

Synthesis of α -Galactosyl Ceramide, a Potent Immunostimulatory Agent

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Supporting Information

Table of Contents

Figure 1. ^1H NMR spectrum of 1,3,4,6-Tetra- <i>O</i> -acetyl 2-deoxy-D-galactopyranoside (3)	S1
Figure 2. ^{13}C NMR spectrum of 1,3,4,6-Tetra- <i>O</i> -acetyl 2-deoxy-D-galactopyranoside (3)	S2
Figure 3. ^1H NMR spectrum of <i>p</i> -Methylphenyl 3,4,6-tri- <i>O</i> -acetyl 2-deoxy-1-thio-D-galactopyranoside (4)	S3
Figure 4. ^{13}C NMR spectrum of <i>p</i> -Methylphenyl 3,4,6-tri- <i>O</i> -acetyl 2-deoxy-1-thio-D-galactopyranoside (4)	S4
Figure 5. ^1H NMR spectrum of <i>p</i> -Methylphenyl 2-deoxy-1-thio-D-galactopyranoside (5)	S5
Figure 6. ^{13}C NMR spectrum of <i>p</i> -Methylphenyl 2-deoxy-1-thio-D-galactopyranoside (5)	S6
Figure 7. ^1H NMR spectrum of <i>p</i> -Methylphenyl 2-deoxy-1-thio-6- <i>O</i> -triisopropylsilyl-D-galactopyranoside (6)	S7
Figure 8. ^{13}C NMR spectrum of <i>p</i> -Methylphenyl 2-deoxy-1-thio-6- <i>O</i> -triisopropylsilyl-D-galactopyranoside (6)	S8
Figure 9. ^1H NMR spectrum of <i>p</i> -Methylphenyl 3,4-di- <i>O</i> -benzyl-2-deoxy-1-thio-6- <i>O</i> -triisopropylsilyl-D-galactopyranoside (7)	S9
Figure 10. ^{13}C NMR spectrum of <i>p</i> -Methylphenyl 3,4-di- <i>O</i> -benzyl-2-deoxy-1-thio-6- <i>O</i> -triisopropylsilyl-D-galactopyranoside (7)	S10
Figure 11. ^1H NMR spectrum of 3,4-Di- <i>O</i> -benzyl-2-deoxy-6- <i>O</i> -triisopropylsilyl-D-galactopyranoside (8)	S11
Figure 12. ^{13}C NMR spectrum of 3,4-Di- <i>O</i> -benzyl-2-deoxy-6- <i>O</i> -triisopropylsilyl-D-galactopyranoside (8)	S12
Figure 13. ^1H NMR spectrum of 3,4-Di- <i>O</i> -benzyl-1- <i>O</i> -triisopropylsilyl-octadec-6-ene-2-ol (9)	S13
Figure 14. ^{13}C NMR spectrum of 3,4-Di- <i>O</i> -benzyl-1- <i>O</i> -triisopropylsilyl-octadec-6-ene-2-ol (9)	S14
Figure 15. ^1H NMR spectrum of 2-Azido-3,4-di- <i>O</i> -benzyl-1- <i>O</i> -triisopropylsilyl-octadec-6-ene (10)	S15
Figure 16. ^{13}C NMR spectrum of 2-Azido-3,4-di- <i>O</i> -benzyl-1- <i>O</i> -triisopropylsilyl-octadec-6-ene (10)	S16
Figure 17. ^1H NMR spectrum of 2-Azido-3,4-di- <i>O</i> -benzyl-octadec-6-ene-1-ol (11)	S17
Figure 18. ^{13}C NMR spectrum of 2-Azido-3,4-di- <i>O</i> -benzyl-octadec-6-ene-1-ol (11)	S18
Figure 19. ^1H NMR spectrum of 2-Azido-3,4-di- <i>O</i> -benzyl-1- <i>O</i> -(2,3,4,5-tetra- <i>O</i> -benzyl-D-galactopyranosyl)-D-ribo-octadeca-6-ene-1-ol (13)	S19
Figure 20. ^{13}C NMR spectrum of 2-Azido-3,4-di- <i>O</i> -benzyl-1- <i>O</i> -(2,3,4,5-tetra- <i>O</i> -benzyl-D-galactopyranosyl)-D-ribo-octadeca-6-ene-1-ol (13)	S20

- Figure 21.** ¹H NMR spectrum of 2-Azido-3,4-di-*O*-benzyl-1-*O*-(2,3-di-*O*-benzyl-4,6-*O*-benzylidene- α -D-galactopyranosyl)-D-ribo-octadeca-6-ene-1-ol (17)
- Figure 22.** ¹³C NMR spectrum of 2-Azido-3,4-di-*O*-benzyl-1-*O*-(2,3-di-*O*-benzyl-4,6-*O*-benzylidene- α -D-galactopyranosyl)-D-ribo-octadeca-6-ene-1-ol (17)
- Figure 23.** ¹H NMR spectrum of 2-Amino-3,4-di-*O*-benzyl-1-*O*-(2,3-di-*O*-benzyl-4,6-*O*-benzylidene- α -D-galactopyranosyl)-D-ribo-octadeca-6-ene-1-ol (19)
- Figure 24.** ¹³C NMR spectrum of 2-Amino-3,4-di-*O*-benzyl-1-*O*-(2,3-di-*O*-benzyl-4,6-*O*-benzylidene- α -D-galactopyranosyl)-D-ribo-octadeca-6-ene-1-ol (19)
- Figure 25.** ¹H NMR spectrum of 3,4-Di-*O*-benzyl-1-*O*-(2,3-di-*O*-benzyl-4,6-*O*-benzylidene- α -D-galactopyranosyl)-2-hexacosylamino-D-ribo-octadeca-6-ene-1-ol (20)
- Figure 26.** ¹³C NMR spectrum of 3,4-Di-*O*-benzyl-1-*O*-(2,3-di-*O*-benzyl-4,6-*O*-benzylidene- α -D-galactopyranosyl)-2-hexacosylamino-D-ribo-octadeca-6-ene-1-ol (20)
- Figure 27.** ¹H NMR spectrum of 1-*O*-(α -D-galactopyranosyl)-2-hexacosylamino-D-ribo-1,3,4-octadecantriol (1)
- Figure 28.** ¹³C NMR spectrum of 1-*O*-(α -D-galactopyranosyl)-2-hexacosylamino-D-ribo-1,3,4-octadecantriol (1)

S21

S22

S23

S24

S25

S26

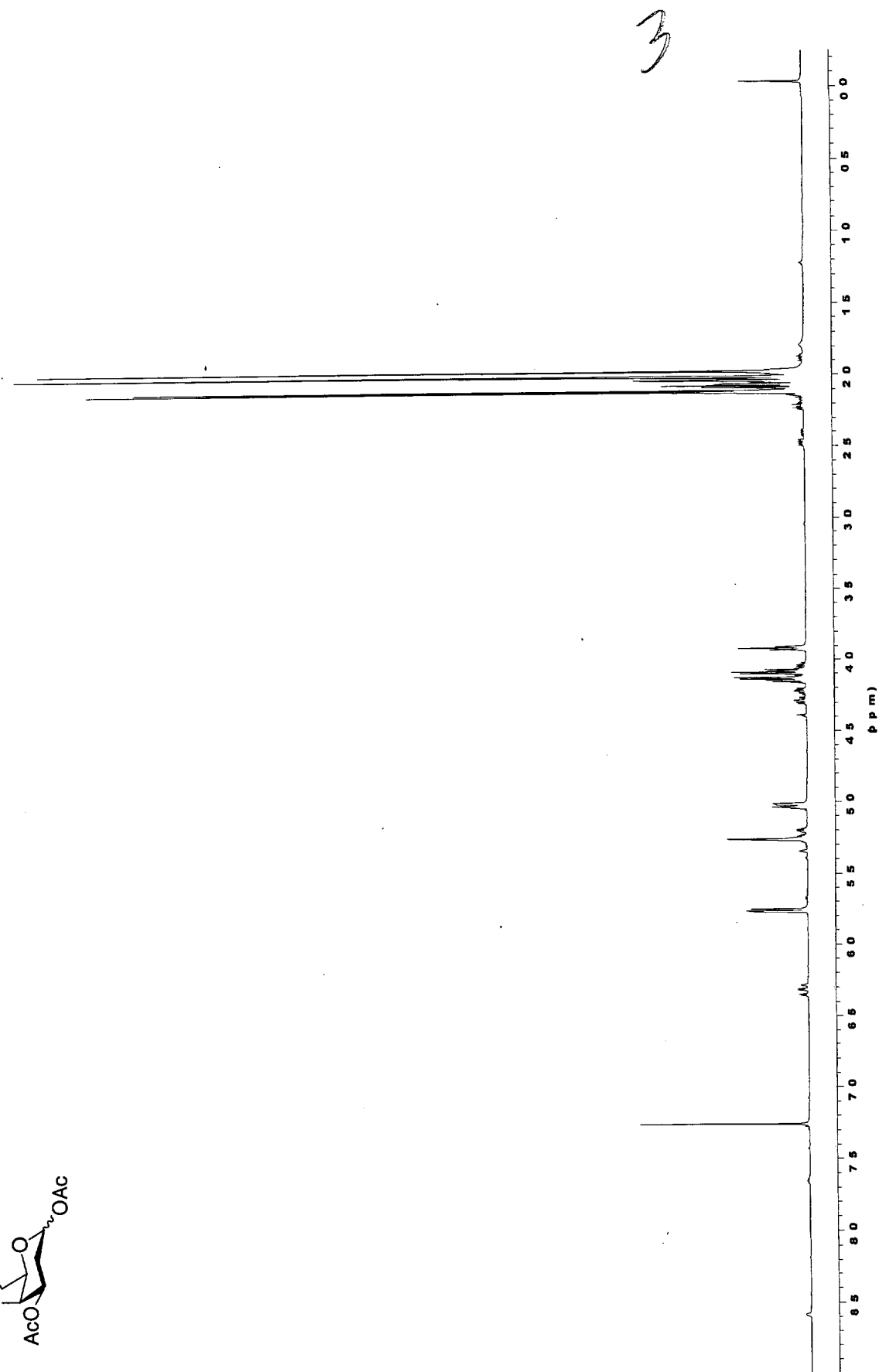
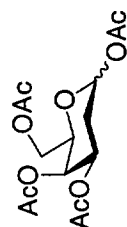
S27

S28

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Figure 1. ^1H NMR spectrum of 1,3,4,6-Tetra-*O*-acetyl 2-deoxy-D-galactopyranoside (3)

S1



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Figure 2. ^{13}C NMR spectrum of 1,3,4,6-Tetra-*O*-acetyl 2-deoxy-D-galactopyranoside (**3**)

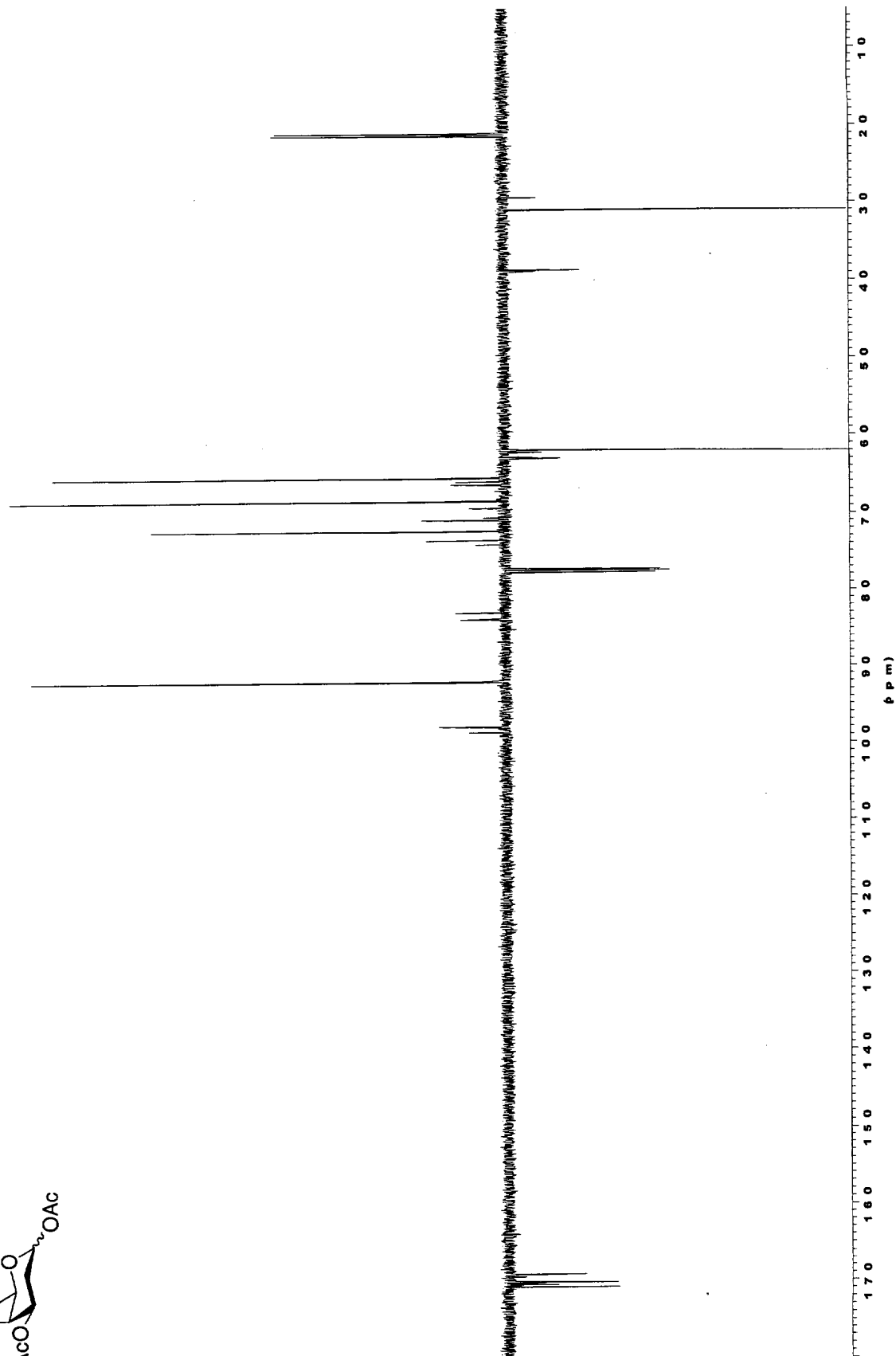
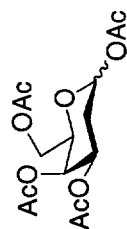
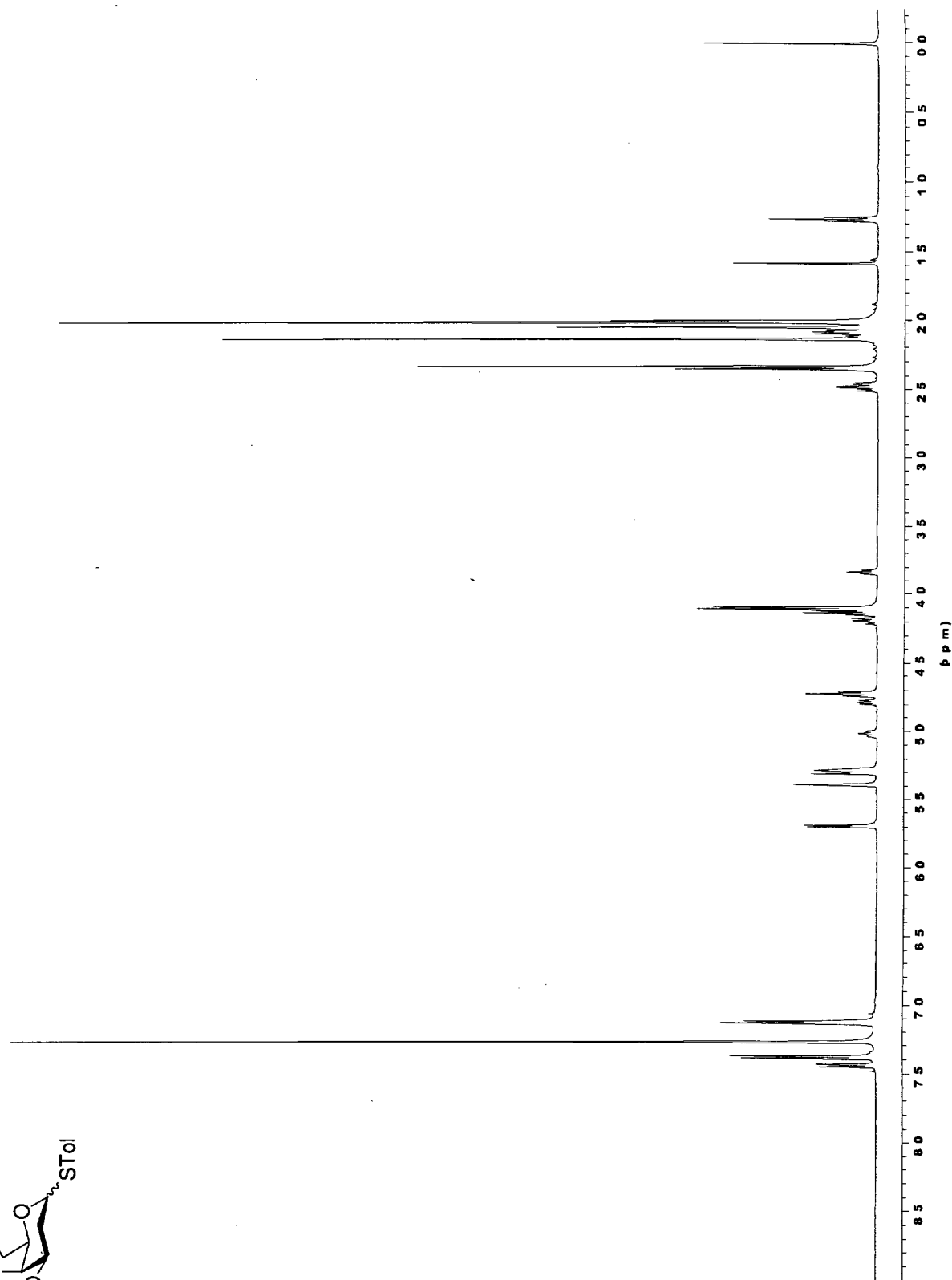
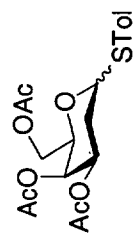


Figure 3. ^1H NMR spectrum of *p*-Methylphenyl 3,4,6-tri-*O*-acetyl 2-deoxy-1-thio-D-galactopyranoside (**4**)

S3



S4

Figure 4. ^{13}C NMR spectrum of *p*-Methylphenyl 3,4,6-tri-*O*-acetyl 2-deoxy-1-thio-D-galactopyranoside (4)

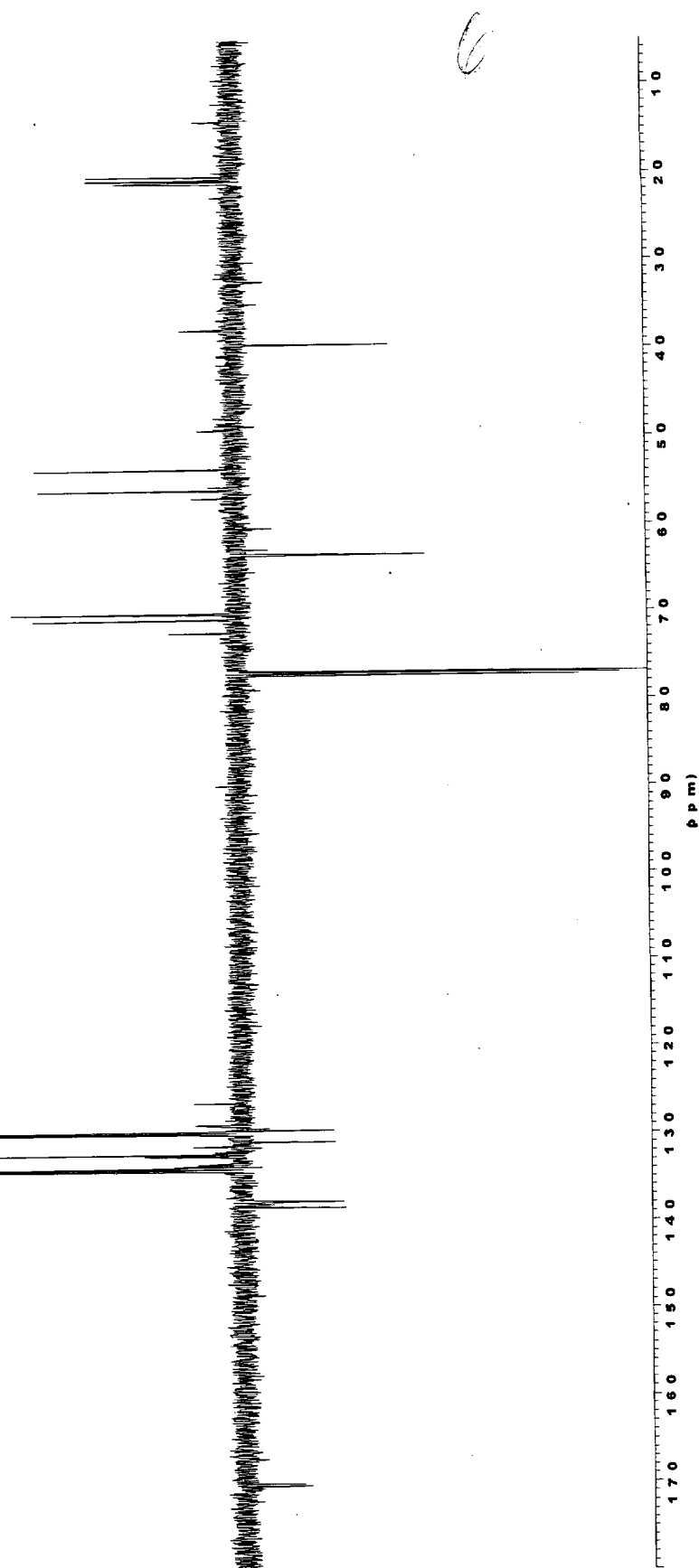
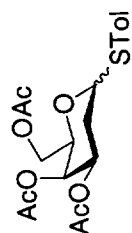


Figure 5. ^1H NMR spectrum of *p*-Methylphenyl 2-deoxy-1-thio-D-galactopyranoside (**5**)

S5

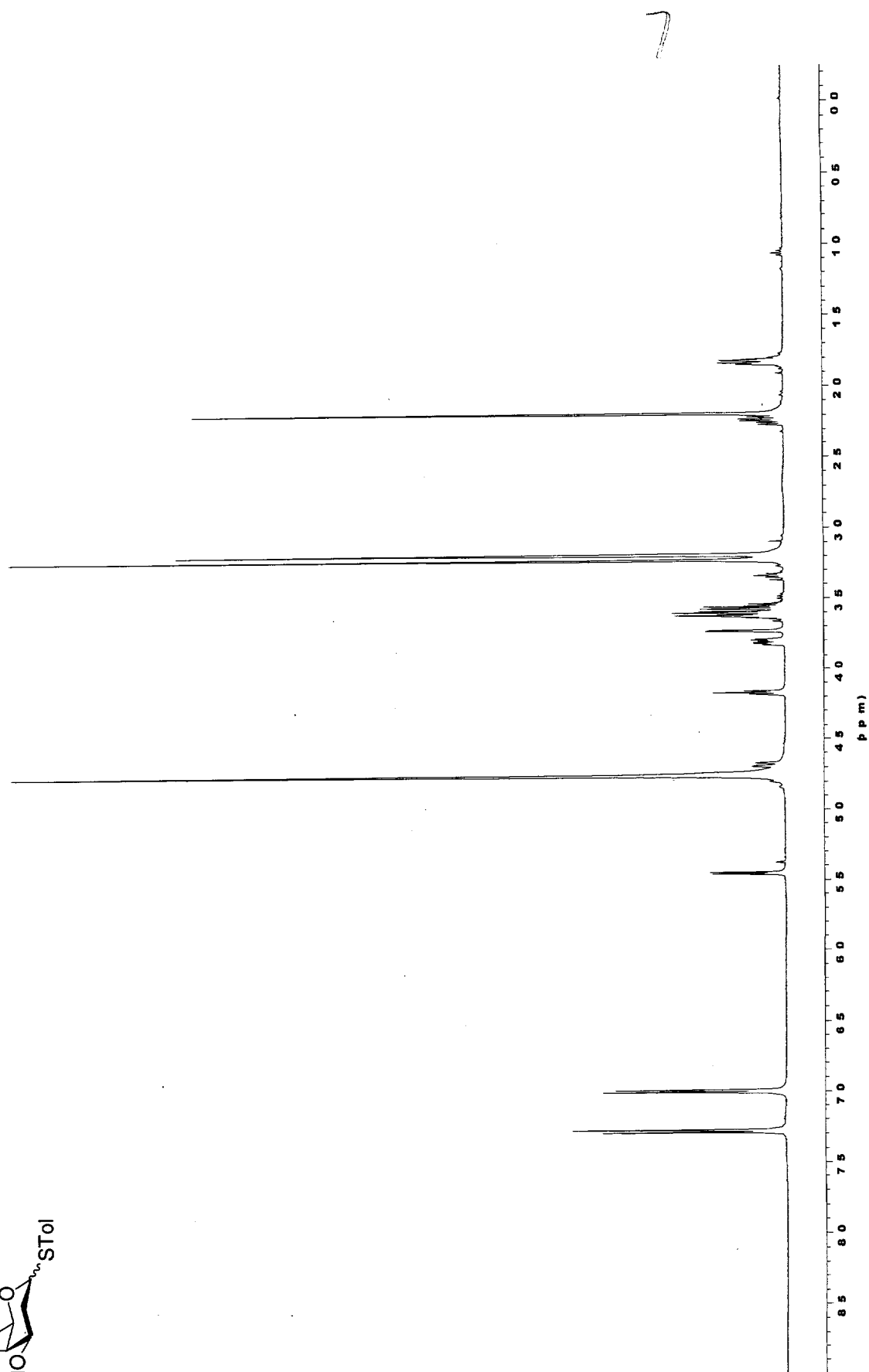
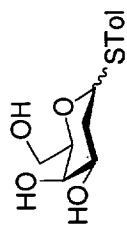


Figure 6. ^{13}C NMR spectrum of *p*-Methylphenyl 2-deoxy-1-thio-D-galactopyranoside (5)

S6

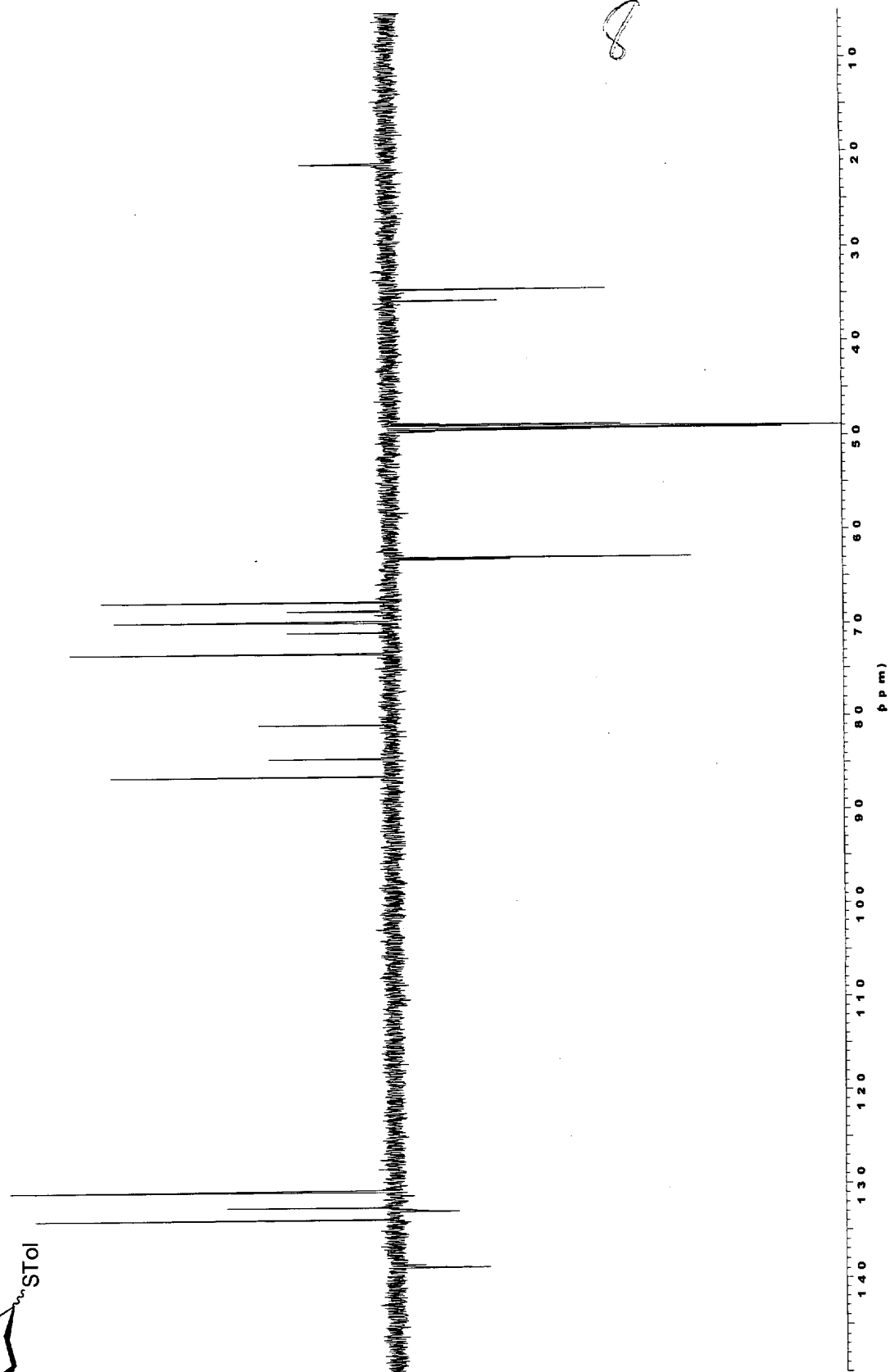
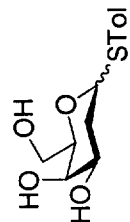


Figure 7. ^1H NMR spectrum of *p*-Methylphenyl 2-deoxy-1-thio-6-*O*-triisopropylsilyl-D-galactopyranoside (**6**)

S7

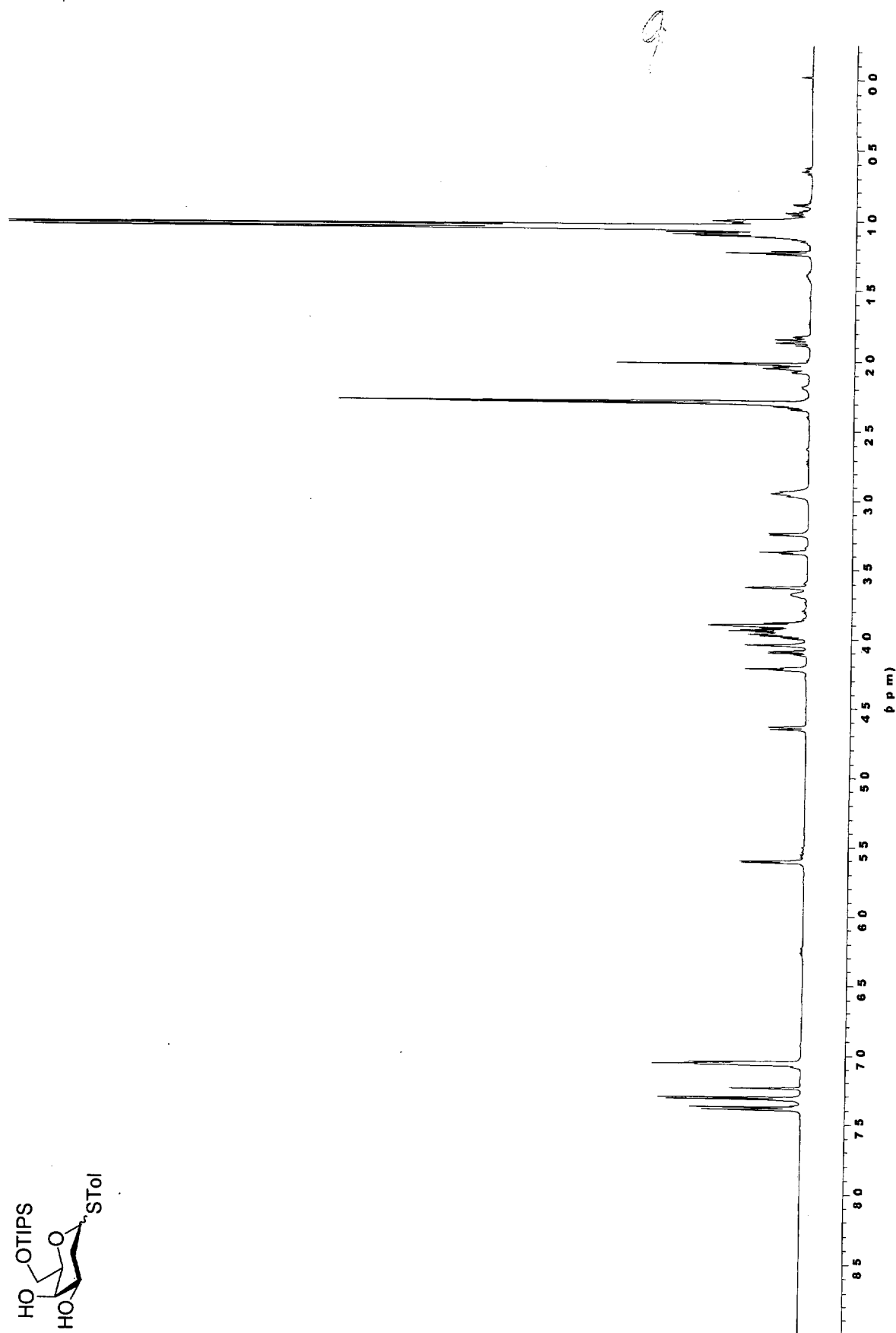


Figure 8. ^{13}C NMR spectrum of *p*-Methylphenyl 2-deoxy-1-thio-6-*O*-triisopropylsilyl-D-galactopyranoside (**6**)

S8

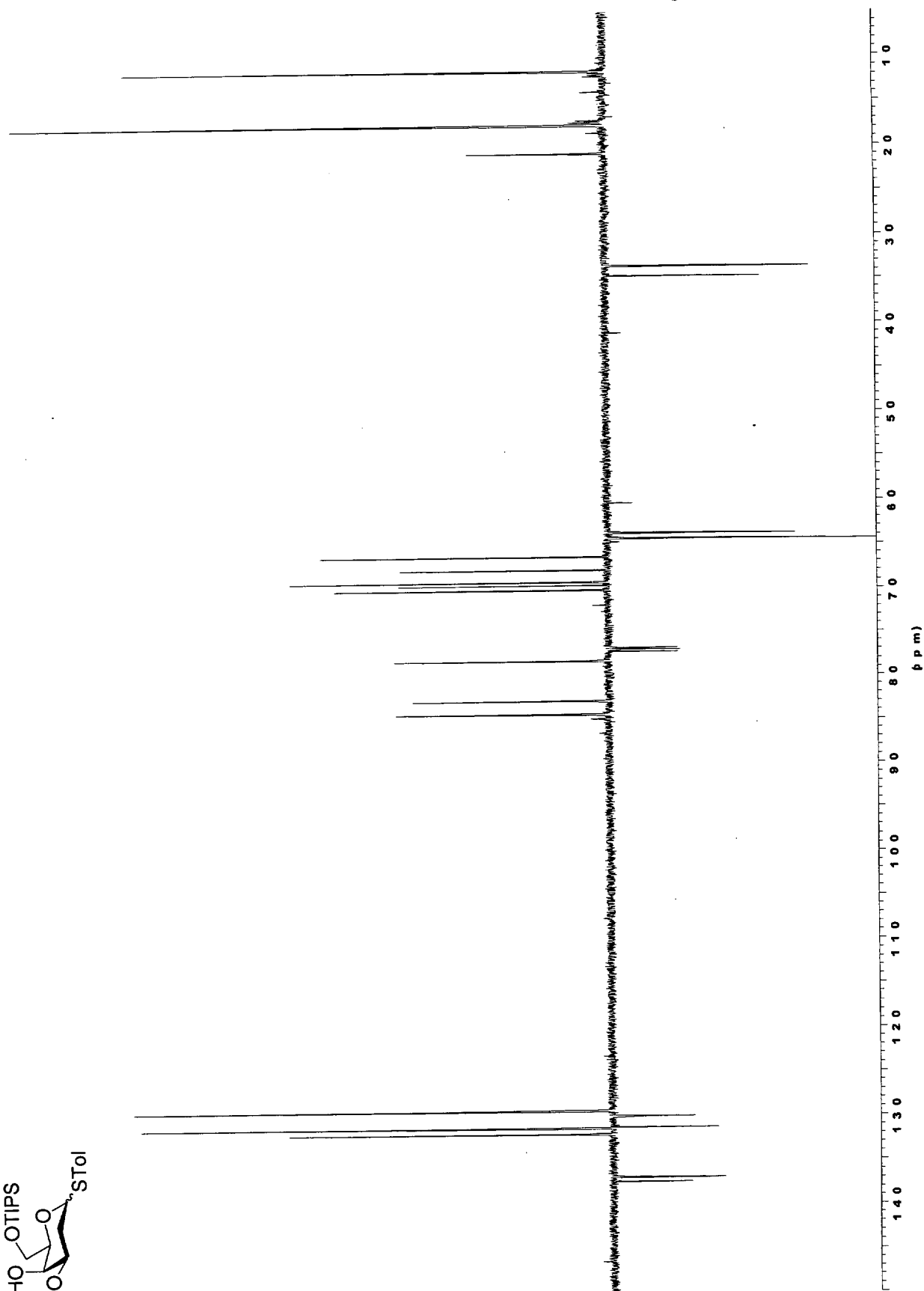


Figure 9. ^1H NMR spectrum of *p*-Methylphenyl 3,4-di-*O*-benzyl-2-deoxy-1-thio-6-*O*-triisopropylsilyl-D-galactopyranoside (7) S9

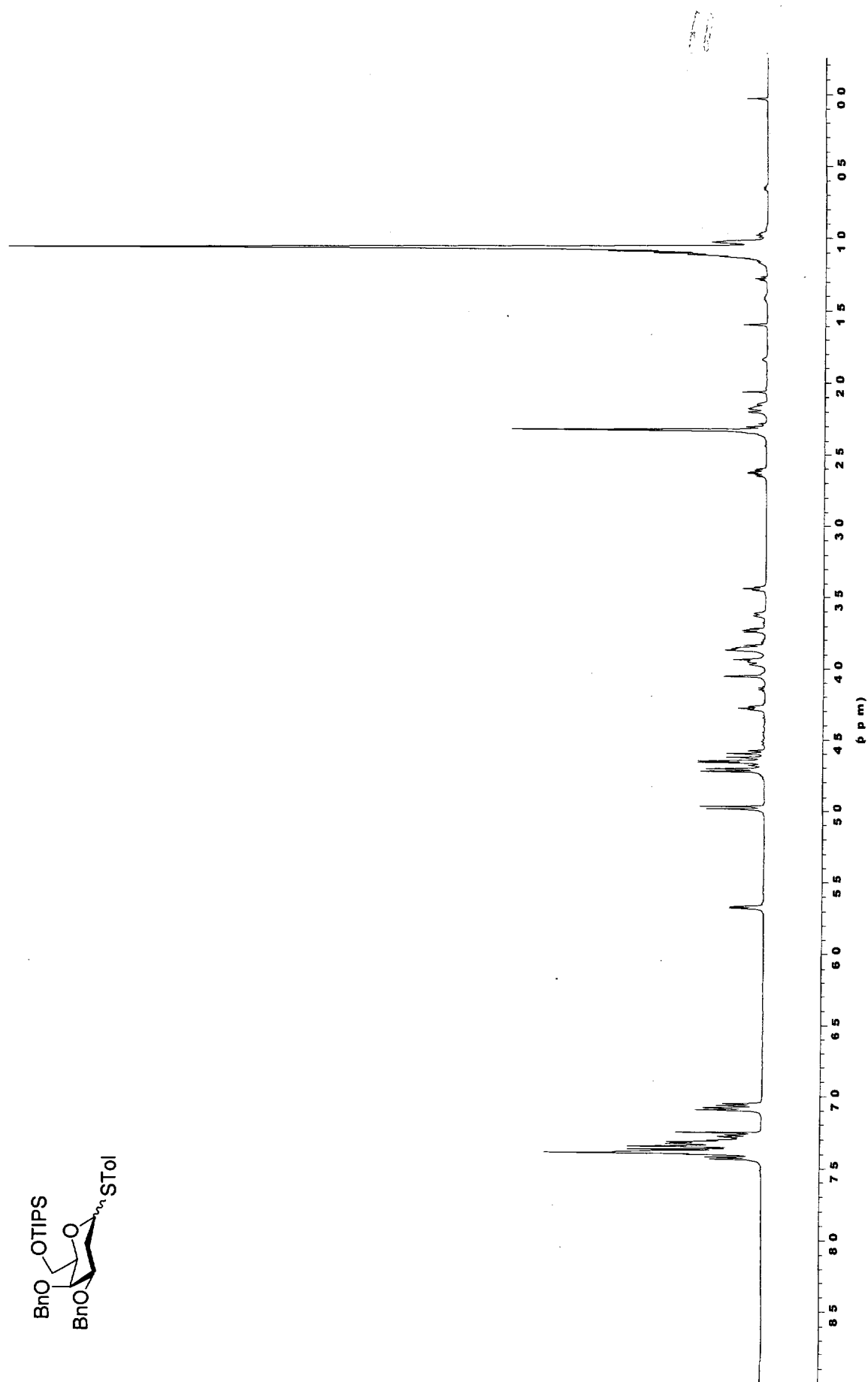


Figure 10. ^{13}C NMR spectrum of *p*-Methylphenyl 3,4-di-*O*-benzyl-2-deoxy-1-thio-6-*O*-triisopropylsilyl-D-galactopyranoside (7) S10

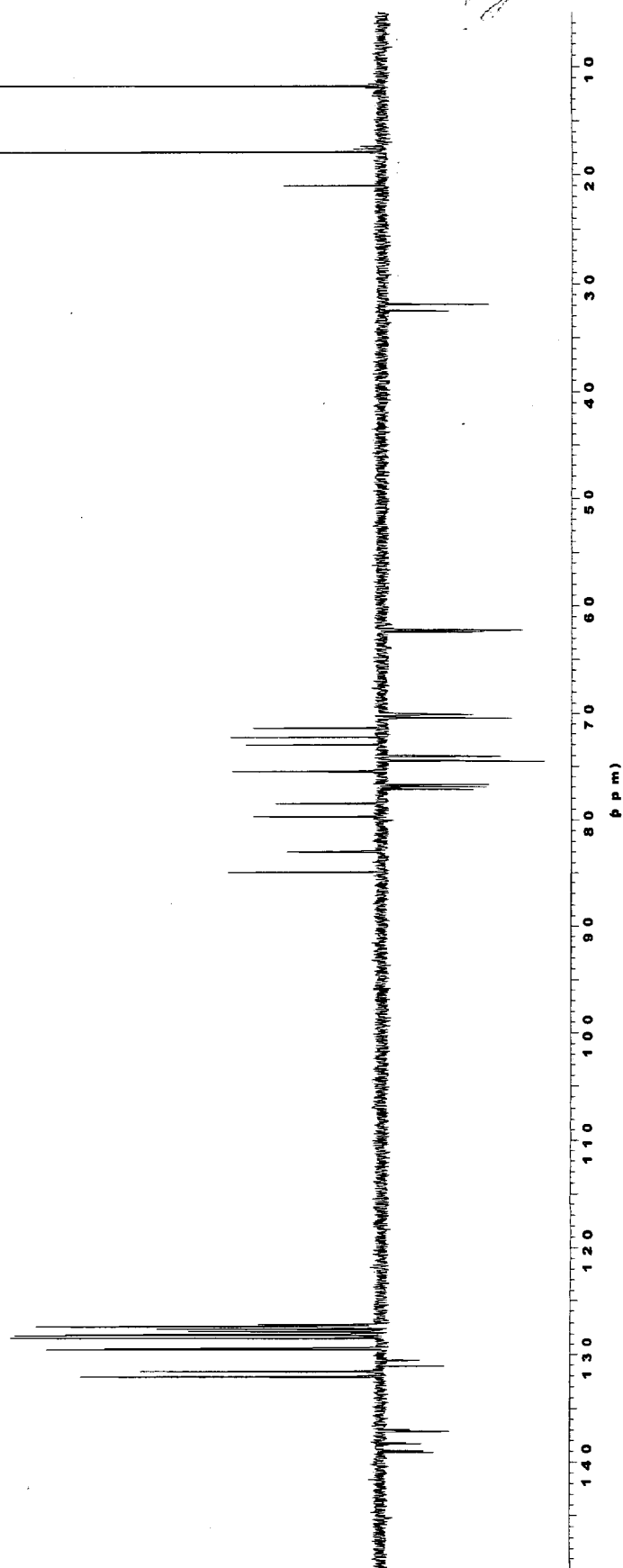


Figure 11. ¹H NMR spectrum of 3,4-Di-*O*-benzyl-2-deoxy-6-*O*-triisopropylsilyl-D-galactopyranoside (**8**)

S11

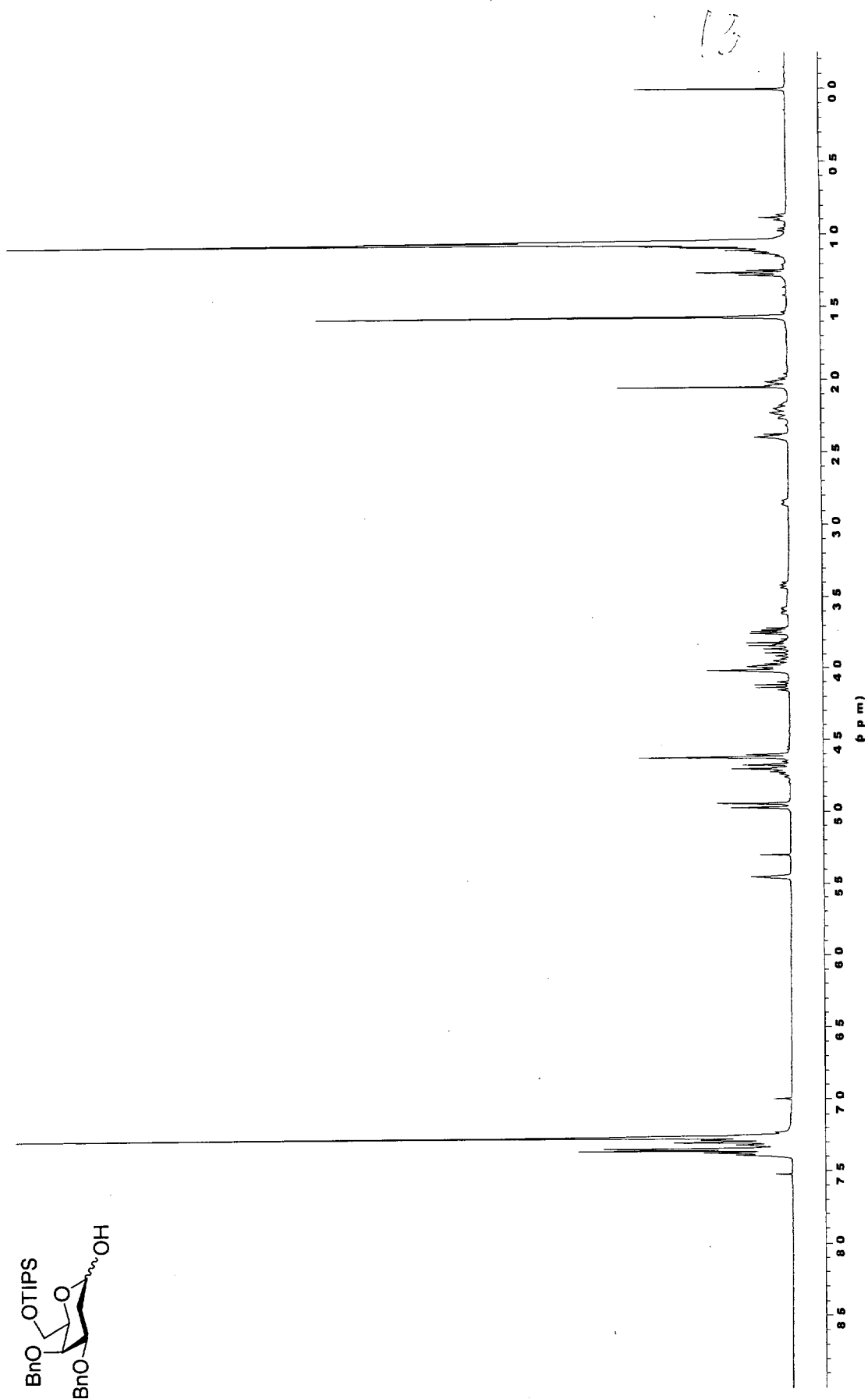
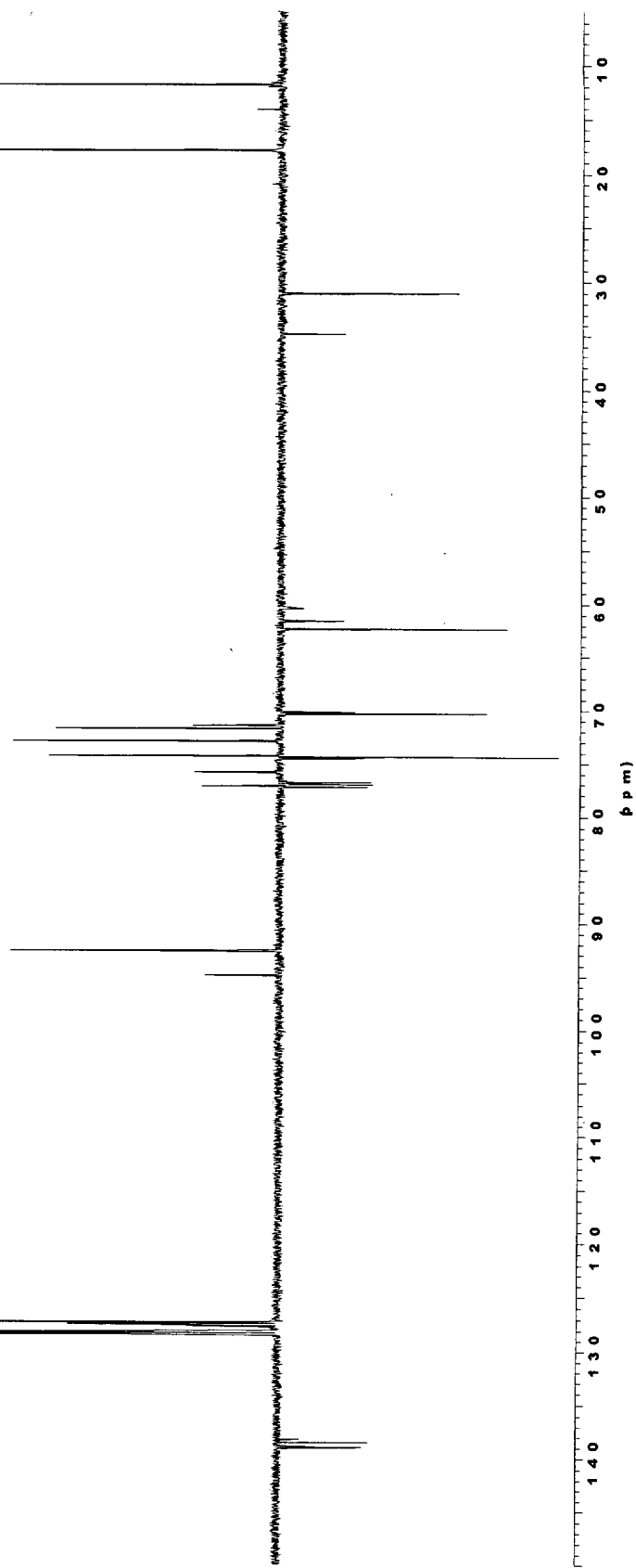


Figure 12. ^{13}C NMR spectrum of 3,4-Di-*O*-benzyl-2-deoxy-6-*O*-triisopropylsilyl-D-galactopyranoside (**8**)

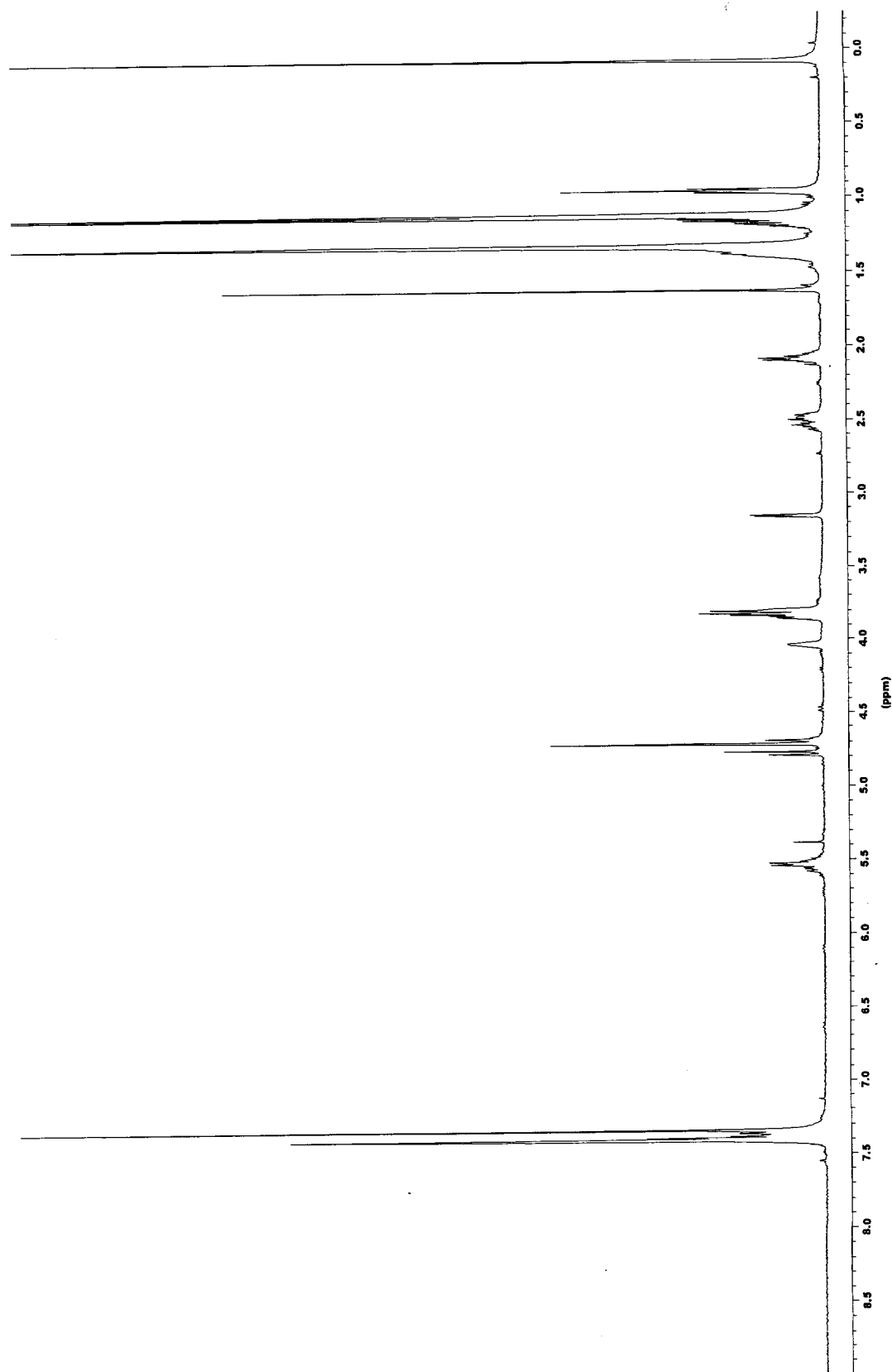
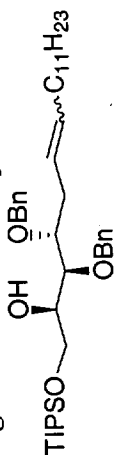
S12



14

S13

Figure 13. ¹H NMR spectrum of 3,4-Di-*O*-benzyl-1-*O*-triisopropylsilyl-octadec-6-ene-2-ol (**9**)



S14

Figure 14. ^{13}C NMR spectrum of 3,4-Di-*O*-benzyl-1-*O*-triisopropylsilyl-octadec-6-ene-2-ol (9)

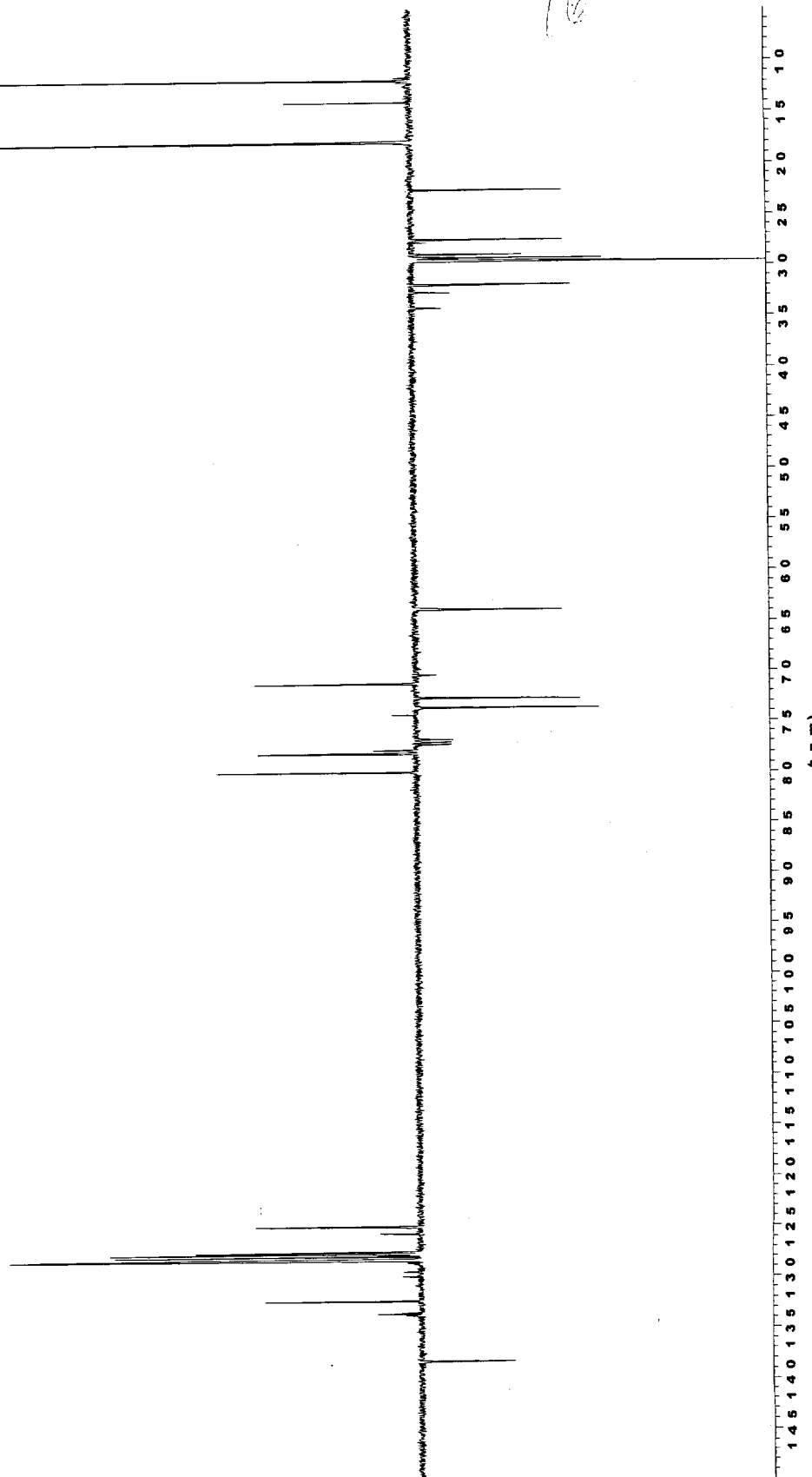
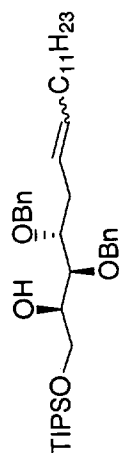


Figure 15. ^1H NMR spectrum of 2-Azido-3,4-di-*O*-benzyl-1-*O*-triisopropylsilyl-octadec-6-ene (10)

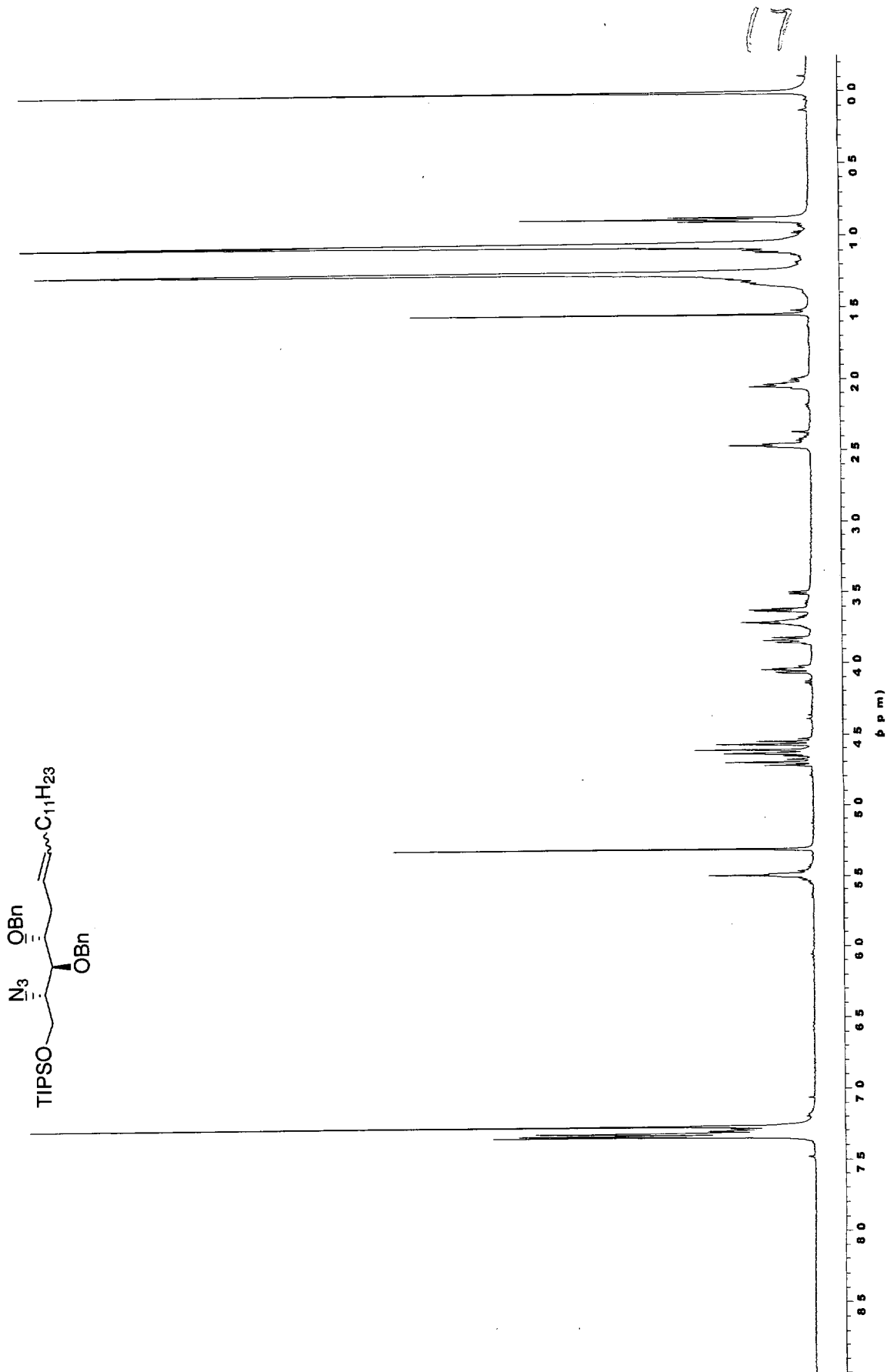


Figure 16. ^{13}C NMR spectrum of 2-Azido-3,4-di-*O*-benzyl-1-*O*-triisopropylsilyl-octadec-6-ene (**10**)

S16

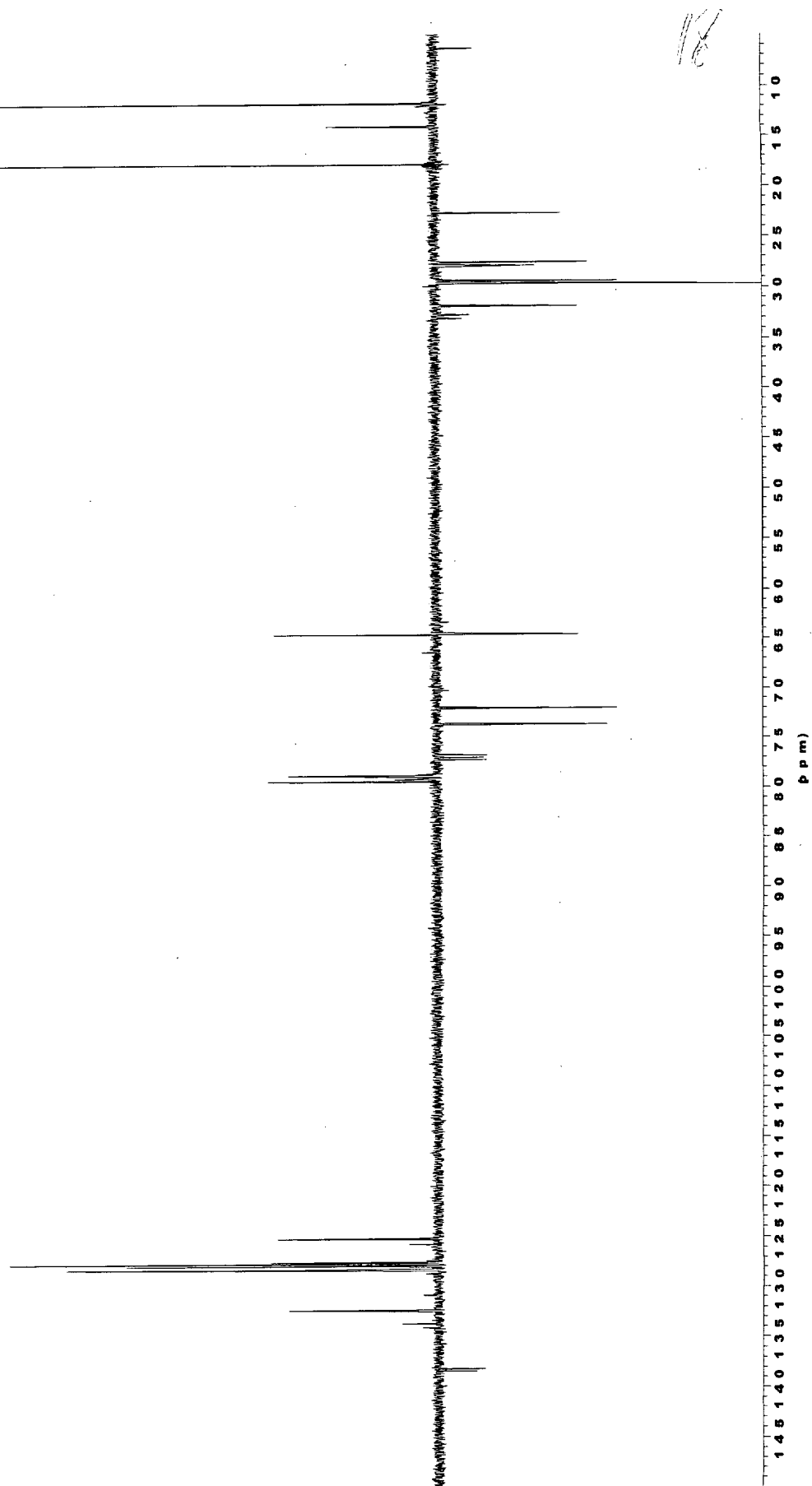
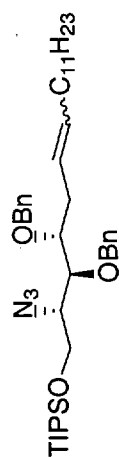
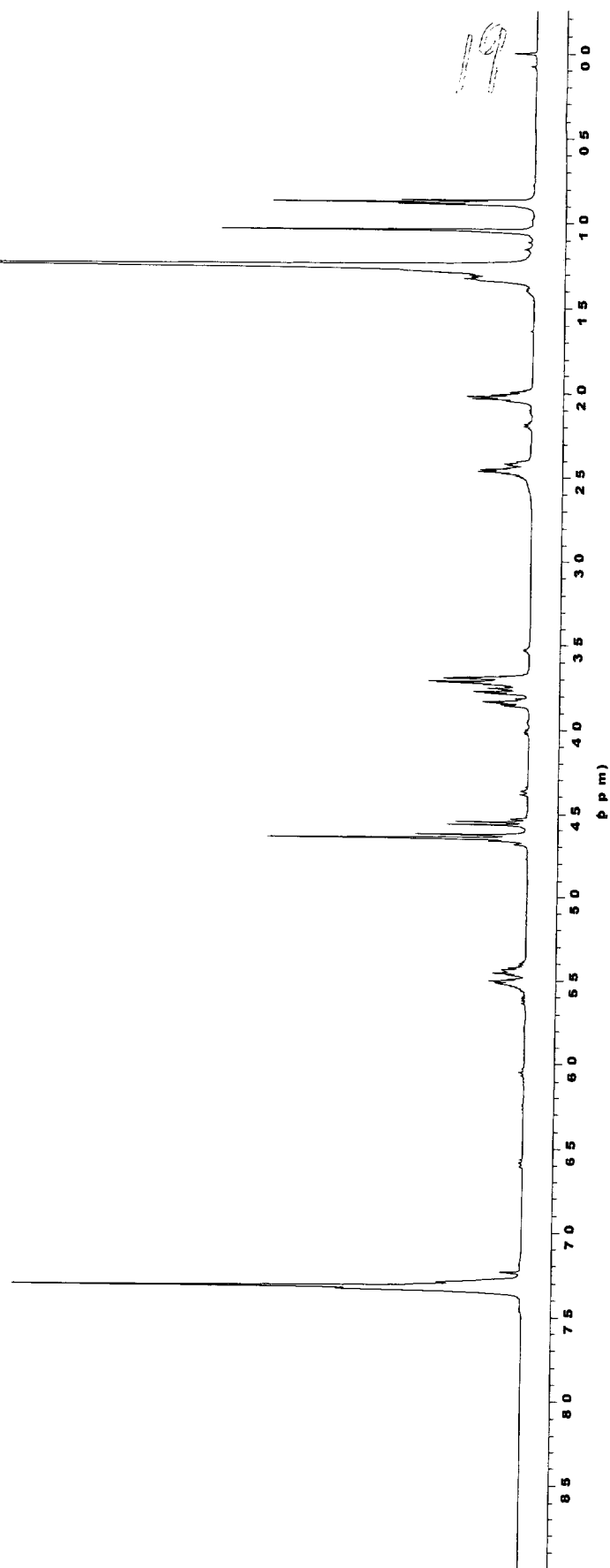
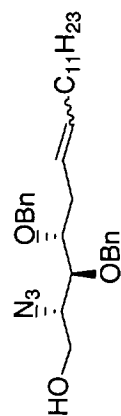


Figure 17. ^1H NMR spectrum of 2-Azido-3,4-di-*O*-benzyl-octadec-6-ene-1-ol (11)

S17



S18

Figure 18. ^{13}C NMR spectrum of 2-Azido-3,4-di-*O*-benzyl-octadec-6-ene-1-ol (11)

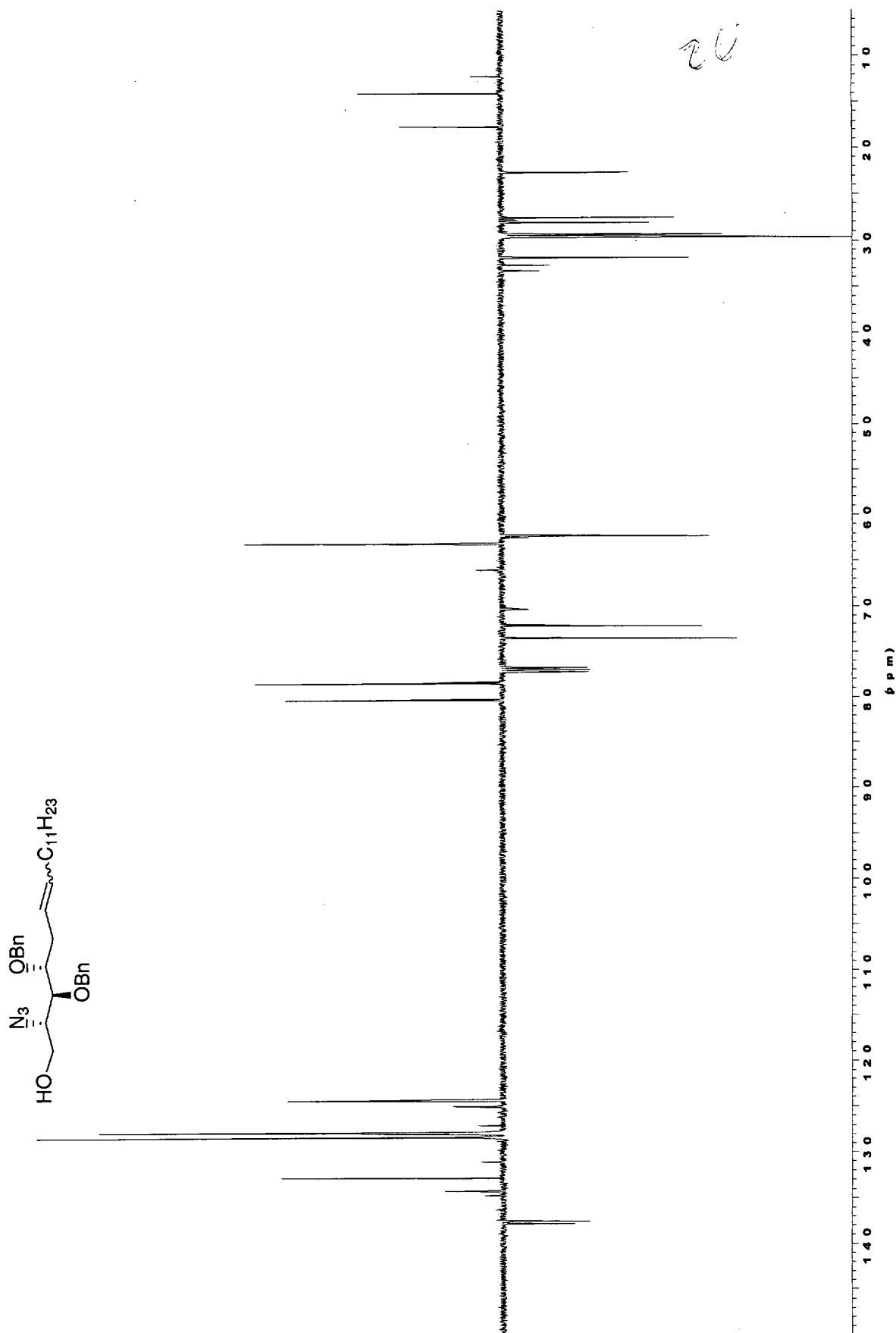


Figure 19. ^1H NMR spectrum of 2-Azido-3,4-di-*O*-benzyl-1-*O*-(2,3,4,5-tetra-*O*-benzyl- α -D-galactopyranosyl)-D-ribo-octadeca-6-ene-1-ol (**13**)

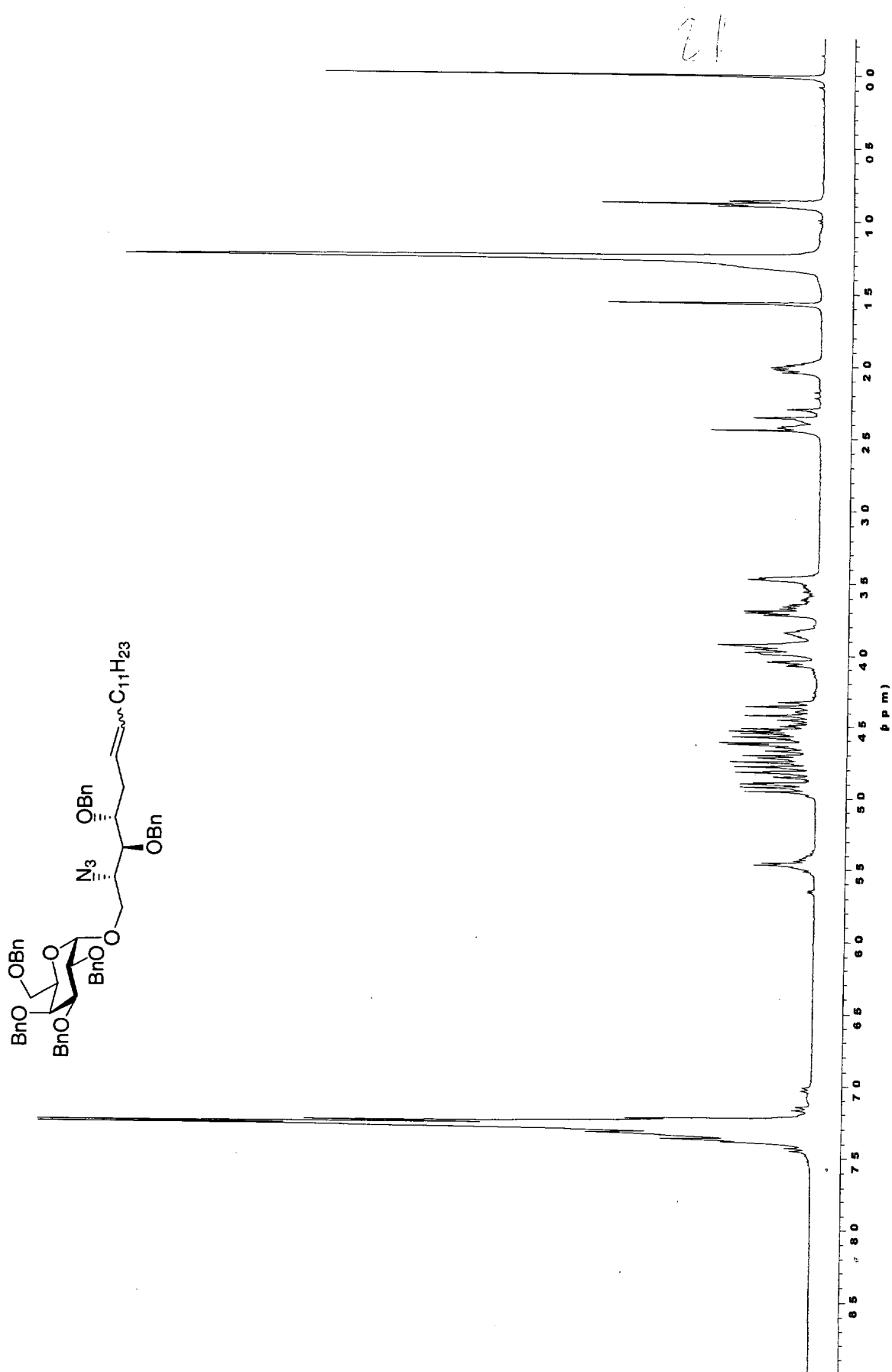
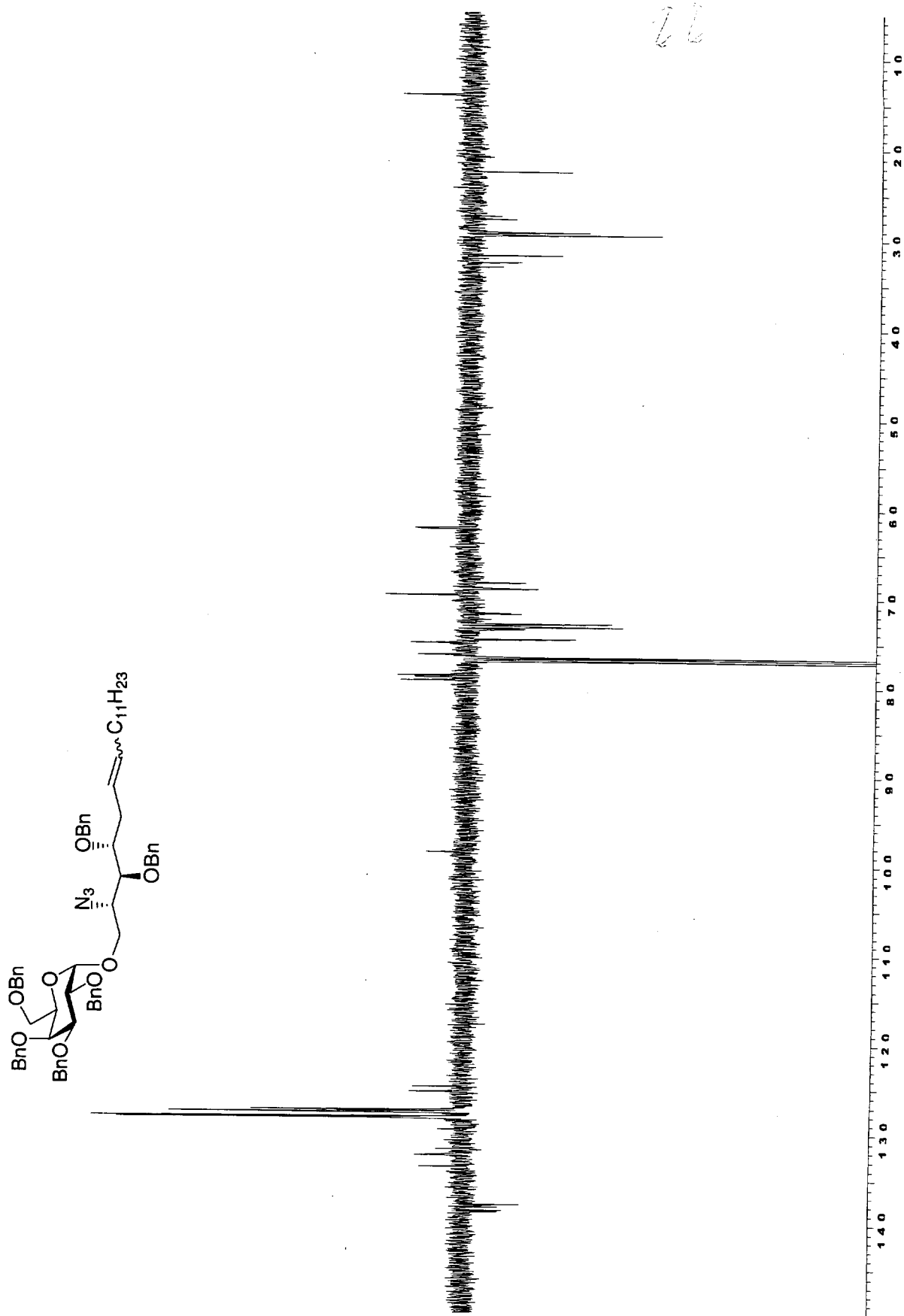
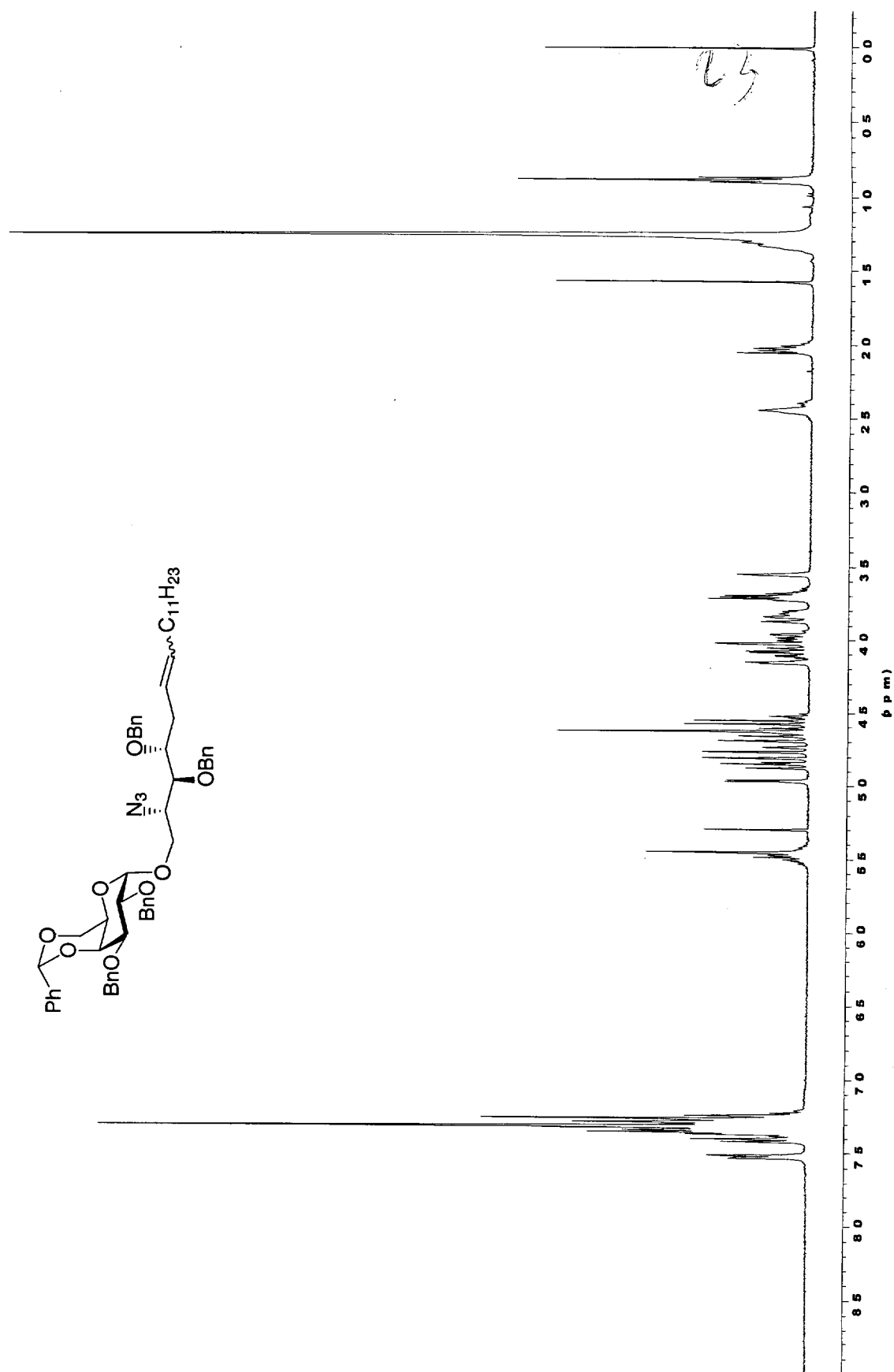


Figure 20. ^{13}C NMR spectrum of 2-Azido-3,4-di-O-benzyl-1-O-(2,3,4,5-tetra-O-benzyl- α -D-galactopyranosyl)-D-ribo-octadeca-6-ene-1-ol (13)



S21
Figure 21. ^1H NMR spectrum of 2-Azido-3,4-di-*O*-benzyl-1-*O*-(2,3-di-*O*-benzyl-4,6-*O*-benzylidene- α -D-galactopyranosyl)-D-ribo-octadeca-6-ene-1-ol (**17**)



S22

Figure 22. ^{13}C NMR spectrum of 2-Azido-3,4-di-*O*-benzyl-1-*O*-(2,3-di-*O*-benzyl-4,6-*O*-benzylidene- α -D-galactopyranosyl)-D-ribo-octadeca-6-ene-1-ol (**17**)

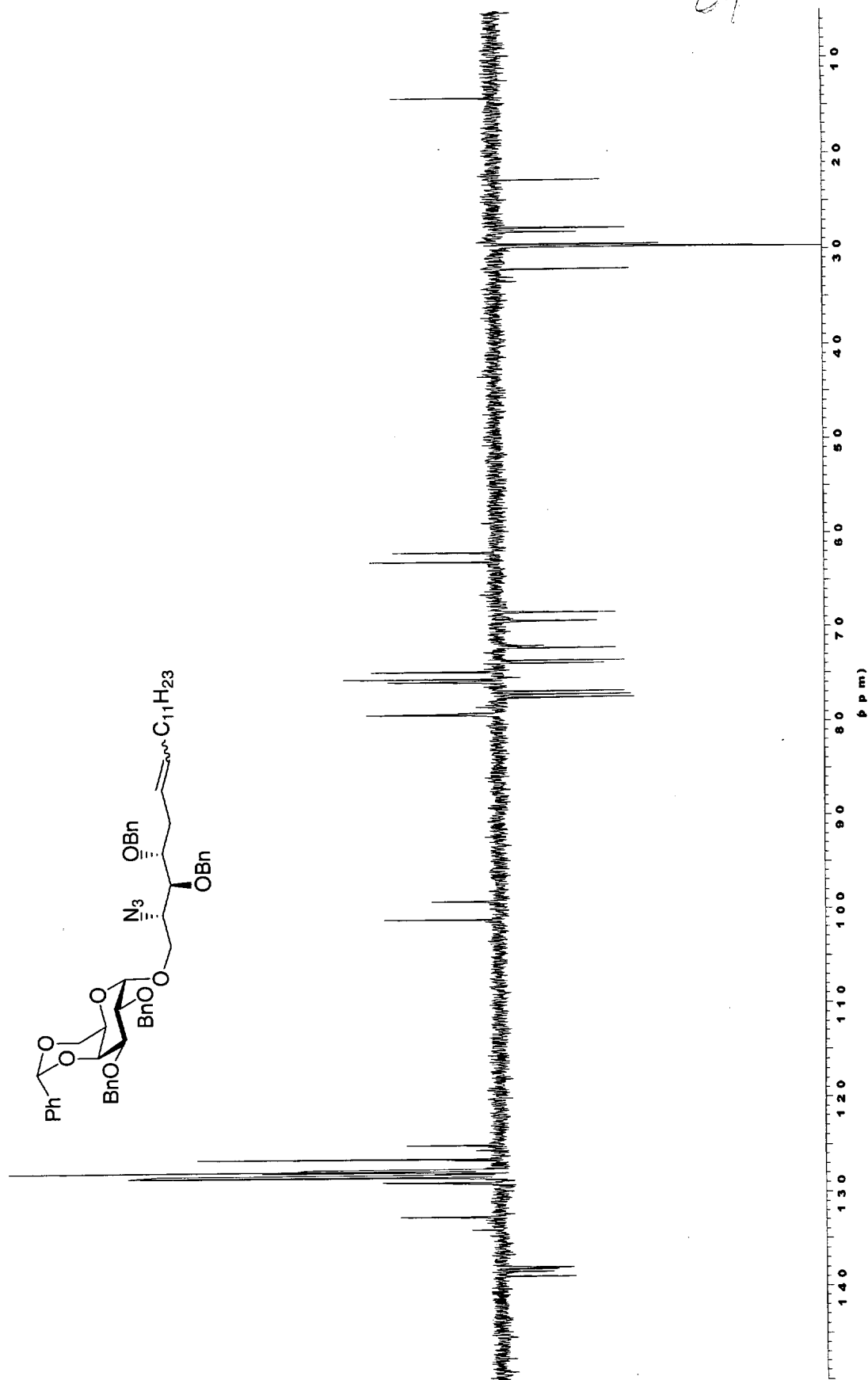
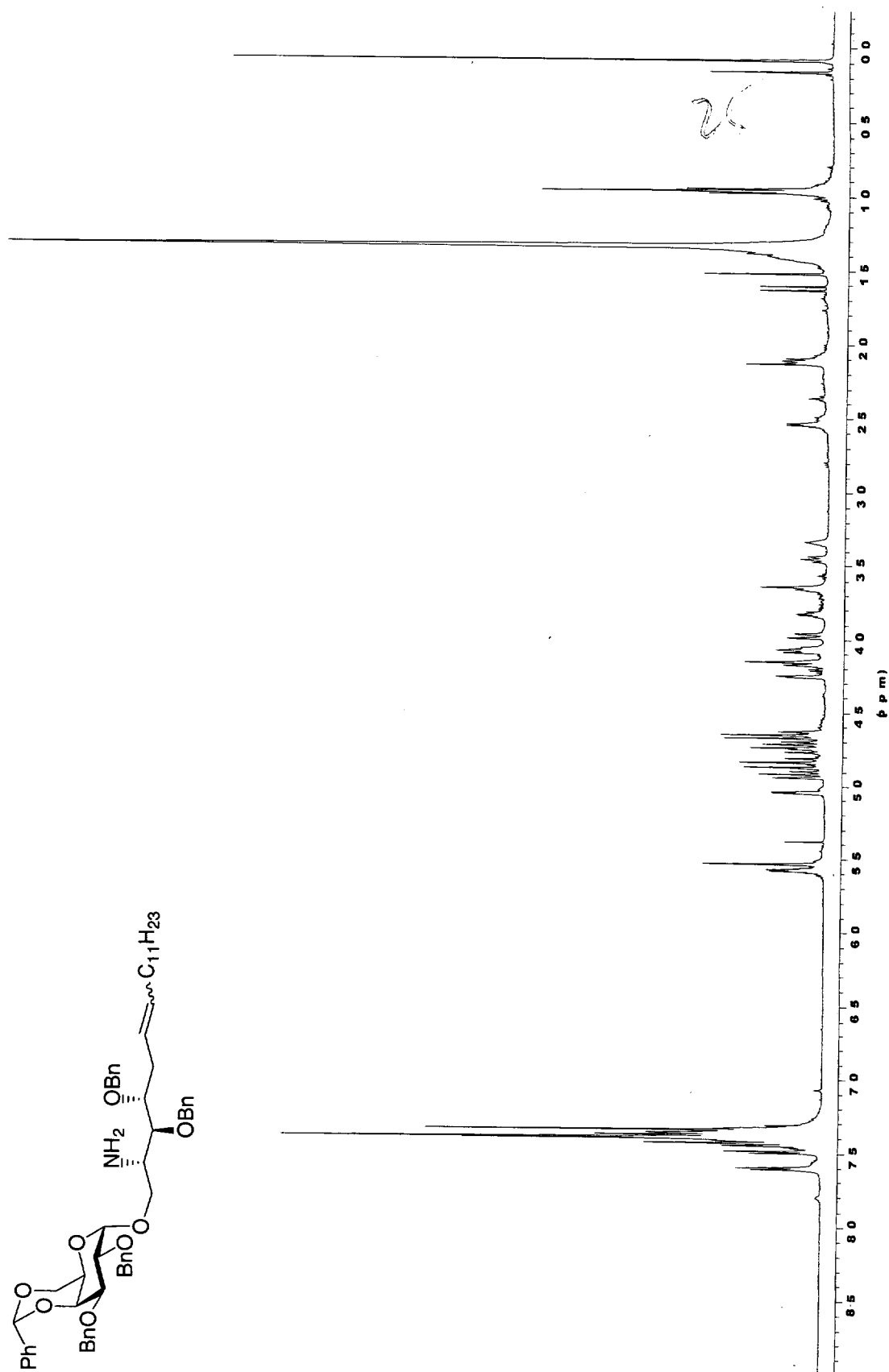
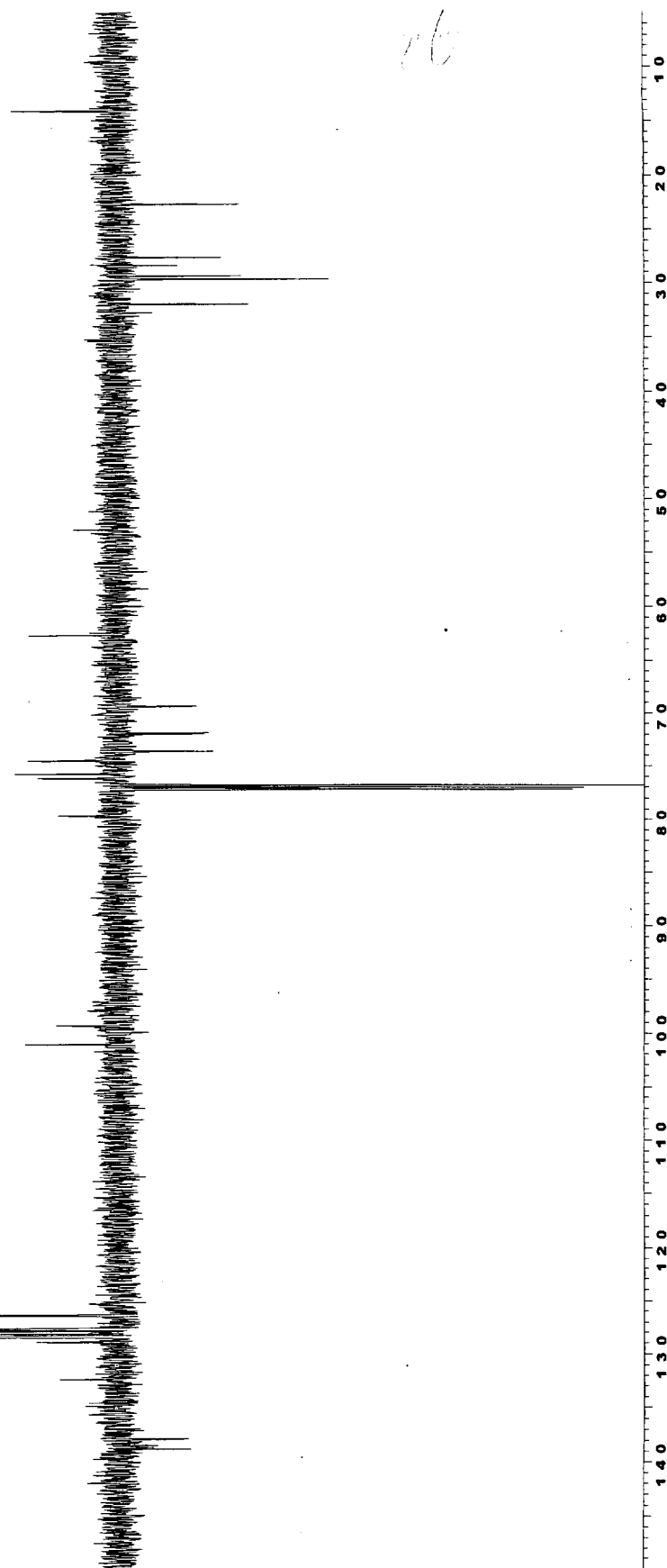
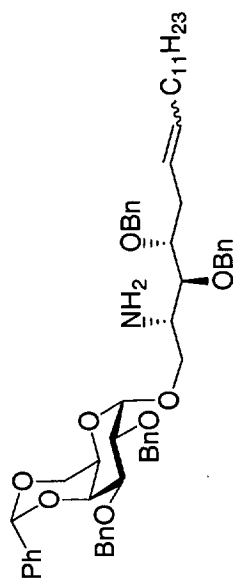


Figure 23. ^1H NMR spectrum of 2-Amino-3,4-di-*O*-benzyl-1-*O*-(2,3-di-*O*-benzyl-4,6-*O*-benzylidene- α -D-galactopyranosyl)-D-ribo-octadeca-6-ene-1-ol (**19**)



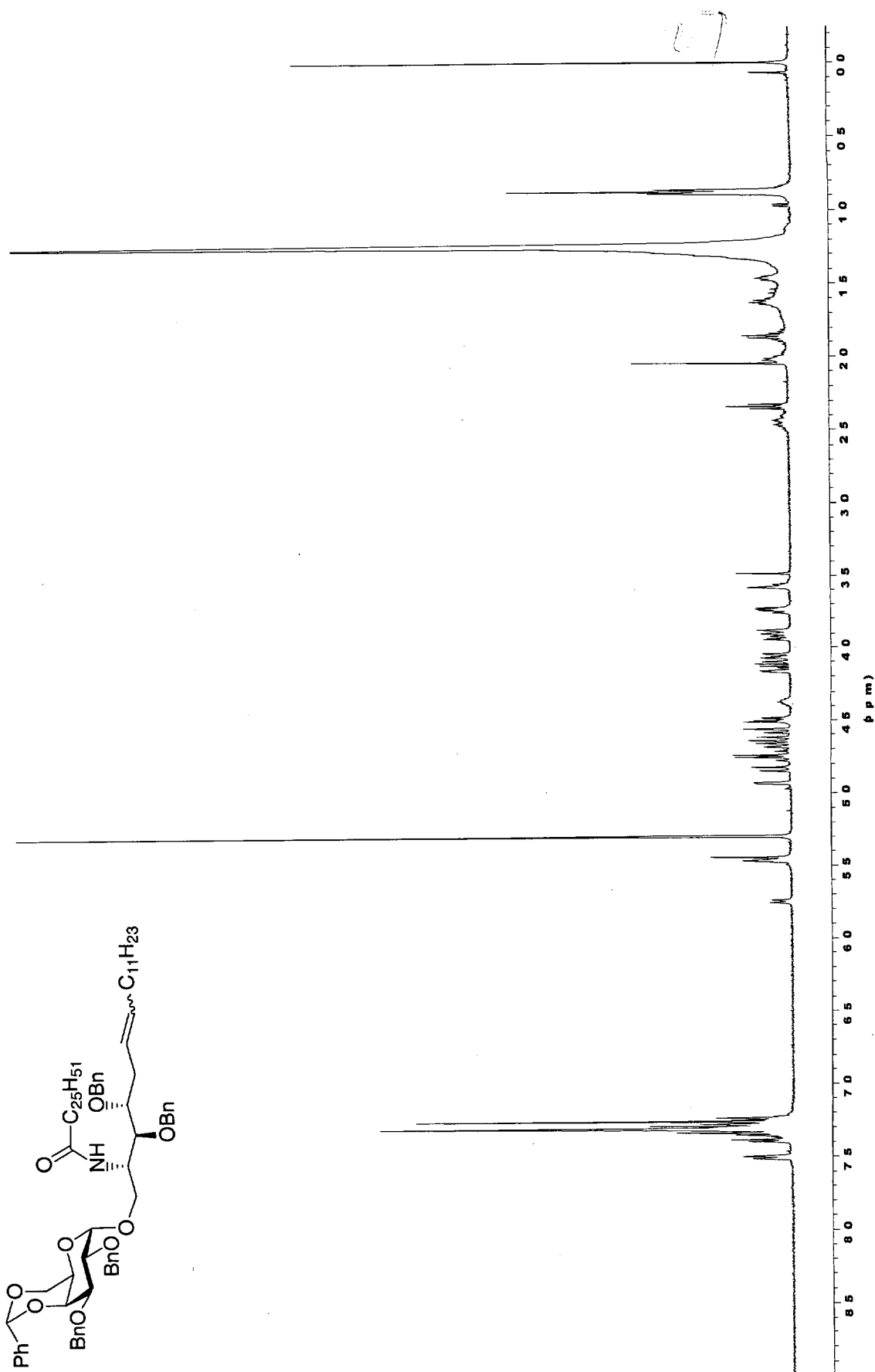
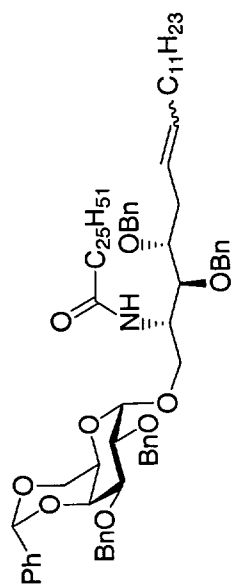
S24

Figure 24. ^{13}C NMR spectrum of 2-Amino-3,4-di-*O*-benzyl-1-*O*-(2,3-di-*O*-benzyl-4,6-*O*-benzylidene- α -D-galactopyranosyl)-D-ribo-octadeca-6-ene-1-ol (**19**)



S25

Figure 25. ^1H NMR spectrum of 3,4-Di-*O*-benzyl-1-*O*-(2,3-di-*O*-benzyl-4,6-*O*-benzylidene- α -D-galactopyranosyl)-2-hexacosylamino-D-ribo-octadeca-6-ene-1-ol (**20**)



S26

Figure 26. ^{13}C NMR spectrum of 3,4-Di-*O*-benzyl-1-*O*-(2,3-di-*O*-benzyl-4,6-*O*-benzylidene- α -D-galactopyranosyl)-2-hexacosylamino-D-ribo-octadeca-6-ene-1-ol (**20**)

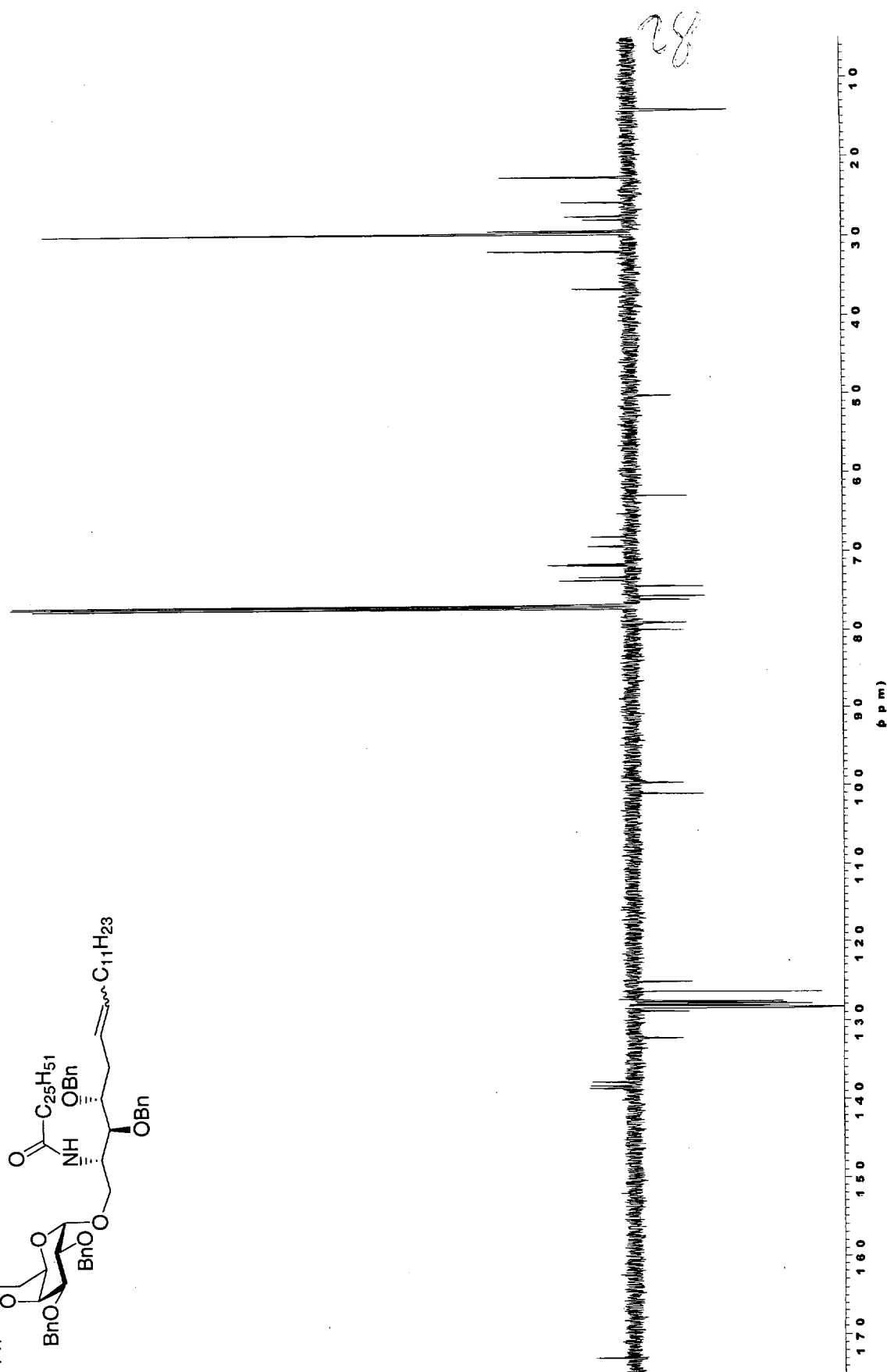
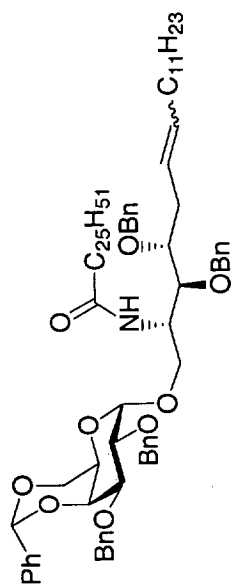


Figure 27. ^1H NMR spectrum of 1-*O*-(α -D-galactopyranosyl)-2-hexacosylamino-D-ribo-1,3,4-octadecantriol (**1**)

S27

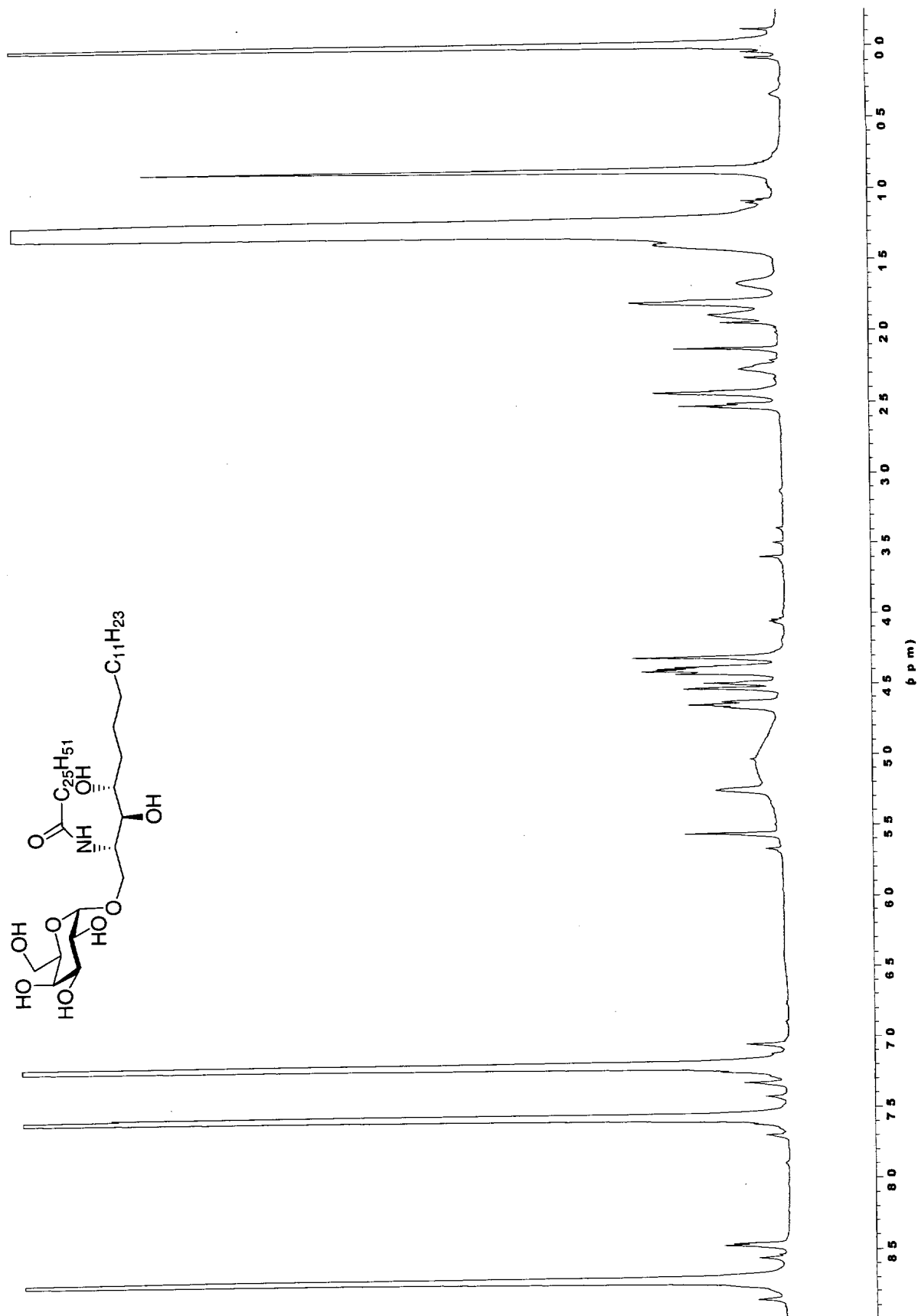


Figure 28. ^{13}C NMR spectrum of 1-*O*-(α -D-galactopyranosyl)-2-hexacosylamino-D-ribo-1,3,4-octadecantriol (**1**)

S28

