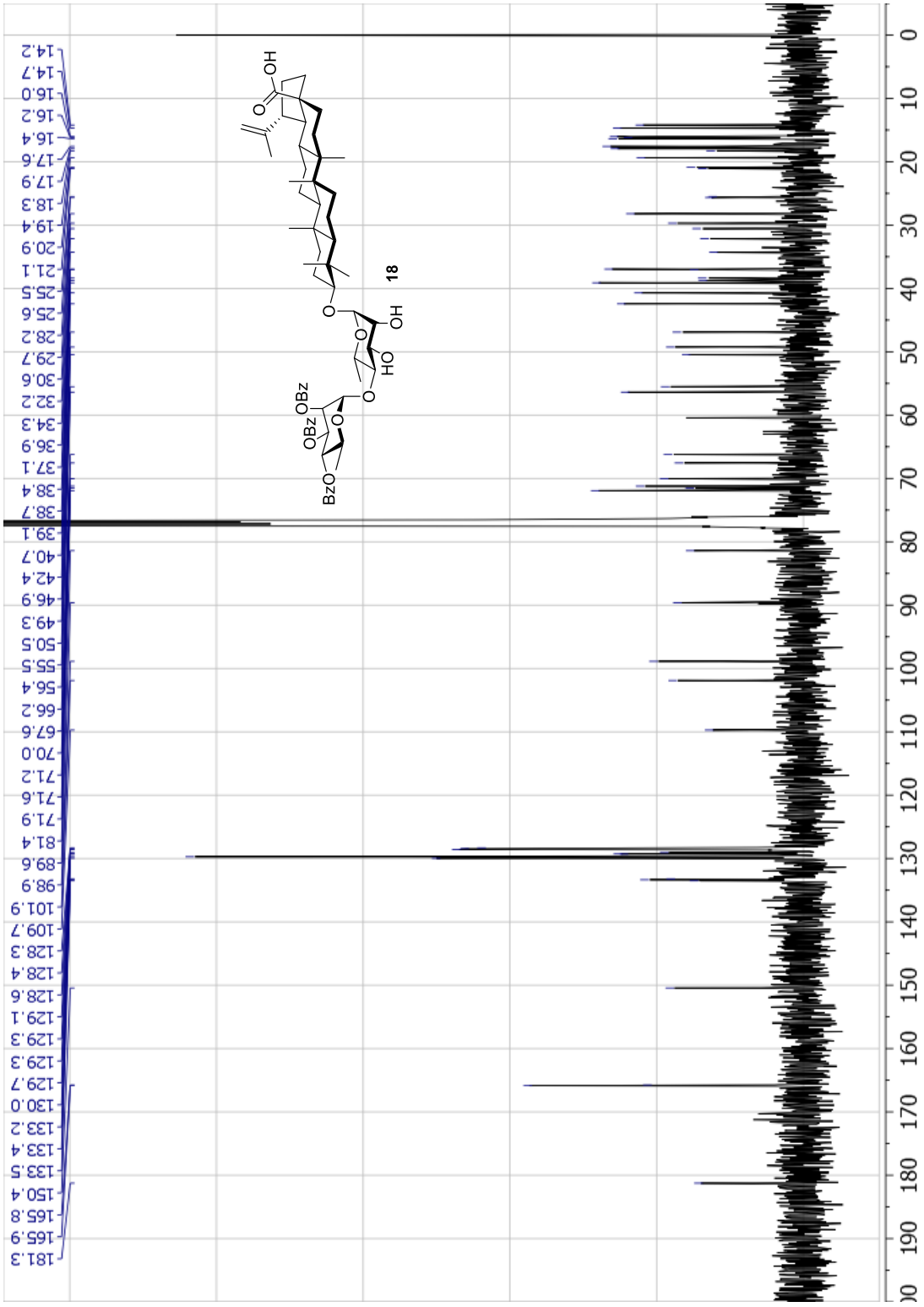
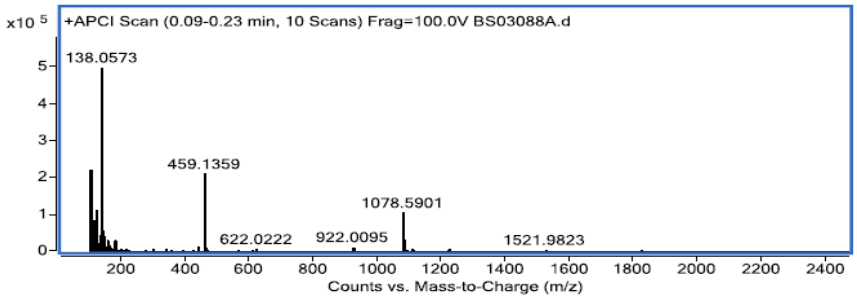


Figure S18. HRMS spectra of **18**

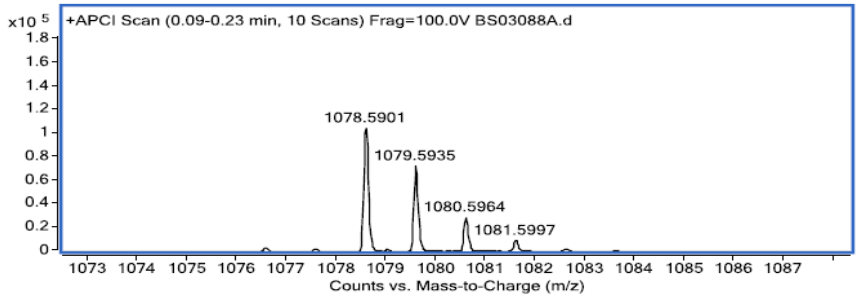
Masse Exacte

Data File	BS03088A	**Sample Name**	BS03088A
Analysis Date	May 10, 2018	**User Name**	Karine
Acq Method	APCI_POS_DI	**DA Method**	
Instrument	TOF 6220		
Comment	N/A		

MS spectrum



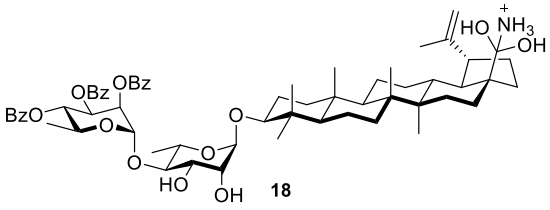
MS zoomed spectrum



Ion	Formula	Expe. m/z	Calc. m/z	Diff (ppm)
[M+NH4]+	C63 H80 O14	1078.5901	1078.5886	-1.36

Université de Montréal Centre Régional de Spectrométrie de Masse

1 de 1



18

Chemical Formula: $C_{63}H_{84}NO_{14}^{+}$
Exact Mass: 1078.5886
Molecular Weight: 1079.3575

Figure S19. ^{1}H NMR spectrum of **4** (DMSO-d_6, 400 MHz)

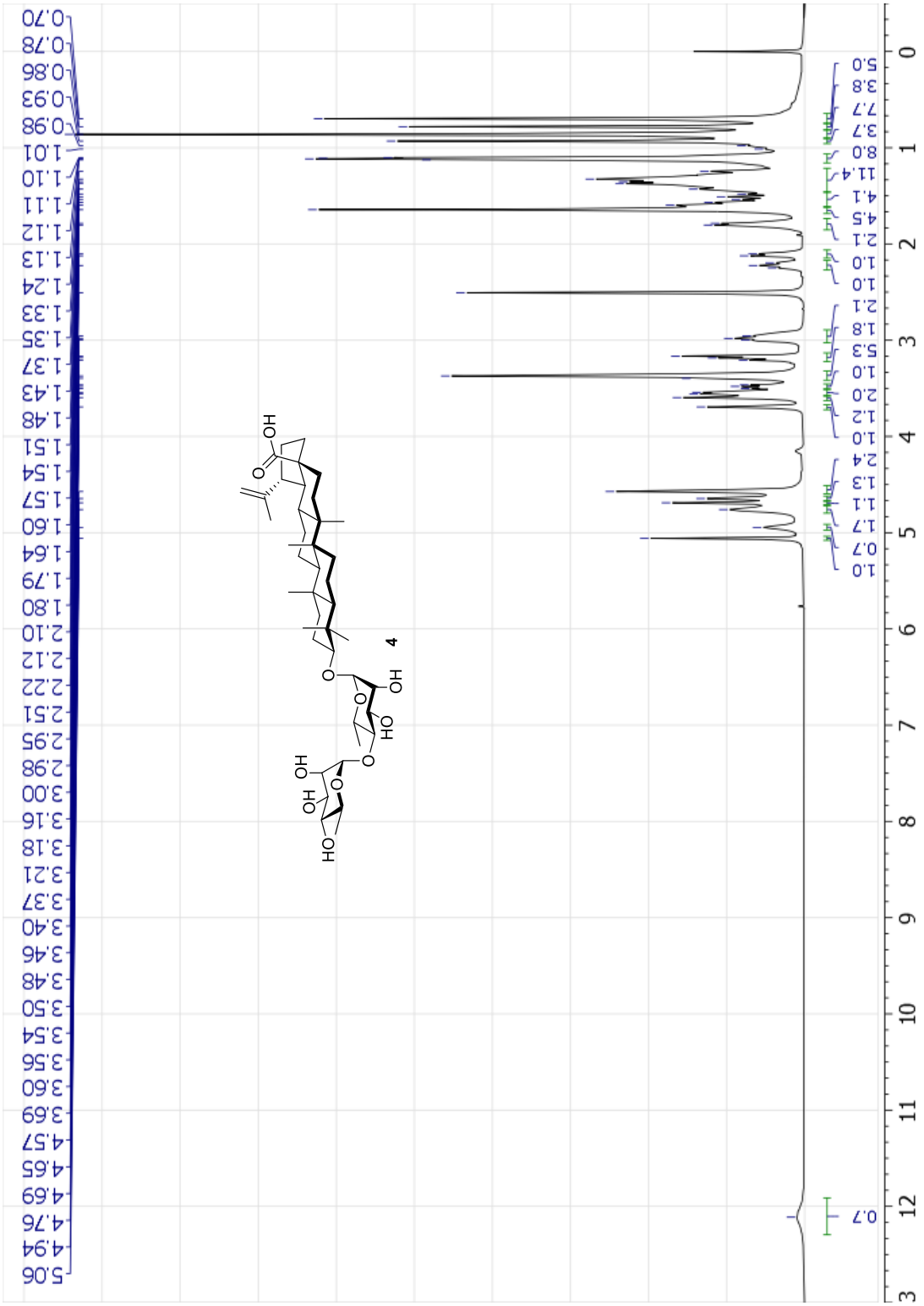


Figure S20. ^{13}C NMR spectra of **4** (DMSO-d_6, 100 MHz)

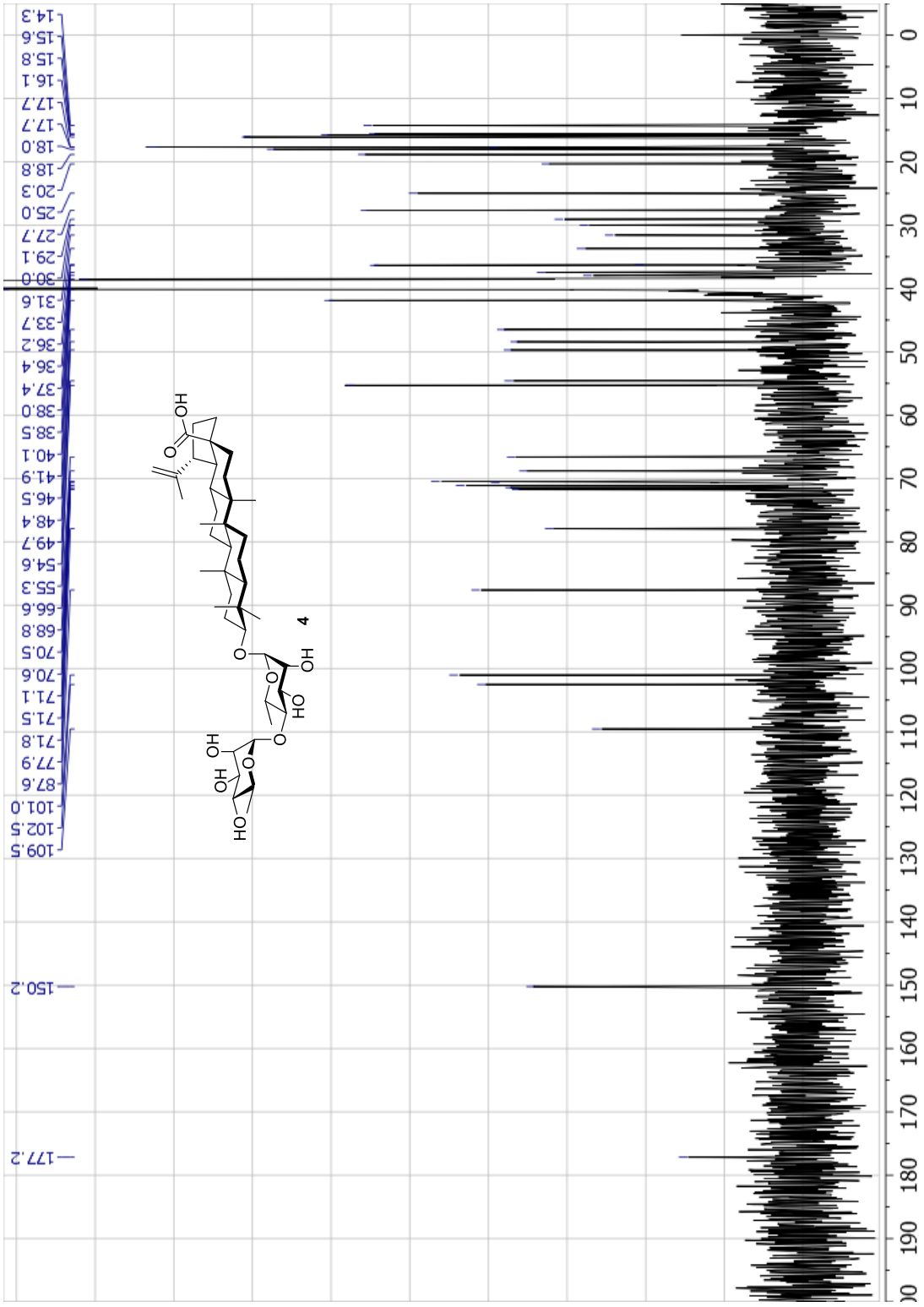
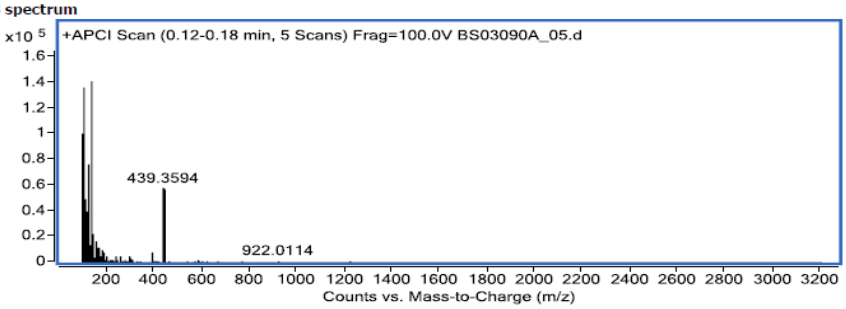


Figure S21. HRMS spectra of **4**

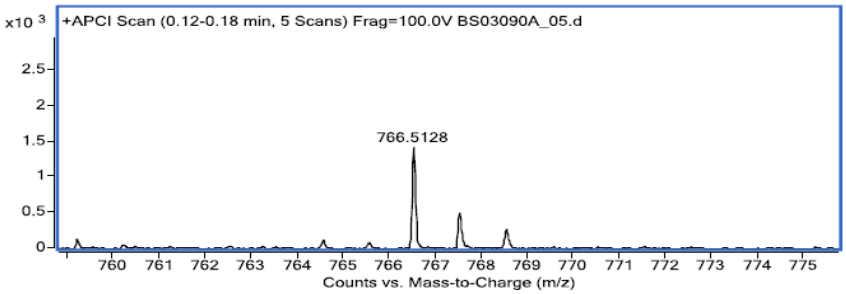
Masse Exacte

Data File	BS03090A	**Sample Name**	BS03090A
Analysis Date	May 10, 2018	**User Name**	Karine
Acq Method	APCI_POS_DI	**DA Method**	
Instrument	TOF 6220		
Comment	N/A		

MS spectrum



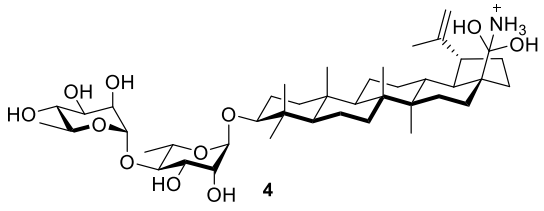
MS zoomed spectrum



Ion	Formula	Expe. m/z	Calc. m/z	Diff (ppm)
[M+NH4]+	C42 H68 O11	766.5128	766.51	-3.67

Université de Montréal Centre Régional de Spectrométrie de Masse

1 de 1



4

Chemical Formula: $C_{42}H_{72}NO_{11}^{+}$
Exact Mass: 766.5100
Molecular Weight: 767.0335

Figure S22. ^{1}H NMR spectrum of **19** ($CDCl_3$, 400 MHz)

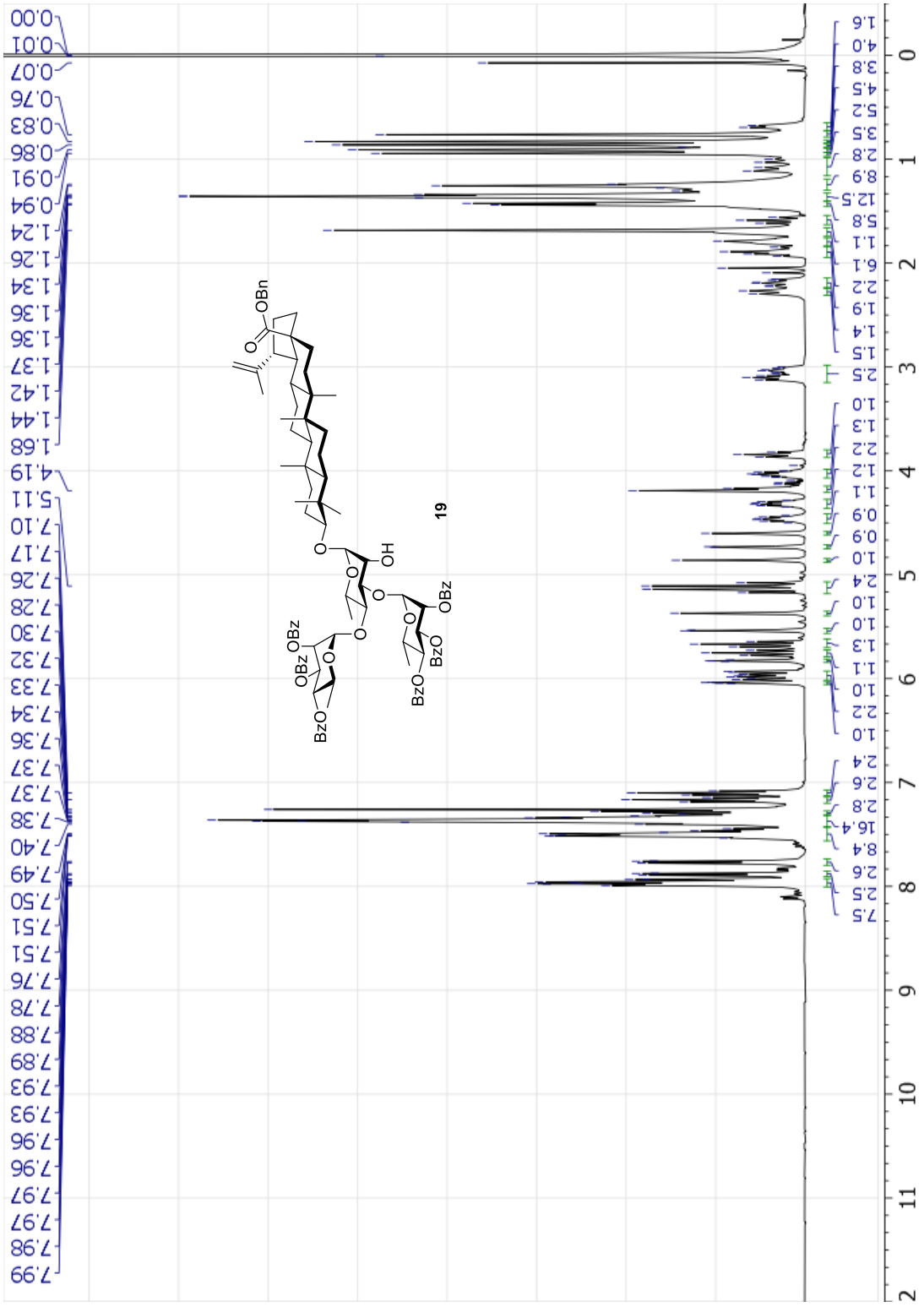


Figure S23. ^{13}C NMR spectra of **19** ($CDCl_3$, 100 MHz)

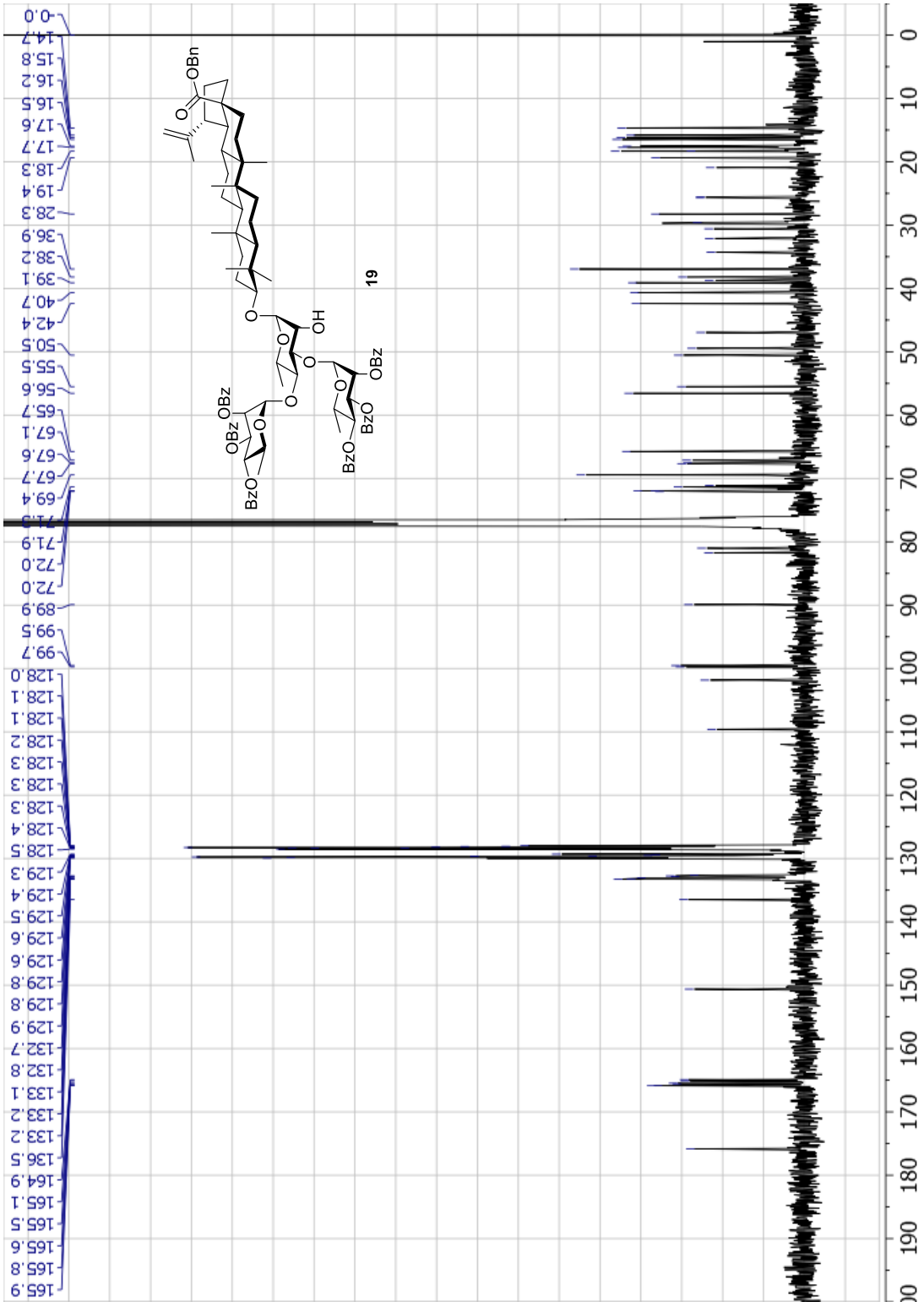
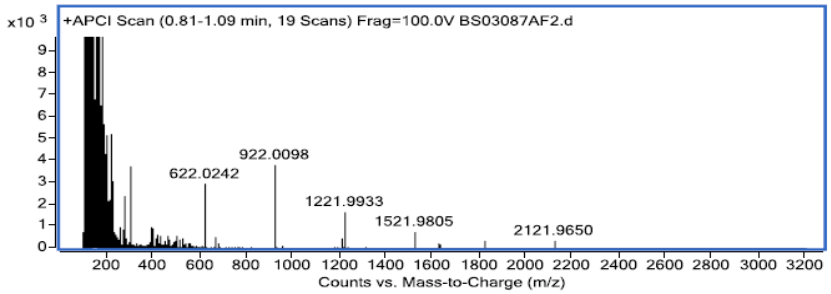


Figure S24. HRMS spectra of **19**

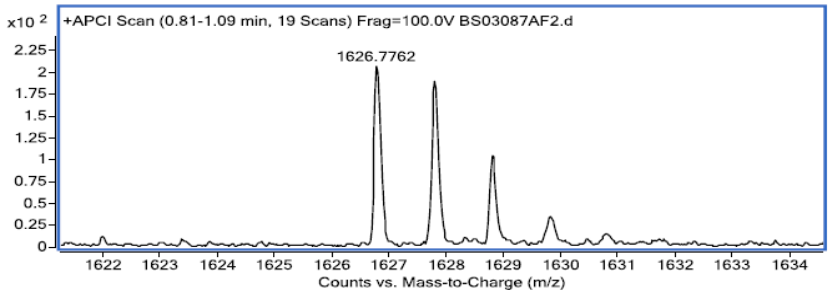
Masse Exacte

Data File	BS03087AF2	**Sample Name**	BS03087AF2
Analysis Date	May 10, 2018	**User Name**	Karine
Acq Method	APCI_POS_DI	**DA Method**	
Instrument	TOF 6220		
Comment	N/A		

MS spectrum



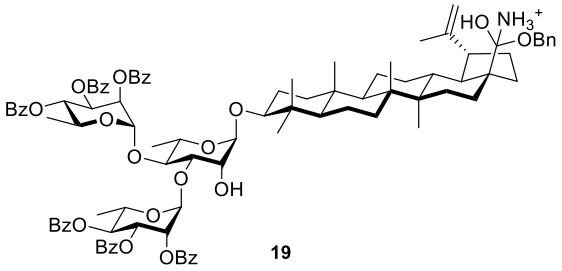
MS zoomed spectrum



Ion	Formula	Expe. m/z	Calc. m/z	Diff (ppm)
[M+NH4]+	C97 H108 O21	1626.7762	1626.7721	-2.5

Université de Montréal Centre Régional de Spectrométrie de Masse

1 de 1



19

Chemical Formula: $C_{97}H_{112}NO_{21}^{+}$
Exact Mass: 1626.7721
Molecular Weight: 1627.9485

Figure S25. ^{1}H NMR spectrum of **5** (DMSO-d_6 + 1 drop H_2O, 400 MHz)

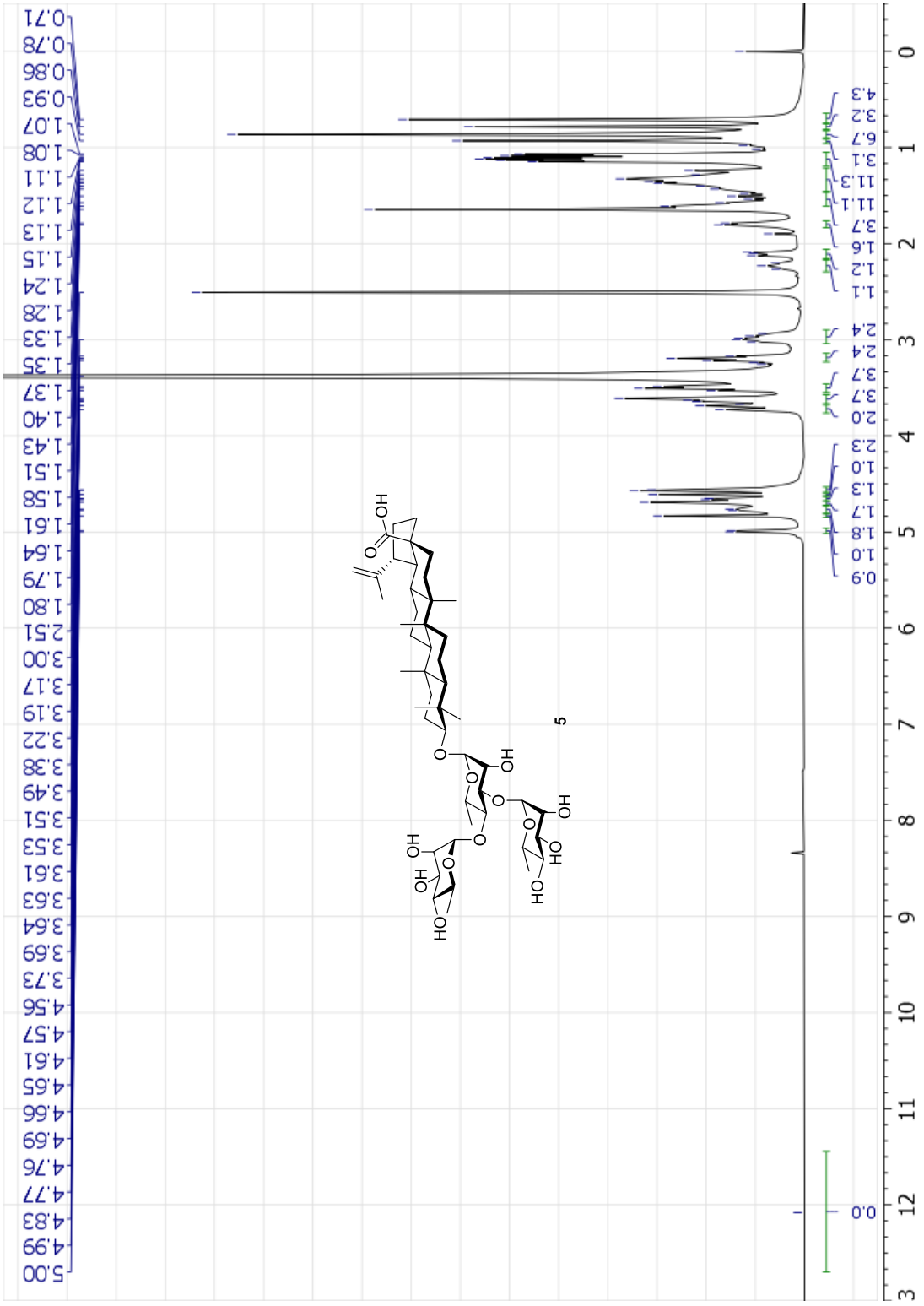


Figure S26. ^{13}C NMR spectra of **5** (DMSO-d_6 + 1 drop H_2O, 100 MHz)

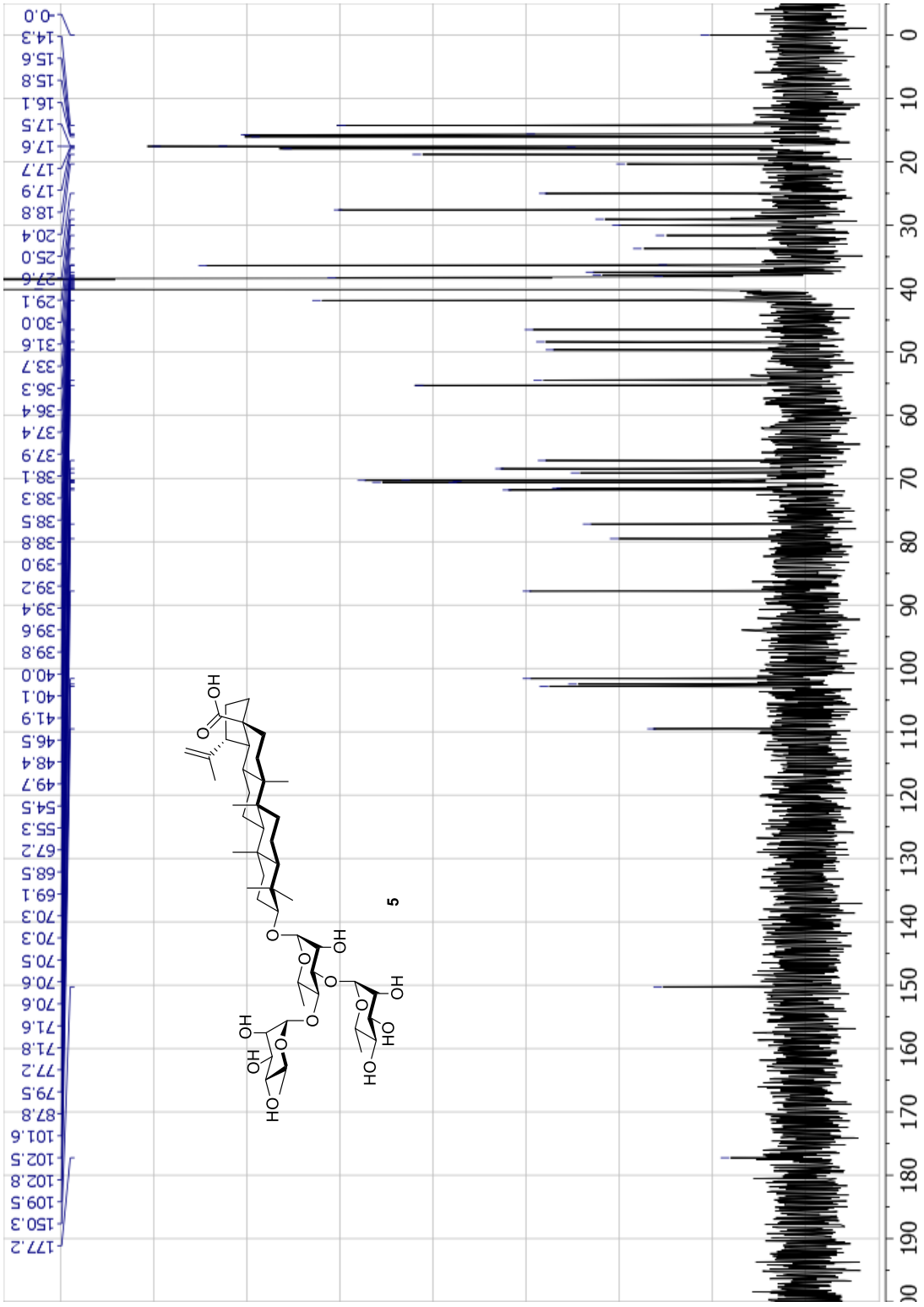
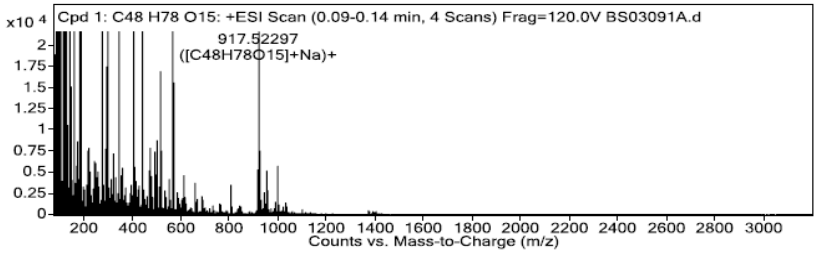


Figure S27. HRMS spectra of **5**

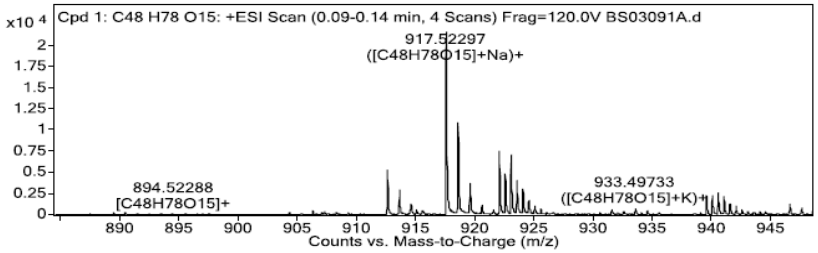
Rapport de masse exacte

Data File	BS03091A.d	**Sample Name**	BS03091A
Sample Type	Sample	**Position**	P1-C2
Analysis Date	5/23/2018 2:50:04 PM	**User Name**	TNT
Acq Method	ESI_POS_DI.m	**InstrumentName**	TOF 6224
Comment			

MS Spectrum



MS Zoomed Spectrum



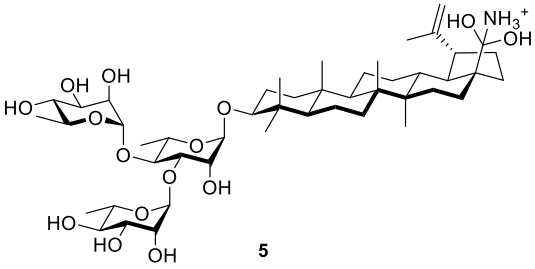
MS Spectrum Peak List

Ion	Formula	Abund	*Expe. m/z*	*Calc. m/z*	Diff(ppm)
(M+NH4)+	C48H78O15	5316.61	912.56823	912.5679	-0.36
(M+Na)+	C48H78O15	21660.78	917.52297	917.52329	0.35

Centre Regional de Spectrometrie de Masse
Universite de Montreal

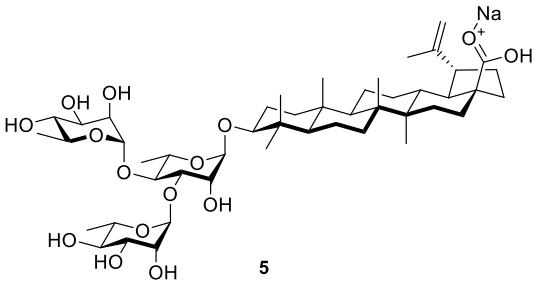
Sous la supervision de Dr. Furtos

Page 1 of 1



5

Chemical Formula: $C_{48}H_{82}NO_{15}^{+}$
Exact Mass: 912.5679
Molecular Weight: 913.1755



5

Chemical Formula: $C_{48}H_{78}NaO_{15}^{+}$
Exact Mass: 917.5233
Molecular Weight: 918.1262

Figure S28. ^{1}H NMR spectrum of **6** ($CD_3OD/CDCl_3$ 1:1, 400 MHz)

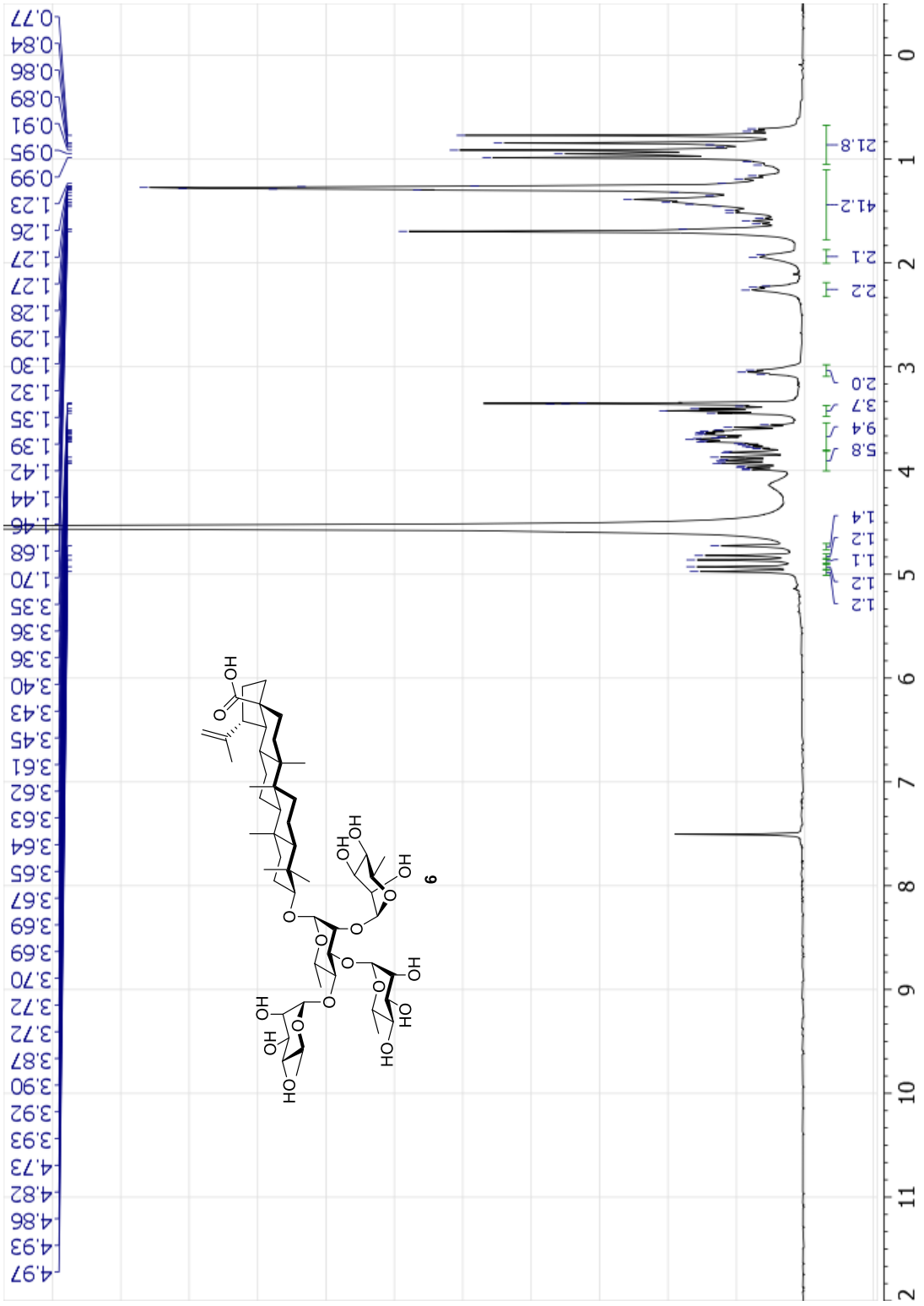


Figure S29. ^{13}C NMR spectra of **6** ($CD_3OD/CDCl_3$ 1:1, 100 MHz)

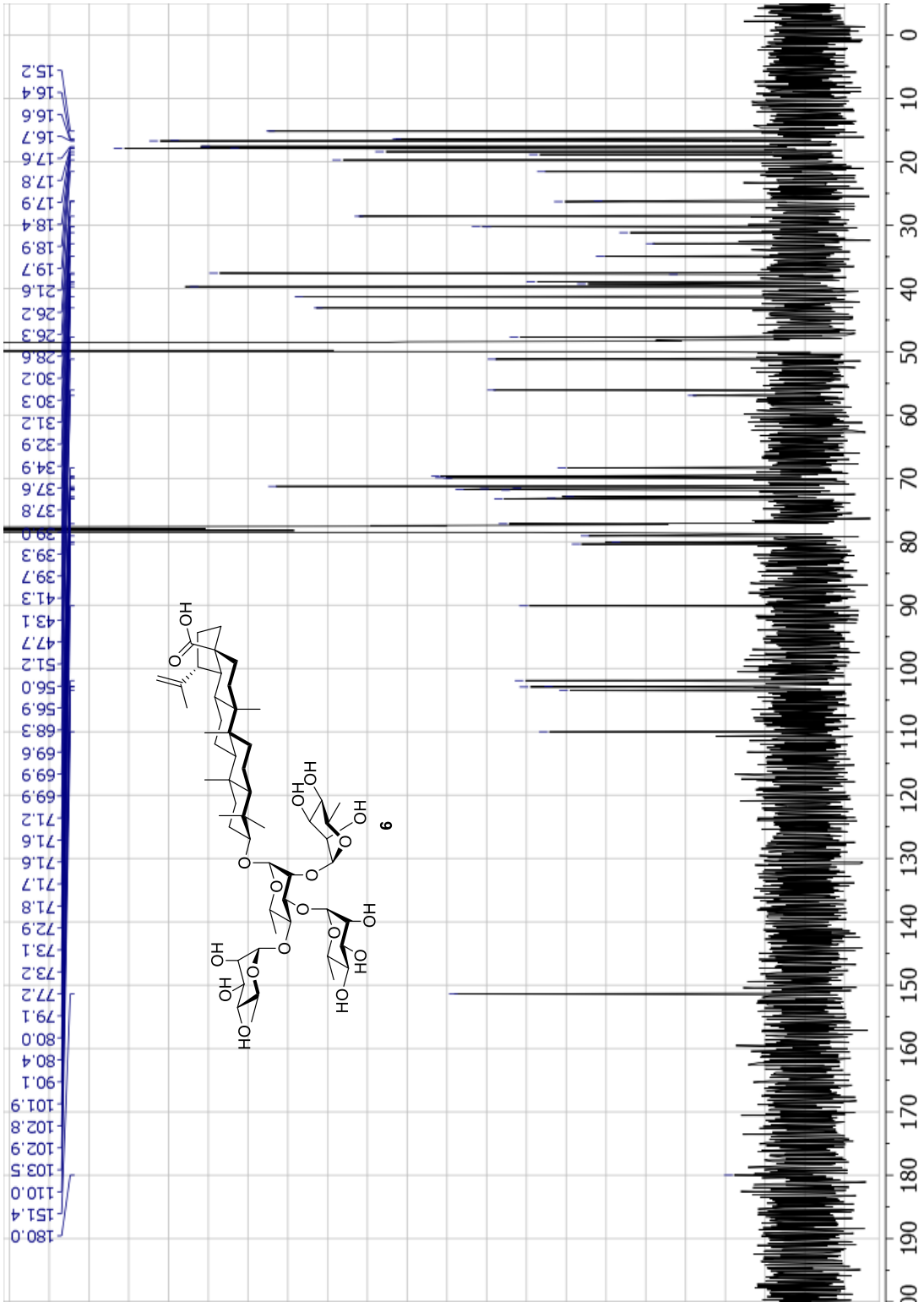
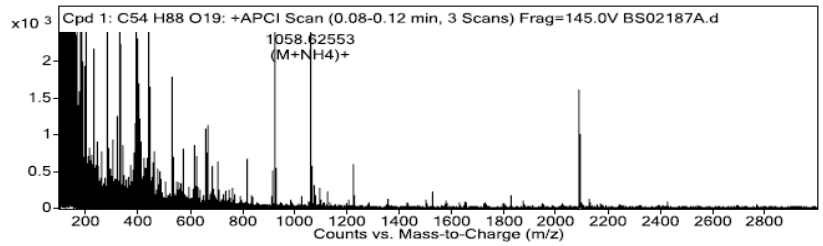


Figure S30. HRMS spectra of **6**

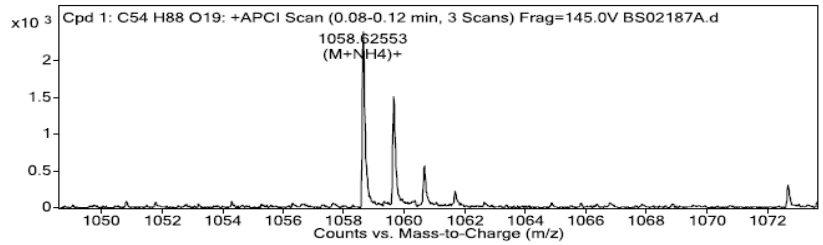
Rapport de masse exacte

Data File	BS02187A.d	**Sample Name**	BS02187A
Sample Type	Sample	**Position**	P1-E7
Analysis Date	8/31/2018 1:49:09 PM	**User Name**	Stephanie
Acq Method	APCI_POS_DI.m	**InstrumentName**	TOF 6224
Comment			

MS Spectrum



MS Zoomed Spectrum



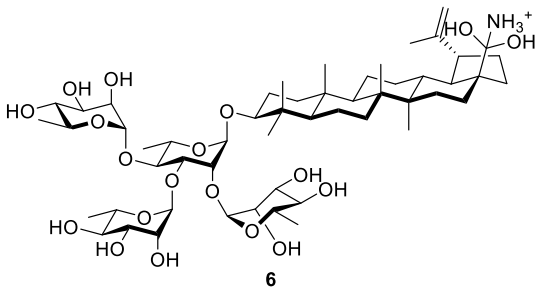
MS Spectrum Peak List

Ion	Formula	Abund	*Expe. m/z*	*Calc. m/z*	Diff(ppm)
		91251.72	138.06535		
(M+NH4)+	C54H88O19	2449.96	1058.62553	1058.62581	0.27

Centre Regional de Spectrometrie de Masse
Universite de Montreal

Sous la supervision de Dr. Furtos

Page 1 of 1



6

Chemical Formula: $C_{54}H_{92}NO_{19}^{+}$
Exact Mass: 1058.6258
Molecular Weight: 1059.3175

Figure S31. ^{1}H NMR spectrum of **21** ($CDCl_3$, 400 MHz)

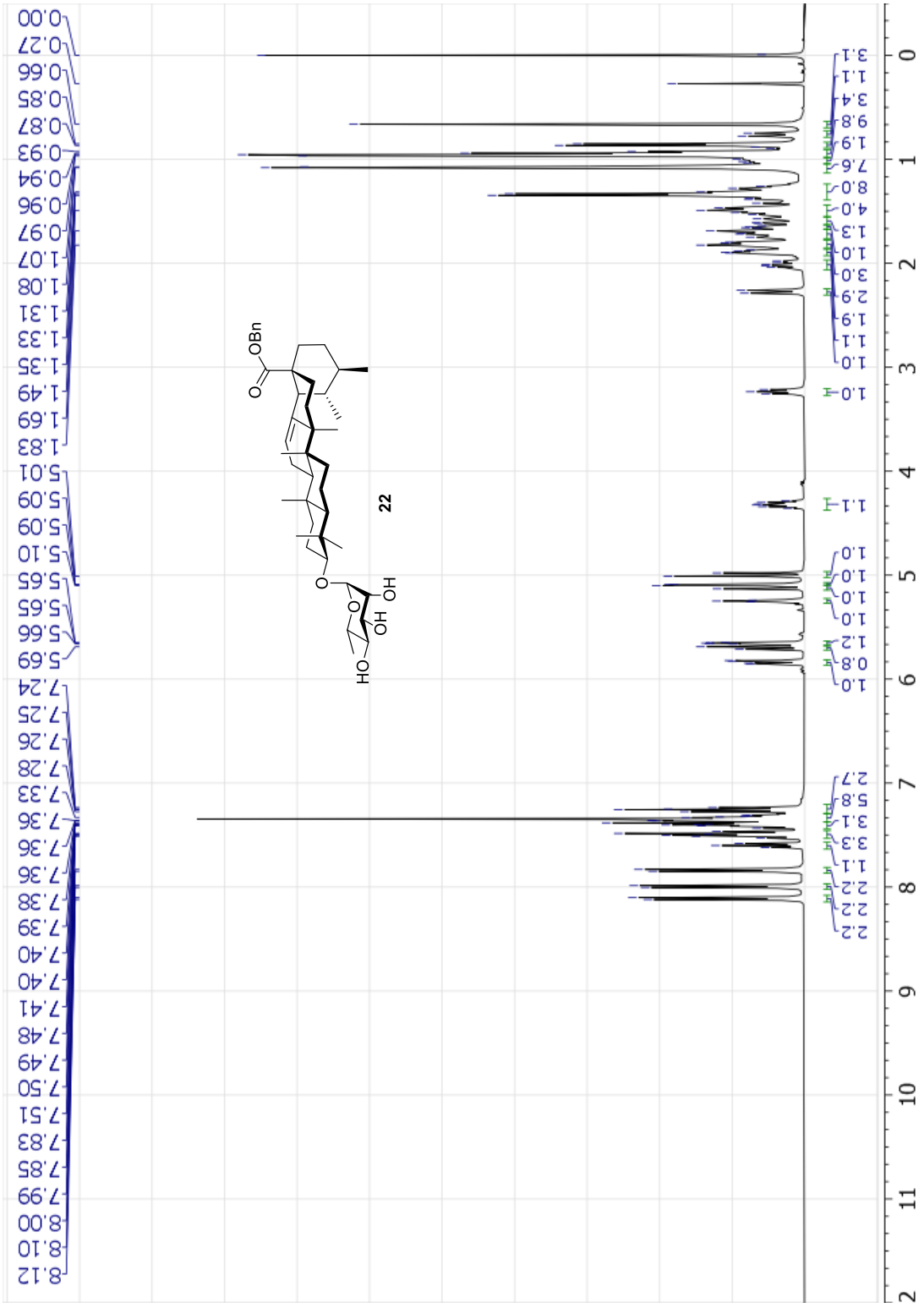


Figure S32. ^{13}C NMR spectra of **21** ($CDCl_3$, 100 MHz)

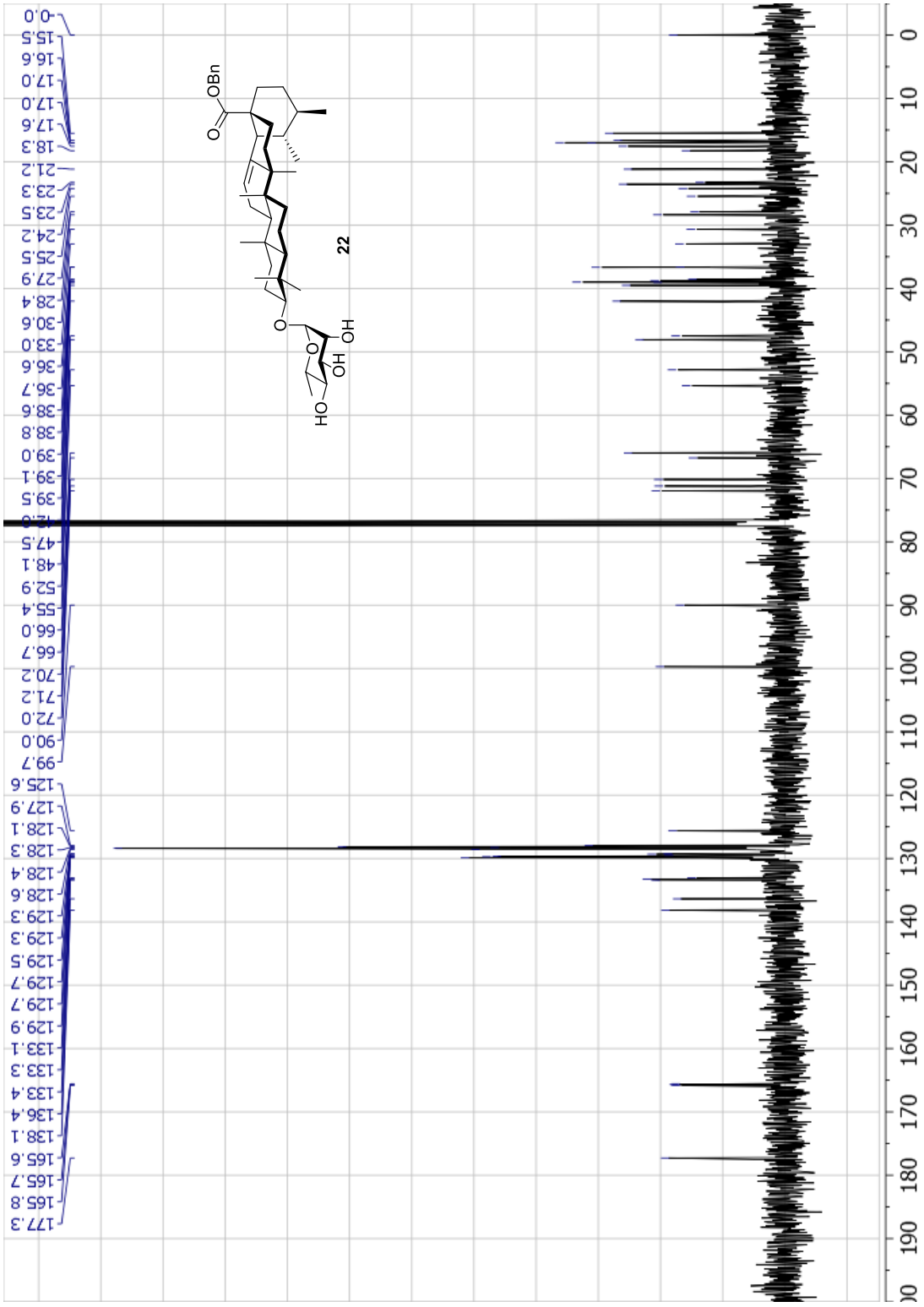
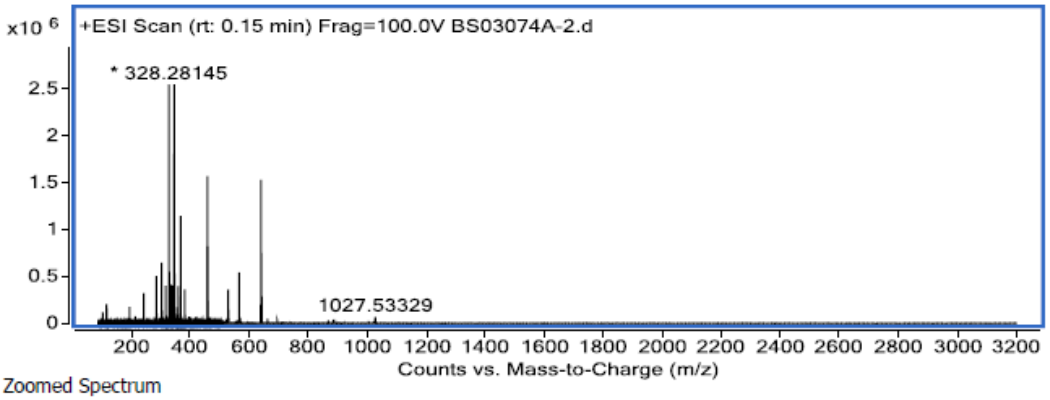


Figure S33. HRMS spectra of **21**

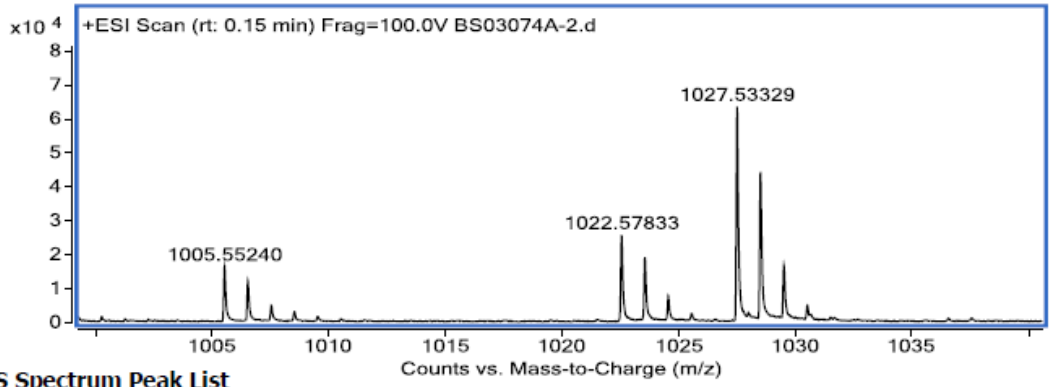
Rapport de masse exacte

Data File	BS03074A	**Sample Name**	BS03074A
Sample Type	Sample	**Position**	P1-E3
Analysis Date	5/21/2019	**User Name**	KG ETB
Acq Method	ESI_POS_DI.m	**InstrumentName**	TOF 6224
Comment			

MS Spectrum



MS Zoomed Spectrum

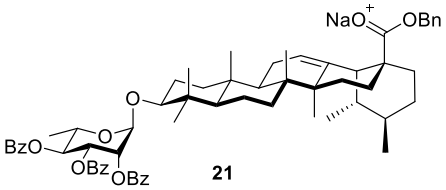


MS Spectrum Peak List

Ion	Formula	Abund	*Expe. m/z*	*Calc. m/z*	Diff(ppm)
(M+H)+	C64 H76 O10	N/A	1005.5524	1005.55113	-1.27
(M+Na)+	C64 H76 O10	N/A	1027.53329	1027.53307	-0.21

21

Chemical Formula: $C_{64}H_{77}O_{10}^{+}$
Exact Mass: 1005.5511
Molecular Weight: 1006.3095



21

Chemical Formula: $C_{64}H_{76}NaO_{10}^{+}$
Exact Mass: 1027.5331
Molecular Weight: 1028.2912

Figure S34. ^{1}H NMR spectrum of **22** ($CDCl_3$, 400 MHz)

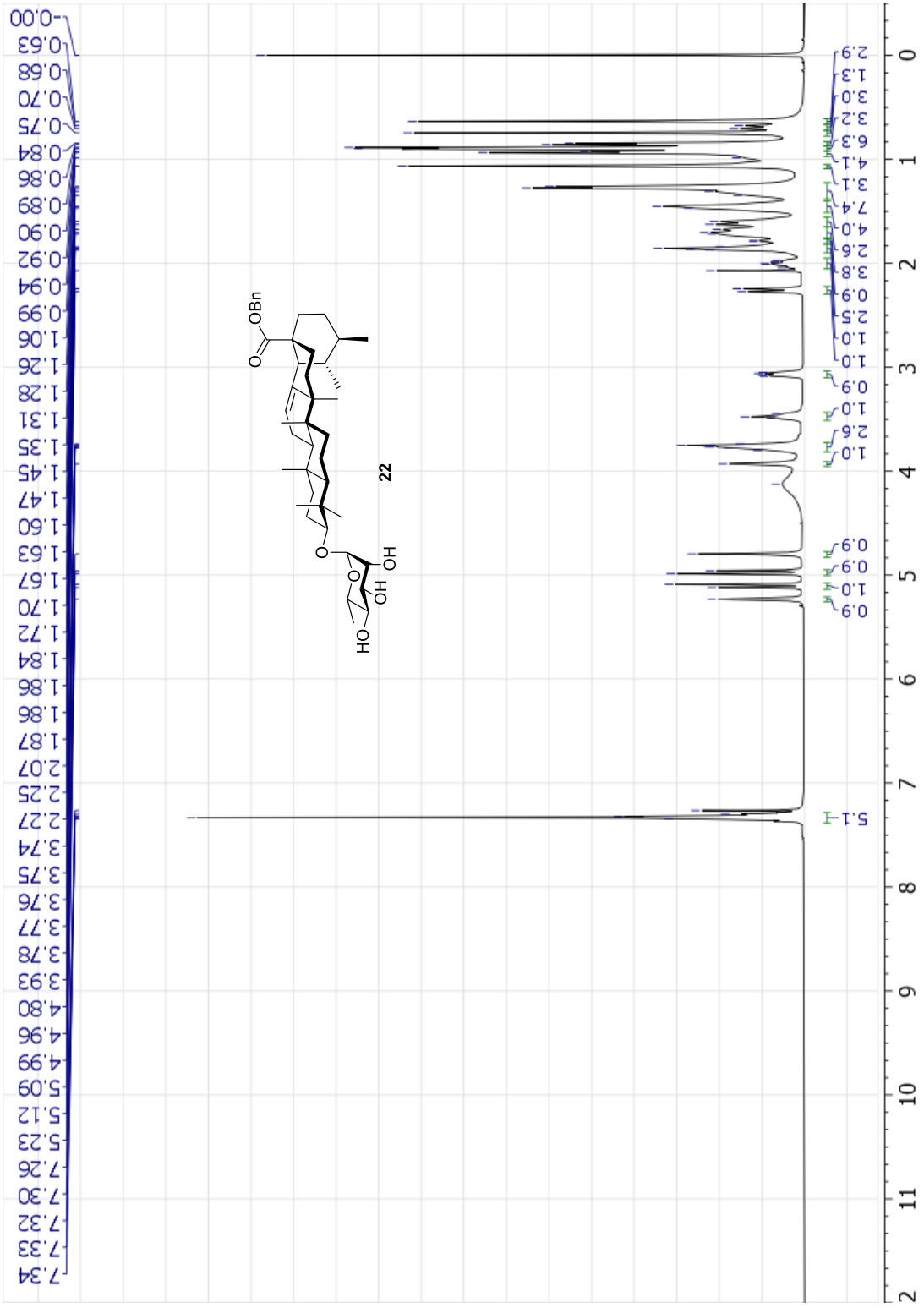


Figure S35. ^{13}C NMR spectra of **22** ($CDCl_3$, 100 MHz)

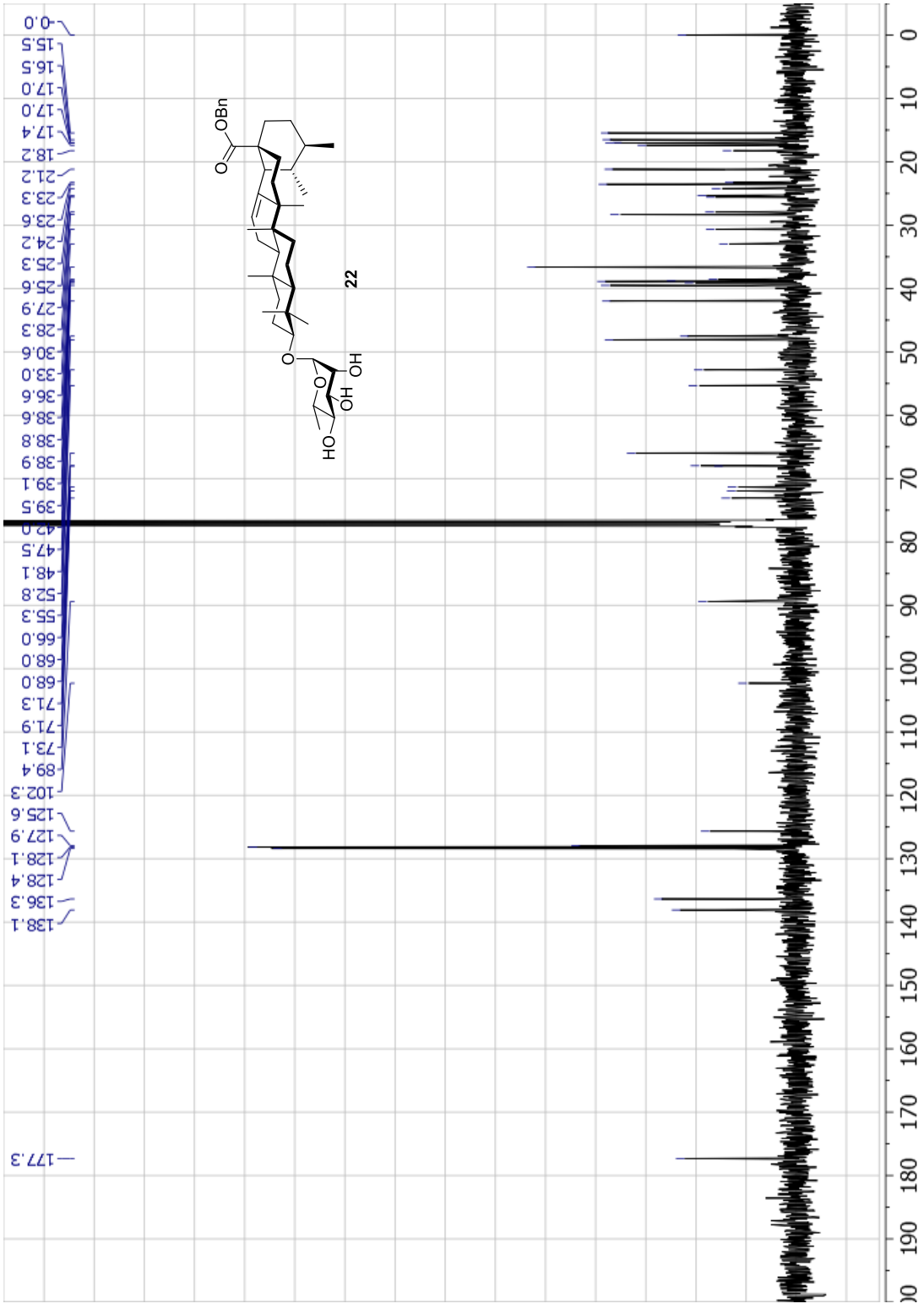
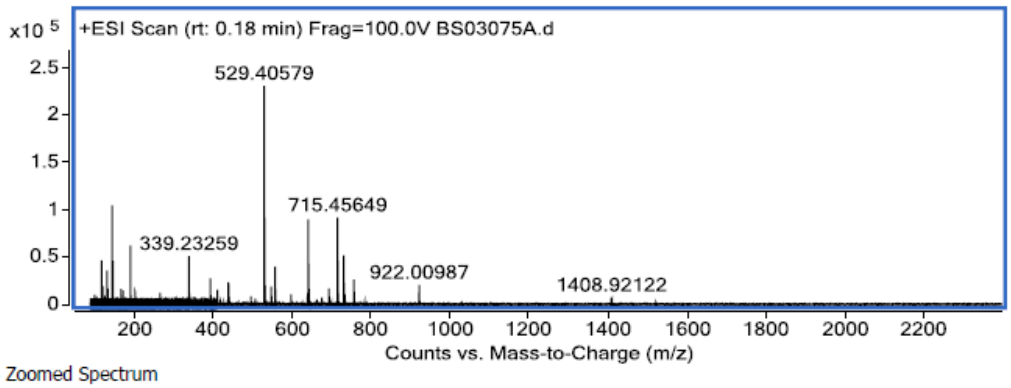


Figure S36. HRMS spectra of **22**

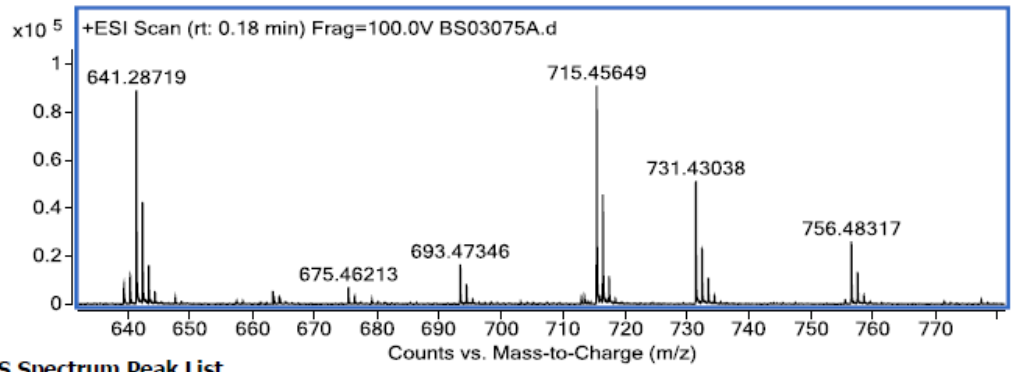
Rapport de masse exacte

Data File	BS03075A	**Sample Name**	BS03075A
Sample Type	Sample	**Position**	P1-E3
Analysis Date	5/21/2019	**User Name**	KG ETB
Acq Method	ESI_POS_DI.m	**InstrumentName**	TOF 6224
Comment			

MS Spectrum

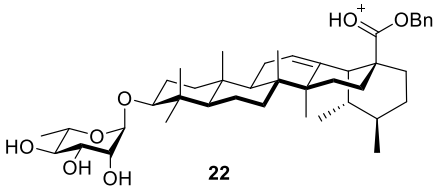


MS Zoomed Spectrum



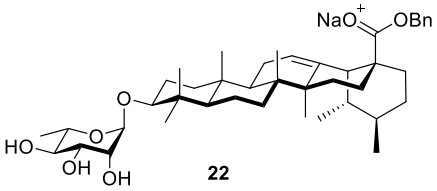
MS Spectrum Peak List

Ion	Formula	Abund	*Expe. m/z*	*Calc. m/z*	Diff(ppm)
(M+H)+	C43 H64 O7	N/A	693.47346	693.47248	-1.41
(M+Na)+	C43 H64 O7	N/A	715.45649	715.45443	-2.89



22

Chemical Formula: $C_{43}H_{65}O_7^+$
Exact Mass: 693.4725
Molecular Weight: 693.9855



22

Chemical Formula: $C_{43}H_{64}NaO_7^+$
Exact Mass: 715.4544
Molecular Weight: 715.9672

Figure S37. ^{1}H NMR spectrum of **7** ($CD_3OD/CDCl_3$ 1:1, 400 MHz)

Figure S38. ^{13}C NMR spectra of **7** ($CD_3OD/CDCl_3$ 1:1, 100 MHz)

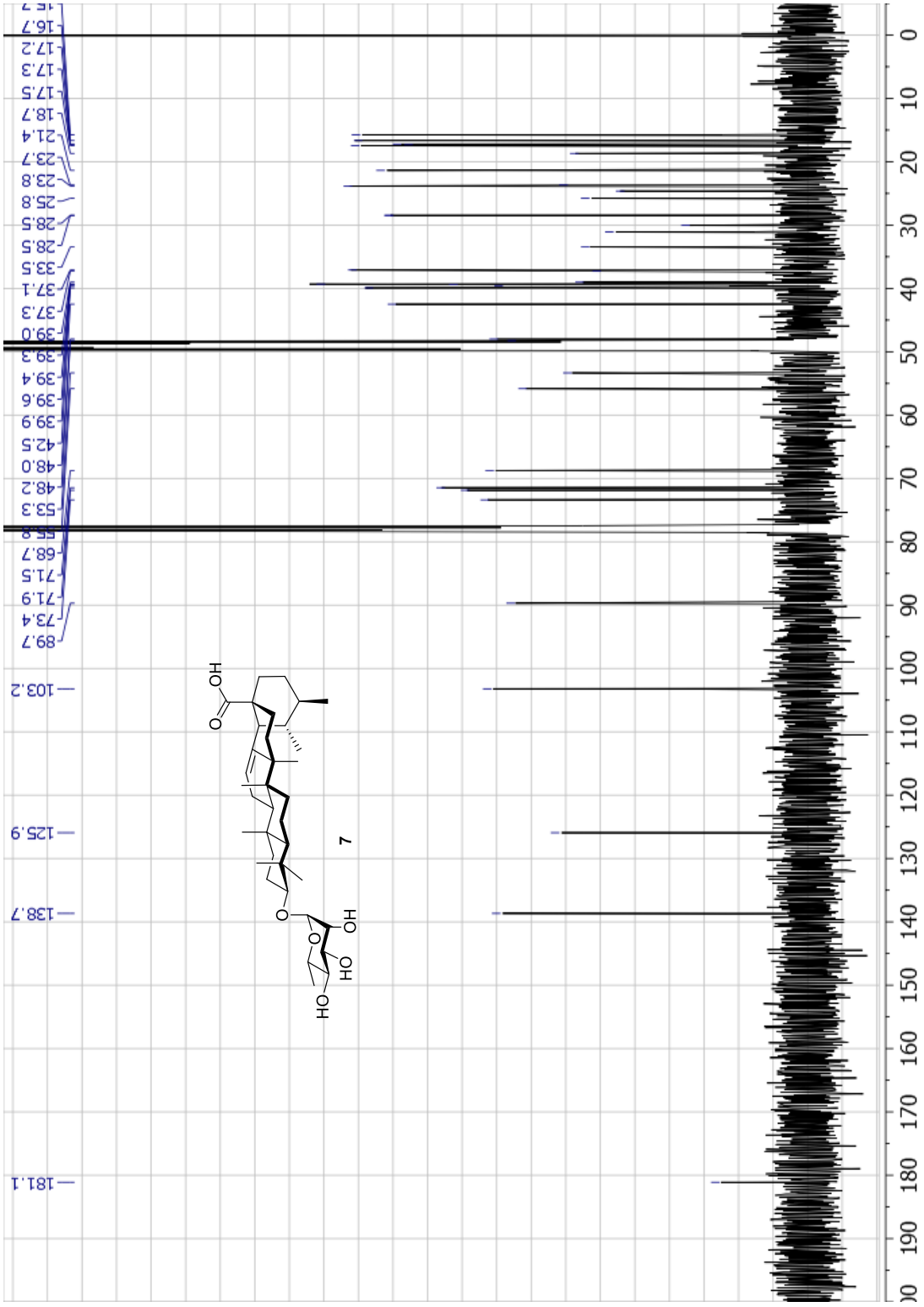
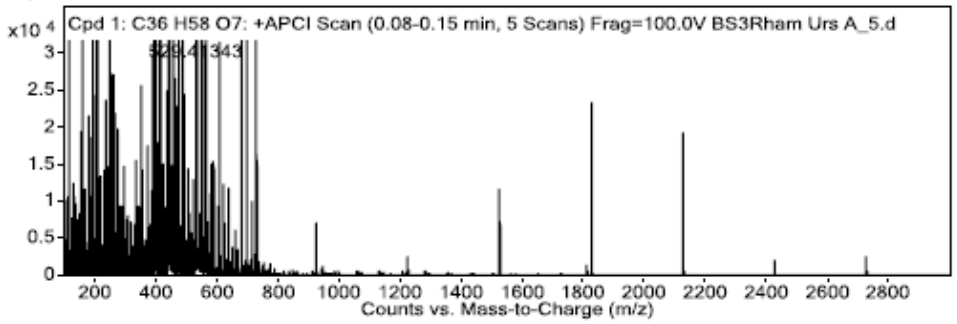


Figure S39. HRMS spectra of **7**

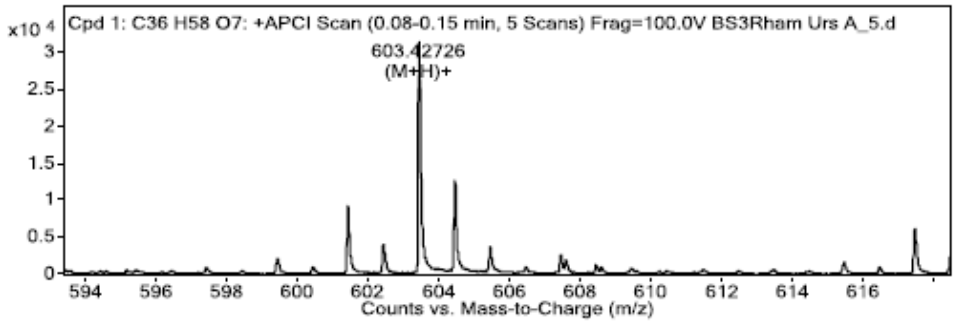
Rapport de masse exacte

Data File	BS3Rham Urs A_5.d	**Sample Name**	BS3Rham Urs A
Sample Type	Sample	**Position**	P1-C7
Analysis Date	9/6/2019 9:22:10 AM	**User Name**	lm
Acq Method	APCI_POS_DI.m	**InstrumentName**	TOF 6224
Comment			

MS Spectrum

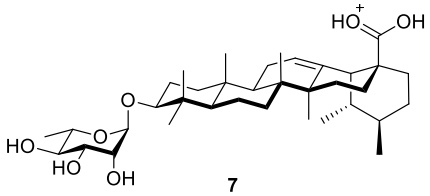


MS Zoomed Spectrum



MS Spectrum Peak List

Ion	Formula	Abund	*Expe. m/z*	*Calc. m/z*	Diff(ppm)
		1659762.15	529.41343		
(M+H)+	C36H58O7	31522.25	603.42726	603.42553	-2.86



7

Chemical Formula: $C_{36}H_{59}O_7^+$
Exact Mass: 603,4255
Molecular Weight: 603,8489

Figure S40. ^{1}H NMR spectrum of **23** ($CDCl_3$, 400 MHz)

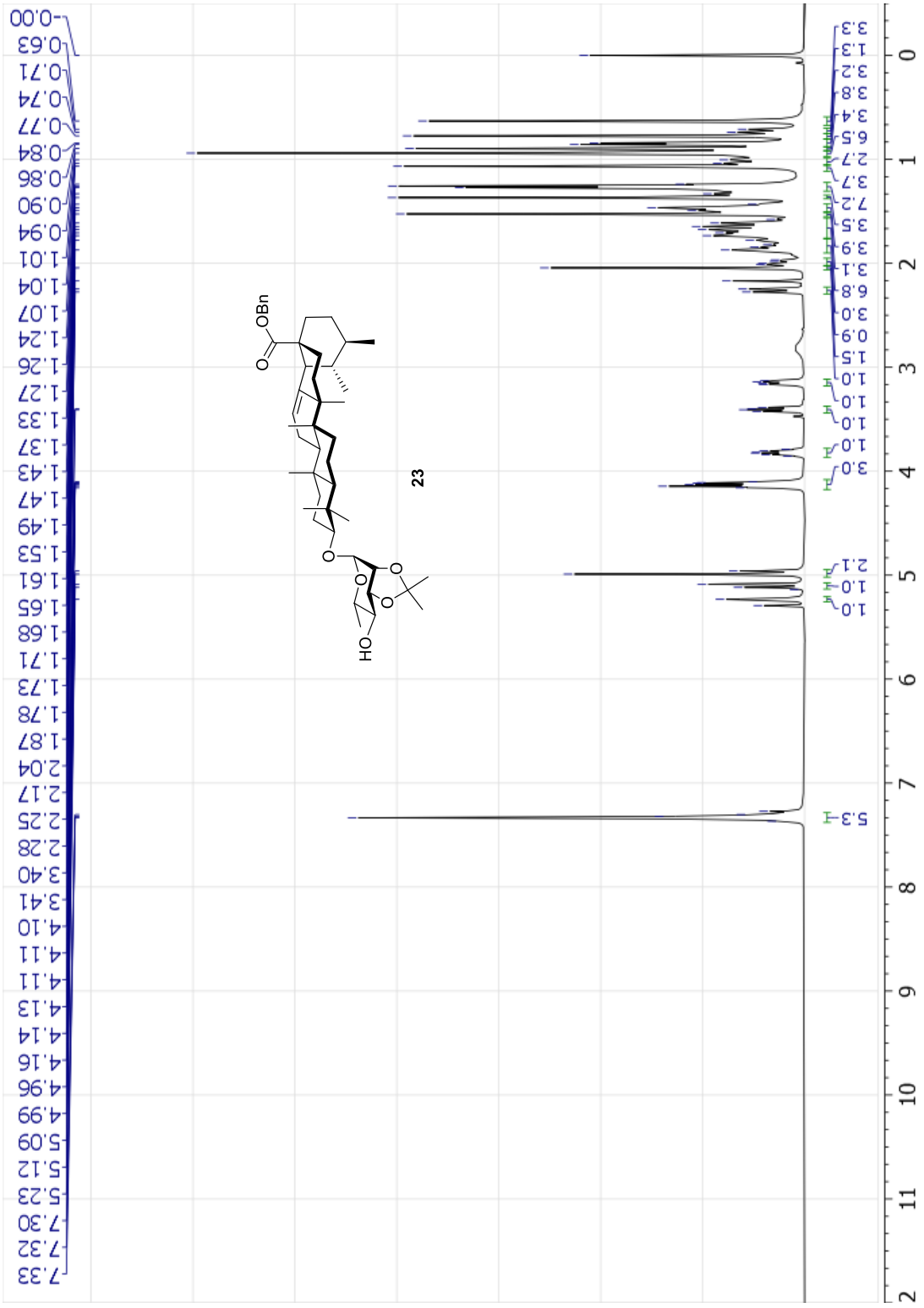


Figure S41. ^{13}C NMR spectra of **23** ($CDCl_3$, 100 MHz)

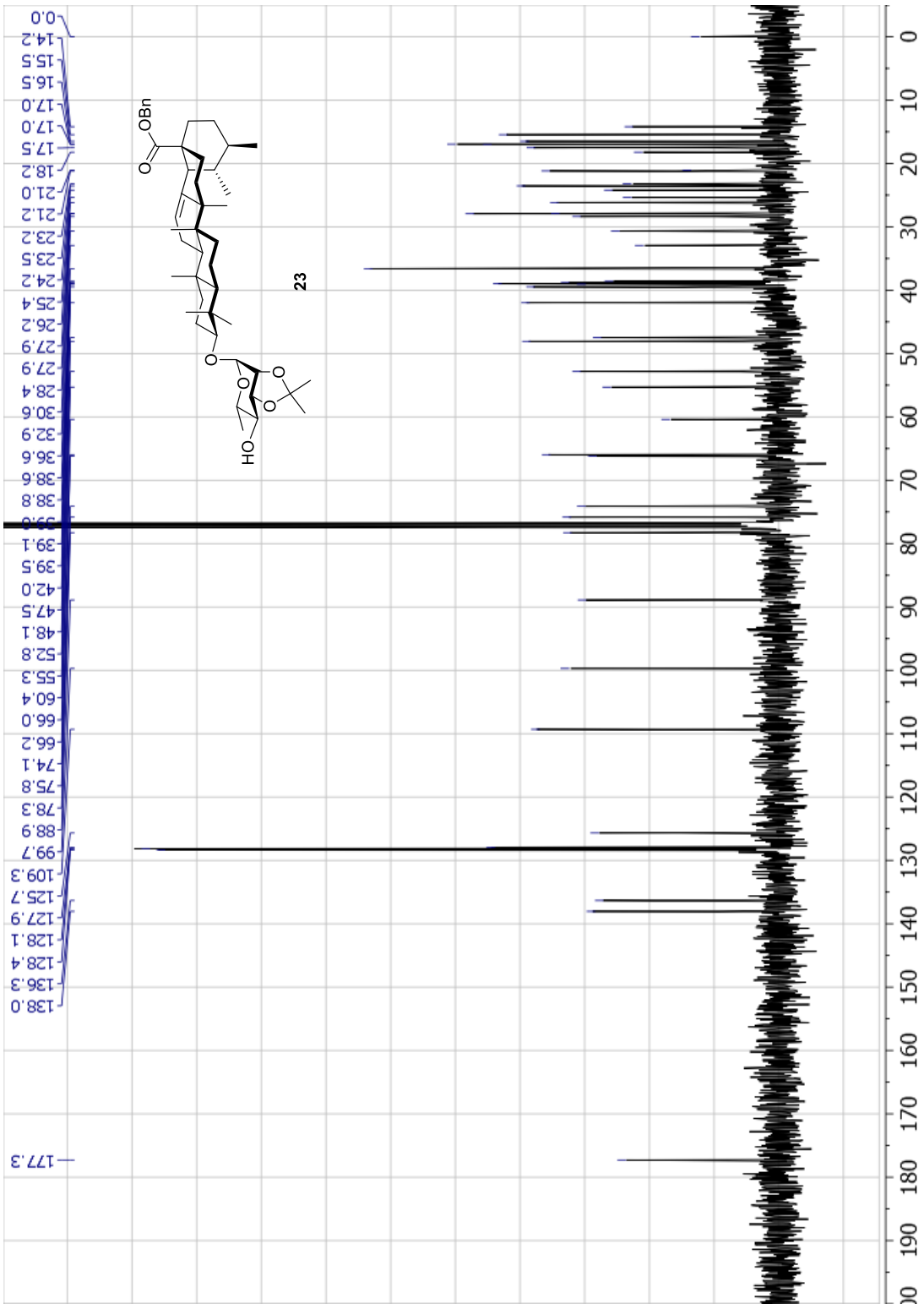
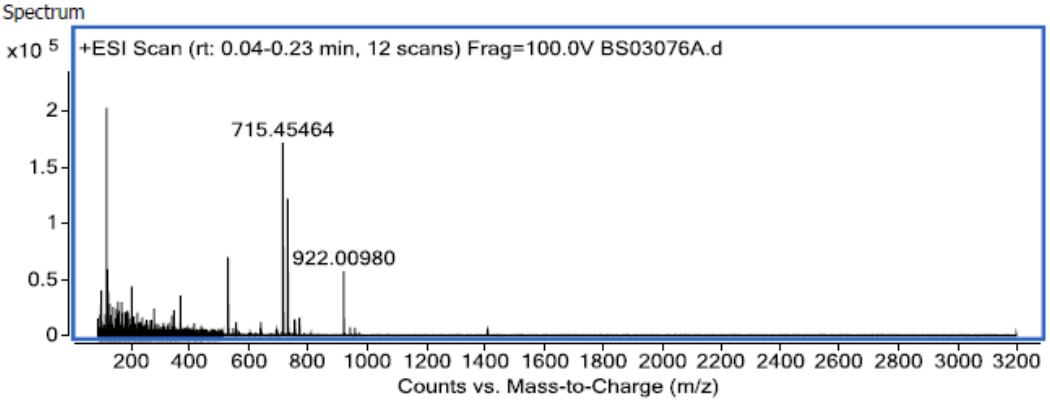


Figure S42. HRMS spectra of **23**

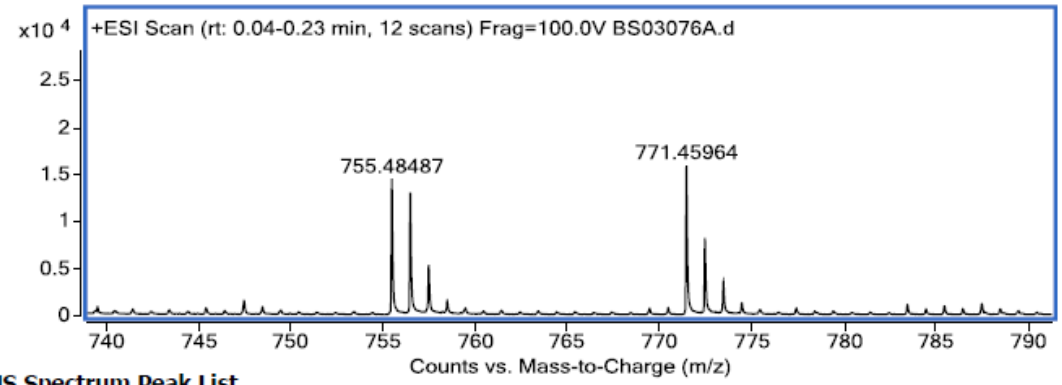
Rapport de masse exacte

Data File	BS03076A	**Sample Name**	BS03076A
Sample Type	Sample	**Position**	P1-E3
Analysis Date	5/21/2019	**User Name**	KG ETB
Acq Method	ESI_POS_DI.m	**InstrumentName**	TOF 6224
Comment			

MS Spectrum

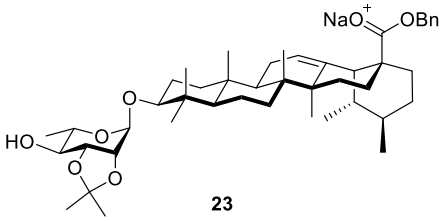


MS Zoomed Spectrum



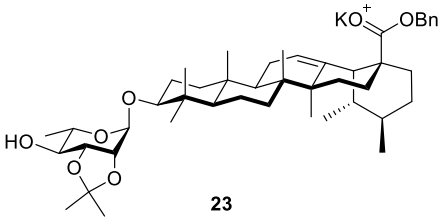
MS Spectrum Peak List

Ion	Formula	Abund	*Expe. m/z*	*Calc. m/z*	Diff(ppm)
(M+Na)+	C46 H68 O7	N/A	755.48487	755.48573	1.13
(M+K)+	C46 H68 O7	N/A	771.45964	771.45966	0.03



23

Chemical Formula: $C_{46}H_{68}NaO_7^+$
Exact Mass: 755.4857
Molecular Weight: 756.0322



23

Chemical Formula: $C_{46}H_{68}KO_7^+$
Exact Mass: 771.4597
Molecular Weight: 772.1408

Figure S43. ^{1}H NMR spectrum of **24** ($CDCl_3$, 400 MHz)

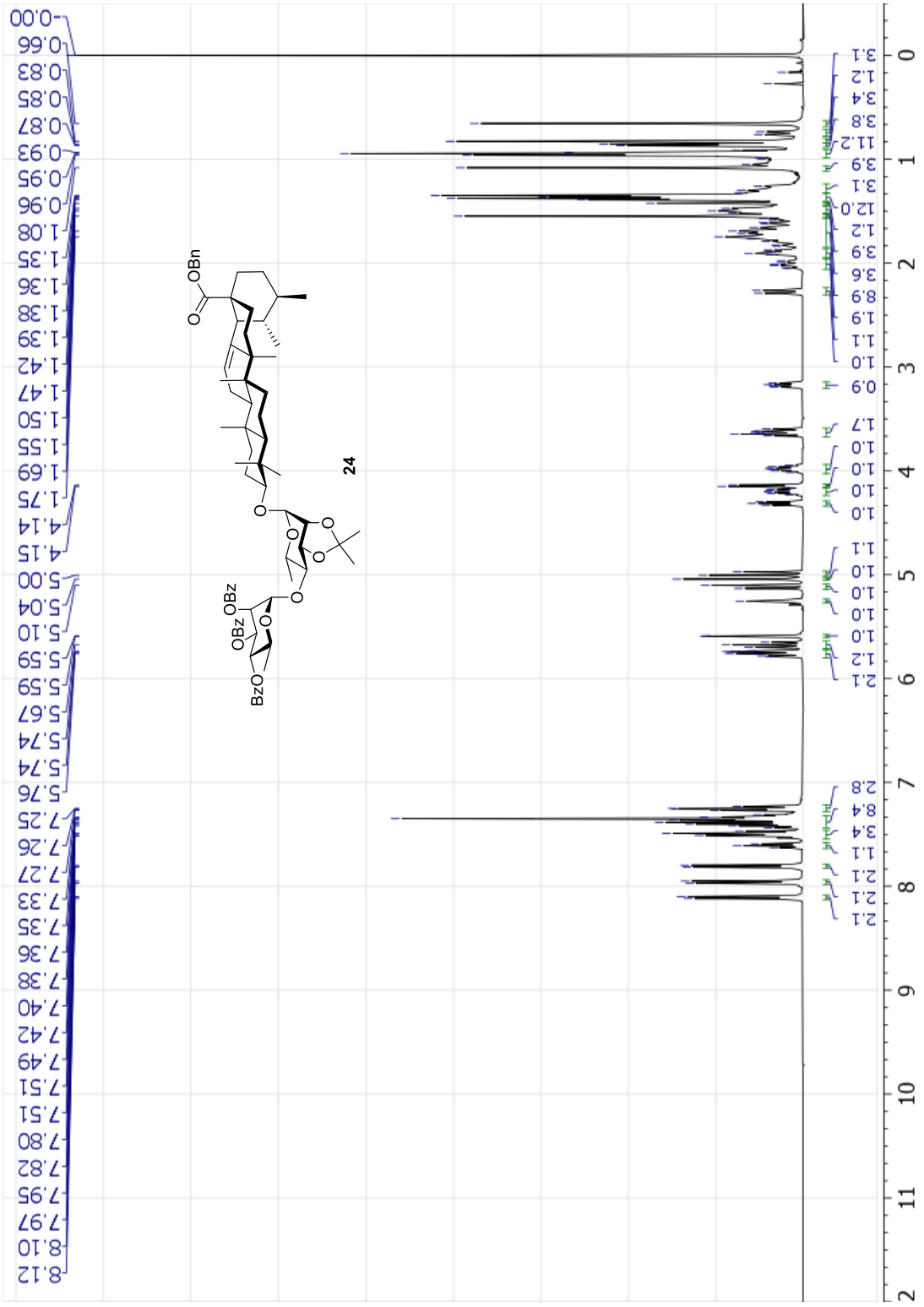


Figure S44. ^{13}C NMR spectra of **24** ($CDCl_3$, 100 MHz)

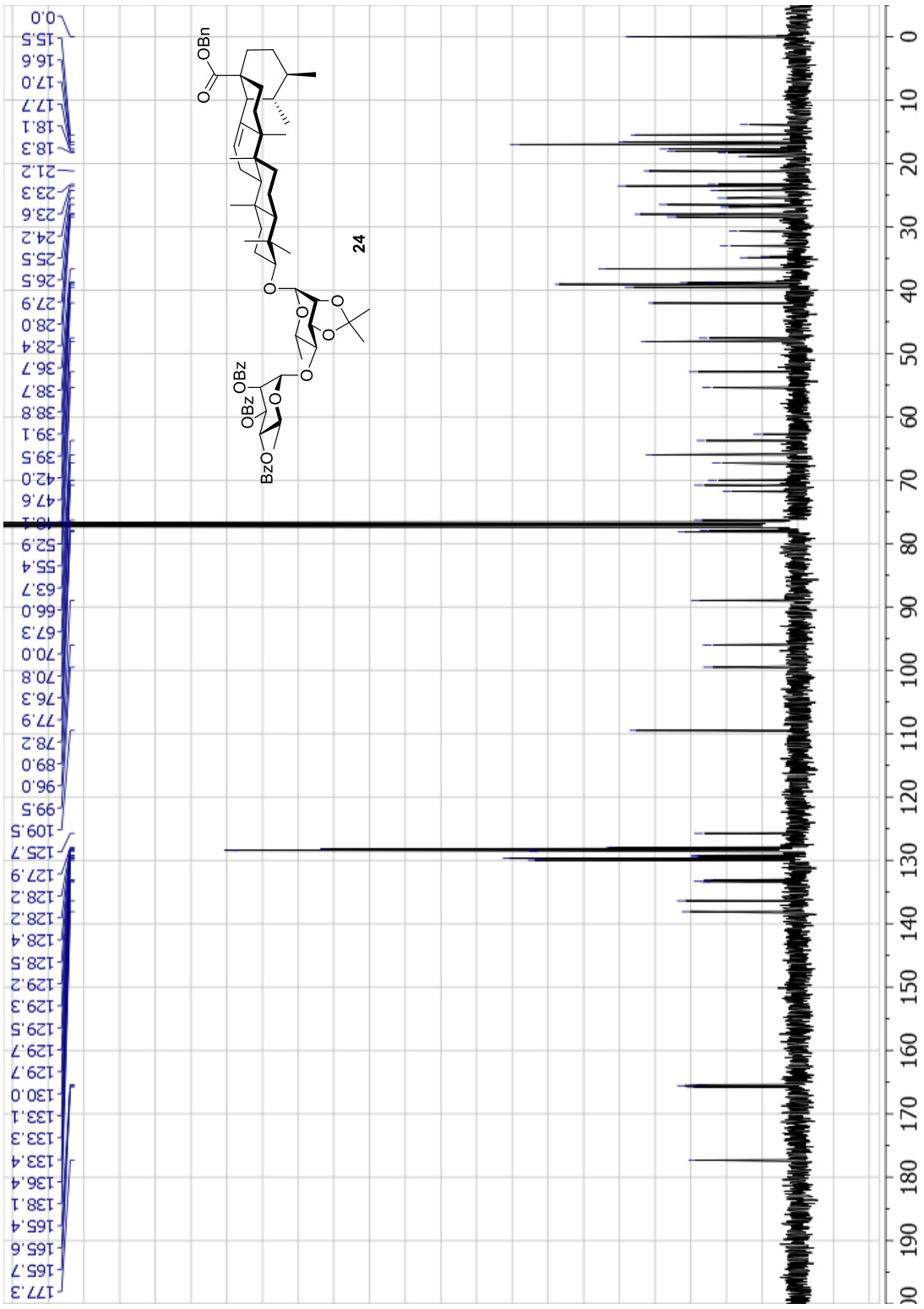
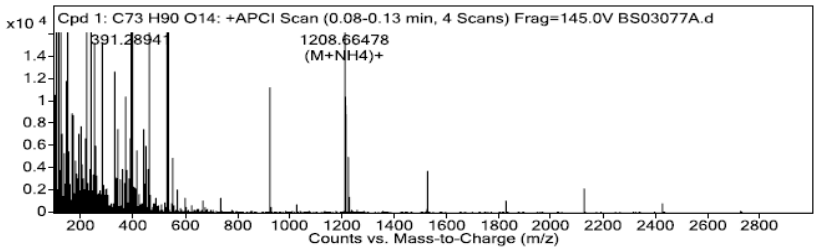


Figure S45. HRMS spectra of **24**

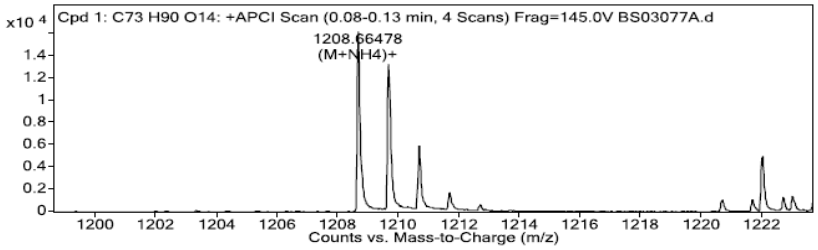
Rapport de masse exacte

Data File	BS03077A.d	**Sample Name**	BS03077A
Sample Type	Sample	**Position**	P2-C5
Analysis Date	3/21/2018 11:27:11 AM	**User Name**	KG
Acq Method	APCI_POS_DI.m	**InstrumentName**	TOF 6224
Comment			

MS Spectrum



MS Zoomed Spectrum



MS Spectrum Peak List

Ion	Formula	Abund	*Expe. m/z*	*Calc. m/z*	Diff(ppm)
		236071.89	391.28941		
(M+NH4)+	C73H90O14	16633.2	1208.66478	1208.66688	1.74

Centre Regional de Spectrometrie de Masse
Universite de Montreal

Sous la supervision de Dr. Furtos

Page 1 of 1

24

Chemical Formula: $C_{73}H_{94}NO_{14}^{+}$
Exact Mass: 1208.6669
Molecular Weight: 1209.5475

Figure S46. ^{1}H NMR spectrum of **25** ($CDCl_3$, 400 MHz)

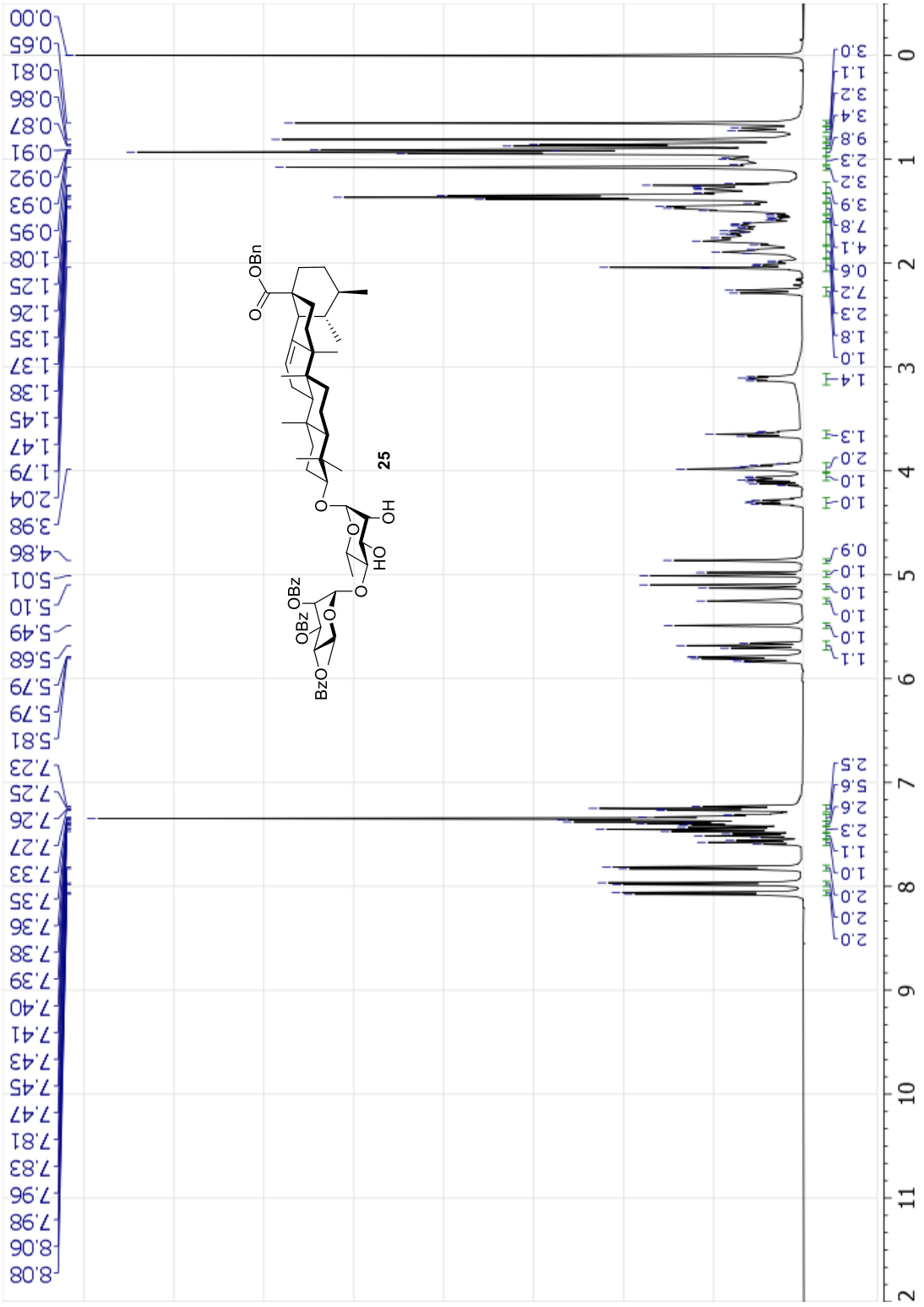


Figure S47. ^{13}C NMR spectra of **25** ($CDCl_3$, 100 MHz)

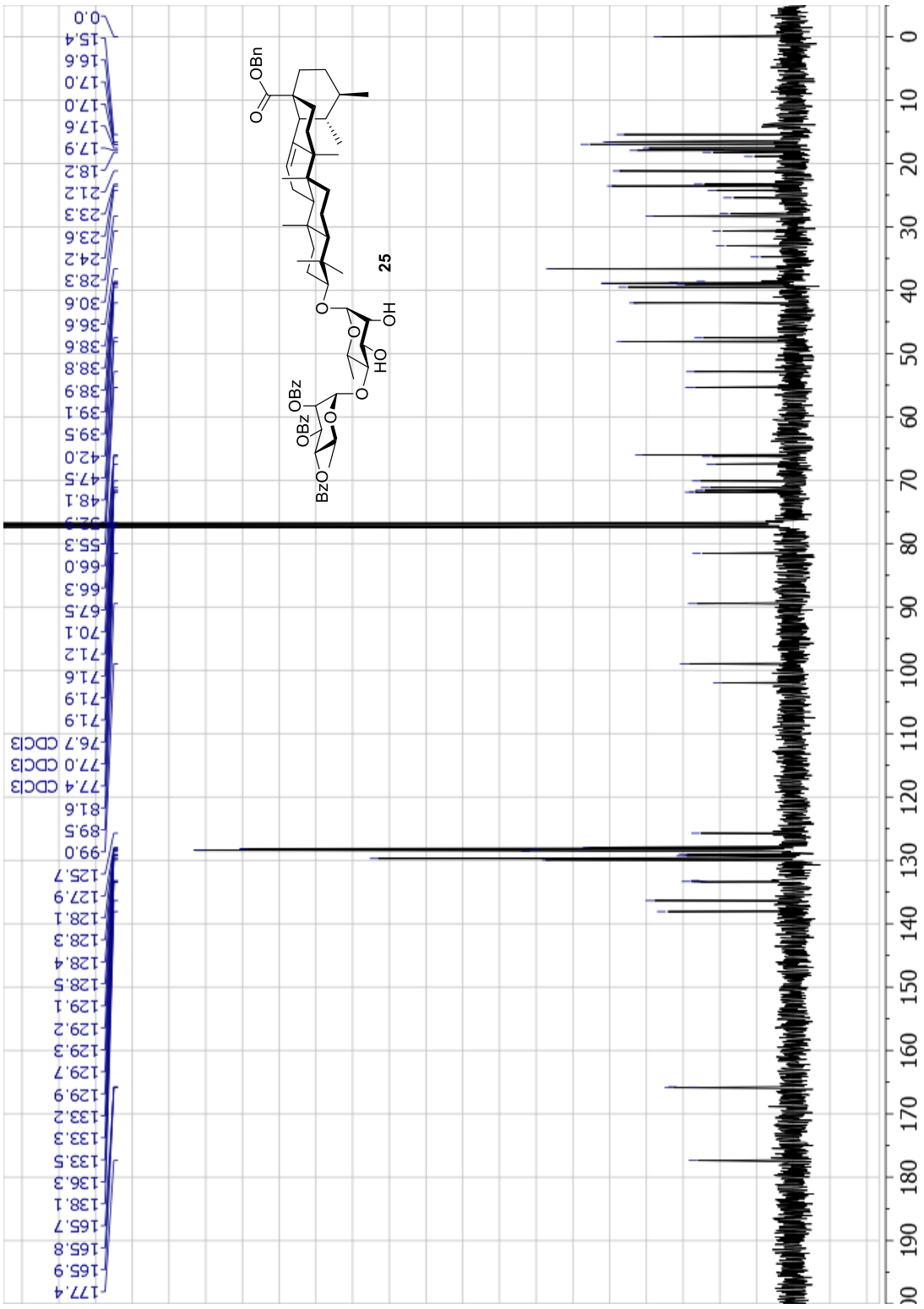
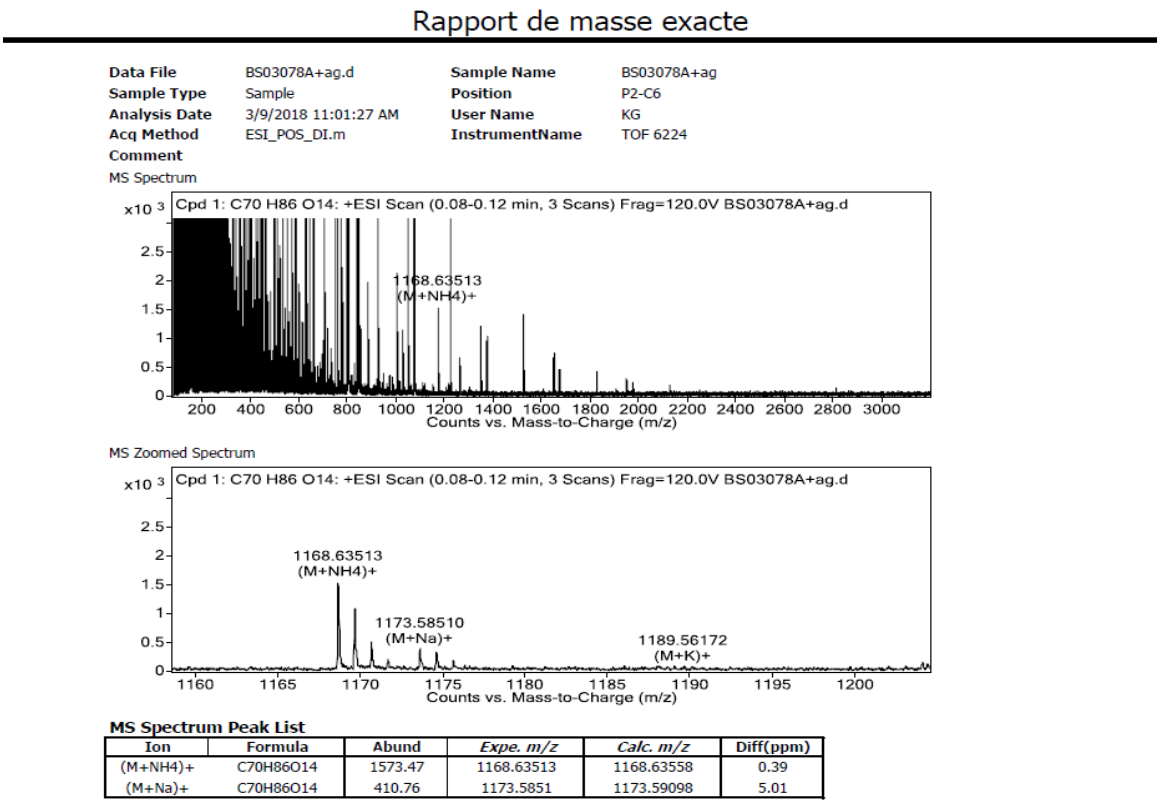
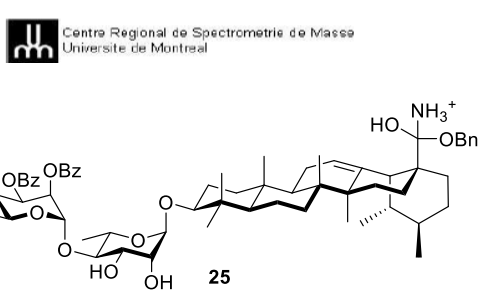


Figure S48. HRMS spectra of **25**

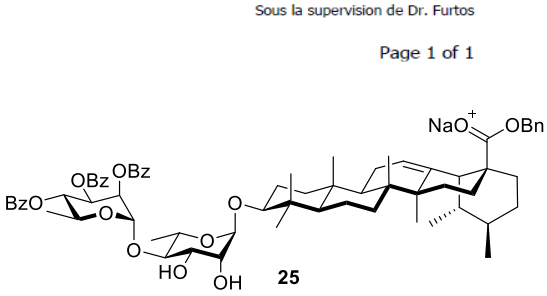


MS Spectrum Peak List

Ion	Formula	Abund	*Expe. m/z*	*Calc. m/z*	Diff(ppm)
(M+NH4)+	C70H86O14	1573.47	1168.63513	1168.63558	0.39
(M+Na)+	C70H86O14	410.76	1173.5851	1173.59098	5.01



Chemical Formula: $C_{70}H_{90}NO_{14}^{+}$
Exact Mass: 1168.6356
Molecular Weight: 1169.4825



Chemical Formula: $C_{70}H_{86}NaO_{14}^{+}$
Exact Mass: 1173.5910
Molecular Weight: 1174.4332

Figure S49. ^{1}H NMR spectrum of **26** ($CDCl_3$, 400 MHz)

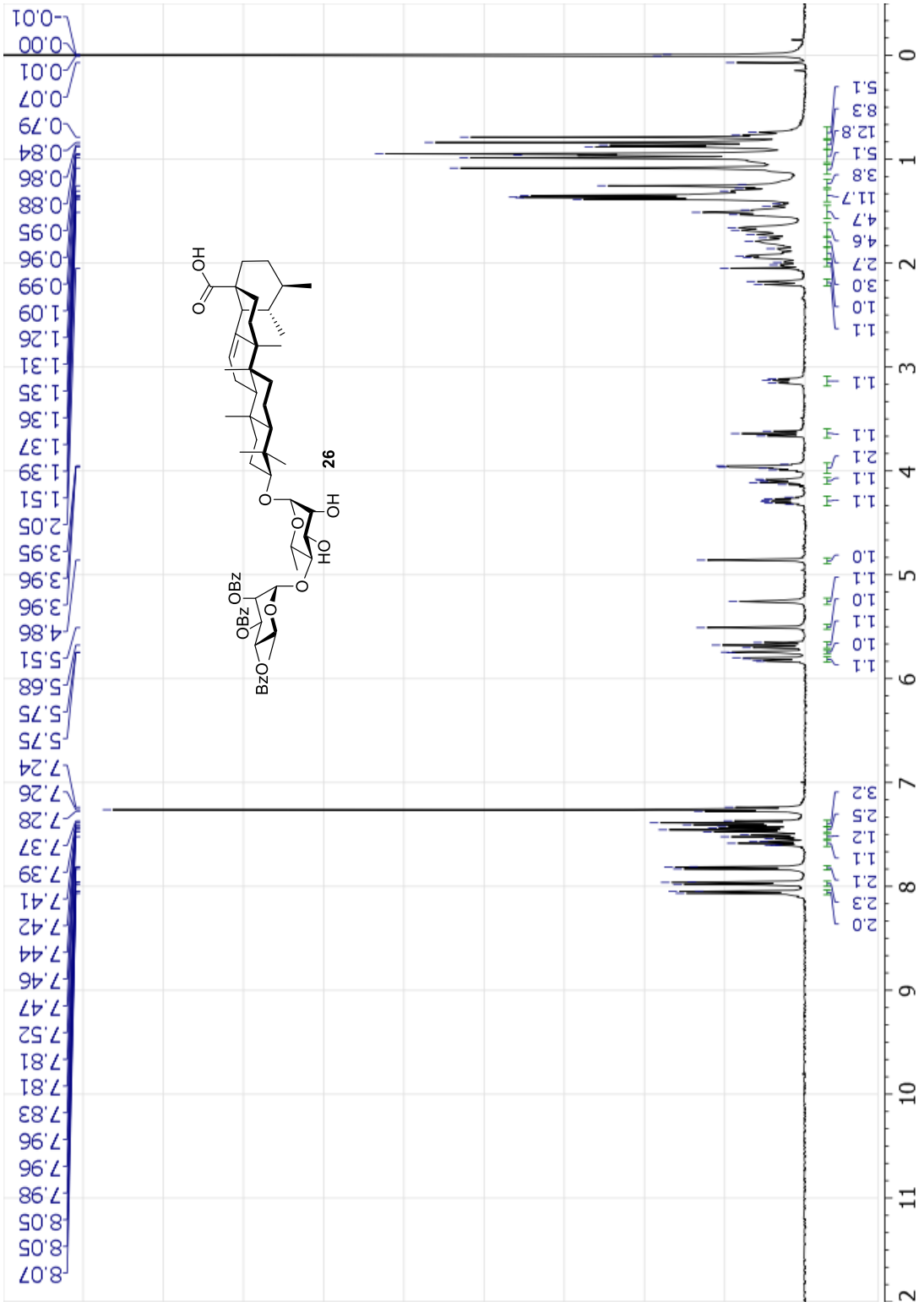


Figure S50. ^{13}C NMR spectra of **26** ($CDCl_3$, 100 MHz)

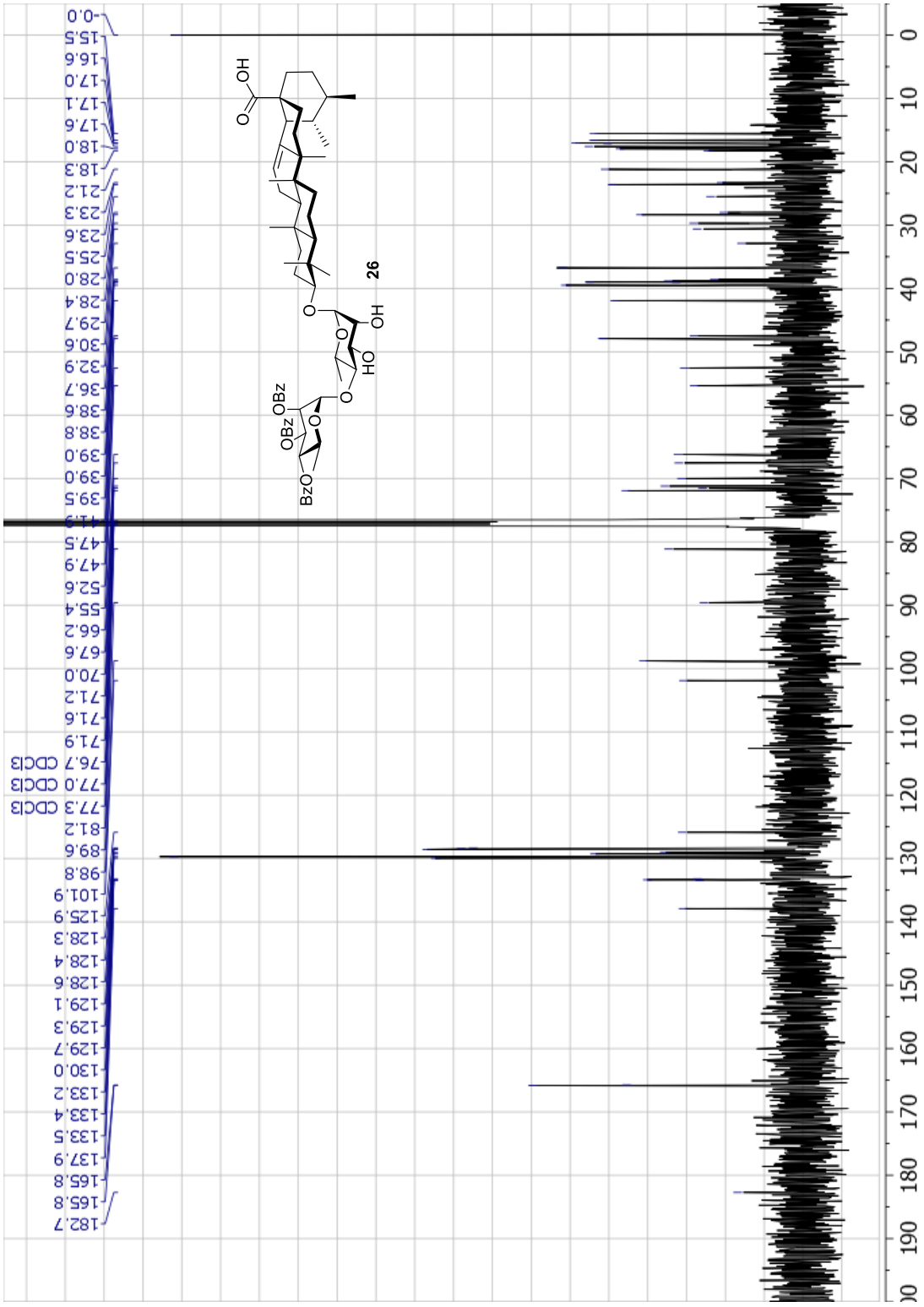
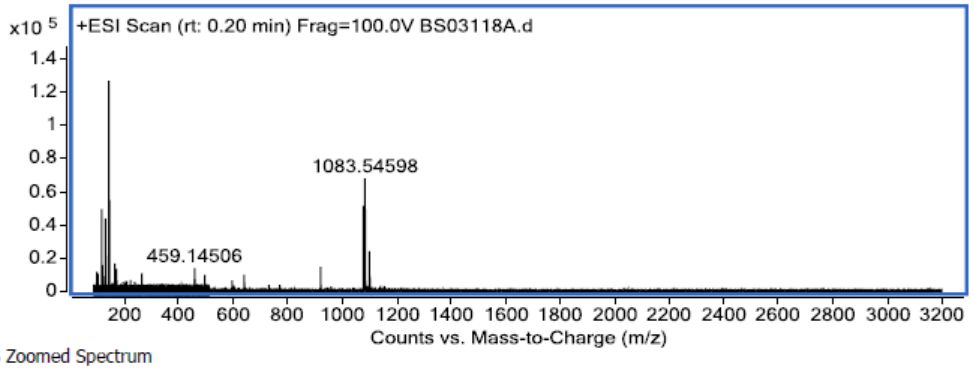


Figure S51. HRMS spectra of **26**

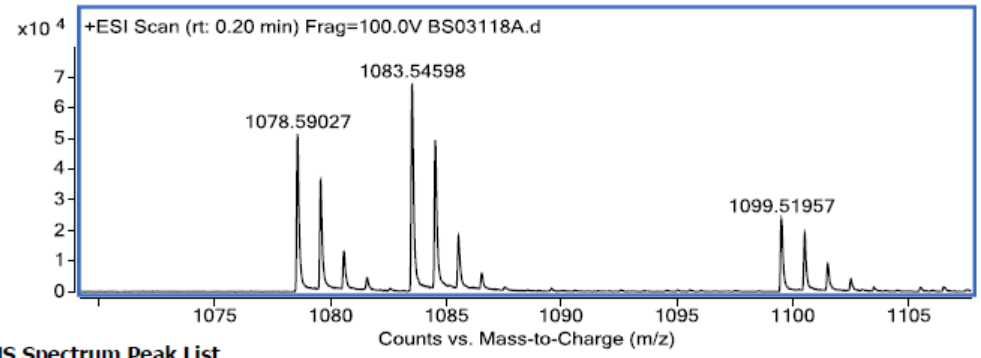
Rapport de masse exacte

Data File	BS03118A	**Sample Name**	BS03118A
Sample Type	Sample	**Position**	P1-E3
Analysis Date	5/21/2019	**User Name**	KG ETB
Acq Method	ESI_POS_DI.m	**InstrumentName**	TOF 6224
Comment			

MS Spectrum



MS Zoomed Spectrum

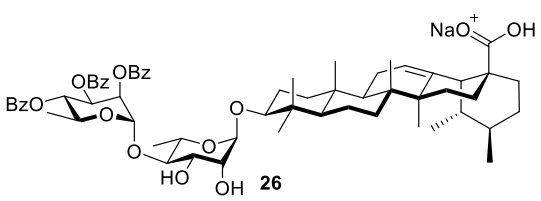


MS Spectrum Peak List

Ion	Formula	Abund	*Expe. m/z*	*Calc. m/z*	Diff(ppm)
(M+NH4)+	C63 H80 O14	N/A	1078.59027	1078.58863	-1.52
(M+Na)+	C63 H80 O14	N/A	1083.54598	1083.54403	-1.8

26

Chemical Formula: $C_{63}H_{84}NO_{14}^{+}$
Exact Mass: 1078.5886
Molecular Weight: 1079.3575



26

Chemical Formula: $C_{63}H_{80}NaO_{14}^{+}$
Exact Mass: 1083.5440
Molecular Weight: 1084.3082

Figure S52. ^{1}H NMR spectrum of **8** ($CD_3OD/CDCl_3$ 1:1, 400 MHz)

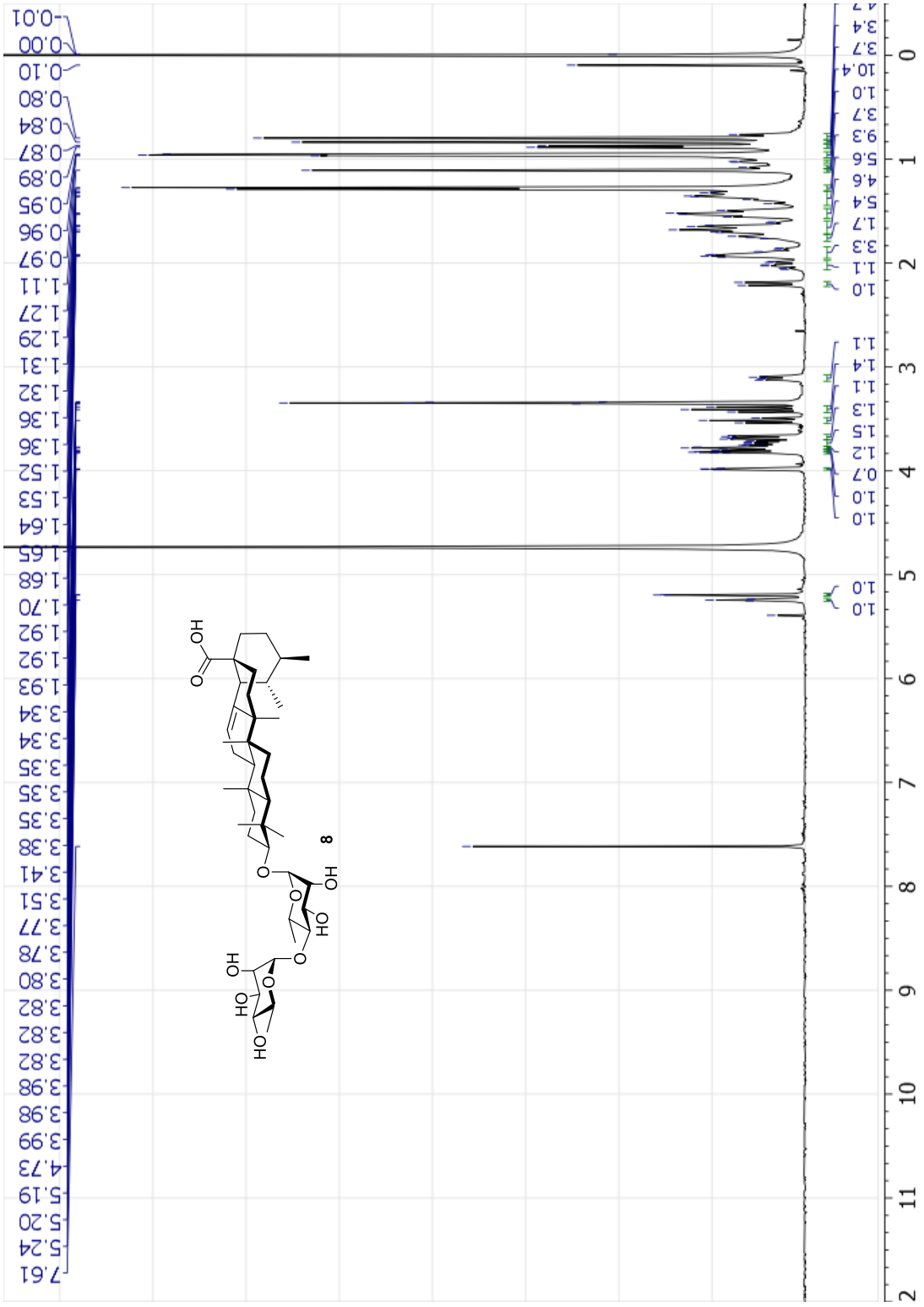


Figure S53. ^{13}C NMR spectra of **8** ($CD_3OD/CDCl_3$ 1:1, 100 MHz)

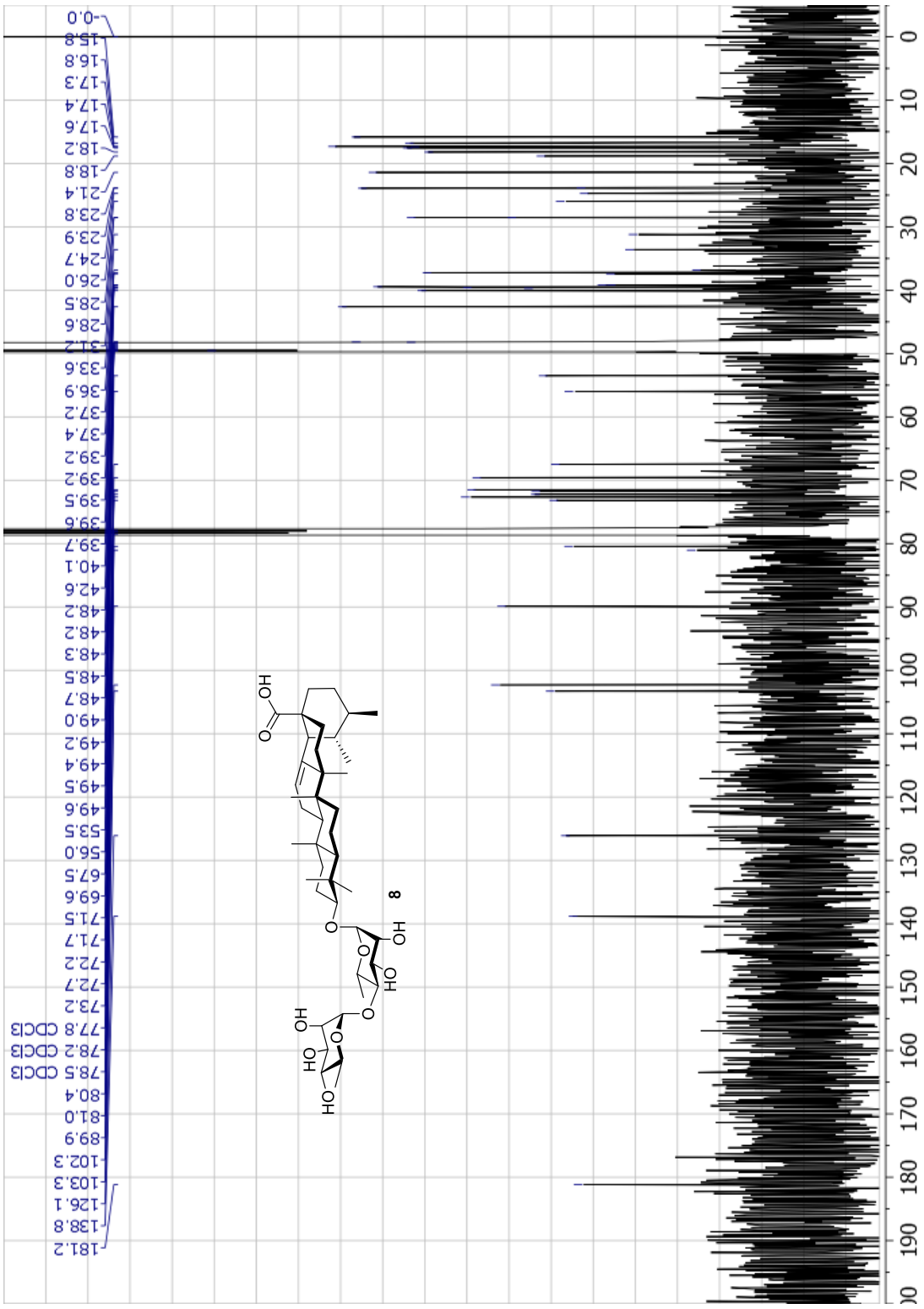
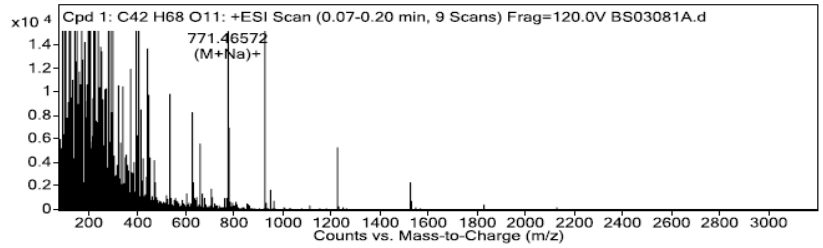


Figure S54. HRMS spectra of **8**

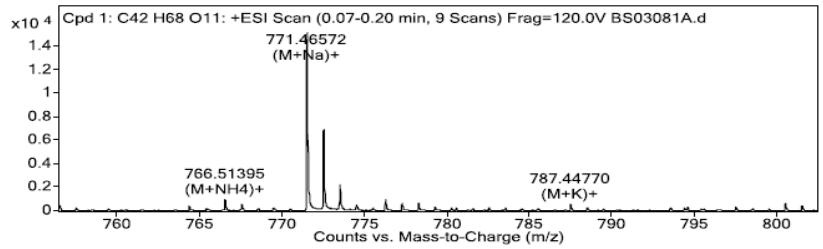
Rapport de masse exacte

Data File	BS03081A.d	**Sample Name**	BS03081A
Sample Type	Sample	**Position**	P2-C9
Analysis Date	3/8/2018 12:13:29 PM	**User Name**	KG
Acq Method	ESI_POS_DI.m	**InstrumentName**	TOF 6224
Comment			

MS Spectrum



MS Zoomed Spectrum



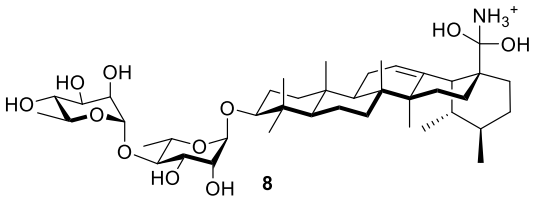
MS Spectrum Peak List

Ion	Formula	Abund	*Expe. m/z*	*Calc. m/z*	Diff(ppm)
(M+NH4)+	C42H68O11	1018.88	766.51395	766.50999	-5.17
(M+Na)+	C42H68O11	15200.44	771.46572	771.46538	-0.44

Centre Regional de Spectrometrie de Masse
Universite de Montreal

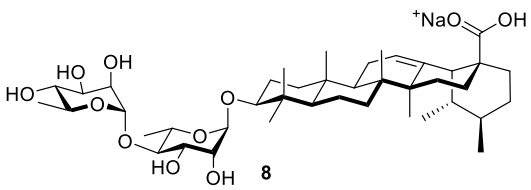
Sous la supervision de Dr. Furtos

Page 1 of 1



8

Chemical Formula: $C_{42}H_{72}NO_{11}^{+}$
Exact Mass: 766.5100
Molecular Weight: 767.0335



8

Chemical Formula: $C_{42}H_{68}NaO_{11}^{+}$
Exact Mass: 771.4654
Molecular Weight: 771.9842

Figure S55. ^{1}H NMR spectrum of **27** ($CDCl_3$, 400 MHz)

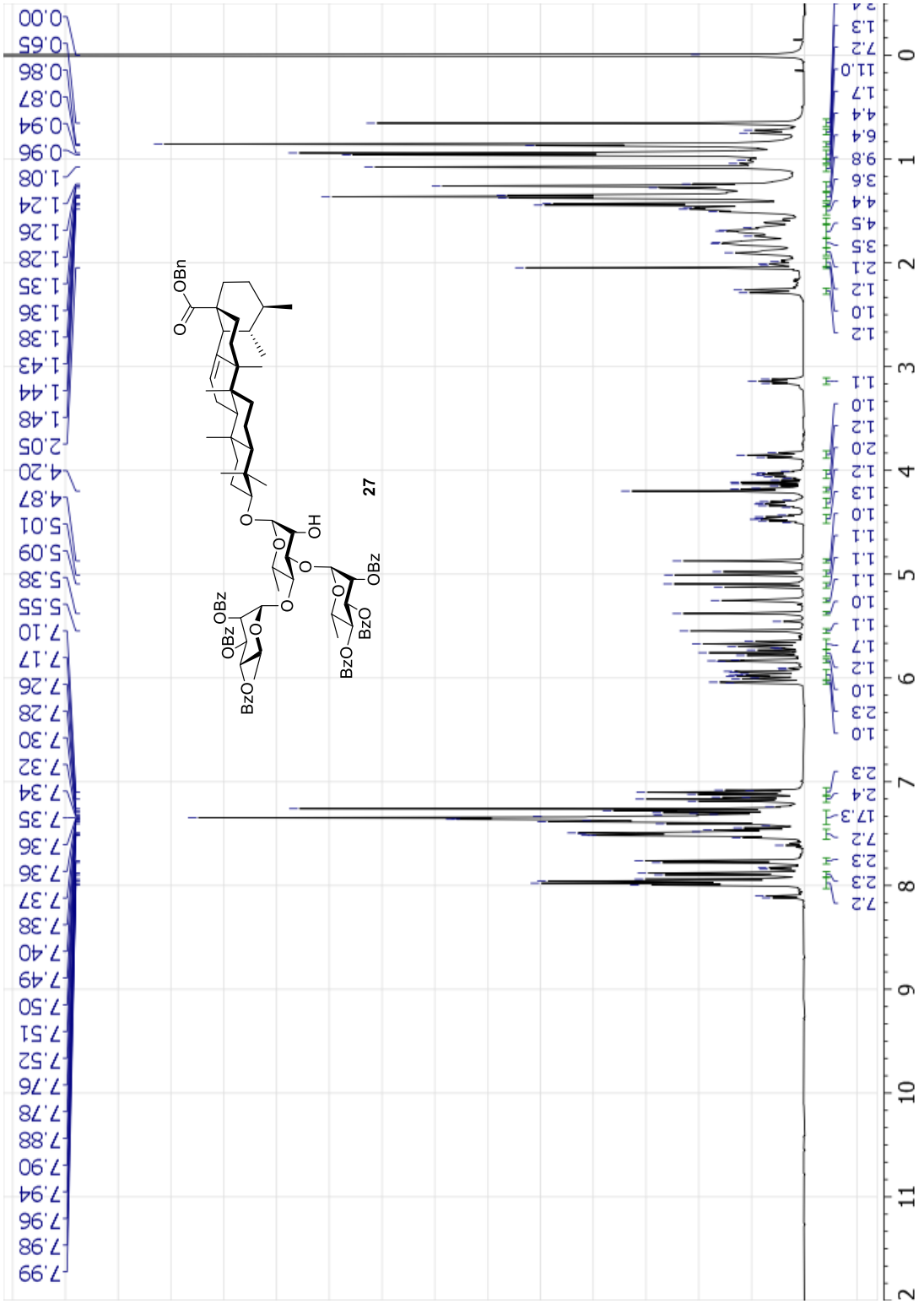


Figure S56. ^{13}C NMR spectra of **27** ($CDCl_3$, 100 MHz)

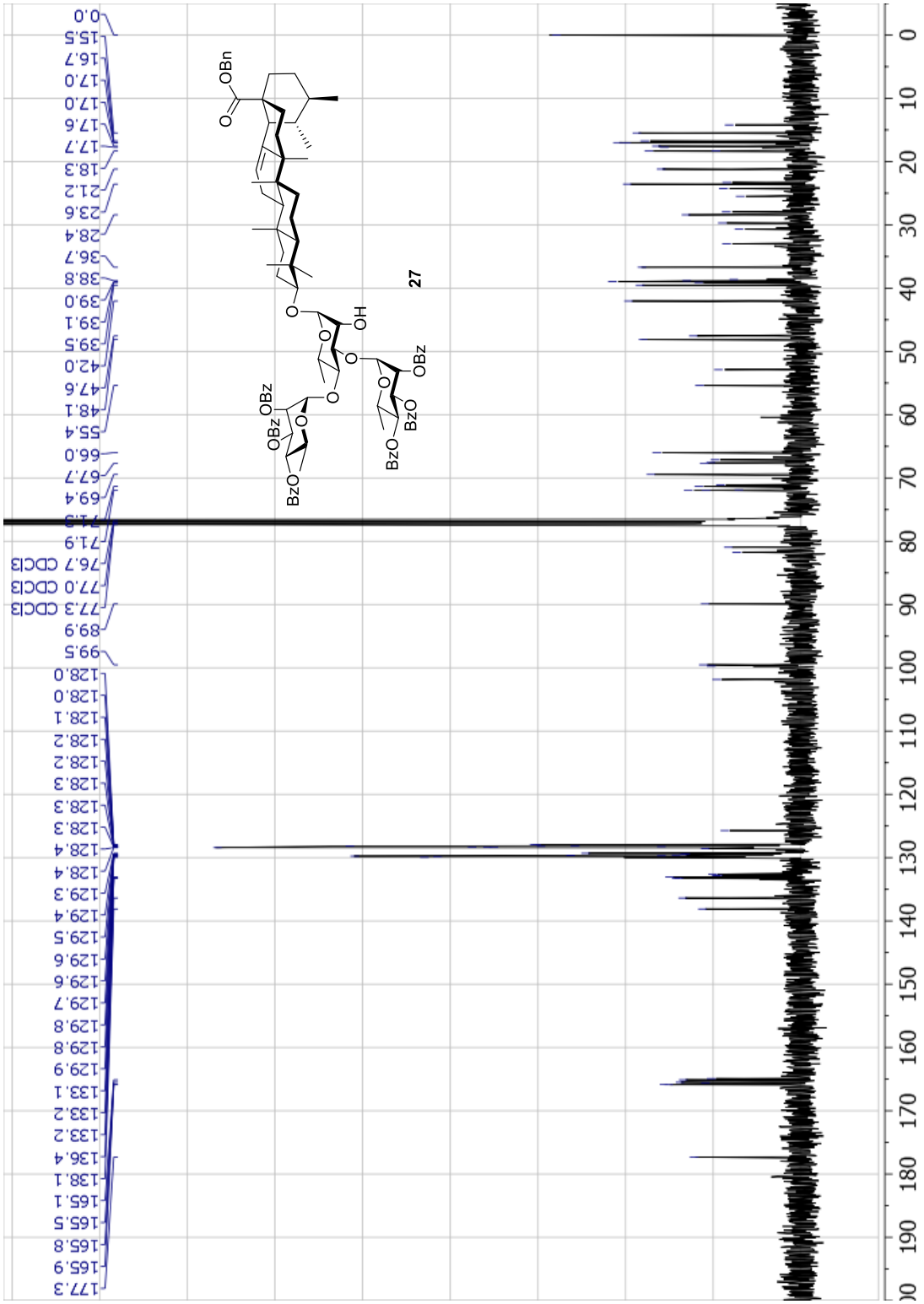
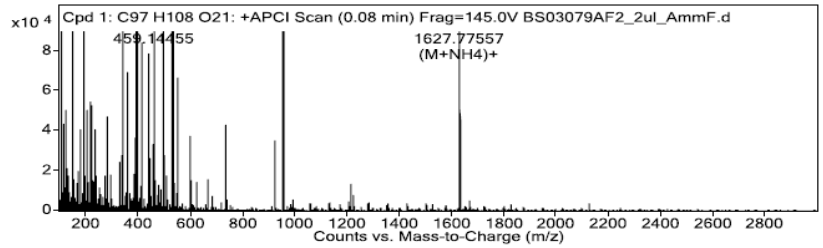


Figure S57. HRMS spectra of **27**

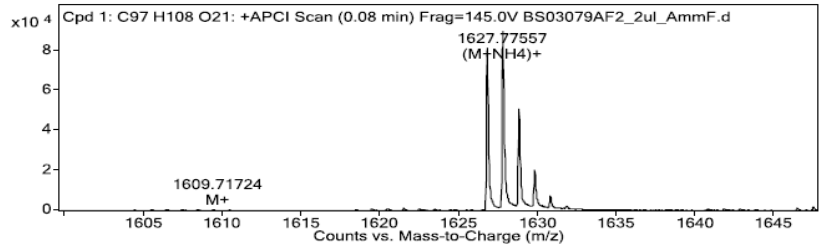
Rapport de masse exacte

Data File	BS03079AF2_2ul_AmmF.d	**Sample Name**	BS03079AF2_2ul_AmmF
Sample Type	Sample	**Position**	P2-C8
Analysis Date	3/23/2018 11:00:46 AM	**User Name**	KG
Acq Method	APCI_POS_DI.m	**InstrumentName**	TOF 6224
Comment			

MS Spectrum



MS Zoomed Spectrum



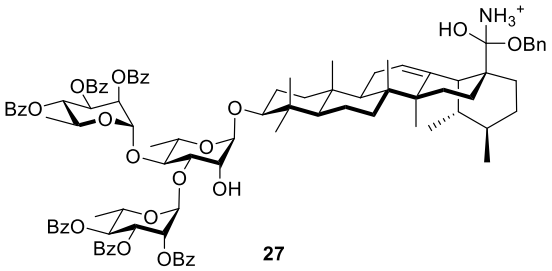
MS Spectrum Peak List

Ion	Formula	Abund	*Expe. m/z*	*Calc. m/z*	Diff(ppm)
(M+NH4)+	C97H108O21	83266.37	1626.77249	1626.77214	-0.22
(M+Na)+	C97H108O21	1062.56	1632.74438	1632.73093	-8.24

Centre Regional de Spectrometrie de Masse
Universite de Montreal

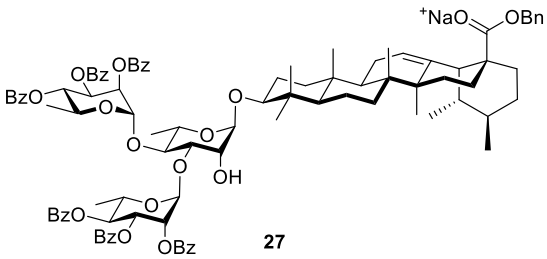
Sous la supervision de Dr. Furtos

Page 1 of 1



27

Chemical Formula: $C_{97}H_{112}NO_{21}^{+}$
Exact Mass: 1626.7721
Molecular Weight: 1627.9485



27

Chemical Formula: $C_{97}H_{108}NaO_{21}^{+}$
Exact Mass: 1631.7275
Molecular Weight: 1632.8992

Figure S58. ^{1}H NMR spectrum of **28** ($CDCl_3$, 400 MHz)

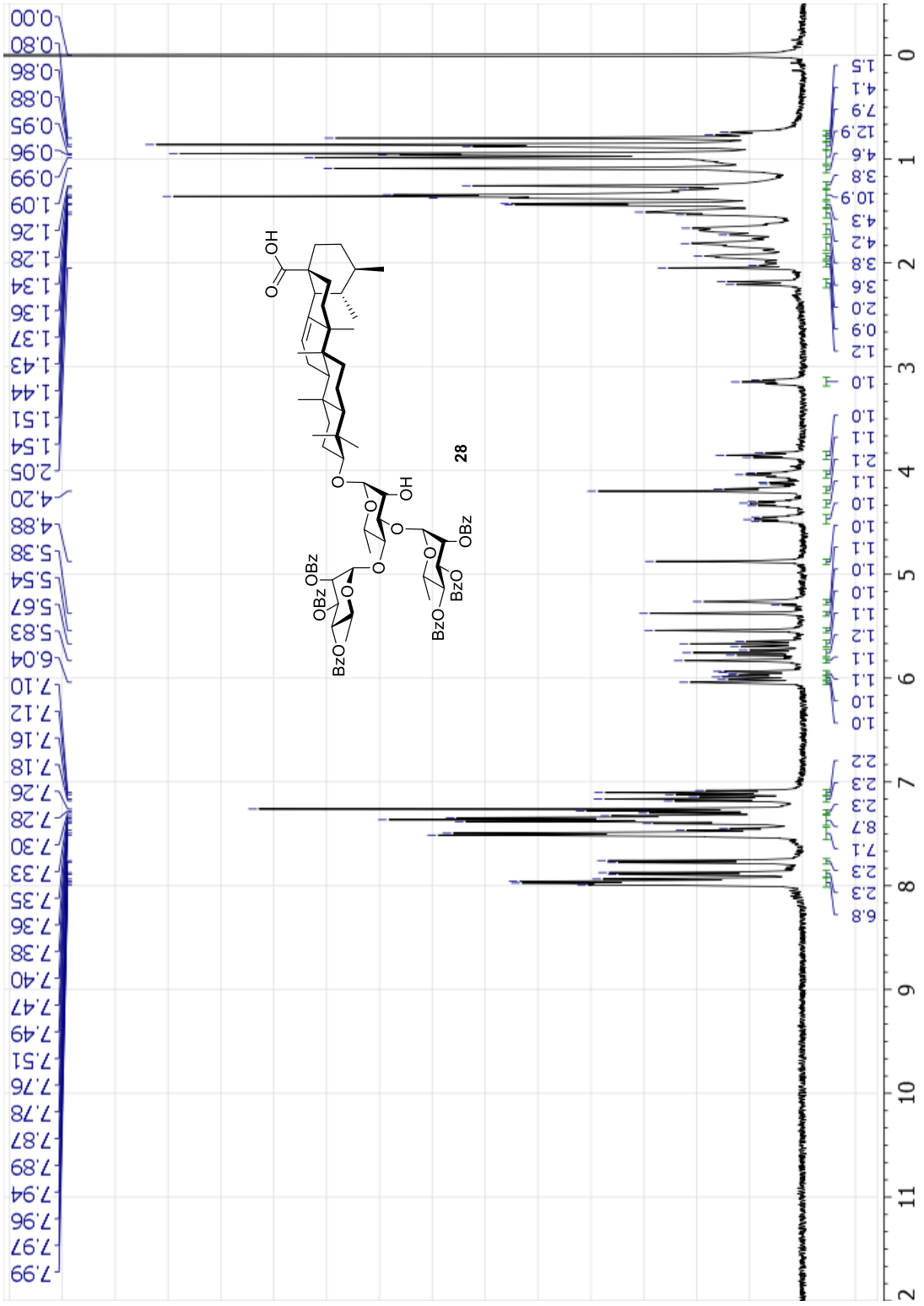


Figure S59. ^{13}C NMR spectrum of **28** ($CDCl_3$, 100 MHz)

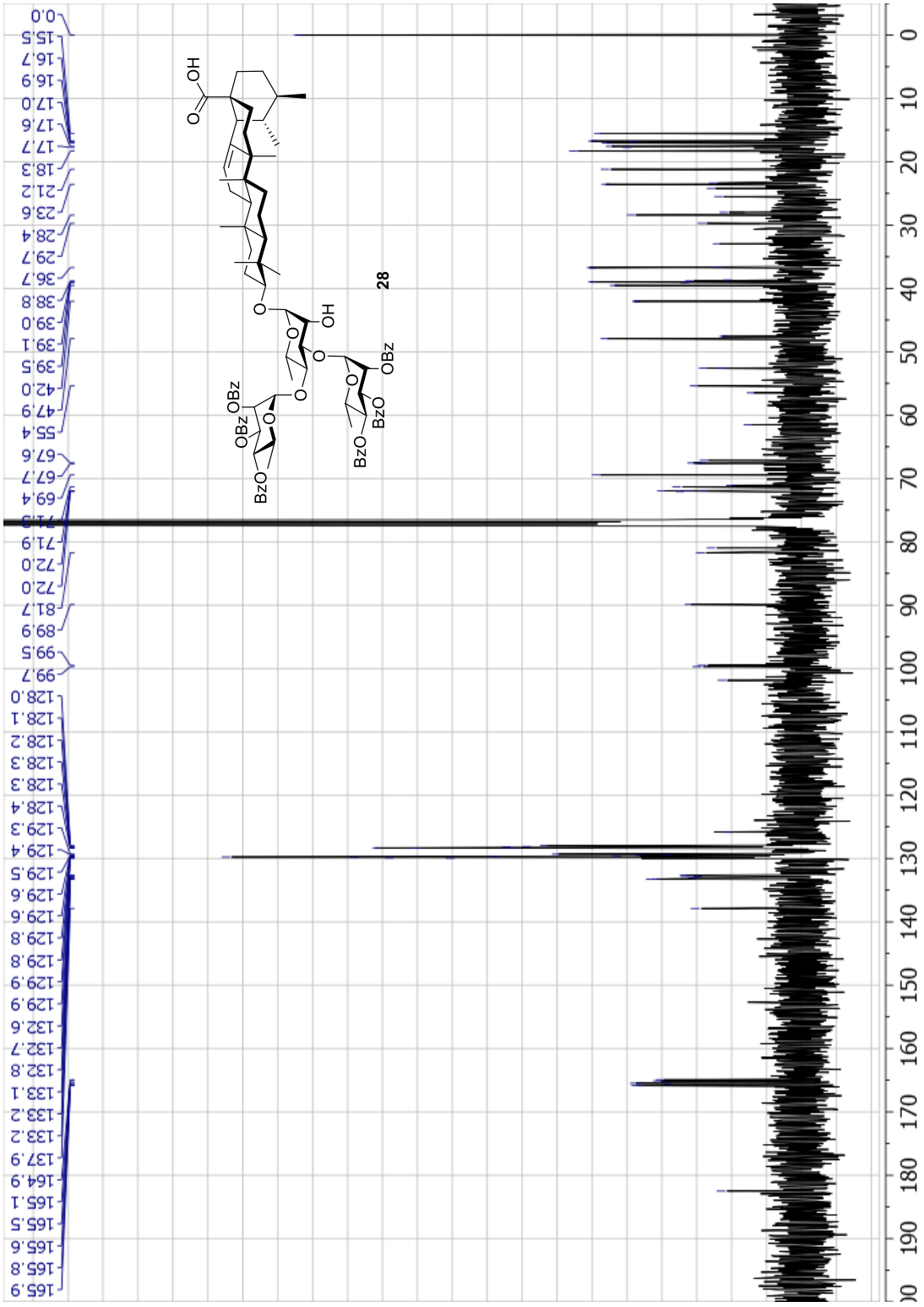
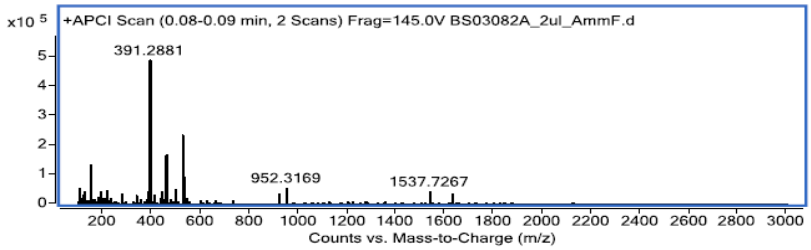


Figure S60. HRMS spectra of **28**

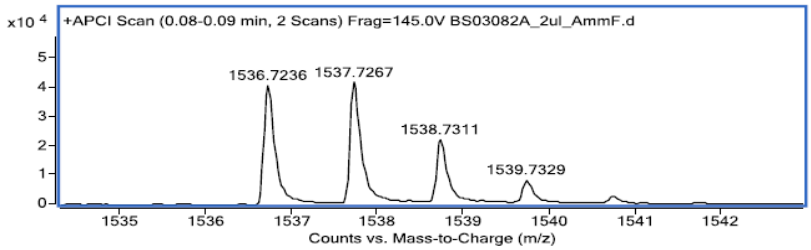
Masse Exacte

Data File	BS03082A_2ul_AmmF	**Sample Name**	BS03082A
Analysis Date	March 23, 2018	**User Name**	Karine
Acq Method	ESI_pos_DI	**DA Method**	
Instrument	TOF 6224		
Comment	N/A		

MS spectrum



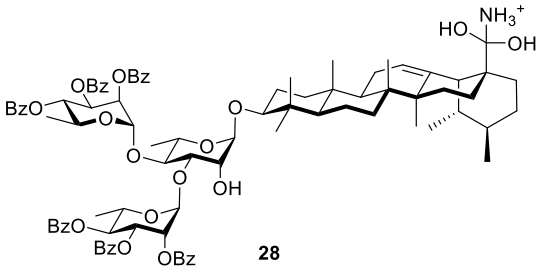
MS zoomed spectrum



Ion	Formula	Expe. m/z	Calc. m/z	Diff (ppm)
M+NH4	C90 H102 O21	1536.7236	1536.7252	1.03

Université de Montréal Centre Régional de Spectrométrie de Masse

1 de 1



28

Chemical Formula: $C_{90}H_{106}NO_{21}^{+}$
Exact Mass: 1536.7252
Molecular Weight: 1537.8235

Figure S61. ^{1}H NMR spectrum of **9** ($CD_3OD/CDCl_3$ 1:1, 400 MHz)

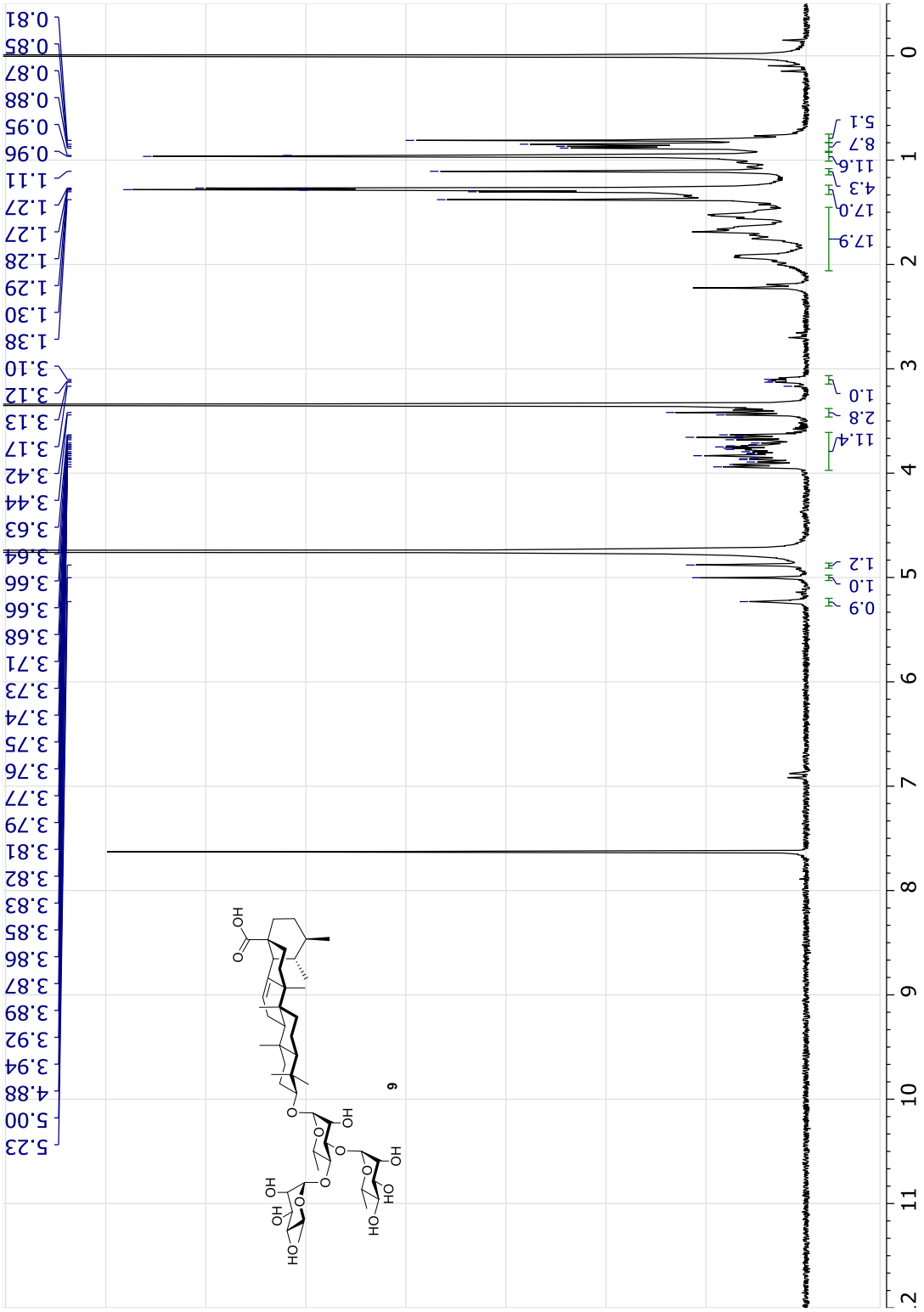


Figure S62. ^{13}C NMR spectrum of **9** ($CD_3OD/CDCl_3$ 1:1, 100 MHz)

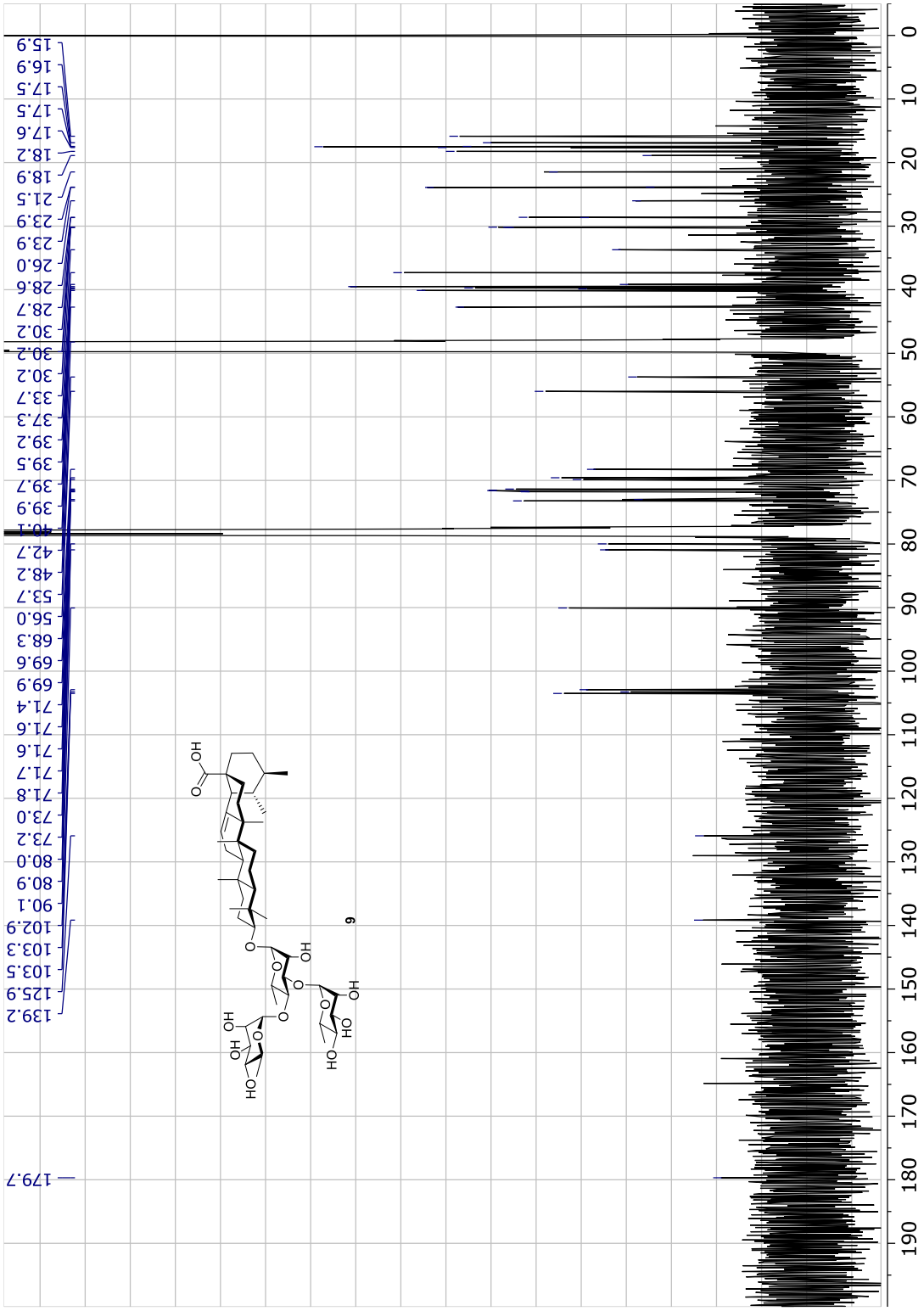
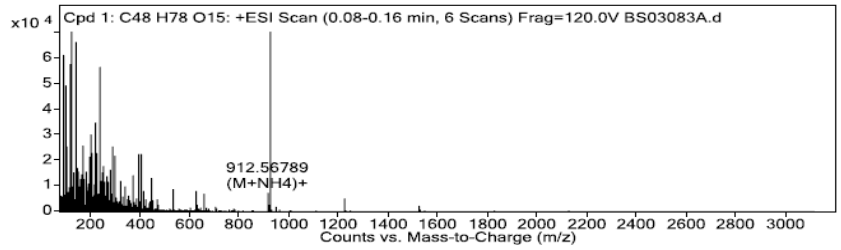


Figure S63. HRMS spectra of **9**

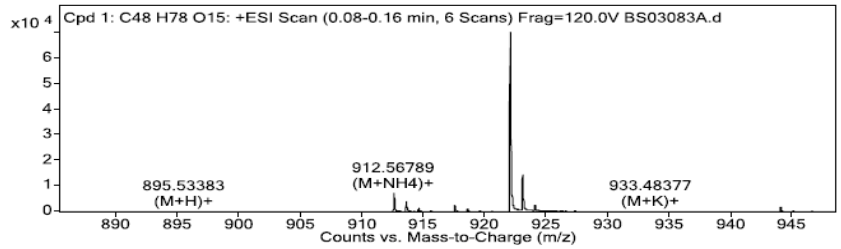
Rapport de masse exacte

Data File	BS03083A.d	**Sample Name**	BS03083A
Sample Type	Sample	**Position**	P2-D2
Analysis Date	3/8/2018 12:16:30 PM	**User Name**	KG
Acq Method	ESI_POS_DI.m	**InstrumentName**	TOF 6224
Comment			

MS Spectrum



MS Zoomed Spectrum



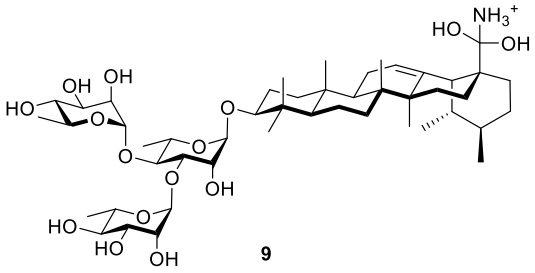
MS Spectrum Peak List

Ion	Formula	Abund	*Expe. m/z*	*Calc. m/z*	Diff(ppm)
(M+NH4)+	C48H78O15	7142.77	912.56789	912.5679	0.01
(M+Na)+	C48H78O15	2394.93	917.52384	917.52329	-0.59

Centre Régional de Spectrométrie de Masse
Université de Montréal

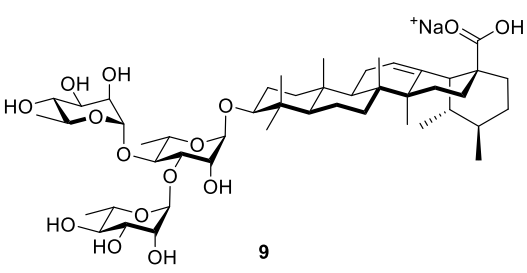
Sous la supervision de Dr. Furtos

Page 1 of 1



9

Chemical Formula: $C_{48}H_{82}NO_{15}^{+}$
Exact Mass: 912.5679
Molecular Weight: 913.1755



9

Chemical Formula: $C_{48}H_{78}NaO_{15}^{+}$
Exact Mass: 917.5233
Molecular Weight: 918.1262

Figure S64. ^{1}H NMR spectrum of **29** ($CDCl_3$, 400 MHz)

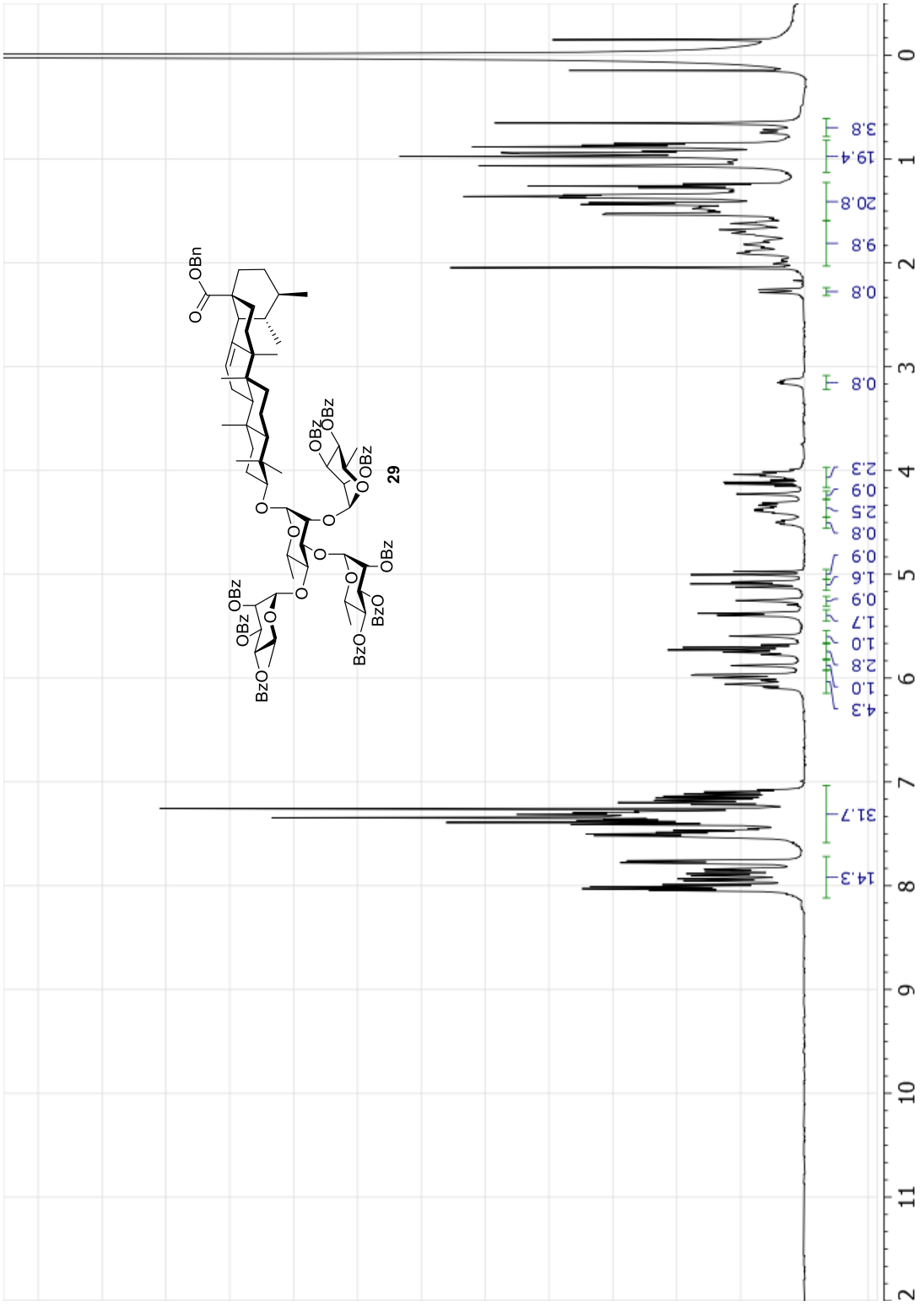


Figure S65. ^{13}C NMR spectrum of **29** ($CDCl_3$, 100 MHz)

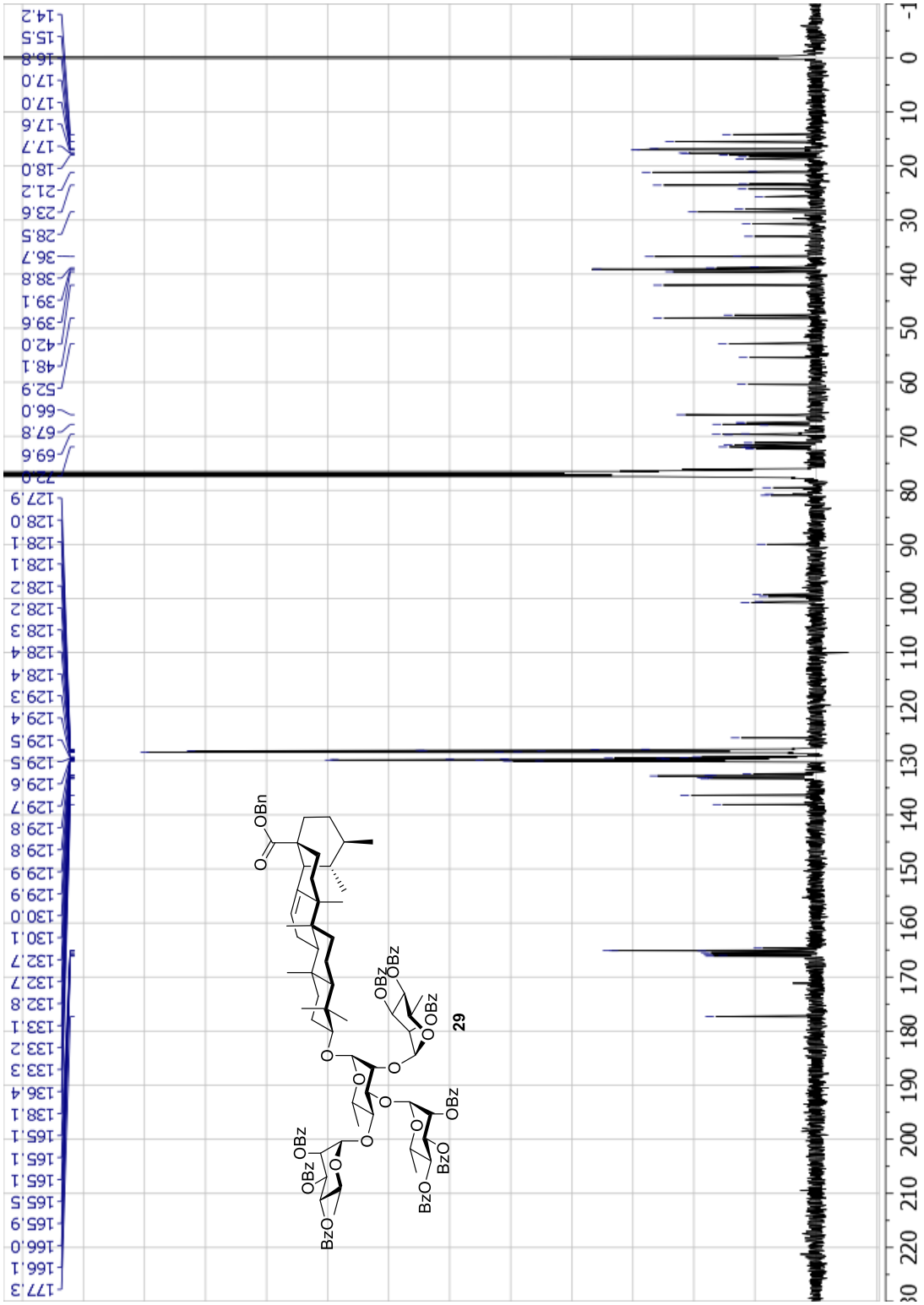
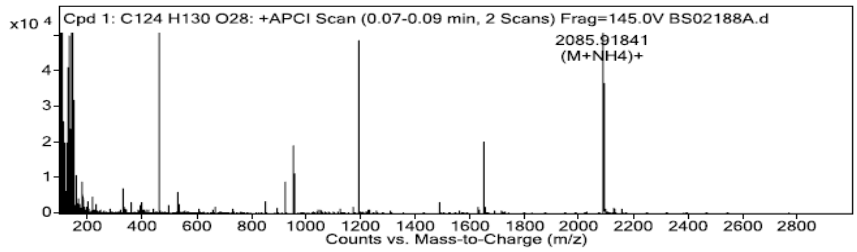


Figure S66. HRMS spectra of **29**

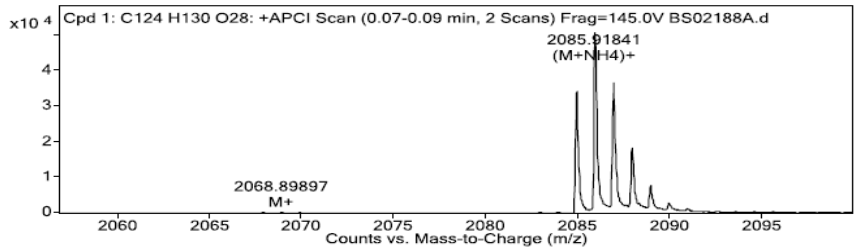
Rapport de masse exacte

Data File	BS02188A.d	**Sample Name**	BS02188A
Sample Type	Sample	**Position**	P1-E6
Analysis Date	8/31/2018 1:47:09 PM	**User Name**	Stephanie
Acq Method	APCI_POS_DI.m	**InstrumentName**	TOF 6224
Comment			

MS Spectrum



MS Zoomed Spectrum



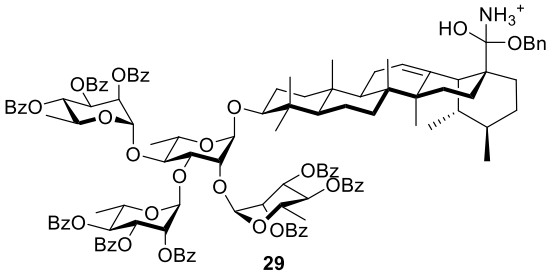
MS Spectrum Peak List

Ion	Formula	Abund	*Expe. m/z*	*Calc. m/z*	Diff(ppm)
M+	C124H130O28	64.85	2066.90994	2066.87431	-17.23
(M+NH4)+	C124H130O28	34732.16	2084.91553	2084.90869	-3.28

Centre Regional de Spectrometrie de Masse
Universite de Montreal

Sous la supervision de Dr. Furtos

Page 1 of 1



29

Chemical Formula: $C_{124}H_{134}NO_{28}^{+}$
Exact Mass: 2084.9087
Molecular Weight: 2086.4145

Figure S67. ^{1}H NMR spectrum of **10** ($CD_3OD/CDCl_3$ 1:1, 400 MHz)

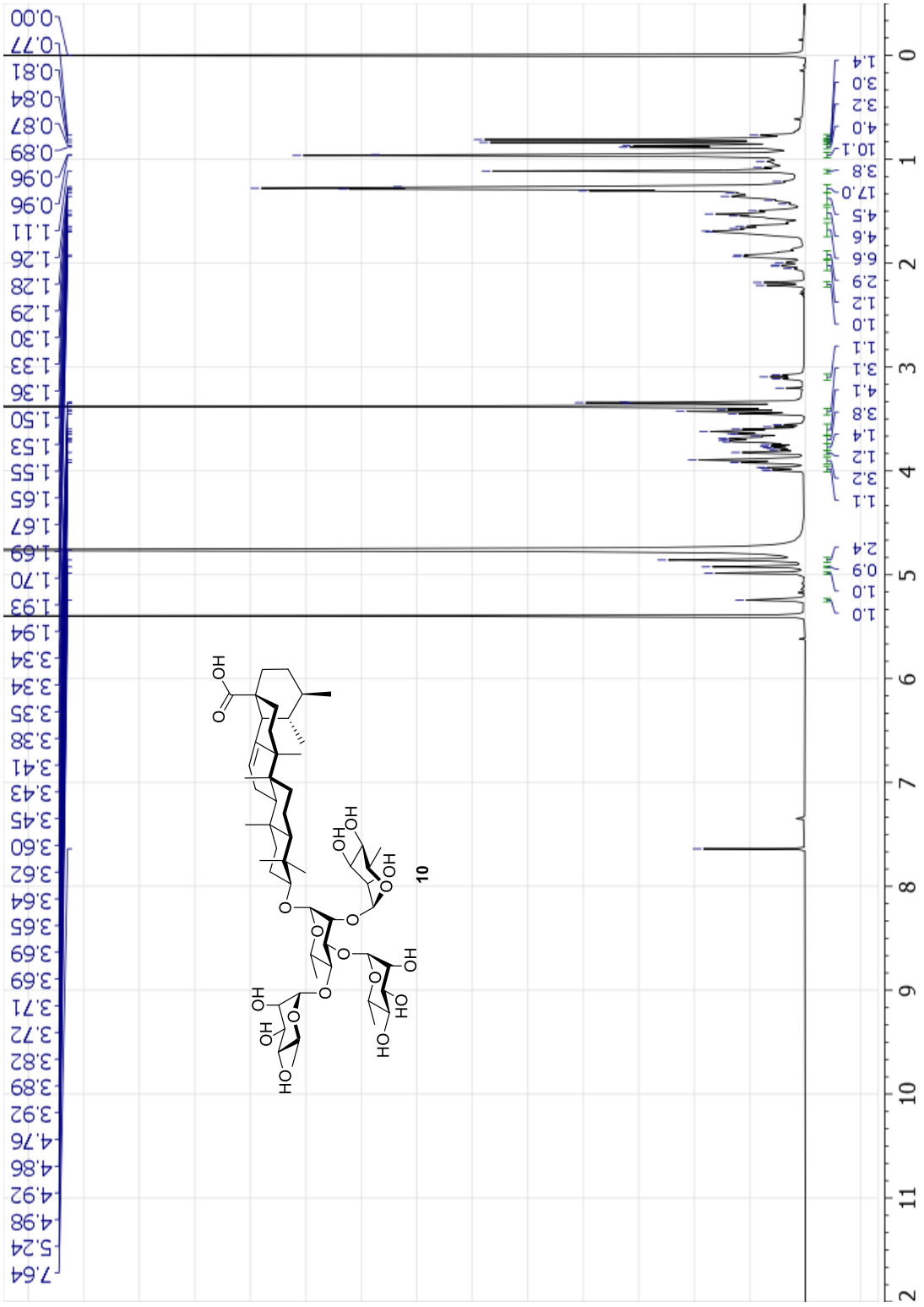


Figure S68. ^{1}H NMR spectrum of **10** ($CD_3OD/CDCl_3$ 1:1, 100 MHz)

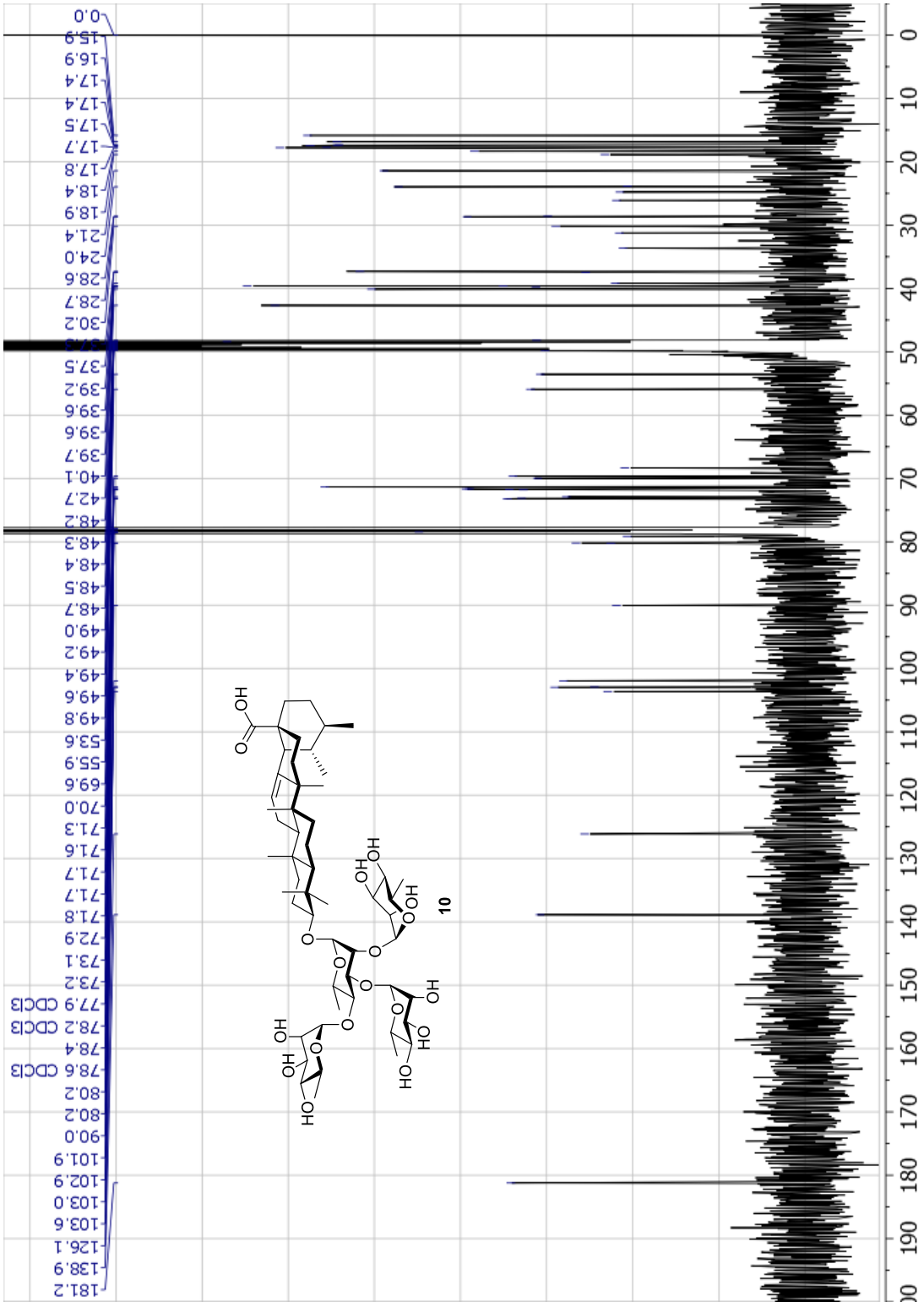
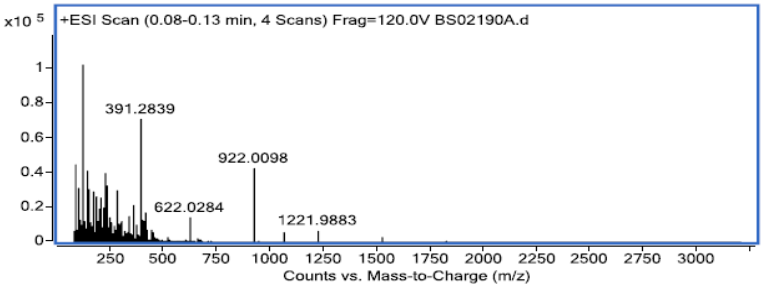


Figure S69. HRMS spectra of **10**

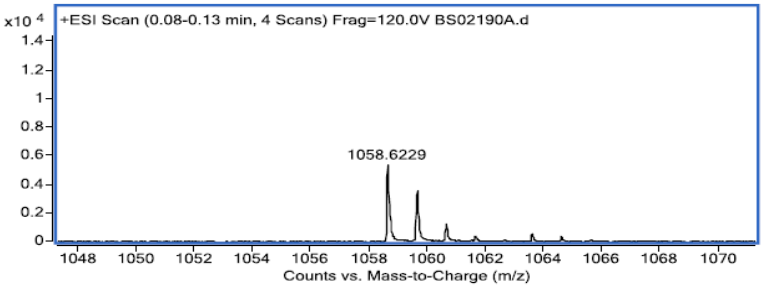
Masse Exacte

Data File	BS02190A	**Sample Name**	BS02190A
Analysis Date	March 7, 2018	**User Name**	Karine
Acq Method	ESI_pos_DI	**DA Method**	
Instrument	TOF 6224		
Comment	N/A		

MS spectrum



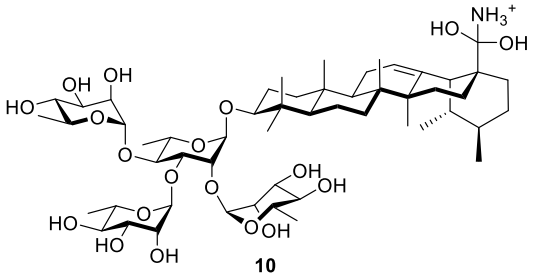
MS zoomed spectrum



Ion	Formula	Expe. m/z	Calc. m/z	Diff (ppm)
[M+NH4]+	C54 H88 O19	1058.6229	1058.6258	2.75

Université de Montréal Centre Régional de Spectrométrie de Masse

1 de 1



10

Chemical Formula: $C_{54}H_{92}NO_{19}^{+}$
Exact Mass: 1058.6258
Molecular Weight: 1059.3175