Supporting Information

Regenerative Glycosylation

Yashapal Singh, Tinghua Wang, Scott A. Geringer, Keith J. Stine, and Alexei V. Demchenko*

Department of Chemistry and Biochemistry, University of Missouri - St. Louis
One University Boulevard, St. Louis, Missouri 63121, USA
Fax: (+) 1-314-516-5342; E-mail: demchenkoa@umsl.edu

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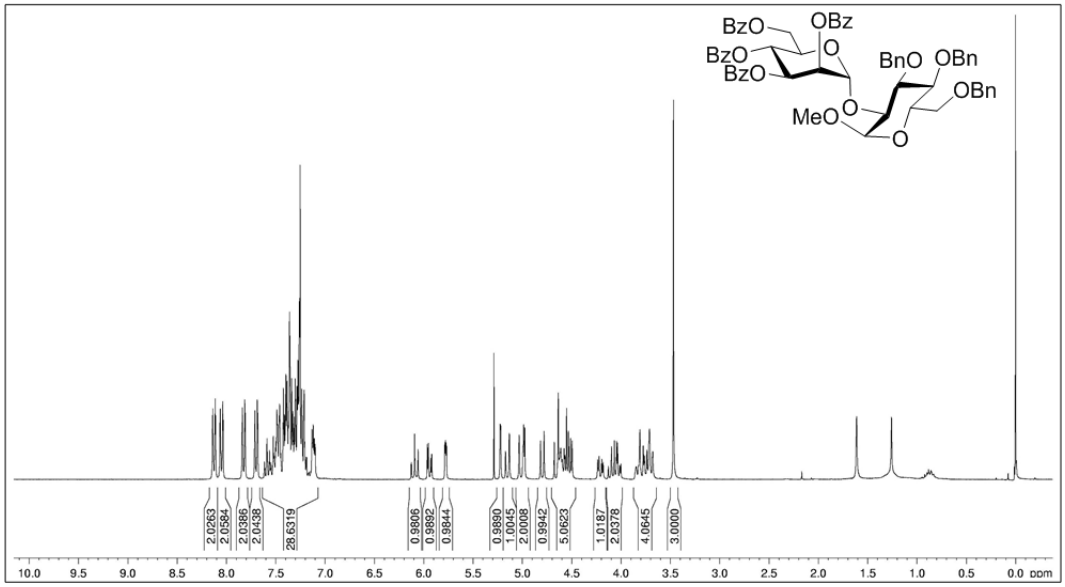
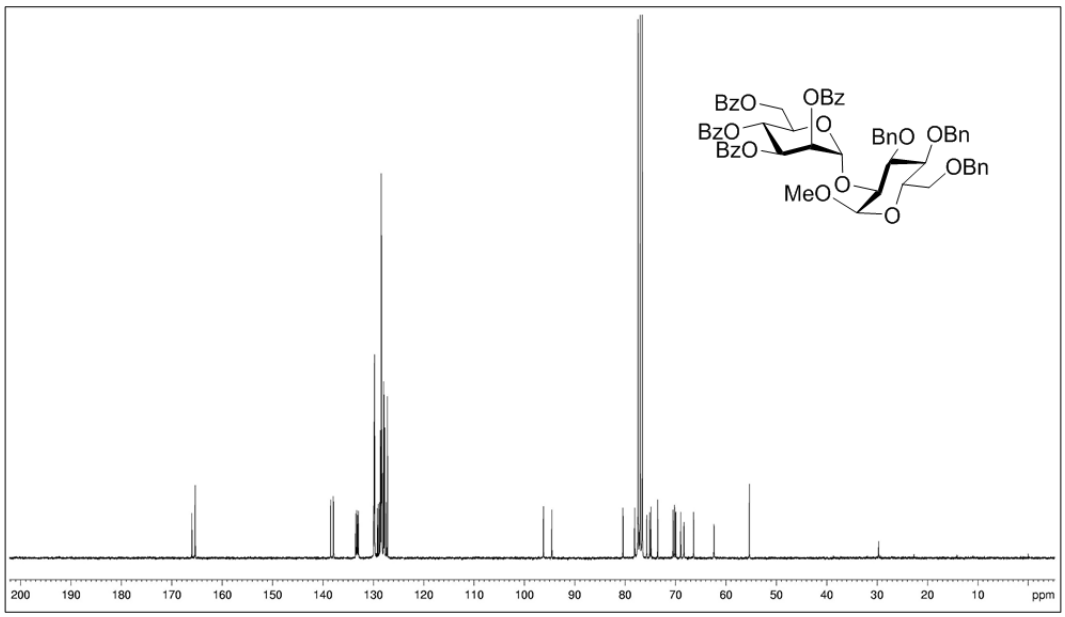
NMR Spectra for new compounds

Methyl 2-*O*-(2,3,4,6-tetra-*O*-benzoyl-*α*-D-mannopyranosyl)-3,4,6-tri-*O*-benzyl-*α*-D-glucopyranoside (21)

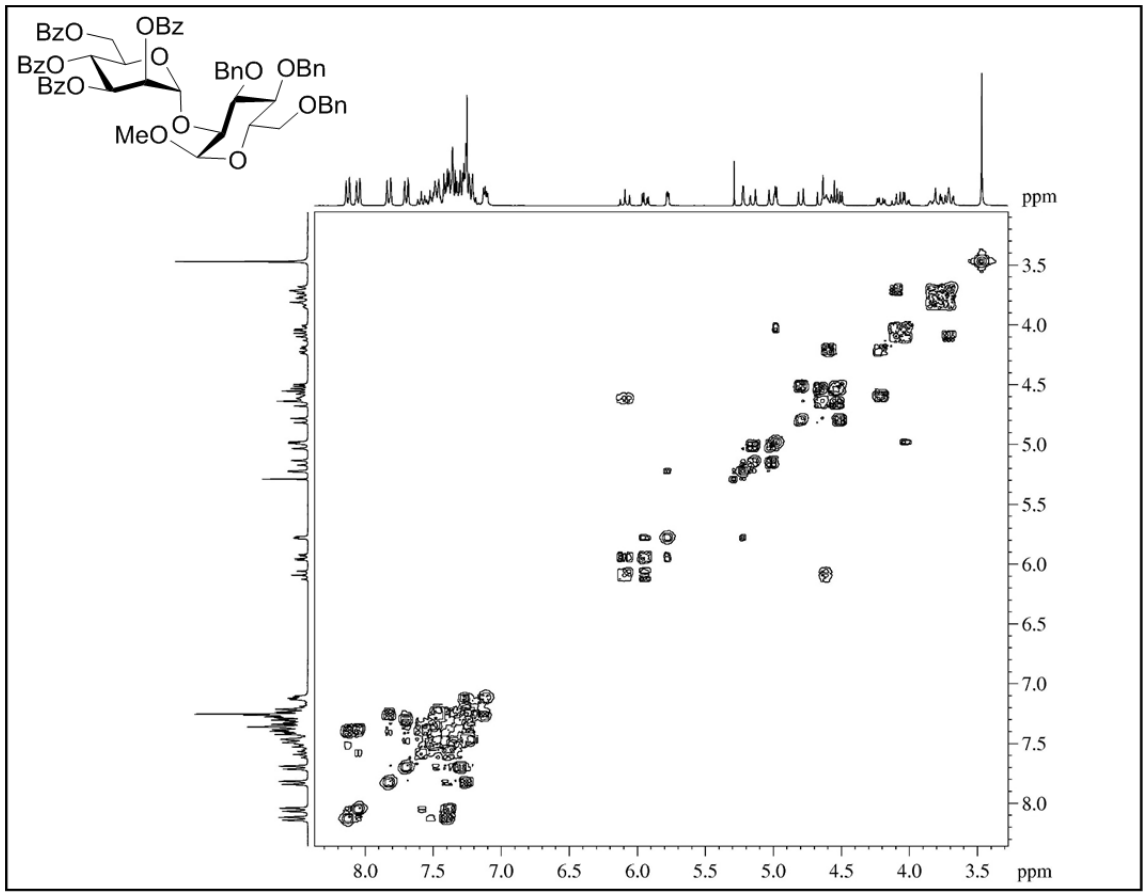


^{1}H NMR spectrum ($CDCl_3$, 300 MHz)



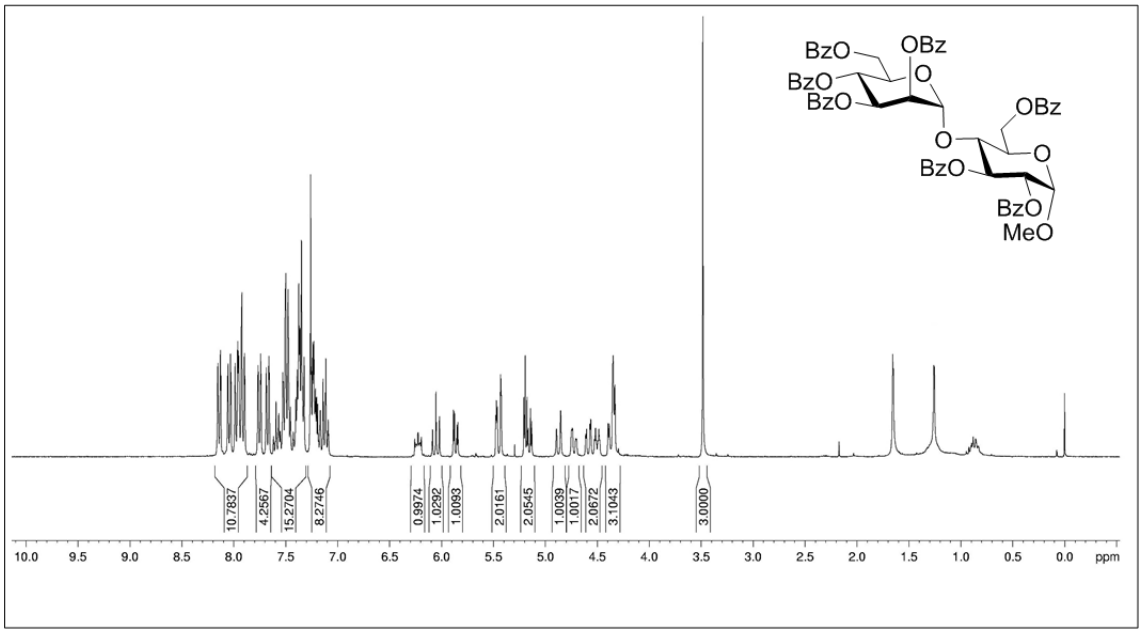
^{13}C NMR spectrum (75 MHz, $CDCl_3$)

Methyl 2-*O*-(2,3,4,6-tetra-*O*-benzoyl-*α*-D-mannopyranosyl)-3,4,6-tri-*O*-benzyl-*α*-D-glucopyranoside (21)

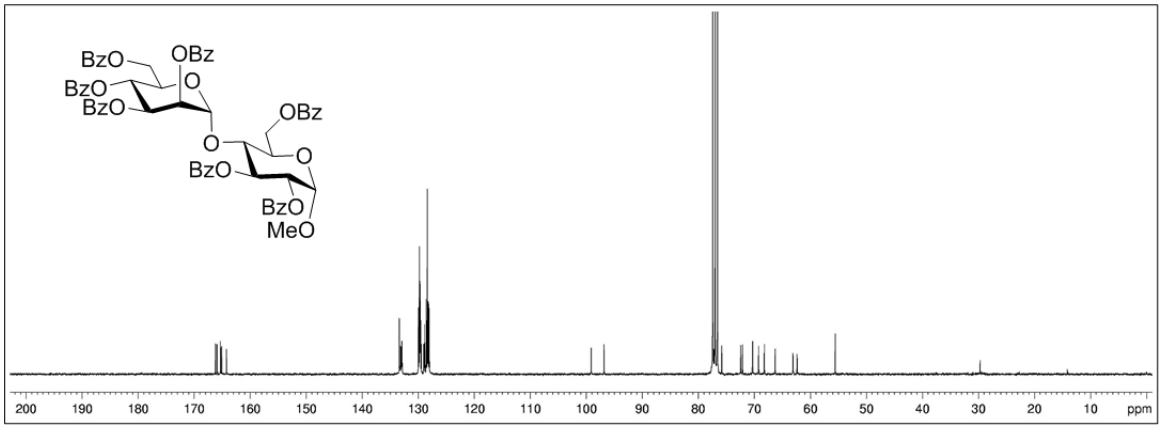


2D NMR (300 MHz, $CDCl_3$)

Methyl 4-*O*-(2,3,4,6-tetra-*O*-benzoyl-*α*-D-mannopyranosyl)-2,4,6-tri-*O*-benzoyl-*α*-D-glucopyranoside (29)



^{1}H NMR spectrum (300 MHz, $CDCl_3$)



^{13}C NMR spectrum (75 MHz, $CDCl_3$)

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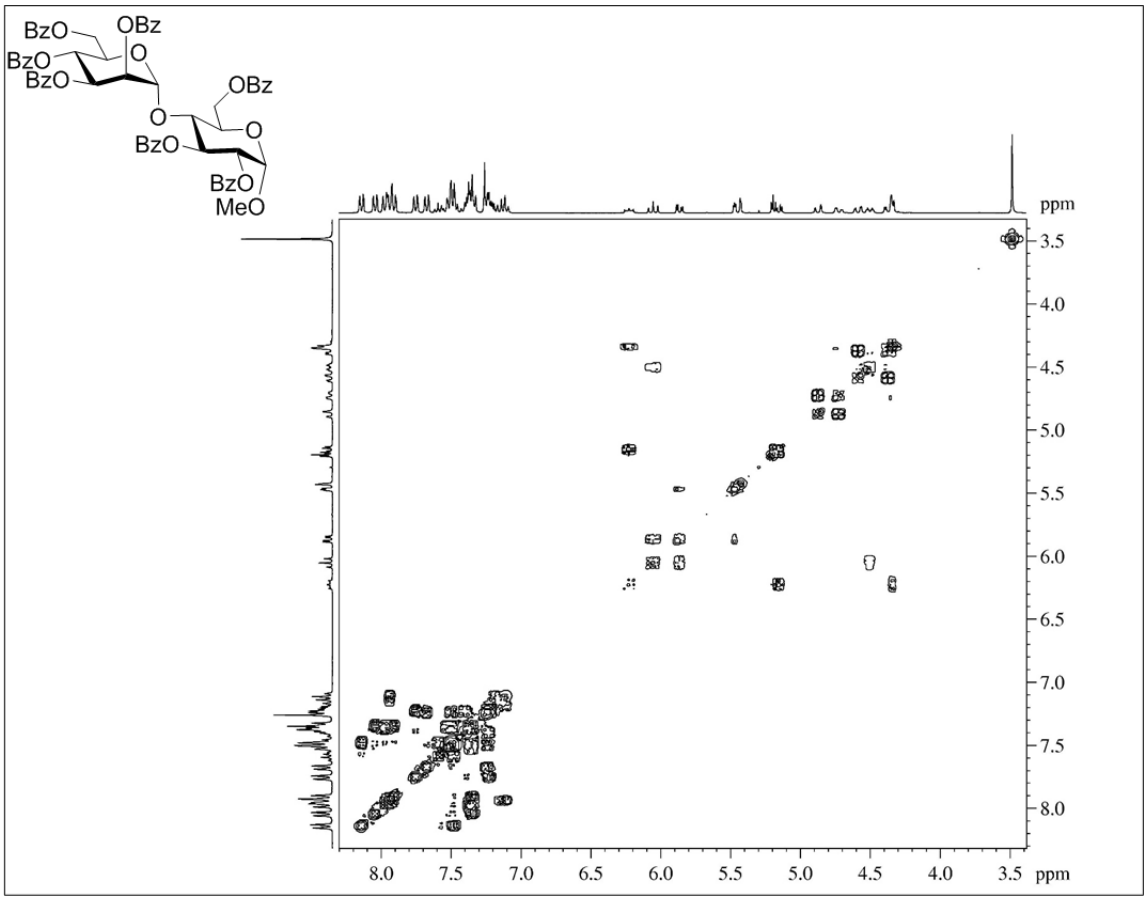
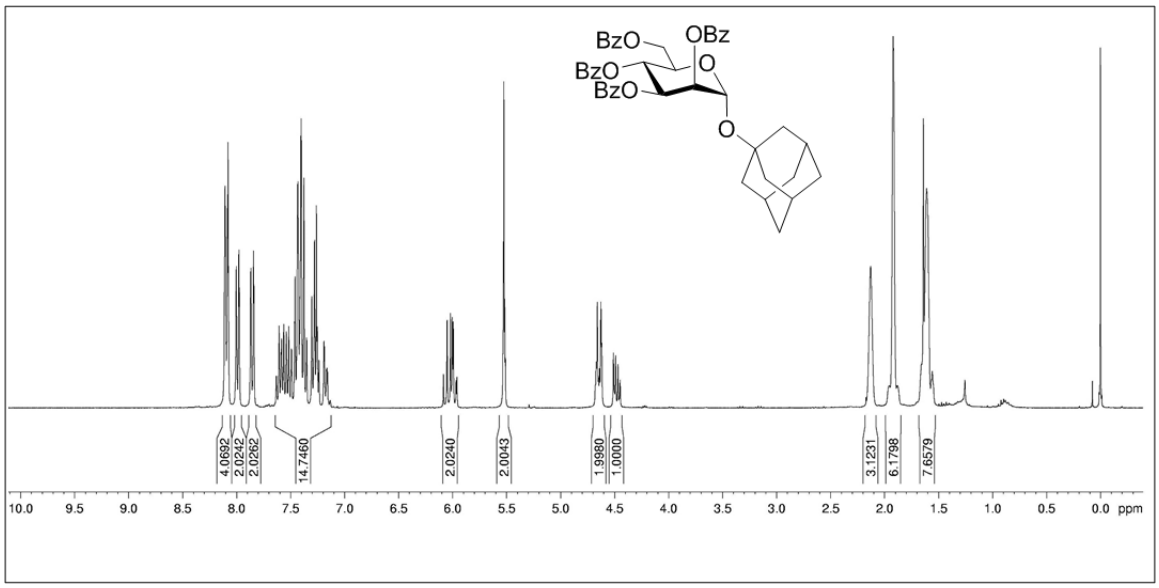
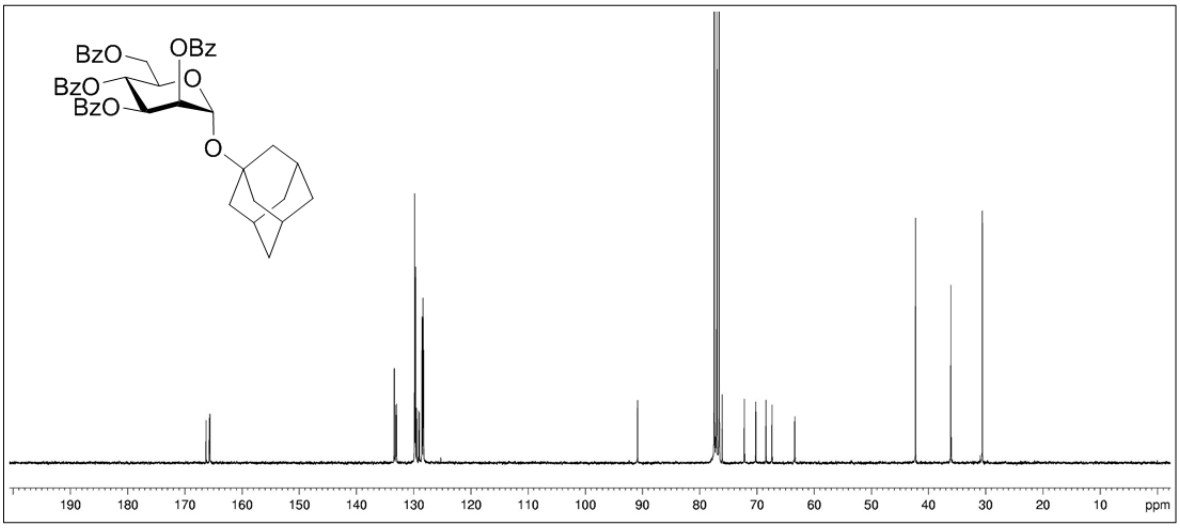


2D NMR (300 MHz, $CDCl_3$)

1-Adamantyl 2,3,4,6-tetra-*O*-benzoyl-*α*-D-mannopyranoside (19)

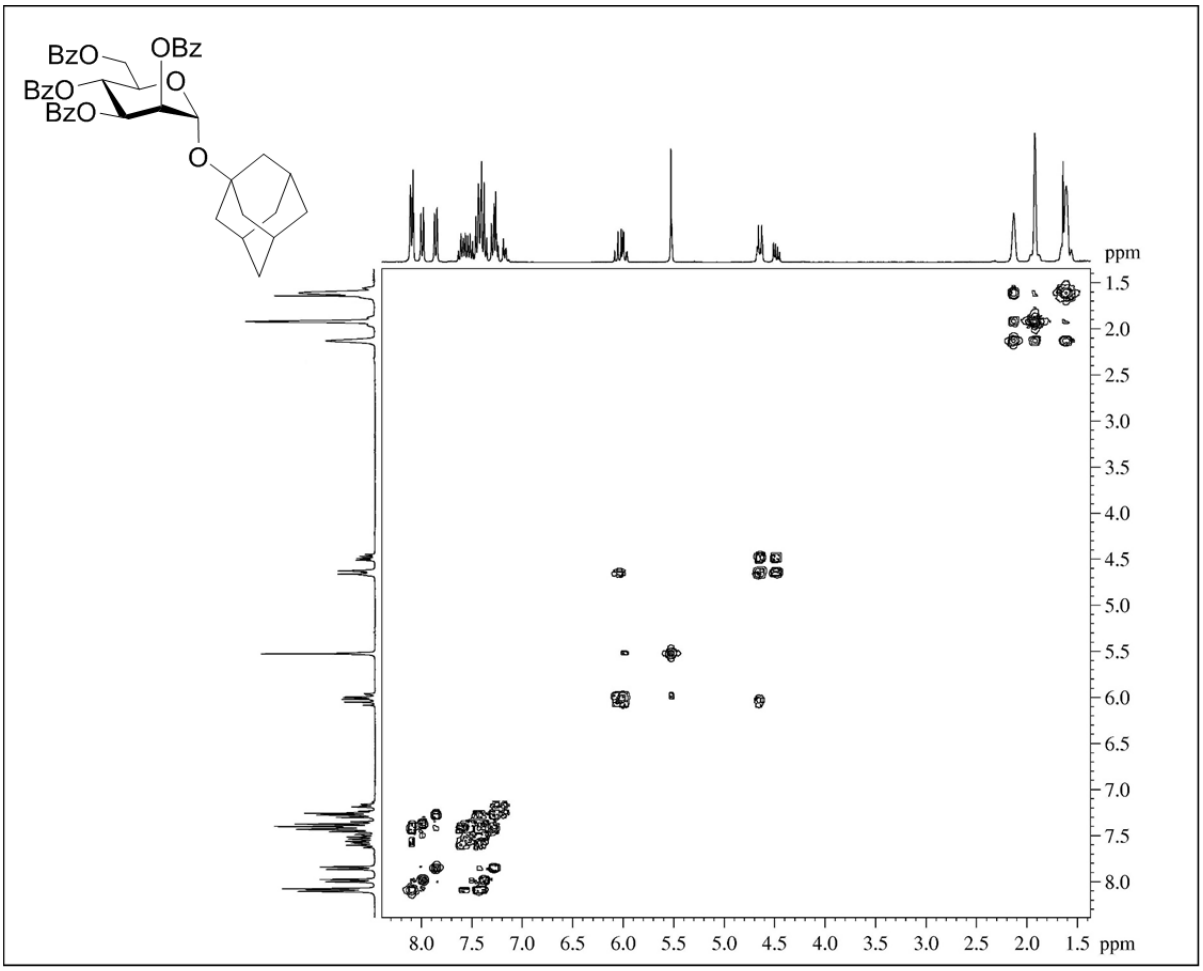


^{1}H NMR spectrum (300 MHz, $CDCl_3$)



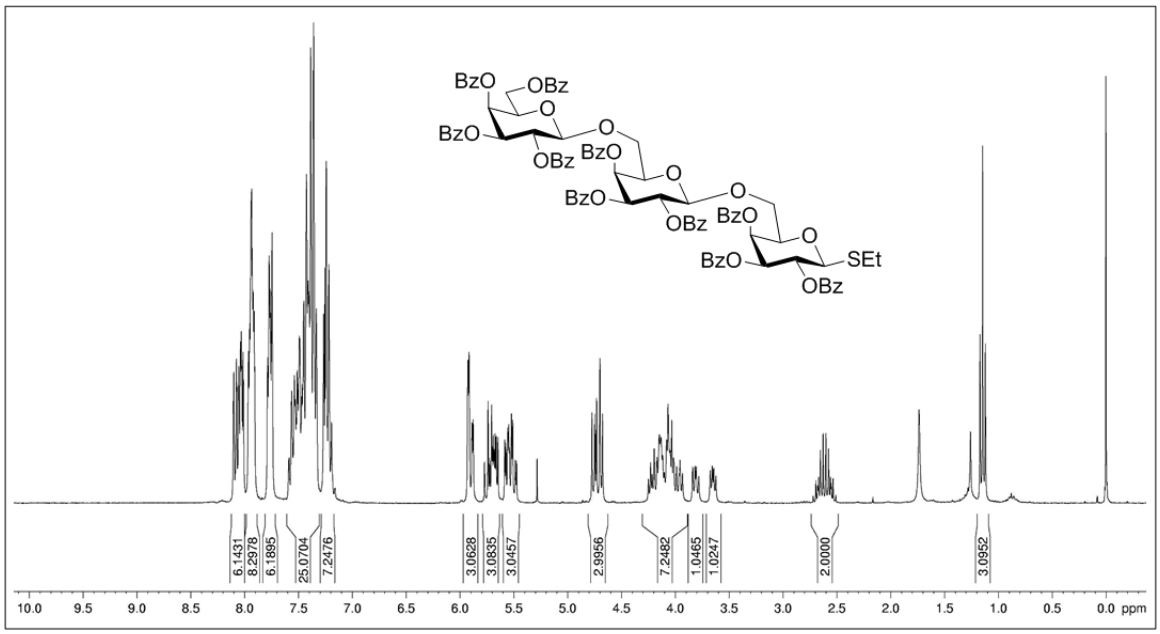
^{13}C NMR spectrum (75 MHz, $CDCl_3$).

1-Adamantyl 2,3,4,6-tetra-*O*-benzoyl-*α*-D-mannopyranoside (19)

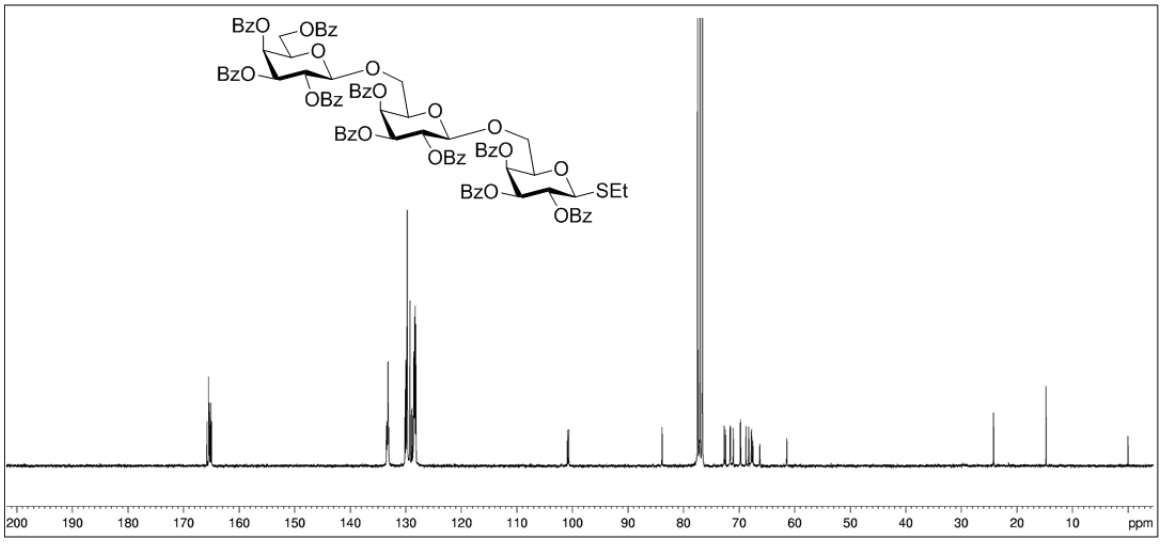


2D NMR (300 MHz, $CDCl_3$)

Ethyl *O*-(2,3,4-Tri-*O*-benzoyl-β-D-galactopyranosyl)-(1→6)-*O*-(2,3,4-tri-*O*-benzoyl-β-D-galactopyranosyl)-(1→6)-2,3,4-tri-*O*-benzoyl-1-thio-β-D-galactopyranoside (37)

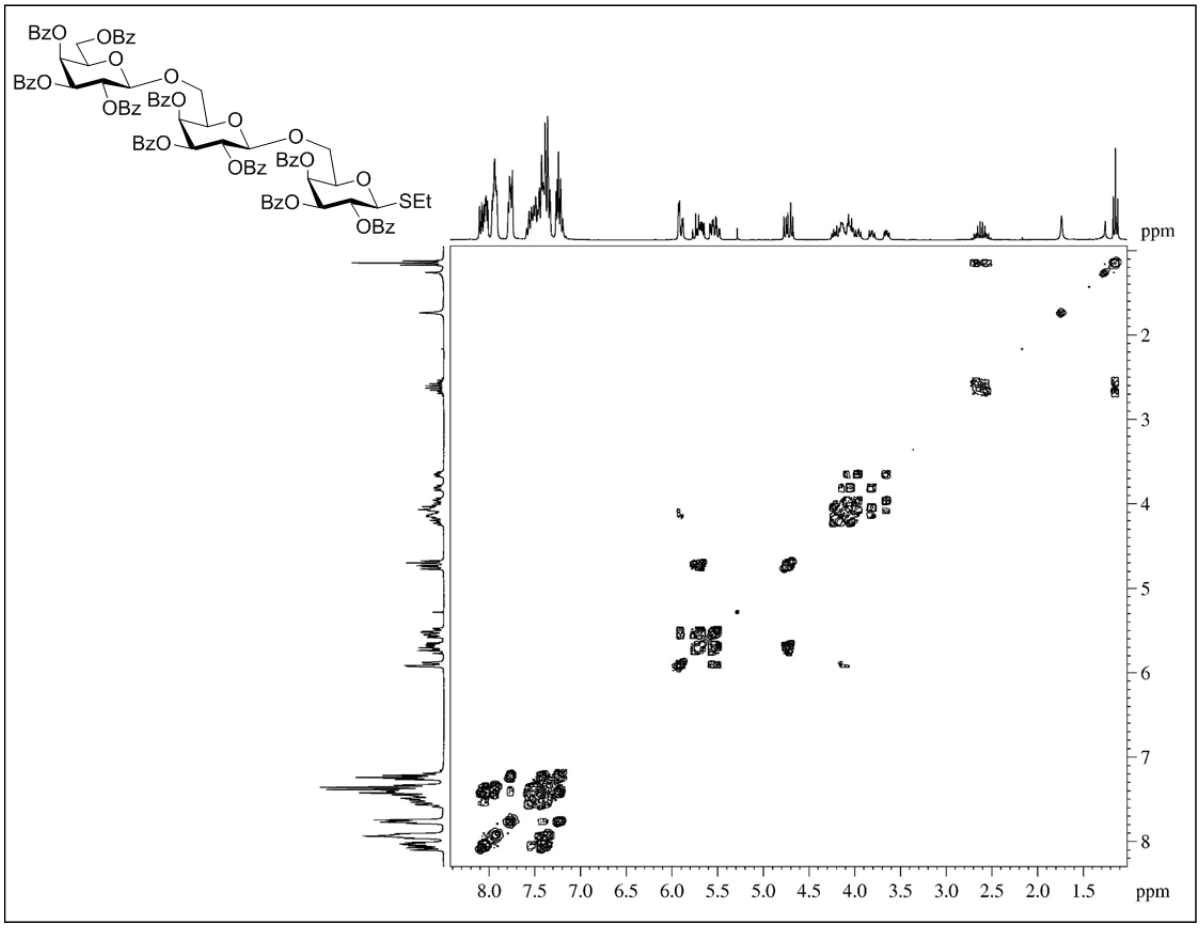


^{1}H NMR spectrum (300 MHz, $CDCl_3$)



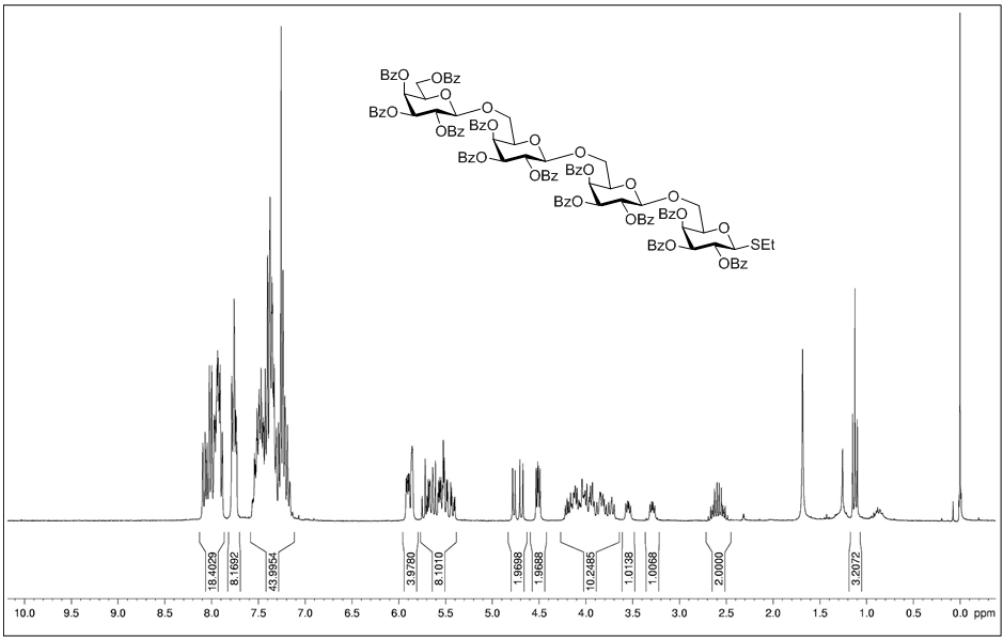
^{13}C NMR spectrum (75 MHz, $CDCl_3$)

Ethyl *O*-(2,3,4-Tri-*O*-benzoyl-β-D-galactopyranosyl)-(1→6)-*O*-(2,3,4-tri-*O*-benzoyl-β-D-galactopyranosyl)-(1→6)-2,3,4-tri-*O*-benzoyl-1-thio-β-D-galactopyranoside (37)

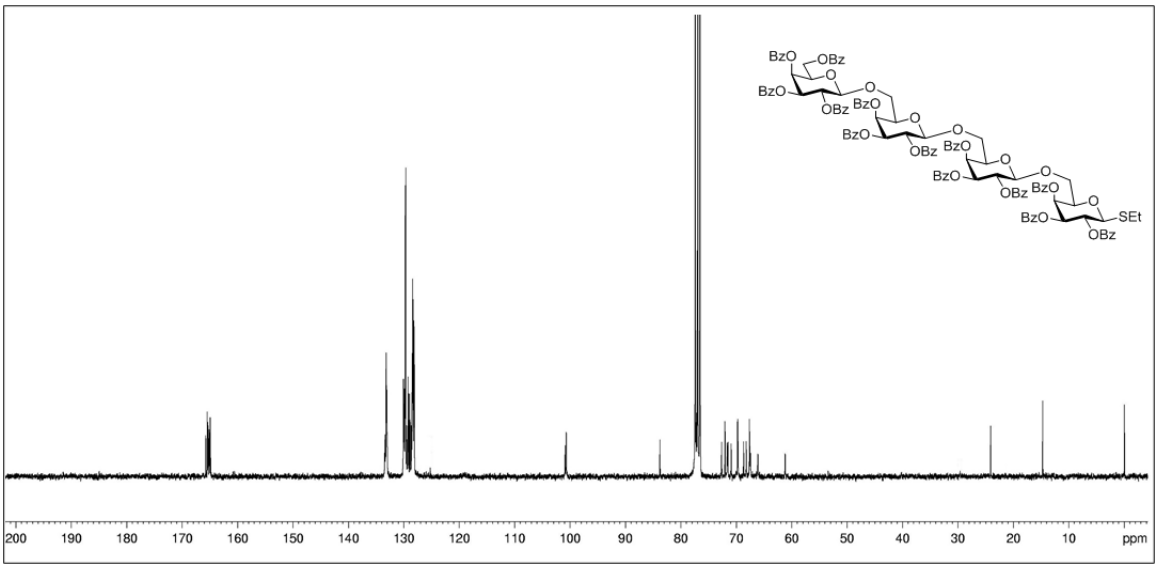


2D NMR (300 MHz, $CDCl_3$)

Ethyl *O*-(2,3,4-Tri-*O*-benzoyl-β-D-galactopyranosyl)-(1→6)-*O*-(2,3,4,6-tetra-*O*-benzoyl-β-D-galactopyranosyl)-(1→6)-*O*-(2,3,4-tri-*O*-benzoyl-β-D-galactopyranosyl)-(1→6)-2,3,4-tri-*O*-benzoyl-1-thio-β-D-galactopyranoside (38)

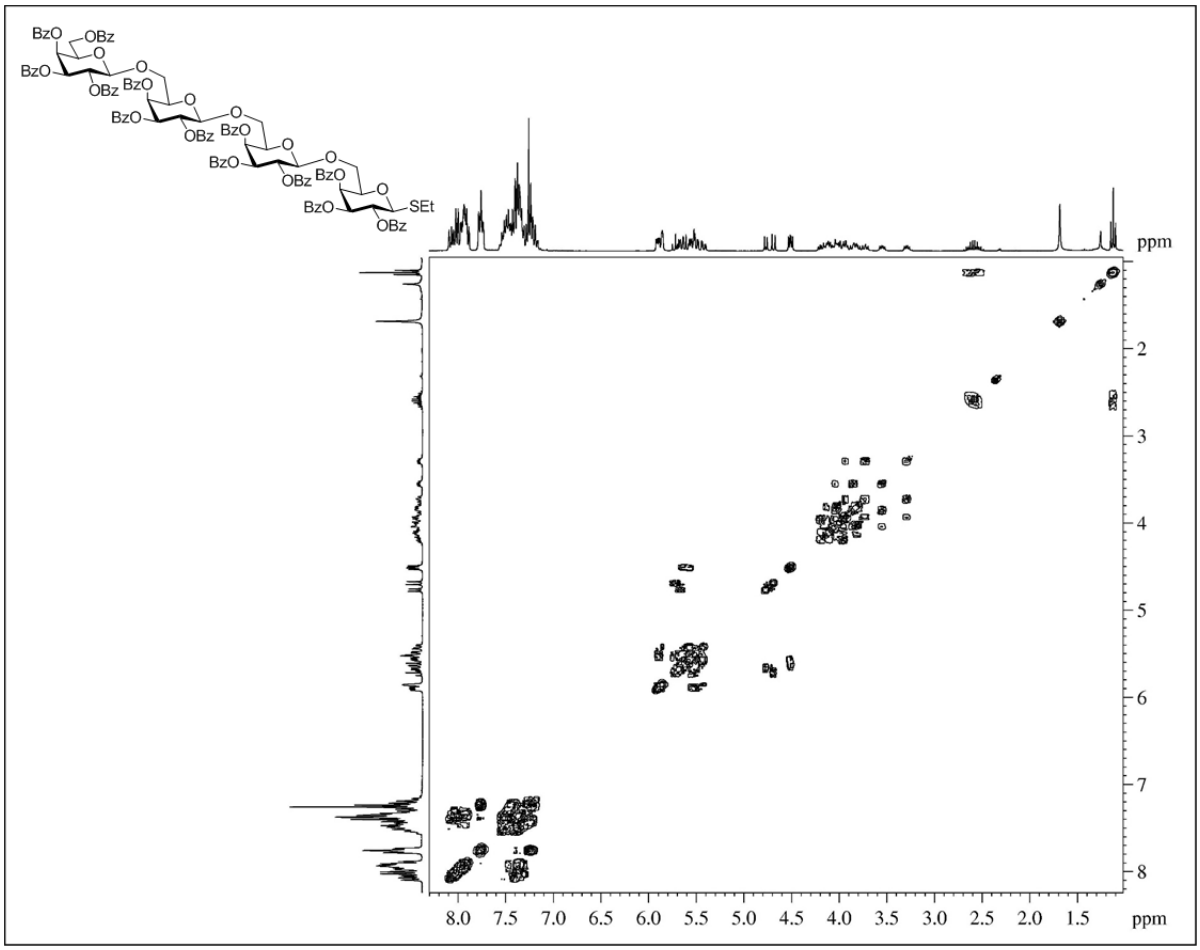


^{1}H NMR spectrum (300 MHz, $CDCl_3$)



^{13}C NMR spectrum (75 MHz, $CDCl_3$)

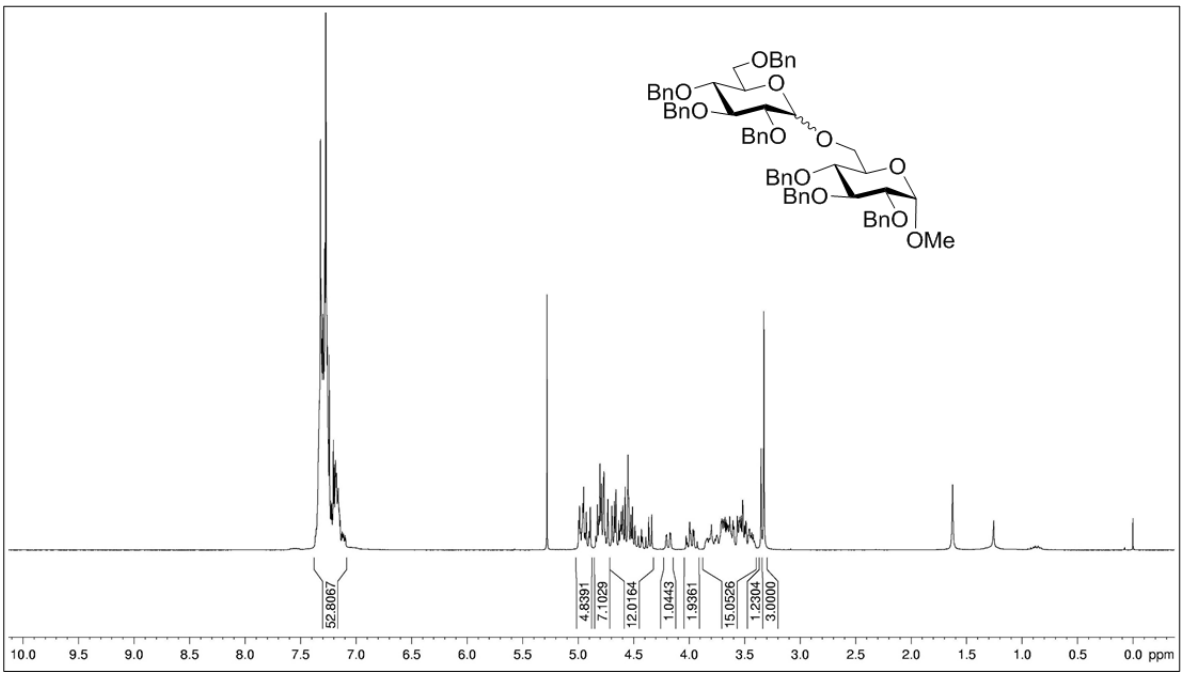
Ethyl *O*-(2,3,4-Tri-*O*-benzoyl-β-D-galactopyranosyl)-(1→6)-*O*-(2,3,4,6-tetra-*O*-benzoyl-β-D-galactopyranosyl)-(1→6)-*O*-(2,3,4-tri-*O*-benzoyl-β-D-galactopyranosyl)-(1→6)-2,3,4-tri-*O*-benzoyl-1-thio-β-D-galactopyranoside (38)



2D NMR (300 MHz, $CDCl_3$)

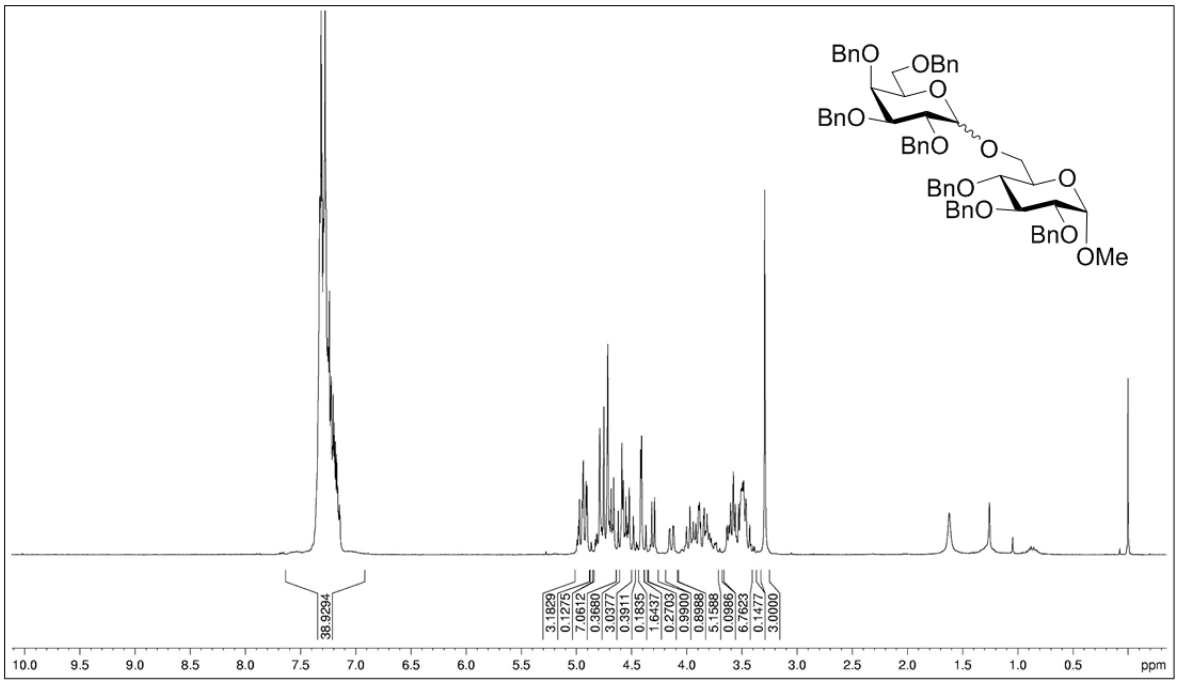
Proton NMR Spectra for known compounds

Methyl 6-*O*-(2,3,4,6-tetra-*O*-benzyl-β-D-glucopyranosyl)-2,3,4-tri-*O*-benzyl-α-D-glucopyranoside (5)



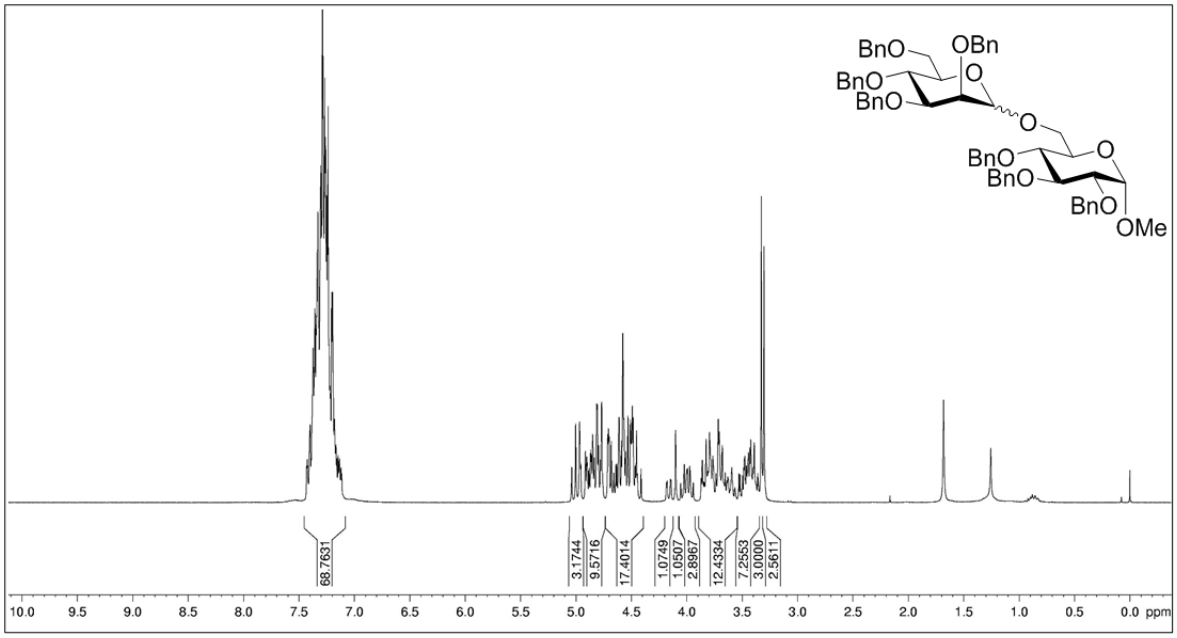
^{1}H NMR spectrum (300 MHz, $CDCl_3$)

Methyl 6-*O*-(2,3,4,6-tetra-*O*-benzyl-β-D-galacopyranosyl)-2,3,4-tri-*O*-benzyl-α-D-glucopyranoside (7)



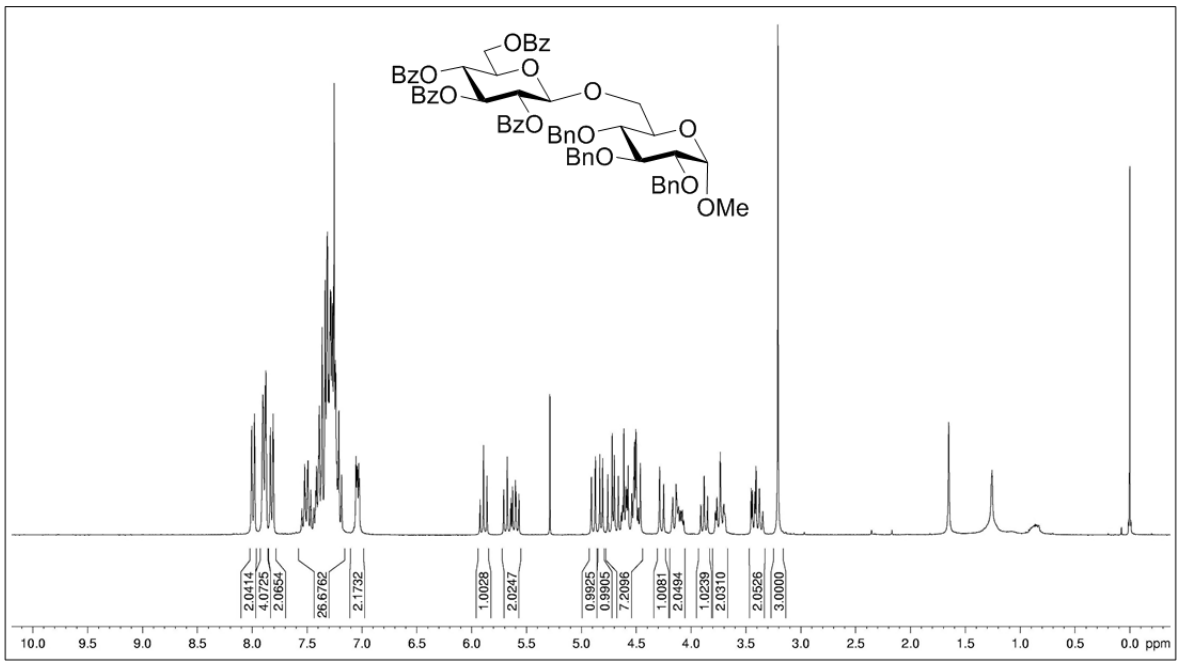
^{1}H NMR spectrum (300 MHz, $CDCl_3$)

Methyl 2,3,4-tri-*O*-benzyl-6-*O*-(2,3,4,6-tetra-*O*-benzyl-α-D-mannopyranosyl)-α-D-glucopyranoside (9)



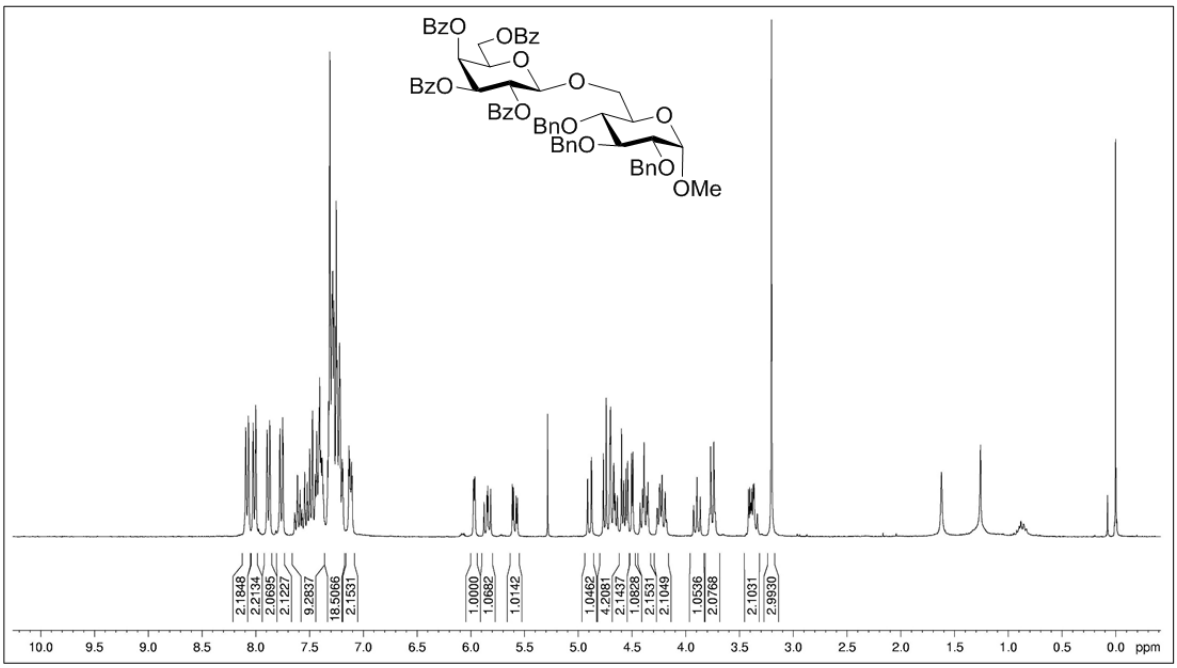
^{1}H NMR spectrum (300 MHz, $CDCl_3$)

Methyl 6-*O*-(2,3,4,6-tetra-*O*-benzoyl-β-D-glucopyranosyl)-2,3,4-tri-*O*-benzyl-α-D-glucopyranoside (11)



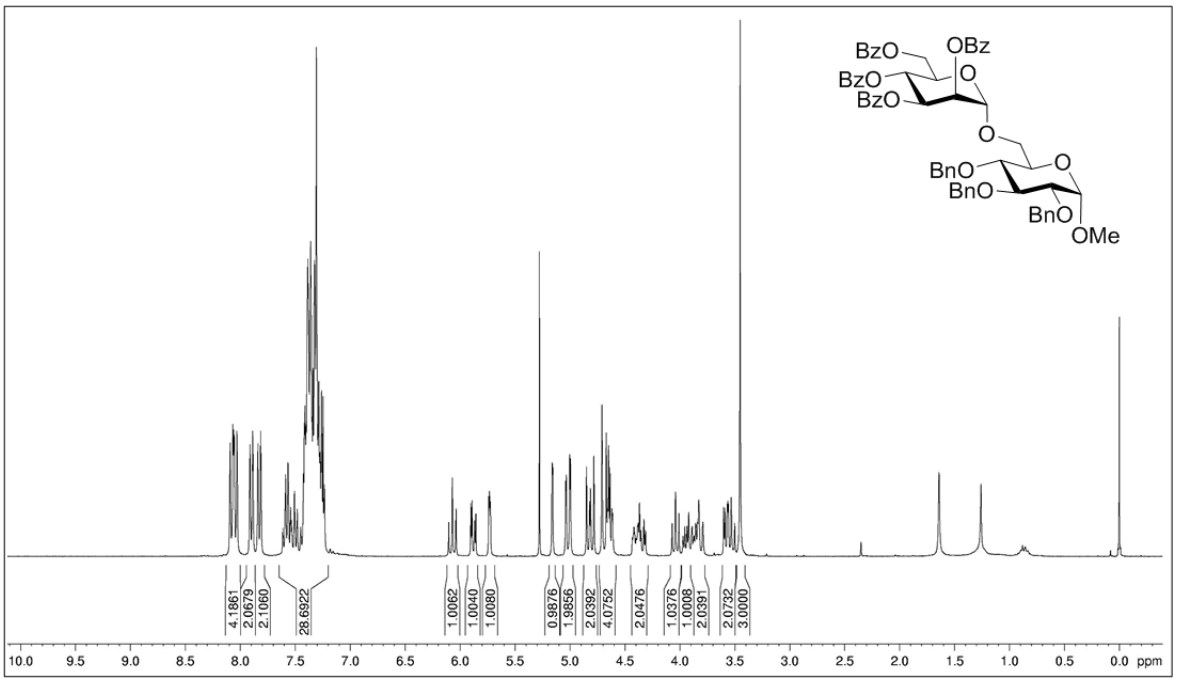
^{1}H NMR spectrum (300 MHz, $CDCl_3$)

Methyl 6-*O*-(2,3,4,6-tetra-*O*-benzoyl-β-D-galactopyranosyl)-2,3,4-tri-*O*-benzyl-α-D-glucopyranoside (13)



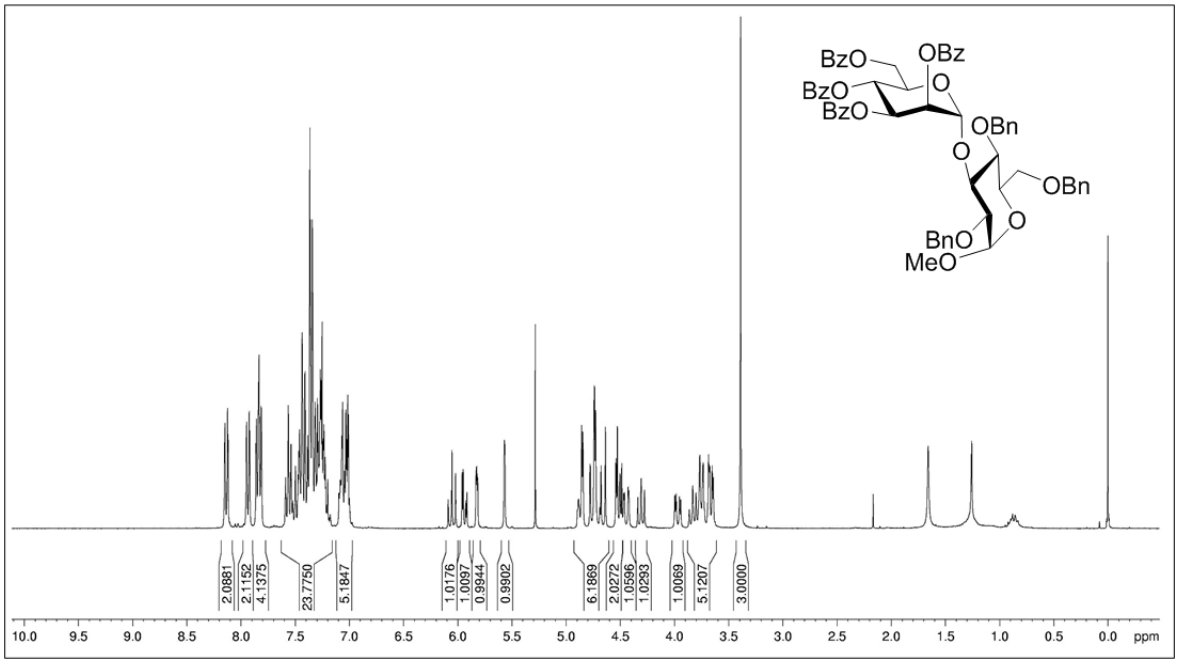
^{1}H NMR spectrum (300 MHz, $CDCl_3$)

Methyl 2,3,4-tri-*O*-benzyl-6-*O*-(2,3,4,6-tetra-*O*-benzoyl-α-D-mannopyranosyl)-α-D-glucopyranoside (15)



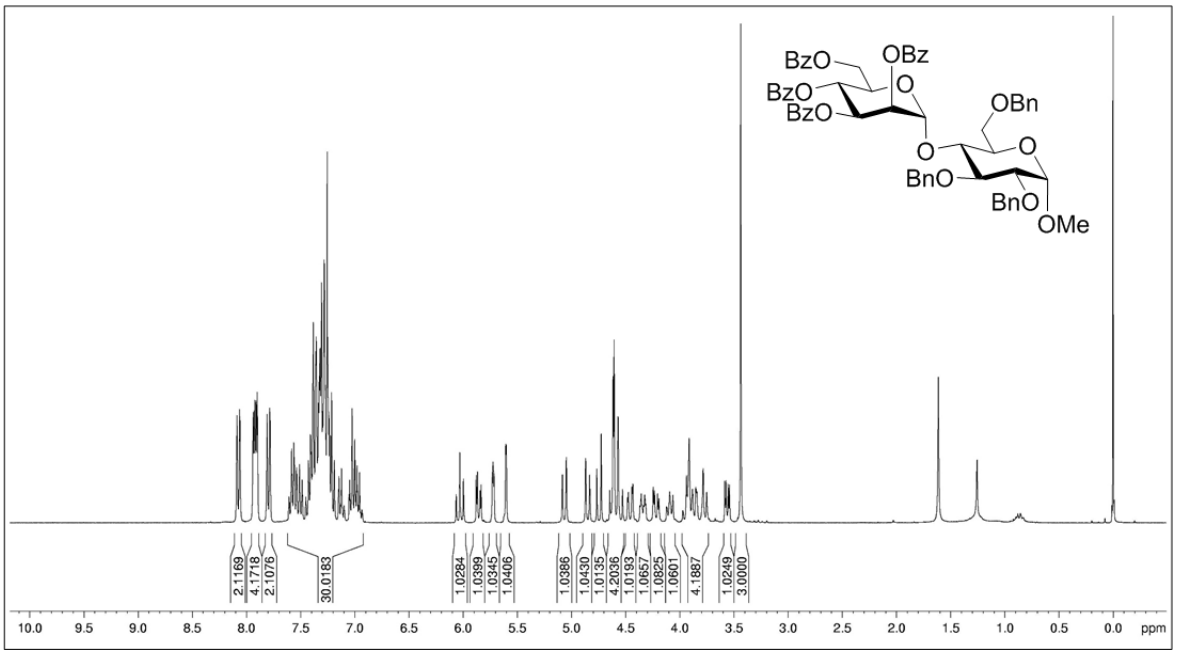
^{1}H NMR spectrum (300 MHz, $CDCl_3$)

Methyl 2,4,6-tri-*O*-benzyl-3-*O*-(2,3,4,6-tetra-*O*-benzoyl-α-D-mannopyranosyl)-α-D-glucopyranoside (23)



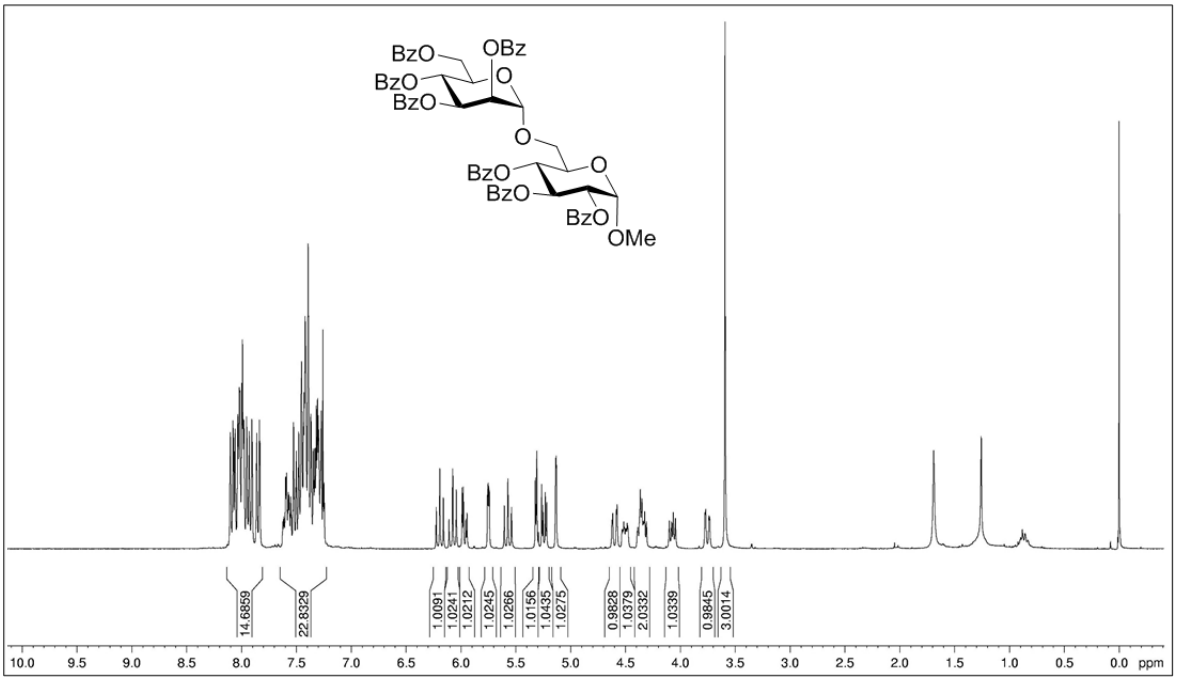
^{1}H NMR spectrum (300 MHz, $CDCl_3$)

Methyl 2,3,6-tri-*O*-benzyl-4-*O*-(2,3,4,6-tetra-*O*-benzoyl-α-D-mannopyranosyl)-α-D-glucopyranoside (25)



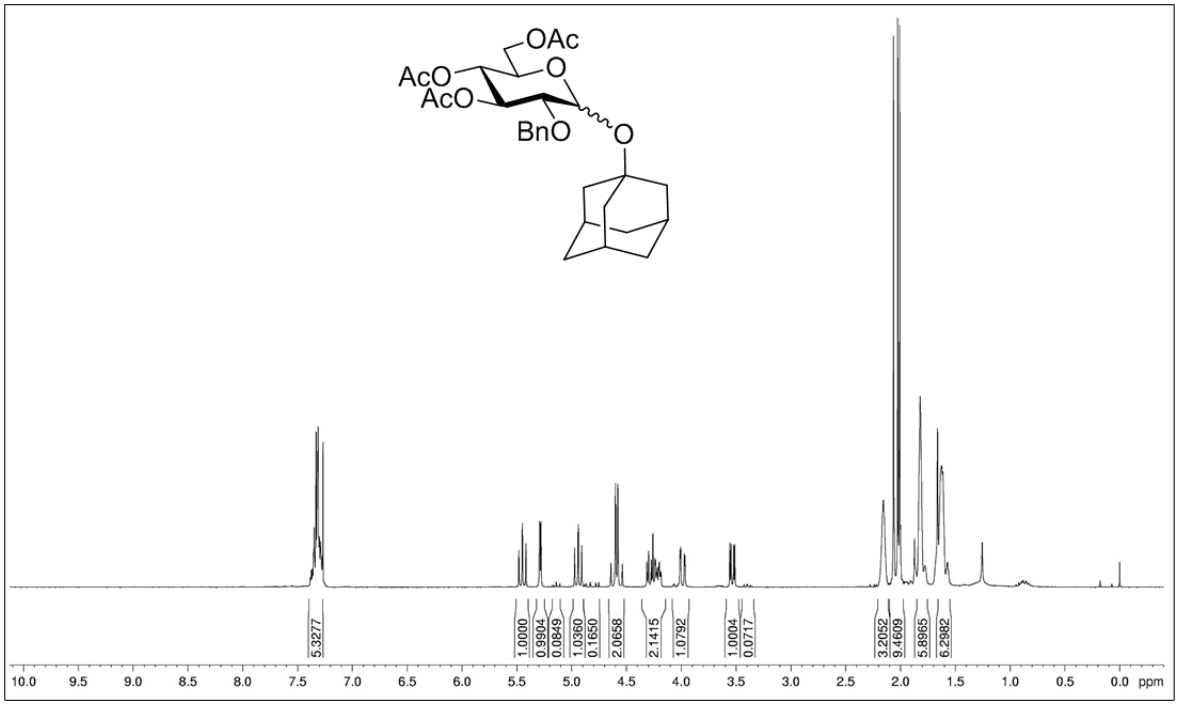
^{1}H NMR spectrum (300 MHz, $CDCl_3$)

Methyl 2,3,4-tri-*O*-benzyl-6-*O*-(2,3,4,6-tetra-*O*-benzoyl-α-D-mannopyranosyl)-α-D-glucopyranoside (27)



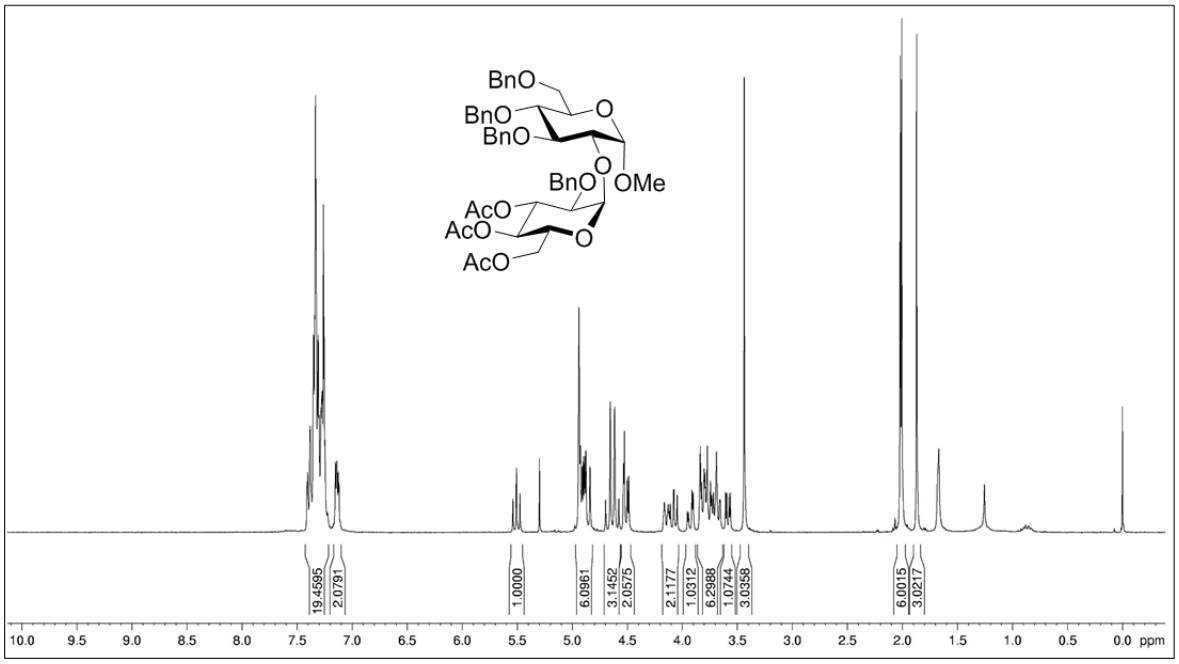
^{1}H NMR spectrum (300 MHz, $CDCl_3$)

1-Adamantyl 3,4,6-tri-*O*-acetyl-2-*O*-benzyl-α-D-glucopyranoside (30)



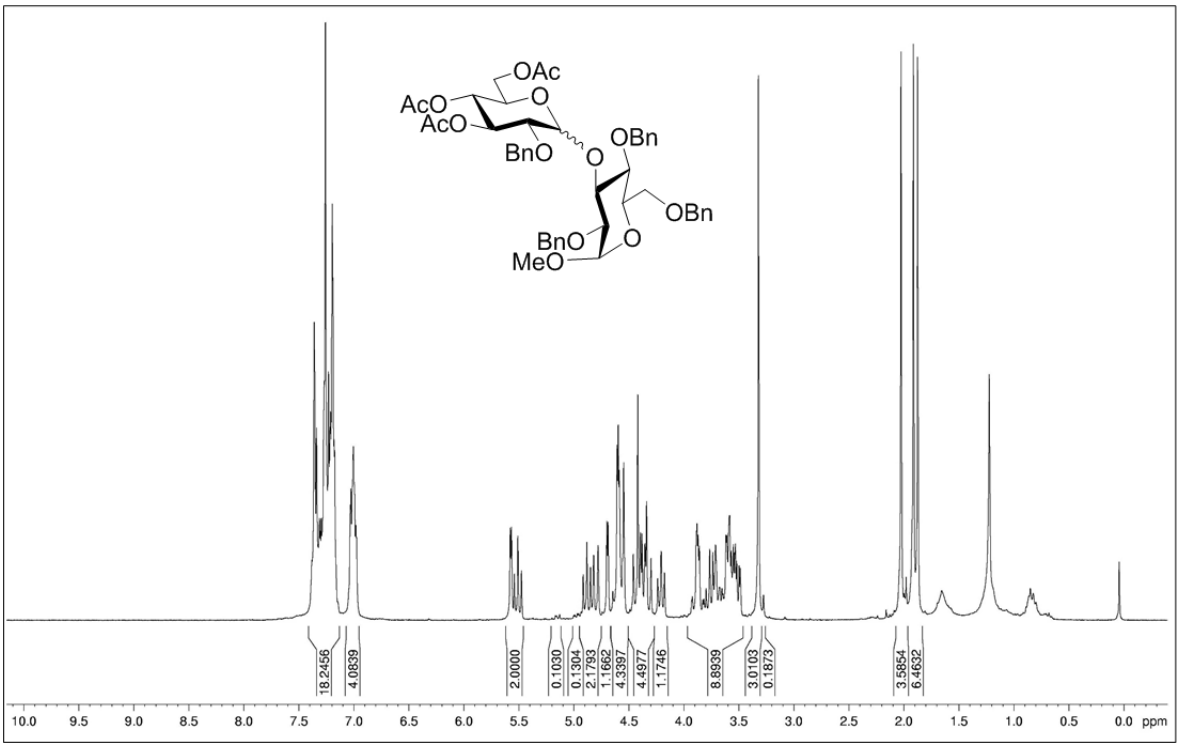
^{1}H NMR spectrum (300 MHz, $CDCl_3$)

Methyl 2-*O*-(3,4,6-tri-*O*-acetyl-2-*O*-benzyl-α-D-glucopyranosyl)-3,4,6-tri-*O*-benzyl-α-D-glucopyranoside (31)



^{1}H NMR spectrum (300 MHz, $CDCl_3$)

Methyl 3-*O*-(3,4,6-tri-*O*-acetyl-2-*O*-benzyl-α-D-glucopyranosyl)-2,4,6-tri-*O*-benzyl-α-D-glucopyranoside (32)



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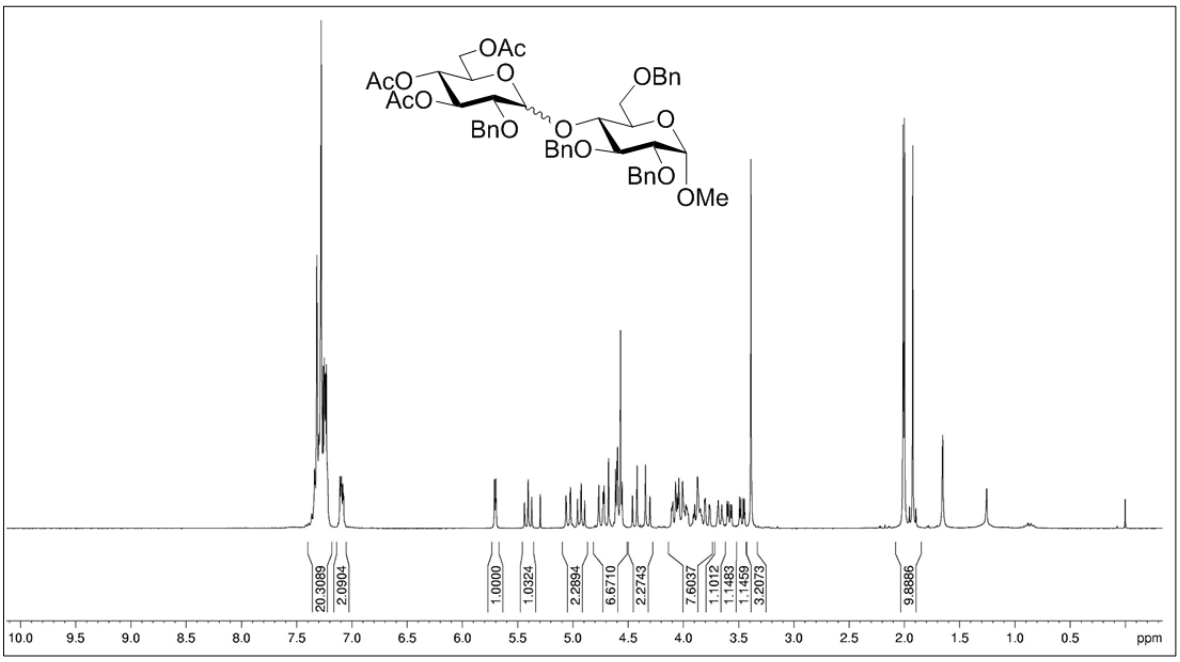

^{1}H NMR spectrum (300 MHz, $CDCl_3$)