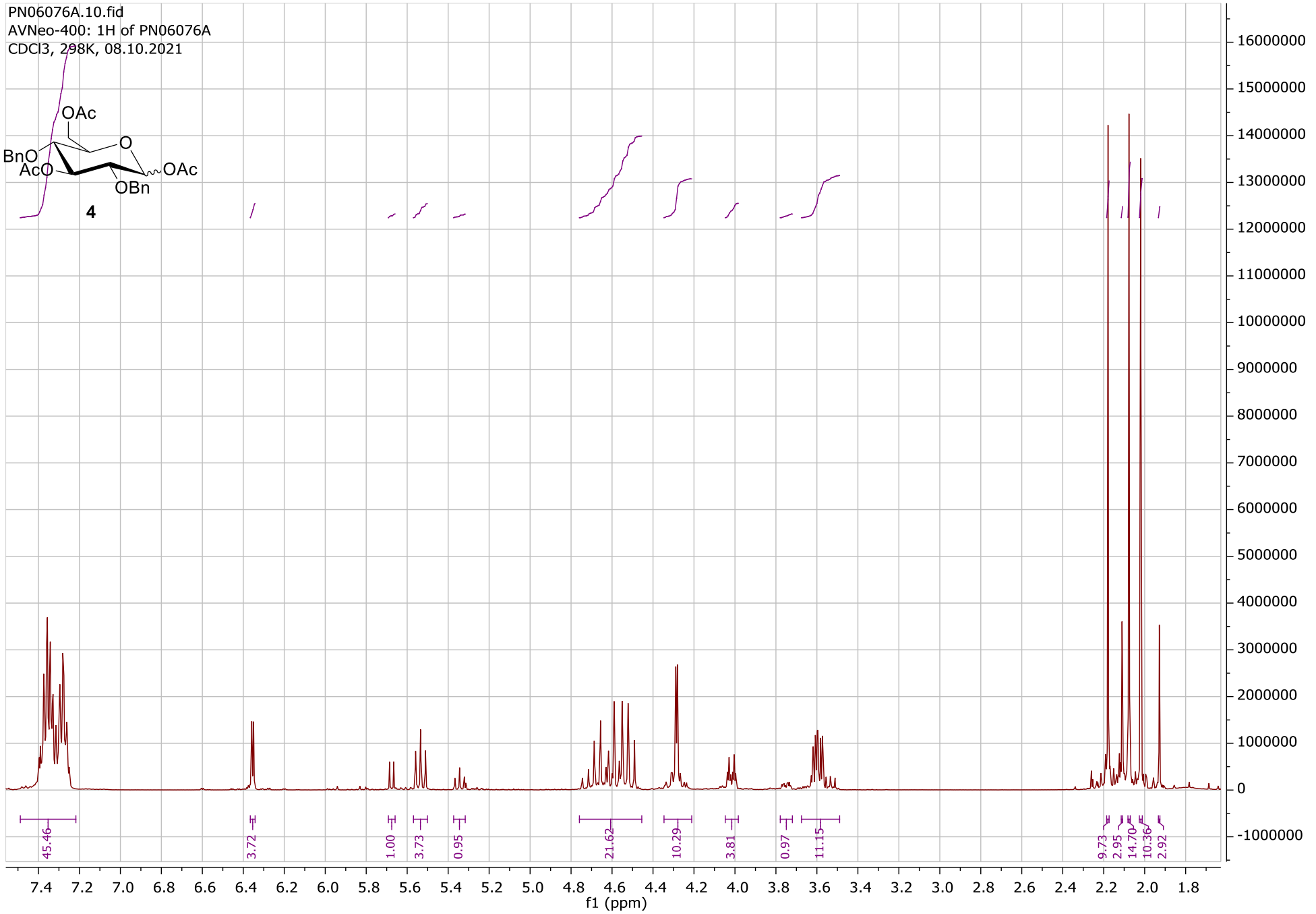
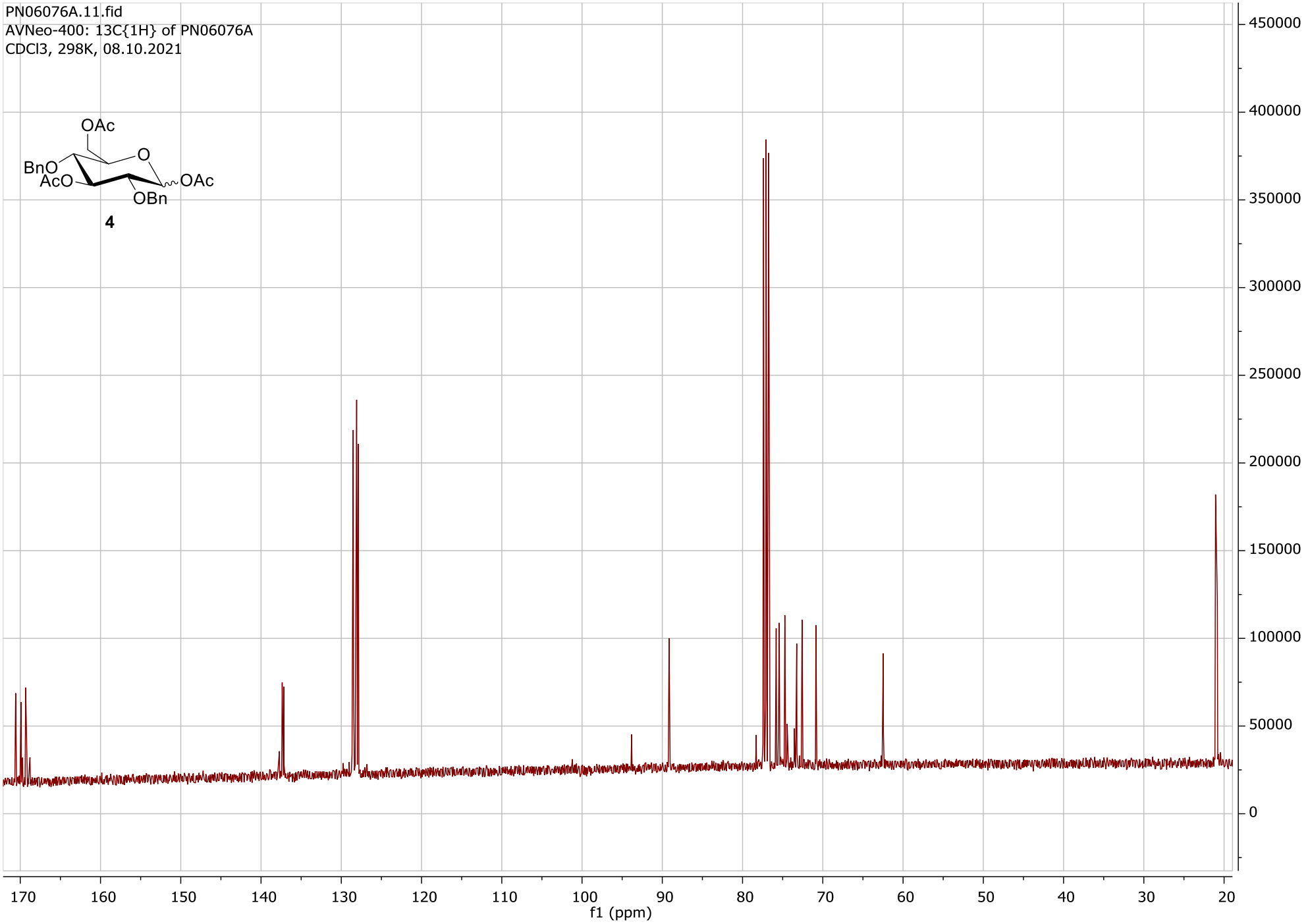
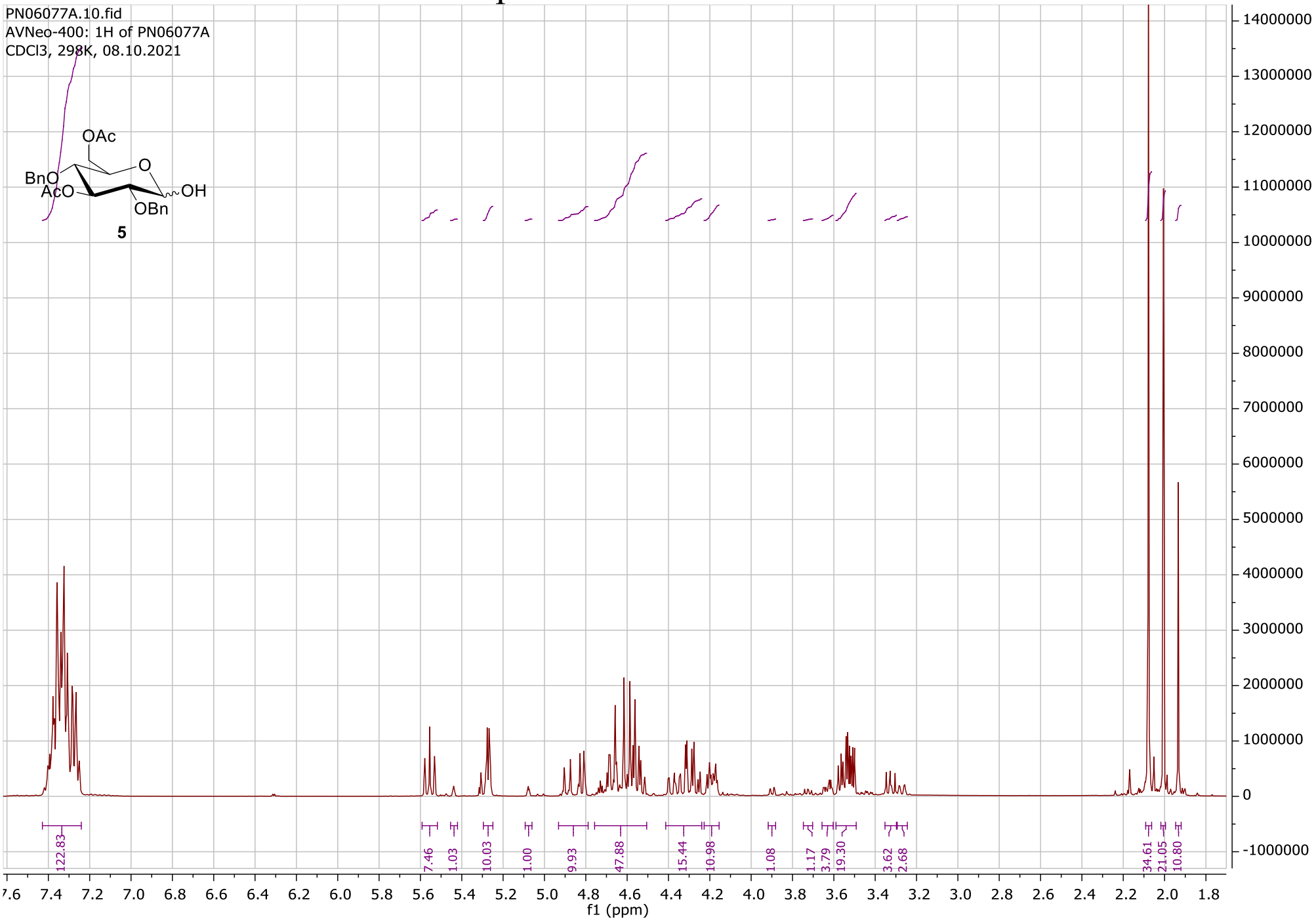
^{1}H NMR spectrum of anomeric acetate **4**



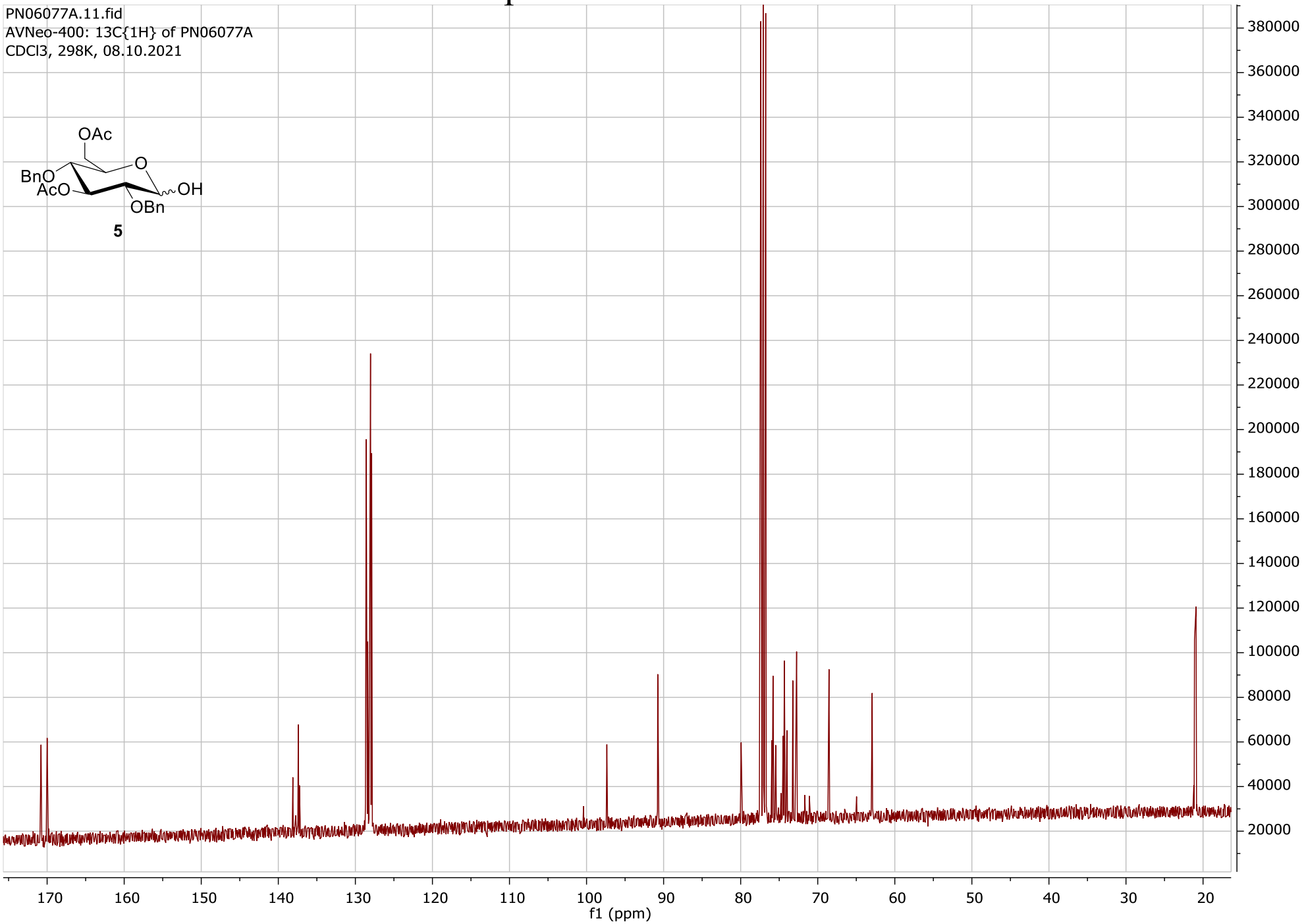
^{13}C NMR spectrum of anomeric acetate **4**



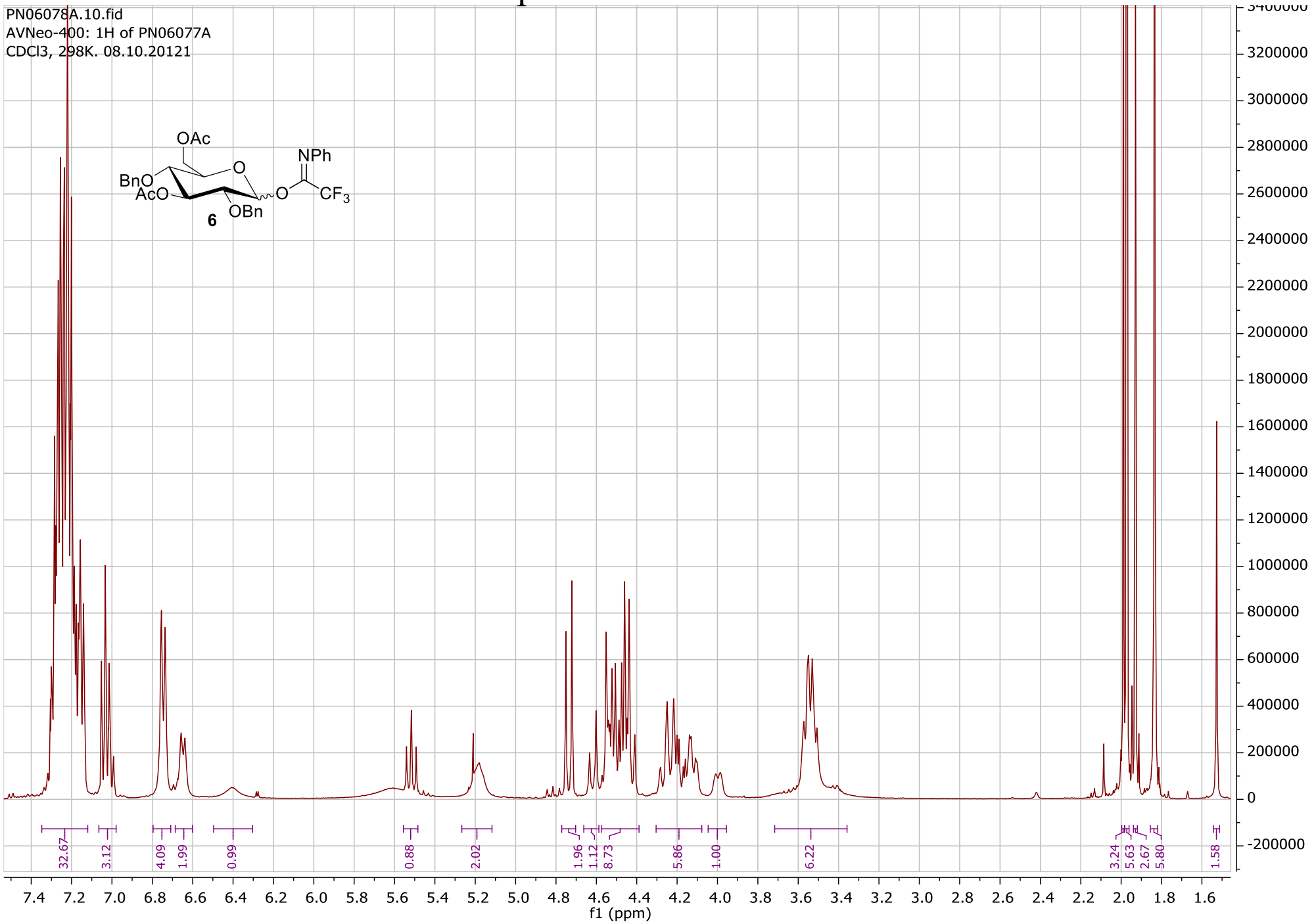
^{1}H NMR spectrum of hemiacetal **5**



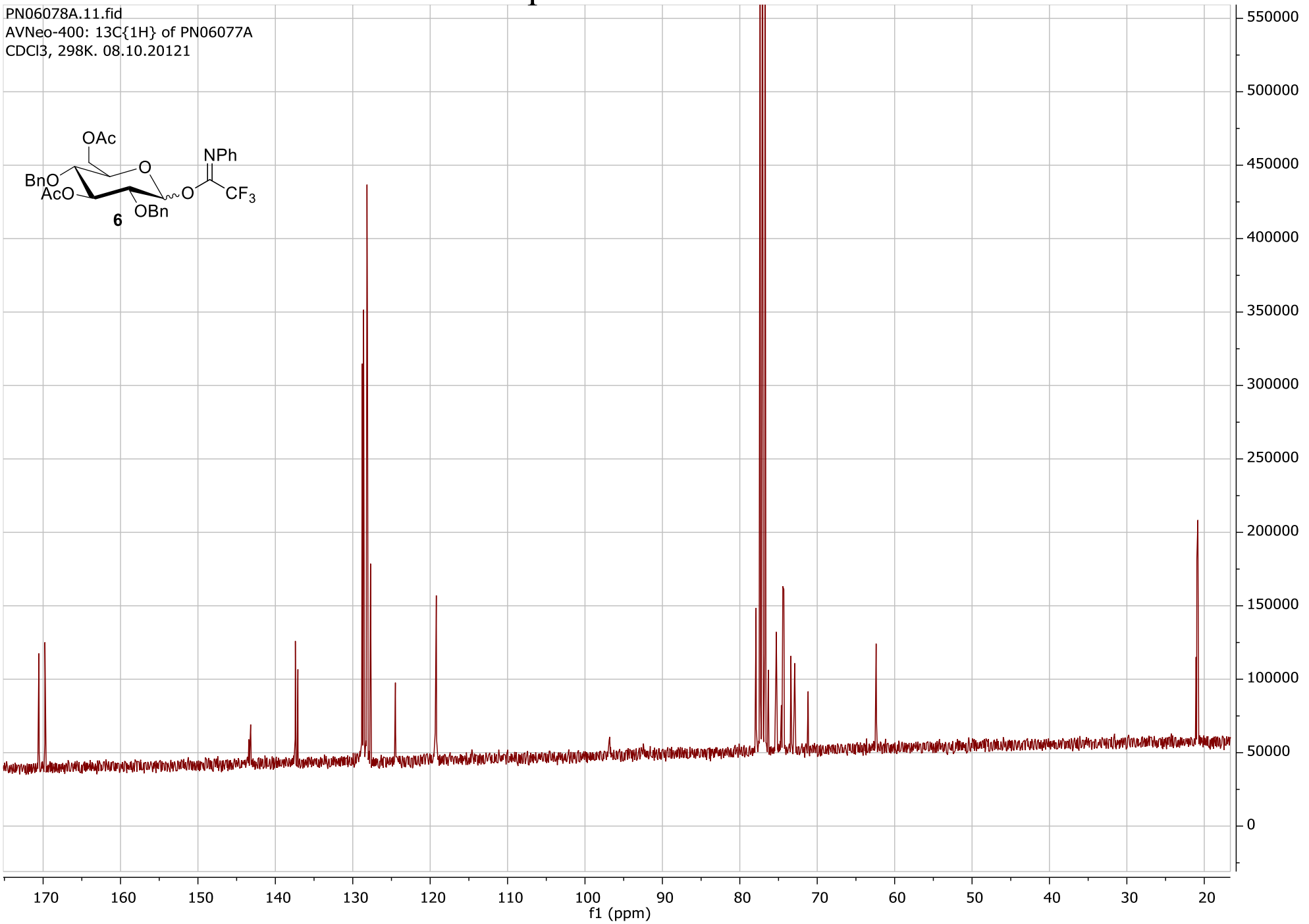
^{13}C NMR spectrum of hemiacetal **5**



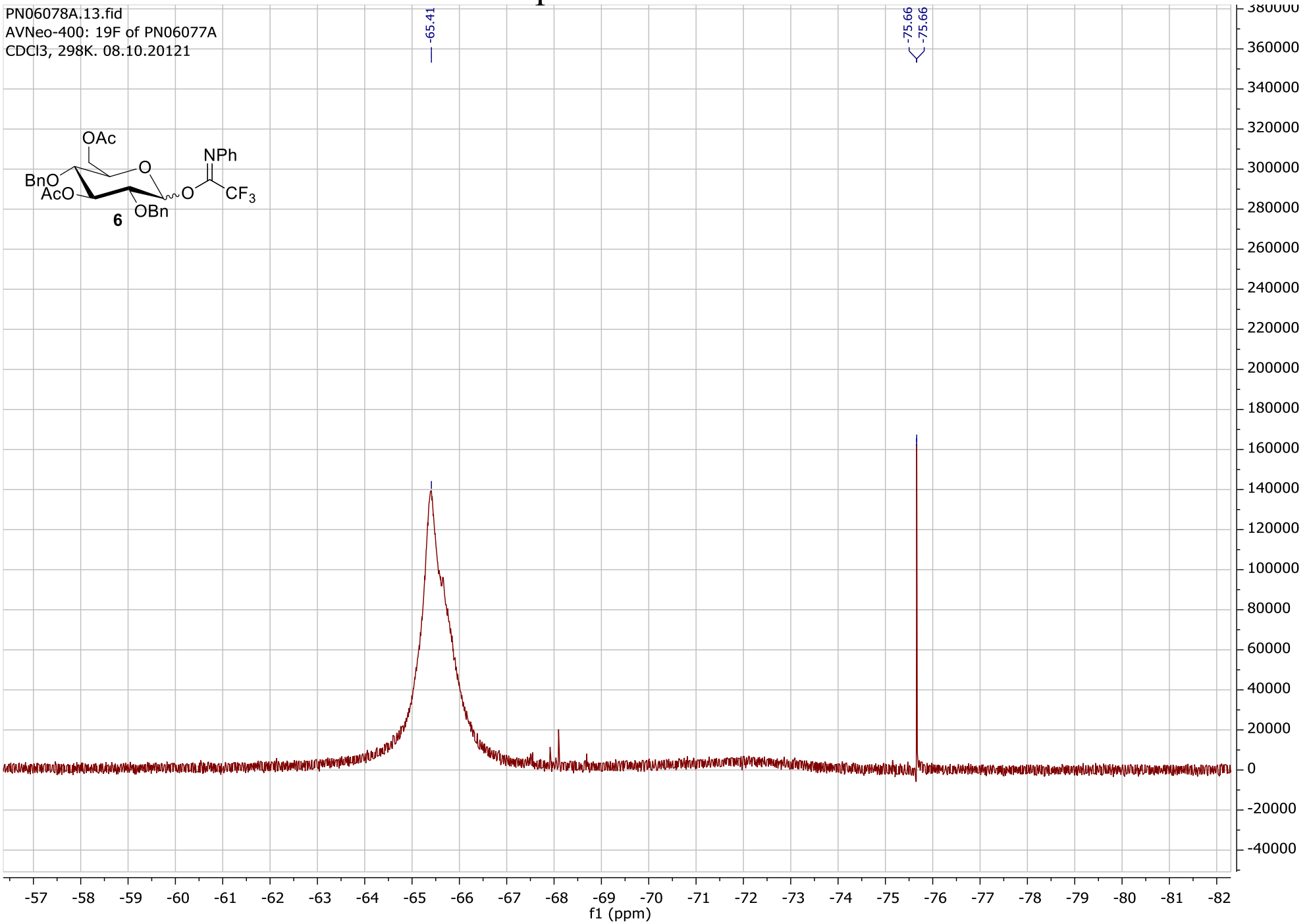
^{1}H NMR spectrum of imidate **6**



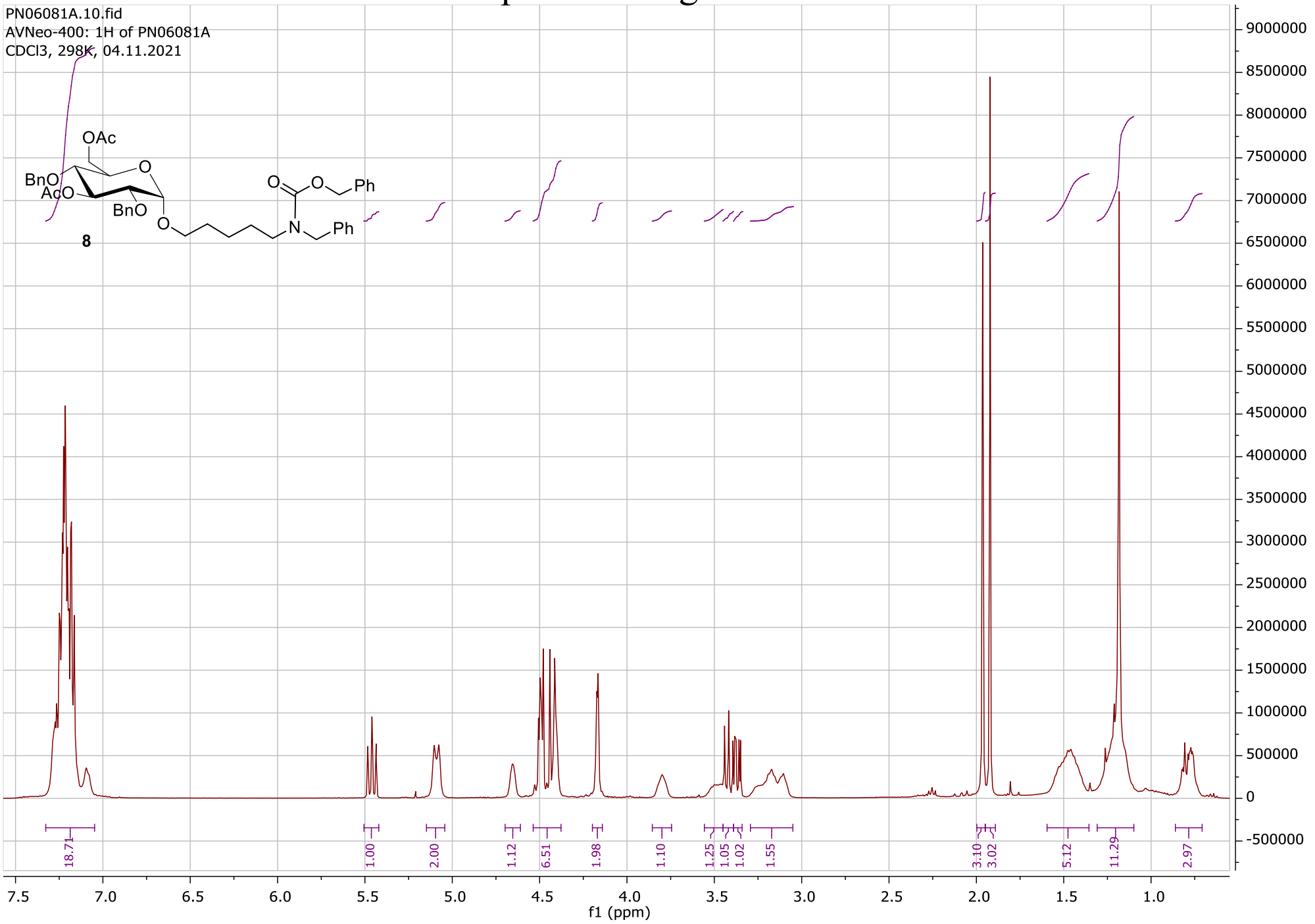
^{13}C NMR spectrum of imidate **6**



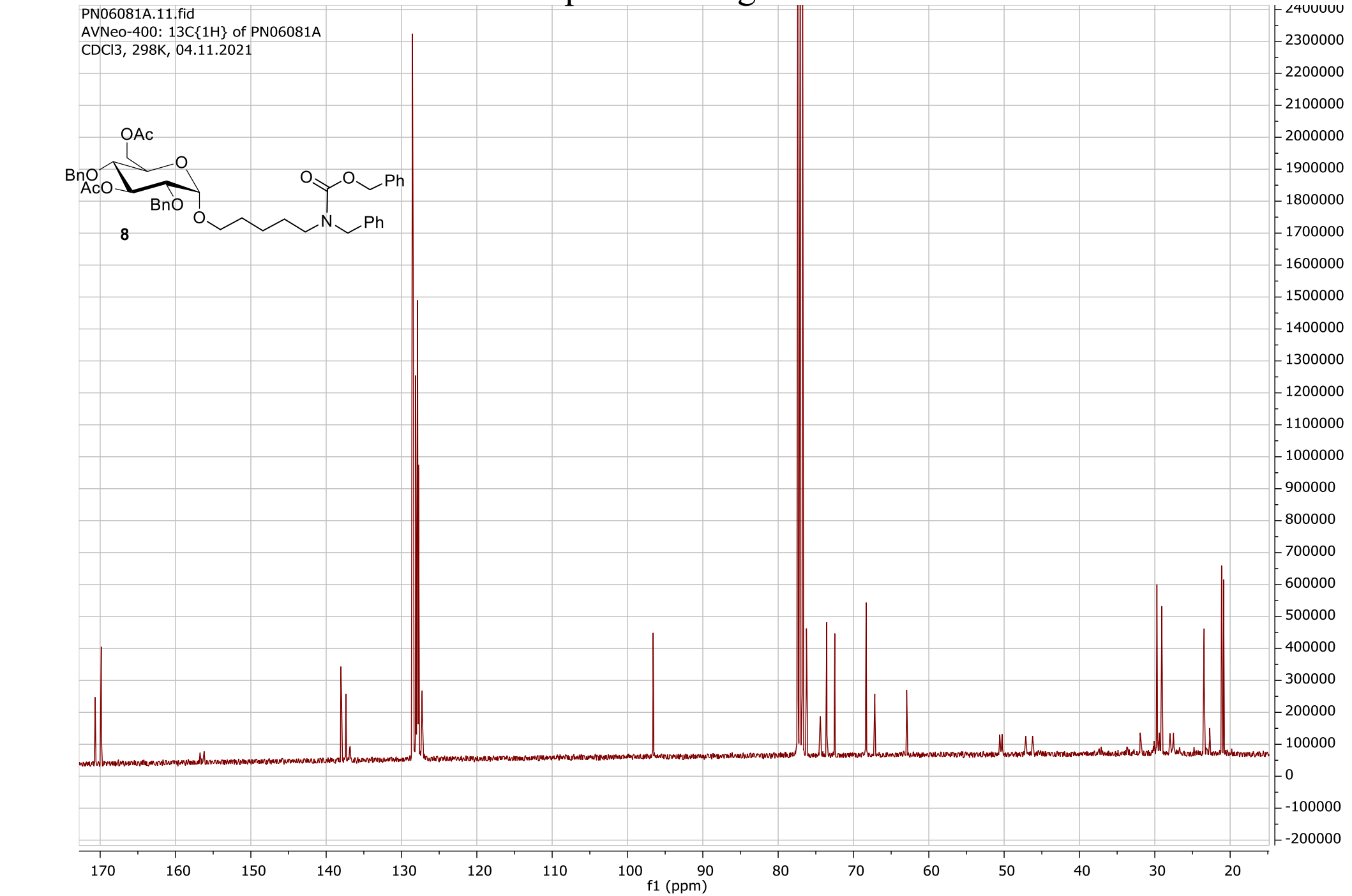
^{19}F NMR spectrum of imidate **6**



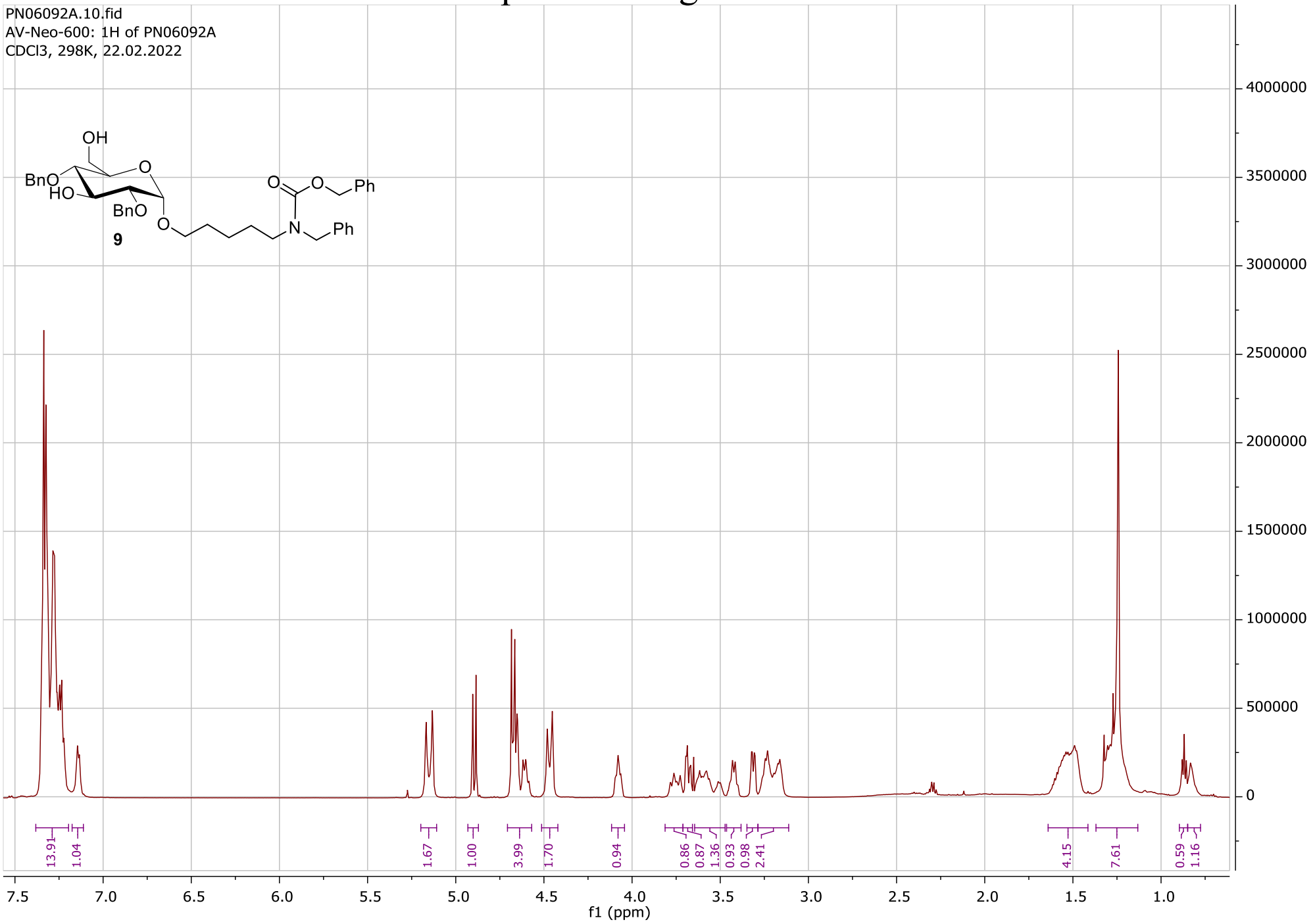
^{1}H NMR spectrum of glucose block **8**



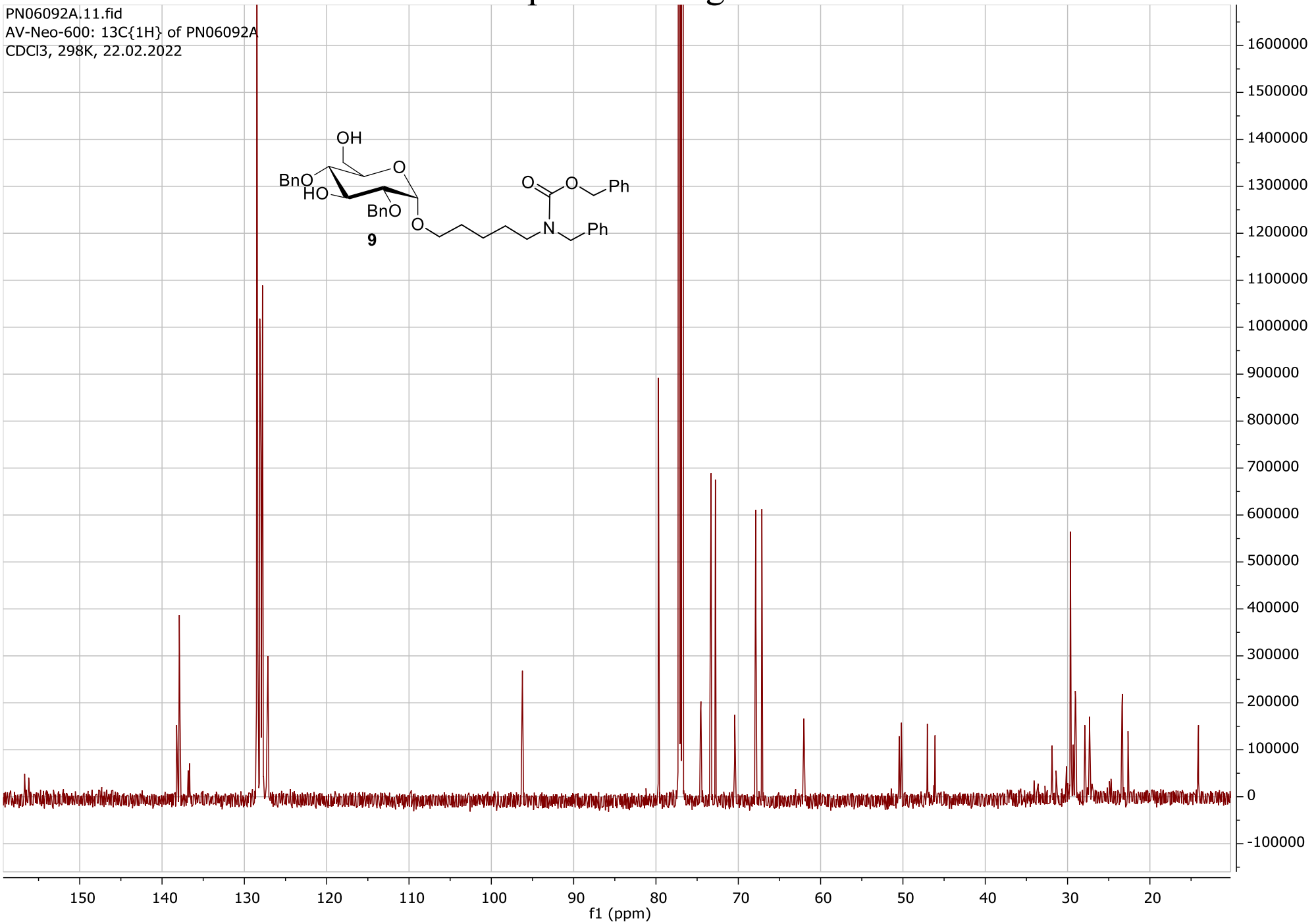
^{13}C NMR spectrum of glucose block **8**



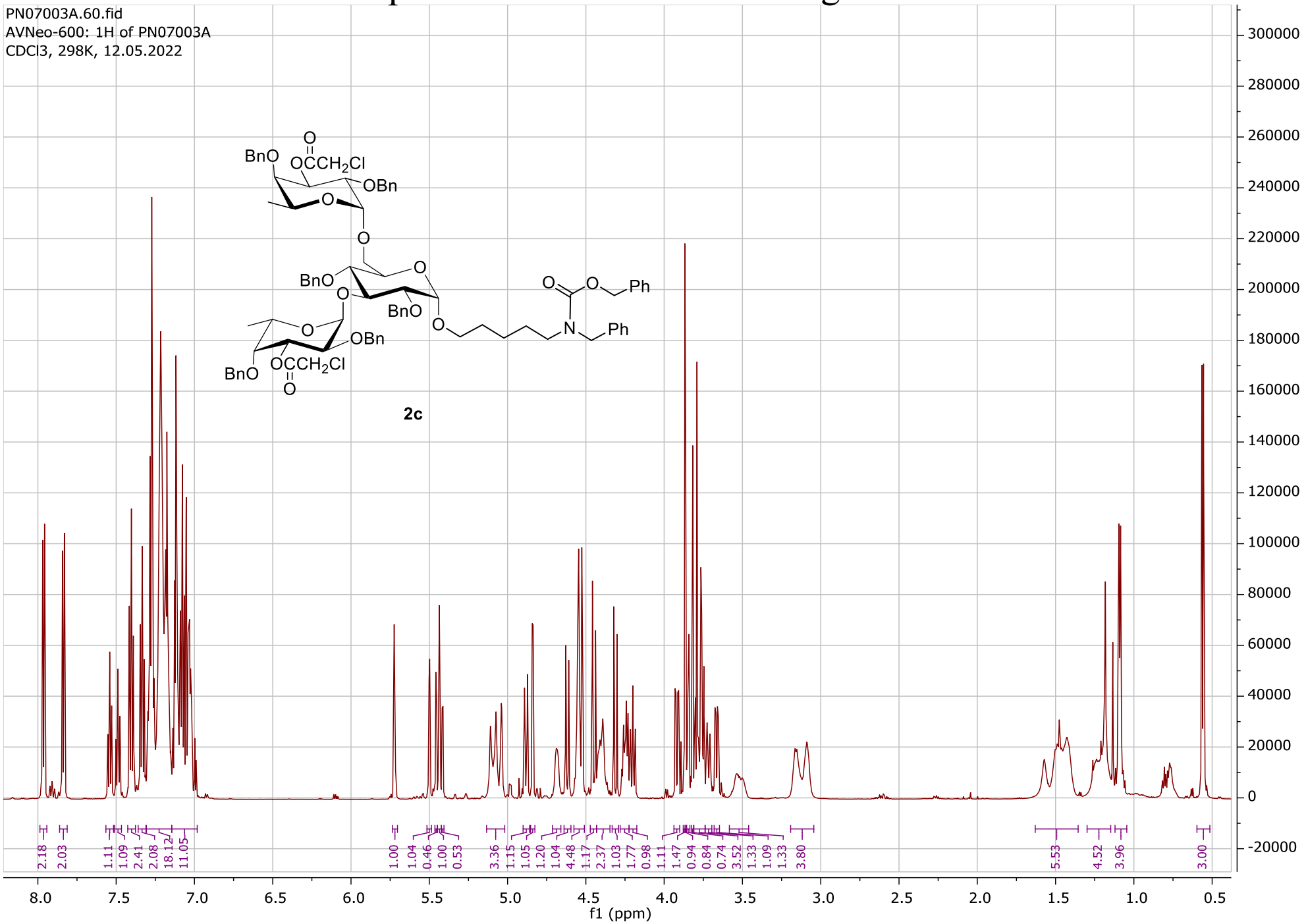
^{1}H NMR spectrum of glucose block **9**



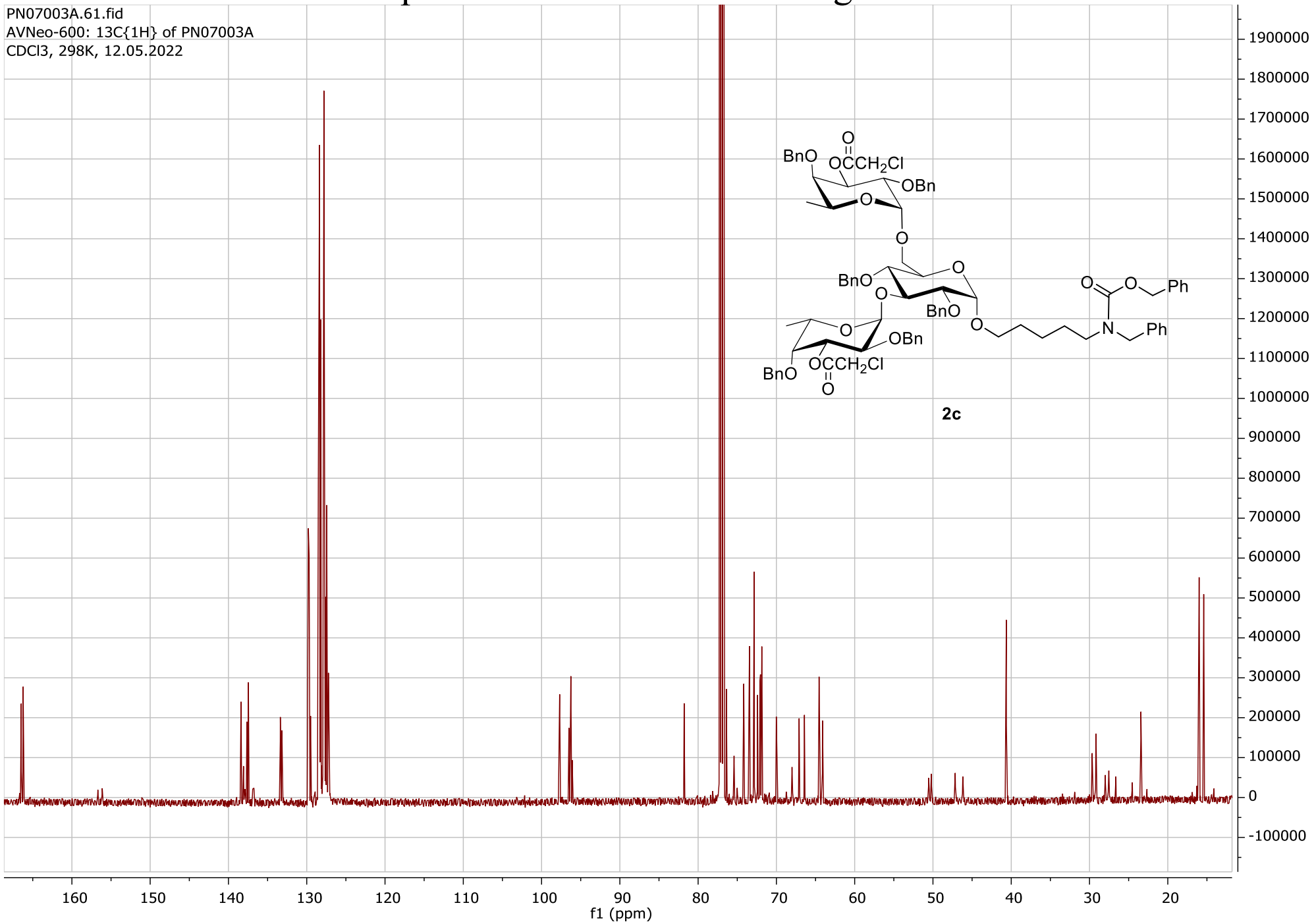
^{13}C NMR spectrum of glucose block **9**



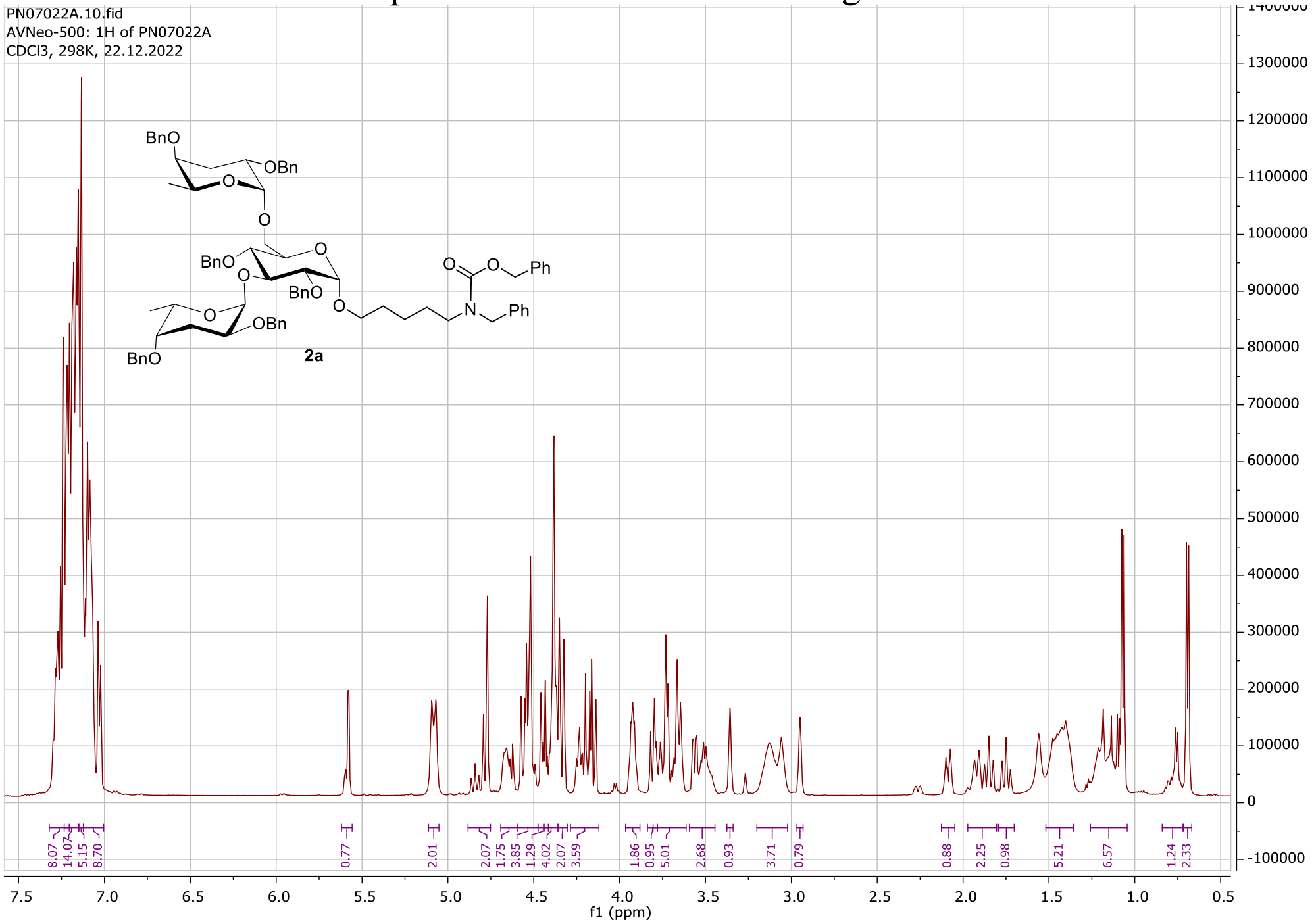
^{1}H NMR spectrum of fucose containing trisaccharide **2c**



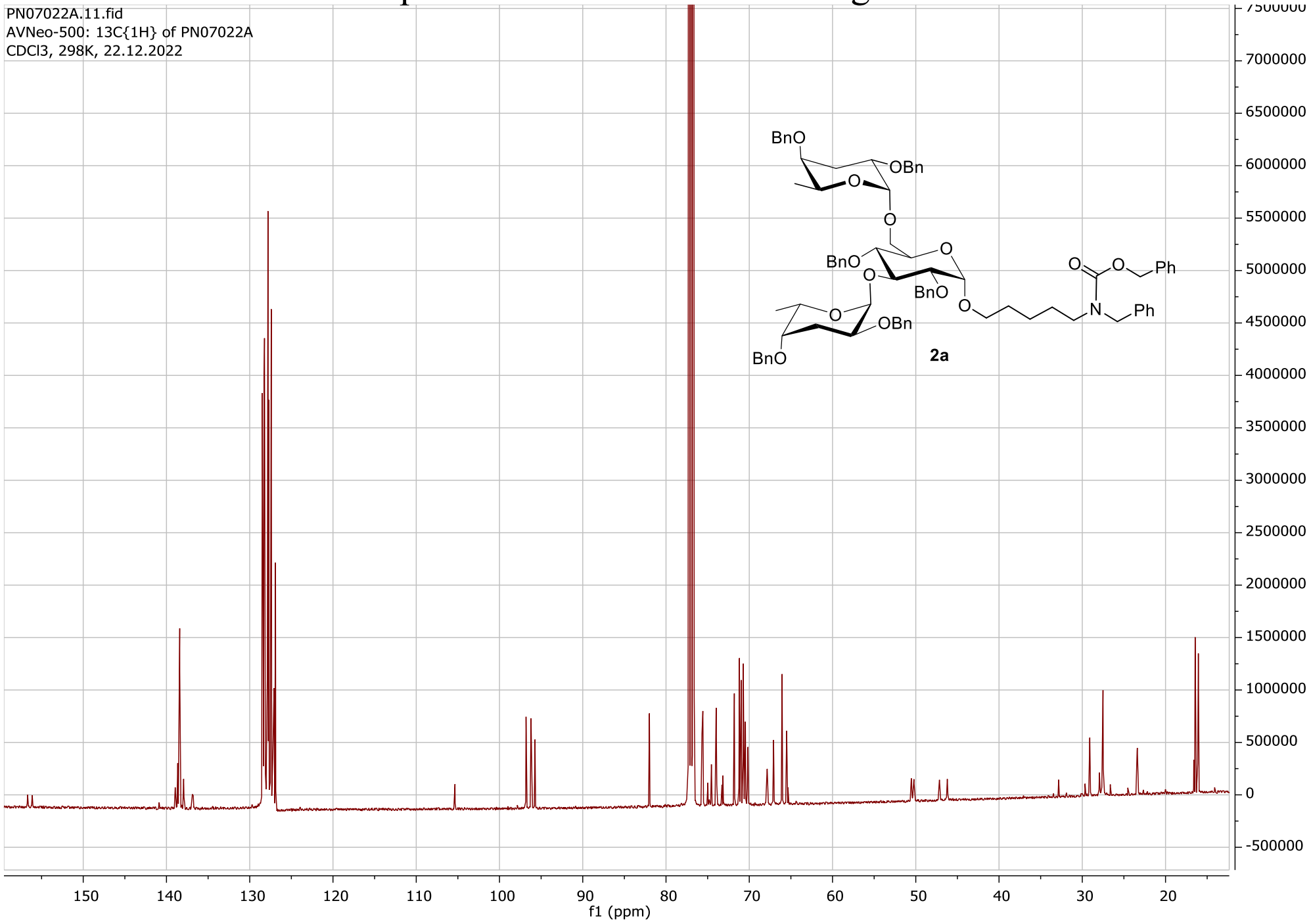
^{13}C NMR spectrum of fucose containing trisaccharide **2c**



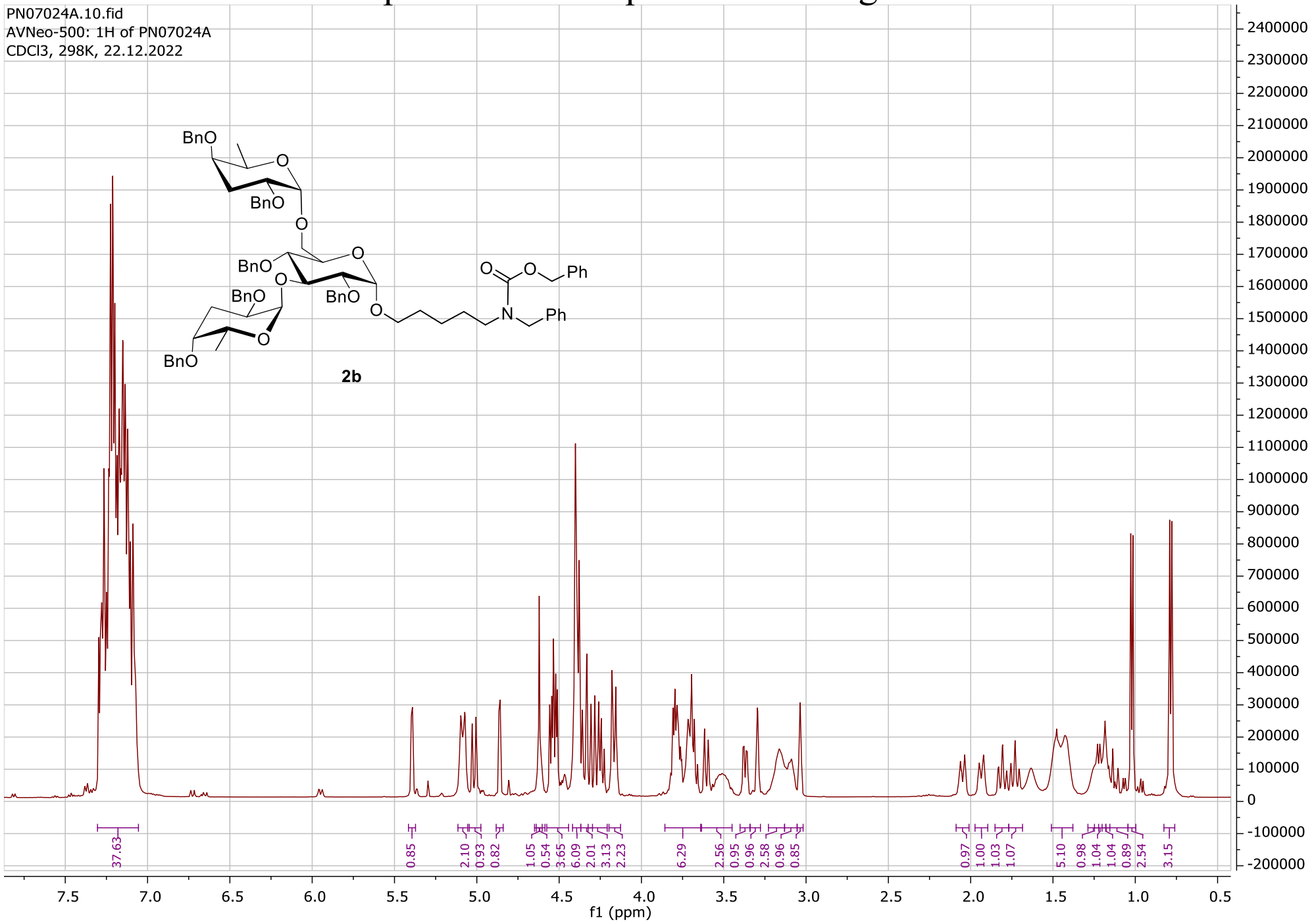
^{1}H NMR spectrum of colitose containing trisaccharide **2a**



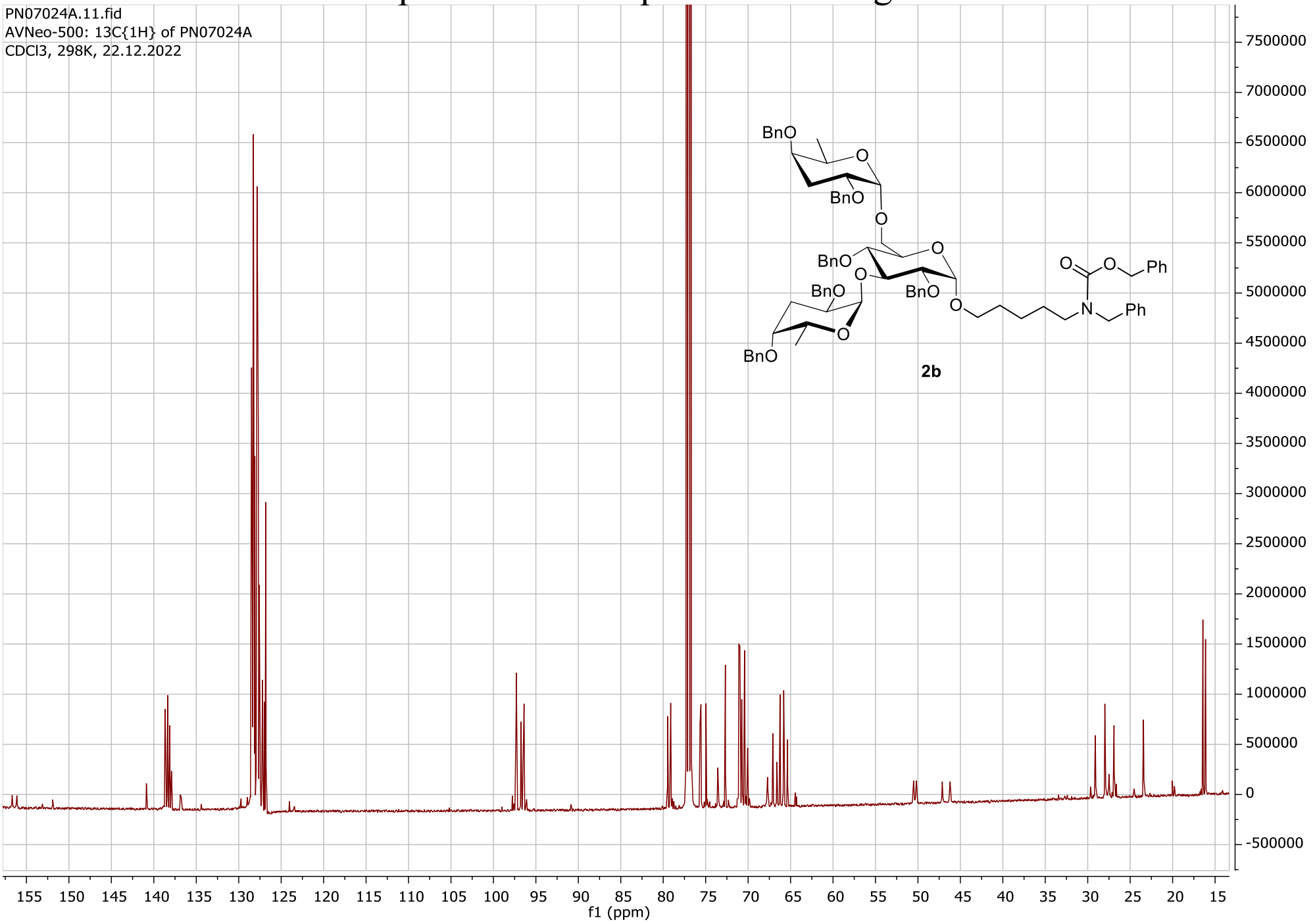
^{13}C NMR spectrum of colitose containing trisaccharide **2a**



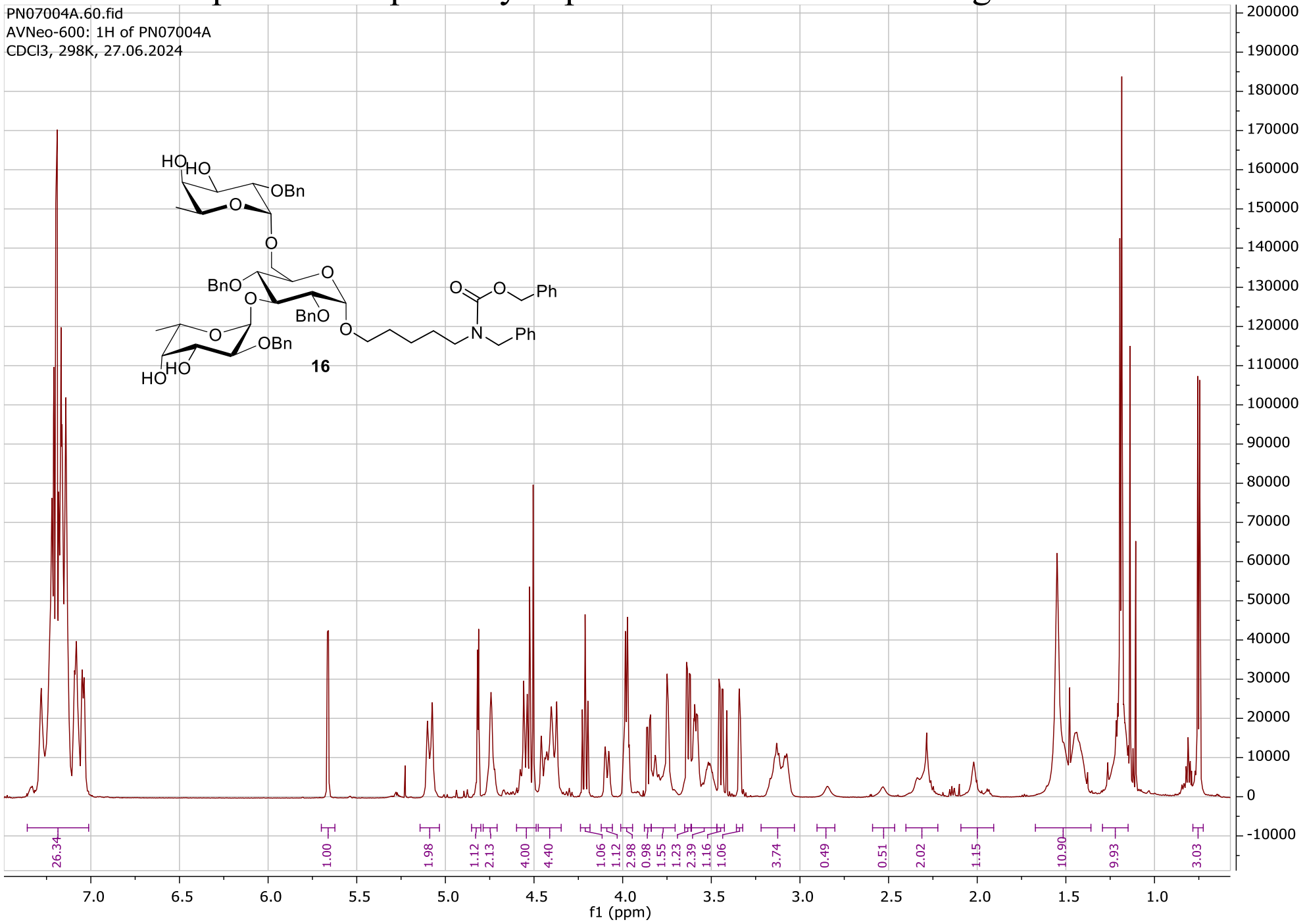
^{1}H NMR spectrum of abequose containing trisaccharide **2c**



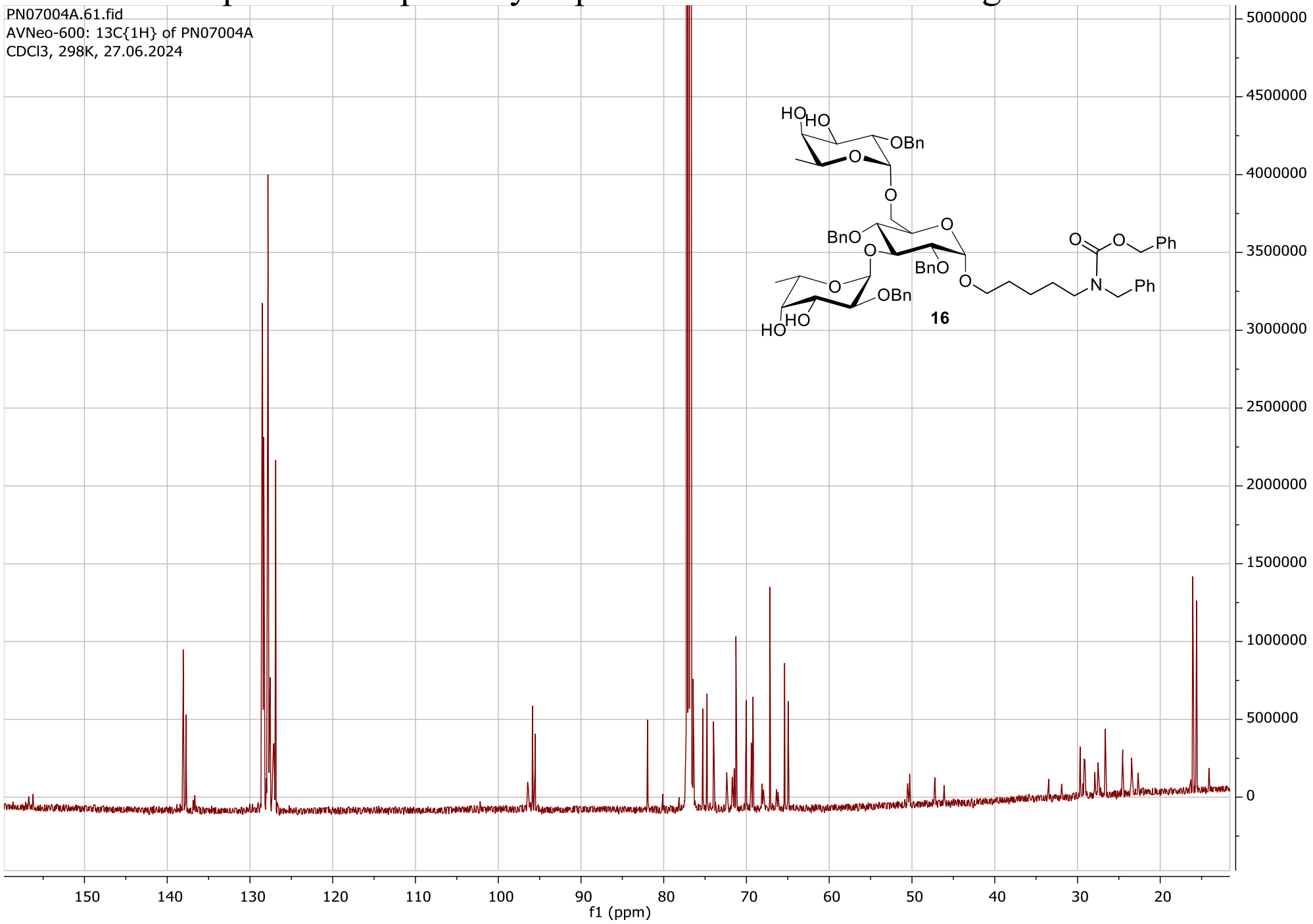
^{13}C NMR spectrum of abequose containing trisaccharide **2c**



^{1}H NMR spectrum of partially deprotected fucose containing trisaccharide **16**

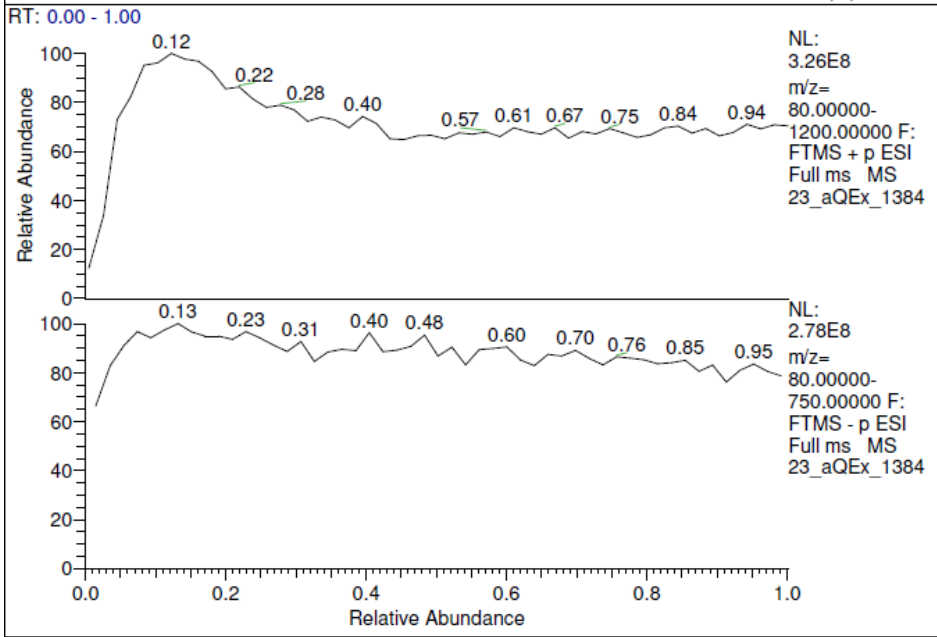


^{13}C NMR spectrum of partially deprotected fucose containing trisaccharide **16**



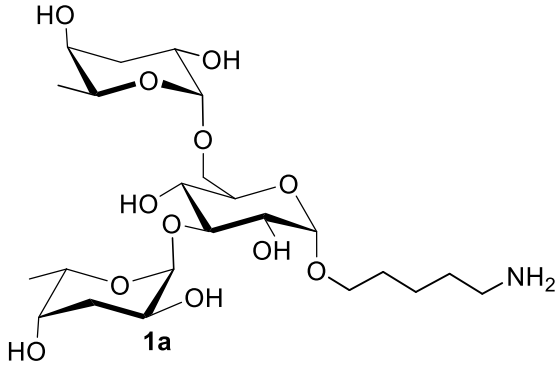
HR-ESI spectrum of deprotected colitose containing trisaccharide **1a**

D:\Data\Service\Data\23_aQEx_1384 08/30/23 11:38:12 Sample: PN07056A
Client: (+)-HR-ESI-MS Solvent:

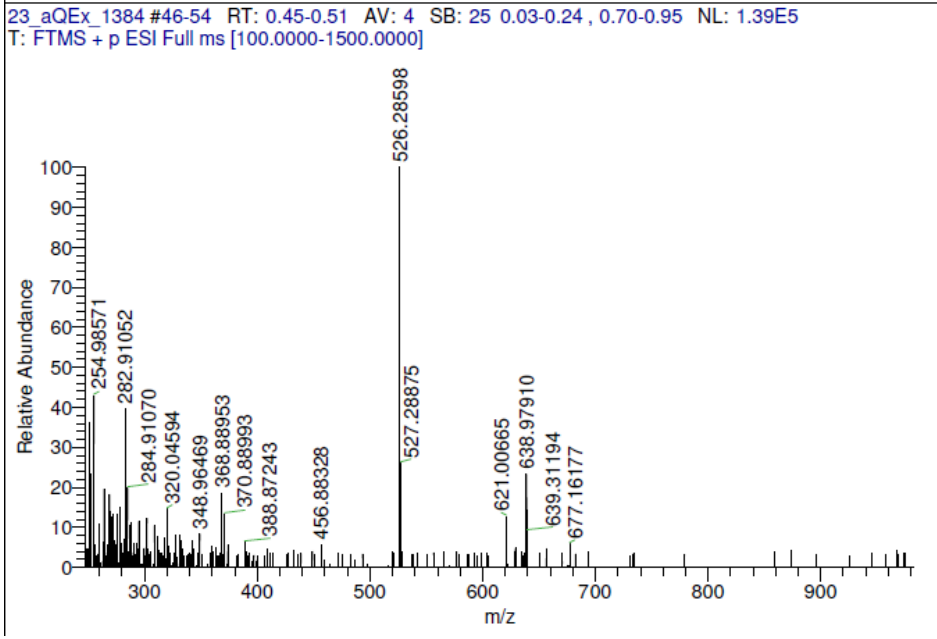


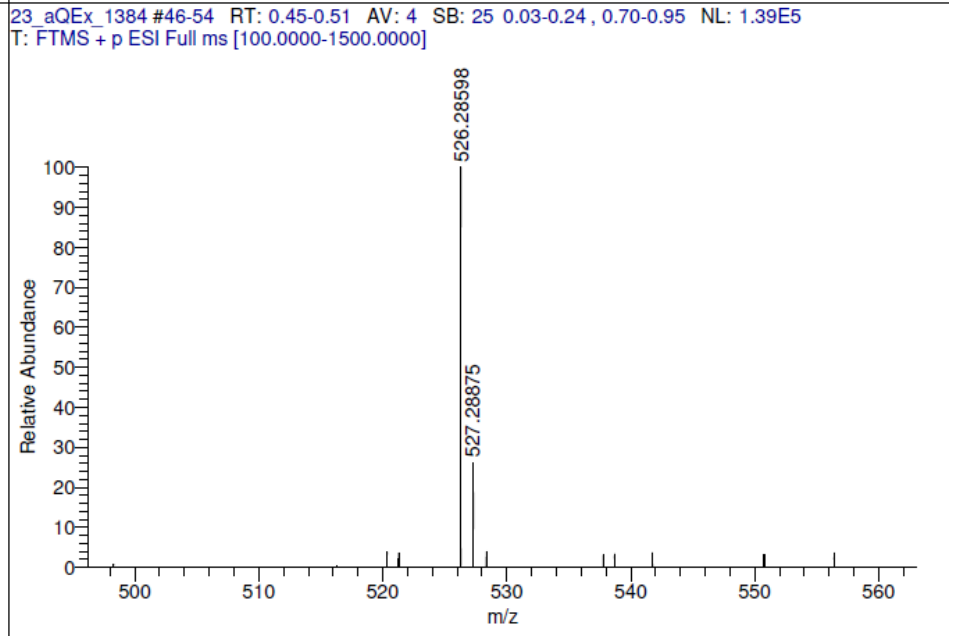
23_aQEx_1384#47-53 RT: 0.45-0.51 AV: 4
SB: 11 0.04-0.24
T: FTMS + p ESI Full ms [100.0000-1500.0000]
m/z= 525.58817-527.08300

m/z	Intensity	Relative	Theo. Mass	Delta (ppm)	RDB equiv.	Composition
526.28574	142107.4	100.00	526.28580	-0.12	8.0	$C_{22}H_{38}O_7N_8$
			526.28580	-0.13	2.5	$C_{23}H_{44}O_{12}N$
			526.28529	0.85	20.5	$C_{36}H_{36}ON_3$
			526.28663	-1.70	20.0	$C_{38}H_{38}O_2$



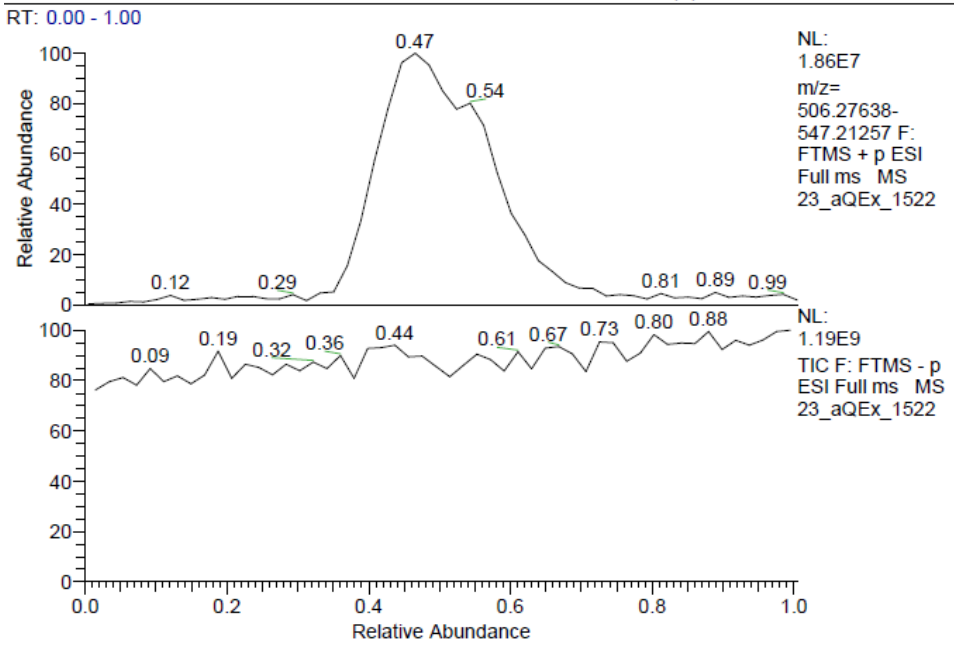
1a





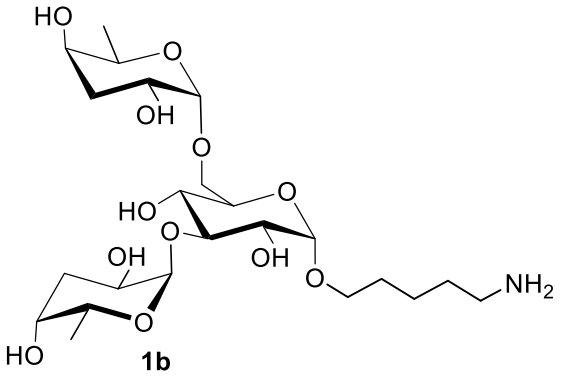
HR-ESI spectrum of deprotected abequose containing trisaccharide **1b**

D:\Data\Service\Data\23_aQEx_1522 09/13/23 15:17:01 (+)-HR-ESI-MS Sample: PN07058A Solvent: Water

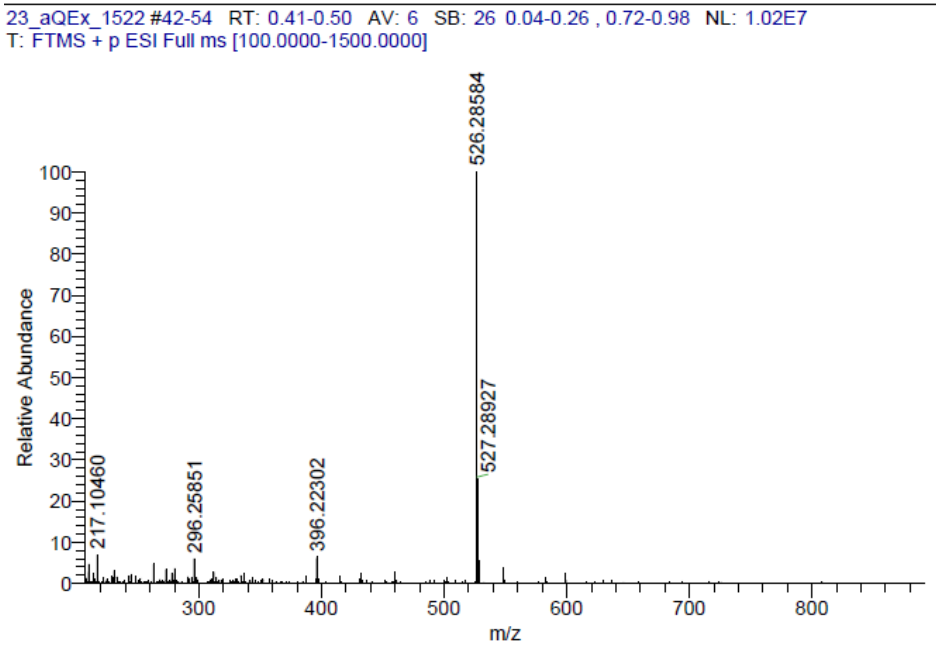


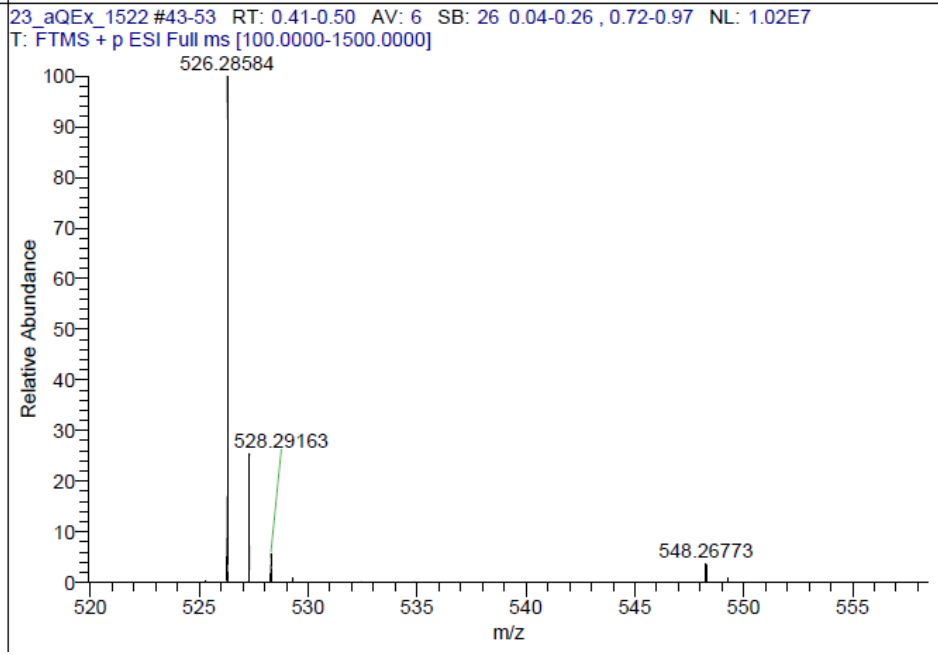
23_aQEx_1522#43-53 RT: 0.41-0.50 AV: 6
SB: 25 0.04-0.26 , 0.73-0.98
T: FTMS + p ESI Full ms [100.0000-1500.0000]
m/z= 526.05228-526.54846

m/z	Intensity	Relative	Theo. Mass	Delta (ppm)	RDB equiv.	Composition
526.28584	10319843.0	100.00	526.28580	0.07	2.5	$C_{23}H_{44}O_{12}N$
			526.28529	1.04	20.5	$C_{36}H_{36}ON_3$
			526.28663	-1.51	20.0	$C_{38}H_{38}O_2$



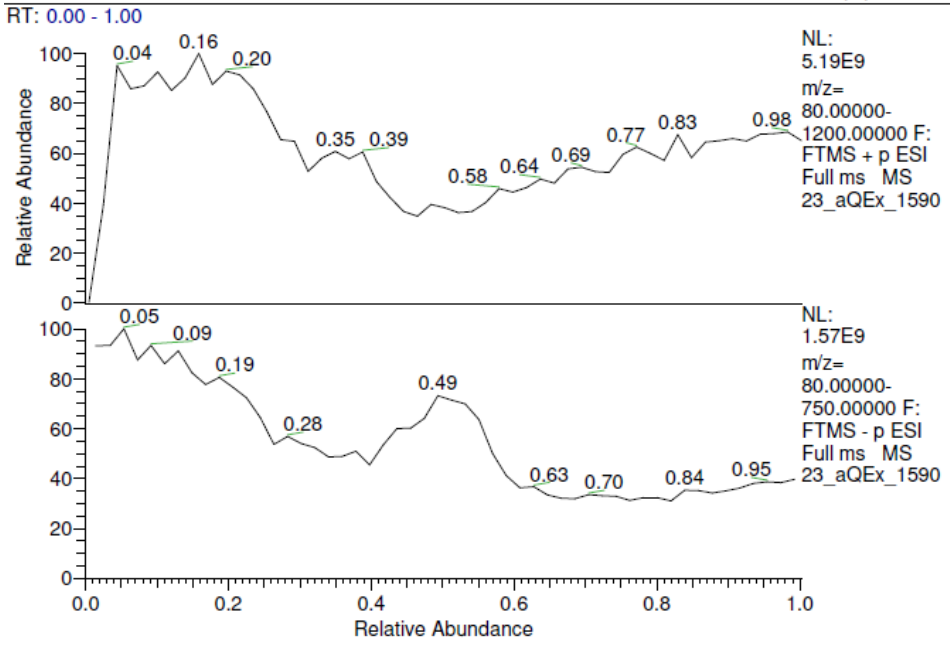
1b





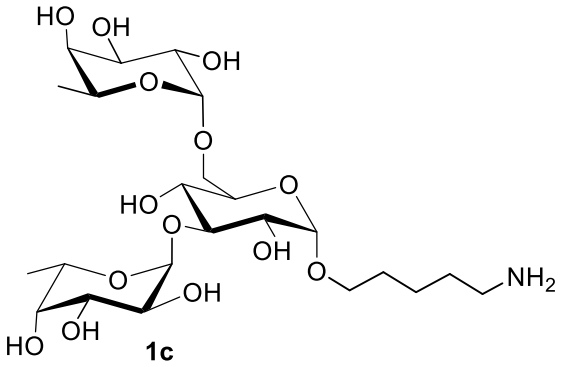
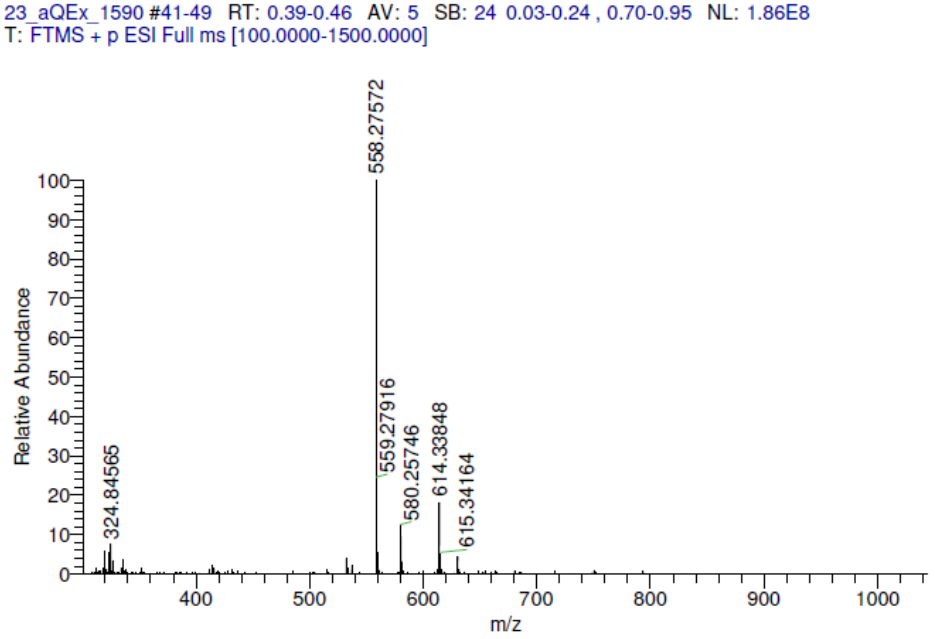
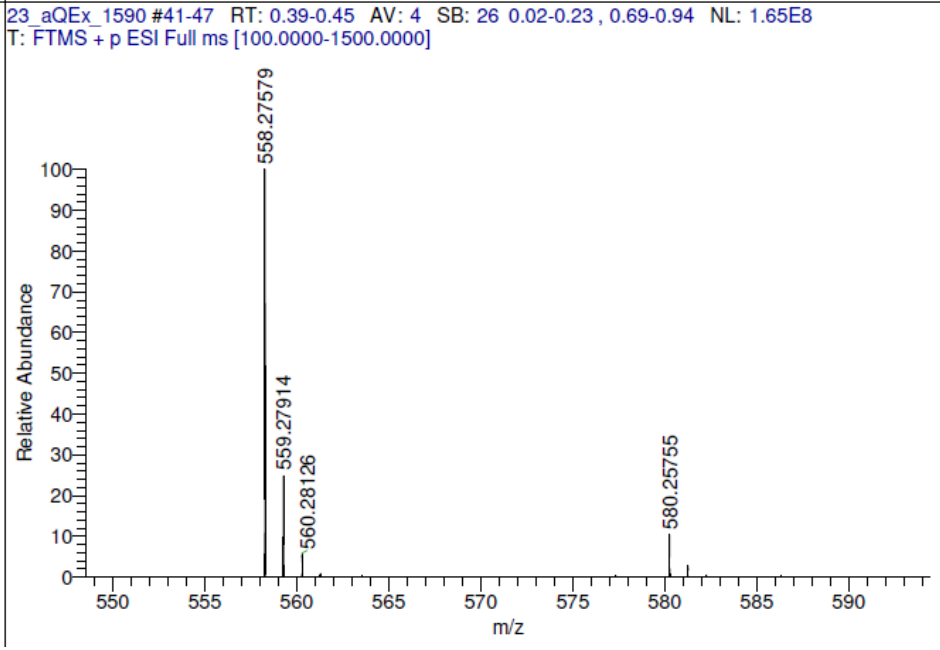
HR-ESI spectrum of deprotected fucose containing trisaccharide **1c**

D:\Data\Service\Data\23_aQEx_1590 09/27/23 12:14:09 Sample: PN07059A
Client: (+)-HR-ESI-MS Solvent: Water



23_aQEx_1590#41-47 RT: 0.39-0.45 AV: 4
SB: 25 0.03-0.23 , 0.69-0.94
T: FTMS + p ESI Full ms [100.0000-1500.0000]
m/z= 557.72441-558.62216

m/z	Intensity	Relative	Theo. Mass	Delta (ppm)	RDB equiv.	Composition
558.27572	167303008.0	100.00	558.27563	0.15	2.5	$C_{23}H_{44}O_{14}N$
			558.27563	0.16	8.0	$C_{22}H_{38}O_9N_8$
			558.27512	1.07	20.5	$C_{36}H_{36}O_3N_3$
			558.27646	-1.34	20.0	$C_{38}H_{38}O_4$



1c