Supporting Information

Microwave-assisted heating reactions of *N*-acetylglucosamine (GlcNAc) in sulfolane as a method generating 1,6-anhydrosugars consisting of amino monosaccharide backbones

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[4] Department of Chemistry and Chemical Engineering, Graduate School of Science and Engineering, Yamagata University; Jonan 4-3-16, Yonezawa 992-8510, Japan; matsuda@yz.yamagata-u.ac.jp
[5] Department of Organic Materials Science, Graduate School of Organic Materials Science, Yamagata University; Jonan 4-3-16, Yonezawa 992-8510, Japan; skawagu@yz.yamagata-u.ac.jp, narumi@yz.yamagata-u.ac.jp
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Contents

1. Supporting data for AGPNAc

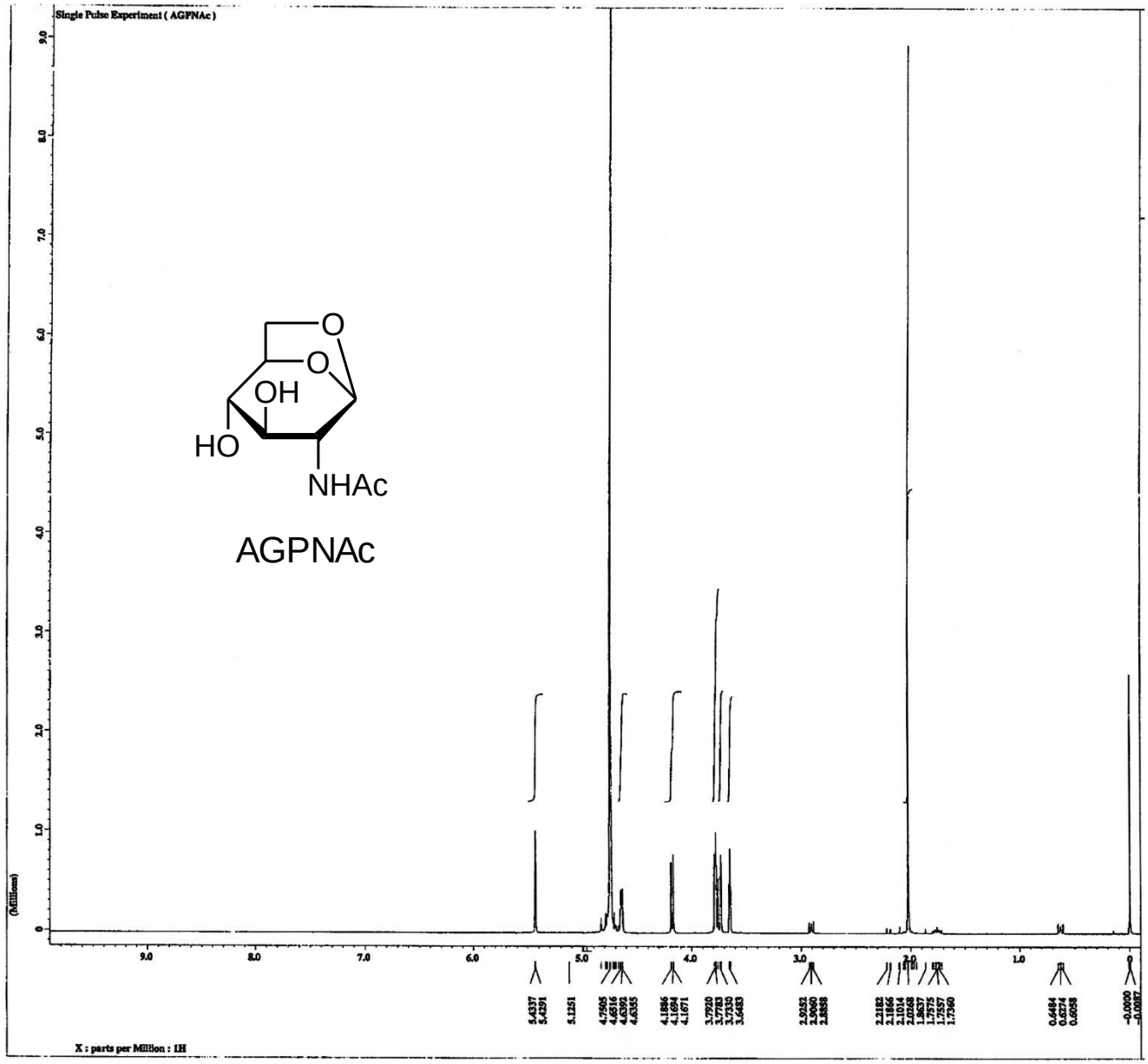


Figure S1.1: ^{1}H NMR spectrum of AGPNAc (400 MHz, D_2O).

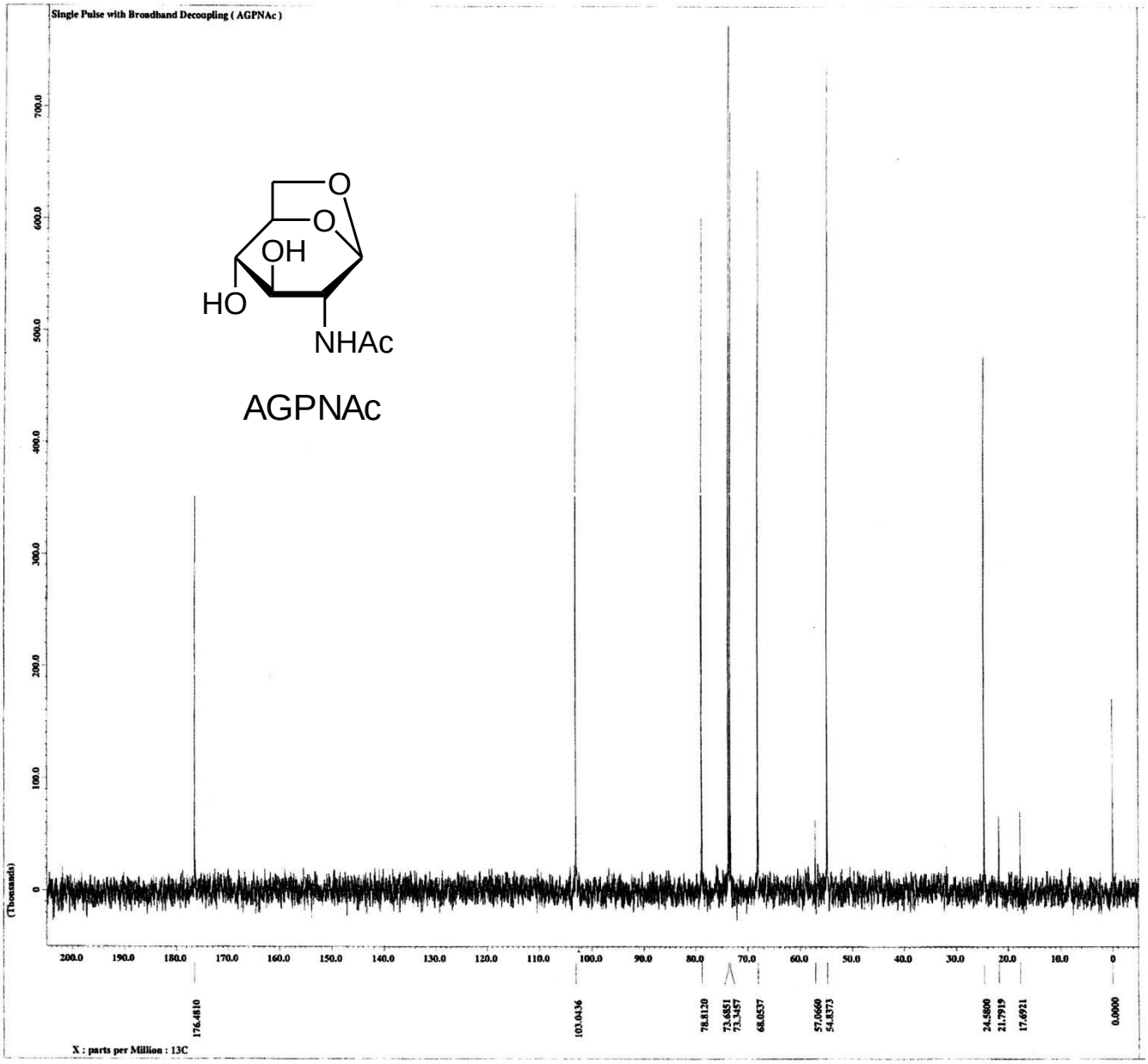
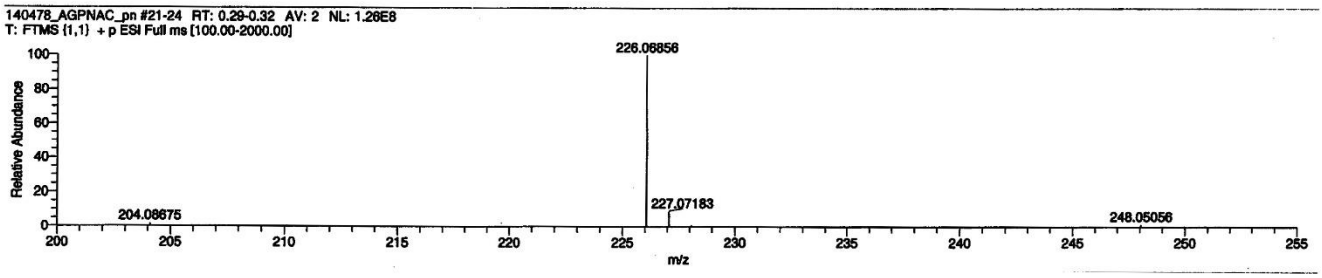


Figure S1.2: ^{13}C NMR spectrum of AGPNAc (100 MHz, D_2O).



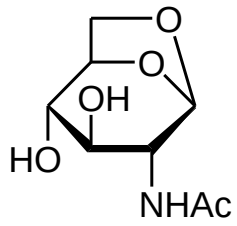
Elemental composition search on mass 226.06856

m/z= 221.06856-231.06856

Isotope	Min	Max
O-16	0	6
C-12	0	30
H-1	0	60
Na-23	0	1
N-14	0	1

Charge 1
Mass tolerance 5.00 ppm
Nitrogen rule not used
RDB equiv -1.00-100.00
max results 100

m/z	Theo. Mass	Delta (ppm)	RDB equiv.	Composition
226.06856	226.06859	-0.15	2.5	$C_8H_{13}O_5NNa$



AGPNAc

Figure S1.3: ESI-HRMS of AGPNAc along with analytical data.

2. Supporting data for AGFNAc

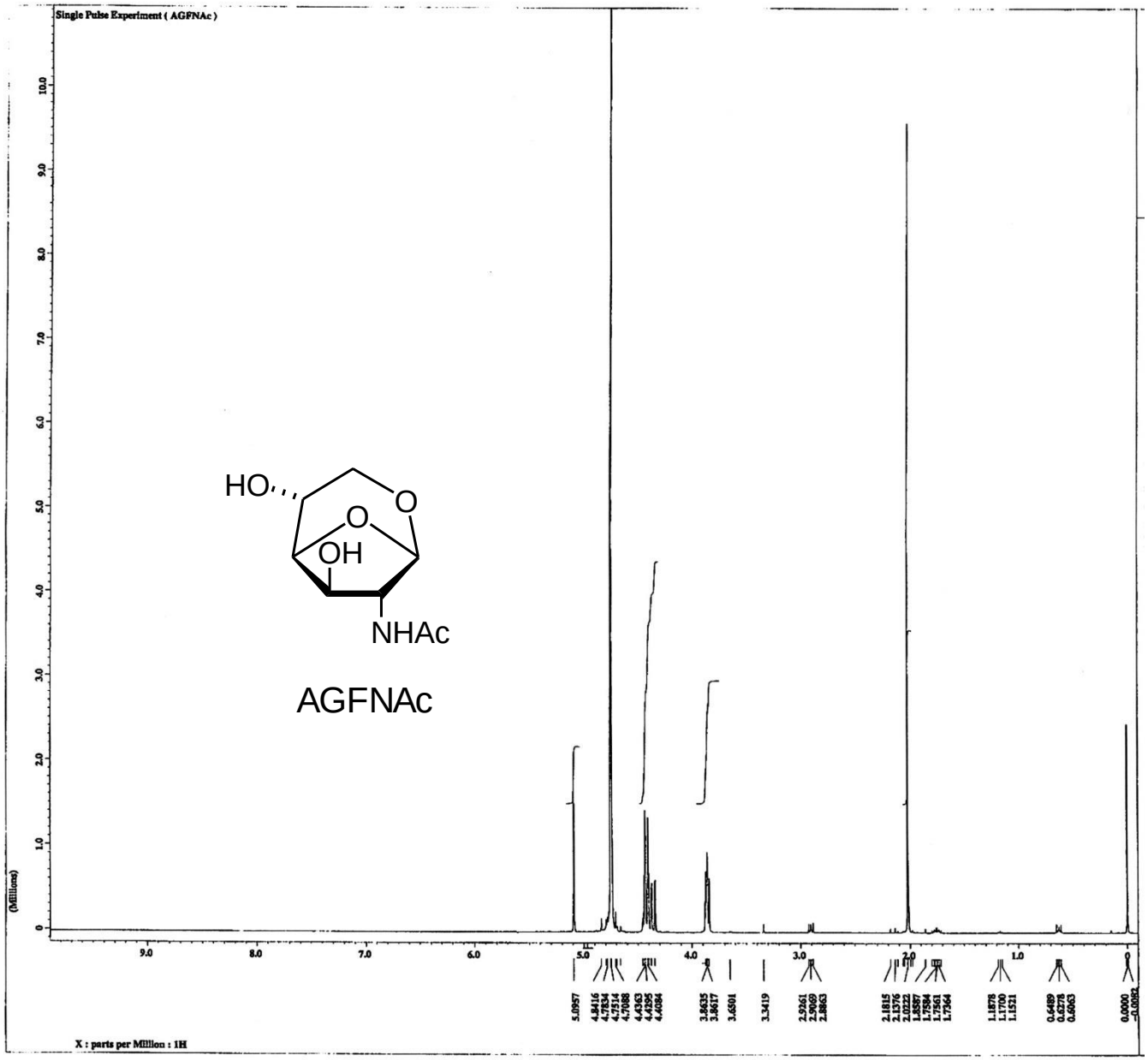


Figure S2.1: ^{1}H NMR spectrum of AGFNAc (400 MHz, D_2O).

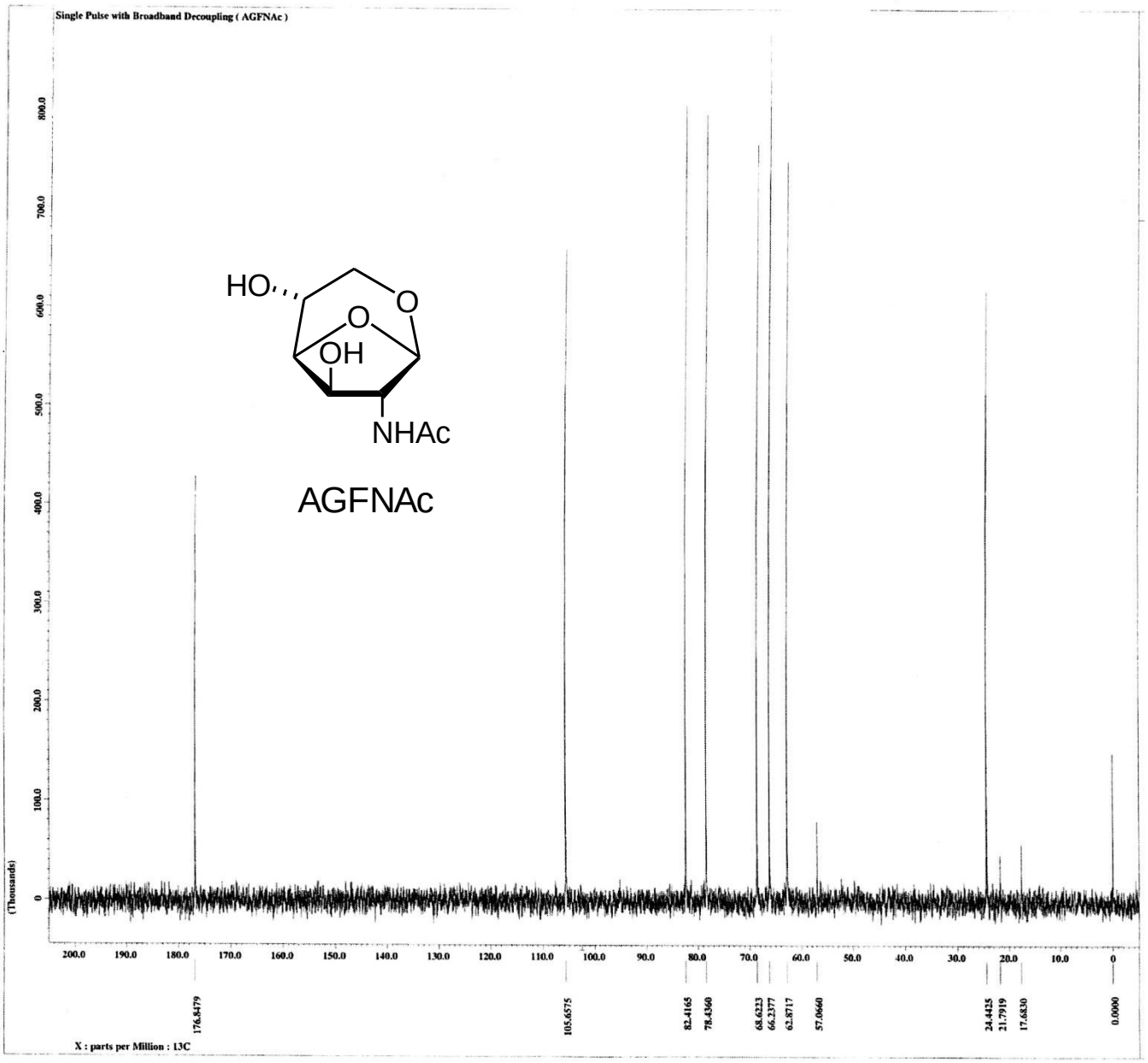
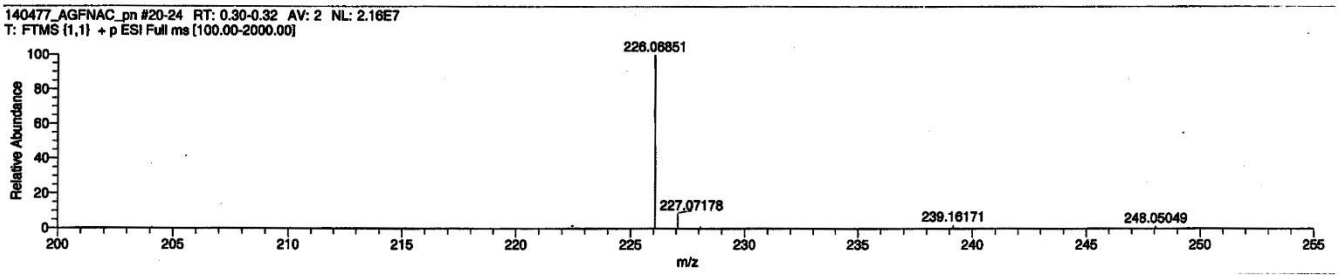


Figure S2.2: ^{13}C NMR spectrum of AGFNAc (100 MHz, D_2O).



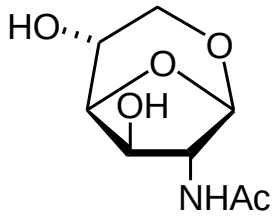
Elemental composition search on mass 226.06851

m/z= 221.06851-231.06851

Isotope	Min	Max
O-16	0	6
C-12	0	30
H-1	0	60
Na-23	0	1
N-14	0	1

Charge 1
Mass tolerance 5.00 ppm
Nitrogen rule not used
RDB equiv -1.00-100.00
max results 100

m/z	Theo Mass	Delta (ppm)	RDB equiv.	Composition
226.06851	226.06859	-0.37	2.5	$C_8H_{13}O_5NNa$



AGFNAc

Figure S2.3: ESI-HRMS of AGFNAc along with analytical data.

3. Supporting data for AGPNAcDA

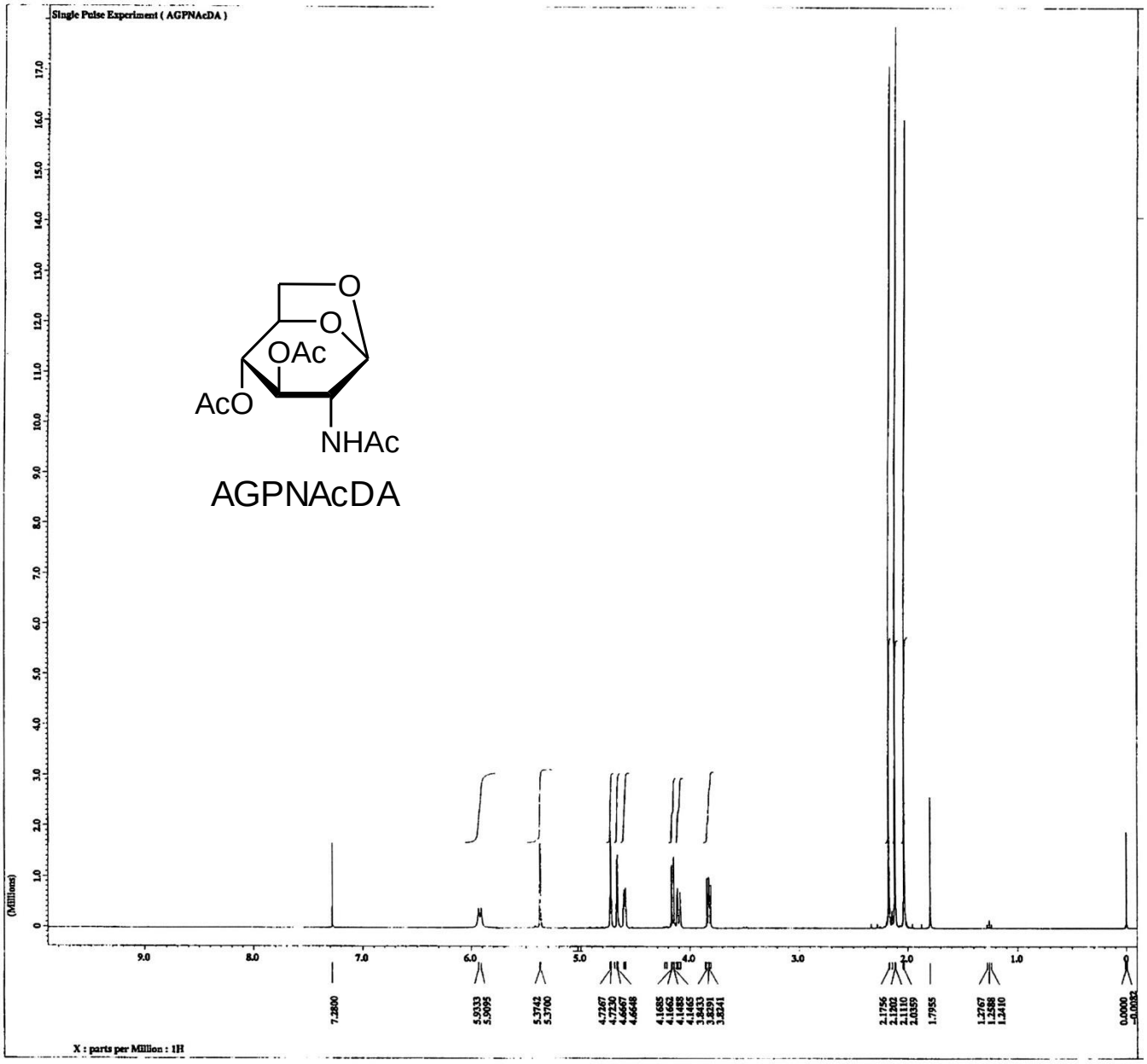


Figure S3.1: ^{1}H NMR spectrum of AGPNAcDA (400 MHz, $CDCl_3$).

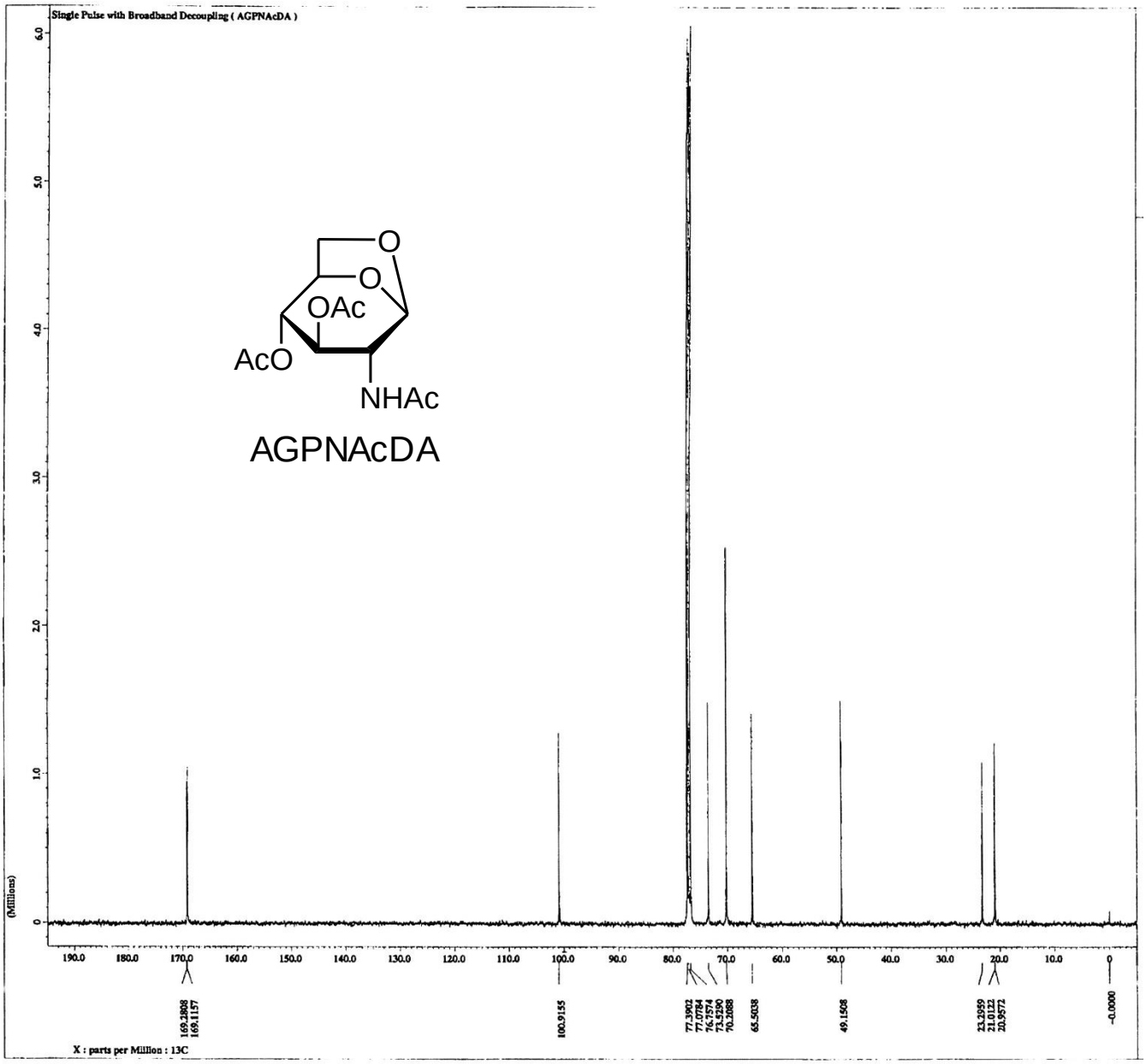
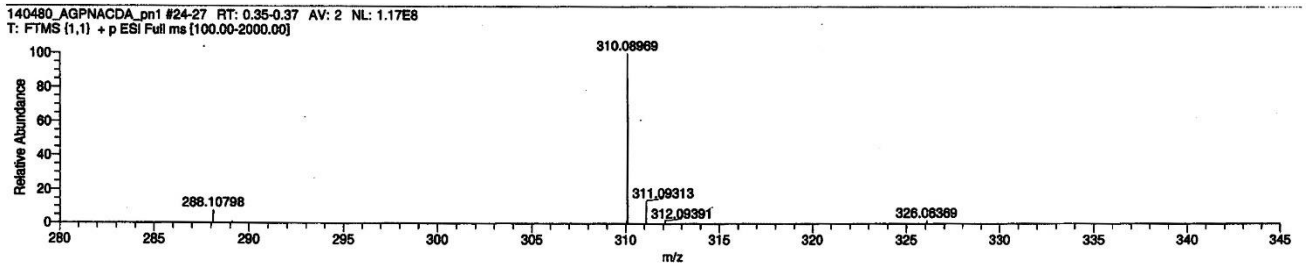


Figure S3.2: ^{13}C NMR spectrum of AGPNAcDA (100 MHz, $CDCl_3$).

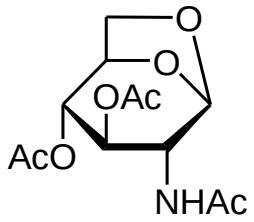


Elemental composition search on mass 310.08969

m/z= 305.08969-315.08969

Isotope	Min	Max
O-16	0	10
C-12	0	30
H-1	0	60
Na-23	0	1
N-14	0	1
B-10	0	1
S-32	0	1

Charge 1
Mass tolerance 5.00 ppm
Nitrogen rule not used
RDB equiv -1.00-100.00
max results 100



AGPNAcDA

m/z	Theo. Mass	Delta (ppm)	RDB equiv.	Composition
310.08969	310.08972	-0.11	4.5	$C_{12}H_{17}O_7NNa$
	310.08963	0.21	11.5	$C_{18}H_{16}O_2NS$
	310.08945	0.78	3.0	$C_{11}H_{18}O_{10}$
	310.08863	3.43	12.0	$C_{18}H_{13}O_3{}^{10}BNa$
	310.09103	-4.33	15.0	$C_{20}H_{12}O_3{}^{10}B$

Figure S3.3: ESI-HRMS of AGPNAcDA along with analytical data.

4. Supporting data for AGFNAcDA

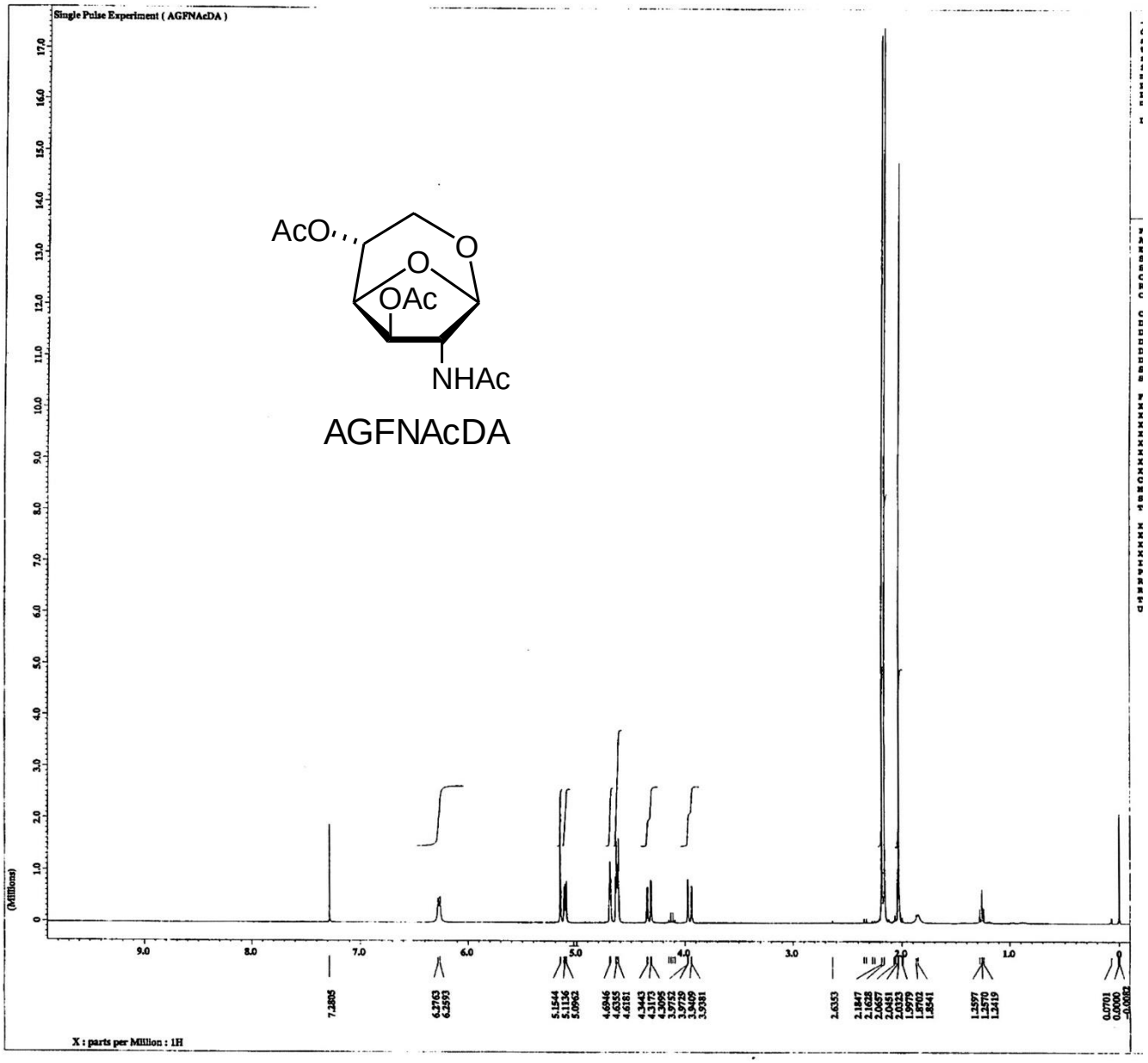


Figure S4.1: ^{1}H NMR spectrum of AGFNAcDA (400 MHz, $CDCl_3$).

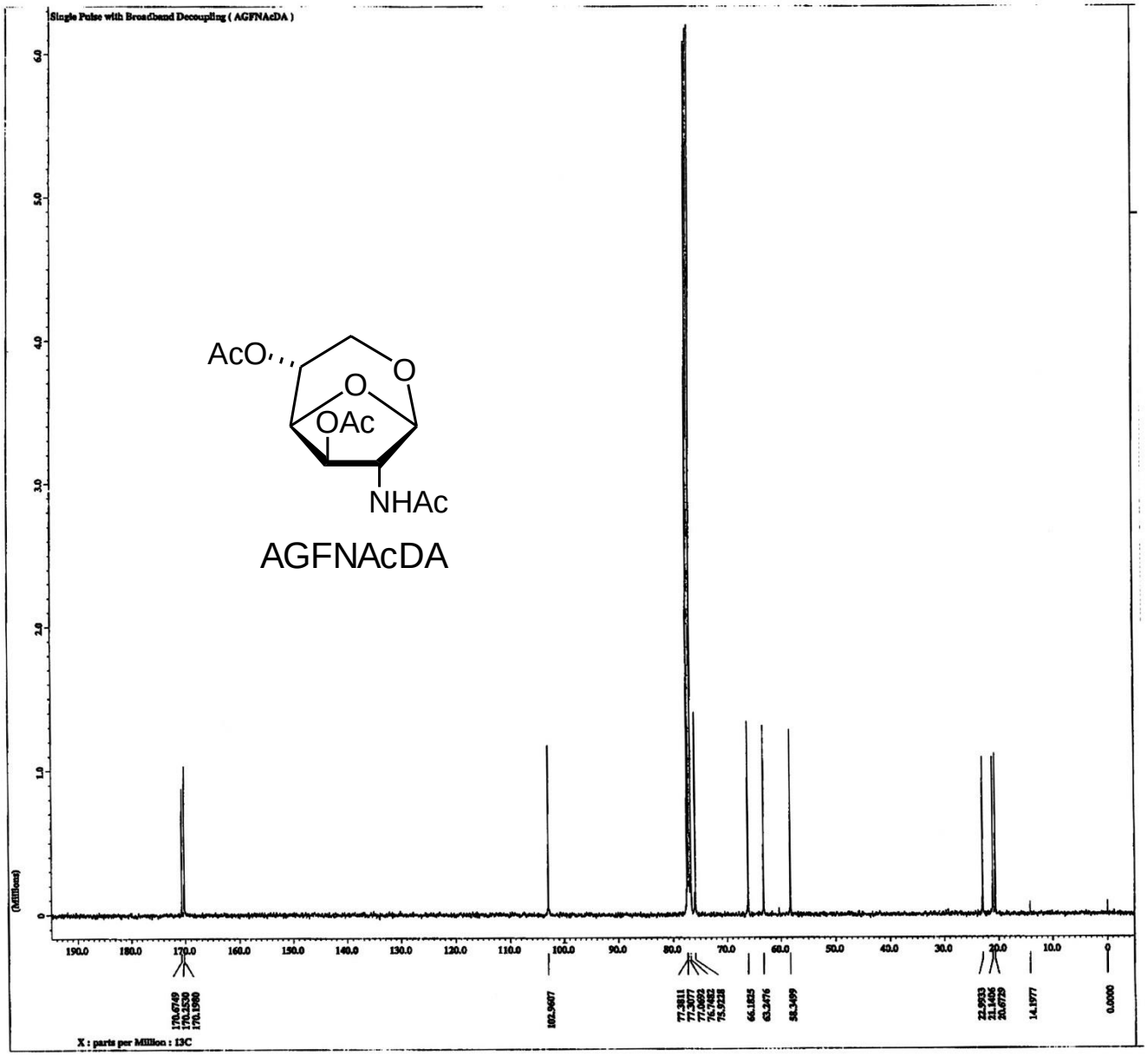
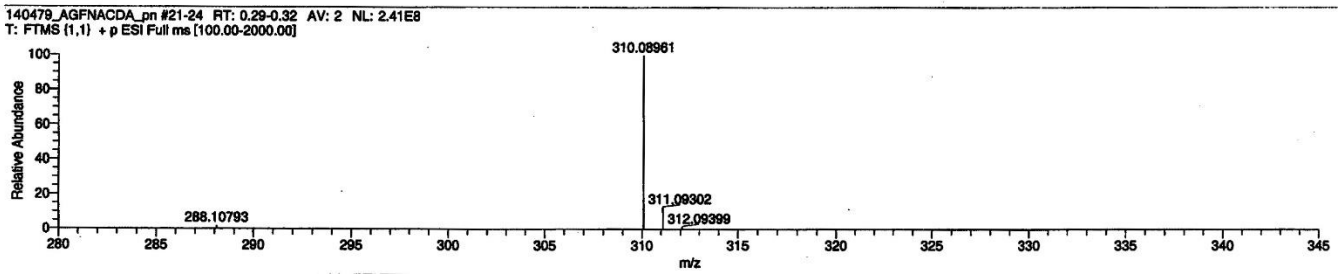


Figure S4.2: ^{13}C NMR spectrum of AGFNAcDA (100 MHz, $CDCl_3$).



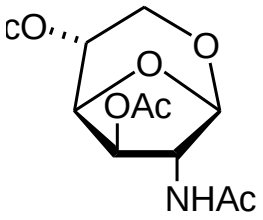
Elemental composition search on mass 310.08965

m/z= 305.08965-315.08965

Isotope	Min	Max
O-16	0	10
C-12	0	30
H-1	0	60
Na-23	0	1
N-14	0	1

Charge 1
Mass tolerance 5.00 ppm
Nitrogen rule not used
RDB equiv -1.00-100.00
max results 100

m/z	Theo. Mass	Delta (ppm)	RDB equiv.	Composition
310.08965	310.08972	-0.24	4.5	$C_{12}H_{17}O_7NNa$
	310.08945	0.65	3.0	$C_{11}H_{18}O_{10}$



AGFNAcDA

Figure S4.3: ESI-HRMS of AGFNAcDA along with analytical data.