Supporting Information

for

Interplay of Protecting Groups and Side Chain Conformation in Glycopyranosides. Modulation of the Influence of Remote Substituents on Glycosylation?

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† These authors contributed equally

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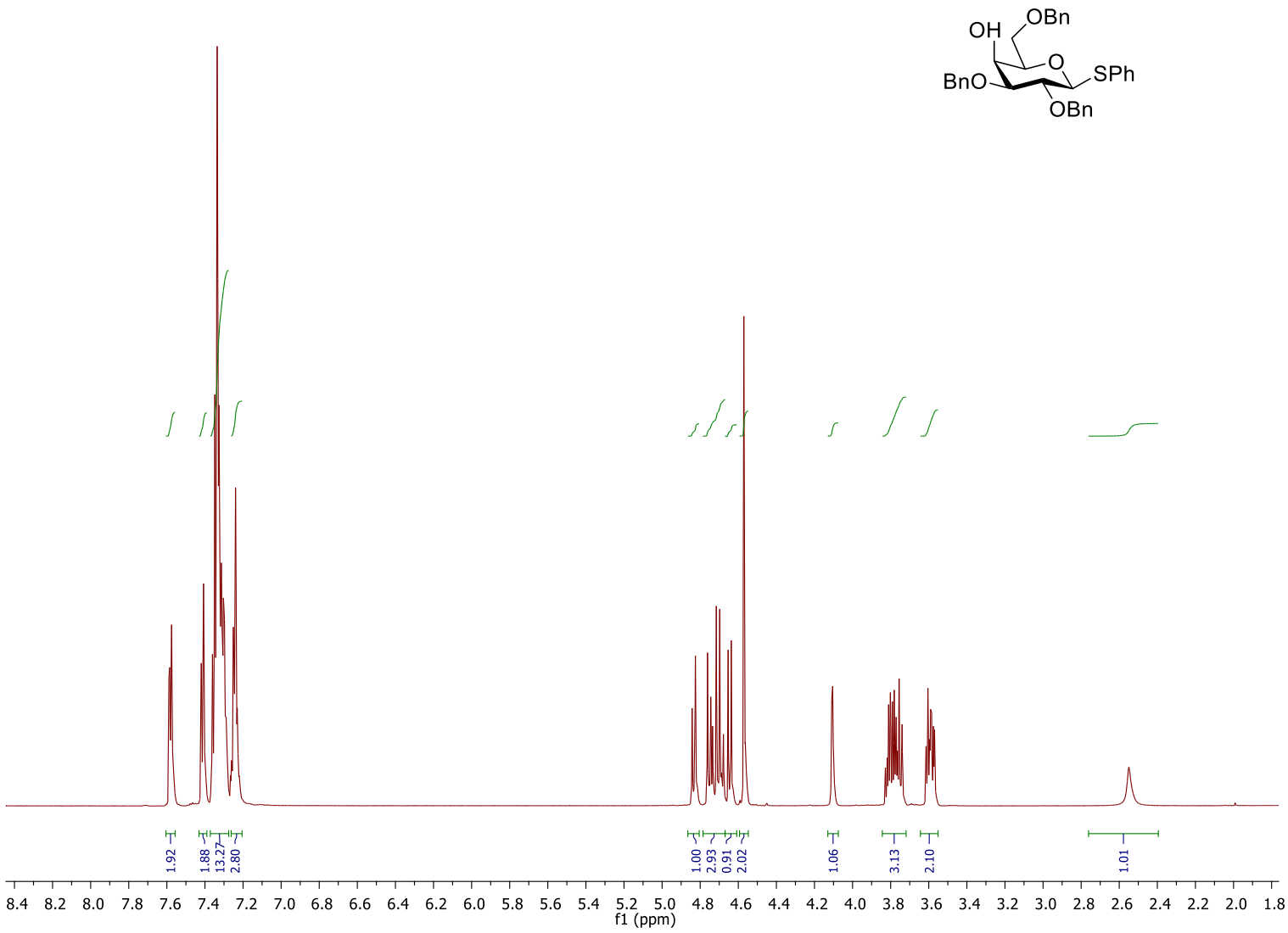
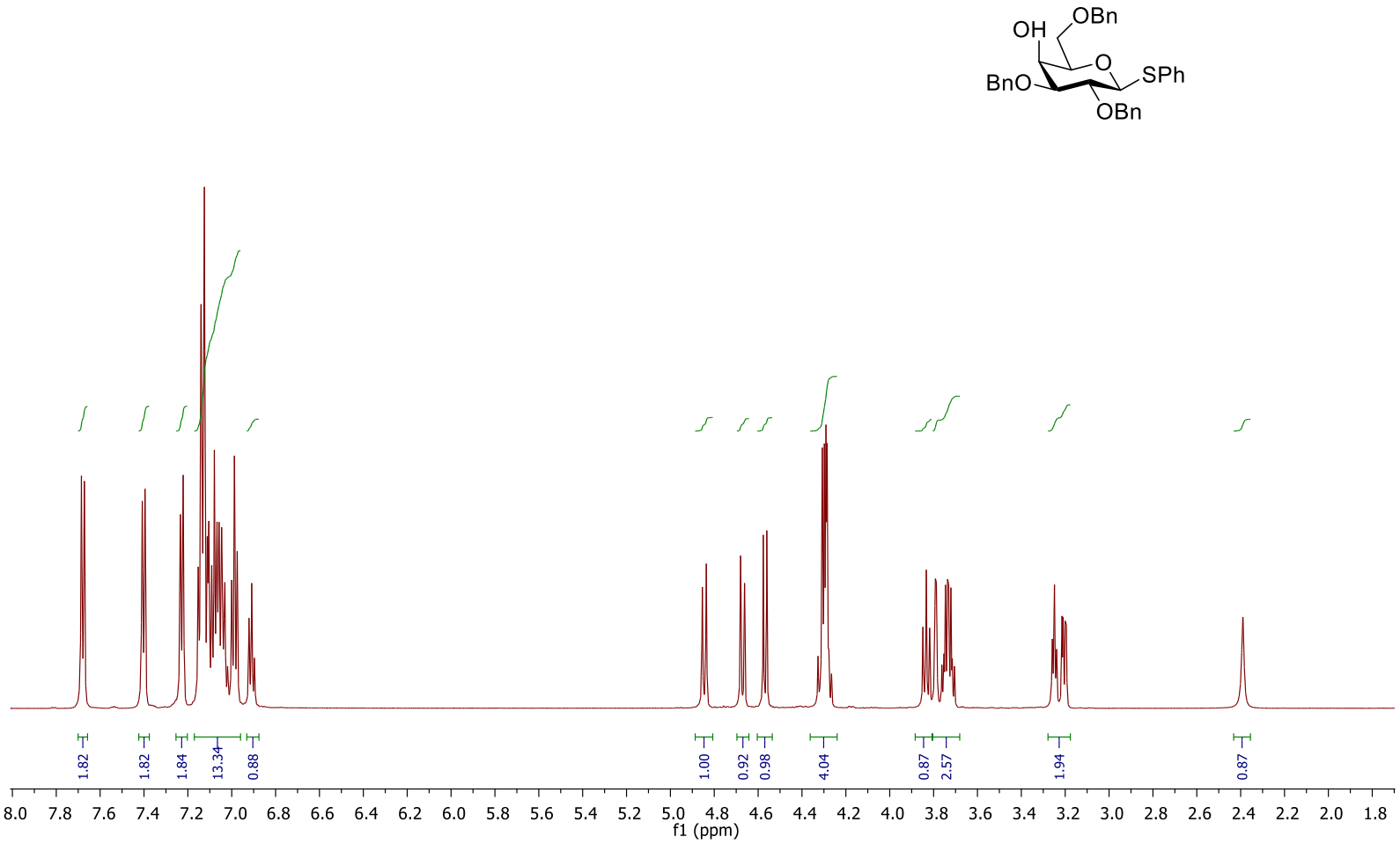
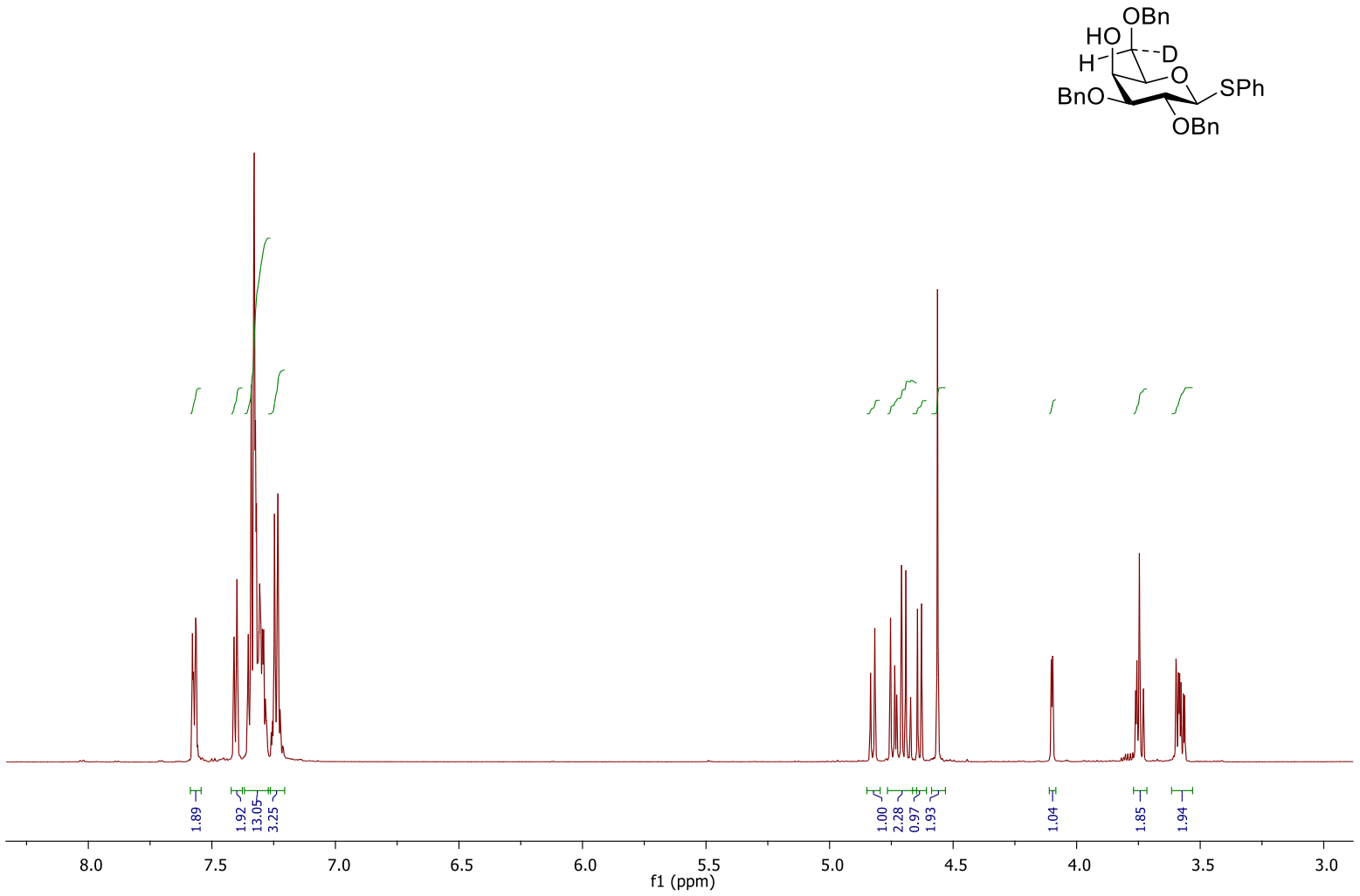
^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Phenyl 2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**1**)



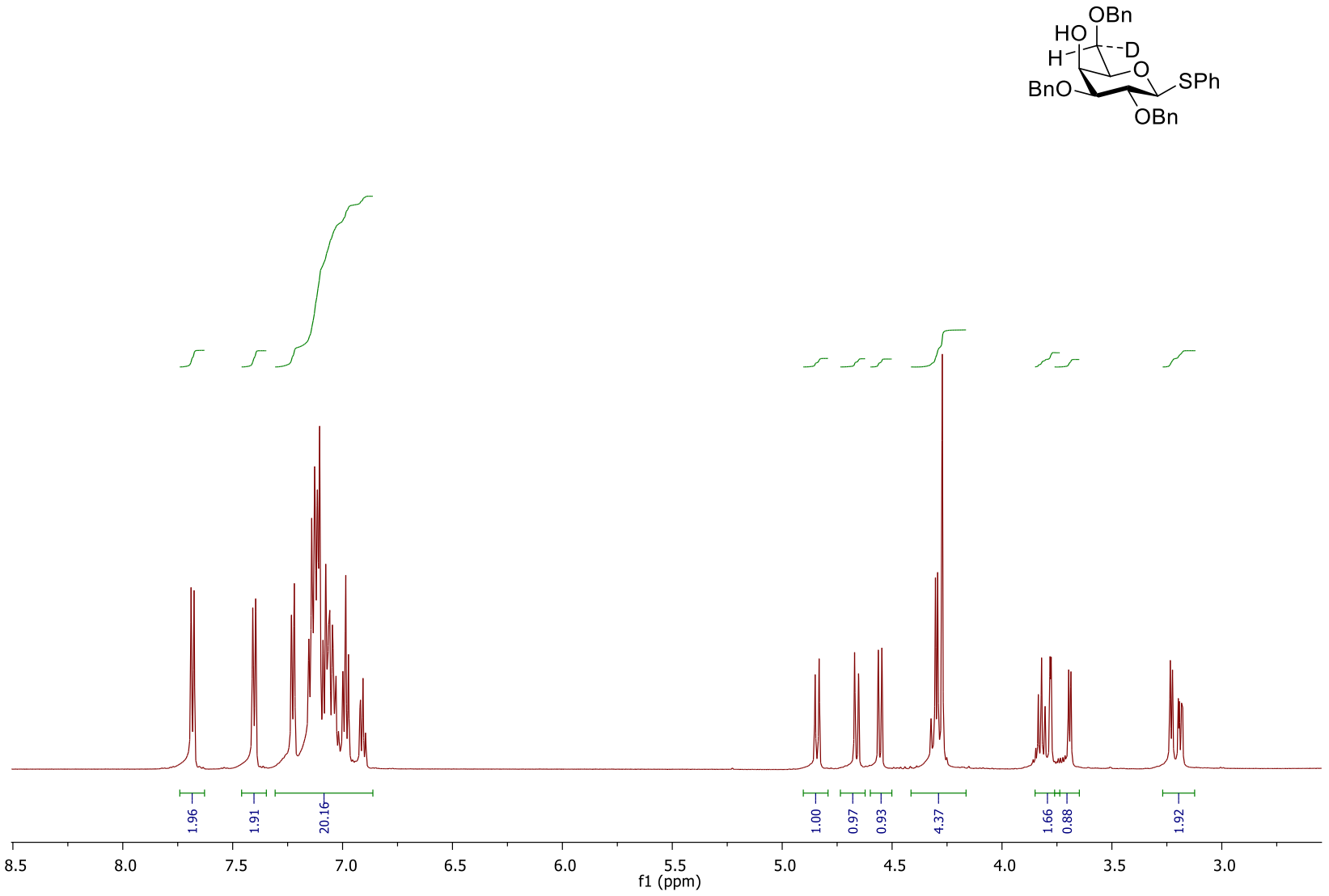
^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl 2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**1**)



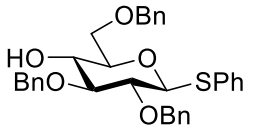
^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Phenyl (6*S*)-[6-$^{2}H_1$]-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**6S-D-1**)

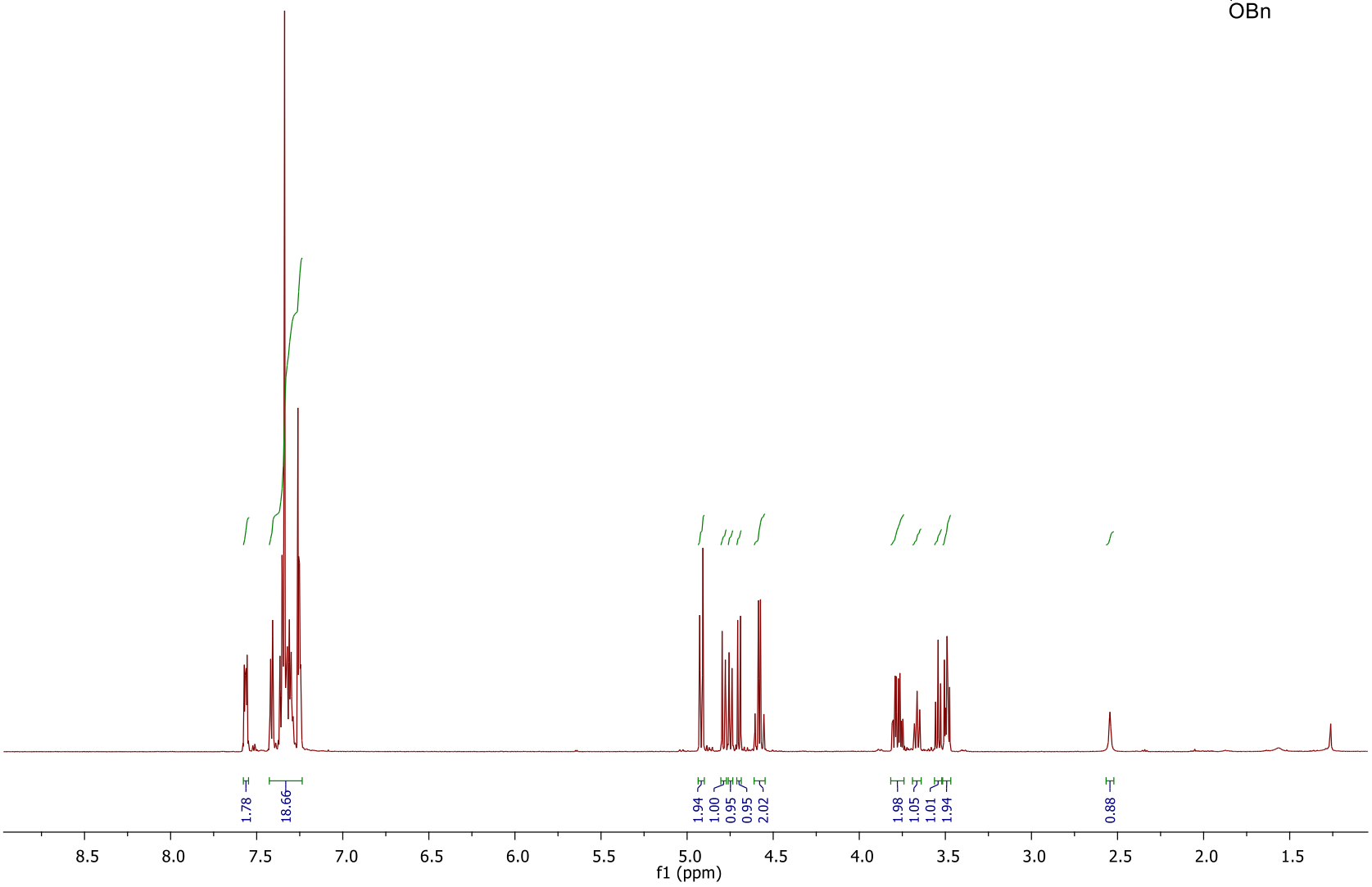


^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl (6*S*)-[6-$^{2}H_1$]-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**6S-D-1**)

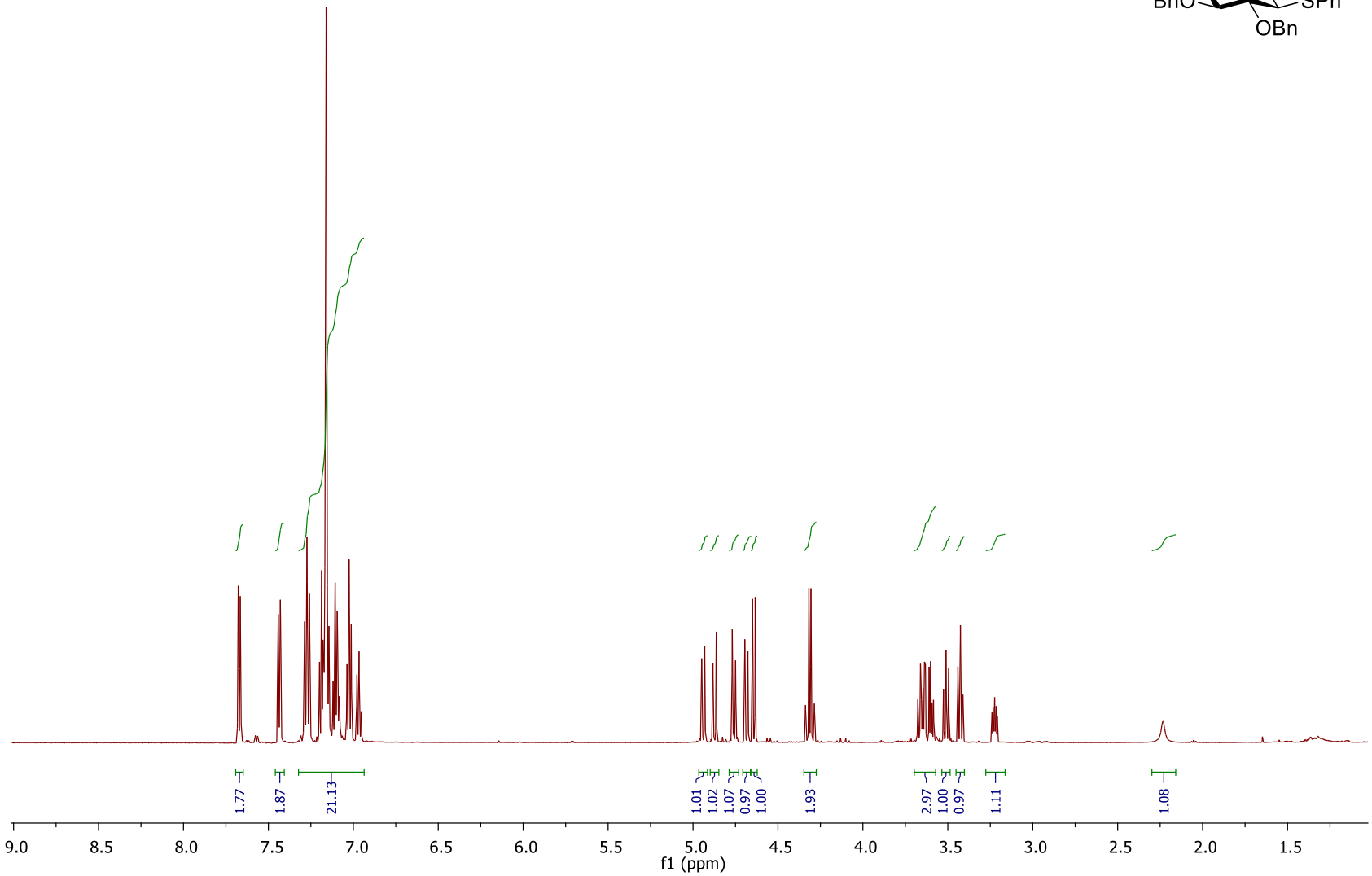


^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Phenyl 2,3,6-tri-*O*-benzyl-1-thio-β-D-glucopyranoside **(2)**

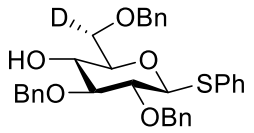


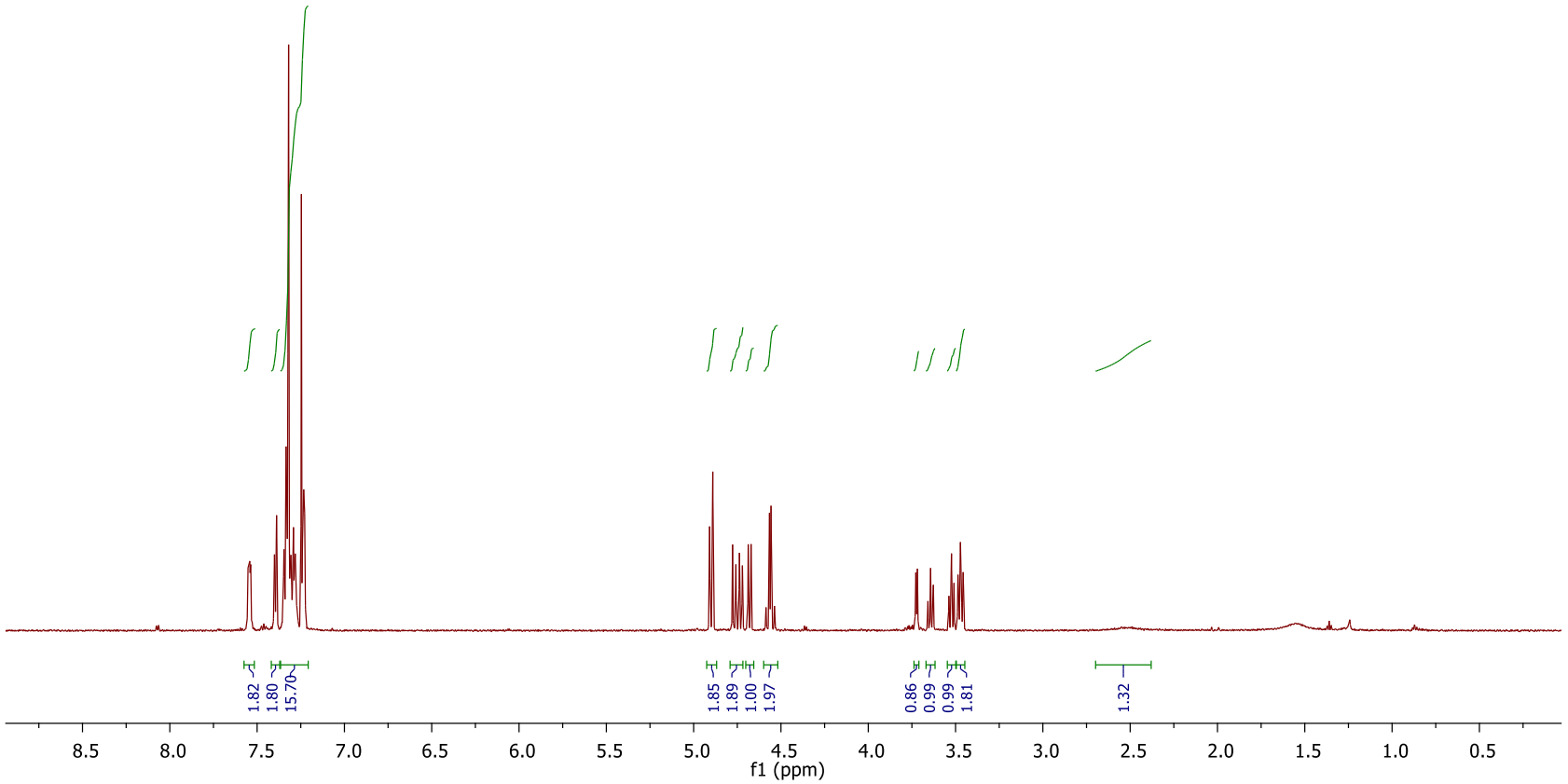


^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl 2,3,6-tri-*O*-benzyl-1-thio-β-D-glucopyranoside **(2)**

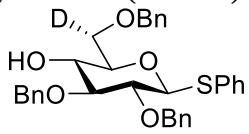


^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Phenyl (6*S*)-[6-$^{2}H_1$]-2,3,6-tri-*O*-benzyl-1-thio-β-D-glucopyranoside(**6*S*-D-2**)

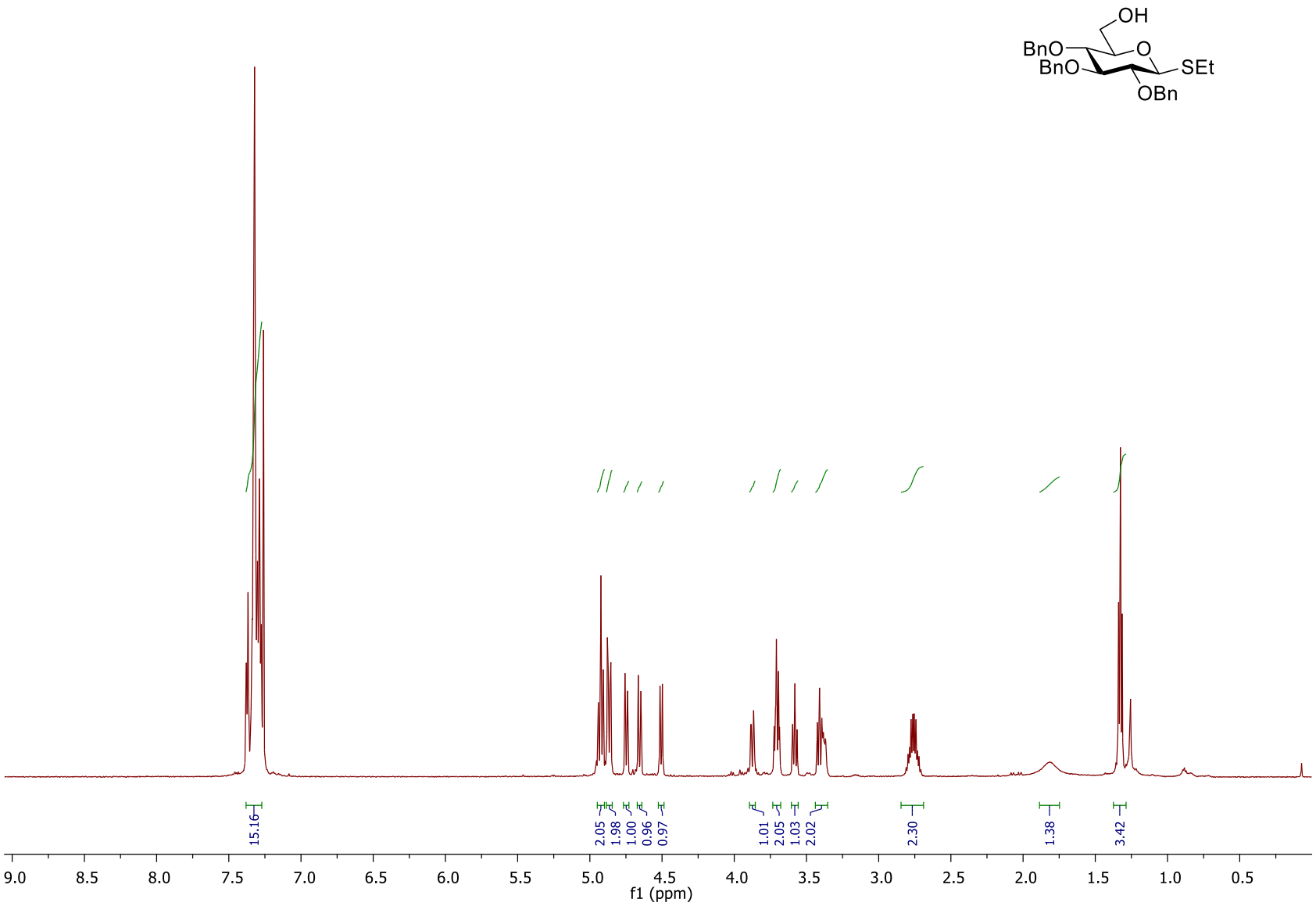




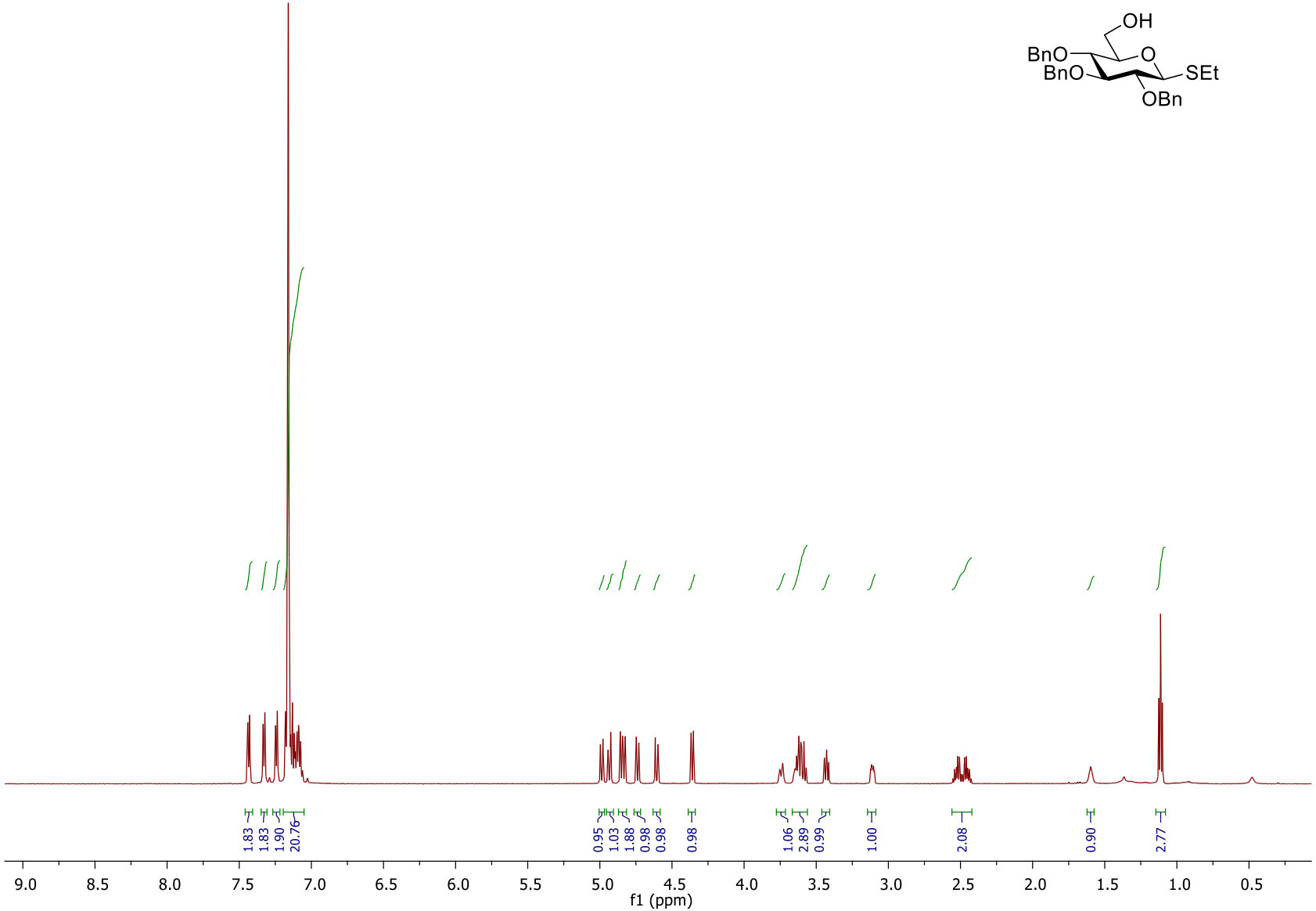
^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl (6*S*)-[6-$^{2}H_1$]-2,3,6-tri-*O*-benzyl-1-thio-β-D-glucopyranoside (**6*S*-D-2**)



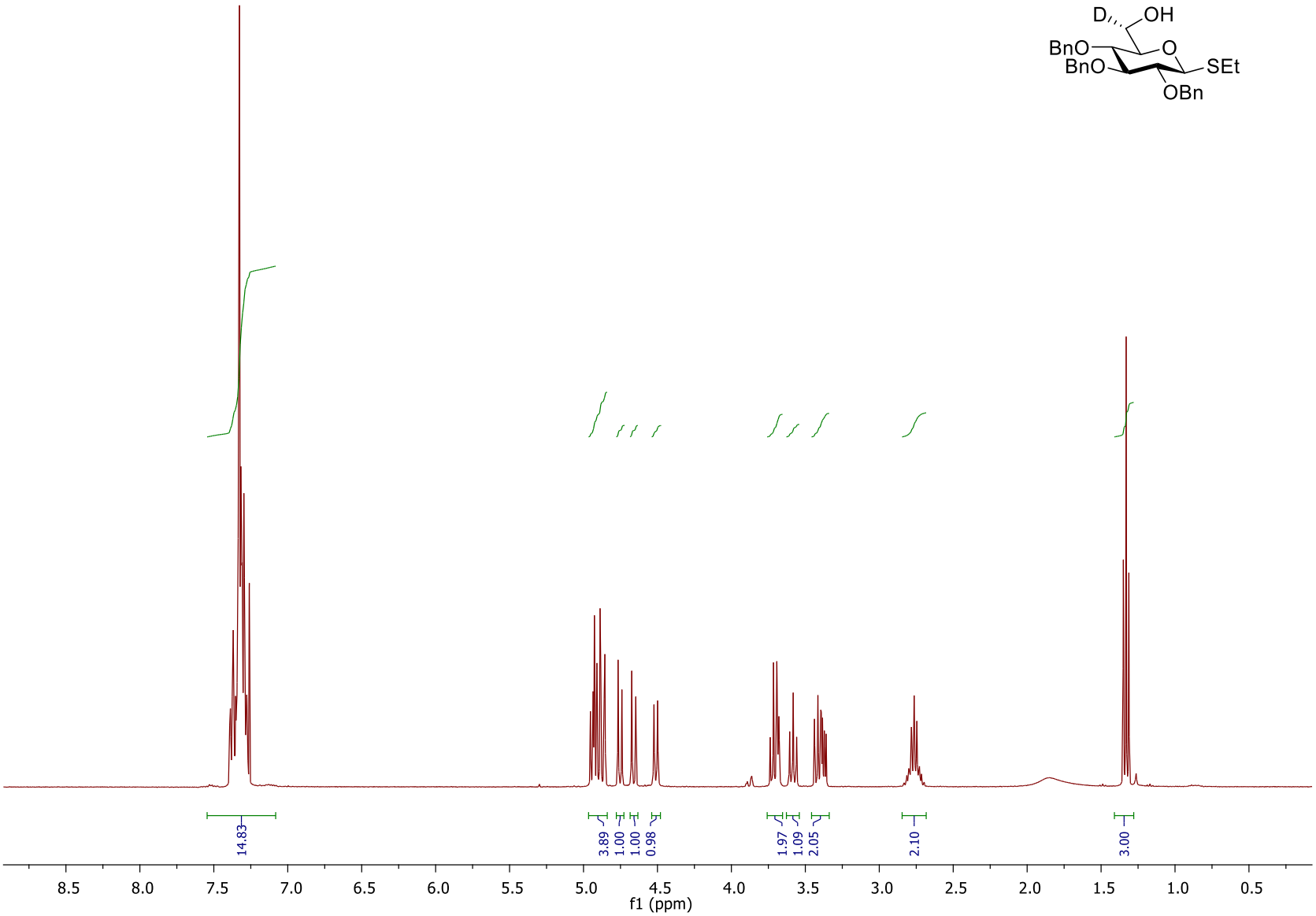
^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Ethyl 2,3,4-tri-*O*-benzyl-1-thio-β-D-glucopyranoside **(3)**



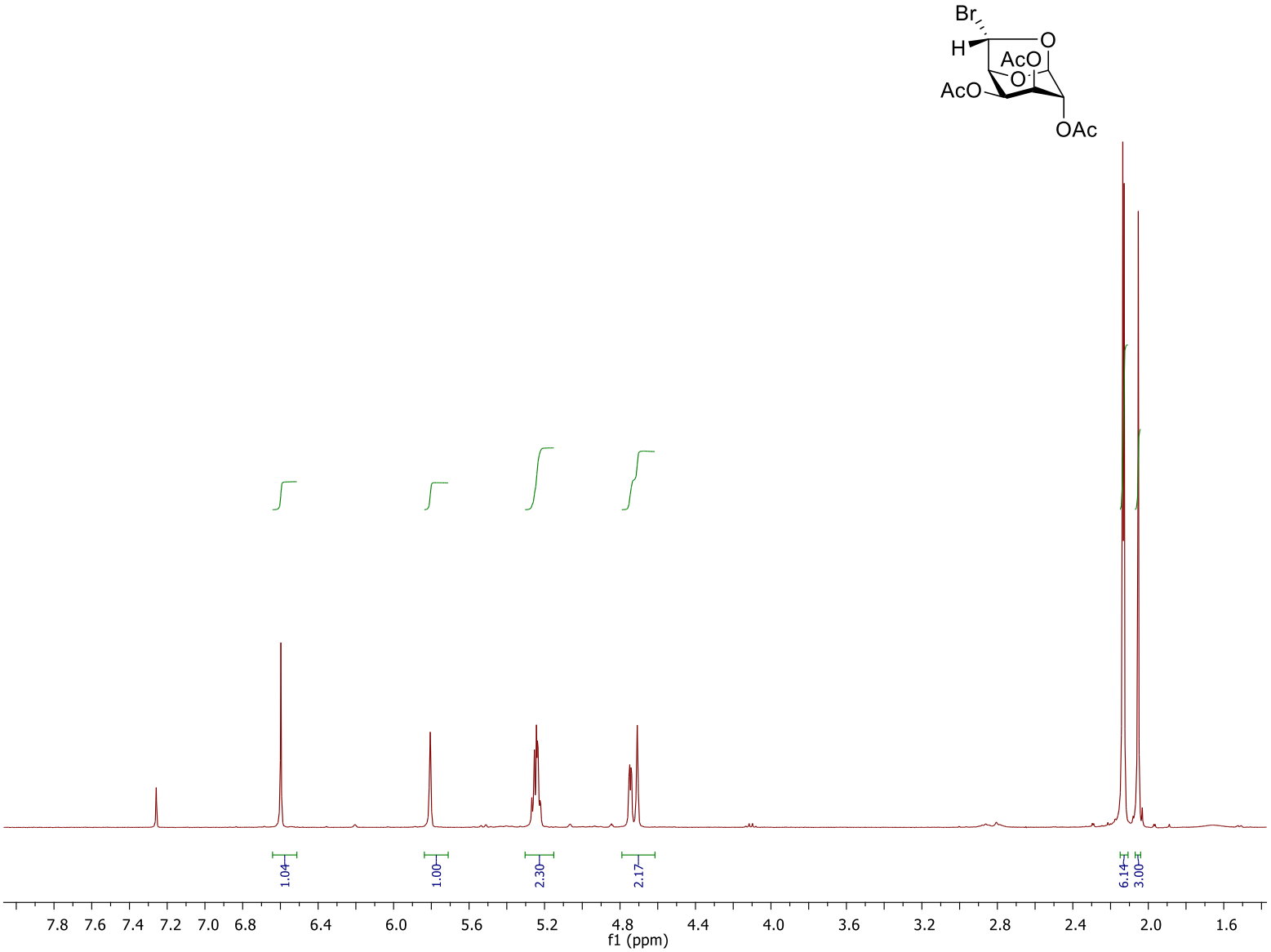
^{1}H NMR (600 MHz, C_6D_6) Spectrum of Ethyl 2,3,4-tri-*O*-benzyl-1-thio-β-D-glucopyranoside **(3)**



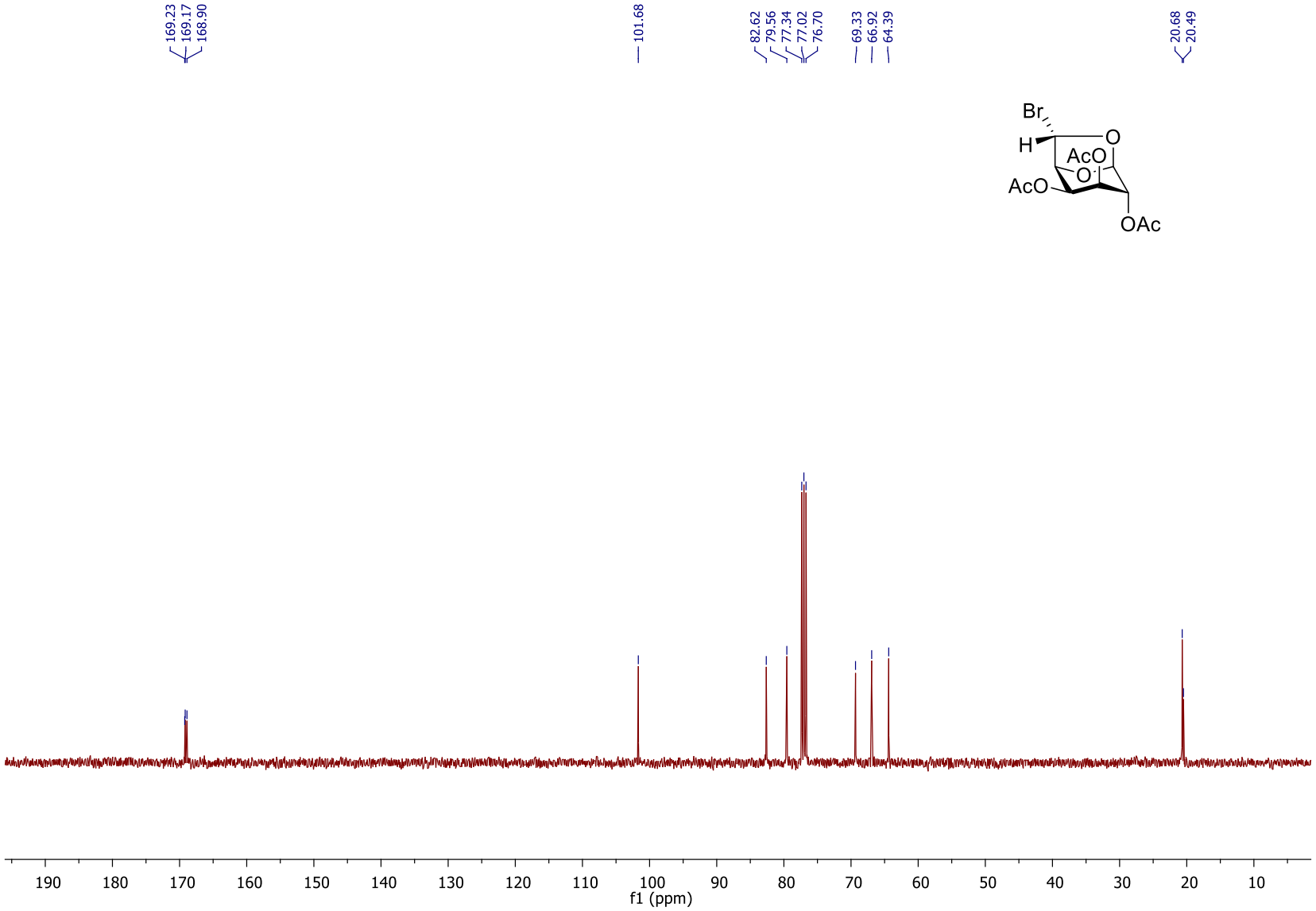
^{1}H NMR (400 MHz, $CDCl_3$) Spectrum of Ethyl (6*S*)-[6-$^{2}H_1$]-2,3,4,6-tetra-*O*-acetyl-1-thio-β-D-glucopyranoside **(6*S*-D-3)**



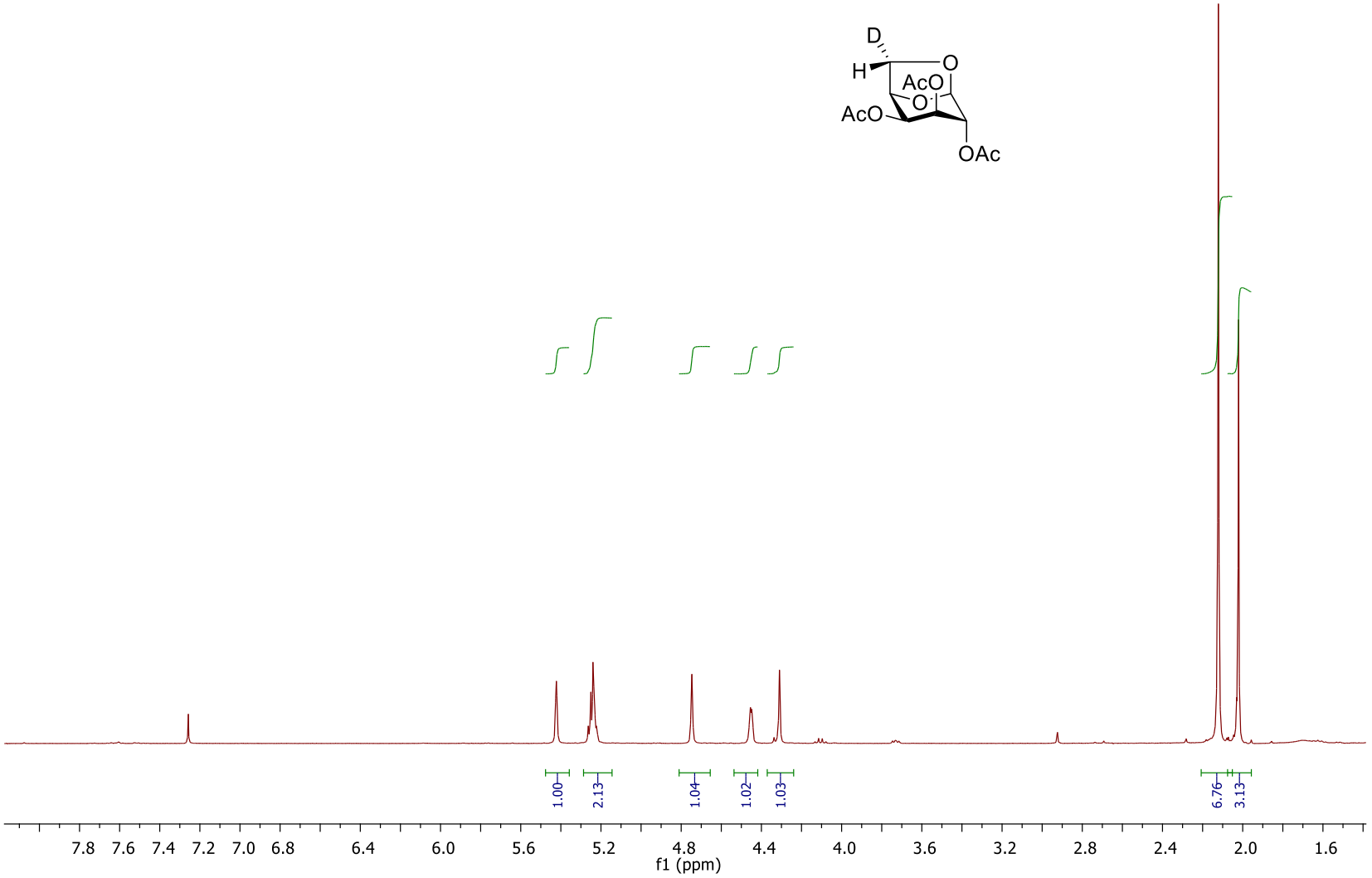
^{1}H NMR (400 MHz, $CDCl_3$) Spectrum of (6*S*) -l,6-Anhydro-2,3,4-tri-O-acetyl-6-bromo-β-D-galactopyranose (**5**)



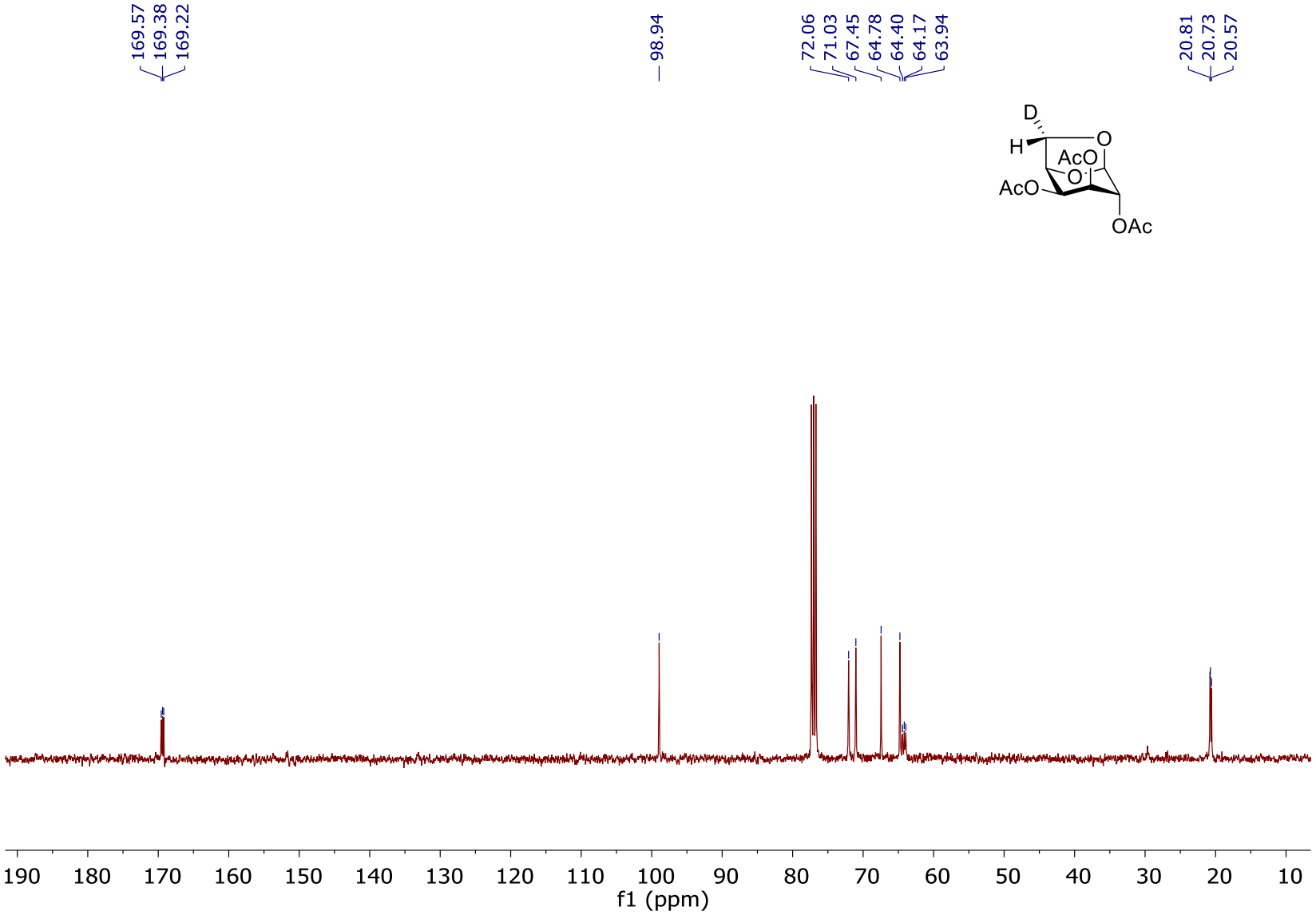
^{1}H NMR (100 MHz, $CDCl_3$) Spectrum of (6*S*) -l,6-Anhydro-2,3,4-tri-*O*-acetyl-6-bromo-β-D-galactopyranose (**5**)



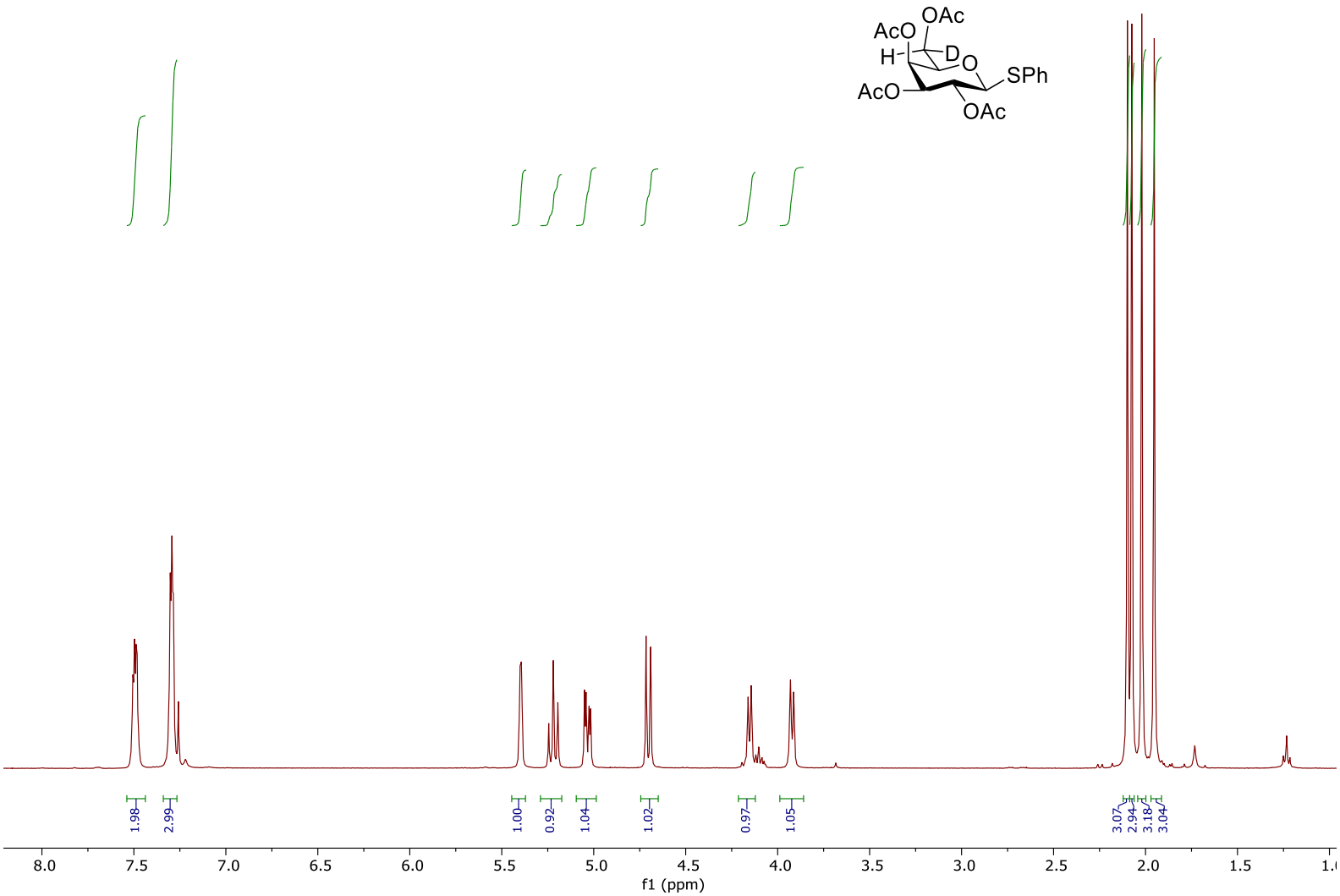
^{1}H NMR (400 MHz, $CDCl_3$) Spectrum of (6*S*)-[6-$^{2}H_1$]-l,6-Anhydro-2,3,4-tri-O-acetyl-β-D-galactopyranose (**6**)



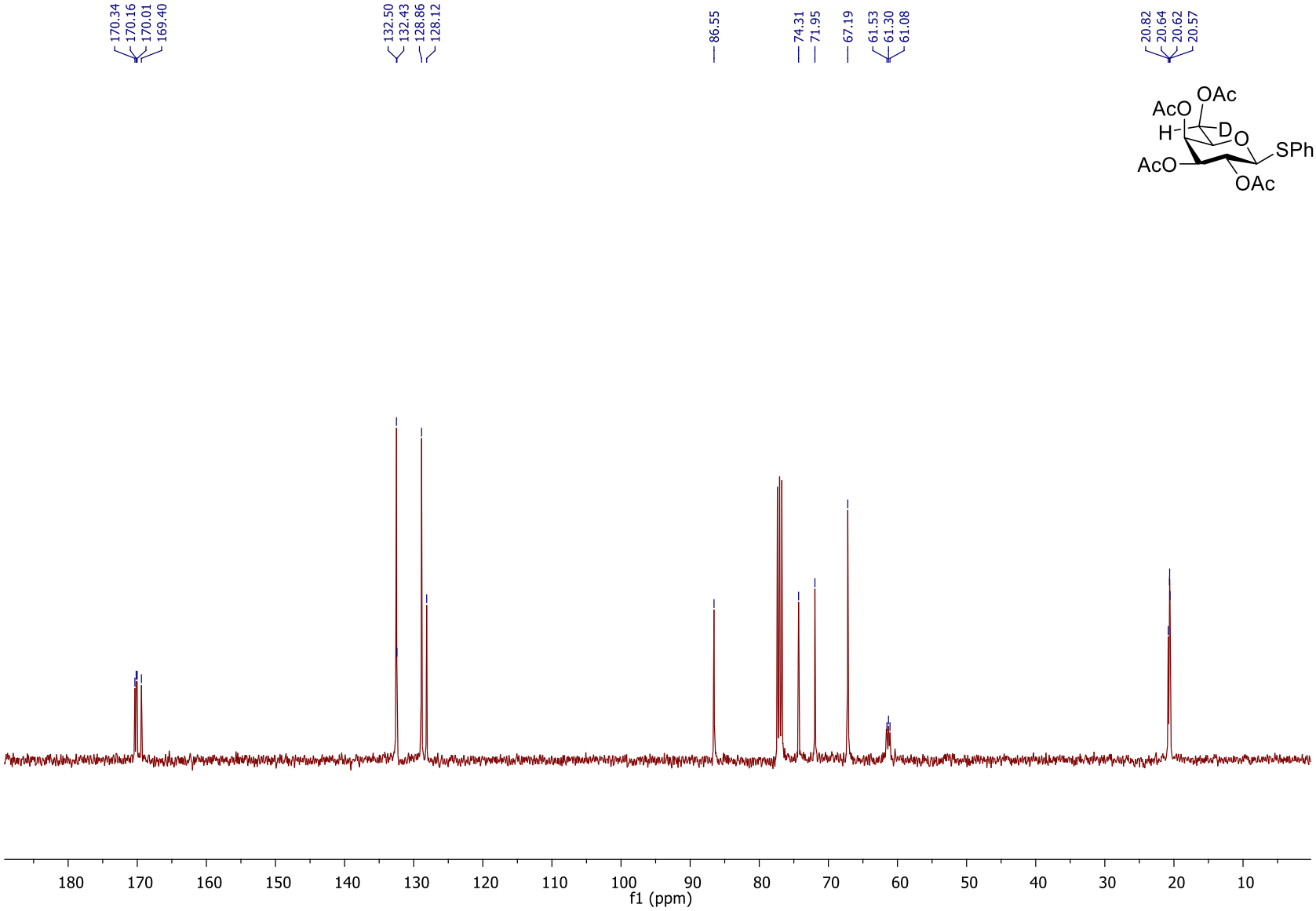
^{13}C NMR (100 MHz, $CDCl_3$) Spectrum of (6*S*)-[6-$^{2}H_1$]-l,6-Anhydro-2,3,4-tri-O-acetyl-β-D-galactopyranose (**6**)



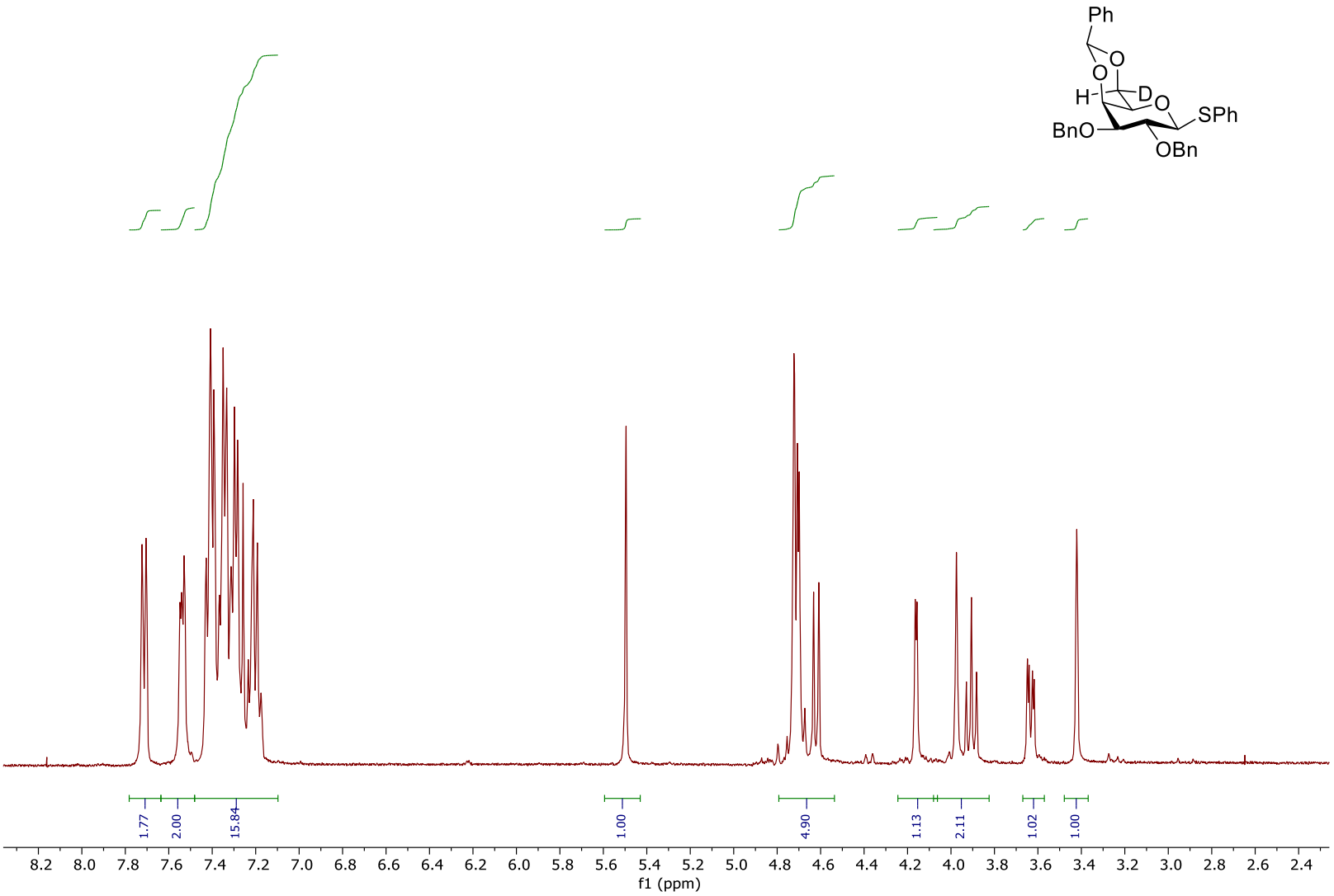
^{1}H NMR (400 MHz, $CDCl_3$) Spectrum of Phenyl (6*S*)-[6-$^{2}H_1$]-2,3,4,6-tetra-*O*-acetyl-1-thio-β-D-galactopyranoside (**8)**



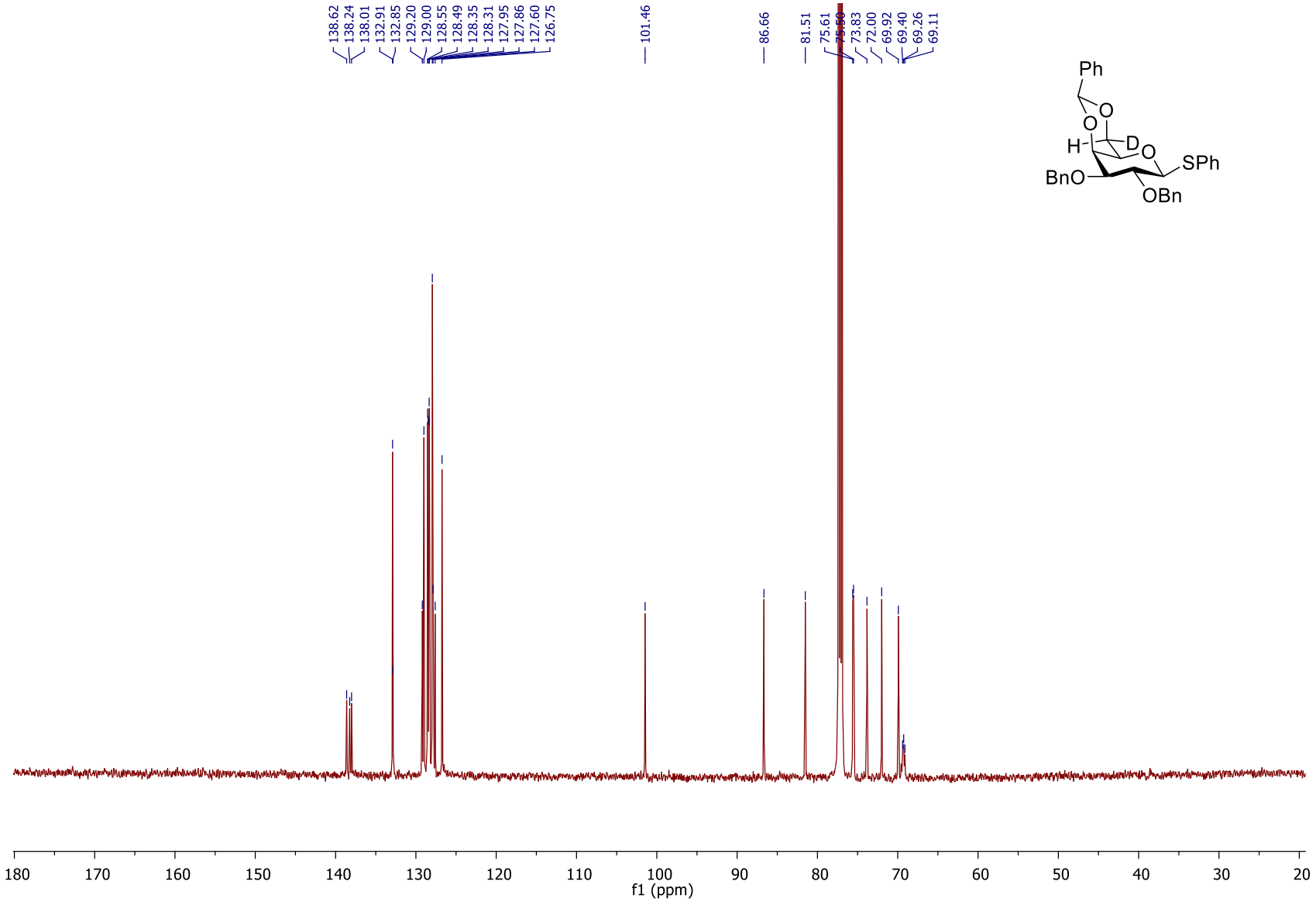
^{13}C NMR (100 MHz, $CDCl_3$) Spectrum of Phenyl (6*S*)-[6-$^{2}H_1$]-2,3,4,6-tetra-*O*-acetyl-1-thio-β-D-galactopyranoside (**8**)



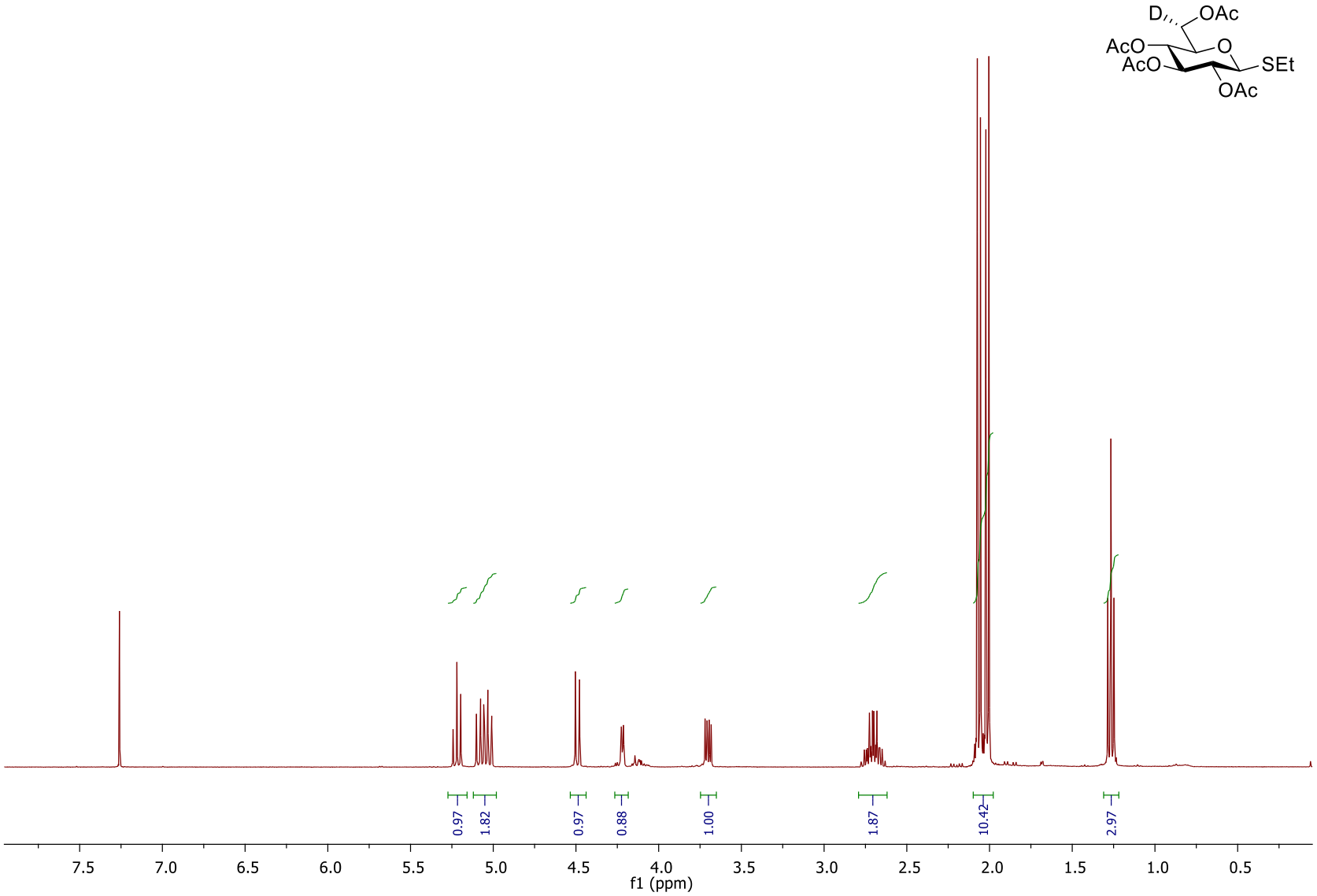
^{1}H NMR (400 MHz, $CDCl_3$) Spectrum of Phenyl 2,3-di-*O*-benzyl-4,6-*O*-benzylidene-(6*S*)-[6-$^{2}H_1$]-1-thio-β-D-galactopyranoside (**10**)



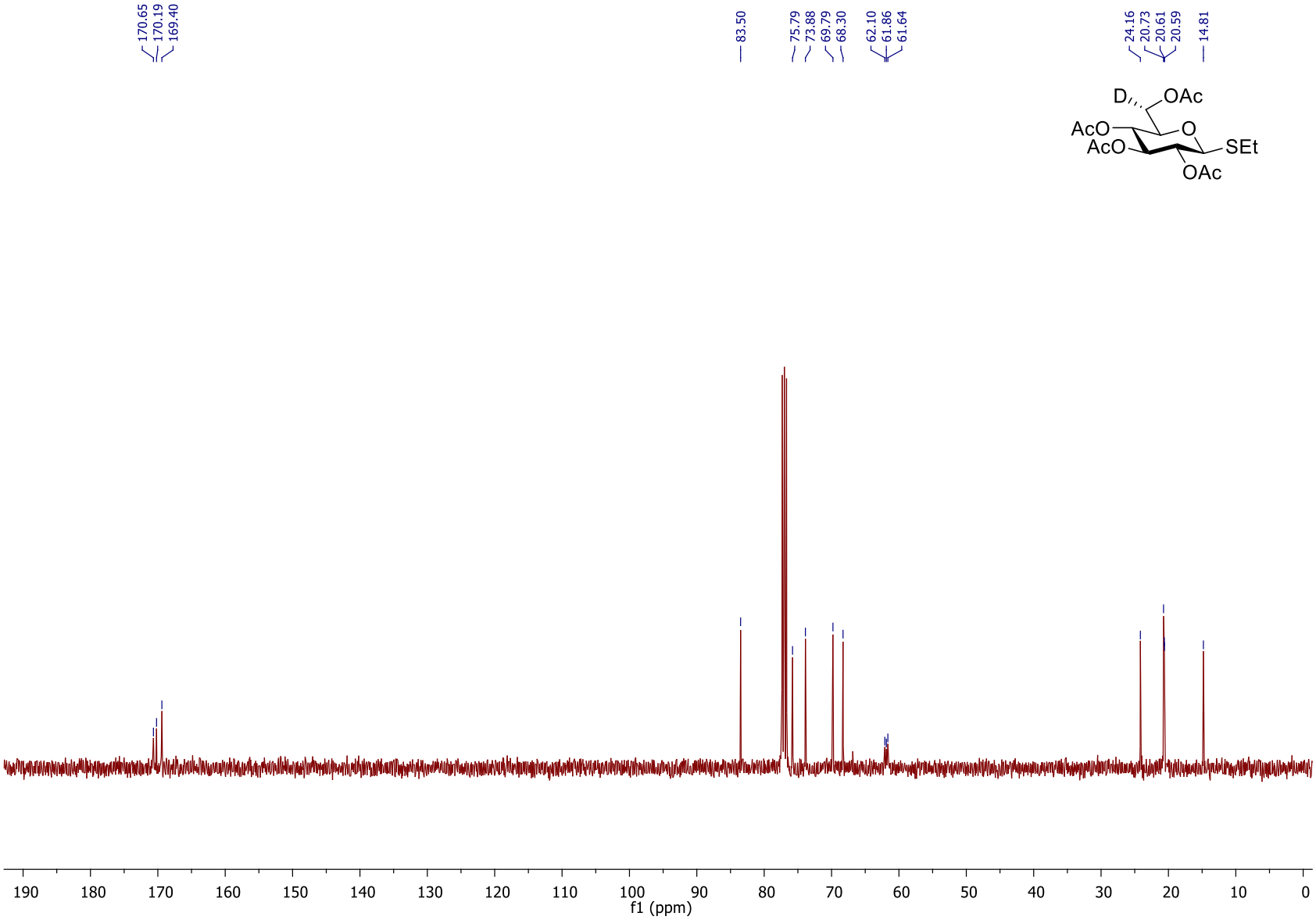
^{13}C NMR (150 MHz, $CDCl_3$) Spectrum of Phenyl 2,3-di-*O*-benzyl-4,6-*O*-benzylidene-(6*S*)-[6-$^{2}H_1$]-1-thio-β-D-galactopyranoside (**10**)



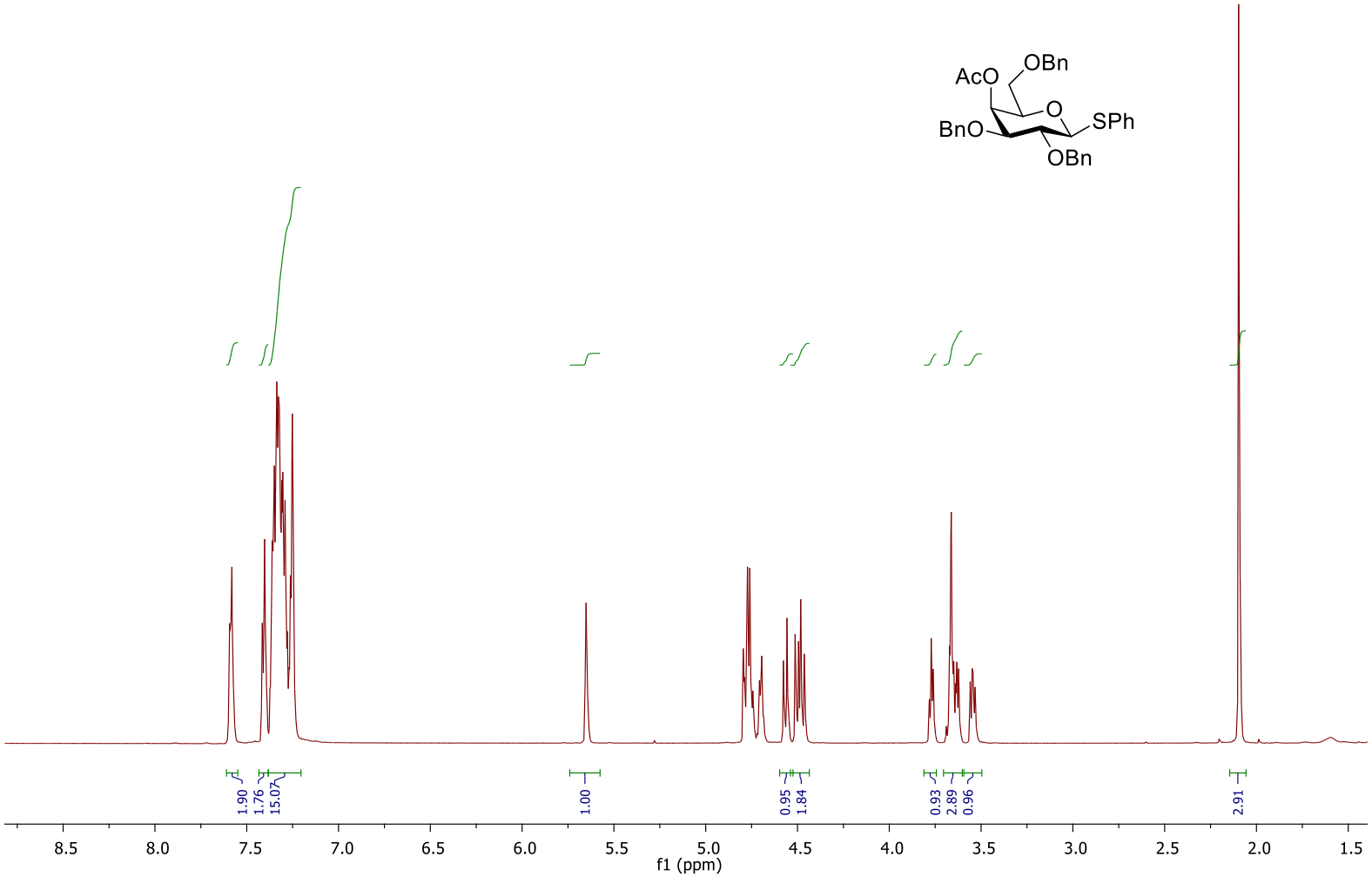
^{1}H NMR (400 MHz, $CDCl_3$) Spectrum of Ethyl -(6*S*)-[6-$^{2}H_1$]-2,3,4,6-tetra-*O*-acetyl-1-thio-β-D-glucopyranoside **(12)**



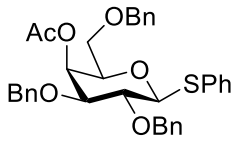
^{13}C NMR (100 MHz, $CDCl_3$) Spectrum of Ethyl -(6*S*)-[6-$^{2}H_1$]-2,3,4,6-tetra-*O*-acetyl-1-thio-β-D-glucopyranoside **(12)**

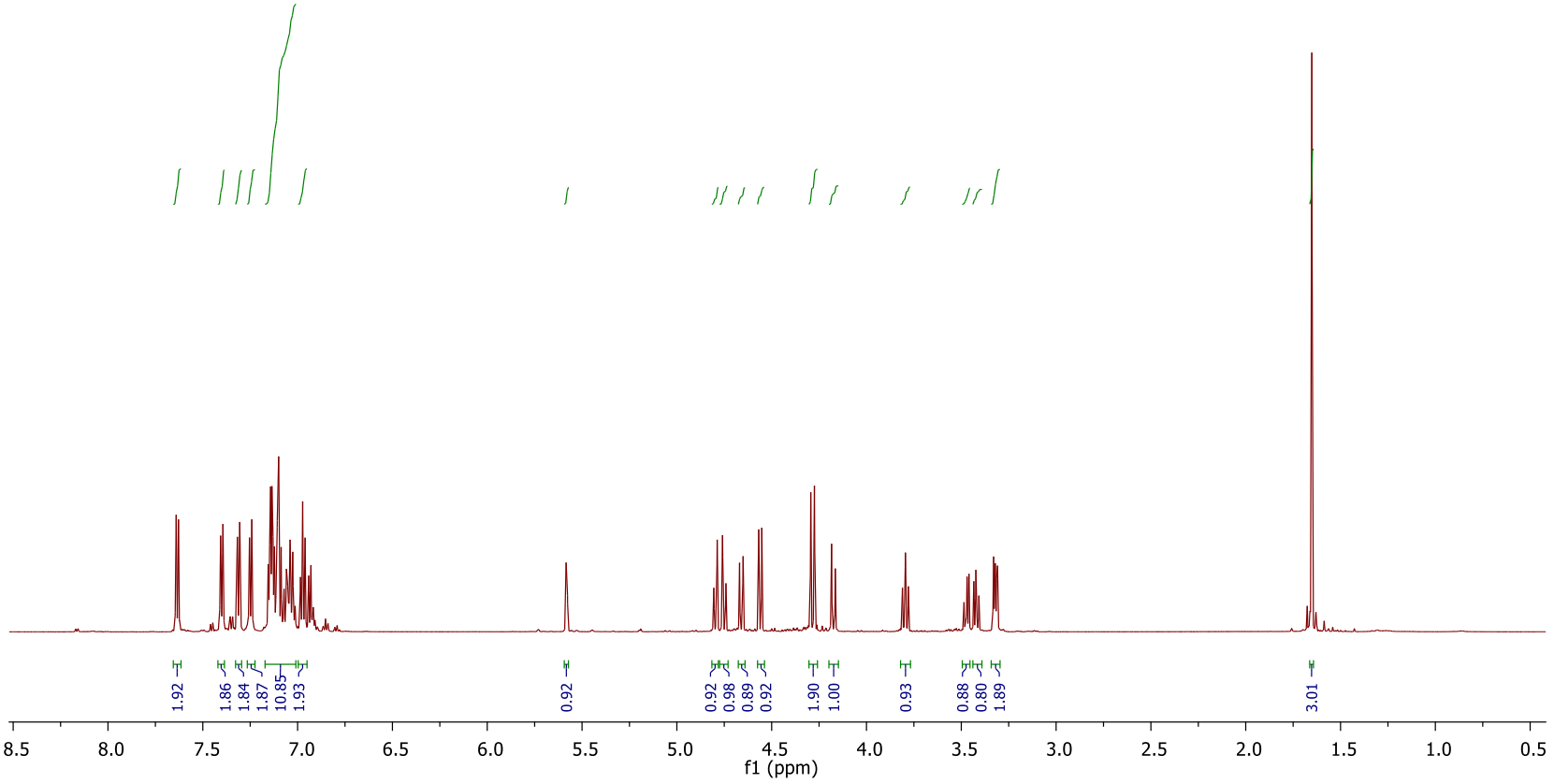


^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Phenyl 4-*O*-acetyl-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**13**)

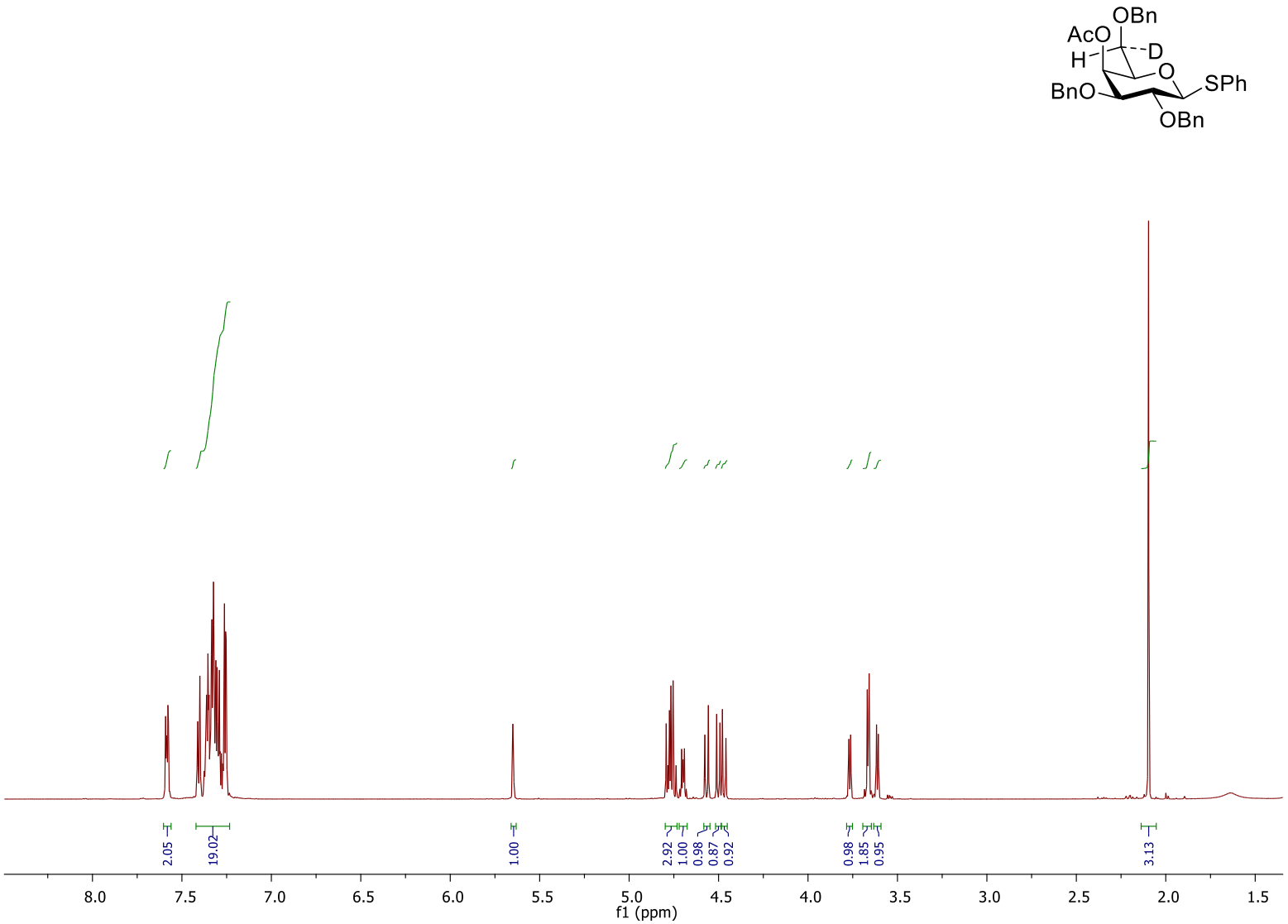


^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl 4-*O*-acetyl-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**13**)

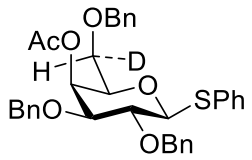


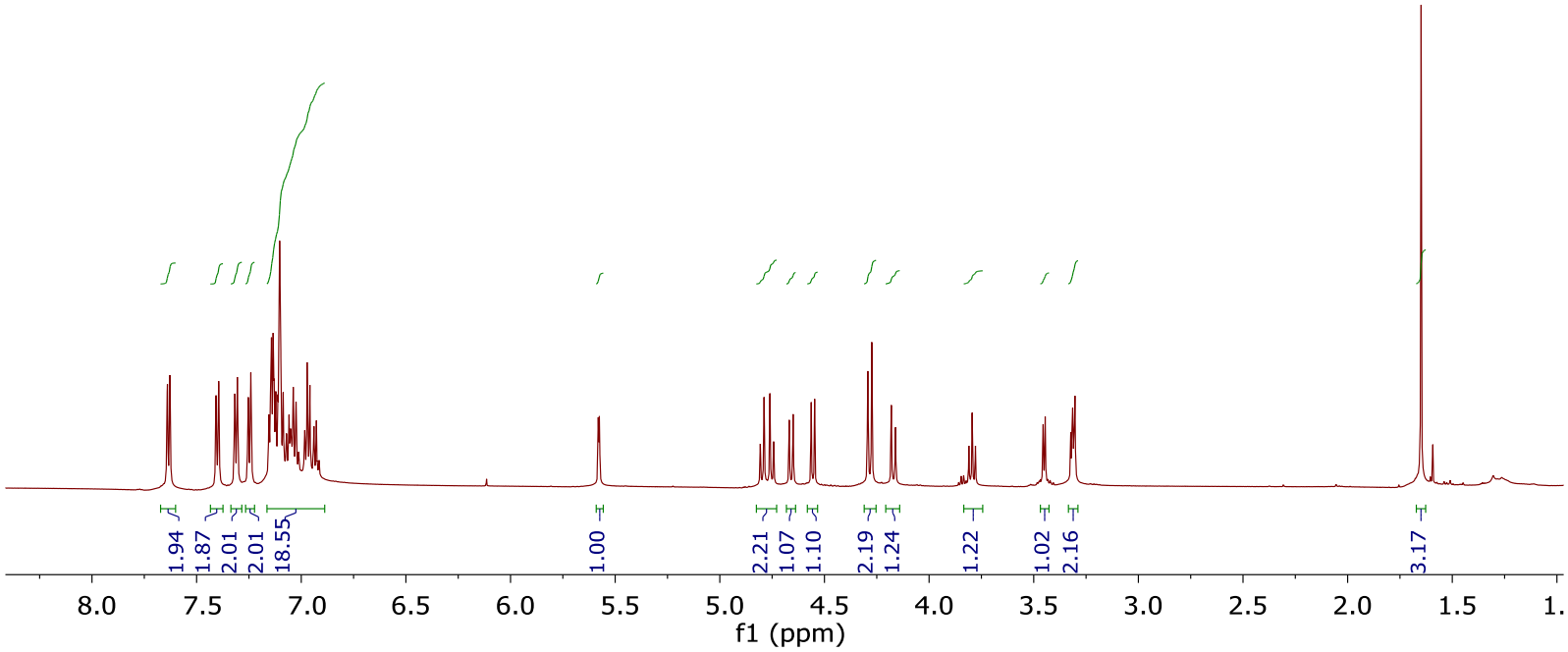


^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Phenyl 4-*O*-acetyl-(6*S*)-[6-$^{2}H_1$]-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**6S-D-13**)

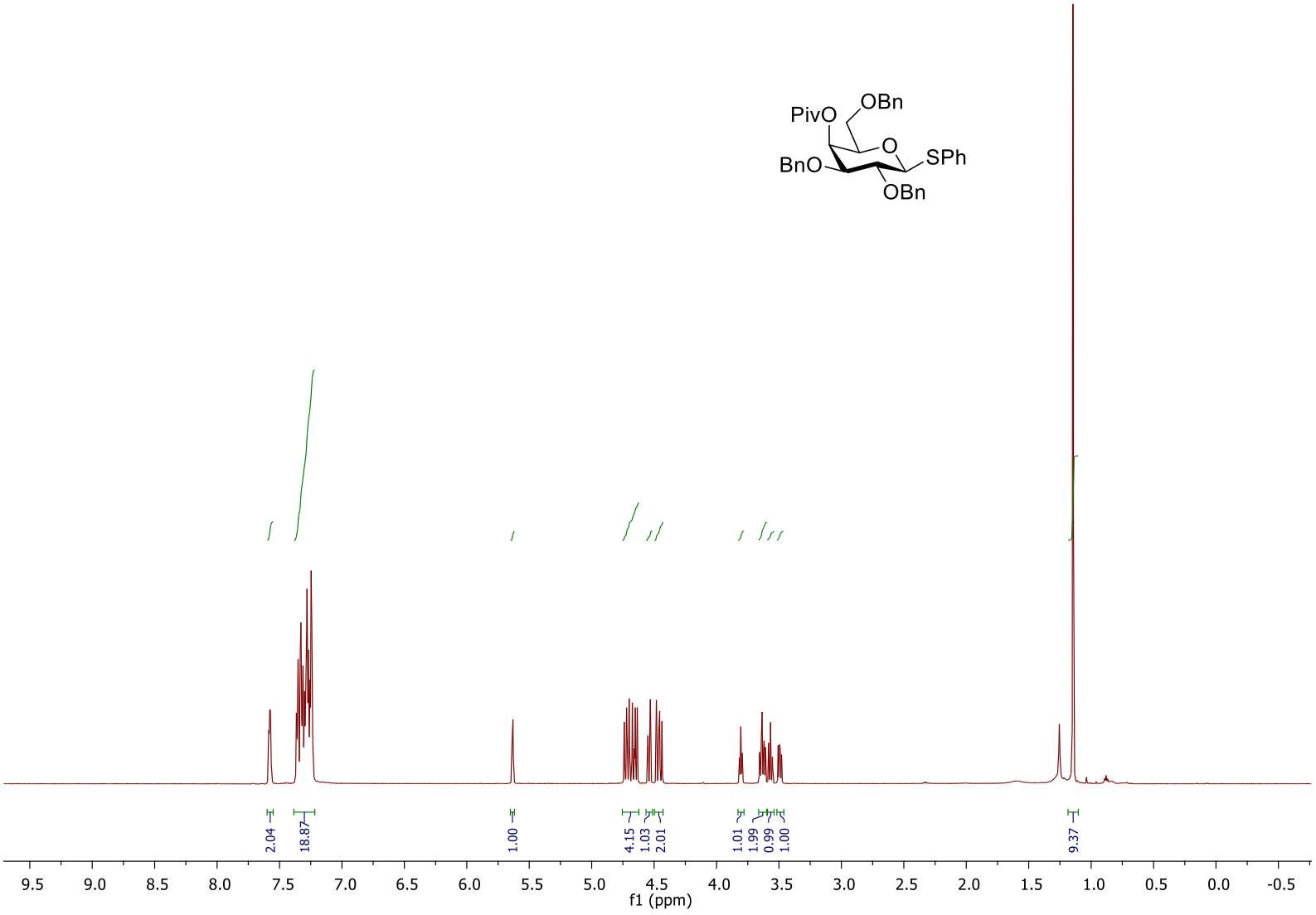


^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl 4-*O*-acetyl-(6*S*)-[6-$^{2}H_1$]-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**6S-D-13**)

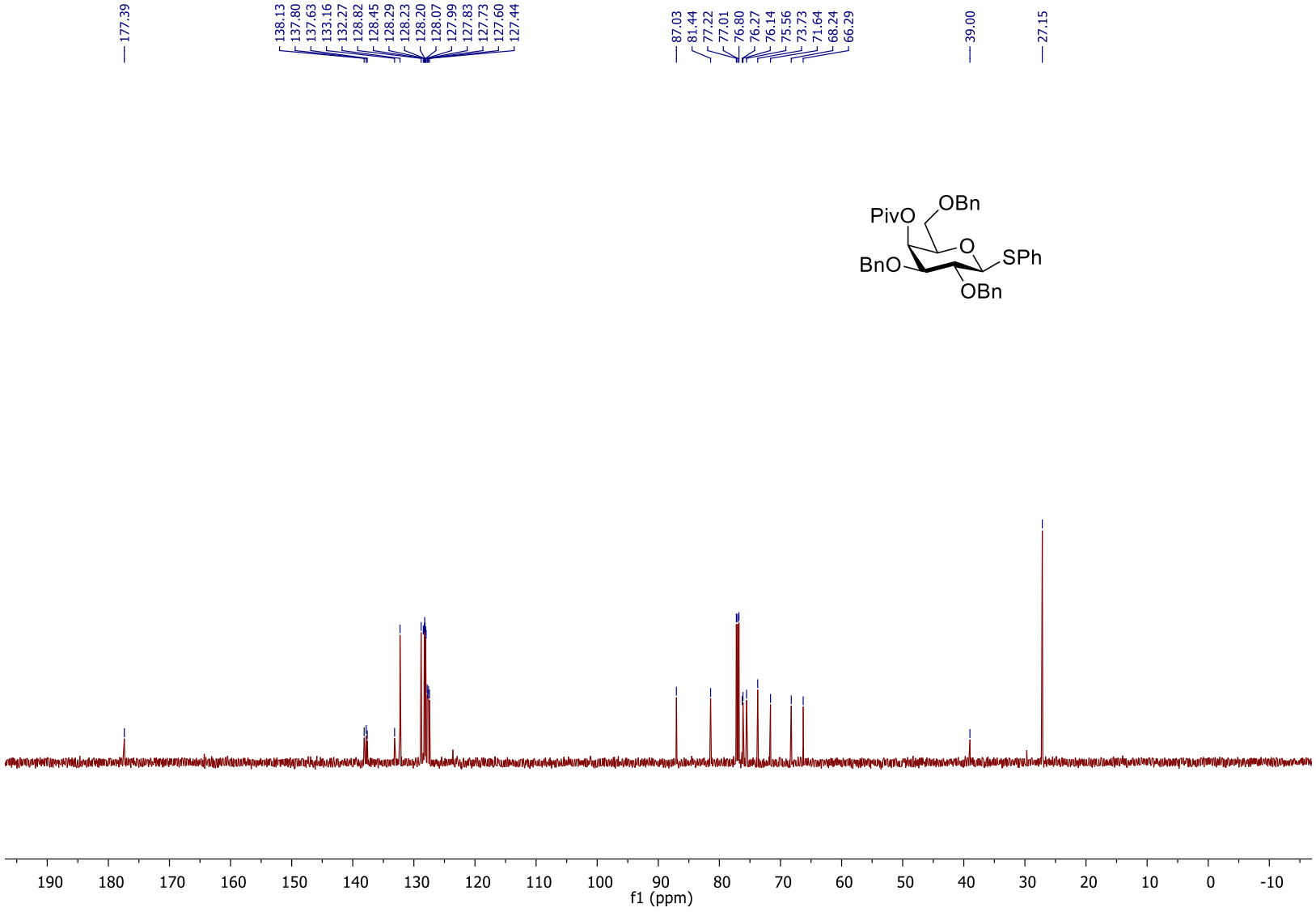




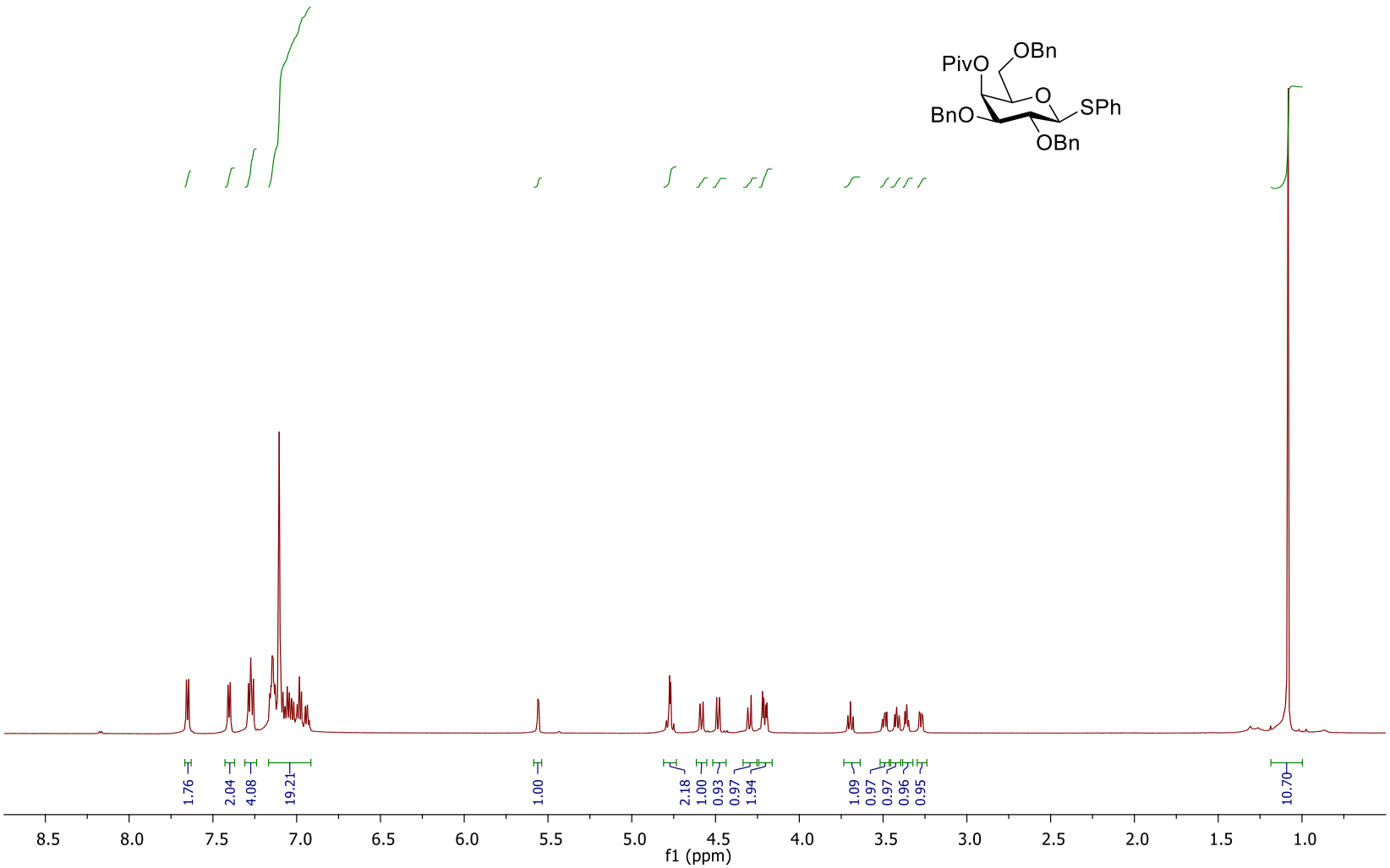
^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Phenyl 4-*O*-pivolyl-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**14**)



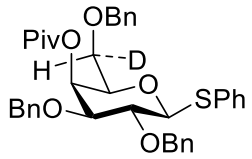
^{13}C NMR (150 MHz, $CDCl_3$) Spectrum of Phenyl 4-*O*-pivolyl-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**14**)

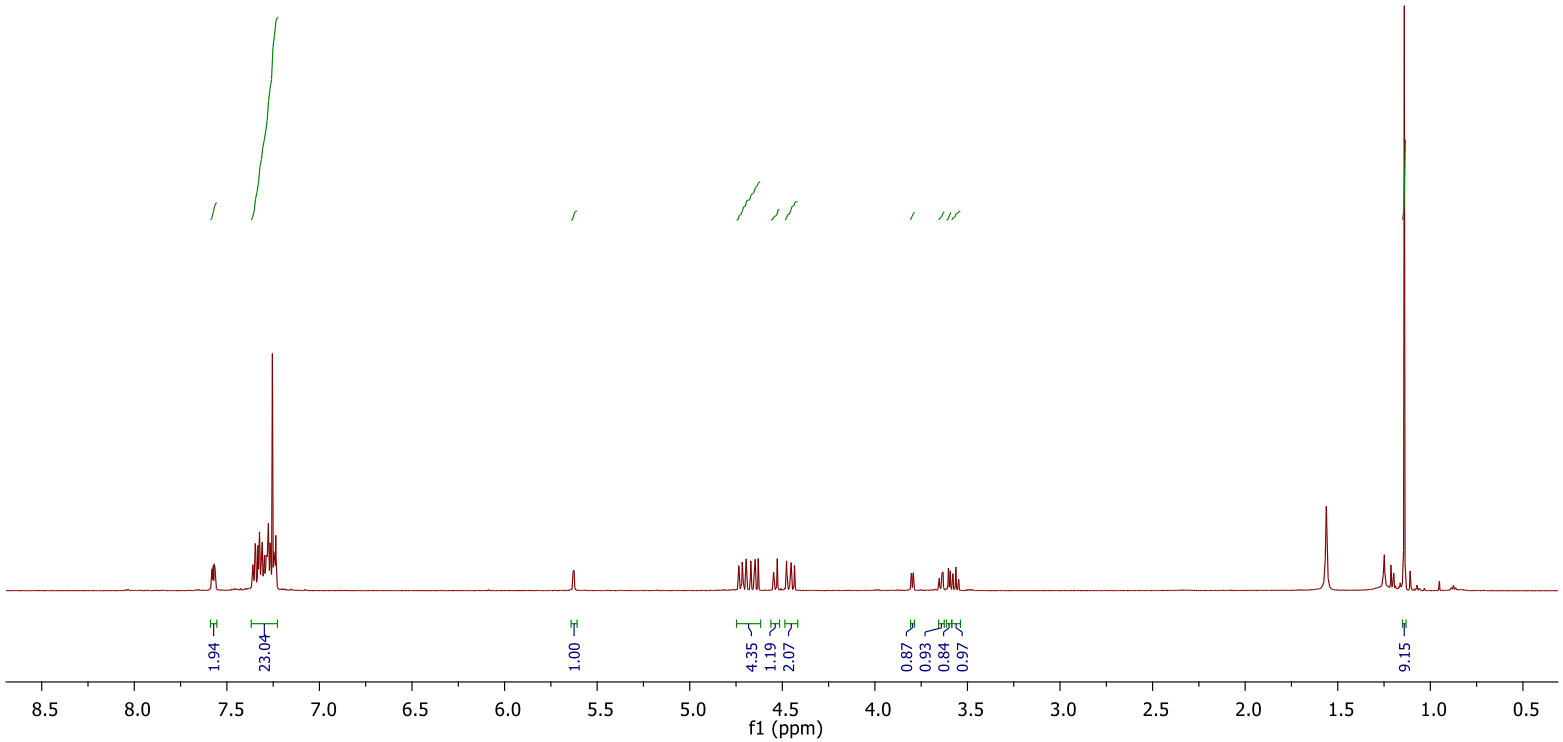


^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl 4-*O*-pivolyl-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**14**)

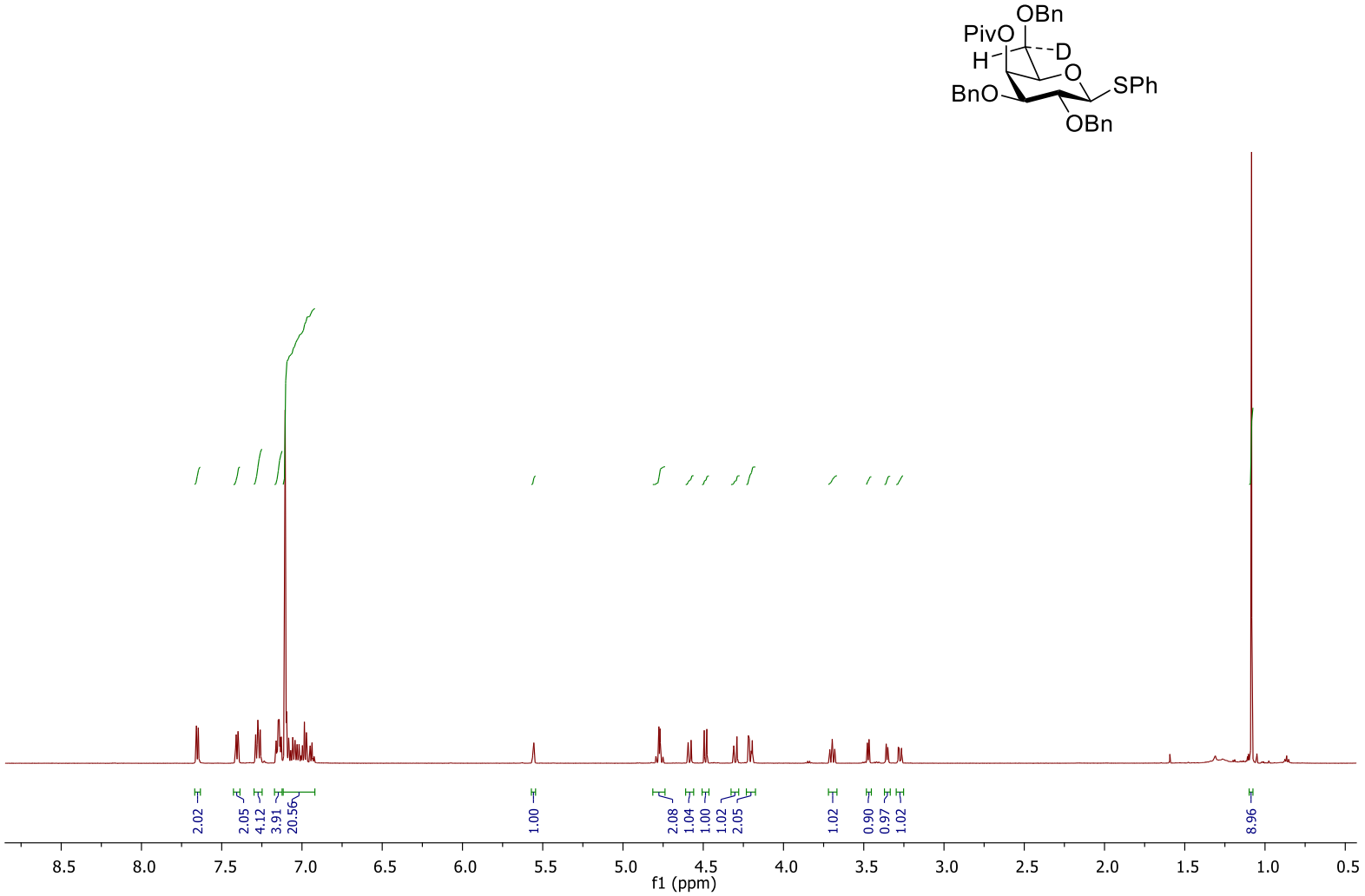


^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Phenyl 4-*O*-pivaloyl-(6*S*)-[6-$^{2}H_1$]-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**6S-D-14**)

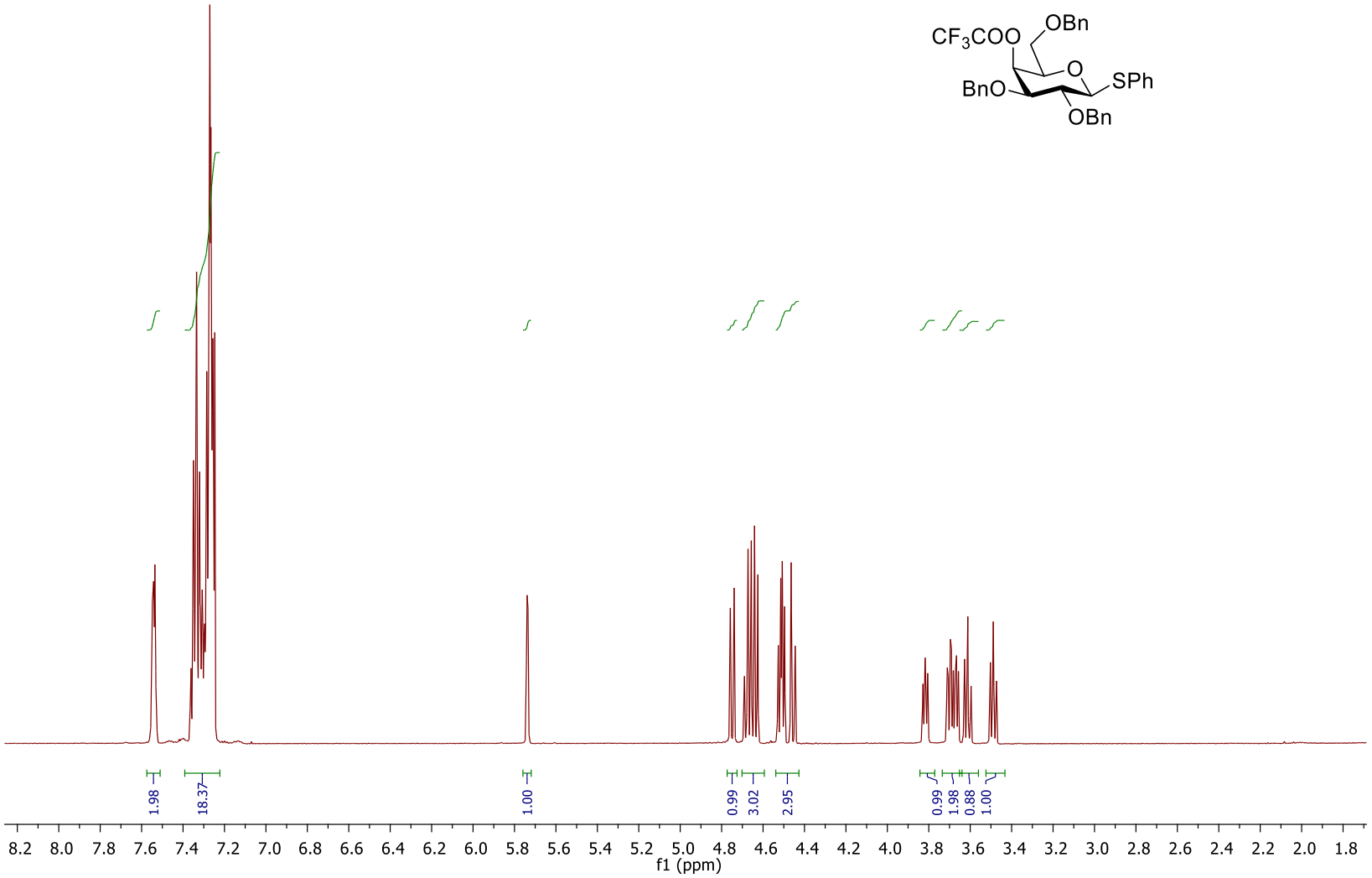




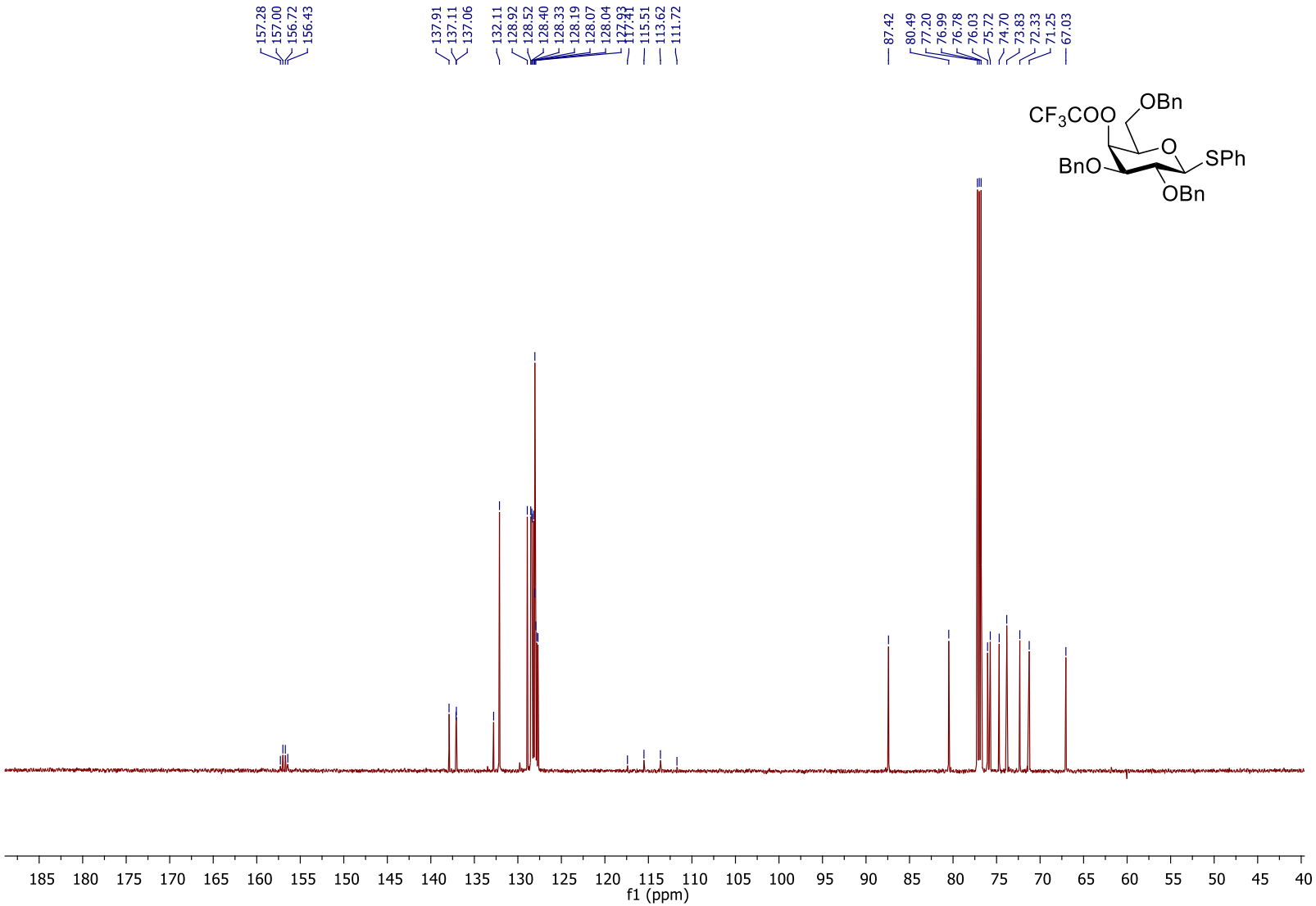
^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl 4-*O*-pivaloyl-(6*S*)-[6-$^{2}H_1$]-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**6S-D-14**)



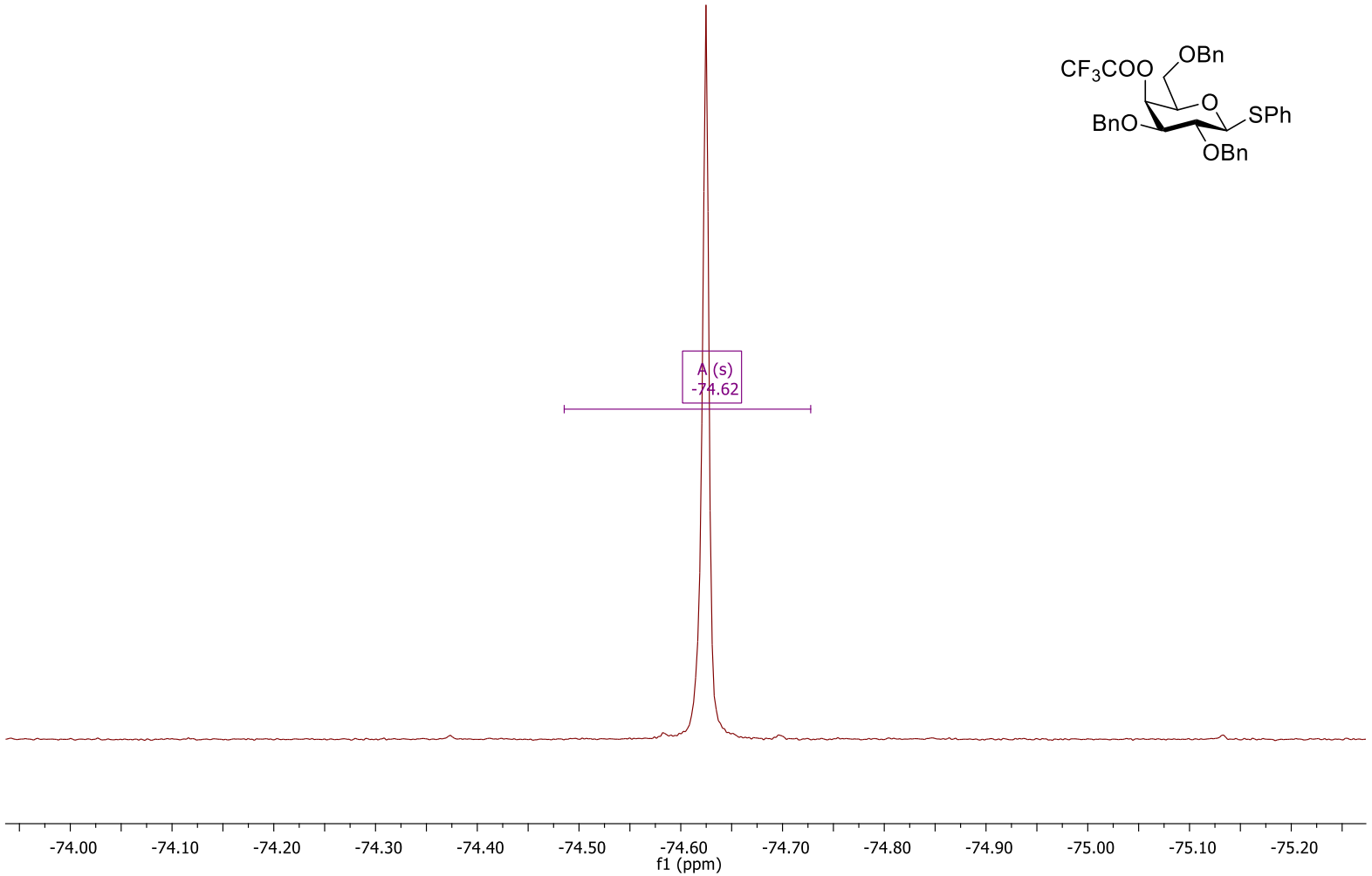
^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Phenyl 2,3,6-tri-*O*-benzyl-4-*O*-trifluoroacetyl -1-thio-β-D-galactopyranoside (**15**)



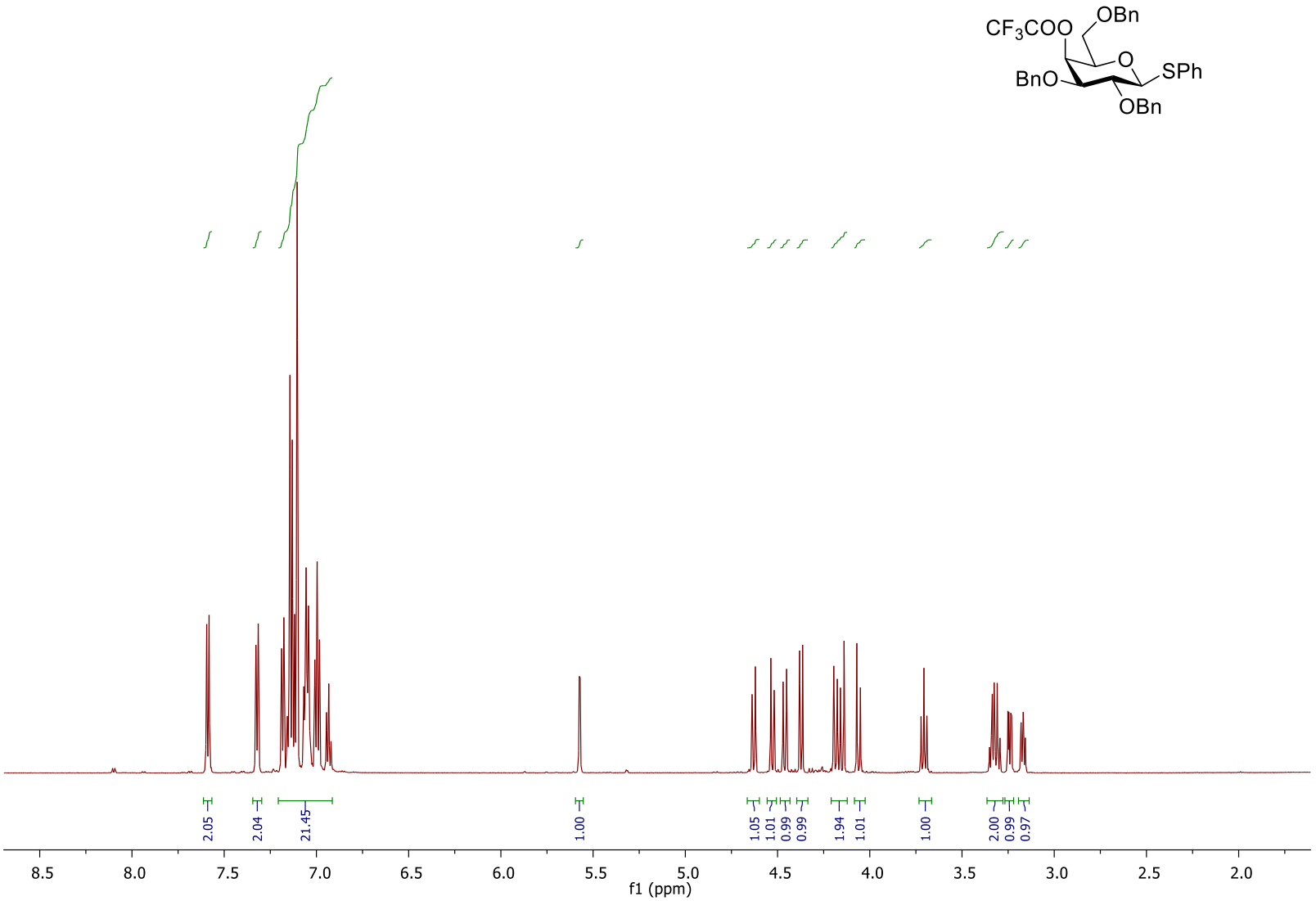
^{13}C NMR (150 MHz, $CDCl_3$) Spectrum of Phenyl 2,3,6-tri-*O*-benzyl-4-*O*-trifluoroacetyl -1-thio-β-D-galactopyranoside (**15**)



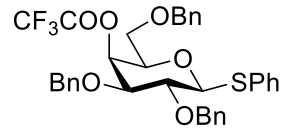
^{19}F NMR (375 MHz, $CDCl_3$) Spectrum of Phenyl 2,3,6-tri-*O*-benzyl-4-*O*-trifluoroacetyl -1-thio-β-D-galactopyranoside (**15**)

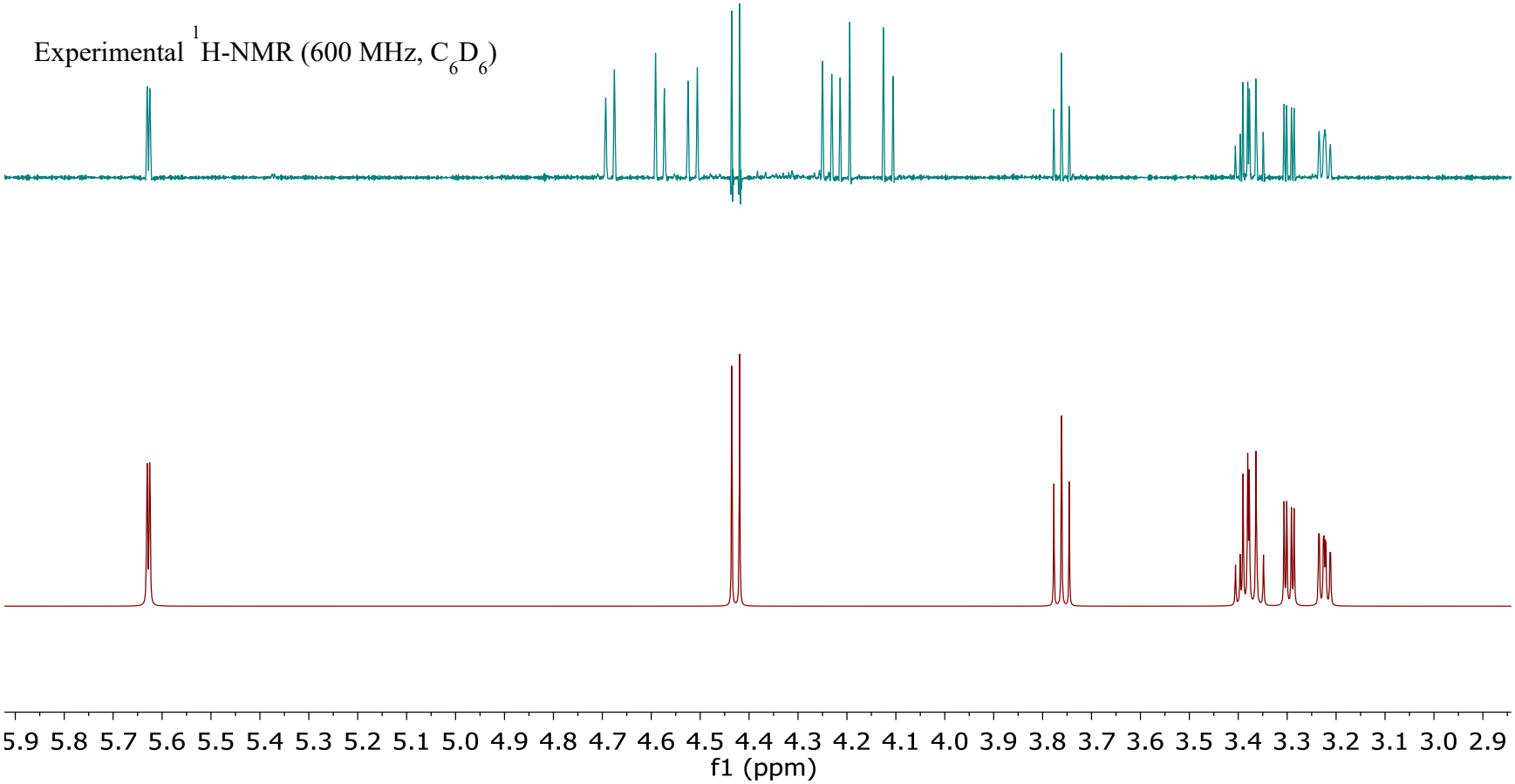


^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl 2,3,6-tri-*O*-benzyl-4-*O*-trifluoroacetyl -1-thio-β-D-*galacto*pyranoside (**15**)

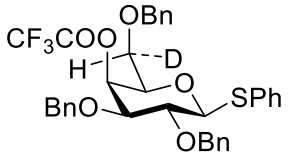


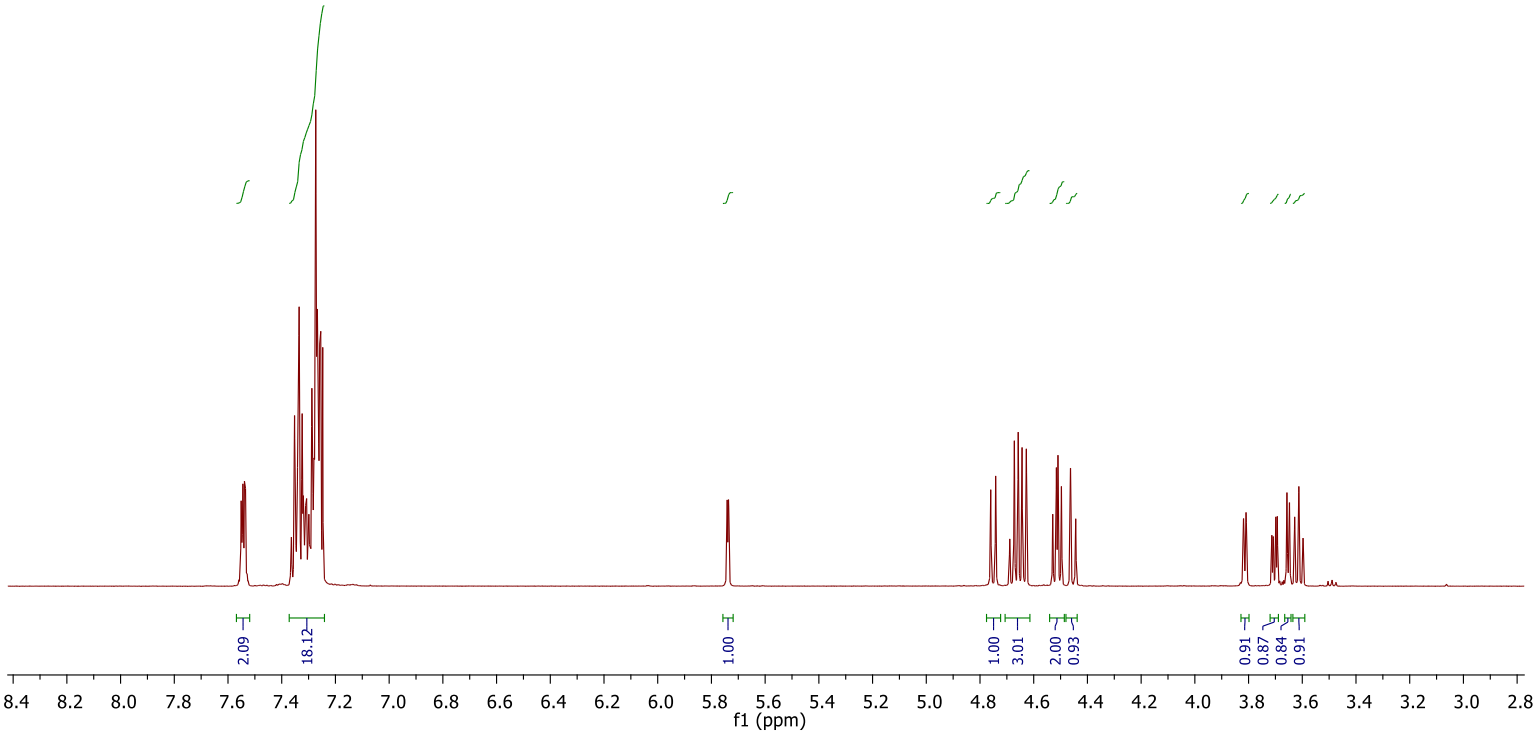
Simulated ^{1}H NMR and ^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl 2,3,6-tri-*O*-benzyl-4-*O*-trifluoroacetyl -1-thio-β-D-galactopyranoside (**15**)



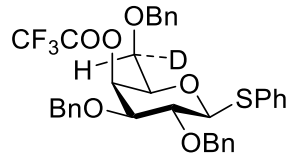


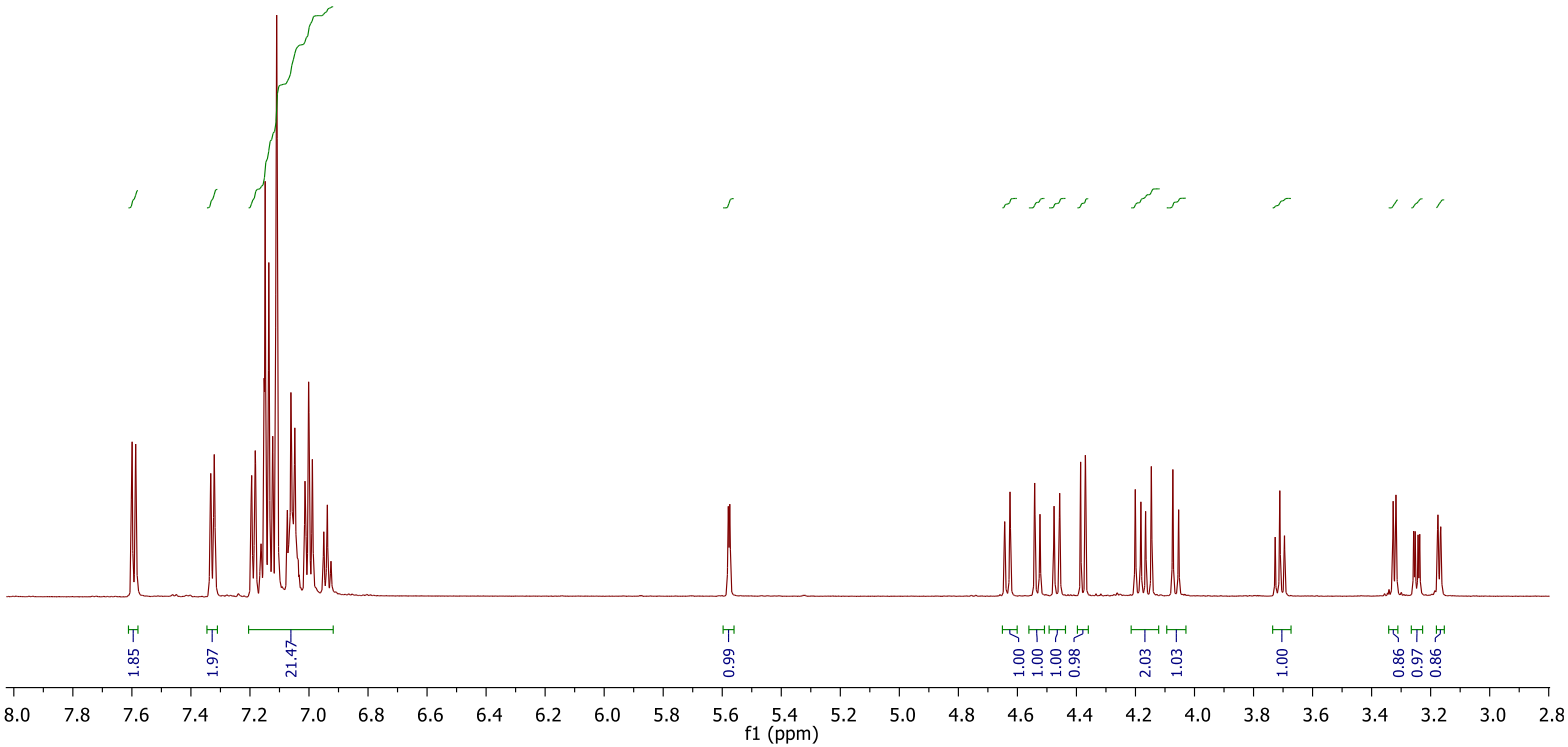
^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Phenyl 4-*O*-trifluoroacetyl-(6*S*)-[6-$^{2}H_1$]-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**6S-D-15**)



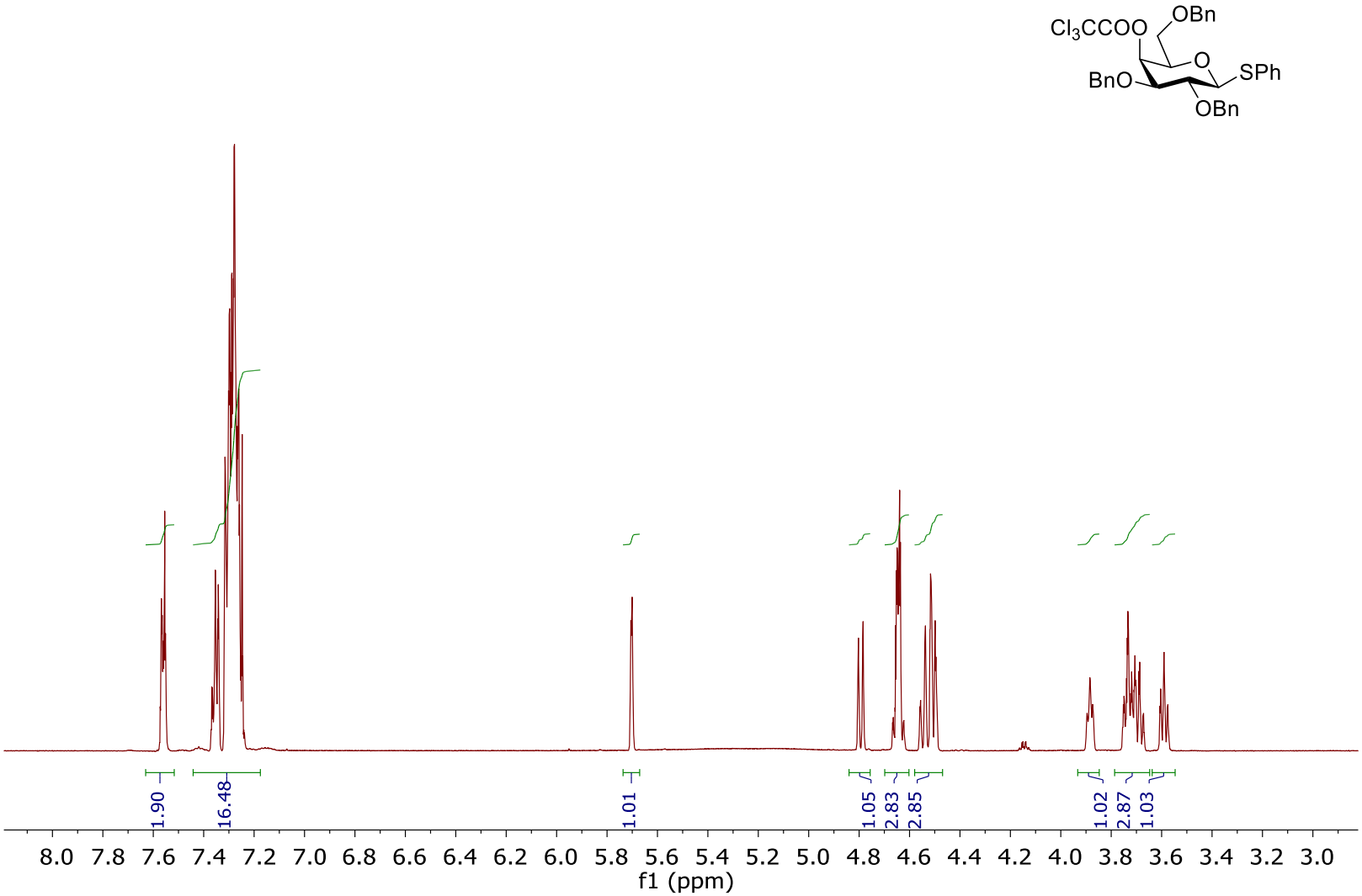


^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl 4-*O*-trifluoroacetyl-(6*S*)-[6-$^{2}H_1$]-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**6S-D-15**)

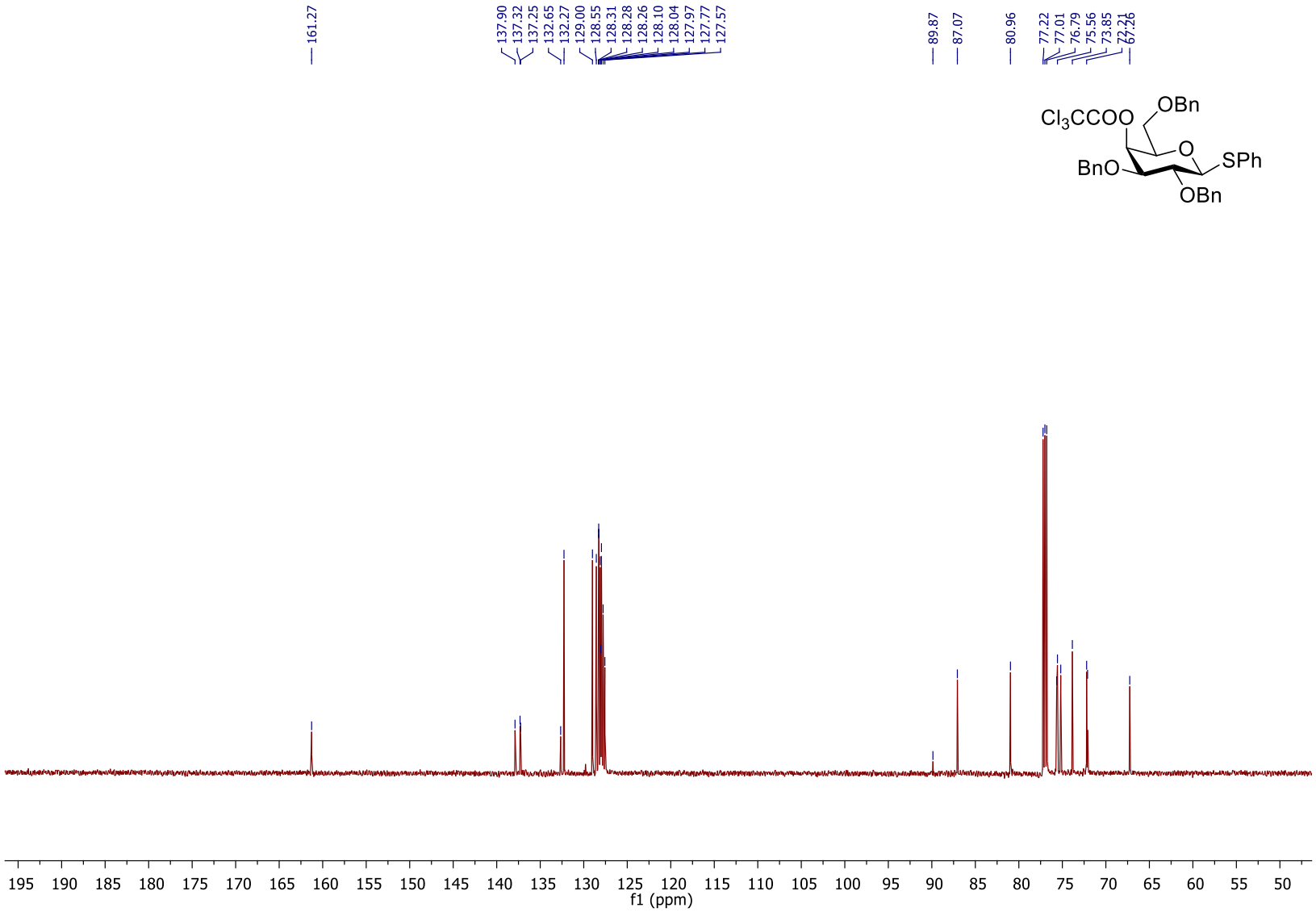




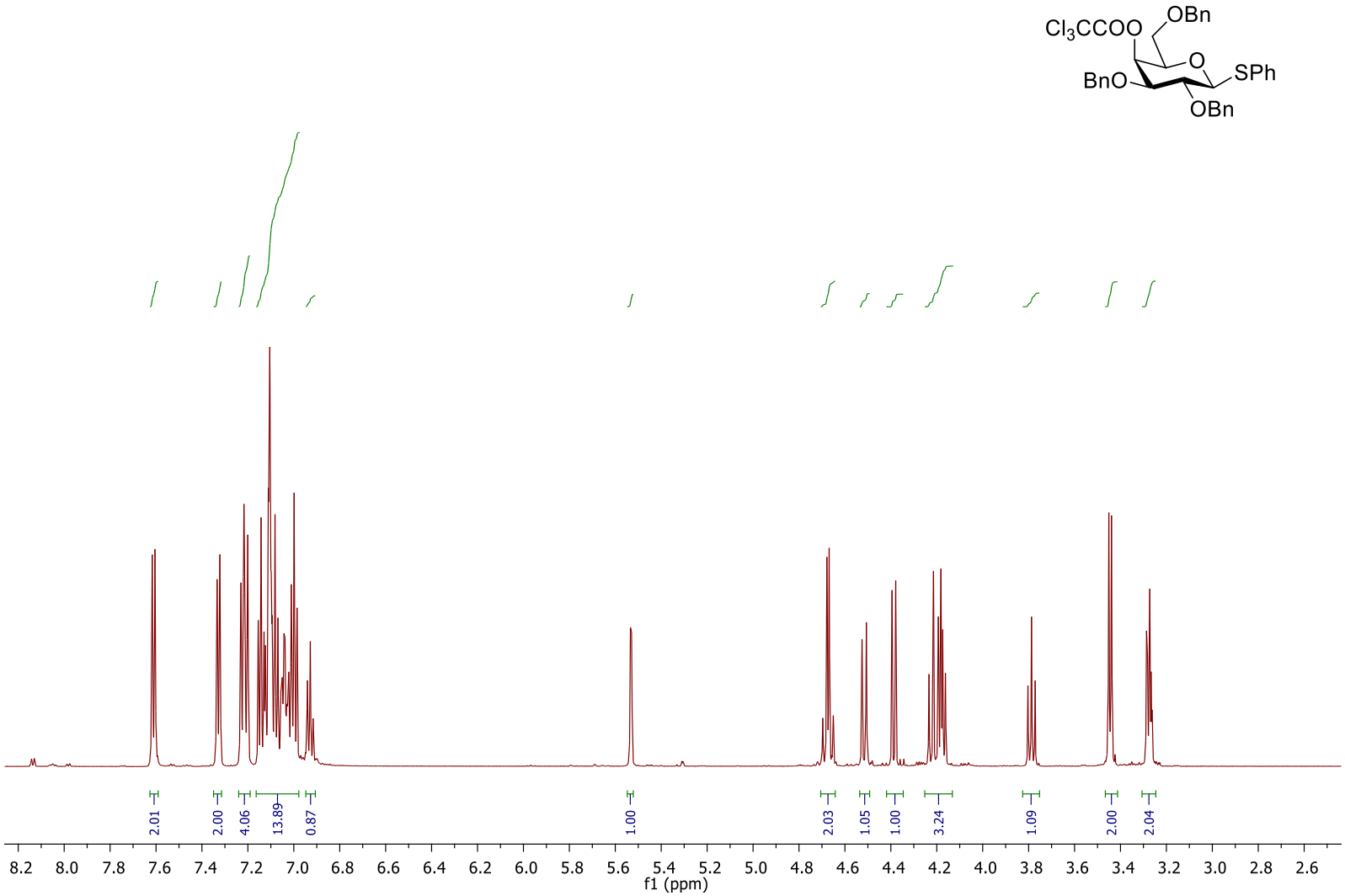
^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Phenyl 2,3,6-tri-*O*-benzyl-4-*O*-trichloroacetyl -1-thio-β-D-galactopyranoside (**16**)



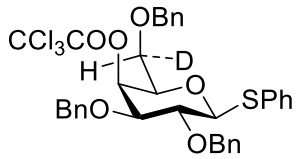
^{13}C NMR (150 MHz, $CDCl_3$) Spectrum of Phenyl 2,3,6-tri-*O*-benzyl-4-*O*-trichloroacetyl -1-thio-β-D-galactopyranoside (**16**)

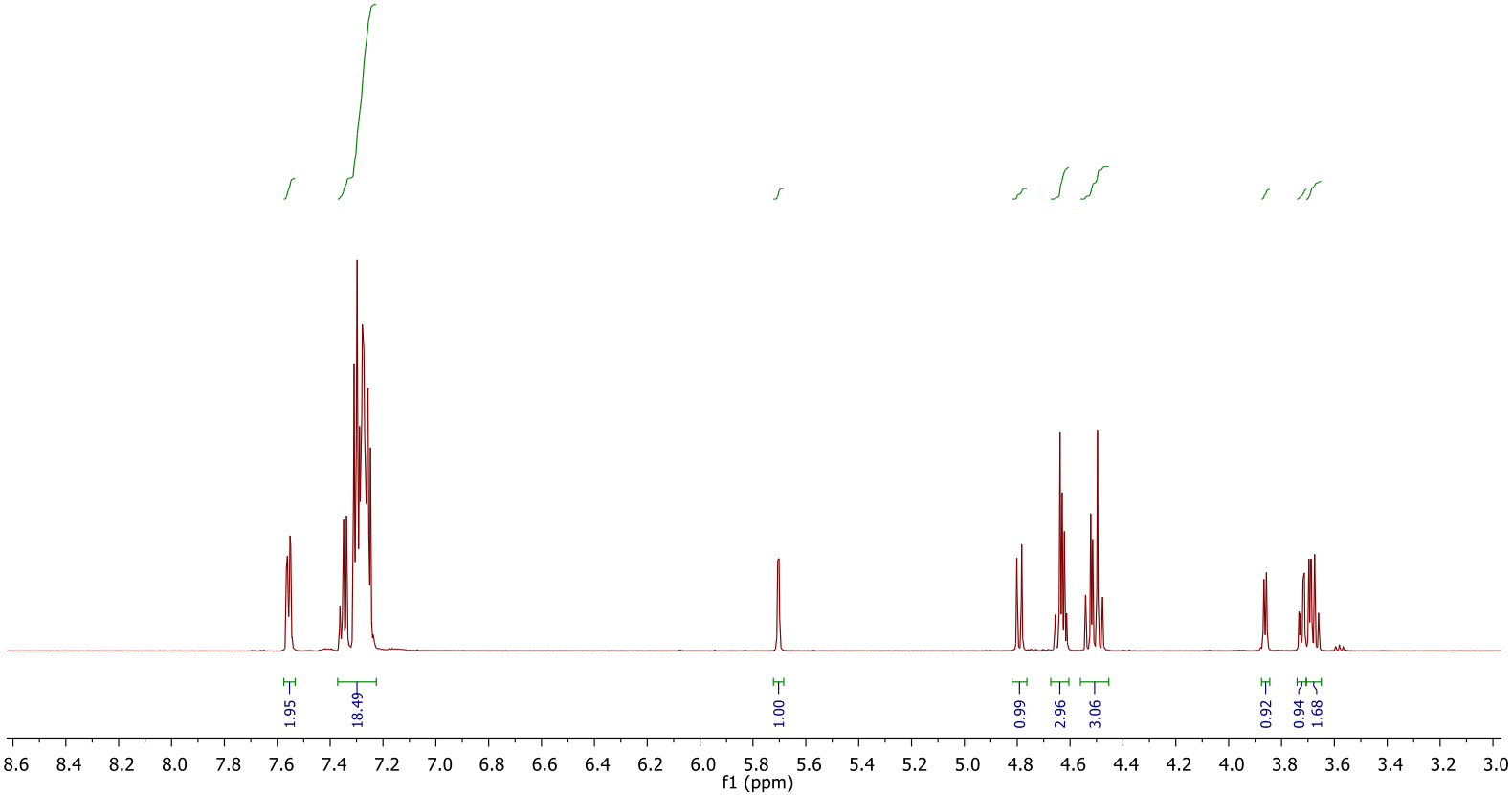


^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl 2,3,6-tri-*O*-benzyl-4-*O*-trichloroacetyl -1-thio-β-D-galactopyranoside (**16**)

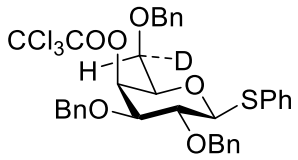


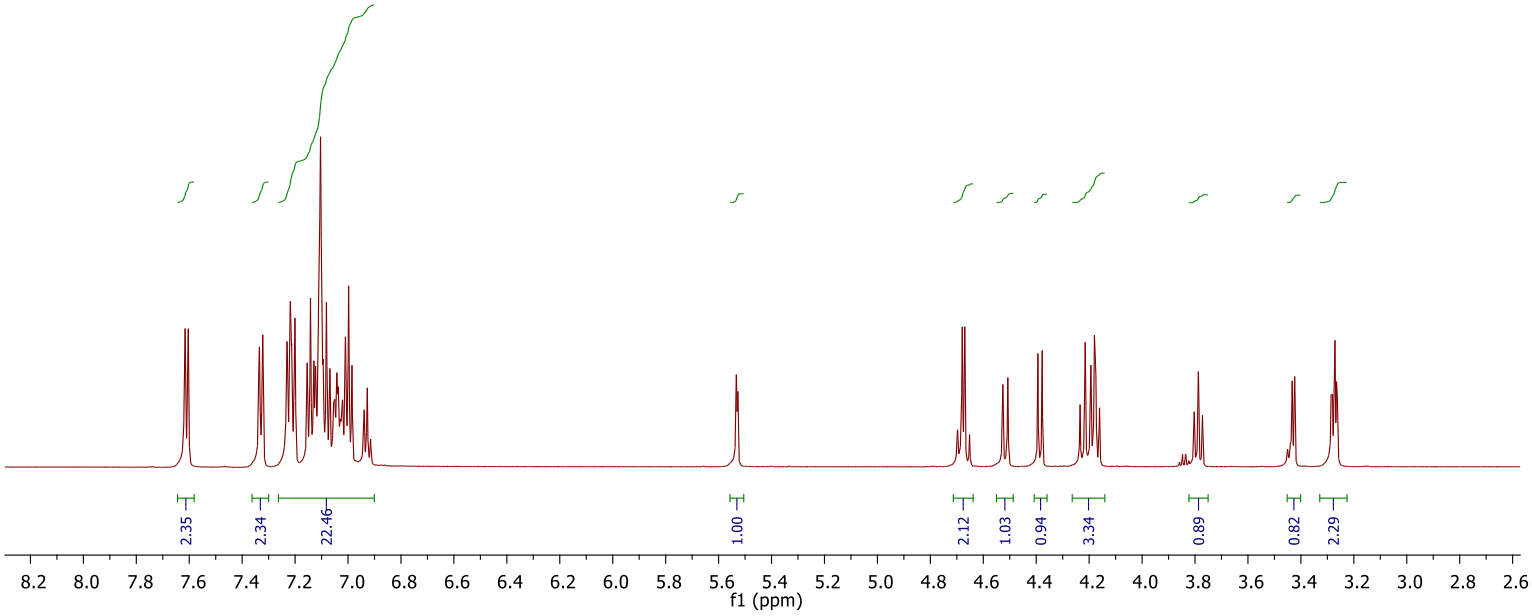
^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Phenyl 4-*O*-trichloroacetyl-(6*S*)-[6-$^{2}H_1$]-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**6S-D-16**)



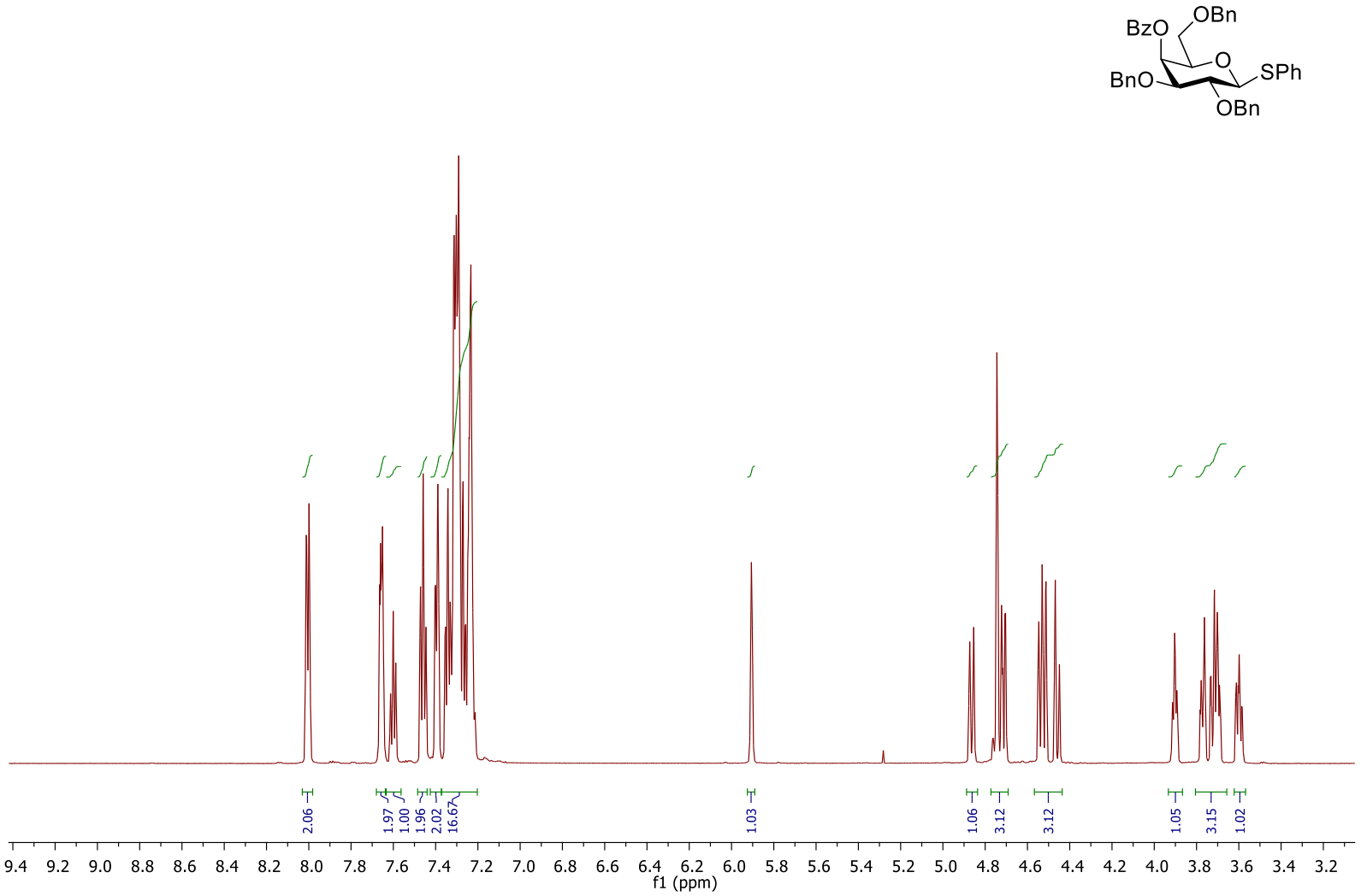


^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl 4-*O*-trichloroacetyl-(6*S*)-[6-$^{2}H_1$]-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**6S-D-16**)

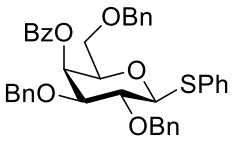


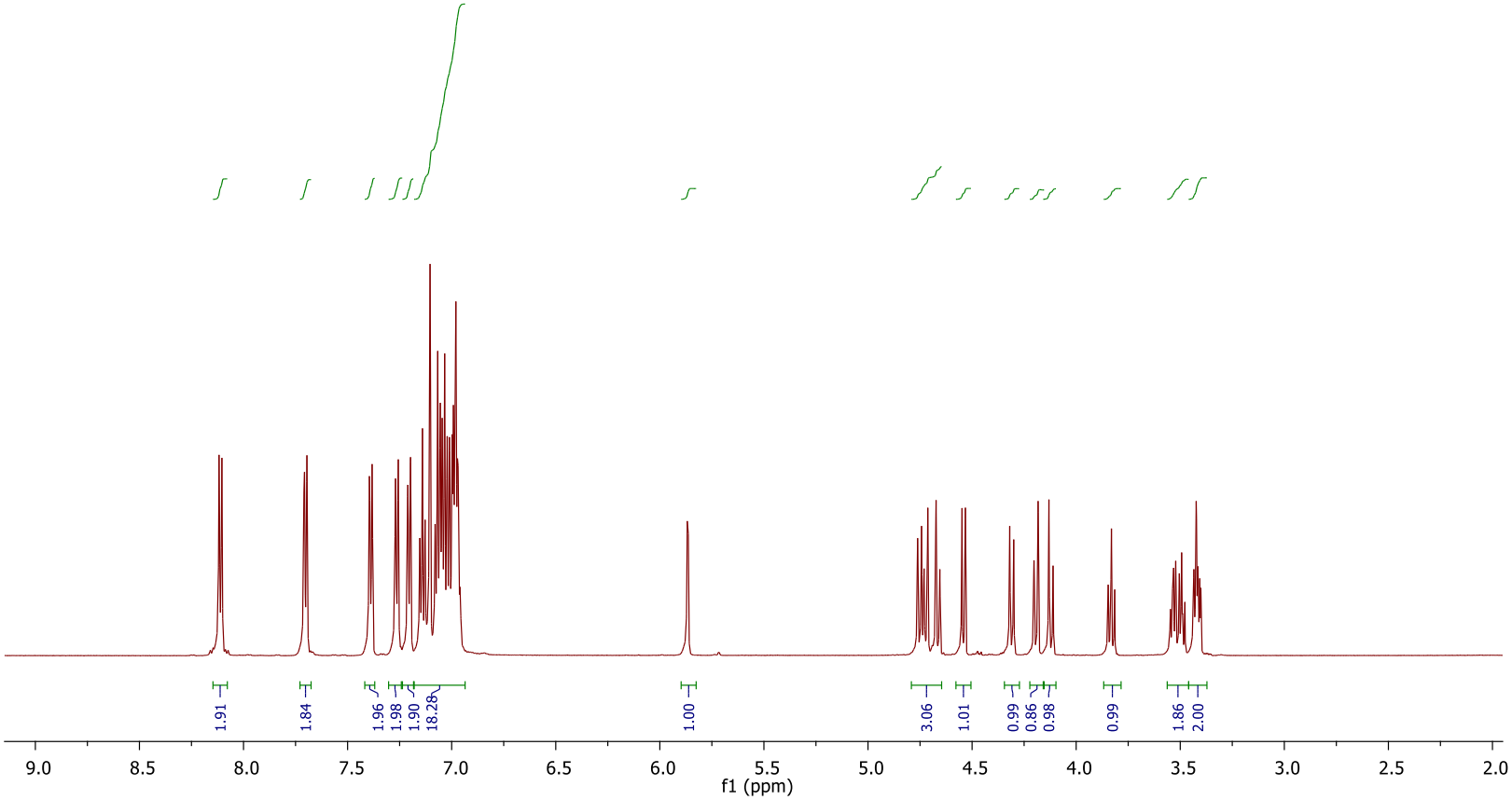


^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Phenyl 4-*O*-benzoyl-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**17**)

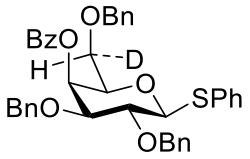


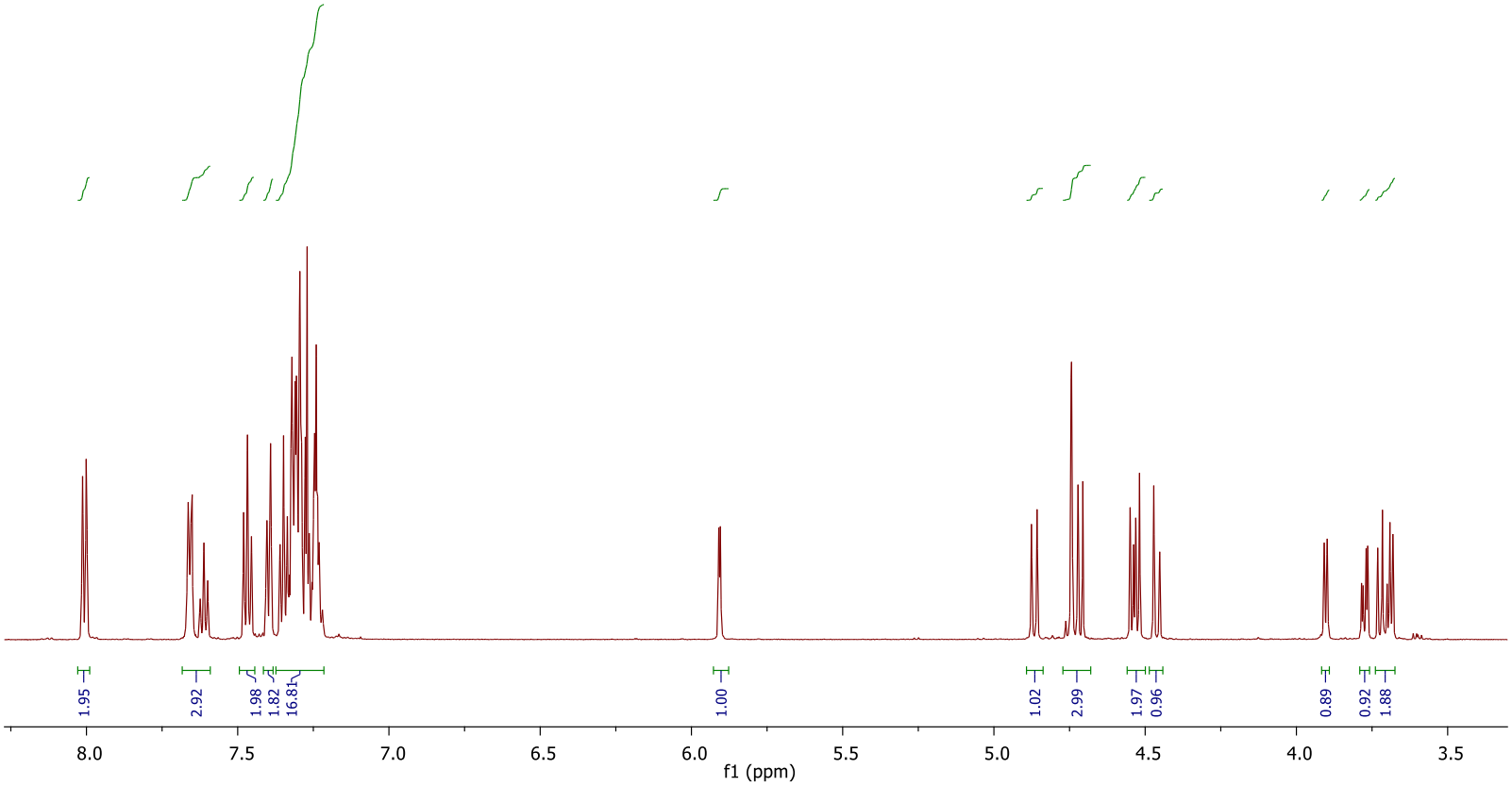
^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl 4-*O*-benzoyl-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**17**)



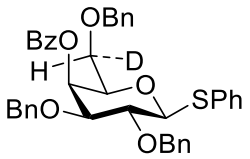


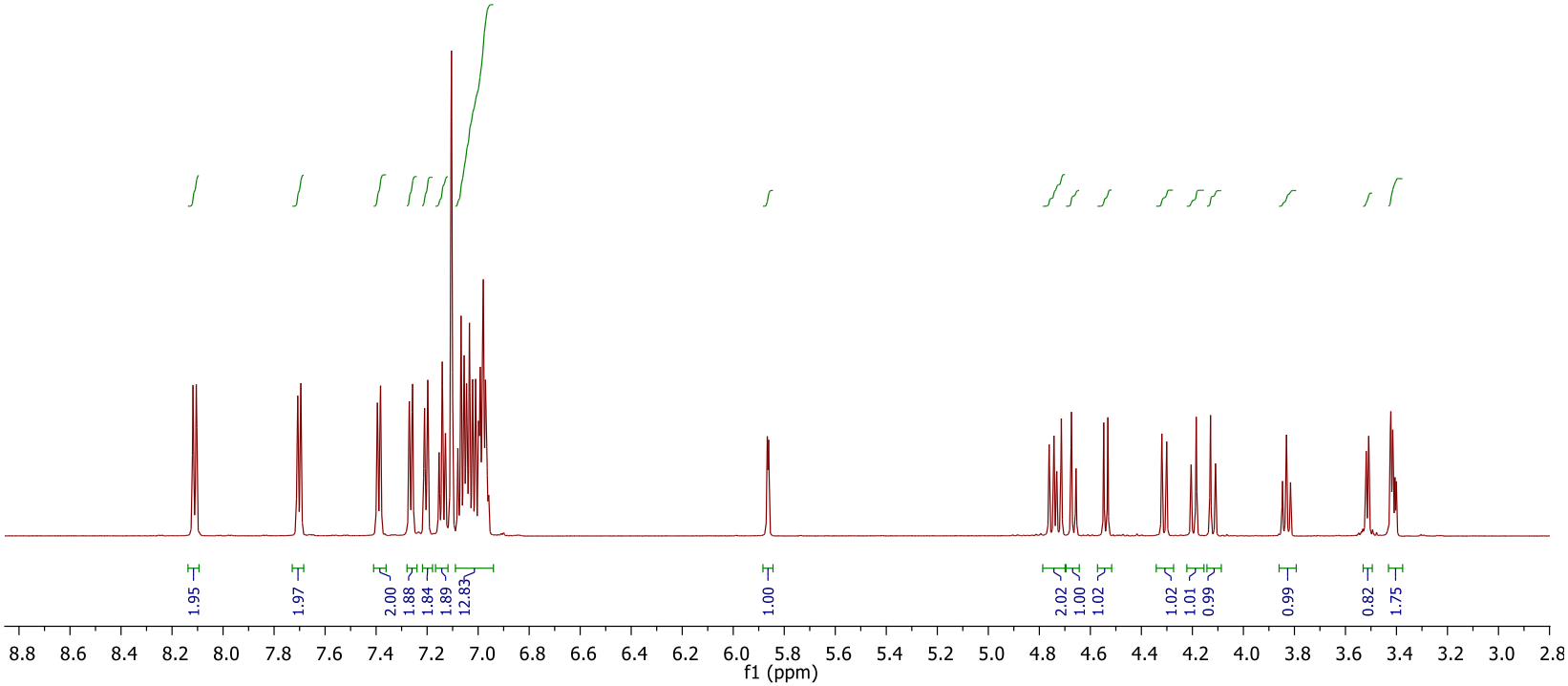
^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Phenyl 4-*O*-benzoyl-(6*S*)-[6-$^{2}H_1$]-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**6S-D-17**)



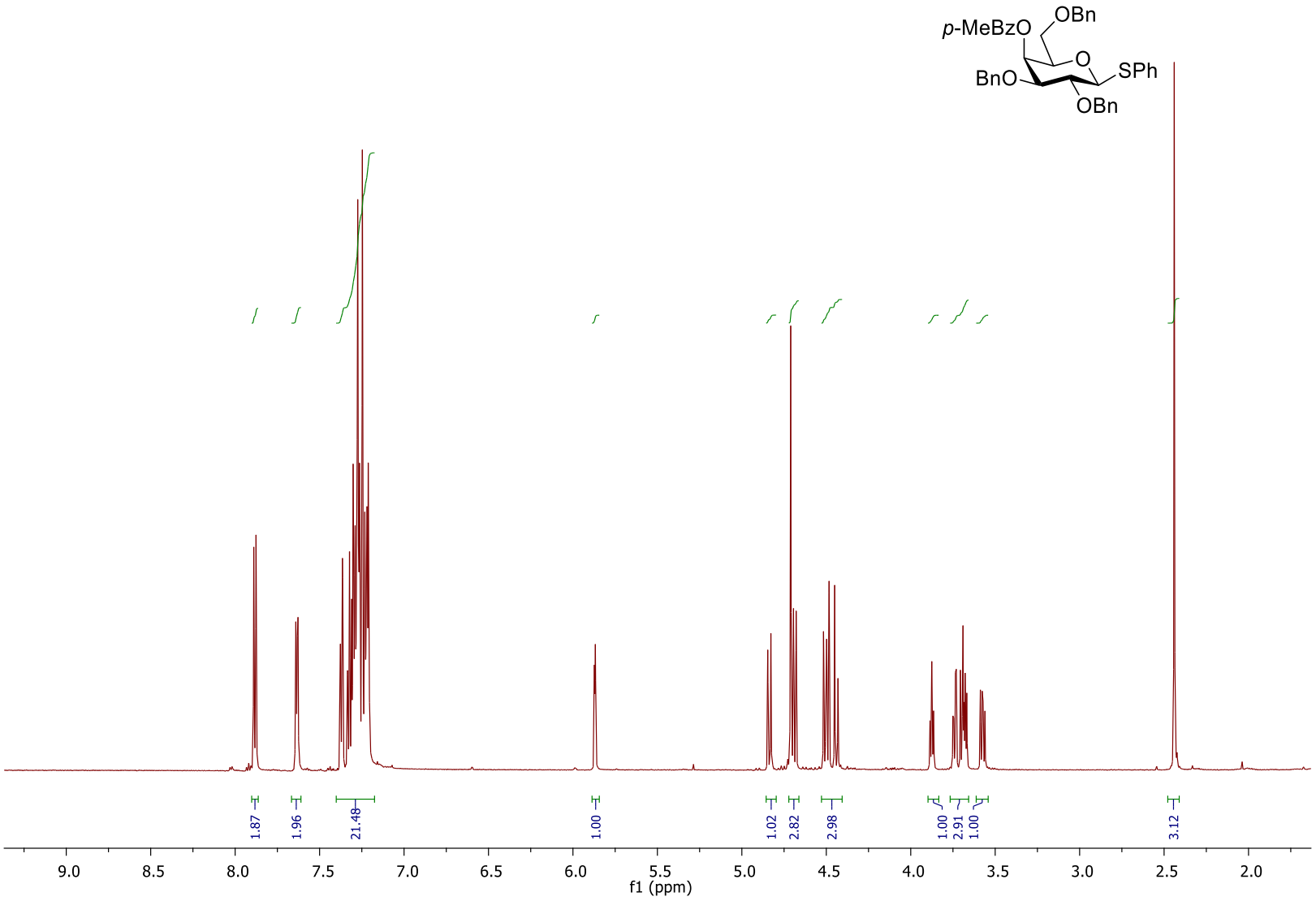


^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl 4-*O*-benzoyl-(6*S*)-[6-$^{2}H_1$]-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**6S-D-17**)

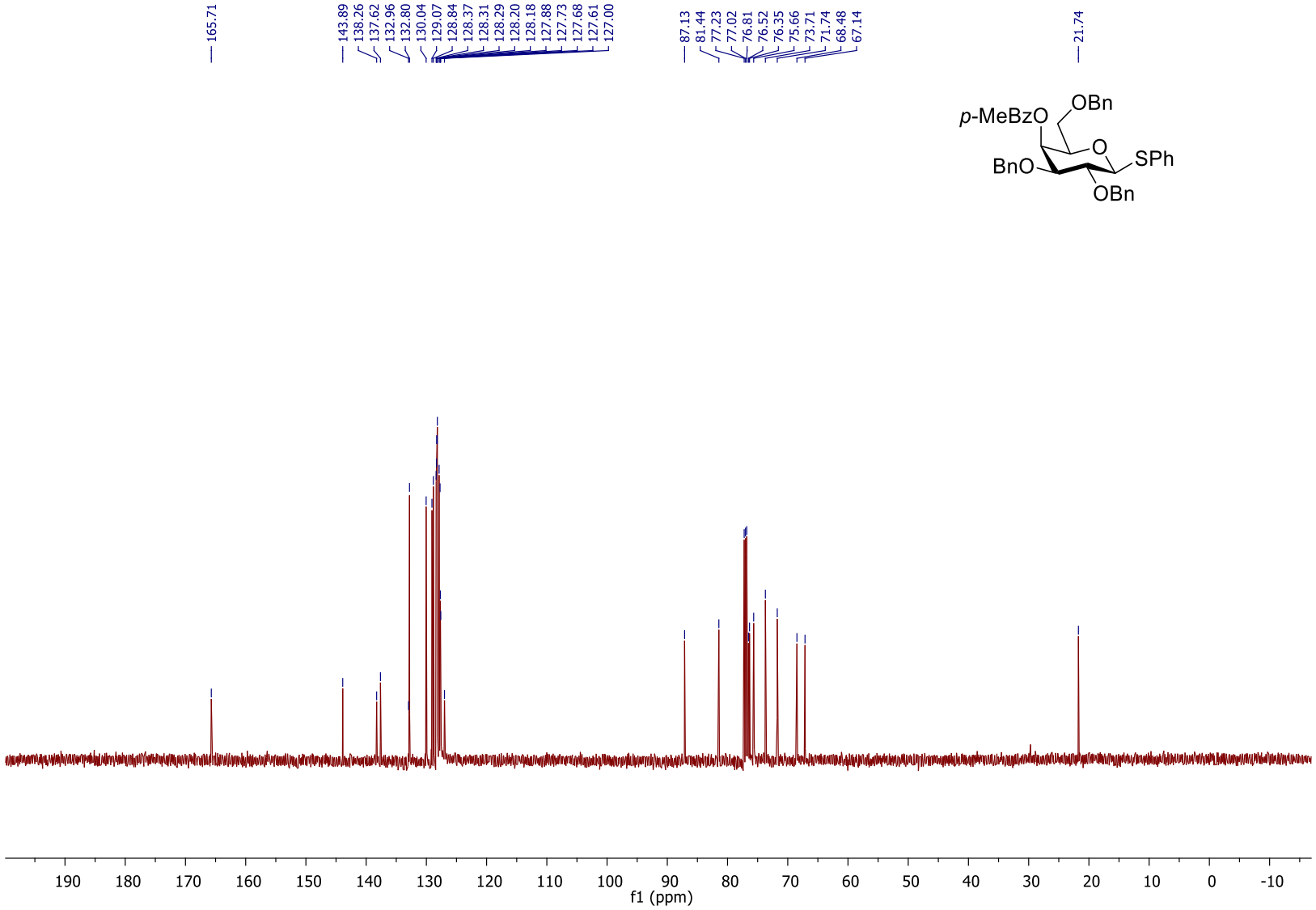




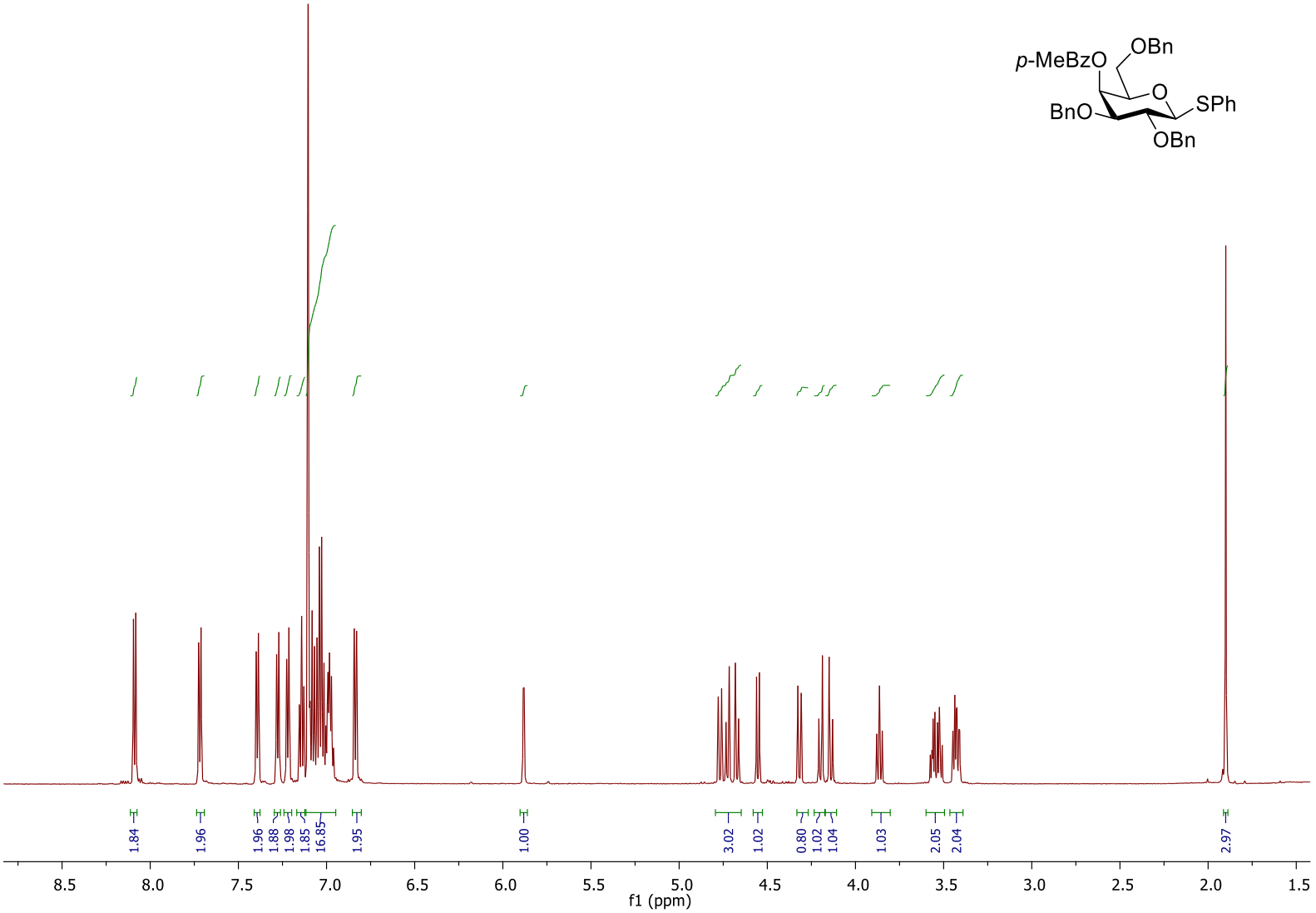
^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Phenyl 4-*O*-(*p*-methylbenzoyl)-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**18**)



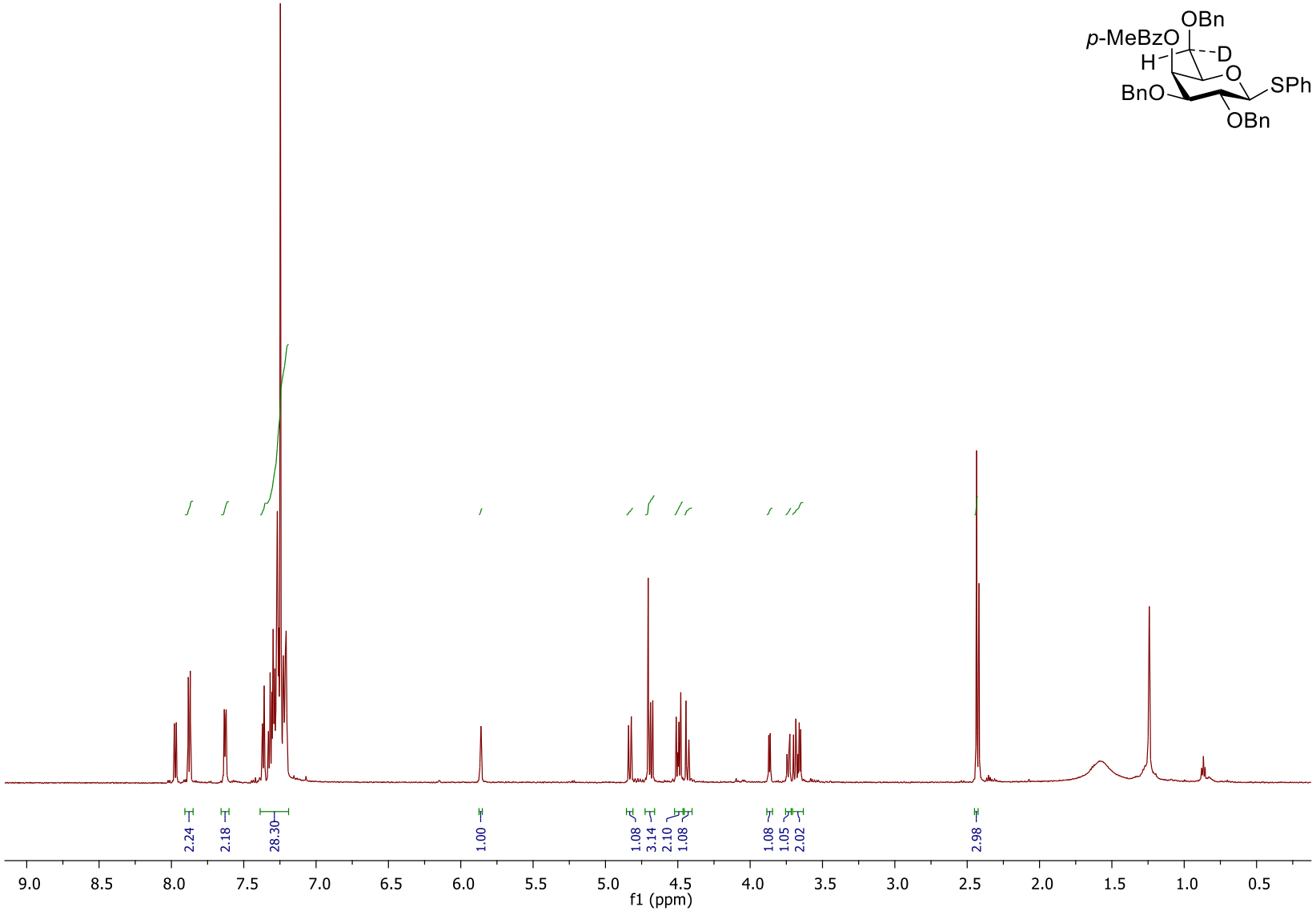
^{13}C NMR (150 MHz, $CDCl_3$) Spectrum of Phenyl 4-*O*-(*p*-methylbenzoyl)-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**18**)



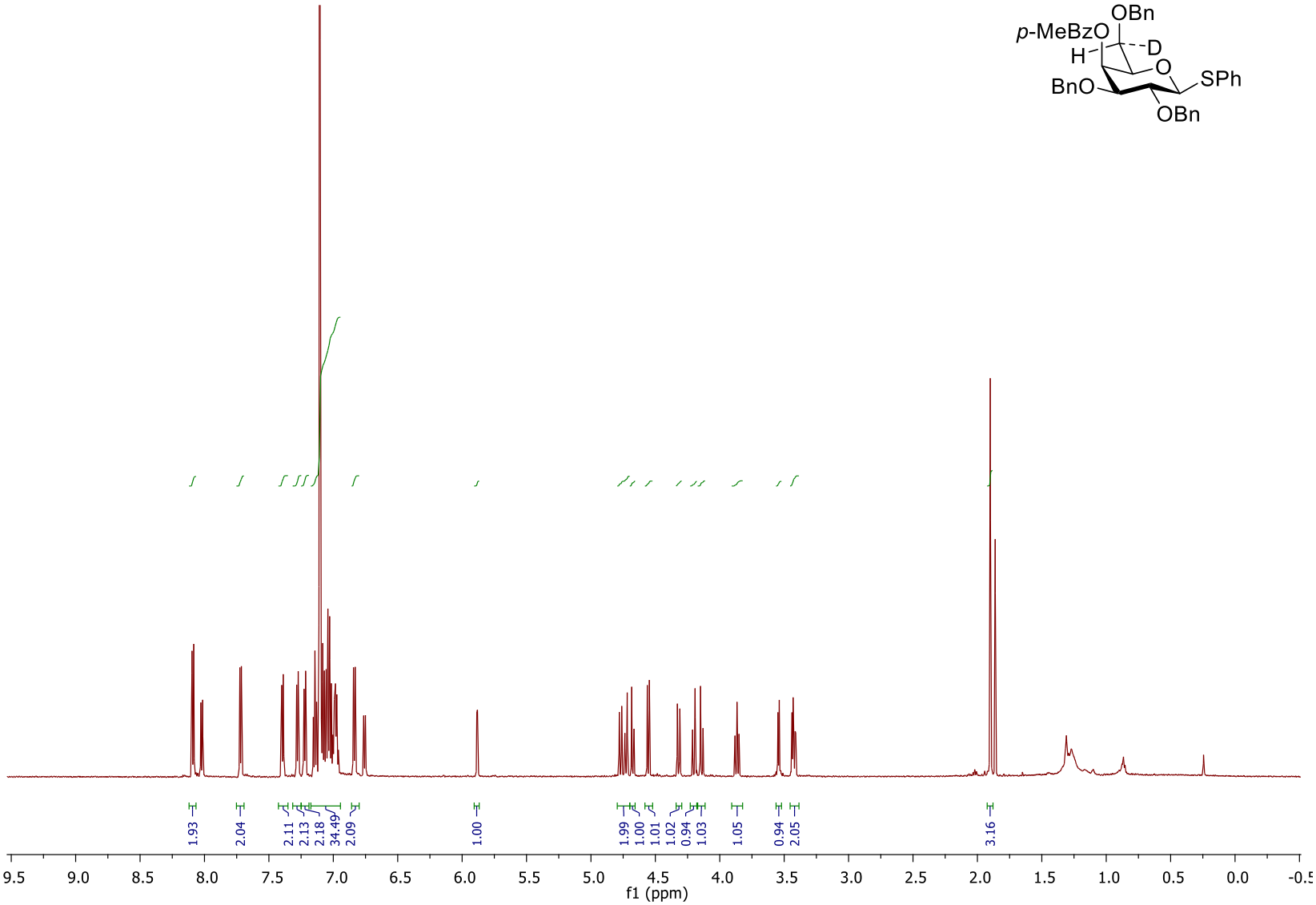
^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl 4-*O*-(*p*-methylbenzoyl)-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**18**)



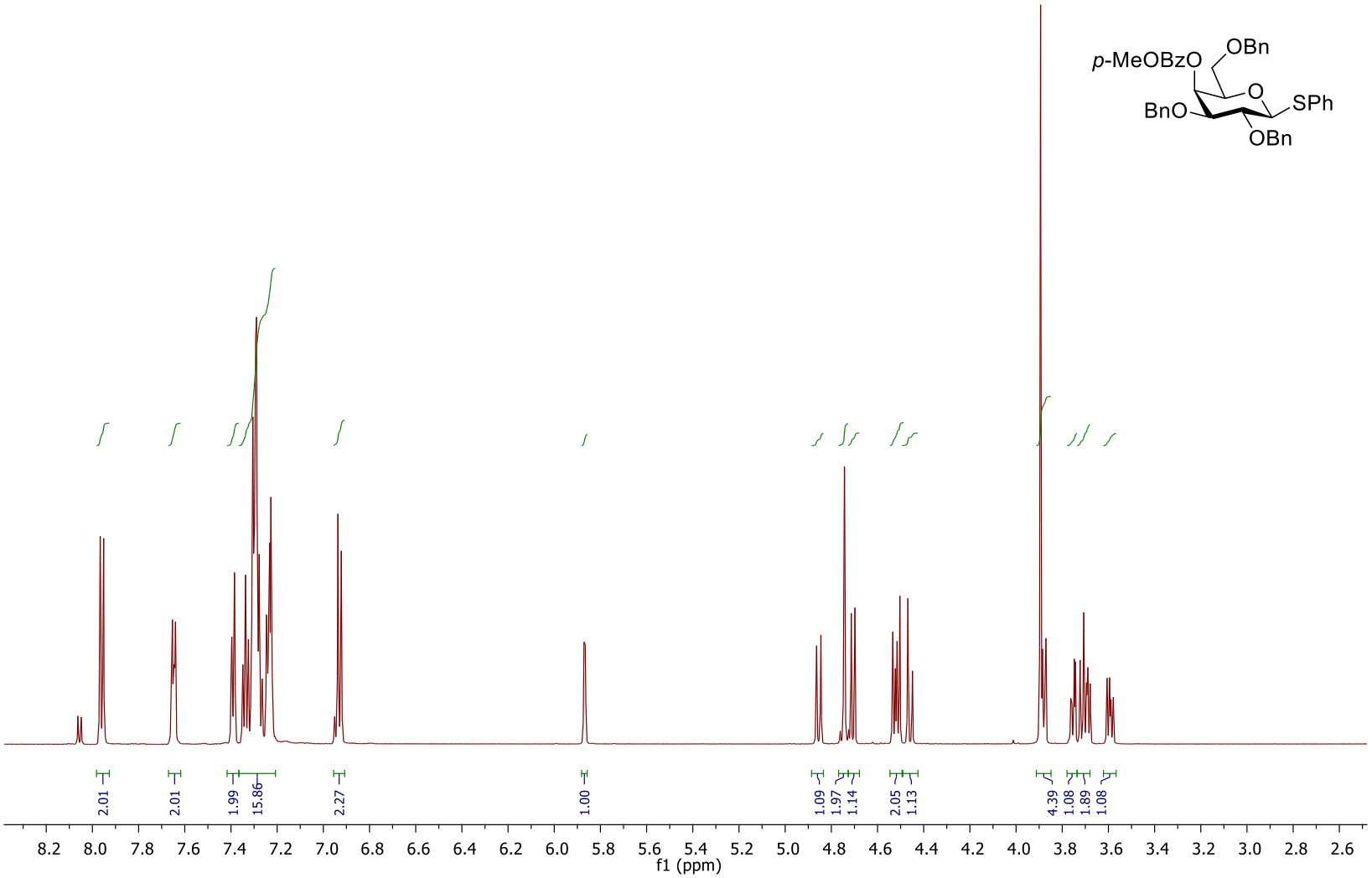
^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Phenyl 4-*O*-(*p*-methylbenzoyl-(6*S*)-[6-$^{2}H_1$]-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**6S-D-18**)



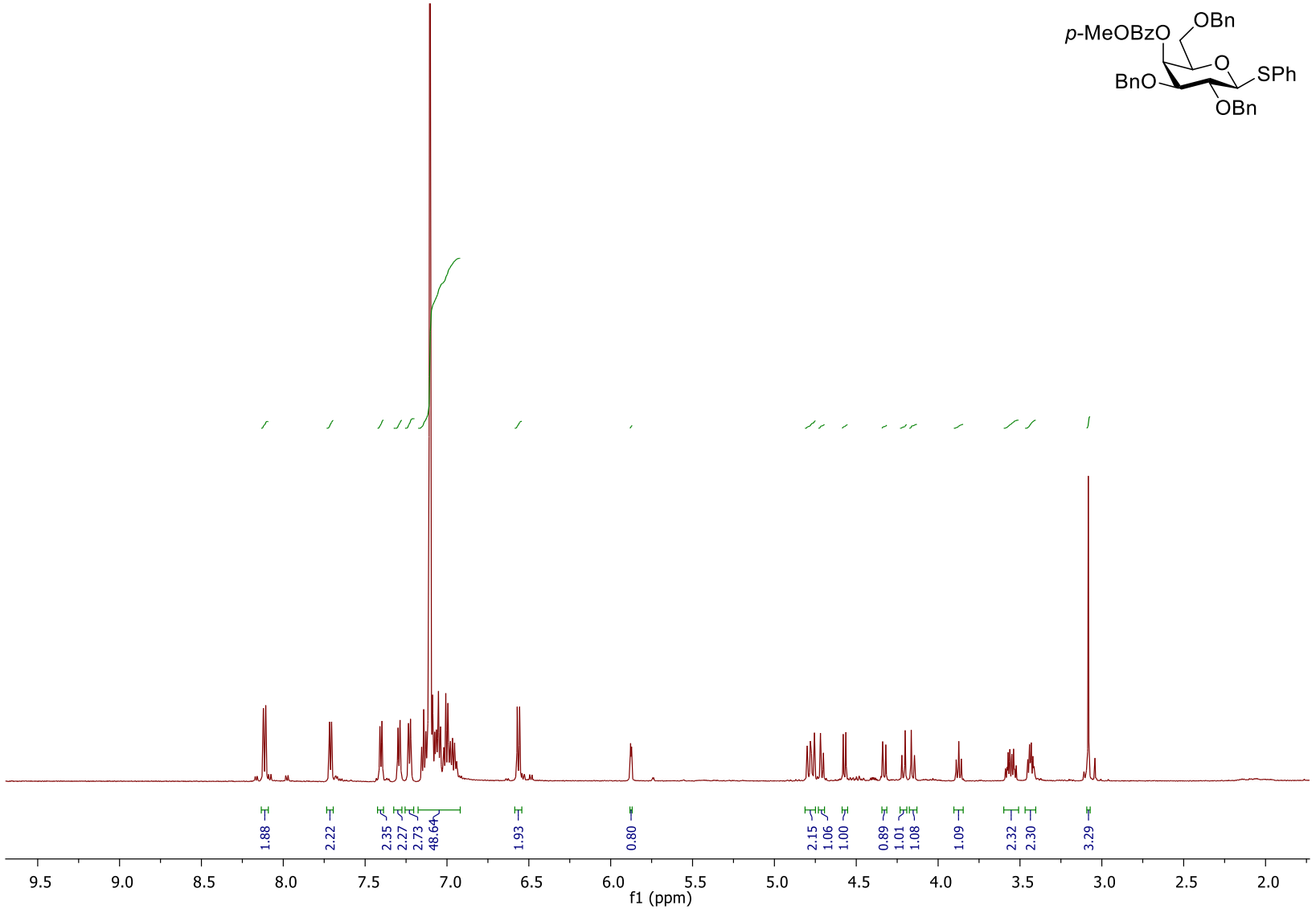
^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl 4-*O*-(*p*-methylbenzoyl-(6*S*)-[6-$^{2}H_1$]-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**6S-D-18**)



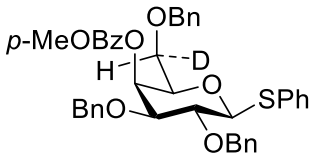
^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Phenyl 4-*O*-(*p*-methoxybenzoyl)-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**19**)

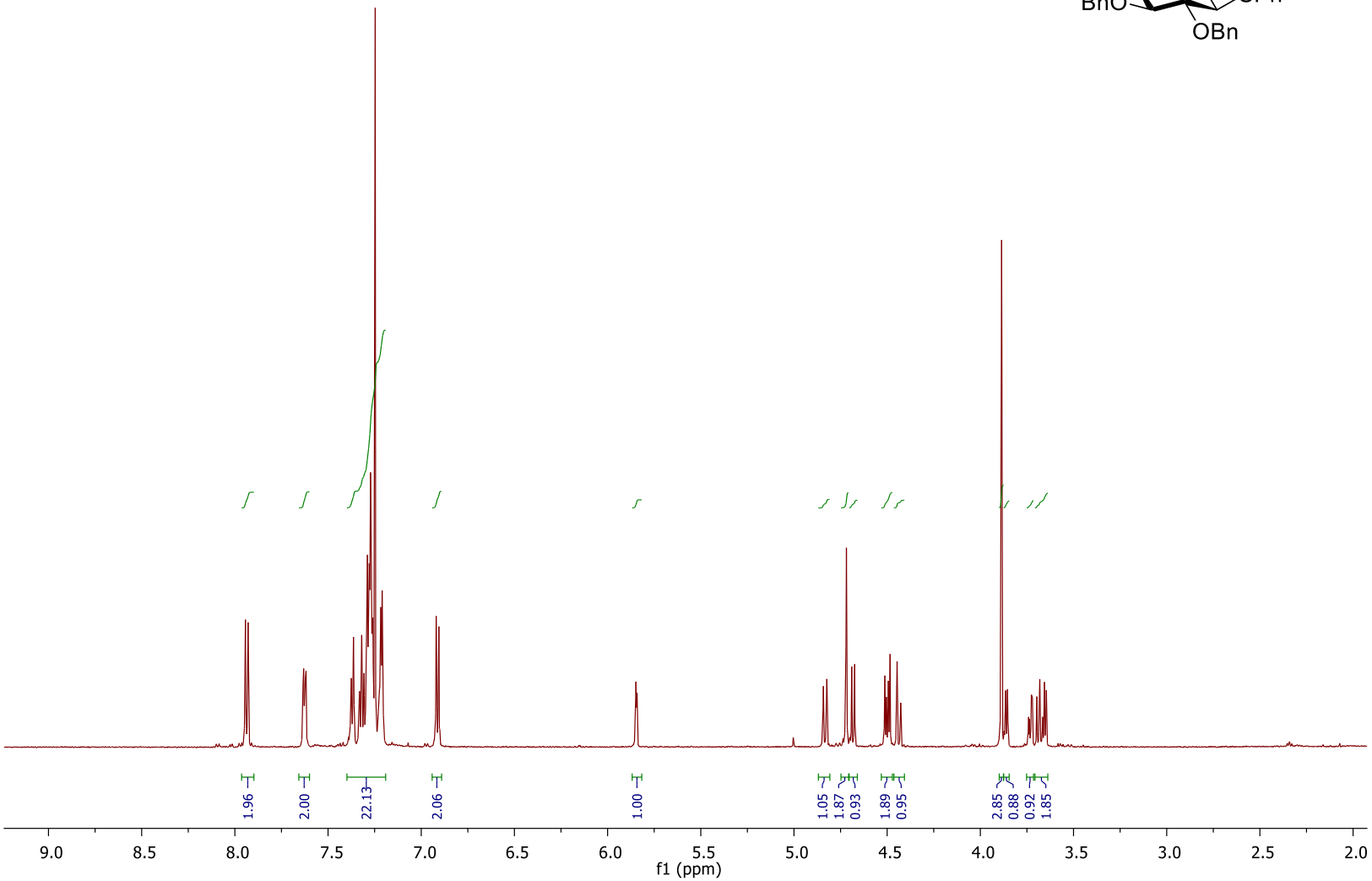


^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl 4-*O*-(*p*-methoxybenzoyl)-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**19**)

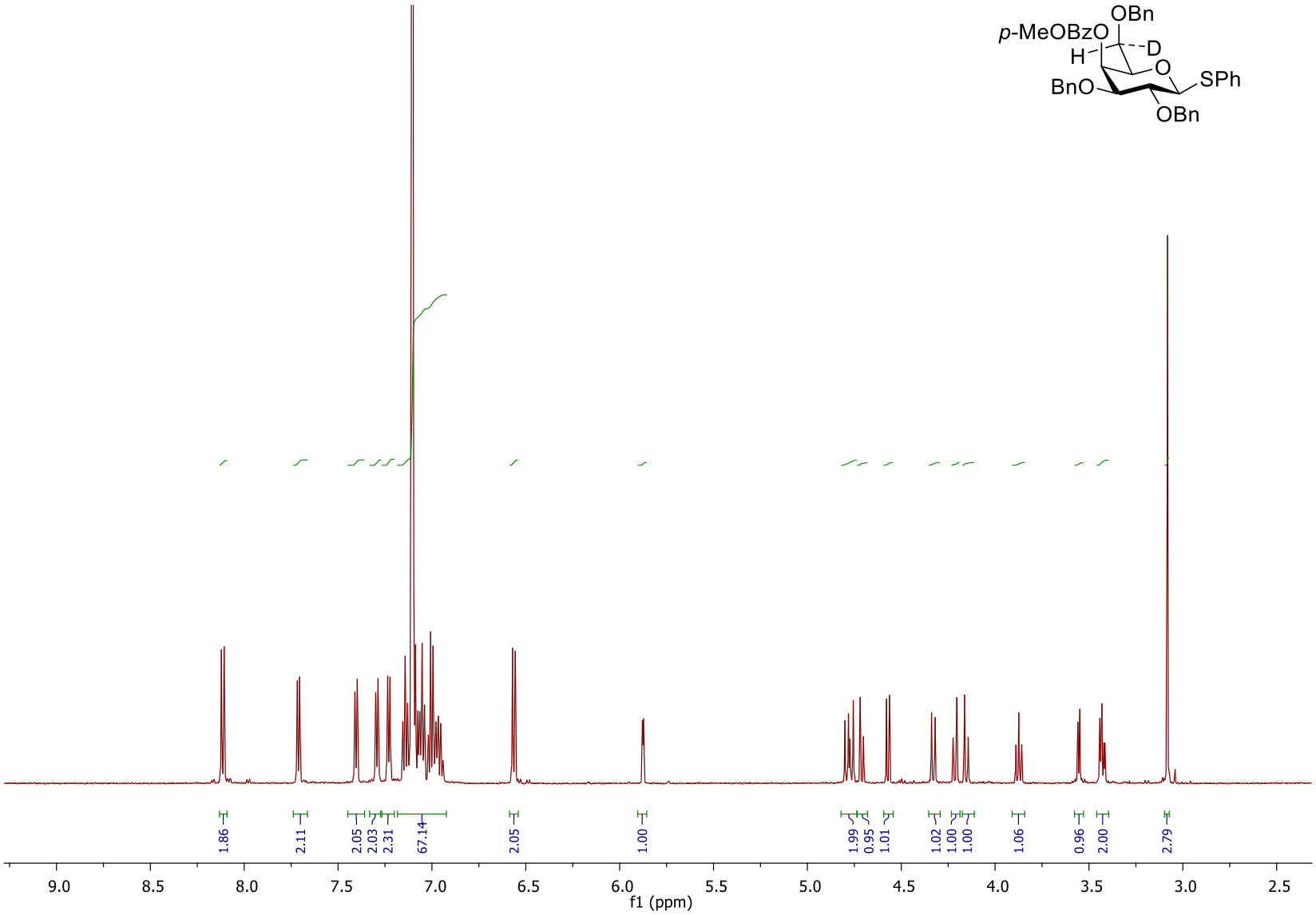


^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Phenyl 4-*O*-(*p*-methoxybenzoyl-(6*S*)-[6-$^{2}H_1$]-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**6S-D-19**)

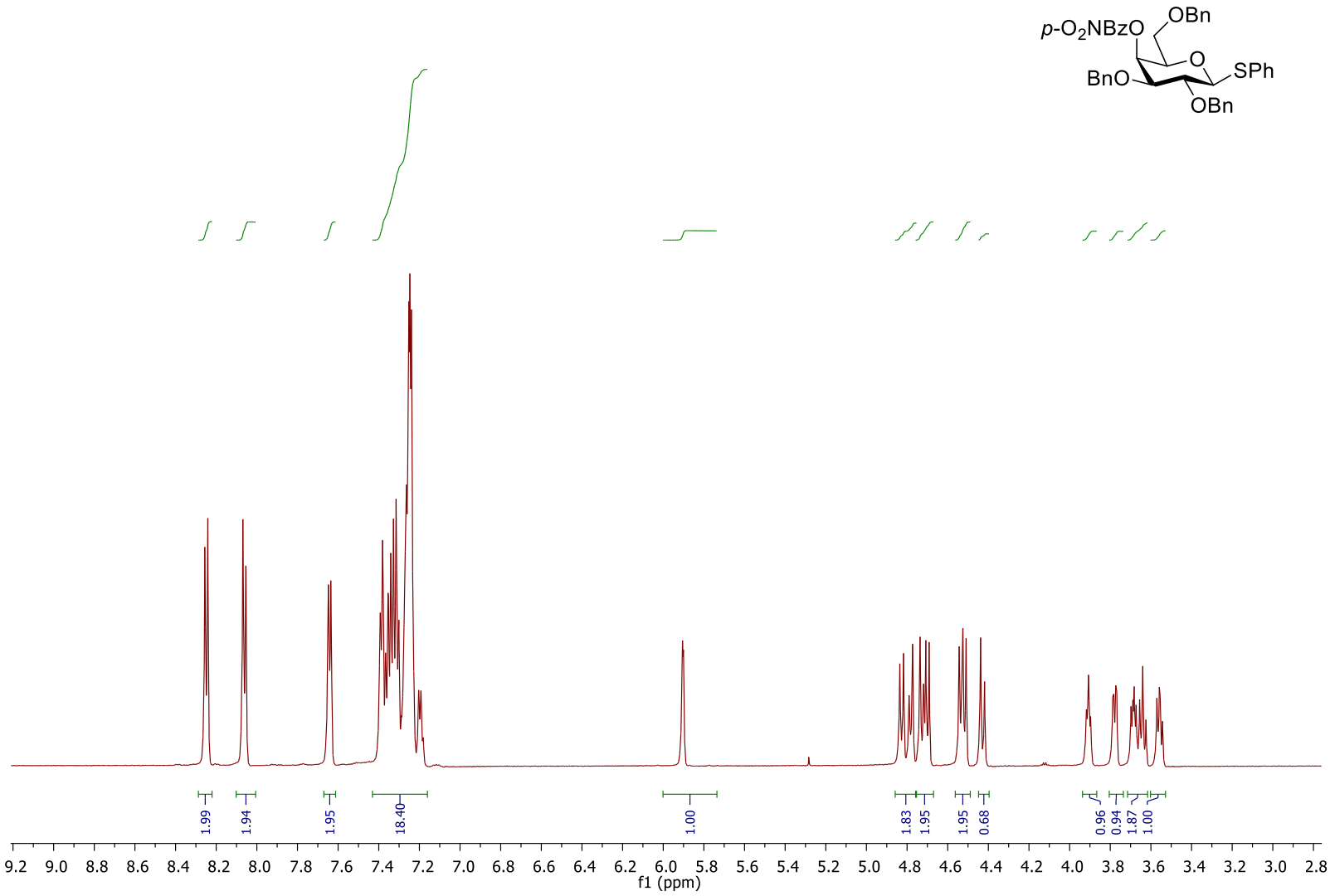




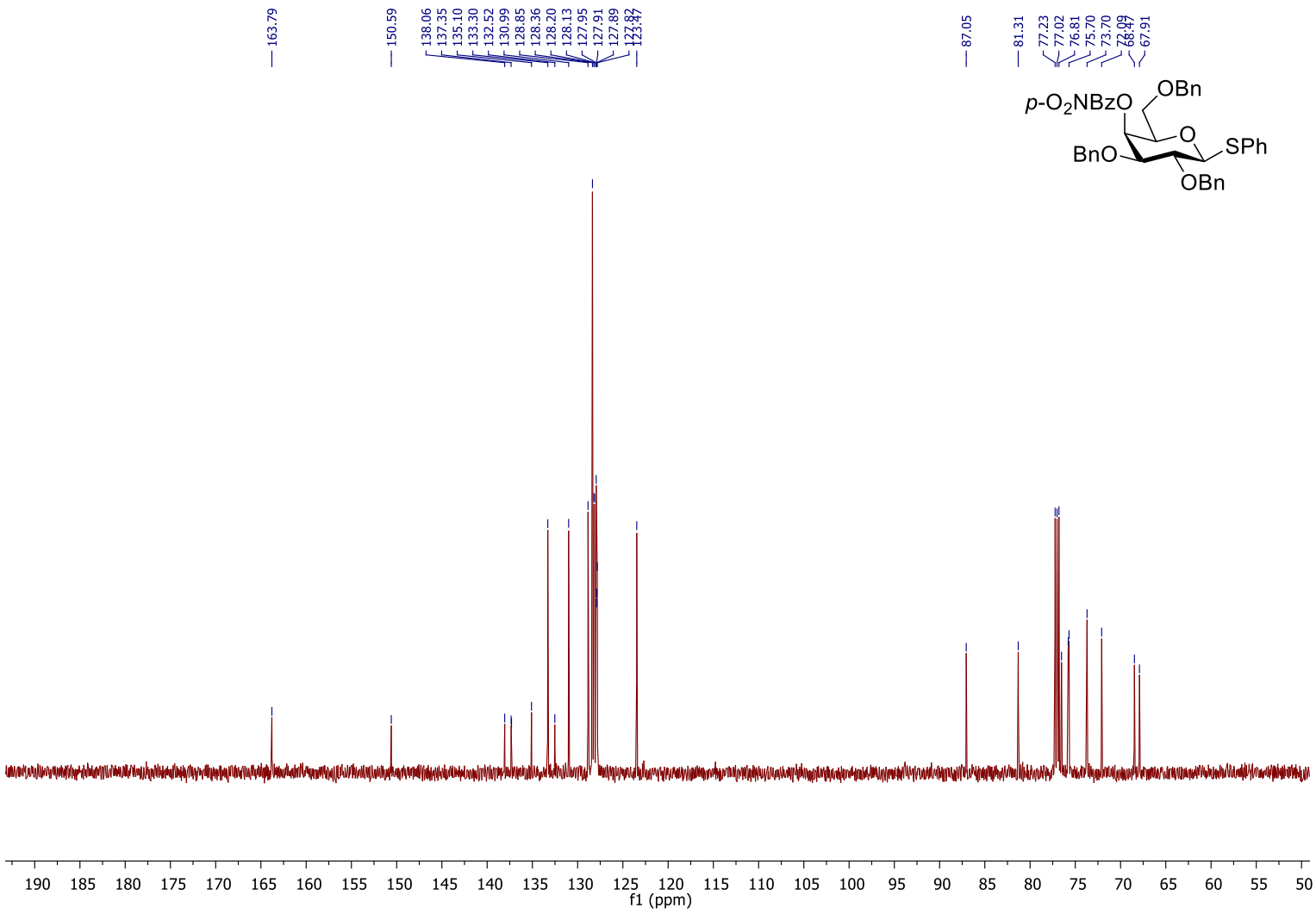
^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl 4-*O*-(*p*-methoxybenzoyl-(6*S*)-[6-$^{2}H_1$]-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**6S-D-19**)



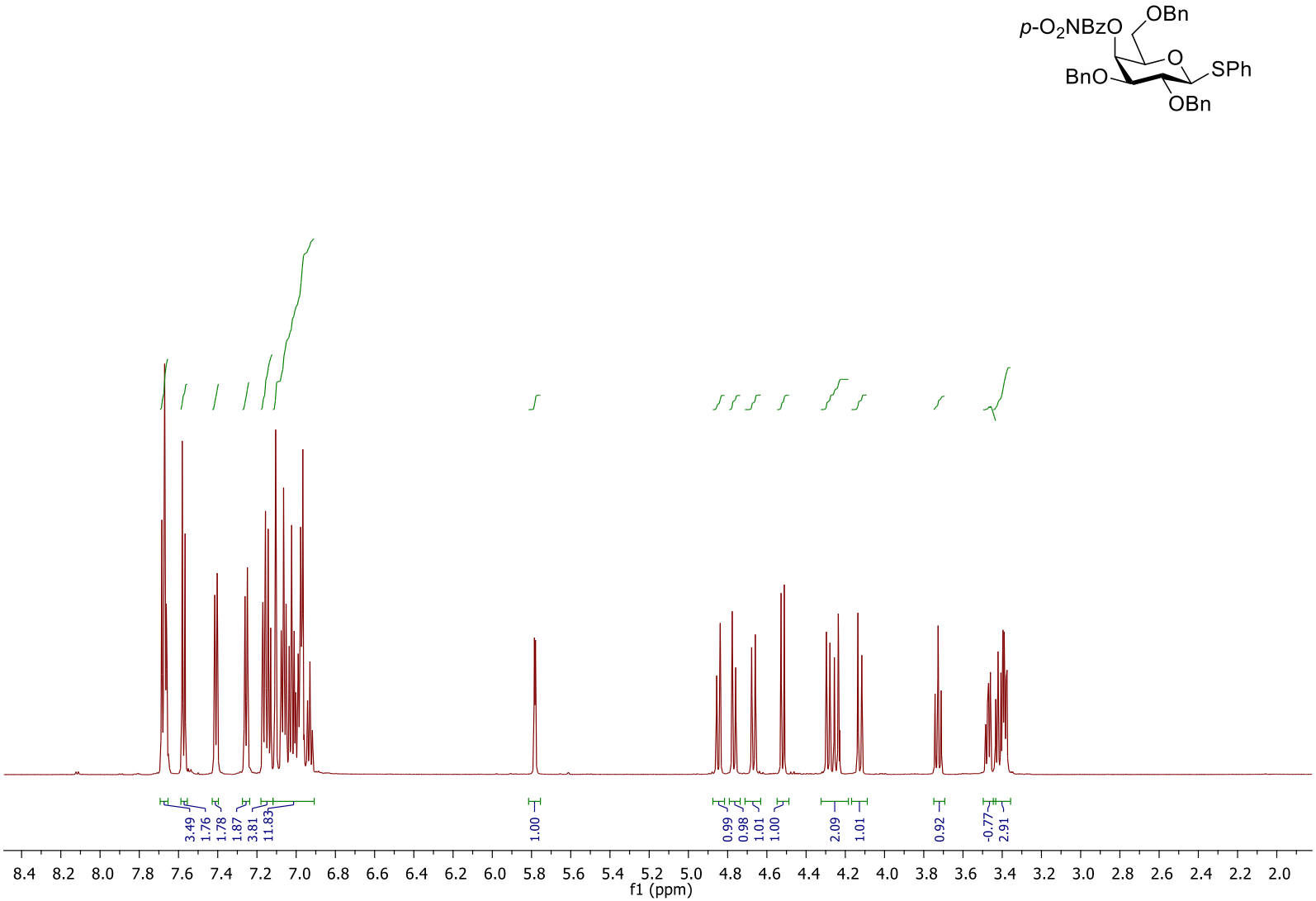
^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Phenyl 4-*O*-(*p*-nitrobenzoyl)-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**20**)



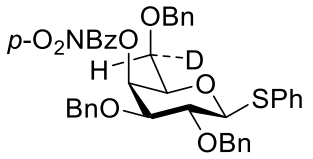
^{13}C NMR (150 MHz, $CDCl_3$) Spectrum of Phenyl 4-*O*-(*p*-nitrobenzoyl)-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**20**)

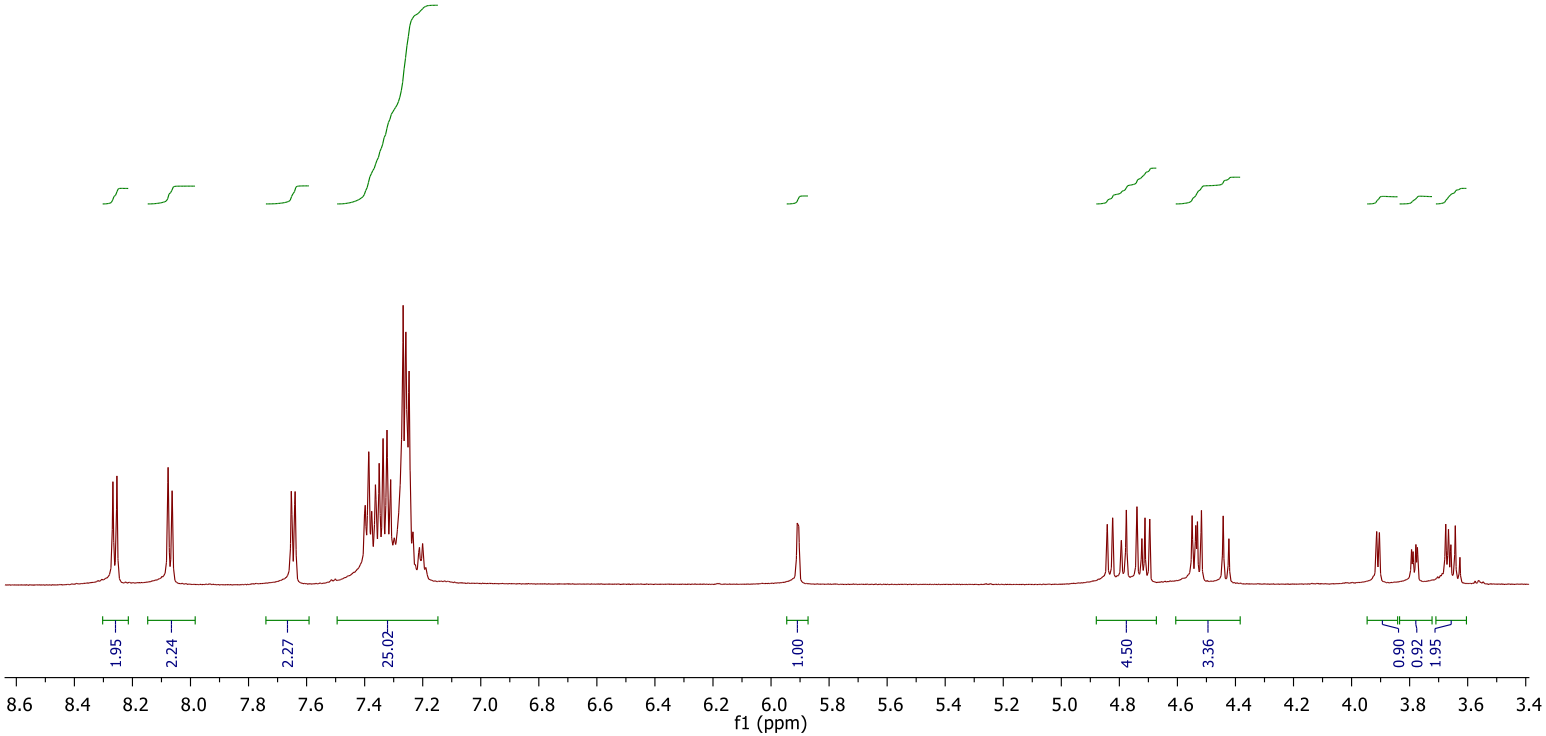


^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl 4-*O*-(*p*-nitrobenzoyl)-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**20**)

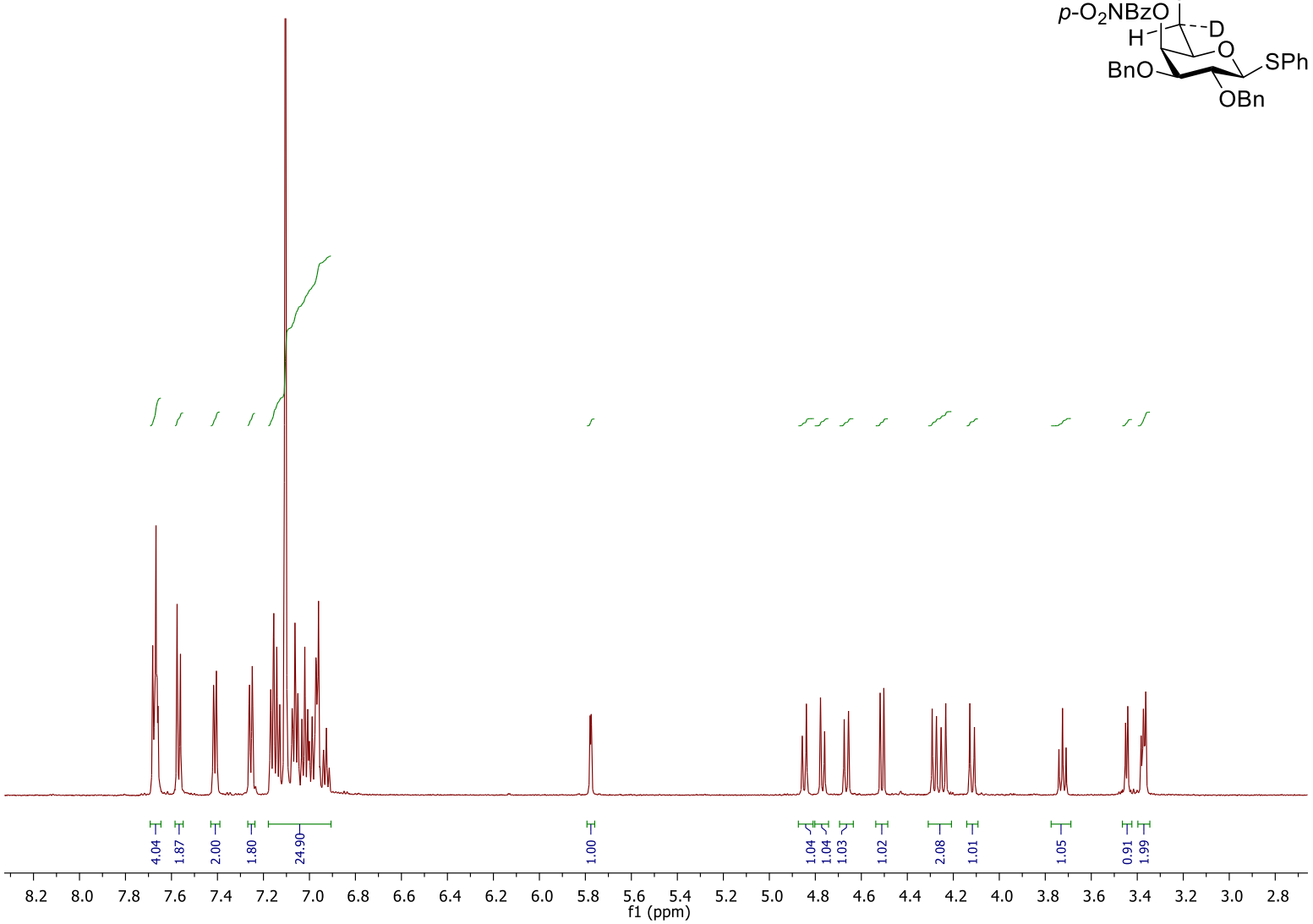


^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Phenyl 4-*O*-(*p*-nitrobenzoyl)-(6*S*)-[6-$^{2}H_1$]-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**6S-D-20**)

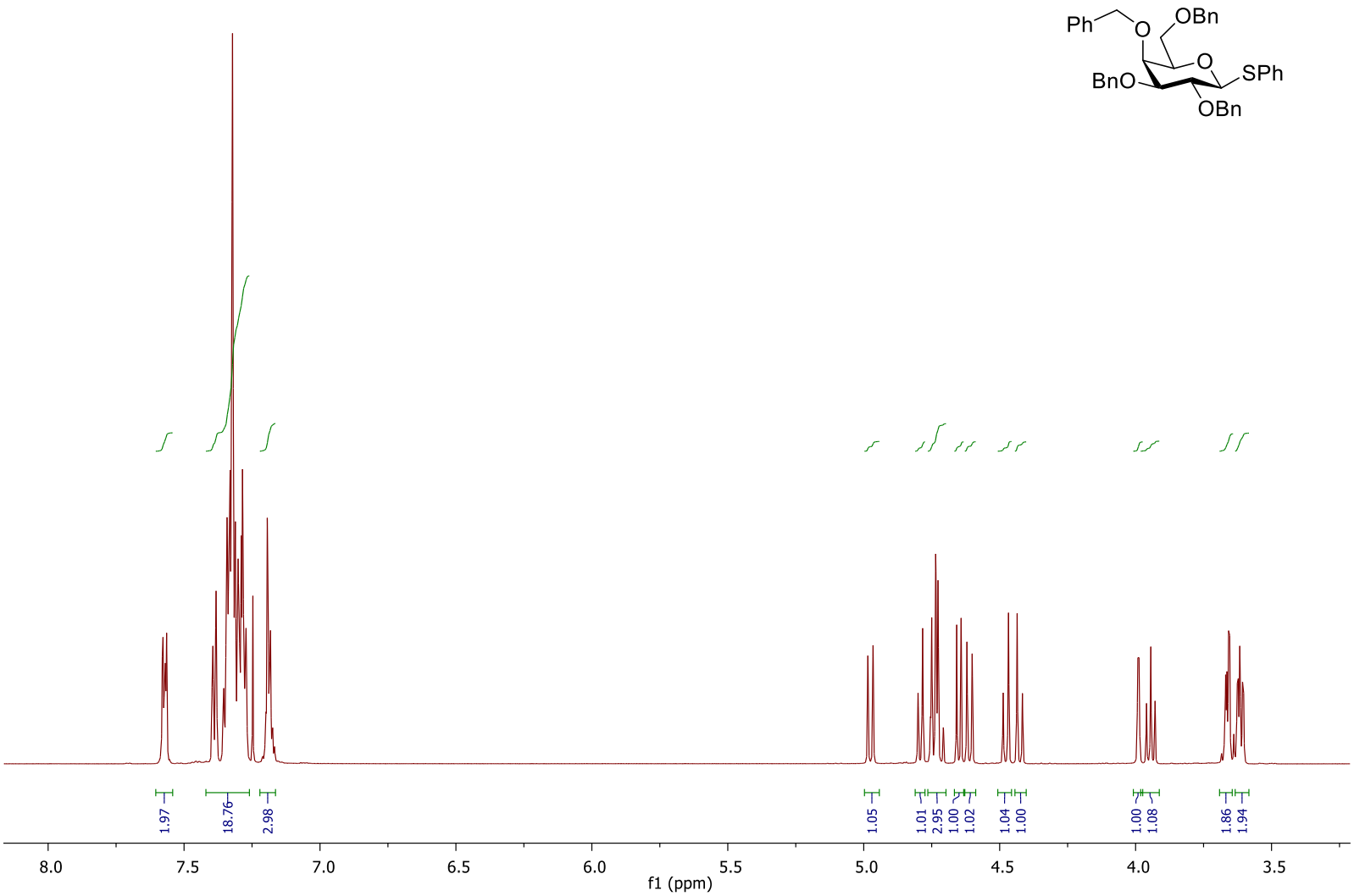




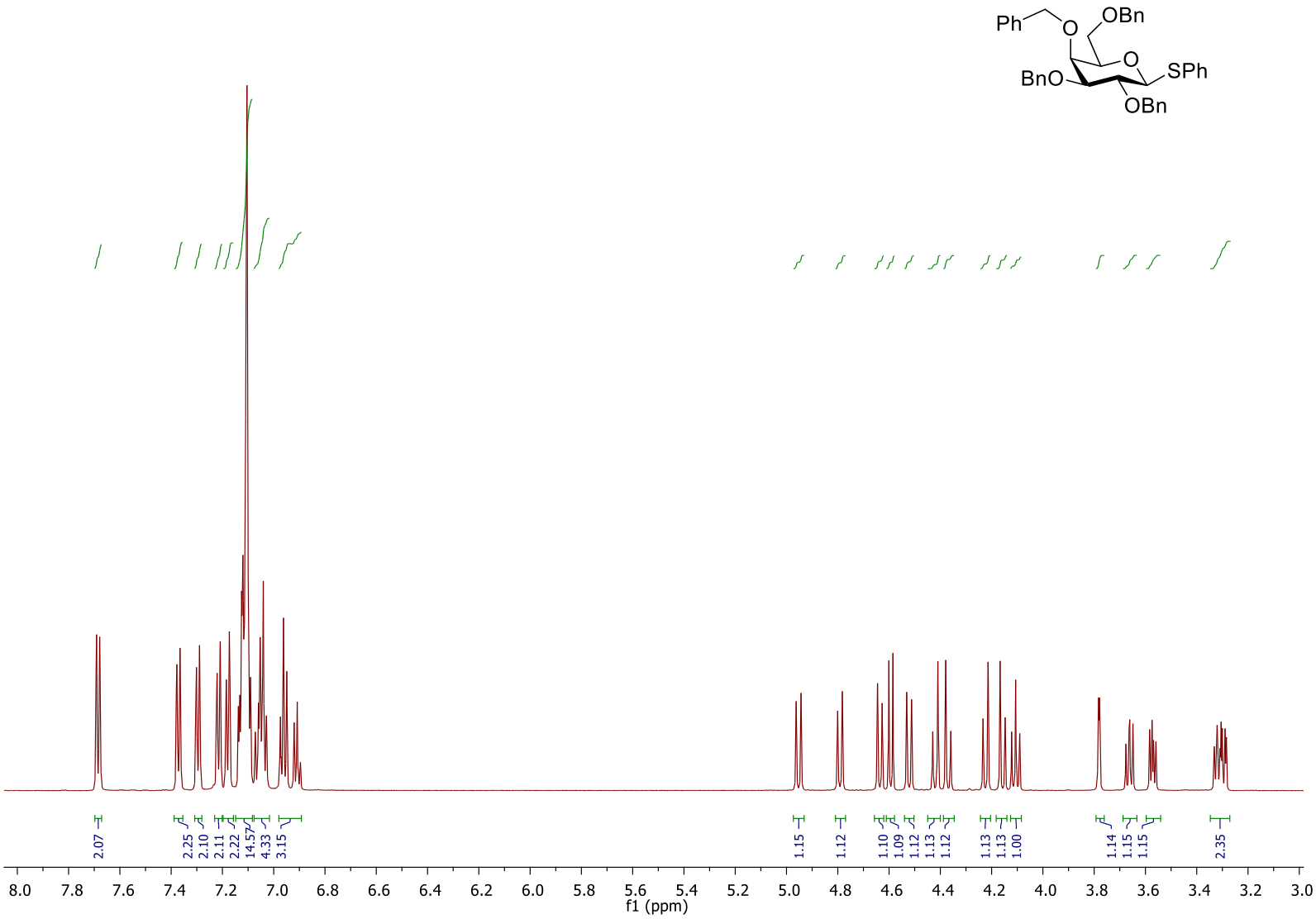
^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl 4-*O*-(*p*-nitrobenzoyl)-(6*S*)-[6-$^{2}H_1$]-2,3,6-tri-*O*-benzyl-1-thio-β-D-galactopyranoside (**6S-D-20**)



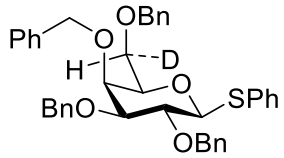
^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Phenyl 2,3,4,6-tetra-*O*-benzyl-1-thio-β-D-galactopyranoside (**21**)

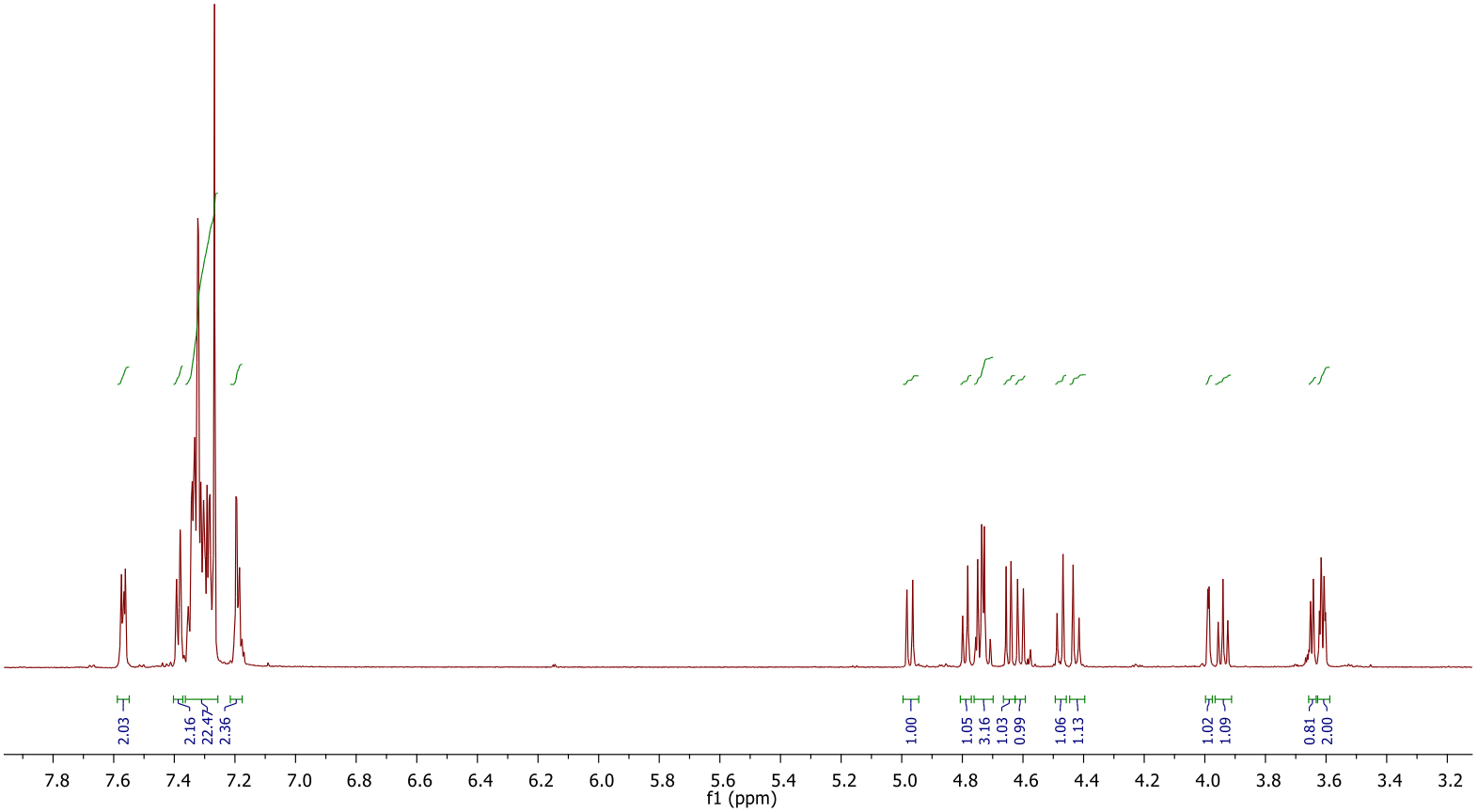


^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl 2,3,4,6-tetra-*O*-benzyl-1-thio-β-D-galactopyranoside (**21**)

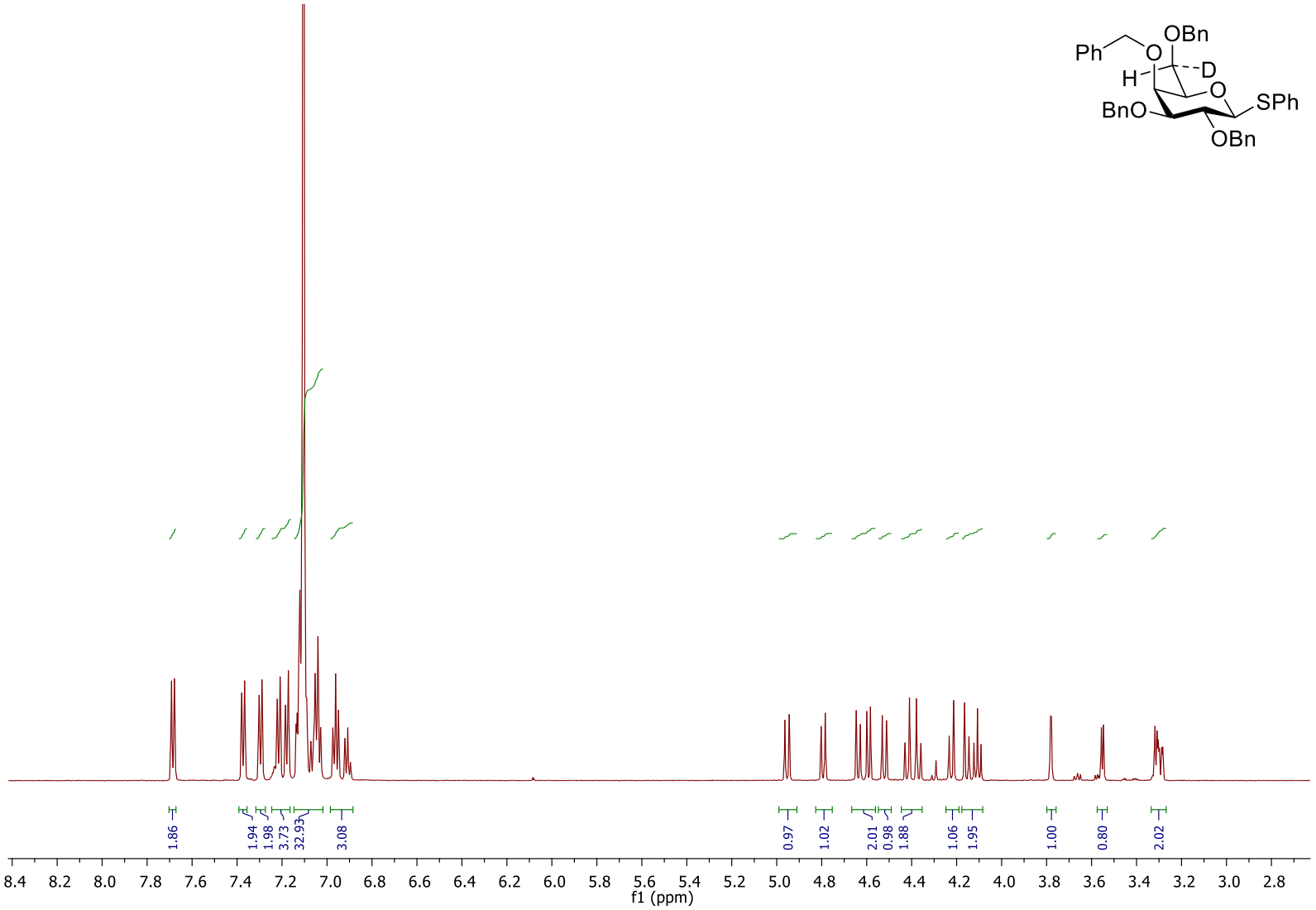


^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Phenyl (6*S*)-[6-$^{2}H_1$]-2,3,4,6-tetra-*O*-benzyl-1-thio-β-D-galactopyranoside (**6S-D-21**)

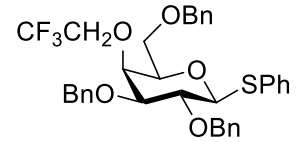


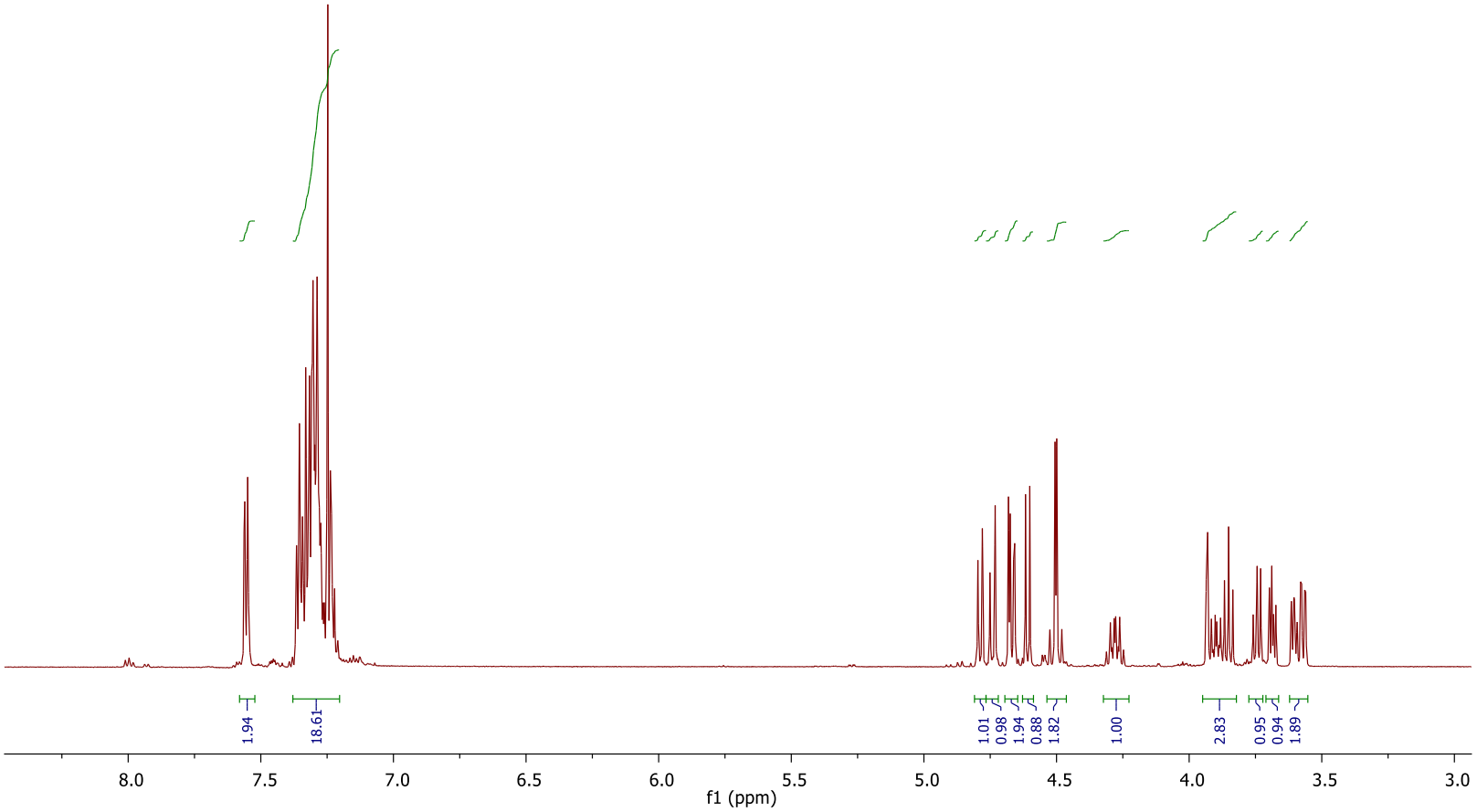


^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl (6*S*)-[6-$^{2}H_1$]-2,3,4,6-tetra-*O*-benzyl-1-thio-β-D-galactopyranoside (**6S-D-21**)

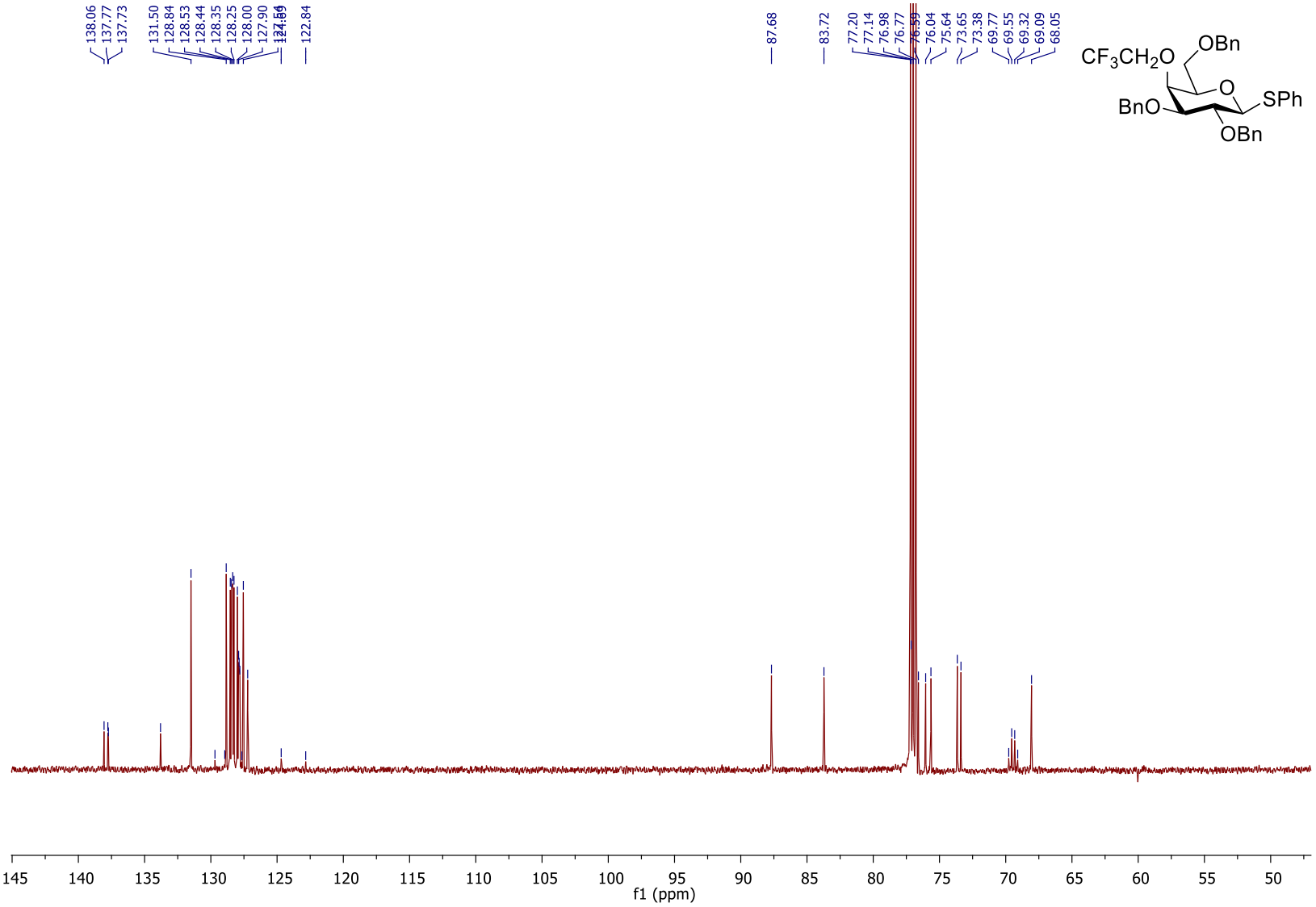


^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Phenyl 2,3,6-tri-*O*-benzyl-4-*O*-(1′,1′,1′-trifluoroethyl)-1-thio-β-D-galactopyranoside (**22**)

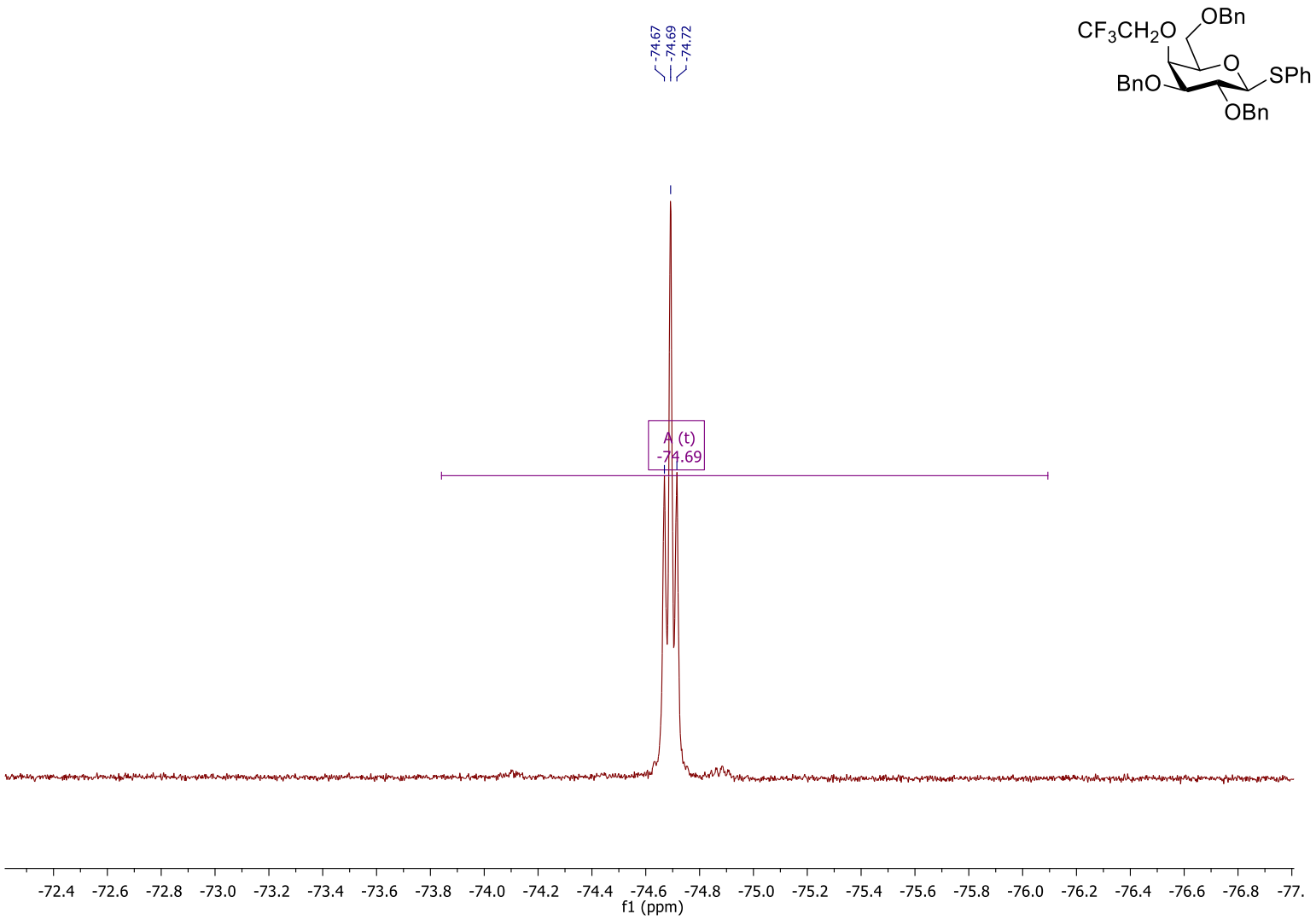




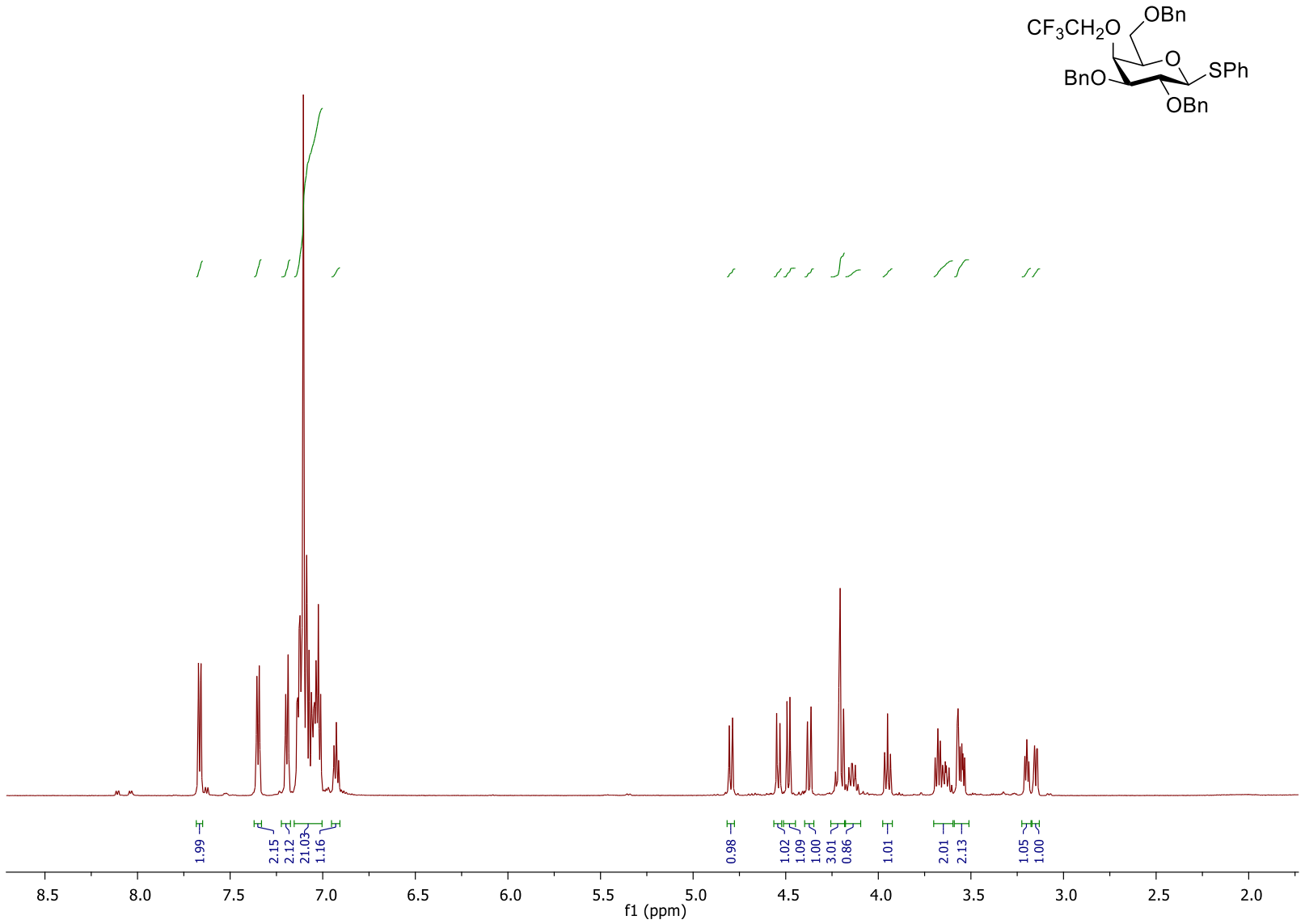
^{13}C NMR (150 MHz, $CDCl_3$) Spectrum of Phenyl 2,3,6-tri-*O*-benzyl-4-*O*-(1′,1′,1′-trifluoroethyl)-1-thio-β-D-galactopyranoside (**22**)



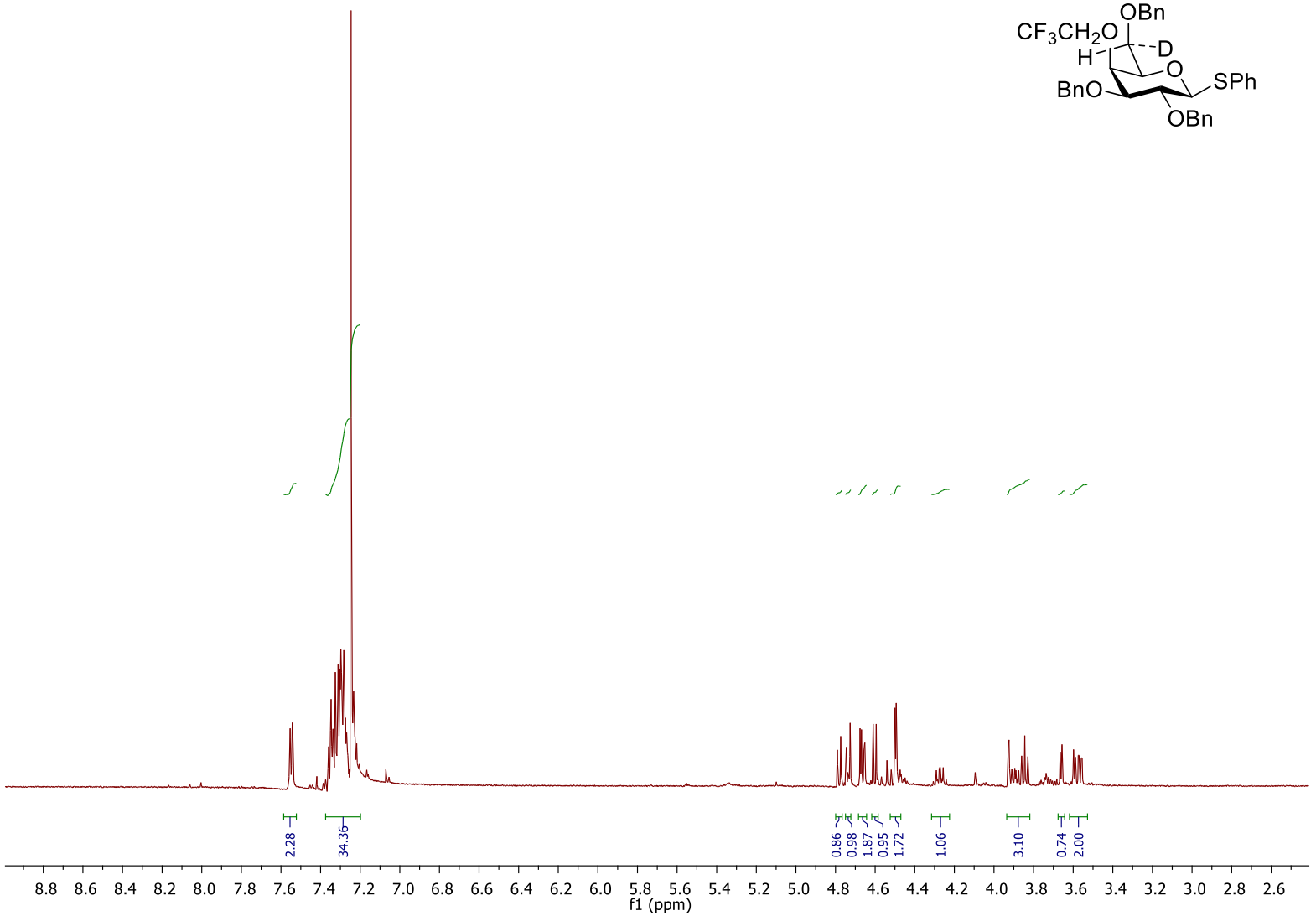
^{19}F NMR (375 MHz, $CDCl_3$) Spectrum of Phenyl 2,3,6-tri-*O*-benzyl-4-*O*-(1′,1′,1′-trifluoroethyl)-1-thio-β-D-galactopyranoside (**22**)



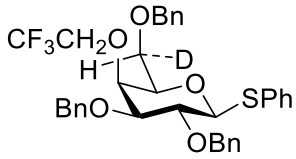
^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl 2,3,6-tri-*O*-benzyl-4-*O*-(1′,1′,1′-trifluoroethyl)-1-thio-β-D-galactopyranoside (**22**)



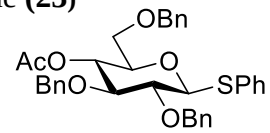
^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Phenyl (6*S*)-[6-$^{2}H_1$]-2,3,6-tri-*O*-benzyl-4-*O*-(1′,1′,1′-trifluoroethyl)-1-thio-β-D-galactopyranoside (**6S-D-22**)

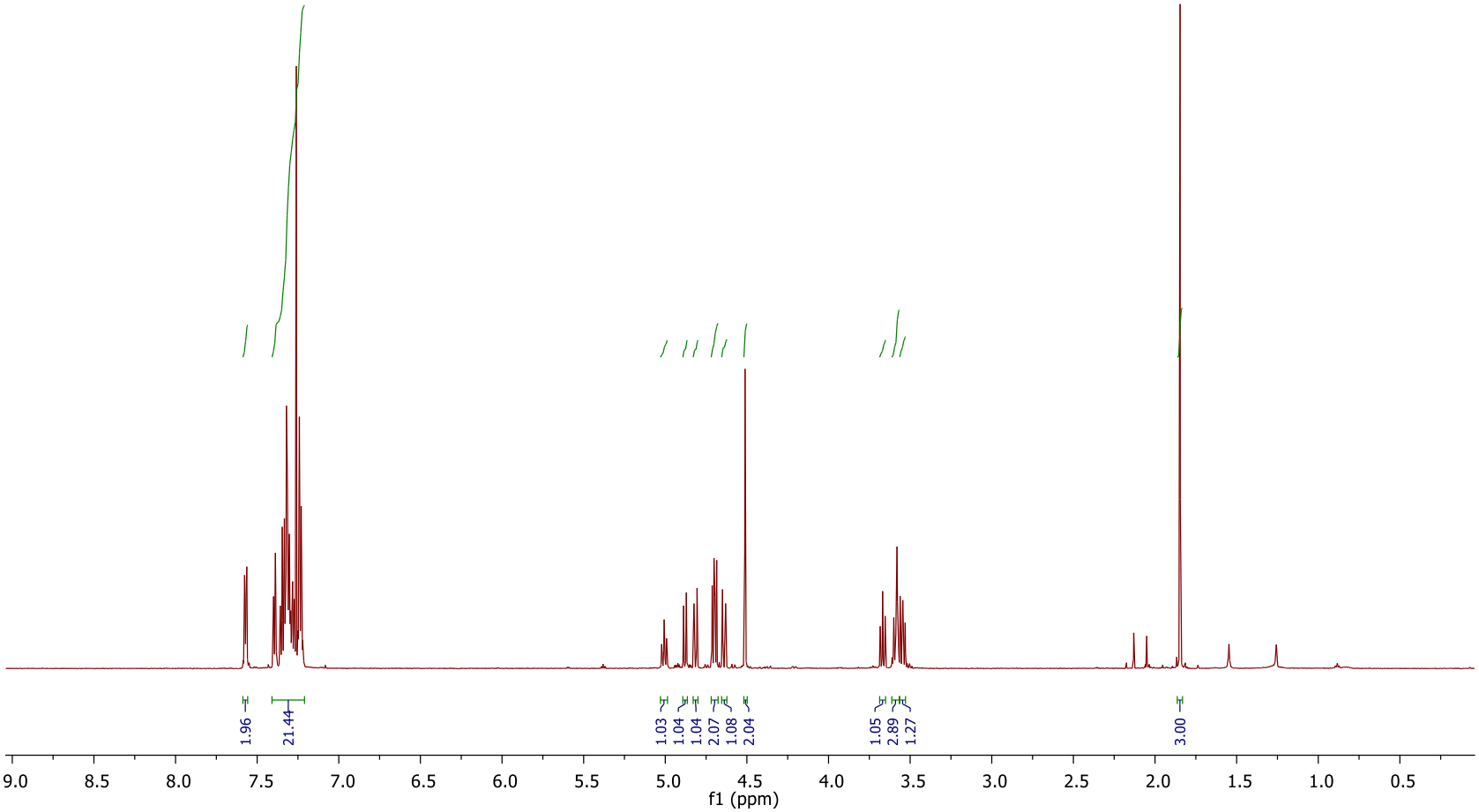


^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl (6*S*)-[6-$^{2}H_1$]-2,3,6-tri-*O*-benzyl-4-*O*-(1′,1′,1′-trifluoroethyl)-1-thio-β-D-*galacto*pyranoside (**6S-D-22**)

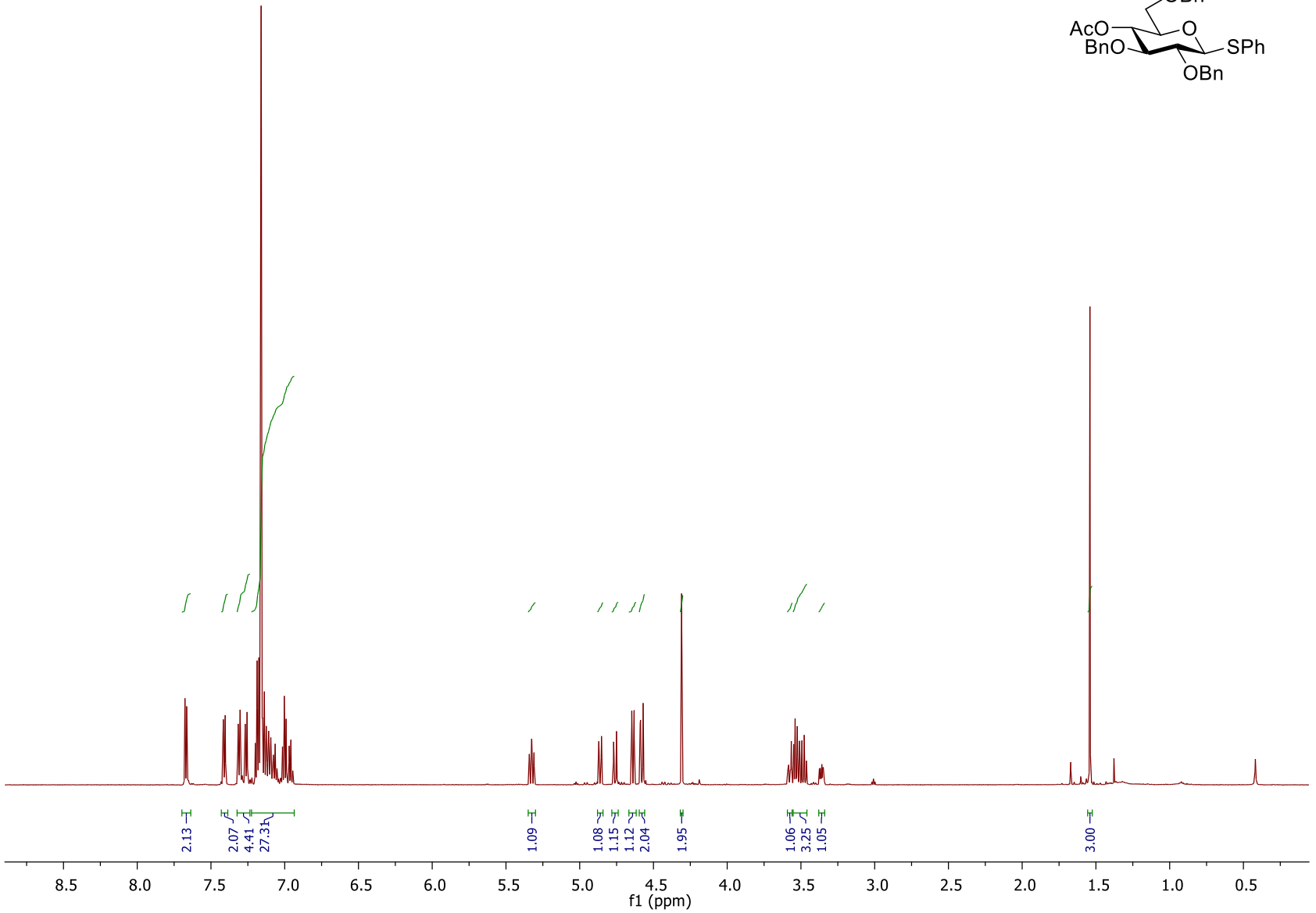


^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Phenyl 4-*O*-acetyl-2,3,6-tri-*O*-benzyl-1-thio-β-D-glucopyranoside **(23)**

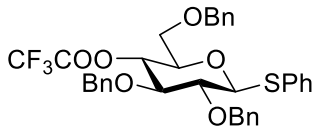


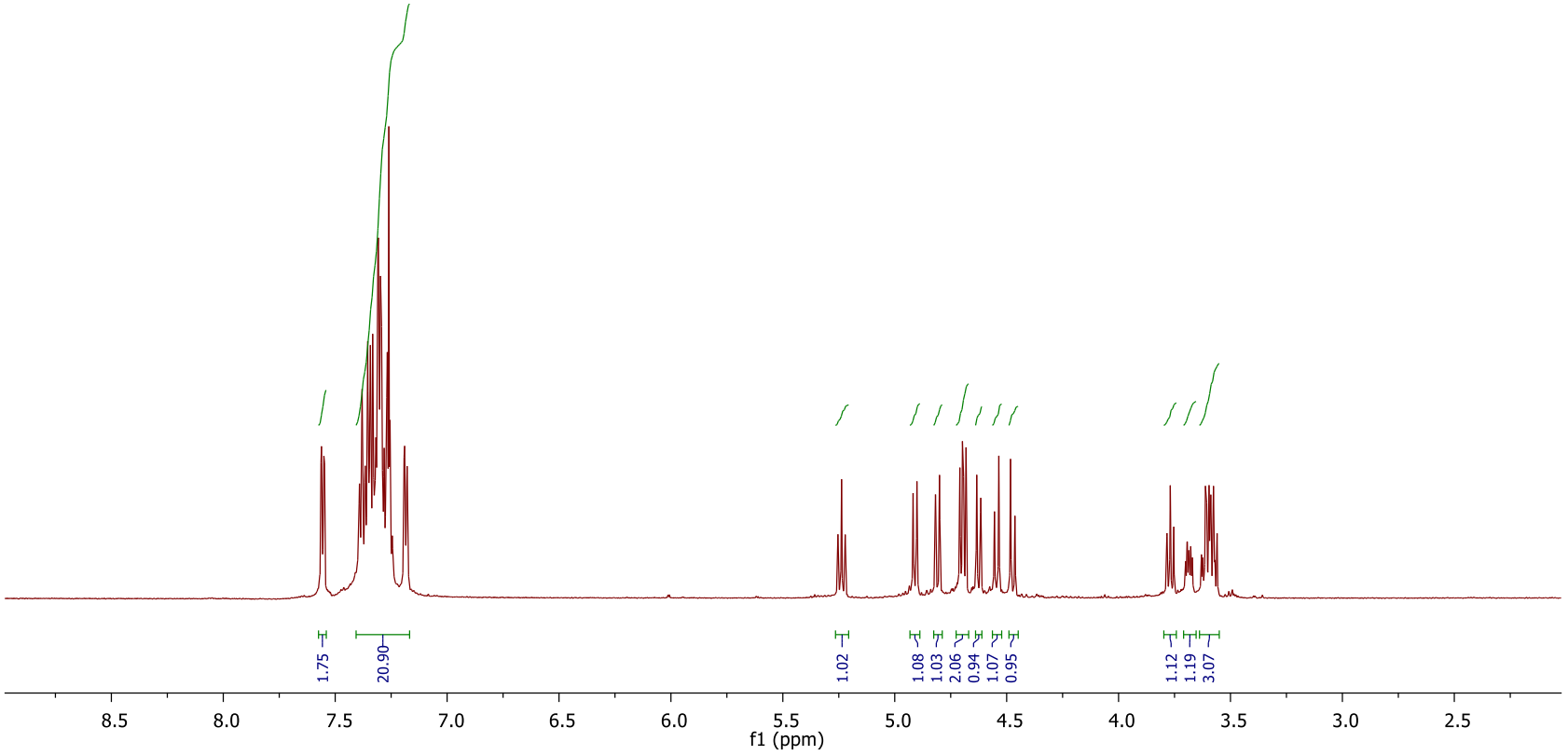


^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl 4-*O*-acetyl-2,3,6-tri-*O*-benzyl-1-thio-β-D-glucopyranoside **(23)**

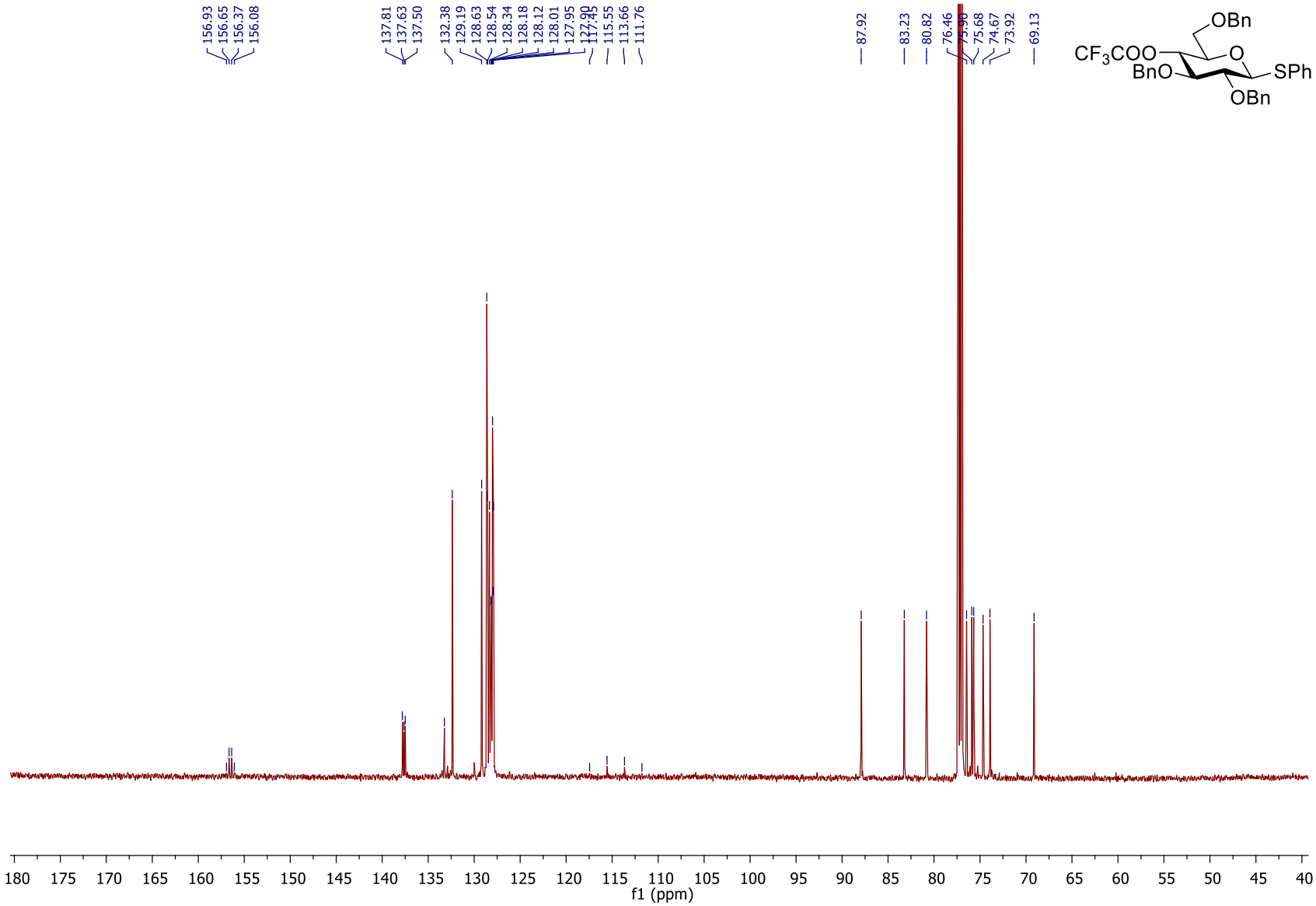


^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Phenyl 2,3,6-tri-*O*-benzyl-4-*O*-trifluoroacetyl-1-thio-β-D-glucopyranoside **(24)**

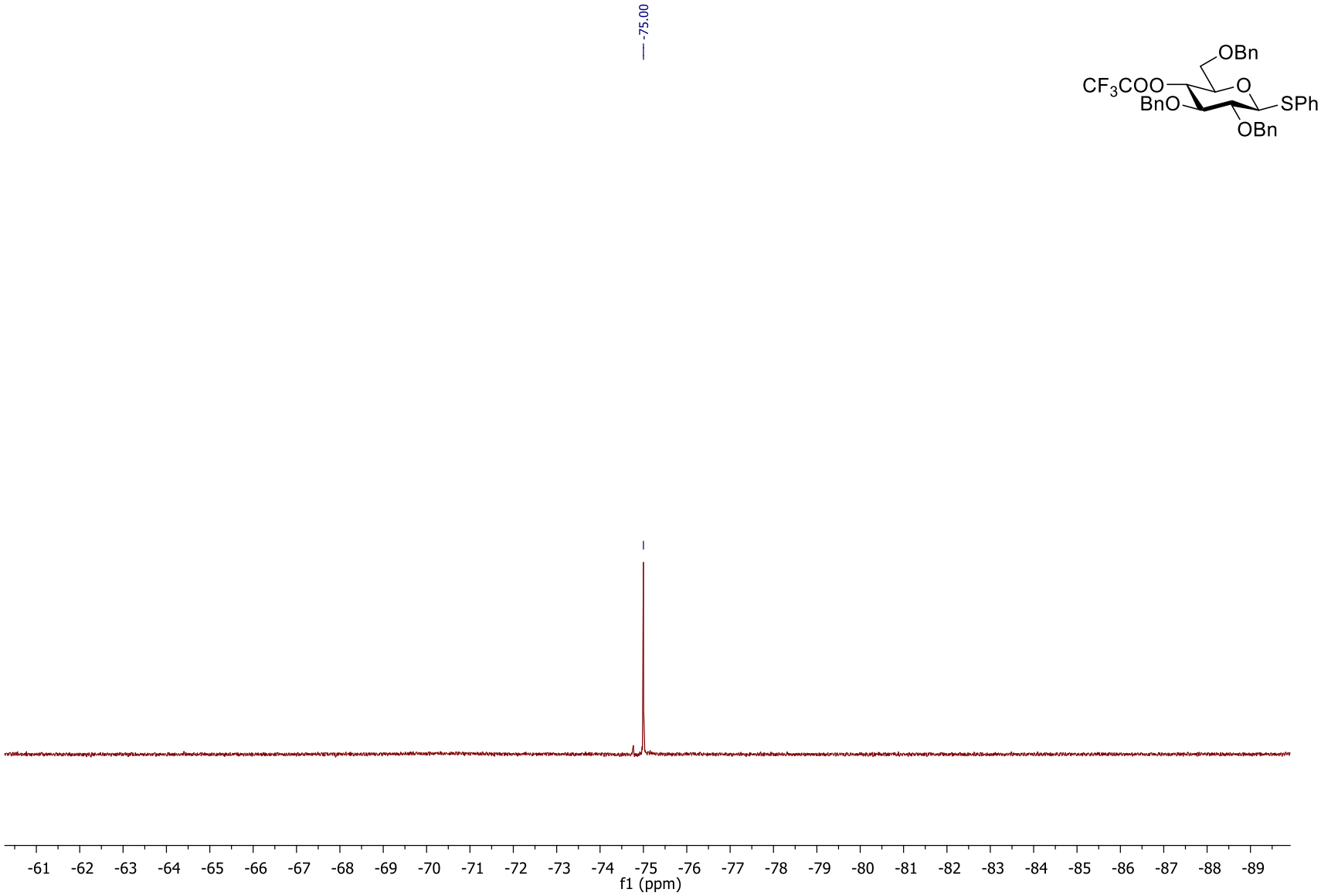




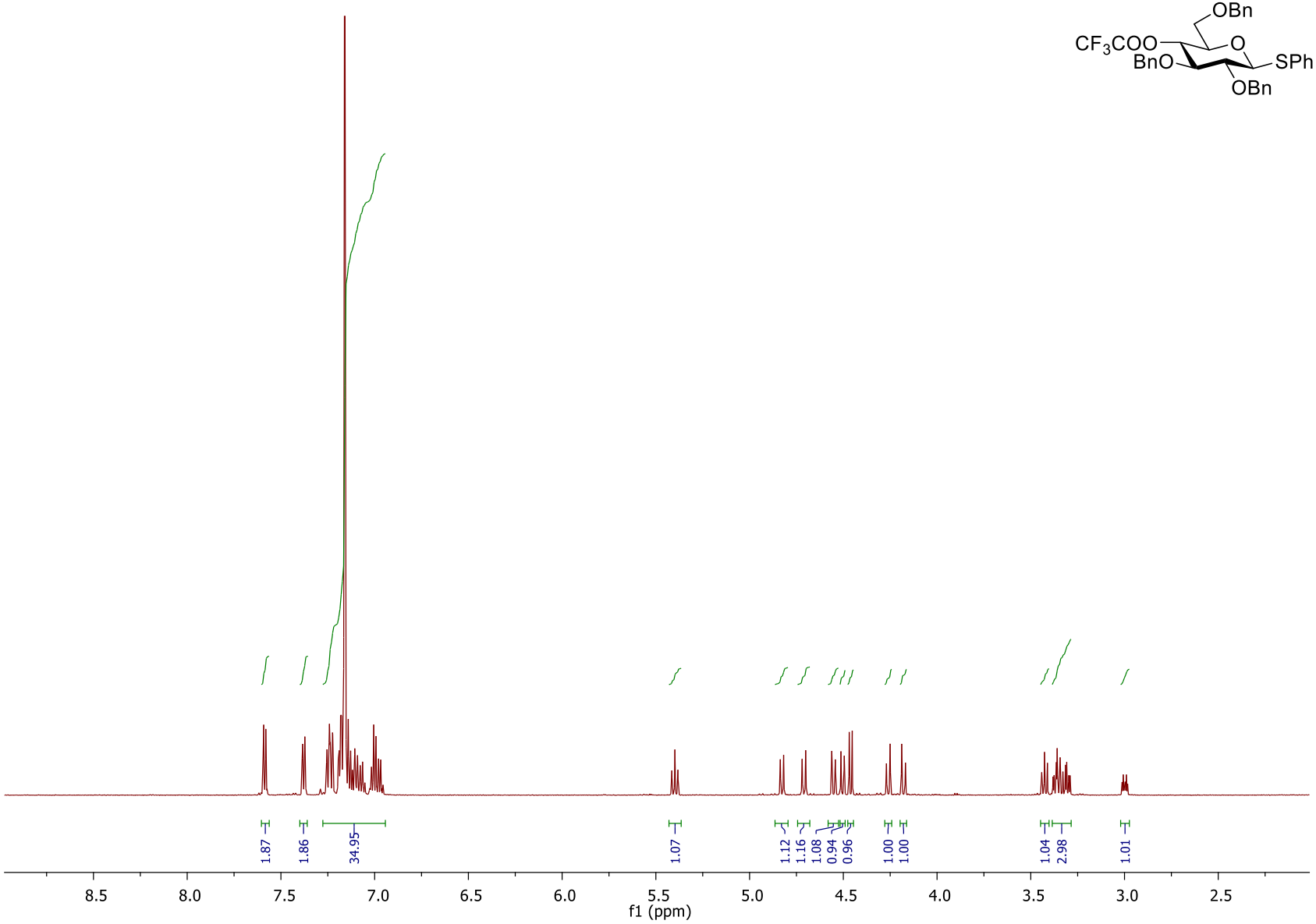
^{13}C NMR (150 MHz, $CDCl_3$) Spectrum of Phenyl 2,3,6-tri-*O*-benzyl-4-*O*-trifluoroacetyl-1-thio-β-D-glucopyranoside **(24)**



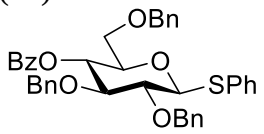
^{19}F NMR (376 MHz, $CDCl_3$) Spectrum of Phenyl 2,3,6-tri-*O*-benzyl-4-*O*-trifluoroacetyl-1-thio-β-D-glucopyranoside **(24)**

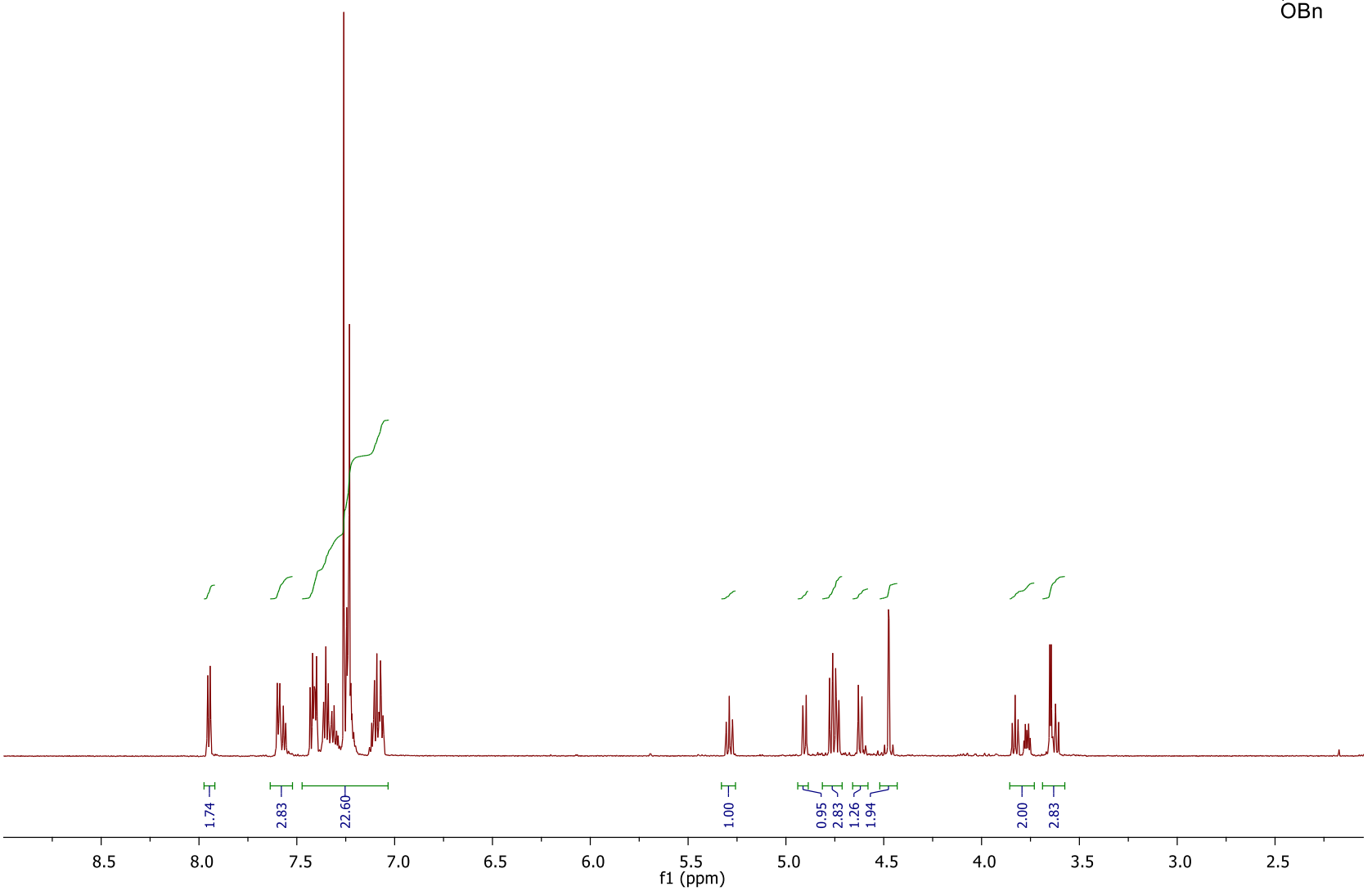


^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl 2,3,6-tri-*O*-benzyl-4-*O*-trifluoroacetyl-1-thio-β-D-glucopyranoside **(24)**

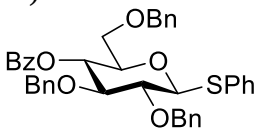


^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Phenyl 4-*O*-benzoyl-2,3,6-tri-*O*-benzyl-1-thio-β-D-glucopyranoside (**25**)

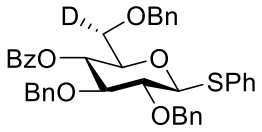




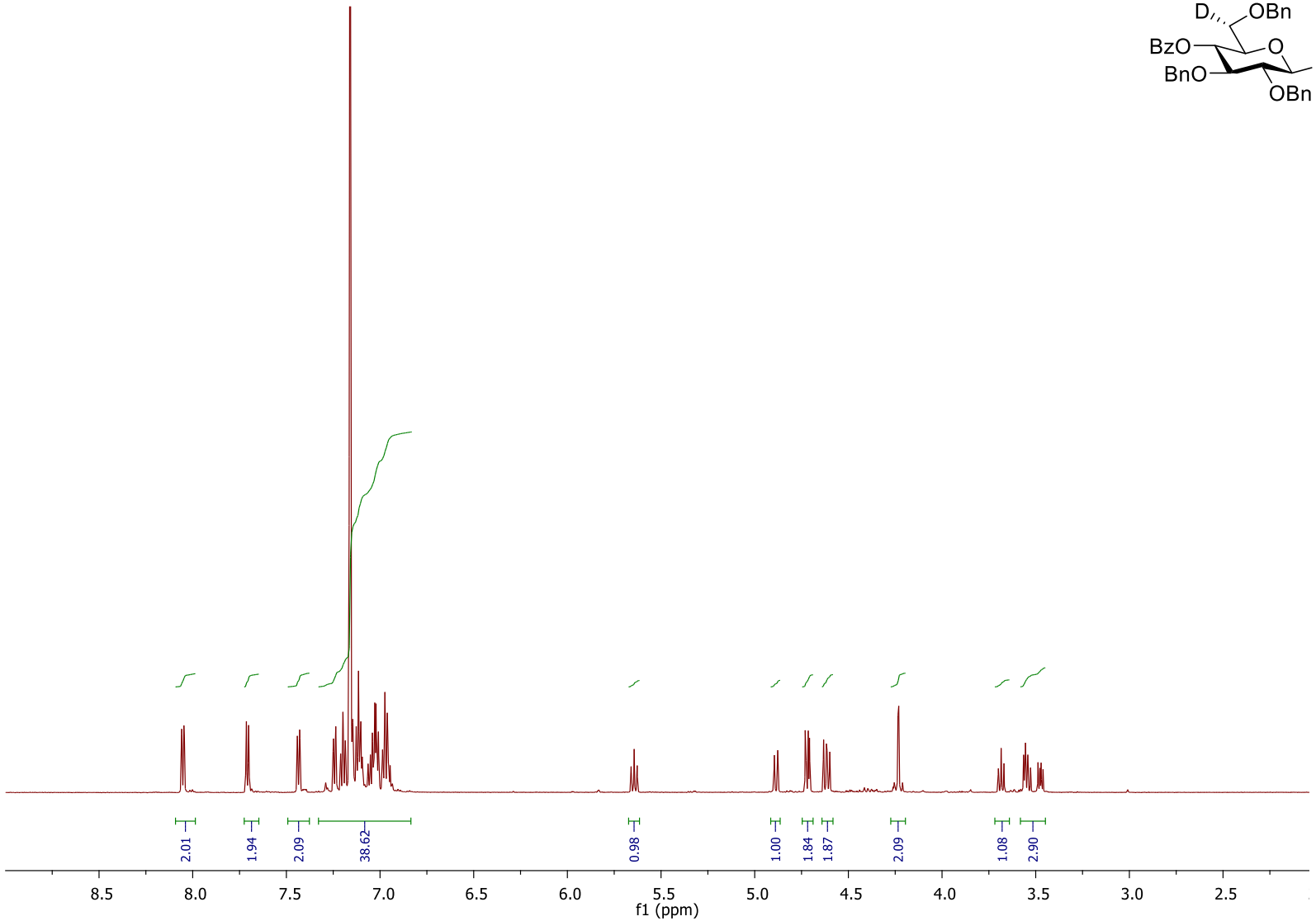
^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl 4-*O*-benzoyl-2,3,6-tri-*O*-benzyl-1-thio-β-D-glucopyranoside (**25**)



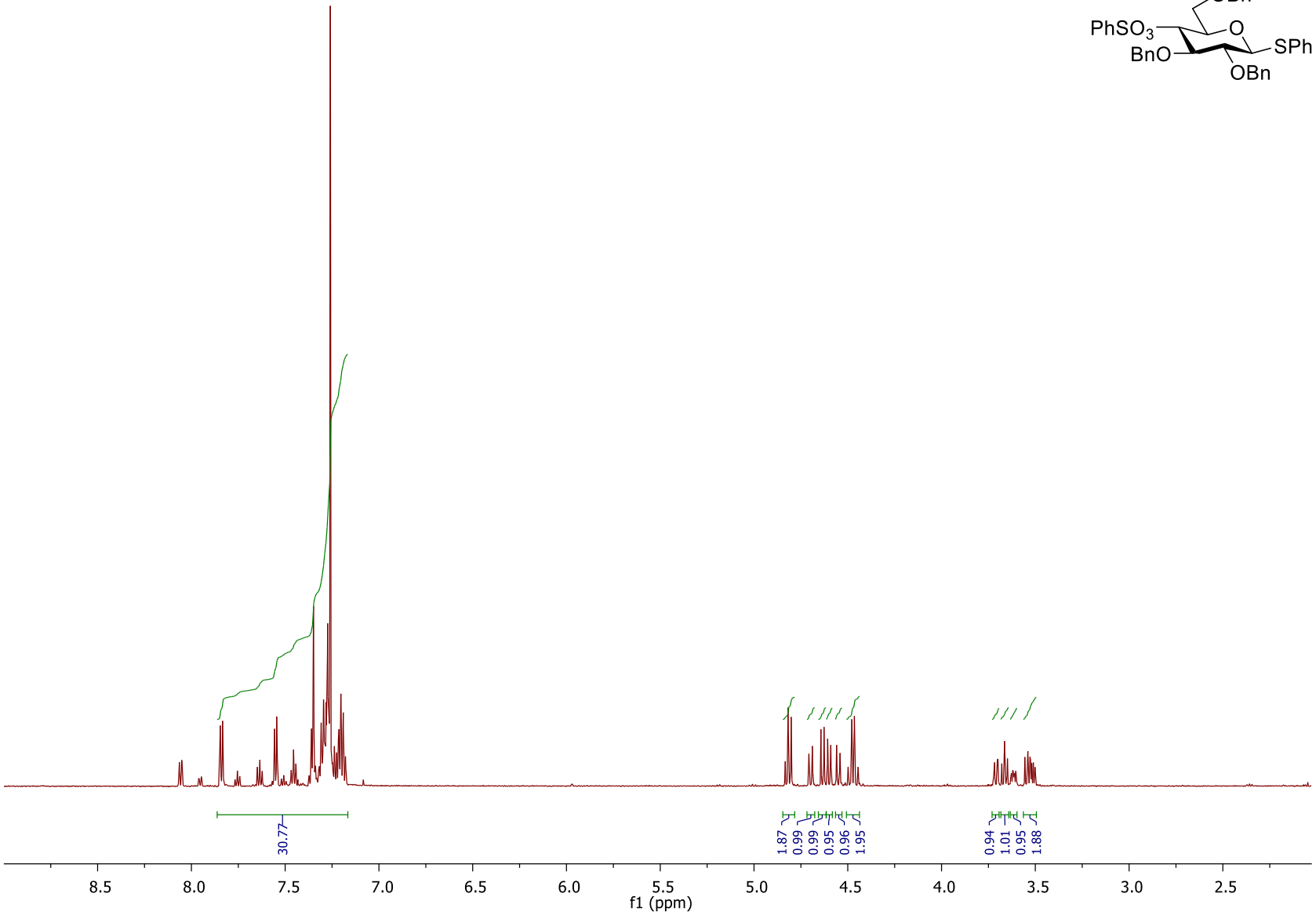
^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Phenyl 4-*O*-benzoyl-(6*S*)-[6-$^{2}H_1$]-2,3,6-tri-*O*-benzyl-1-thio-β-D-glucopyranoside (**6*S*-D-25**)



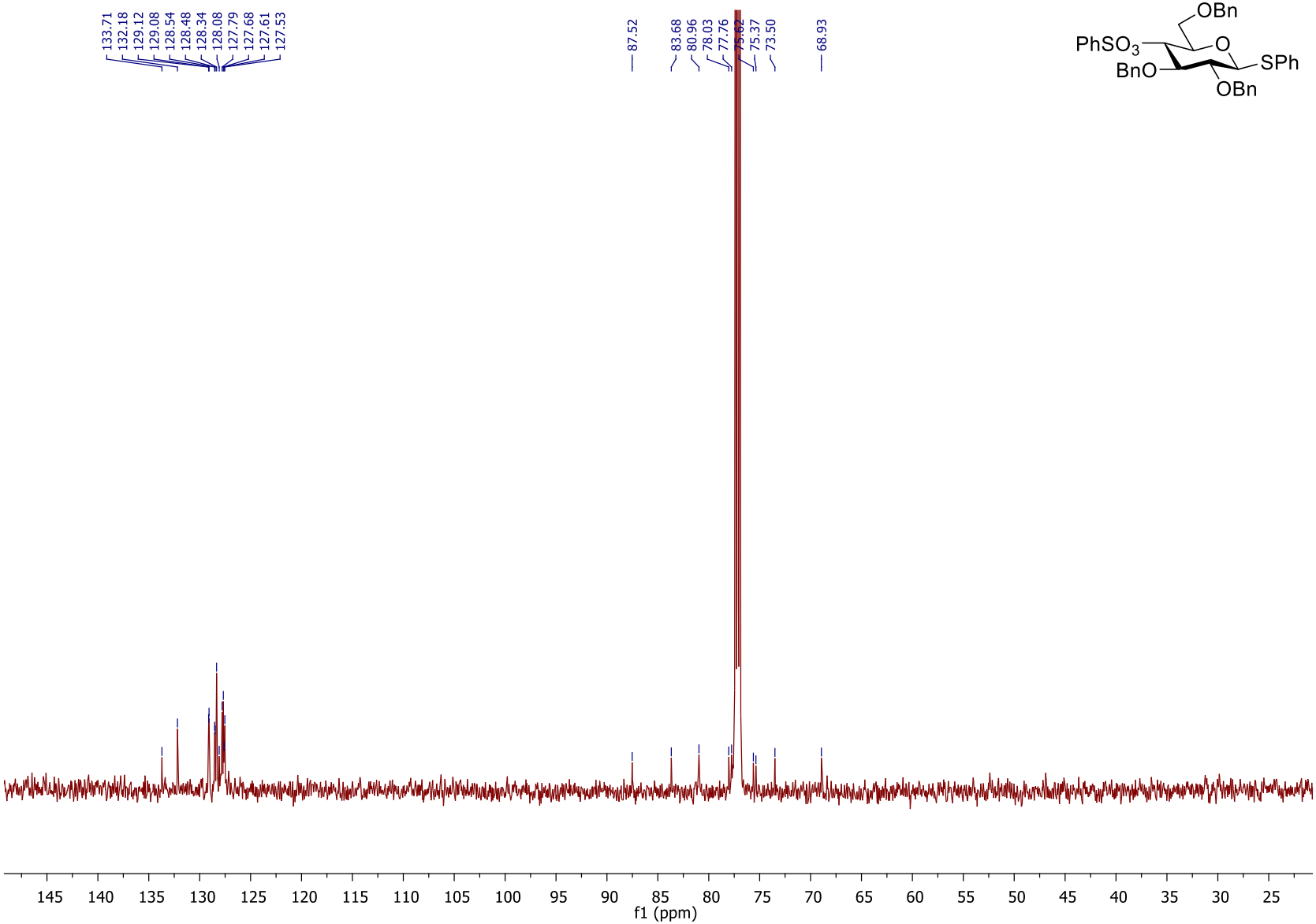
^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl 4-*O*-benzoyl-(6*S*)-[6-$^{2}H_1$]-2,3,6-tri-*O*-benzyl-1-thio-β-D-**(**6*S*-^{2}H)-glucopyranoside (**6*S*-D-25**)



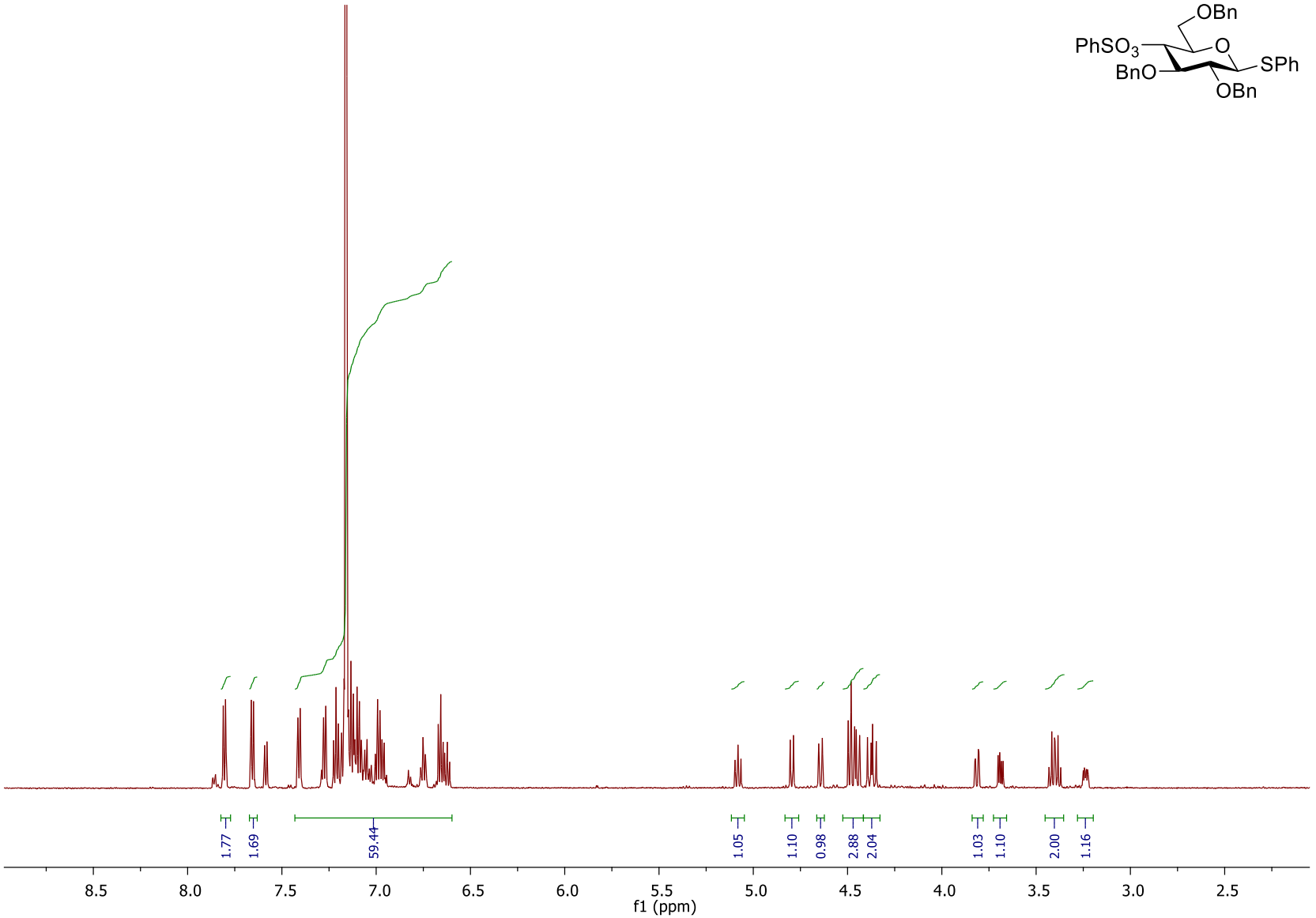
^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Phenyl 4-*O*-benzenesulfonyl-2,3,6-tri-*O*-benzyl-1-thio-β-D-glucopyranoside (**26**)



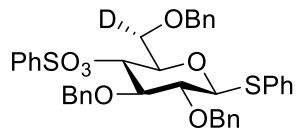
^{13}C NMR (150 MHz, $CDCl_3$) Spectrum of Phenyl 4-*O*-benzenesulfonyl-2,3,6-tri-*O*-benzyl-1-thio-β-D-glucopyranoside (**26**)



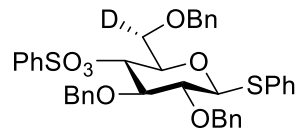
^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl 4-*O*-benzenesulfonyl-2,3,6-tri-*O*-benzyl-1-thio-β-D-glucopyranoside (**26**)

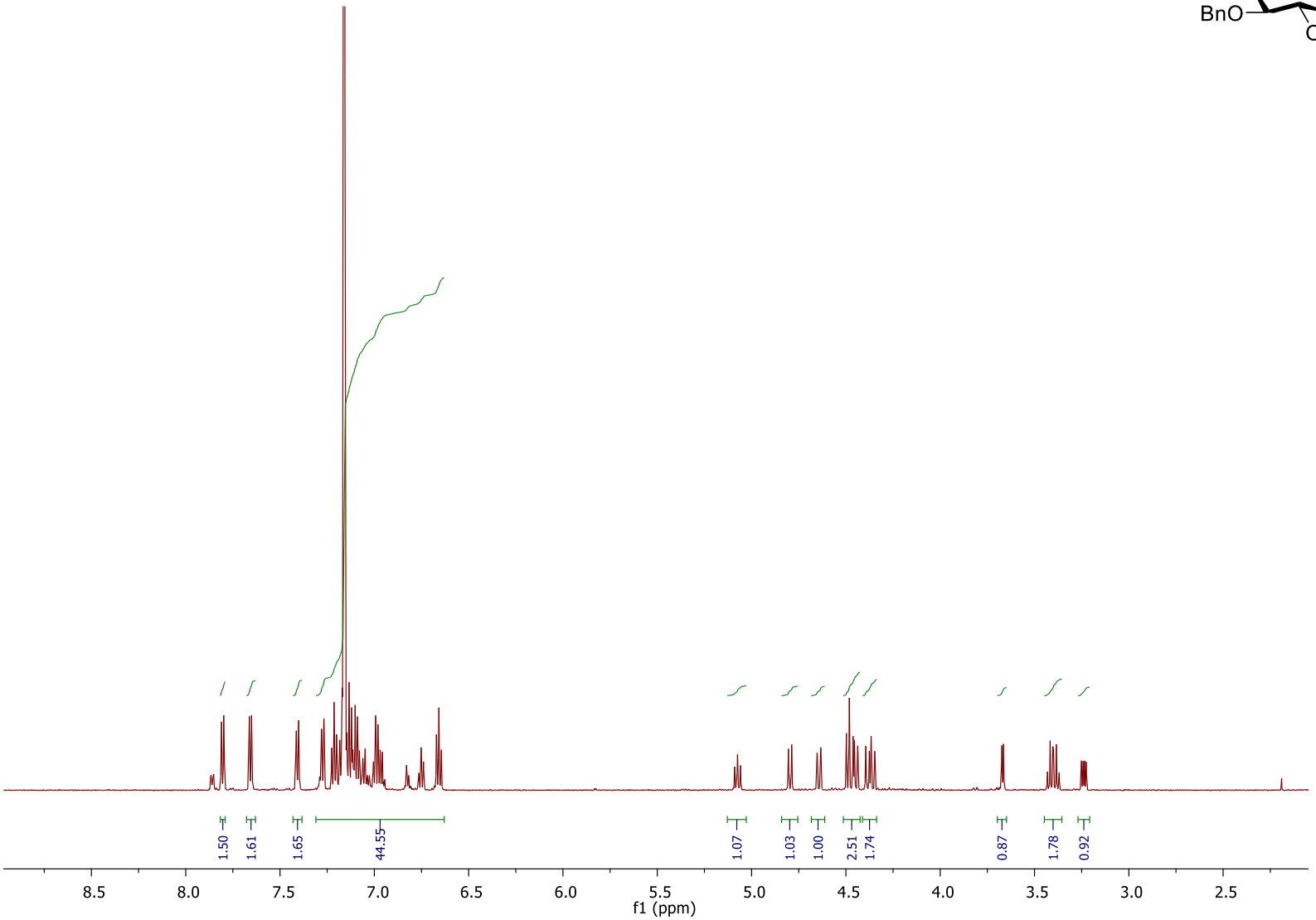


^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Phenyl 4-*O*-benzenesulfonyl-(6*S*)-[6-$^{2}H_1$]-2,3,6-tri-*O*-benzyl-1-thio-β-D-glucopyranoside (**6*S*-D-26**)

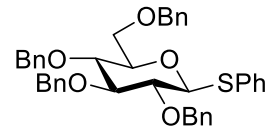


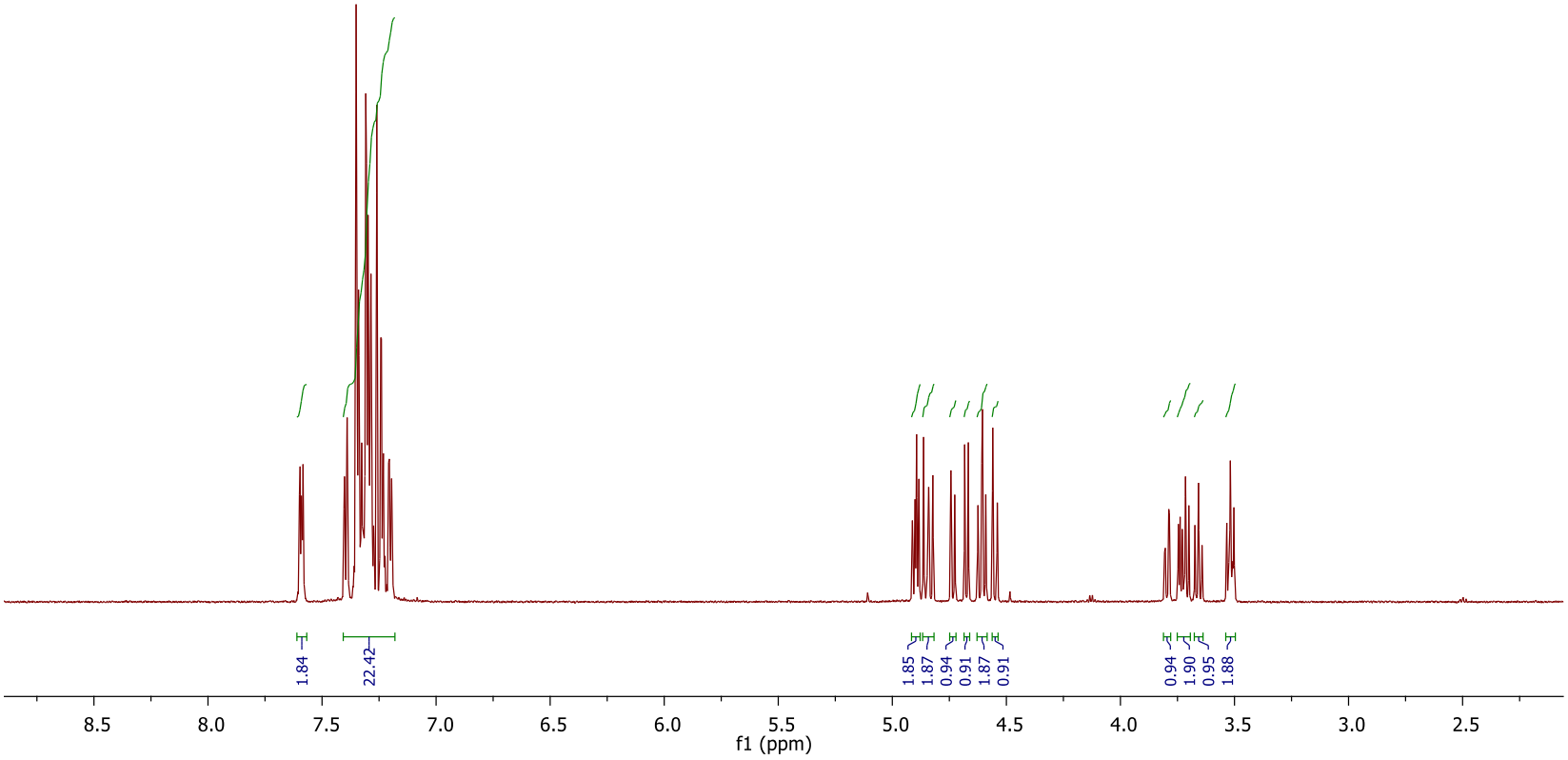
^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl 4-*O*-benzenesulfonyl-(6*S*)-[6-$^{2}H_1$]-2,3,6-tri-*O*-benzyl-1-thio-β-D-glucopyranoside (**6*S*-D-26**)



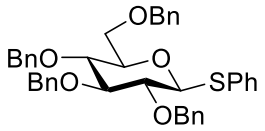


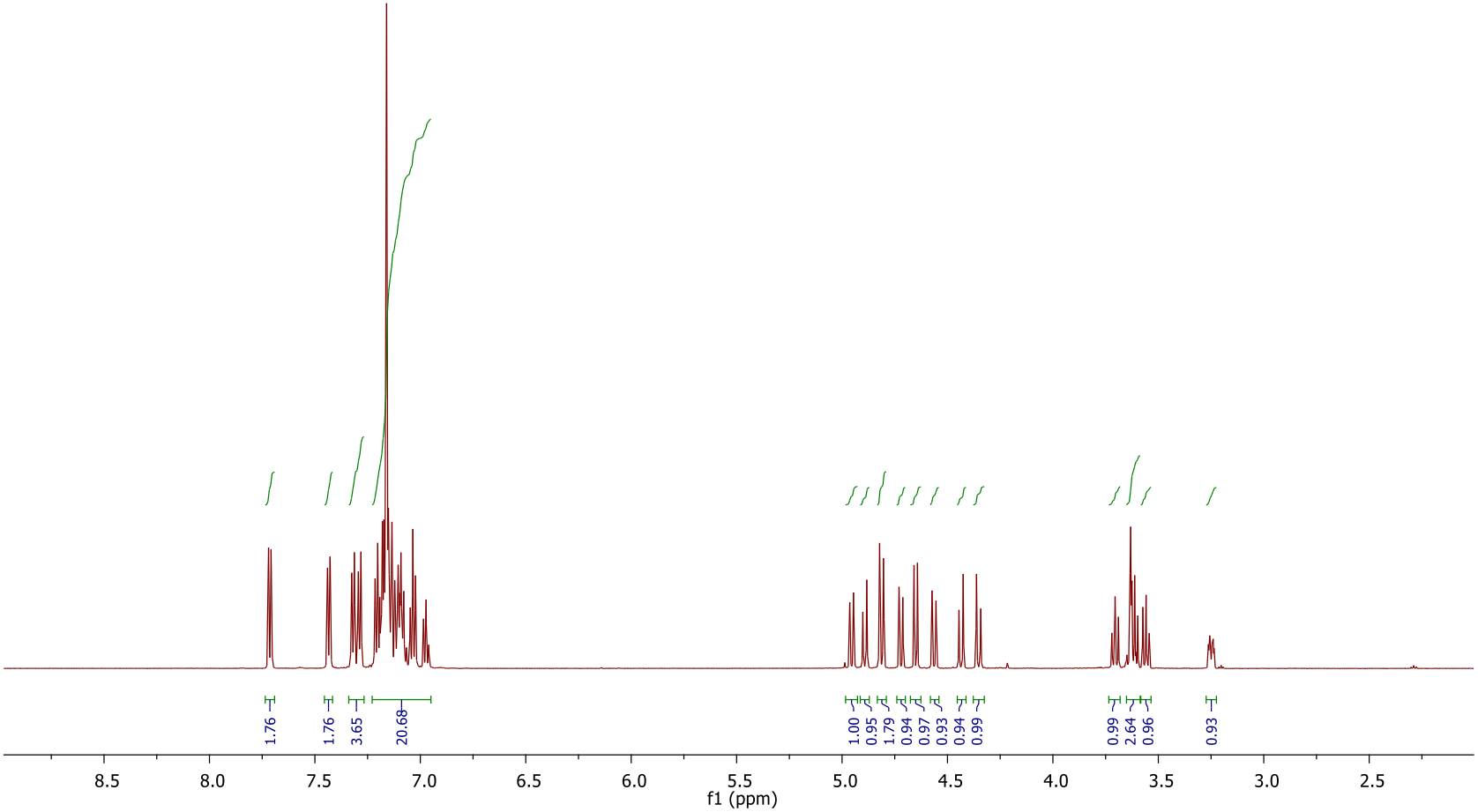
^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Phenyl 2,3,4,6-tetra-*O*-benzyl-1-thio-β-D-glucopyranoside **(27)**



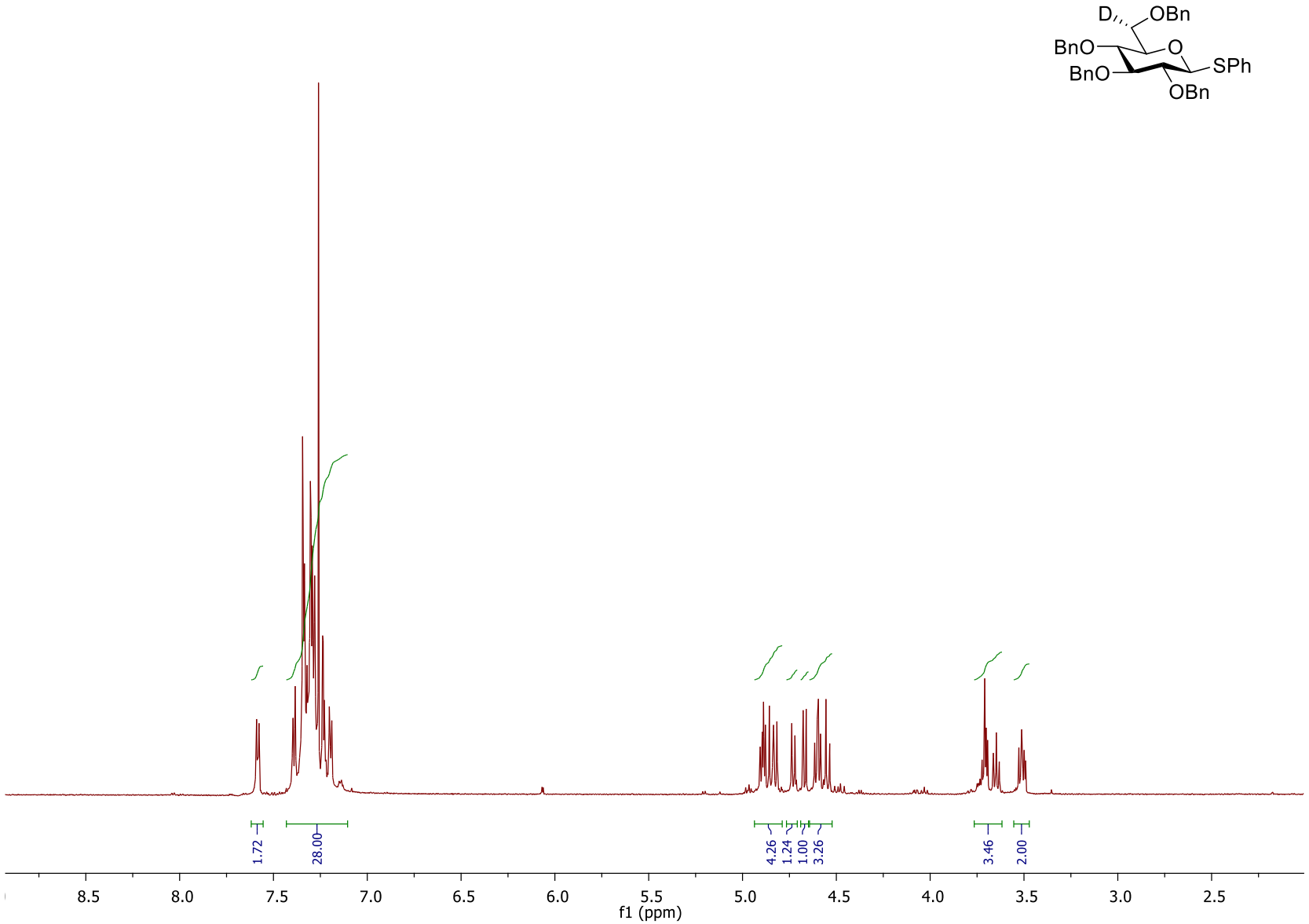


^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl 2,3,4,6-tetra-*O*-benzyl-1-thio-β-D-glucopyranoside **(27)**

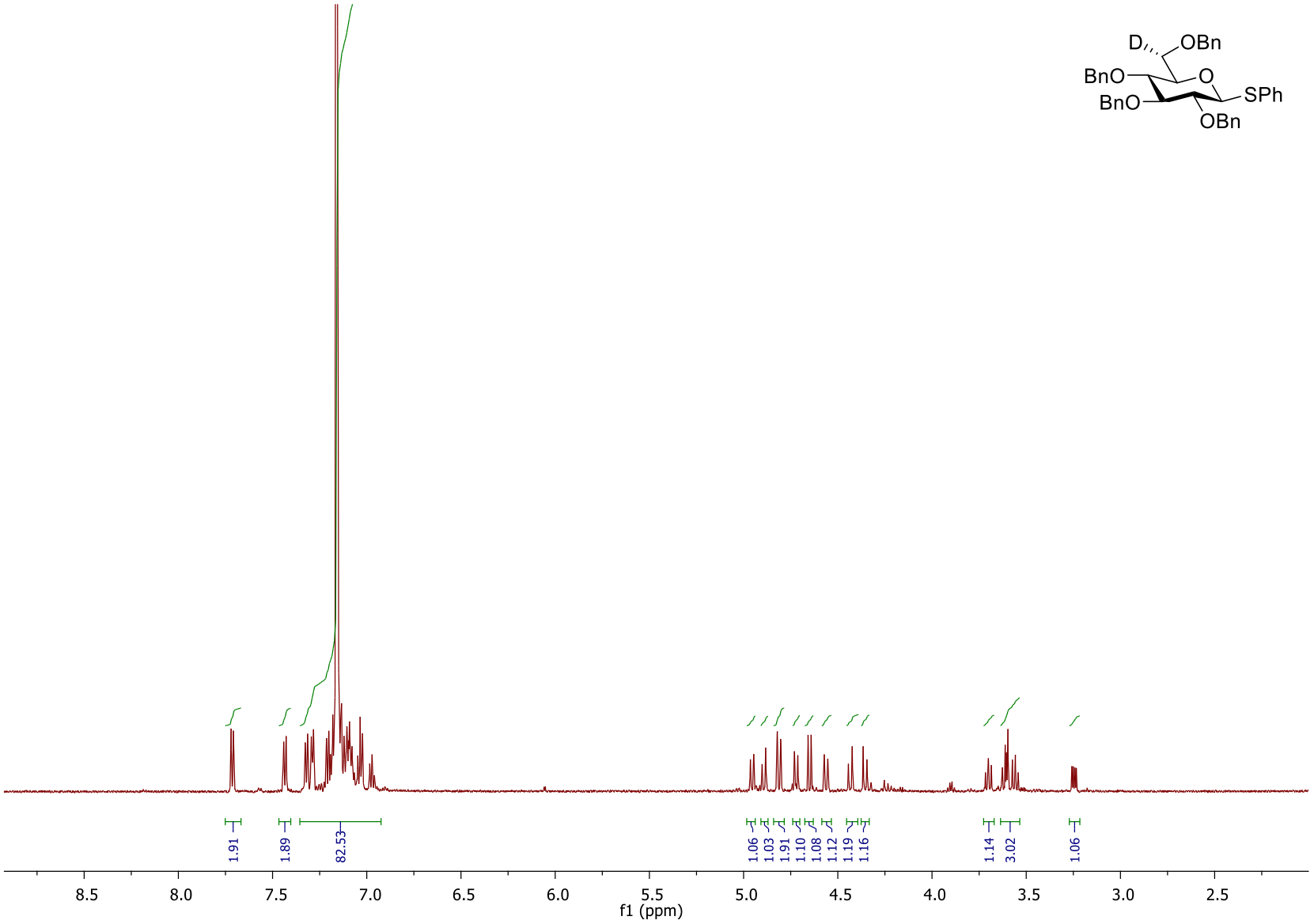




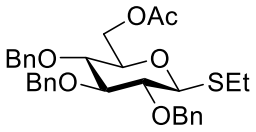
^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Phenyl (6*S*)-[6-$^{2}H_1$]-2,3,4,6-tetra-*O*-benzyl-1-thio-β-D-glucopyranoside (**6*S*-D-27**)

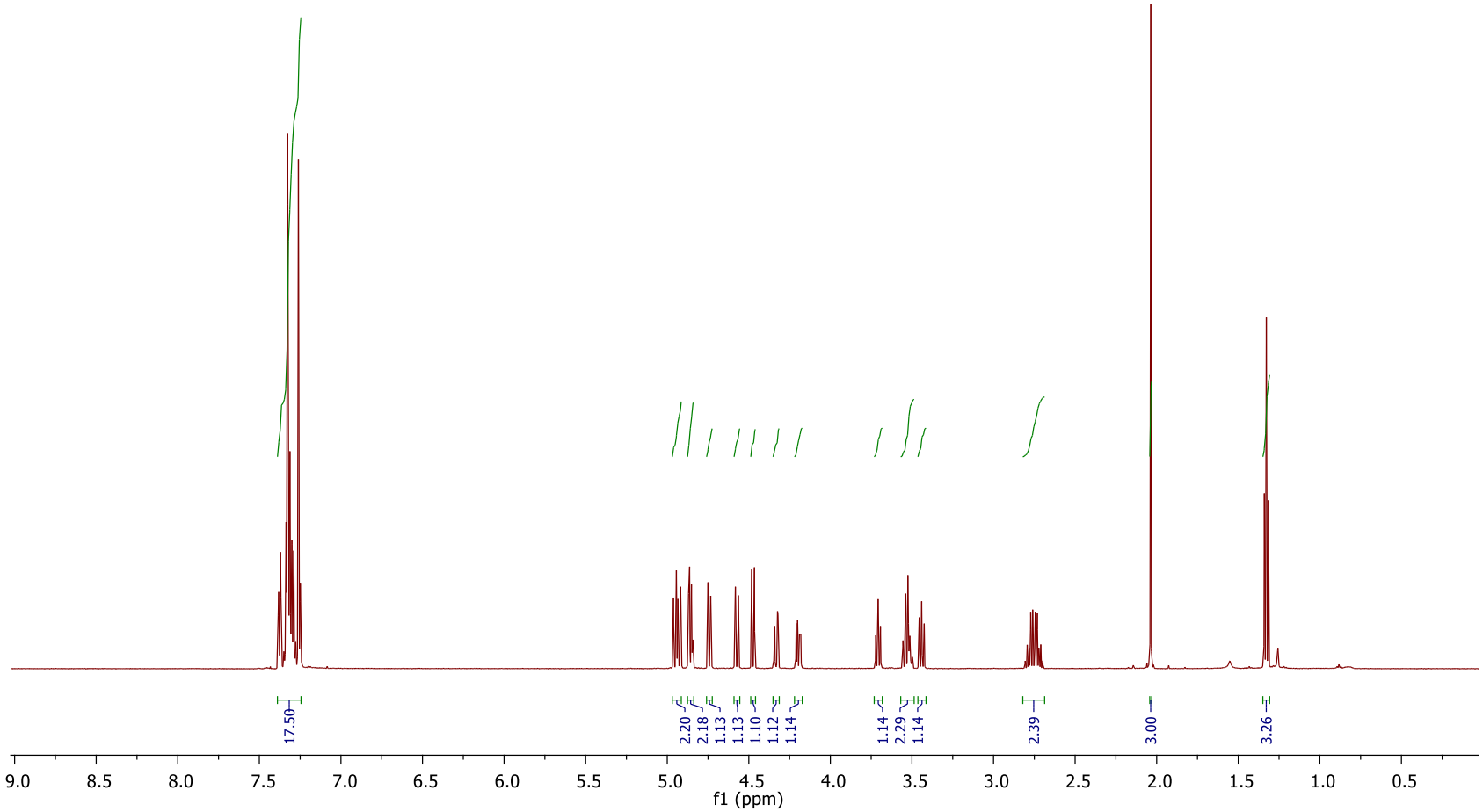


^{1}H NMR (600 MHz, C_6D_6) Spectrum of Phenyl (6*S*)-[6-$^{2}H_1$]-2,3,4,6-tetra-*O*-benzyl-1-thio-β-D-glucopyranoside (**6*S*-D-27**)

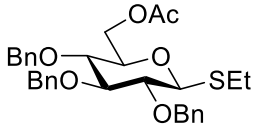


^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Ethyl 6-*O*-acetyl-2,3,4-tri-*O*-benzyl-1-thio-β-D-glucopyranoside **(28)**

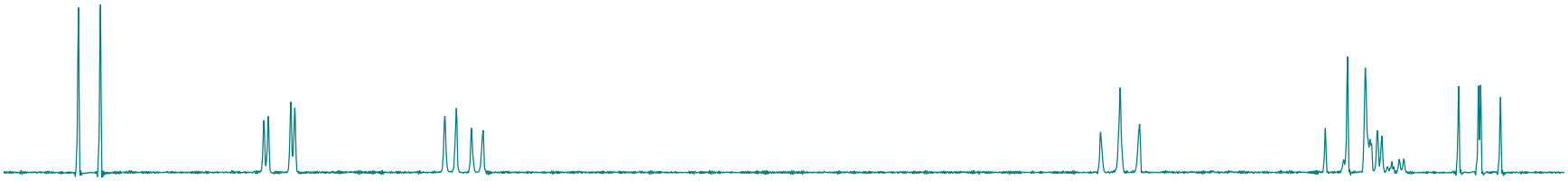




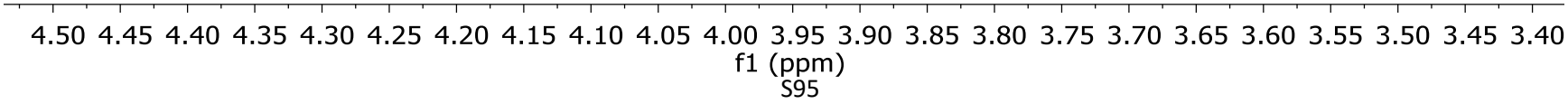
Simulated ^{1}H NMR and ^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Ethyl 6-*O*-acetyl-2,3,4-tri-*O*-benzyl-1-thio-β-D-glucopyranoside **(28)**



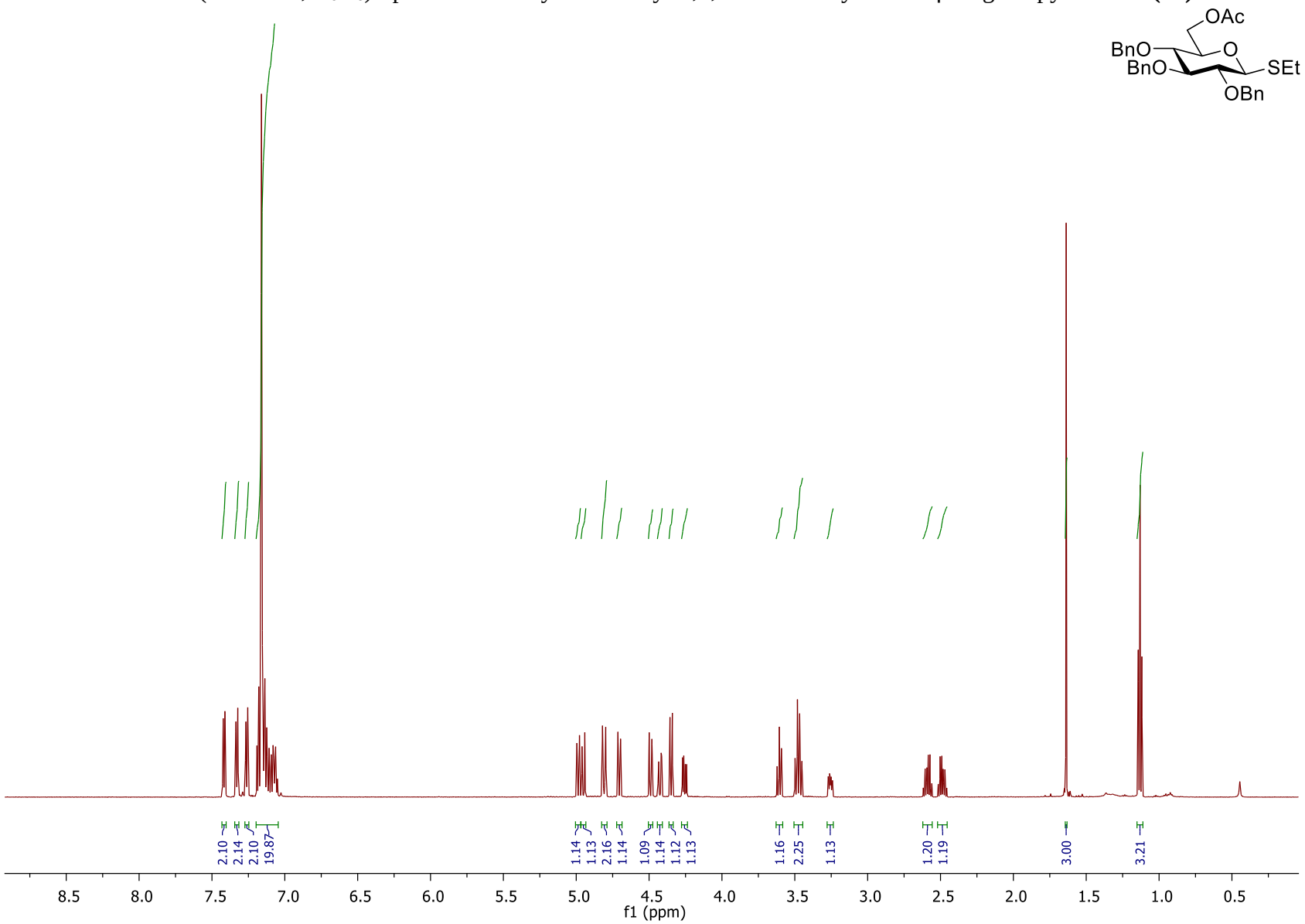
Experimental ^{1}H NMR (600 MHz, $CDCl_3$)



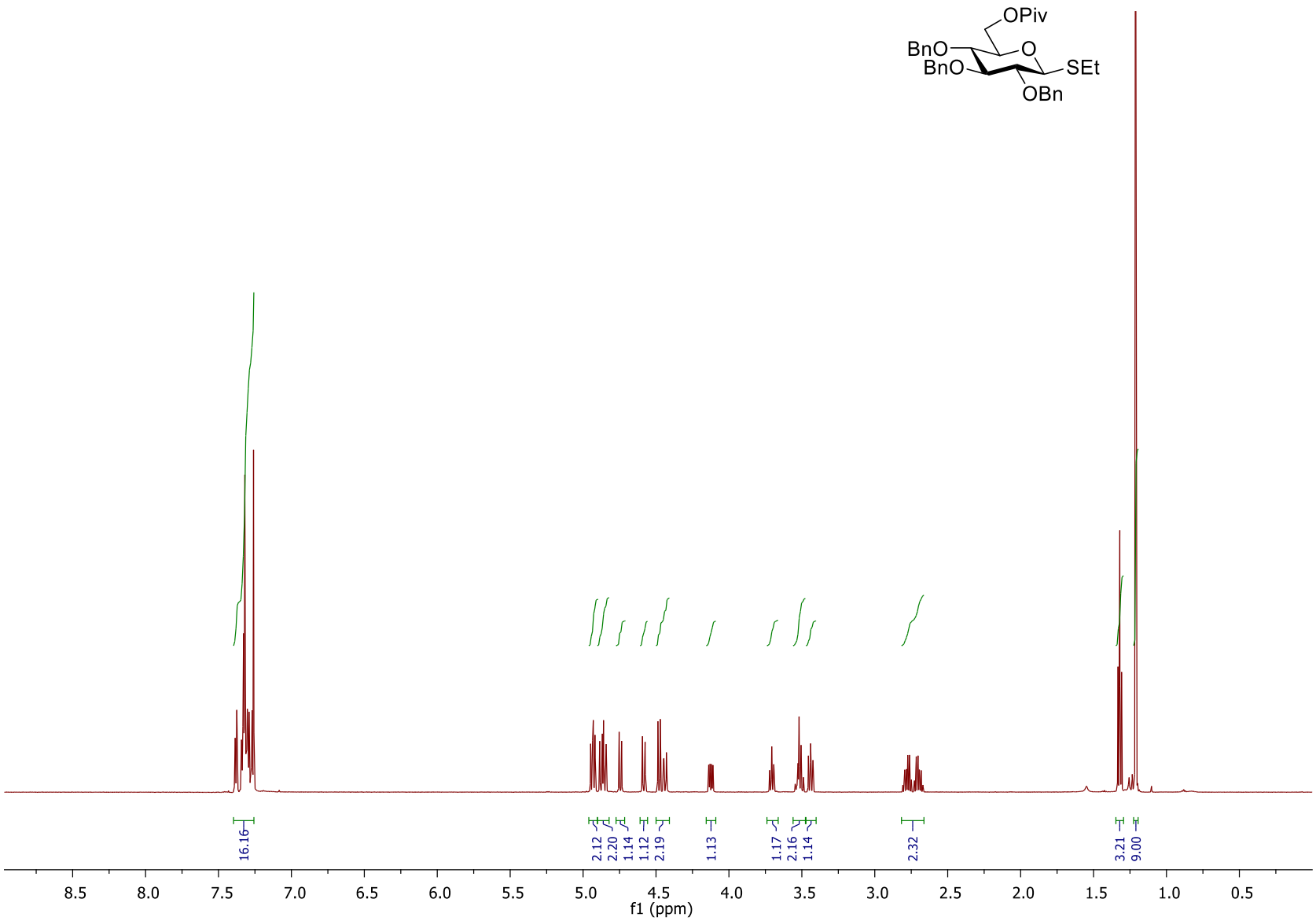
Simulated ^{1}H NMR



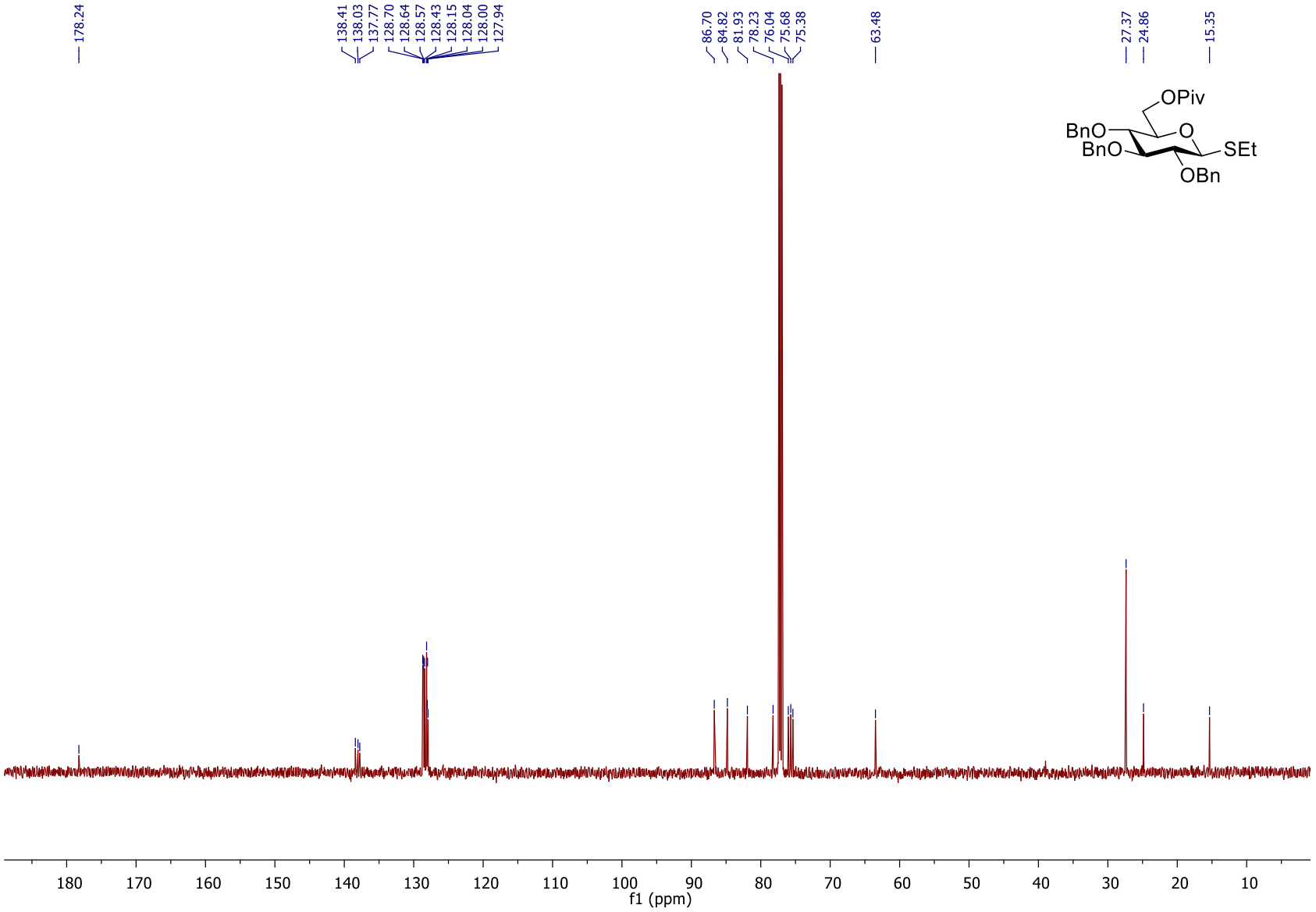
^{1}H NMR (600 MHz, C_6D_6) Spectrum of Ethyl 6-*O*-acetyl-2,3,4-tri-*O*-benzyl-1-thio-β-D-glucopyranoside **(28)**



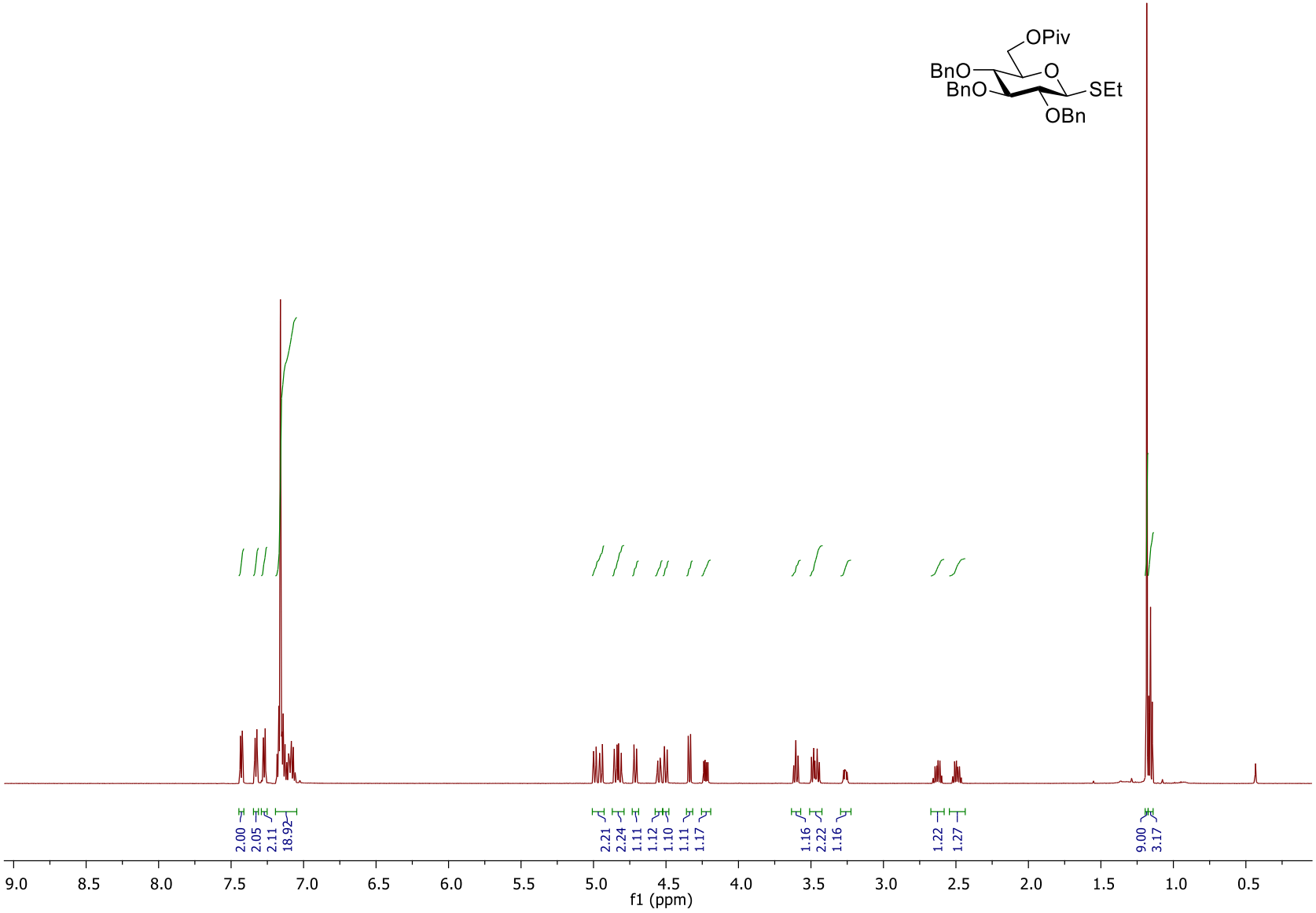
^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Ethyl 2,3,4-tri-*O*-benzyl-6-*O*-pivolyl-1-thio-β-D-glucopyranoside **(29)**



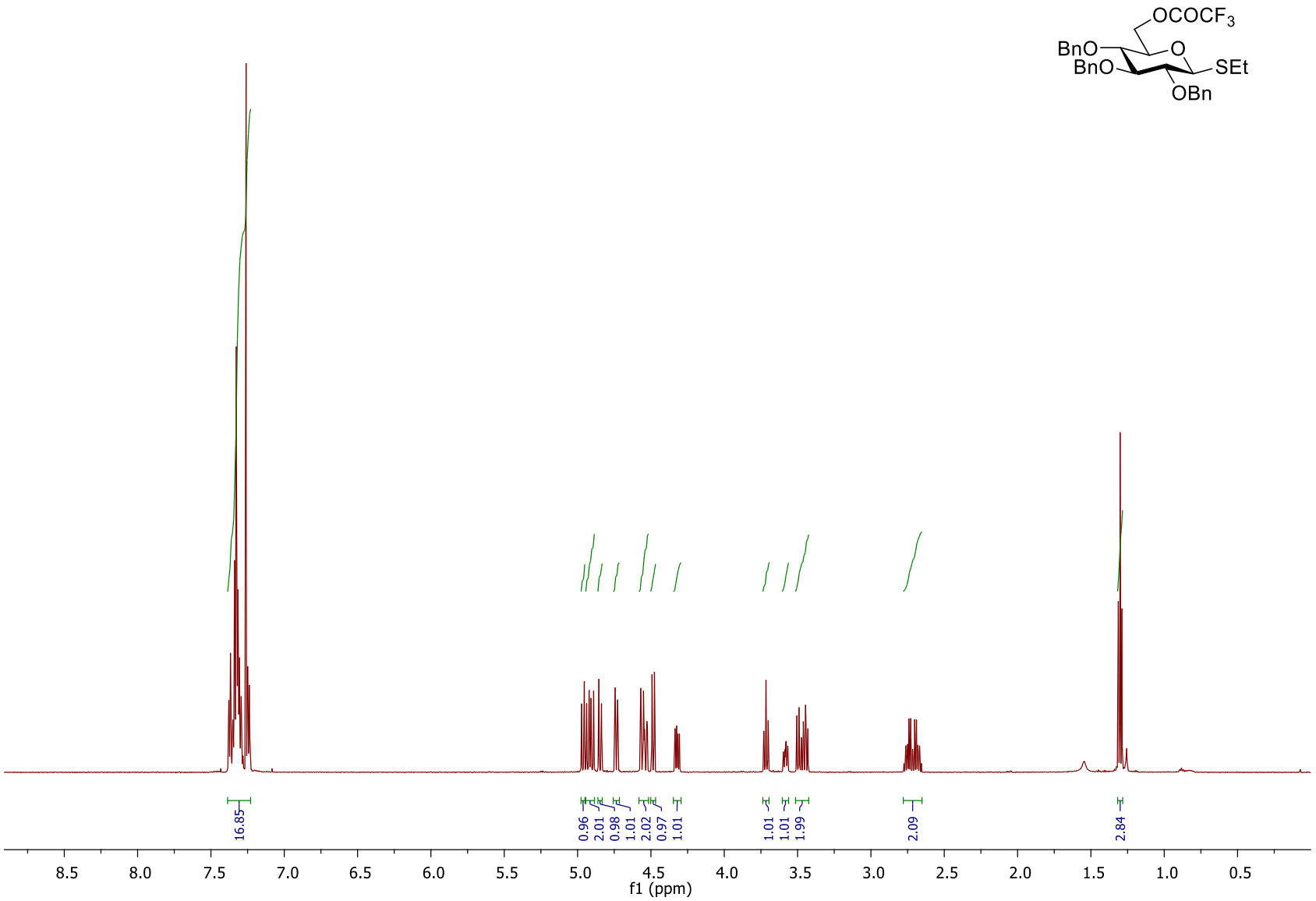
^{13}C NMR (150 MHz, $CDCl_3$) Spectrum of Ethyl 2,3,4-tri-*O*-benzyl-6-*O*-pivolyl-1-thio-β-D-glucopyranoside **(29)**



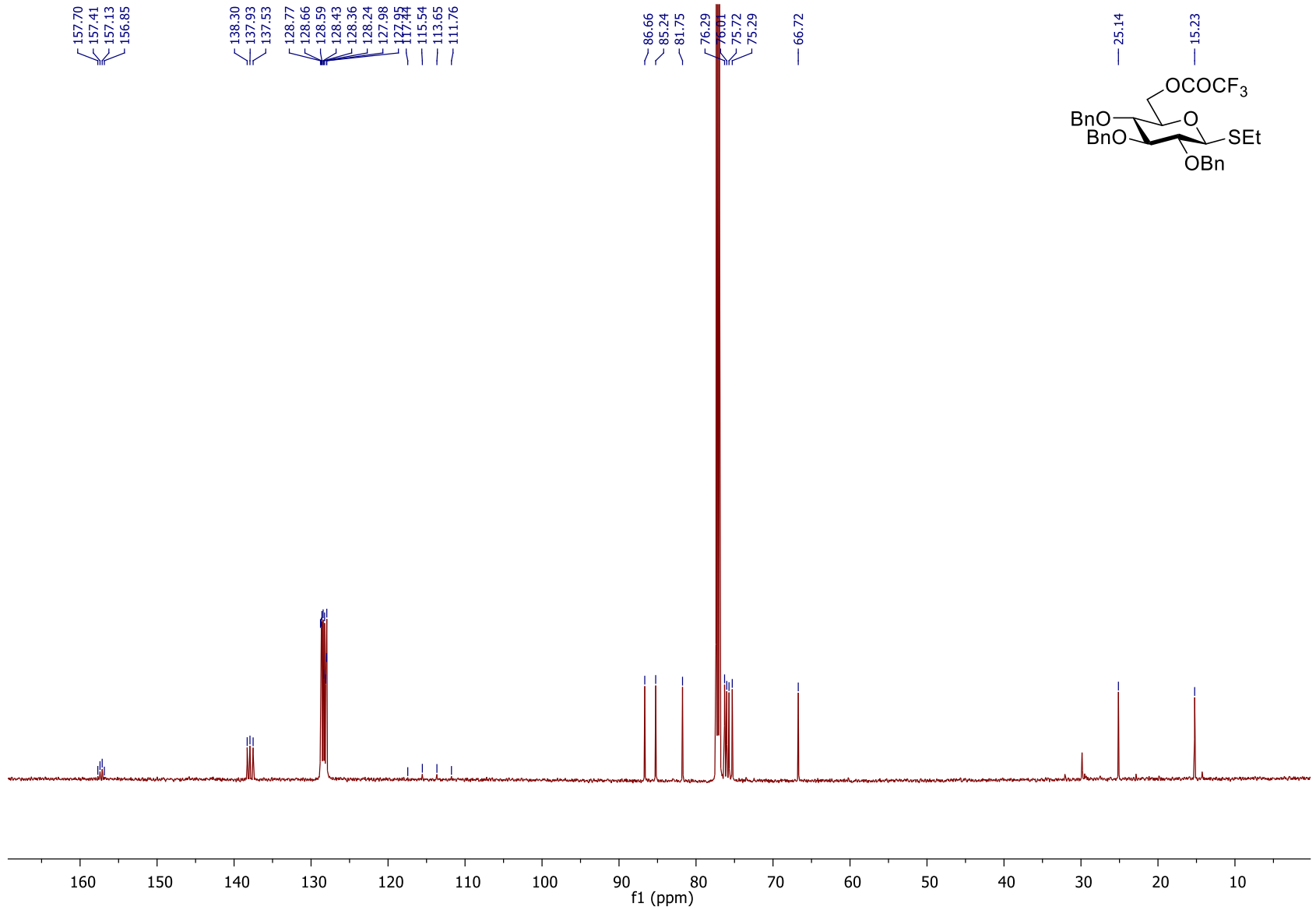
^{1}H NMR (600 MHz, C_6D_6) Spectrum of Ethyl 2,3,4-tri-*O*-benzyl-6-*O*-pivolyl-1-thio-β-D-glucopyranoside **(29)**



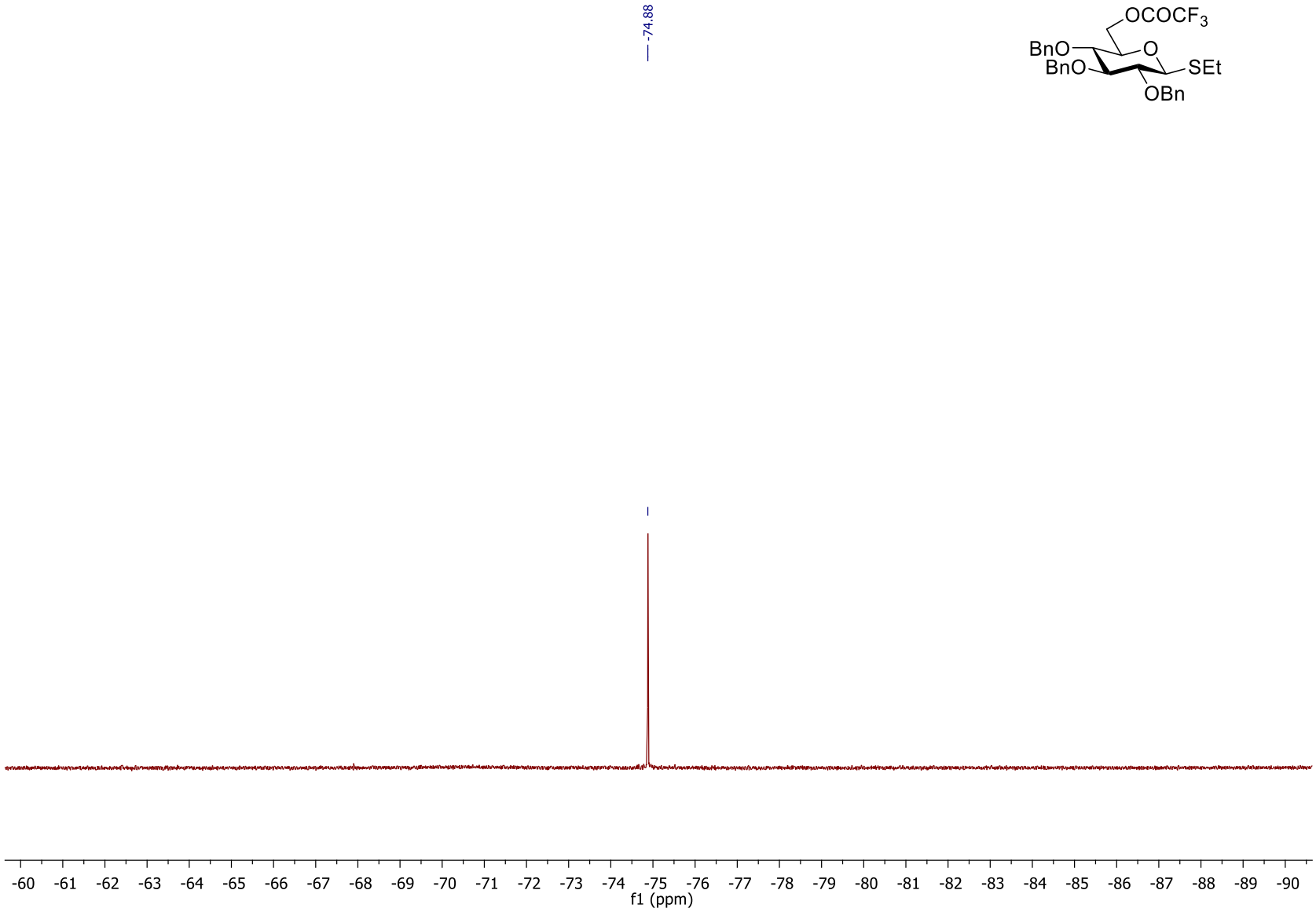
^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Ethyl 2,3,4-tri-*O*-benzyl-6-*O*-trifluoroacetyl-1-thio-β-D-glucopyranoside **(30)**



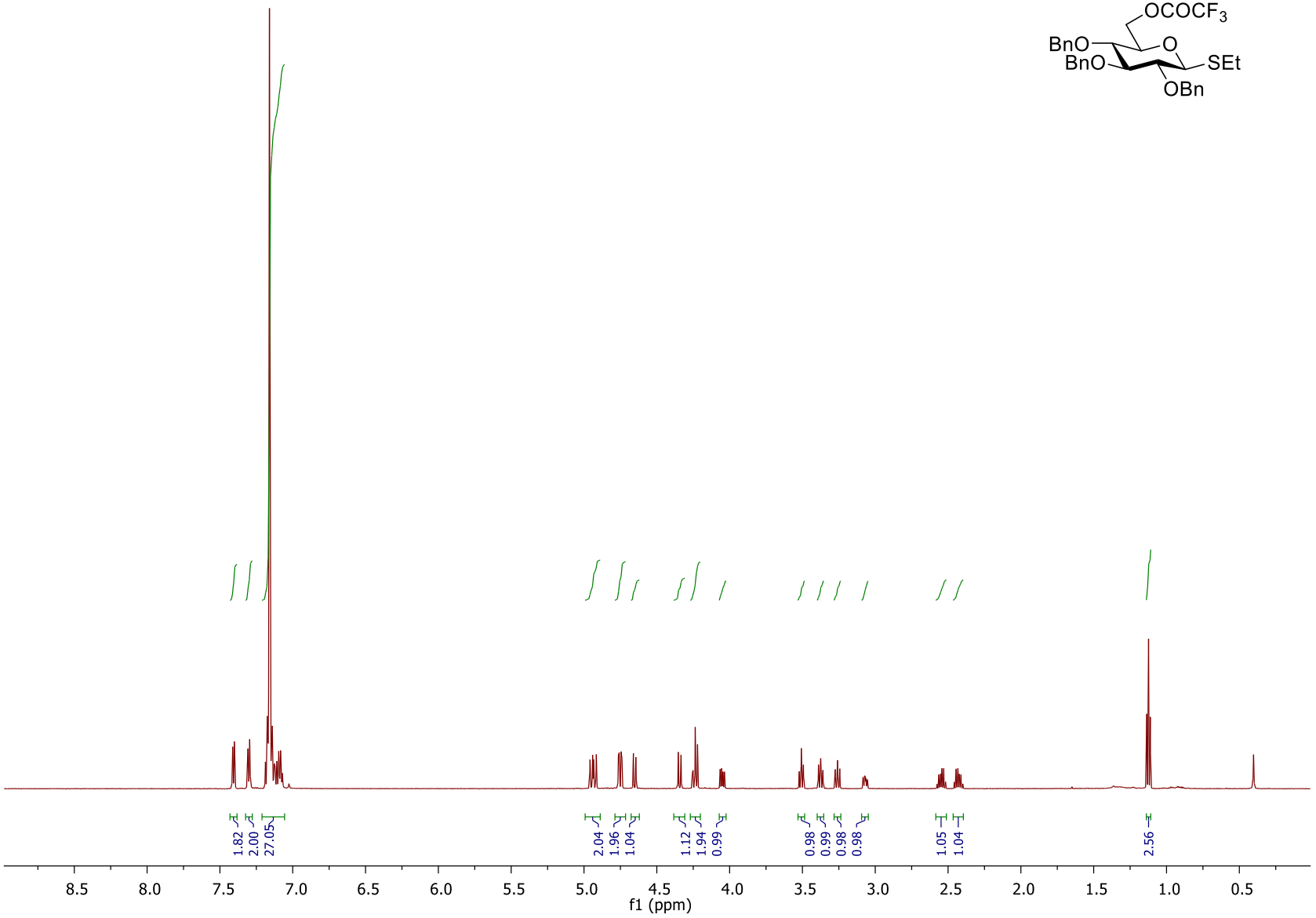
^{13}C NMR (150 MHz, $CDCl_3$) Spectrum of Ethyl 2,3,4-tri-*O*-benzyl-6-*O*-trifluoroacetyl-1-thio-β-D-glucopyranoside **(30)**



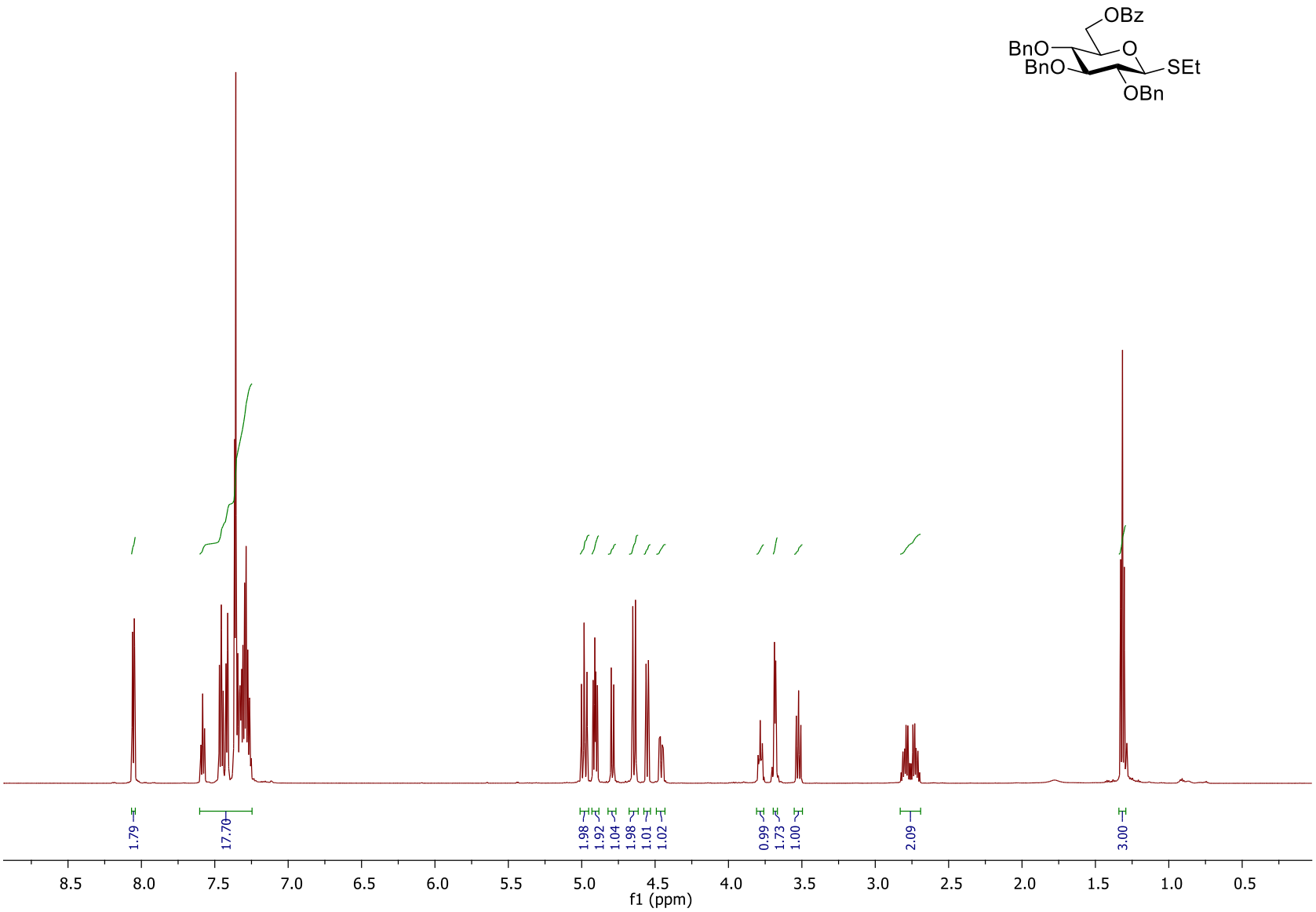
^{19}F NMR (376 MHz, $CDCl_3$) Spectrum of Ethyl 2,3,4-tri-*O*-benzyl-6-*O*-trifluoroacetyl-1-thio-β-D-glucopyranoside **(30)**



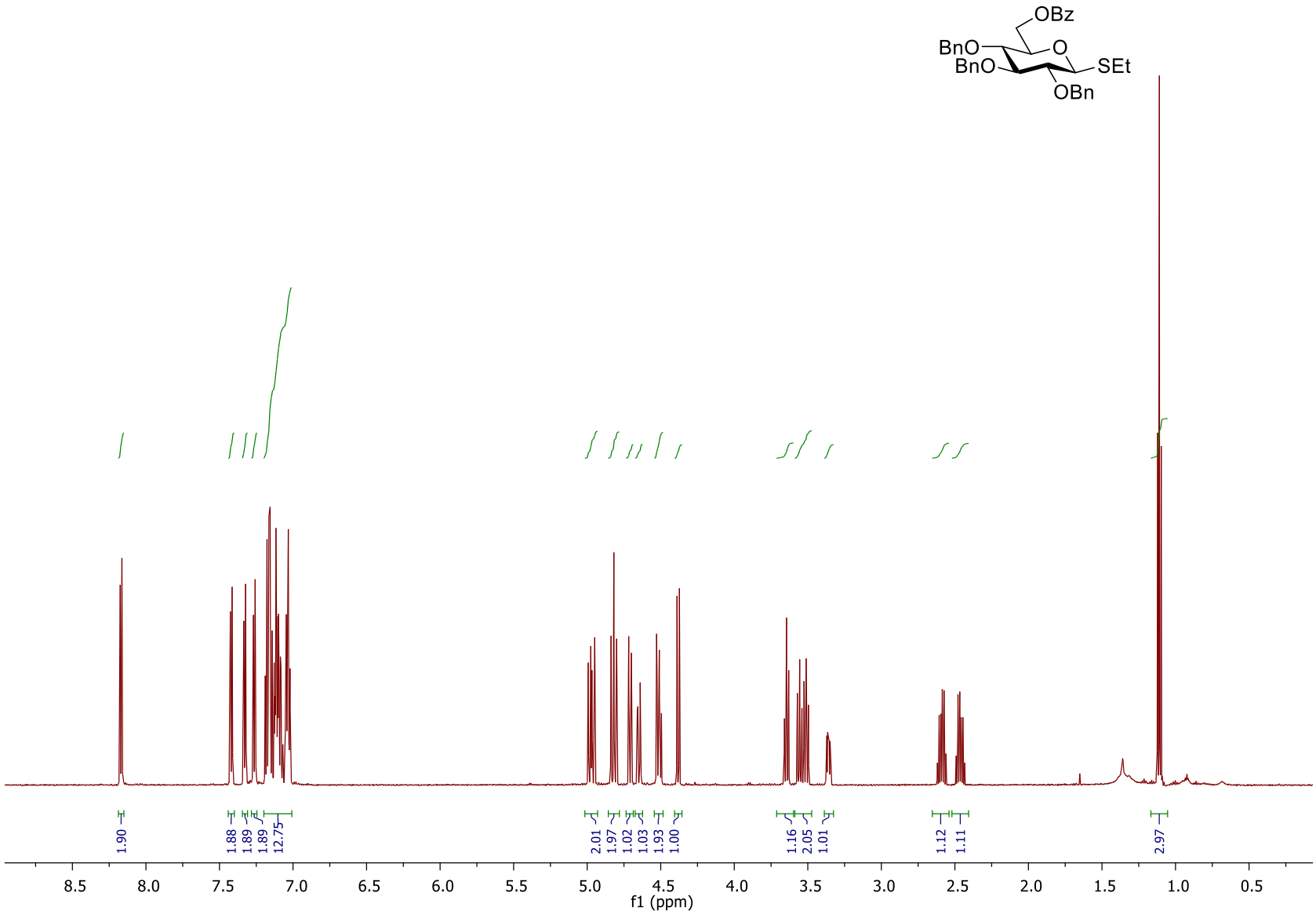
^{1}H NMR (600 MHz, C_6D_6) Spectrum of Ethyl 2,3,4-tri-*O*-benzyl-6-*O*-trifluoroacetyl-1-thio-β-D-glucopyranoside **(30)**



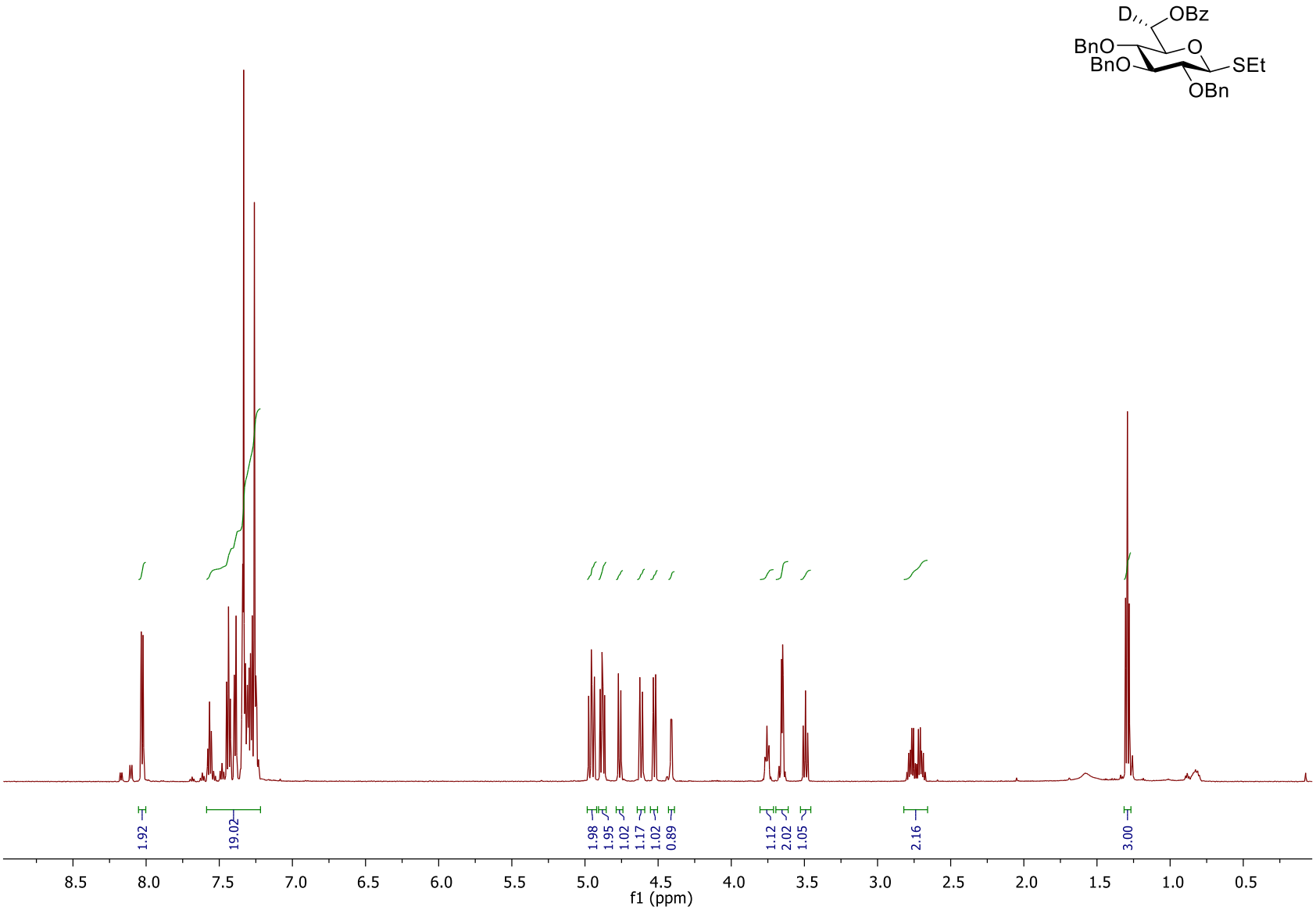
^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Ethyl 6-*O*-benzoyl-2,3,4-tri-*O*-benzyl-1-thio-β-D-glucopyranoside **(31)**



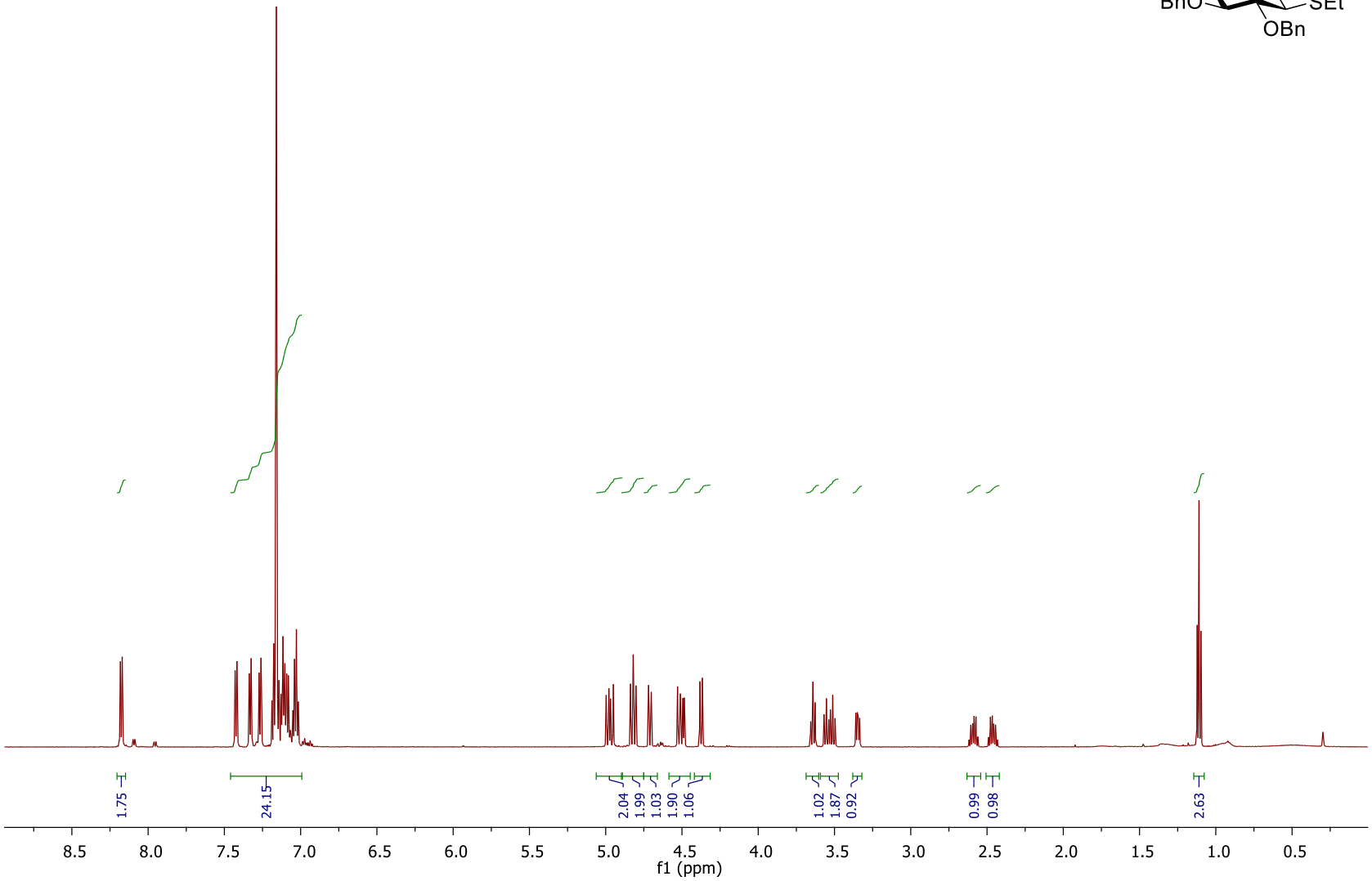
^{1}H NMR (600 MHz, C_6D_6) Spectrum of Ethyl 6-*O*-benzoyl-2,3,4-tri-*O*-benzyl-1-thio-β-D-glucopyranoside **(31)**



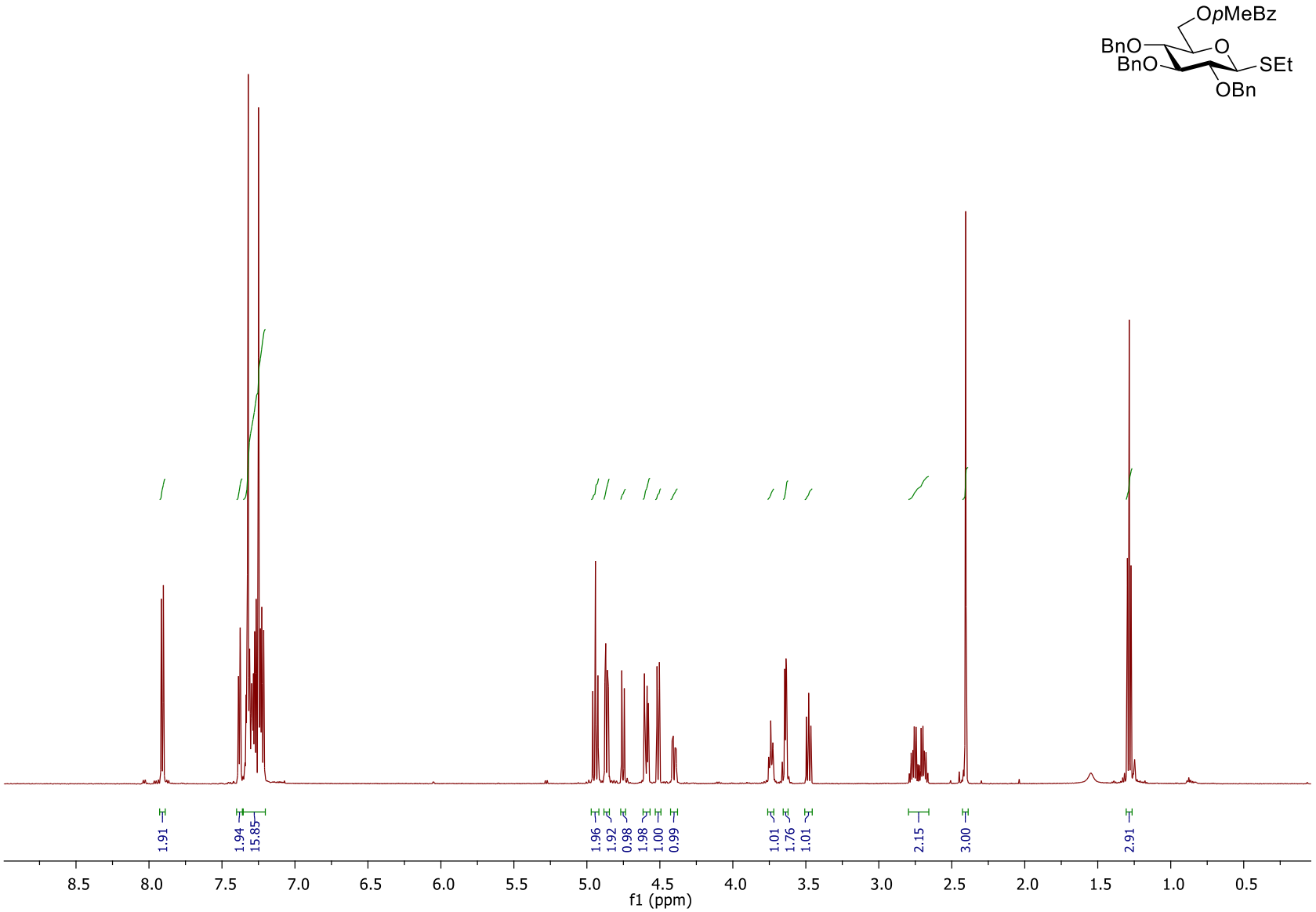
^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Ethyl (6*S*)-[6-$^{2}H_1$]-6-*O*-benzoyl-2,3,4-tri-*O*-benzyl-1-thio-β-D-glucopyranoside (**6*S*-D-31**)



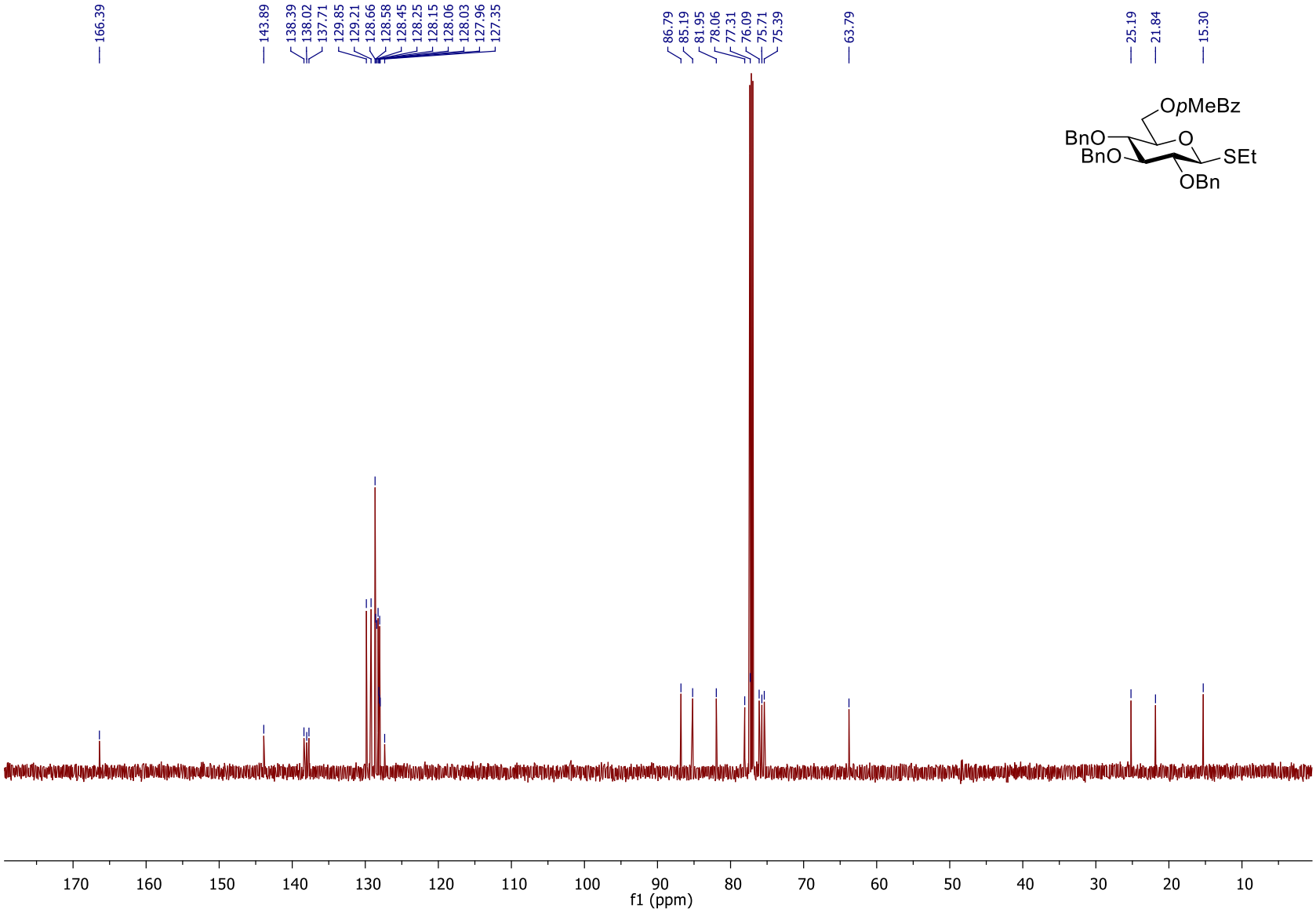
^{1}H NMR (600 MHz, C_6D_6) Spectrum of Ethyl (6*S*)-[6-$^{2}H_1$]-6-*O*-benzoyl-2,3,4-tri-*O*-benzyl-1-thio-β-D-glucopyranoside **(6*S*-D-31)**



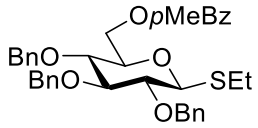
^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Ethyl 6-*O*-*p*-methylbenzoyl-2,3,4-tri-*O*-benzyl-1-thio-β-D-glucopyranoside **(32)**



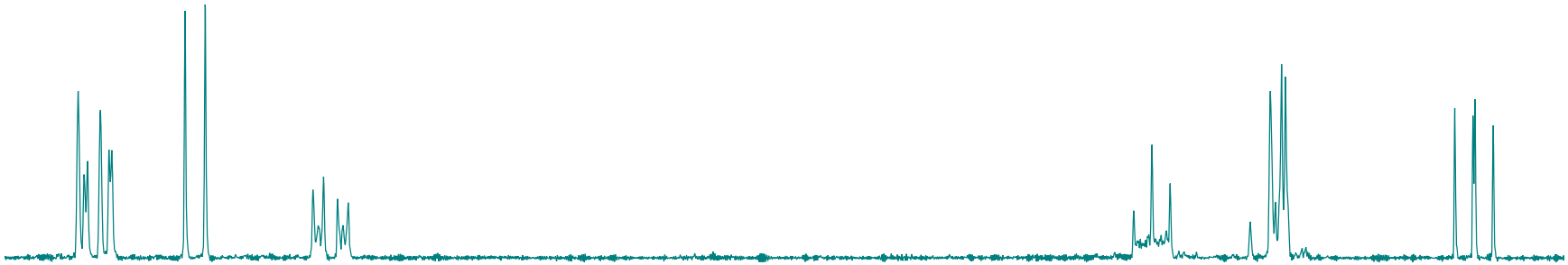
^{13}C NMR (150 MHz, $CDCl_3$) Spectrum of Ethyl 6-*O*-*p*-methylbenzoyl-2,3,4-tri-*O*-benzyl-1-thio-β-D-glucopyranoside **(32)**



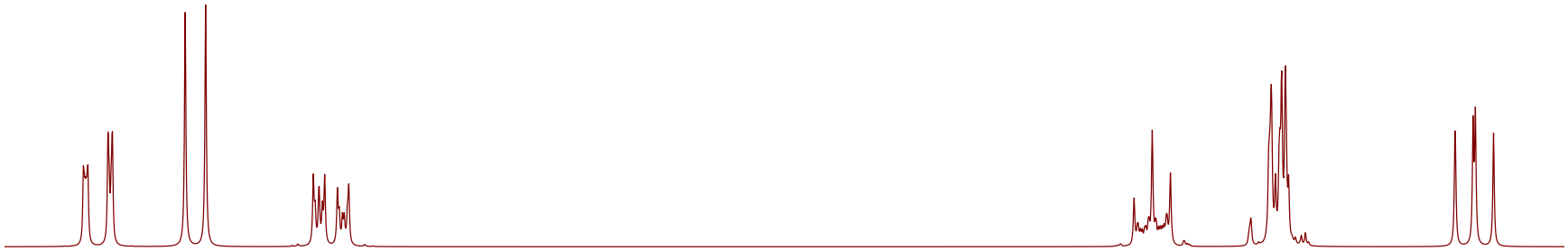
Simulated ^{1}H NMR and ^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Ethyl 6-*O*-*p*-methylbenzoyl-2,3,4-tri-*O*-benzyl-1-thio-β-D-glucopyranoside **(32)**

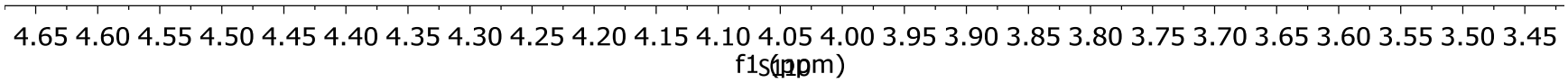


Experimental ^{1}H-NMR (600 MHz, $CDCl_3$)

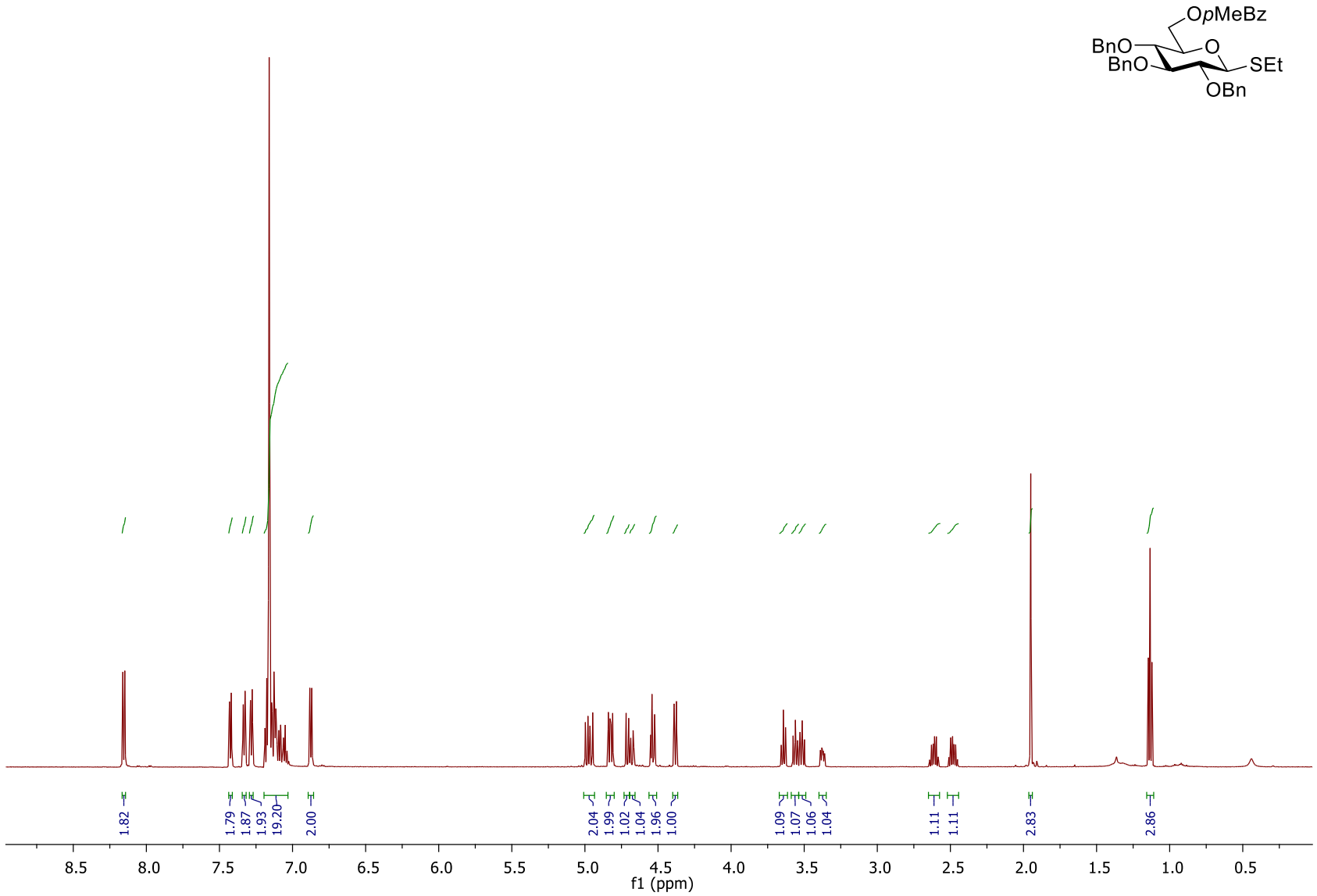


Simulated ^{1}H-NMR

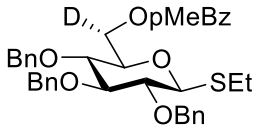




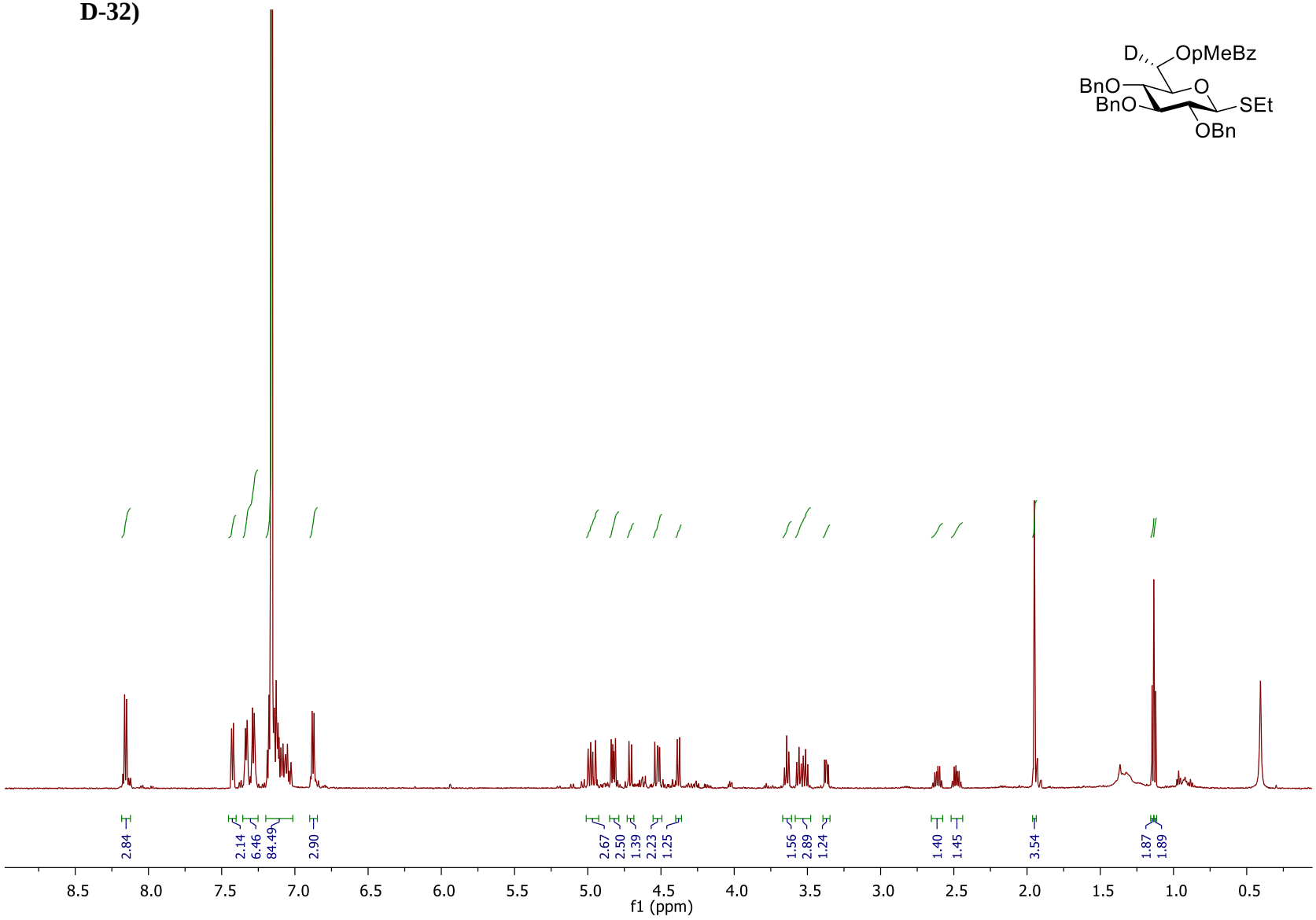
^{1}H NMR (600 MHz, C_6D_6) Spectrum of Ethyl 6-*O*-*p*-methylbenzoyl-2,3,4-tri-*O*-benzyl-1-thio-β-D-glucopyranoside **(32)**



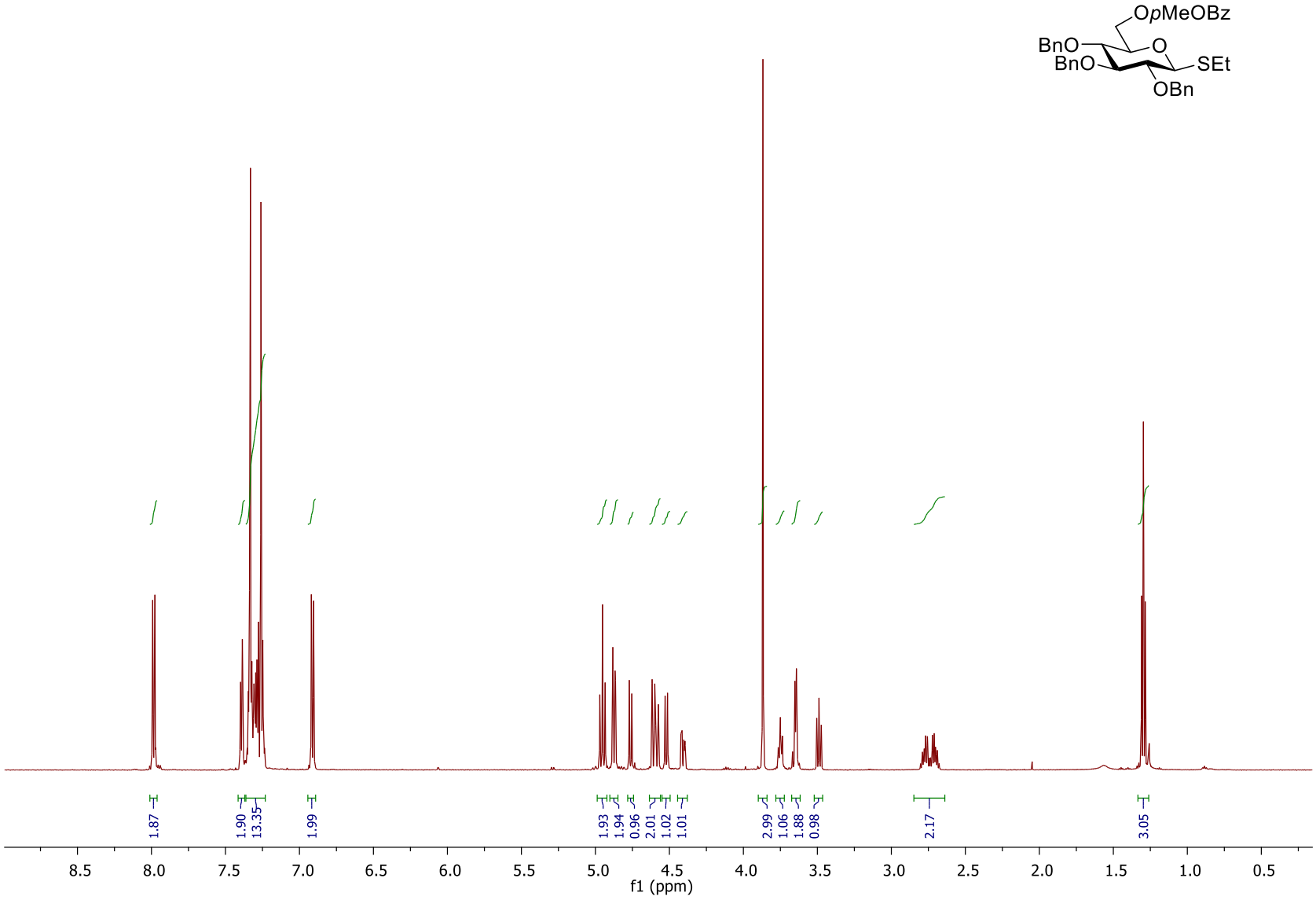
^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Ethyl (6*S*)-[6-$^{2}H_1$]-6-*O*-*p*-methylbenzoyl-2,3,4-tri-*O*-benzyl-1-thio-β-D-glucopyranoside **(6*S*-D-32)**



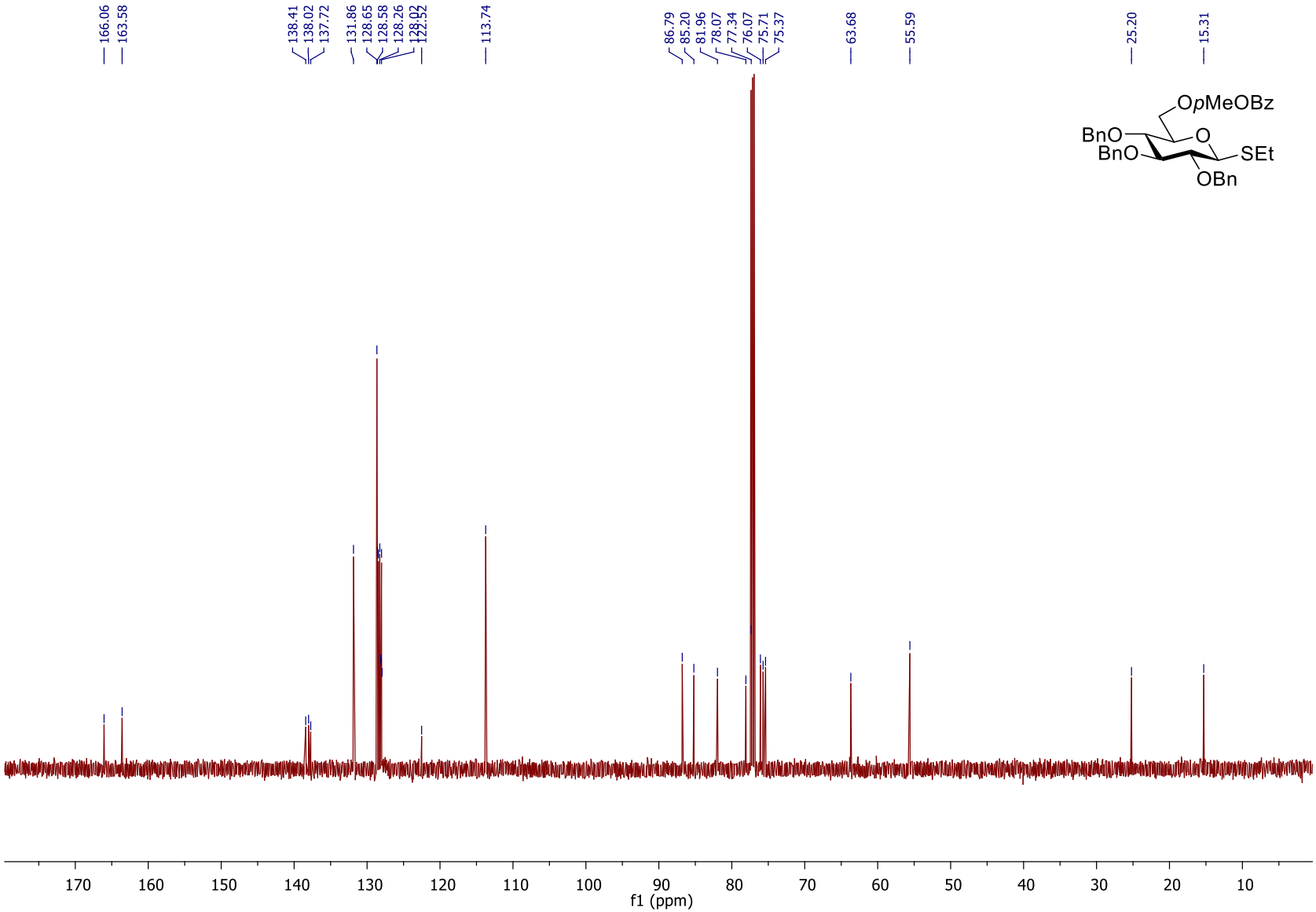
^{1}H NMR (600 MHz, C_6D_6) Spectrum of Ethyl (6*S*)-[6-$^{2}H_1$]-6-*O*-*p*-methylbenzoyl-2,3,4-tri-*O*-benzyl-1-thio-β-D-glucopyranoside **(6*S*-D-32)**



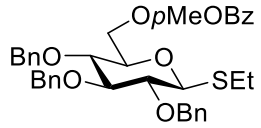
^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Ethyl 6-*O*-*p*-methoxybenzoyl-2,3,4-tri-*O*-benzyl-1-thio-β-D-glucopyranoside **(33)**



^{13}C NMR (150 MHz, $CDCl_3$) Spectrum of Ethyl 6-*O*-*p*-methoxybenzoyl-2,3,4-tri-*O*-benzyl-1-thio-β-D-glucopyranoside **(33)**

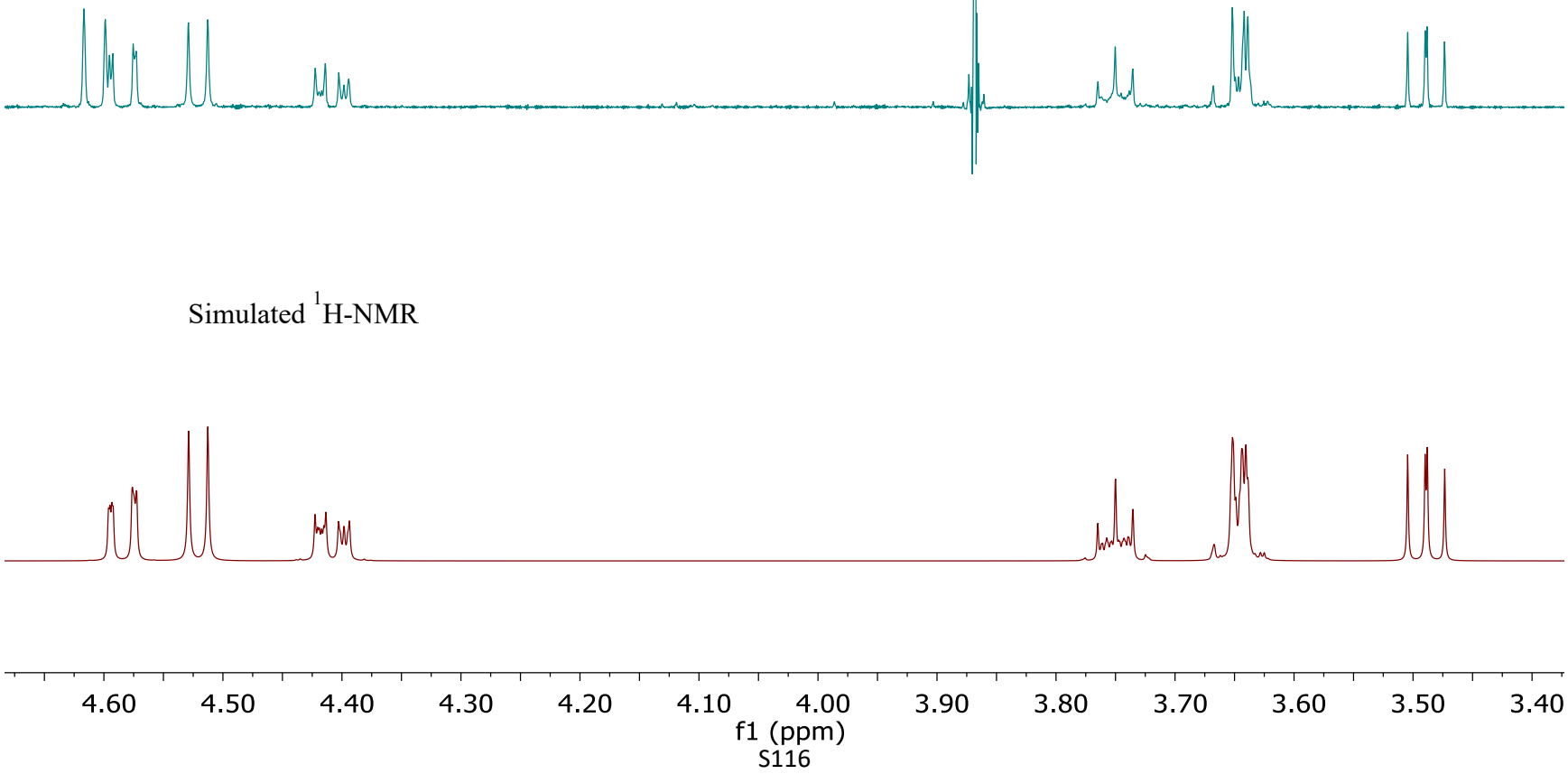


Simulated ^{1}H NMR and ^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Ethyl 6-*O*-*p*-methoxybenzoyl-2,3,4-tri-*O*-benzyl-1-thio-β-D-glucopyranoside **(33)**

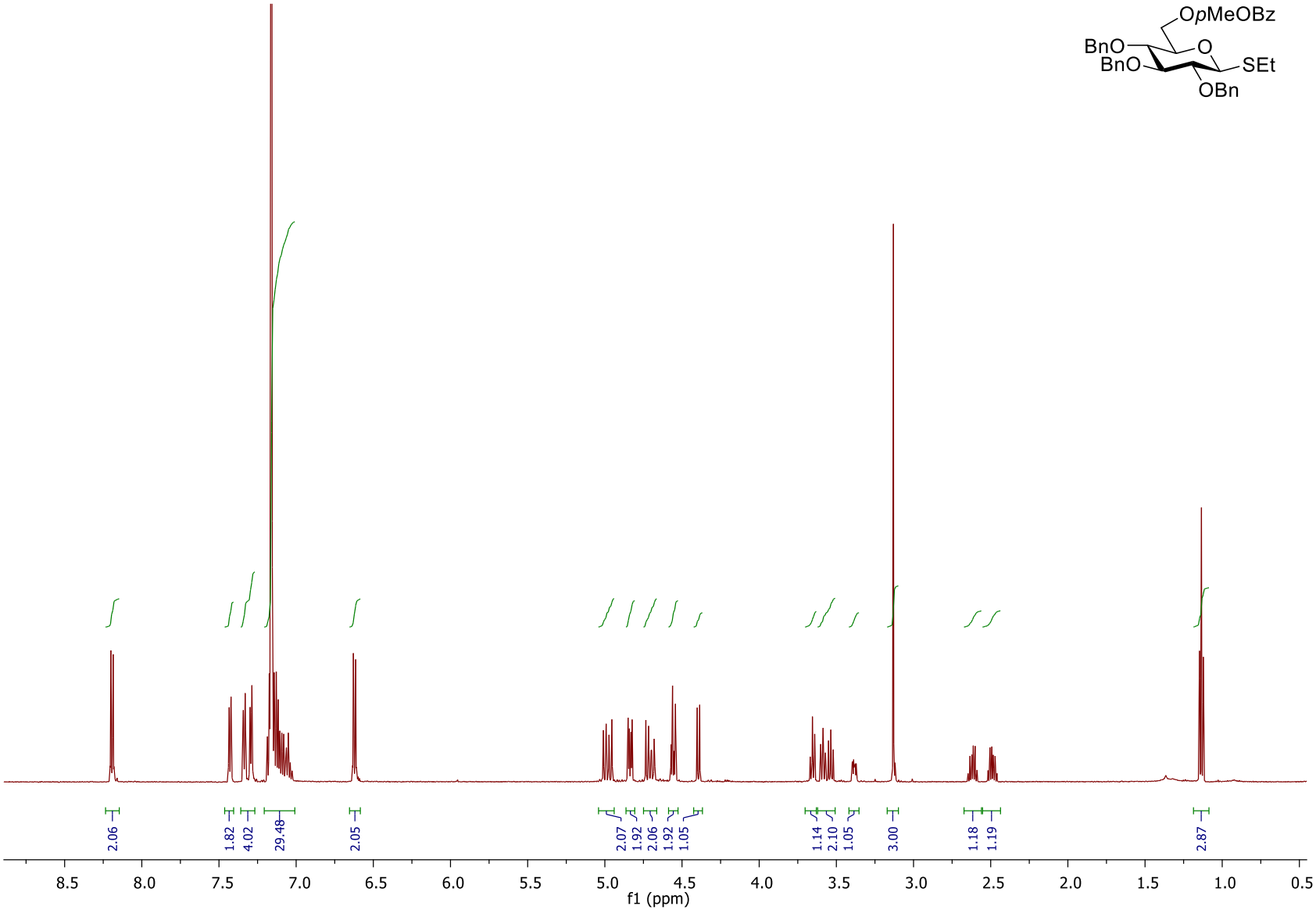


Experimental ^{1}H-NMR (600 MHz, $CDCl_3$)

Simulated ^{1}H-NMR

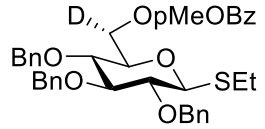


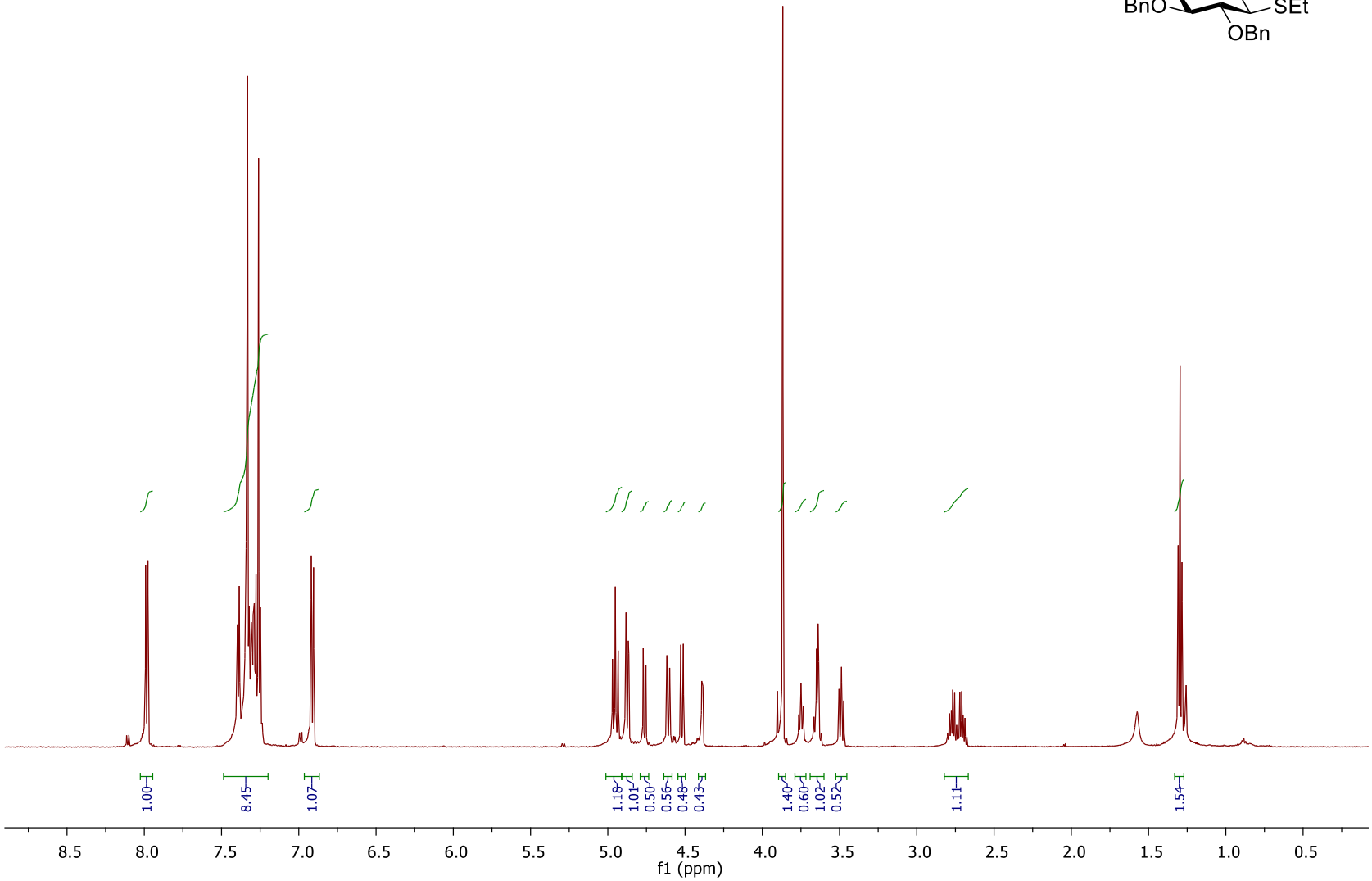
^{1}H NMR (600 MHz, C_6D_6) Spectrum of Ethyl 6-*O*-*p*-methoxybenzoyl-2,3,4-tri-*O*-benzyl-1-thio-β-D-glucopyranoside **(33)**



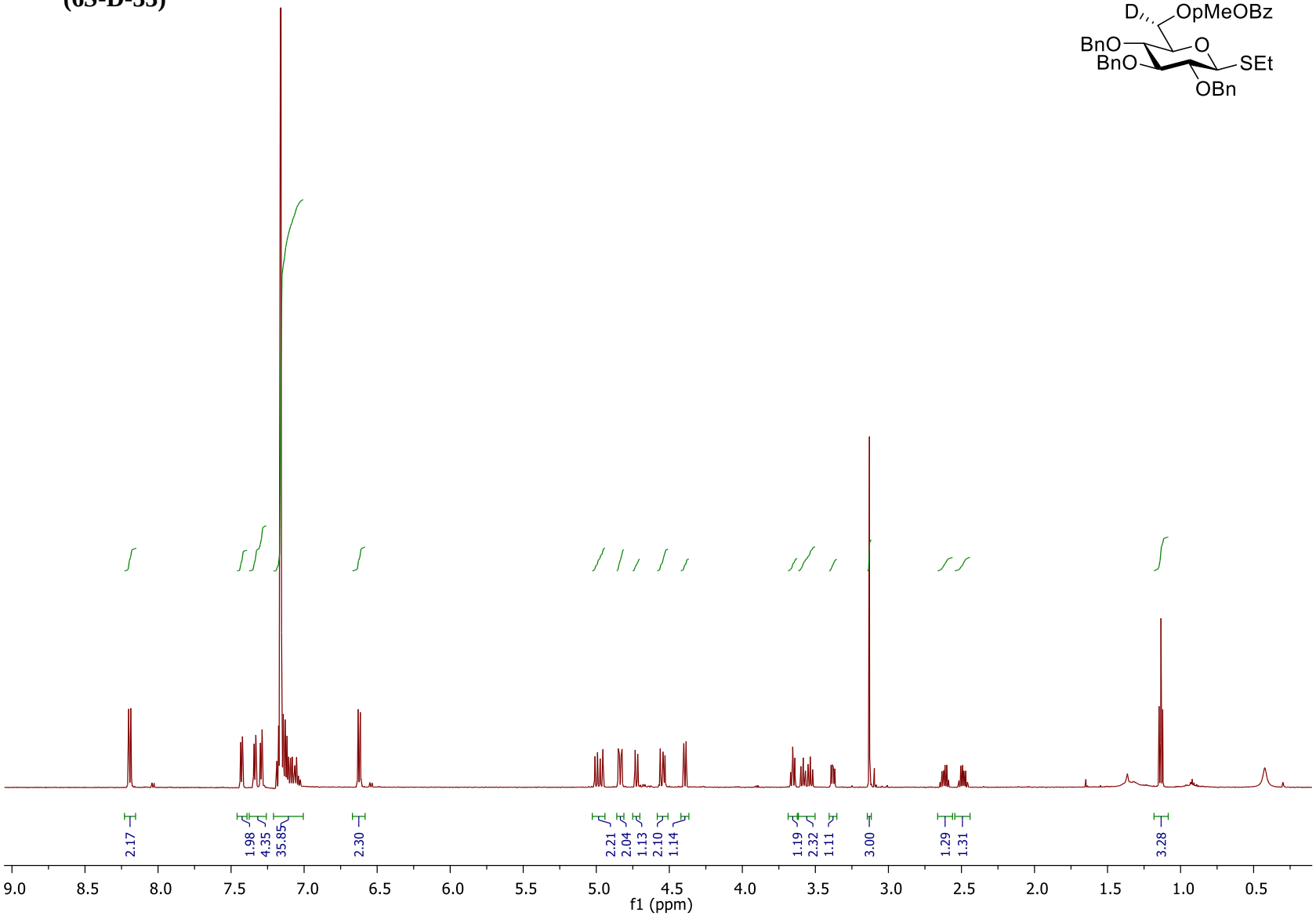
^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Ethyl (6*S*)-[6-$^{2}H_1$]-6-*O*-*p*-methoxybenzoyl-2,3,4-tri-*O*-benzyl-1-thio-β-D-glucopyranoside

(6*S*-D-33)

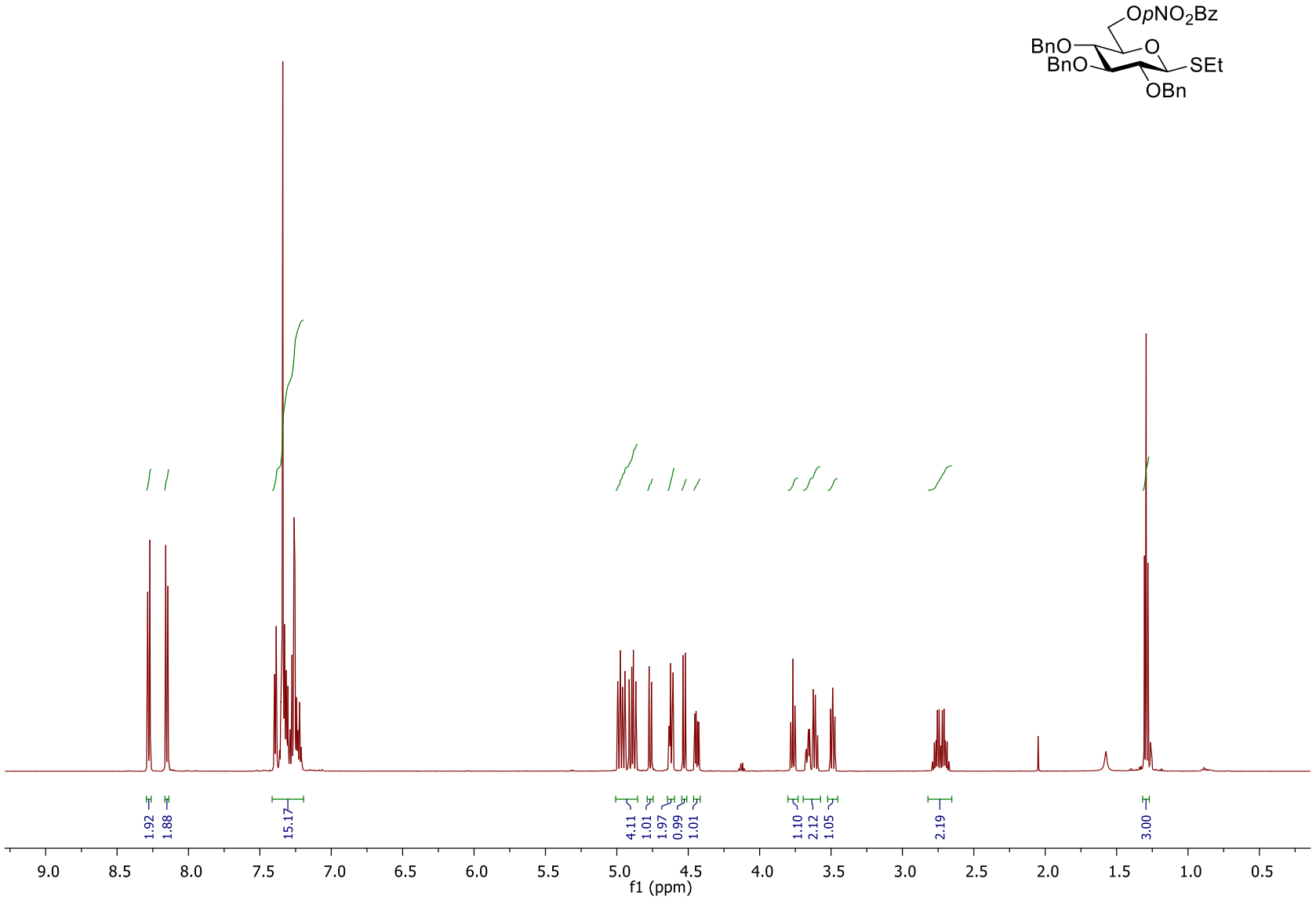




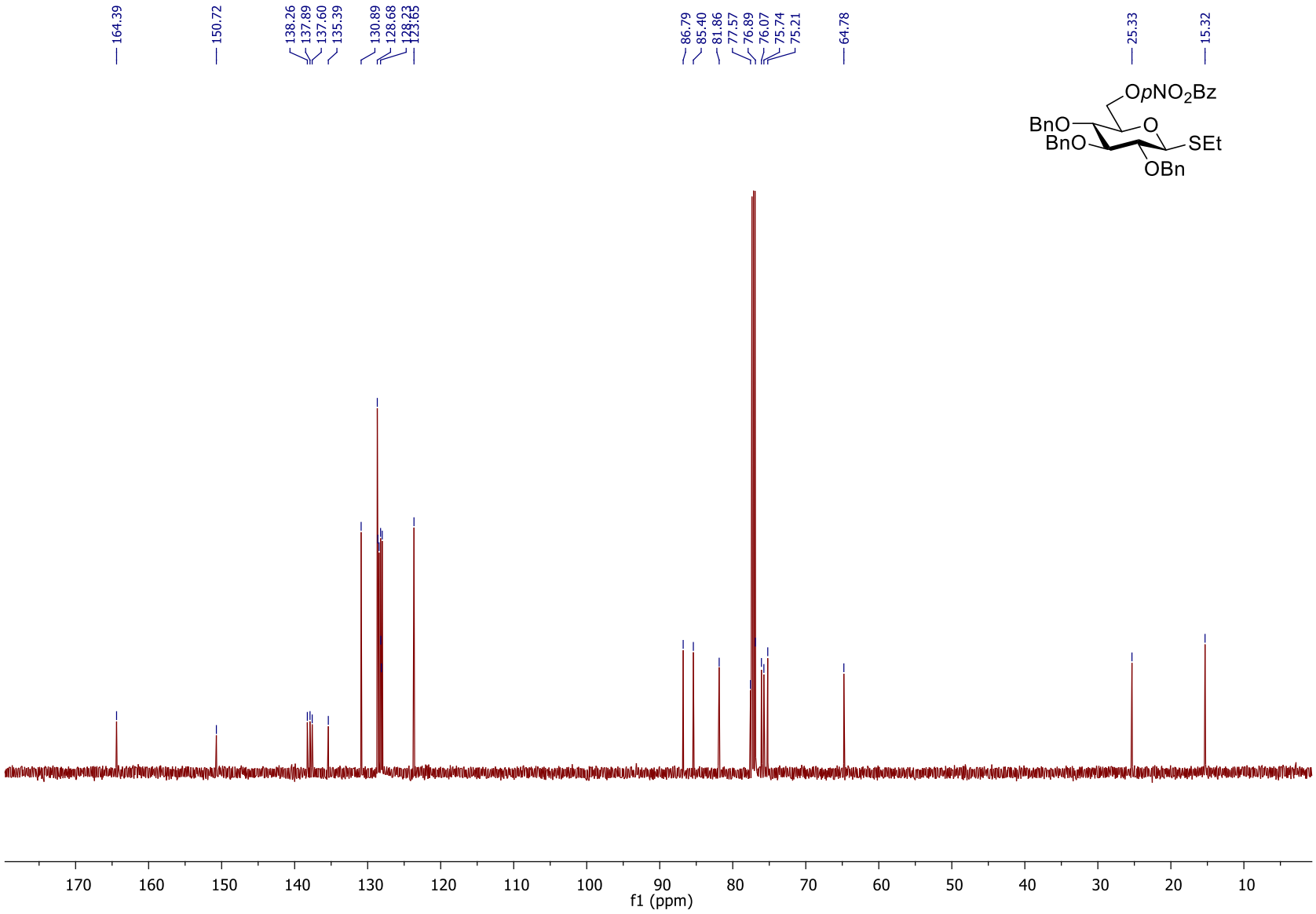
^{1}H NMR (600 MHz, C_6D_6) Spectrum of Ethyl (6*S*)-[6-$^{2}H_1$]-6-*O*-*p*-methoxybenzoyl-2,3,4-tri-*O*-benzyl-1-thio-β-D-glucopyranoside **(6*S*-D-33)**



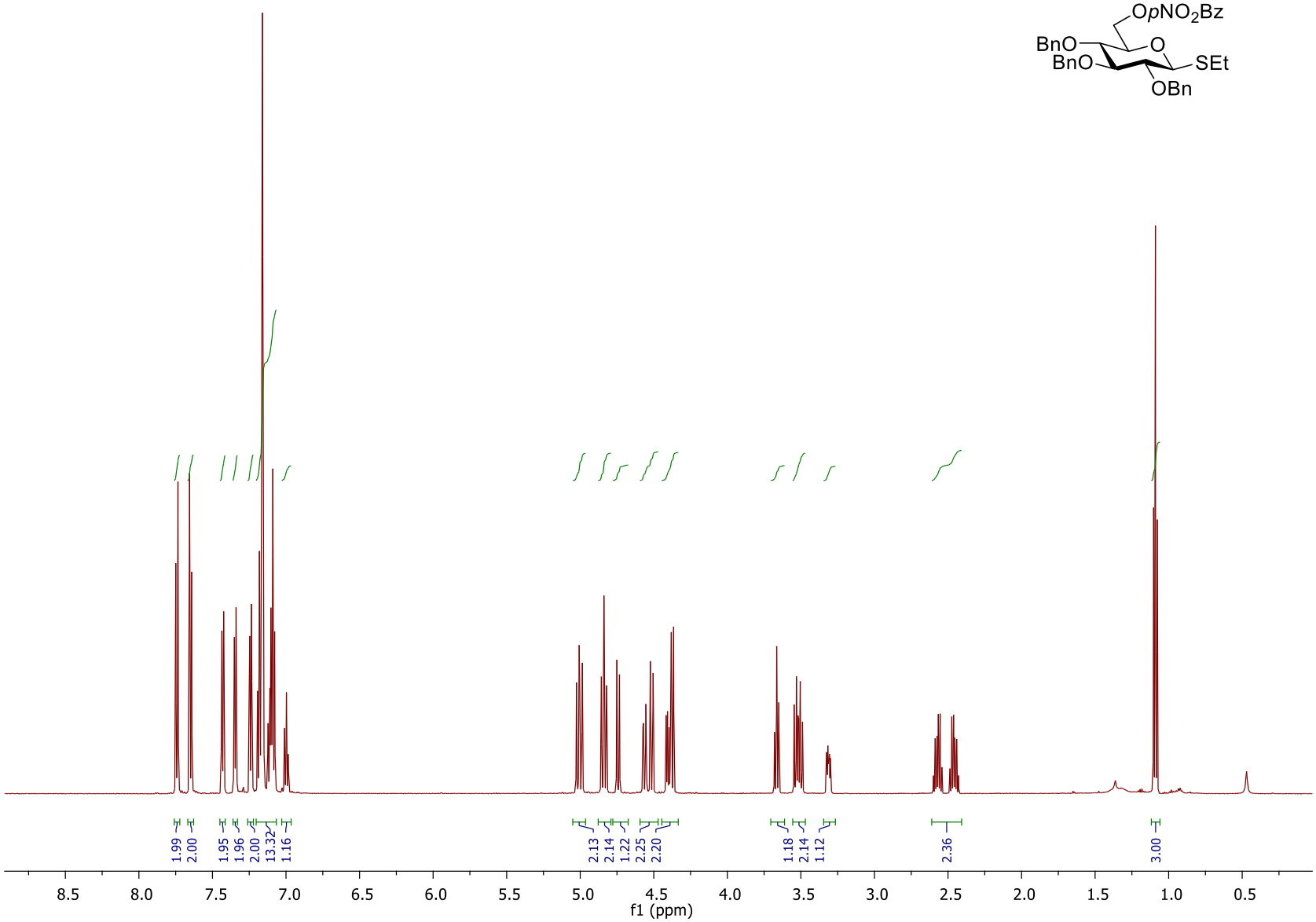
^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Ethyl 6-*O*-*p*-nitrobenzoyl-2,3,4-tri-*O*-benzyl-1-thio-β-D-glucopyranoside **(34)**



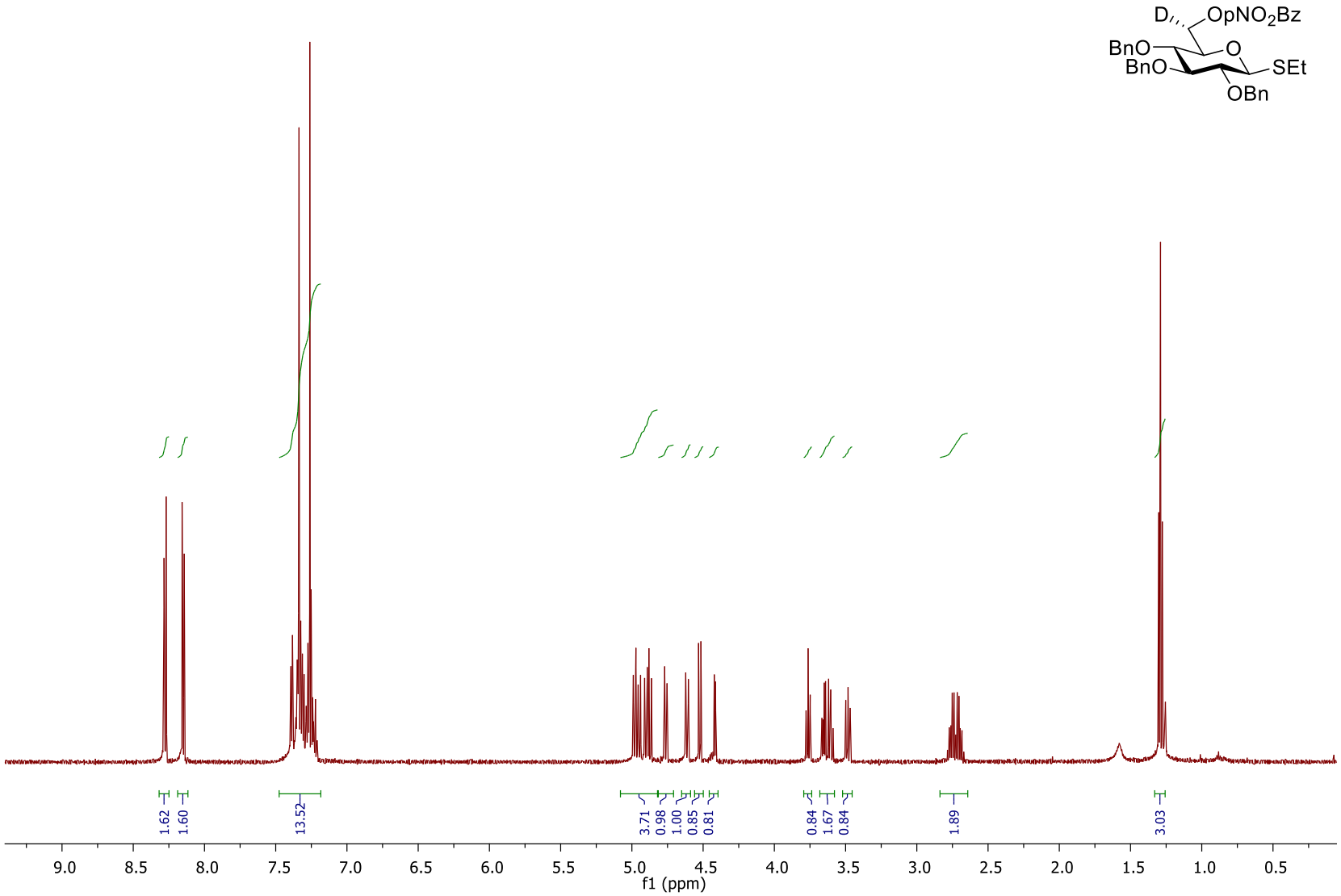
^{13}C NMR (150 MHz, $CDCl_3$) Spectrum of Ethyl 6-*O*-*p*-nitrobenzoyl-2,3,4-tri-*O*-benzyl-1-thio-β-D-glucopyranoside **(34)**



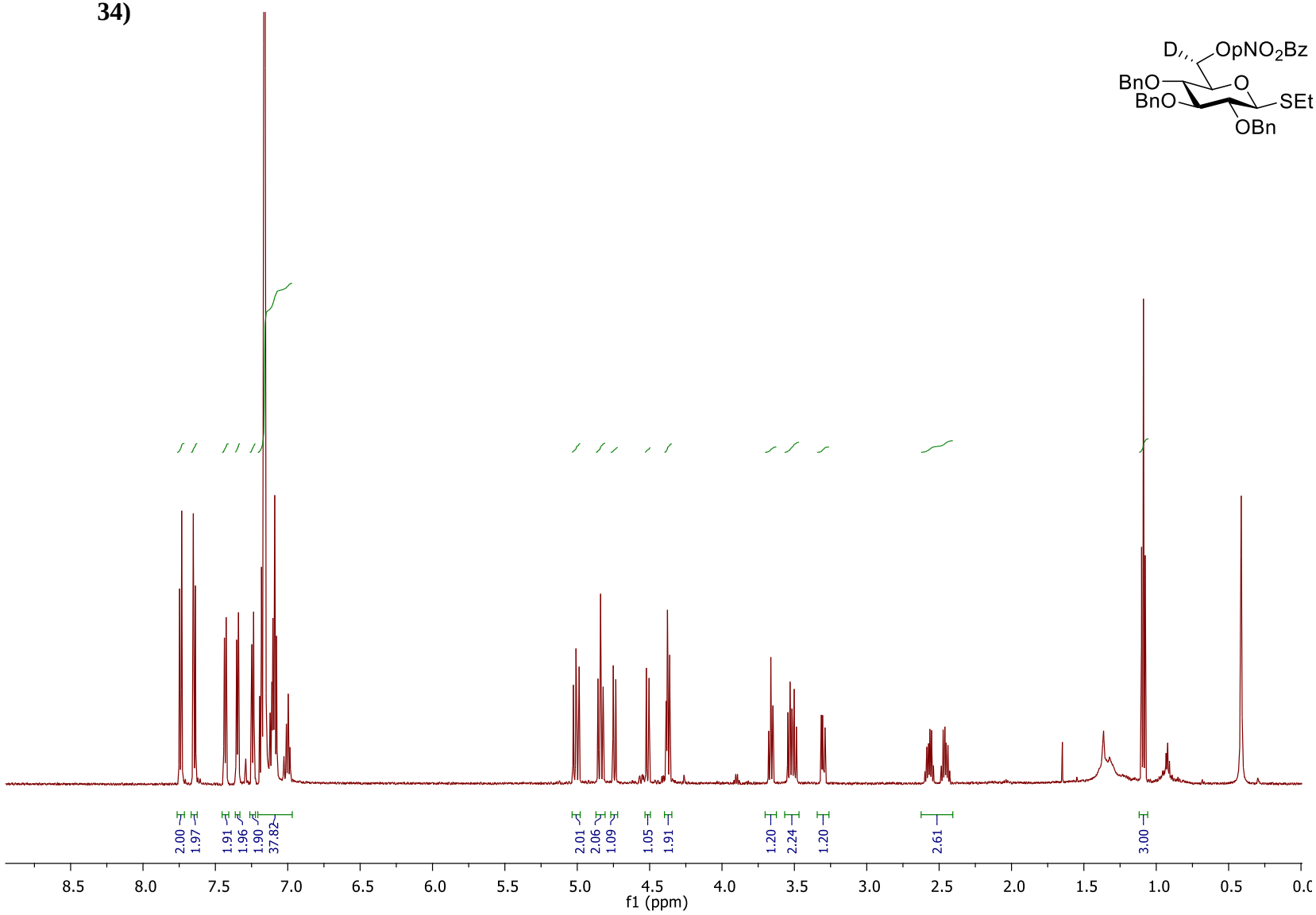
^{1}H NMR (600 MHz, C_6D_6) Spectrum of Ethyl 6-*O*-*p*-nitrobenzoyl-2,3,4-tri-*O*-benzyl-1-thio-β-D-glucopyranoside **(34)**



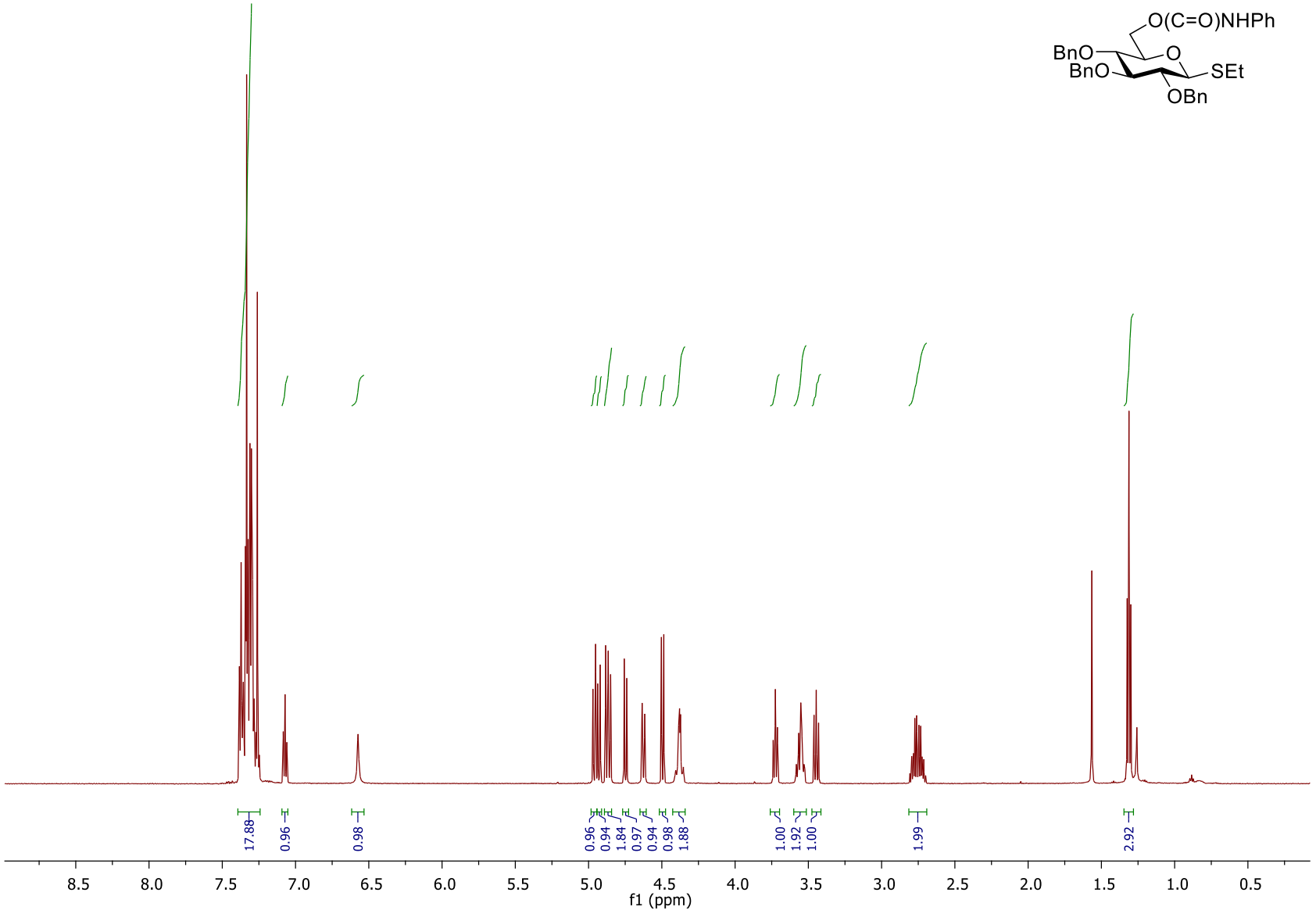
^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Ethyl (6*S*)-[6-$^{2}H_1$]-6-*O*-*p*-nitrobenzoyl-2,3,4-tri-*O*-benzyl-1-thio-βD-glucopyranoside **(6*S*-D-34)**



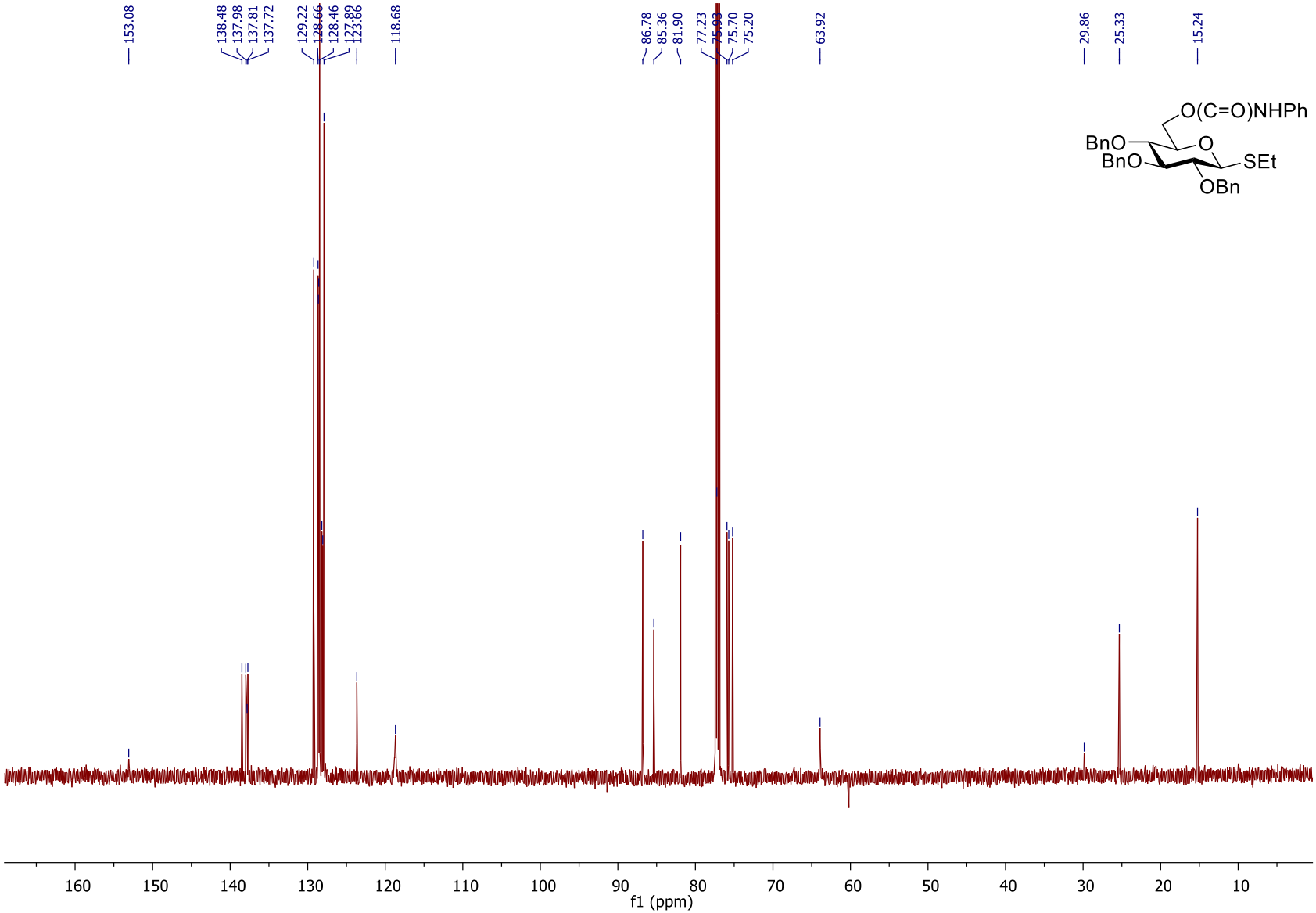
^{1}H NMR (600 MHz, C_6D_6) Spectrum of Ethyl (6*S*)-[6-$^{2}H_1$]-6-*O*-*p*-nitrobenzoyl-2,3,4-tri-*O*-benzyl-1-thio-β-D-glucopyranoside **(6*S*-D-34)**



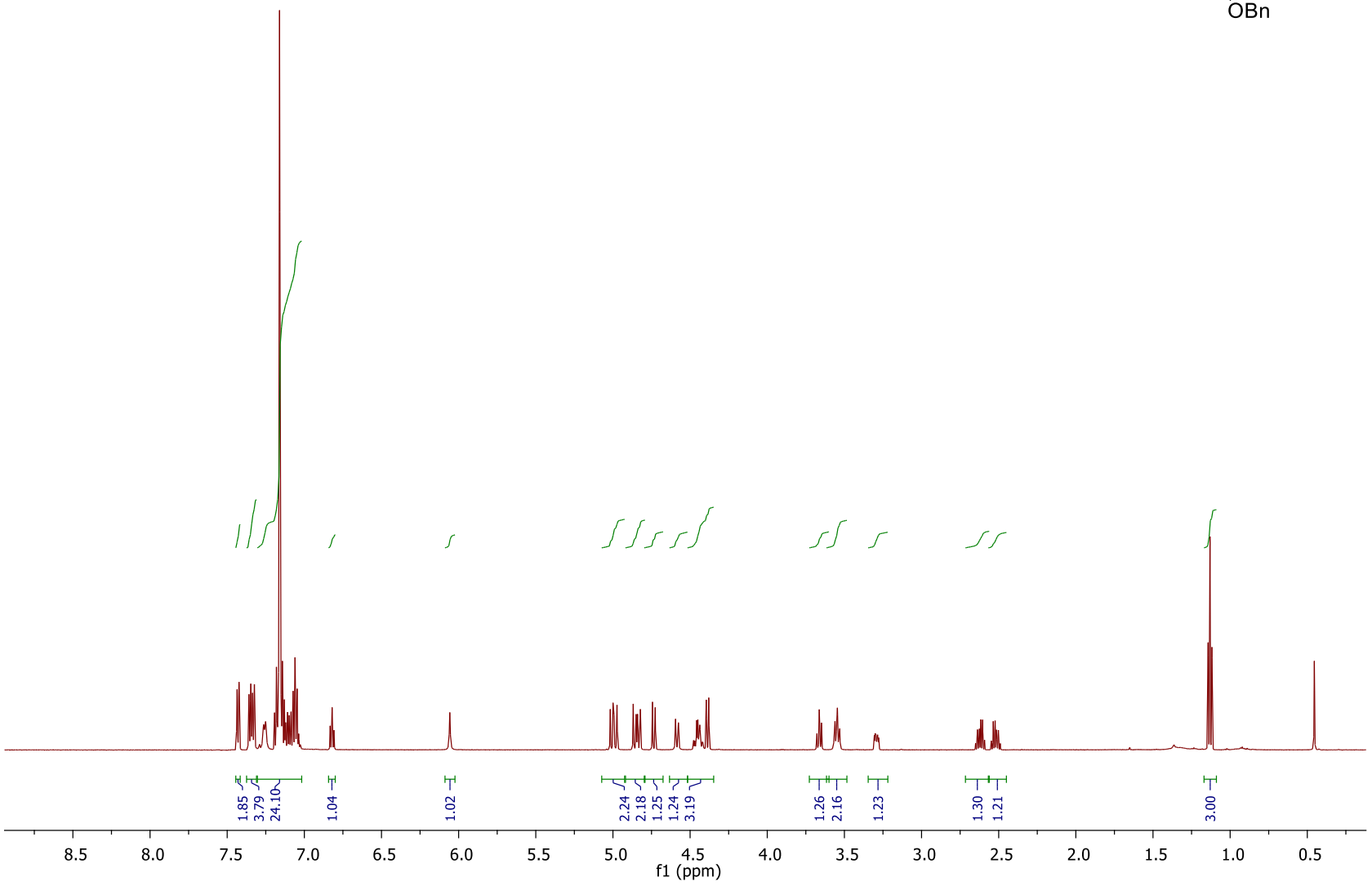
^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Ethyl 2,3,4-tri-*O*-benzyl-6-*O*-(*N*-phenylcarbamoyl)-1-thio-β-D-glucopyranoside (**35**)



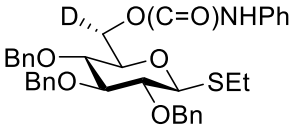
^{13}C NMR (150 MHz, $CDCl_3$) Spectrum of Ethyl 2,3,4-tri-*O*-benzyl-6-*O*-(*N*-phenylcarbamoyl)-1-thio-β-D-glucopyranoside (**35**)

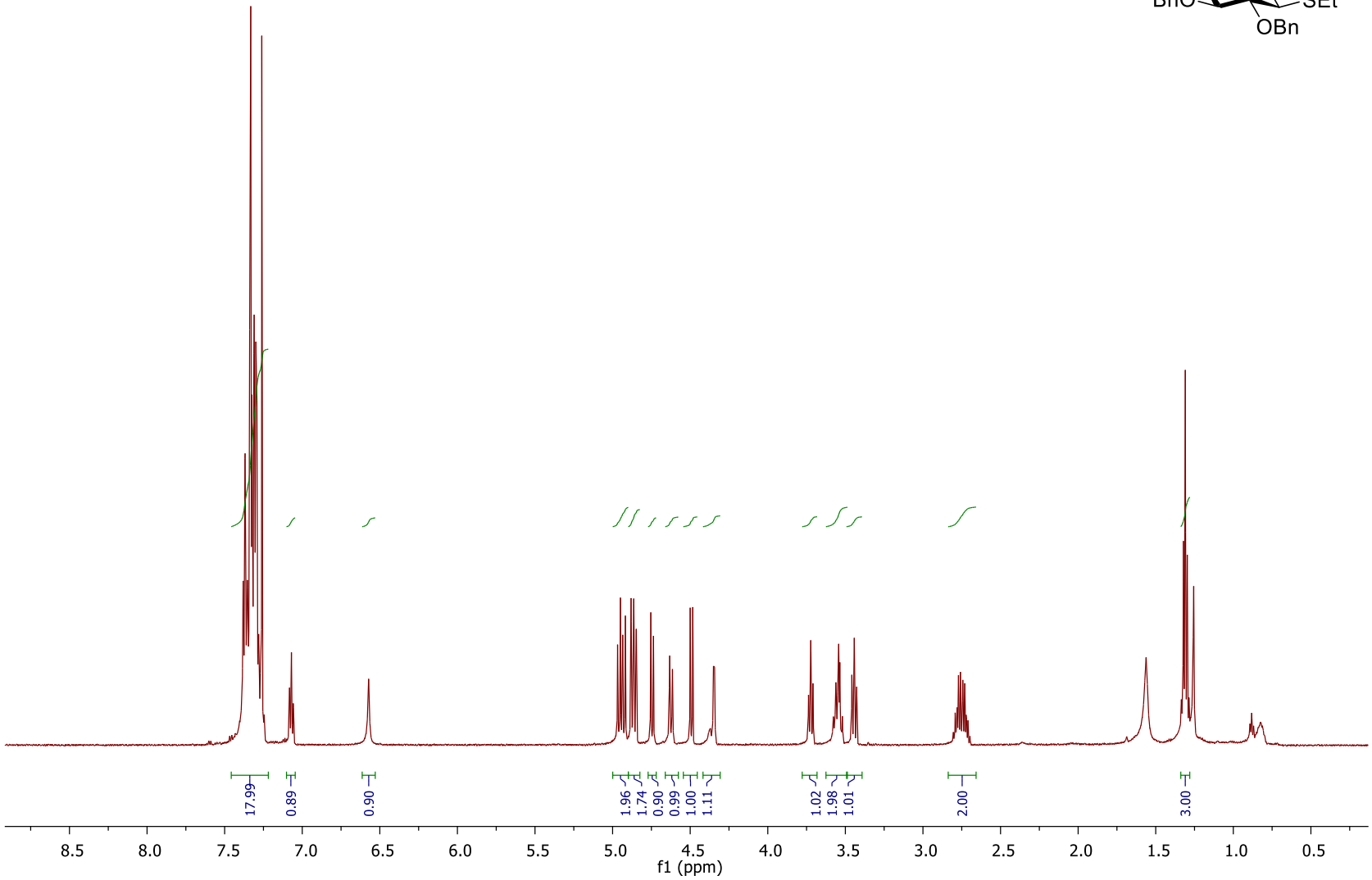


^{1}H NMR (600 MHz, C_6D_6) Spectrum of Ethyl 2,3,4-tri-*O*-benzyl-6-*O*-(*N*-phenylcarbamoyl)-1-thio-β-D-glucopyranoside (**35**)

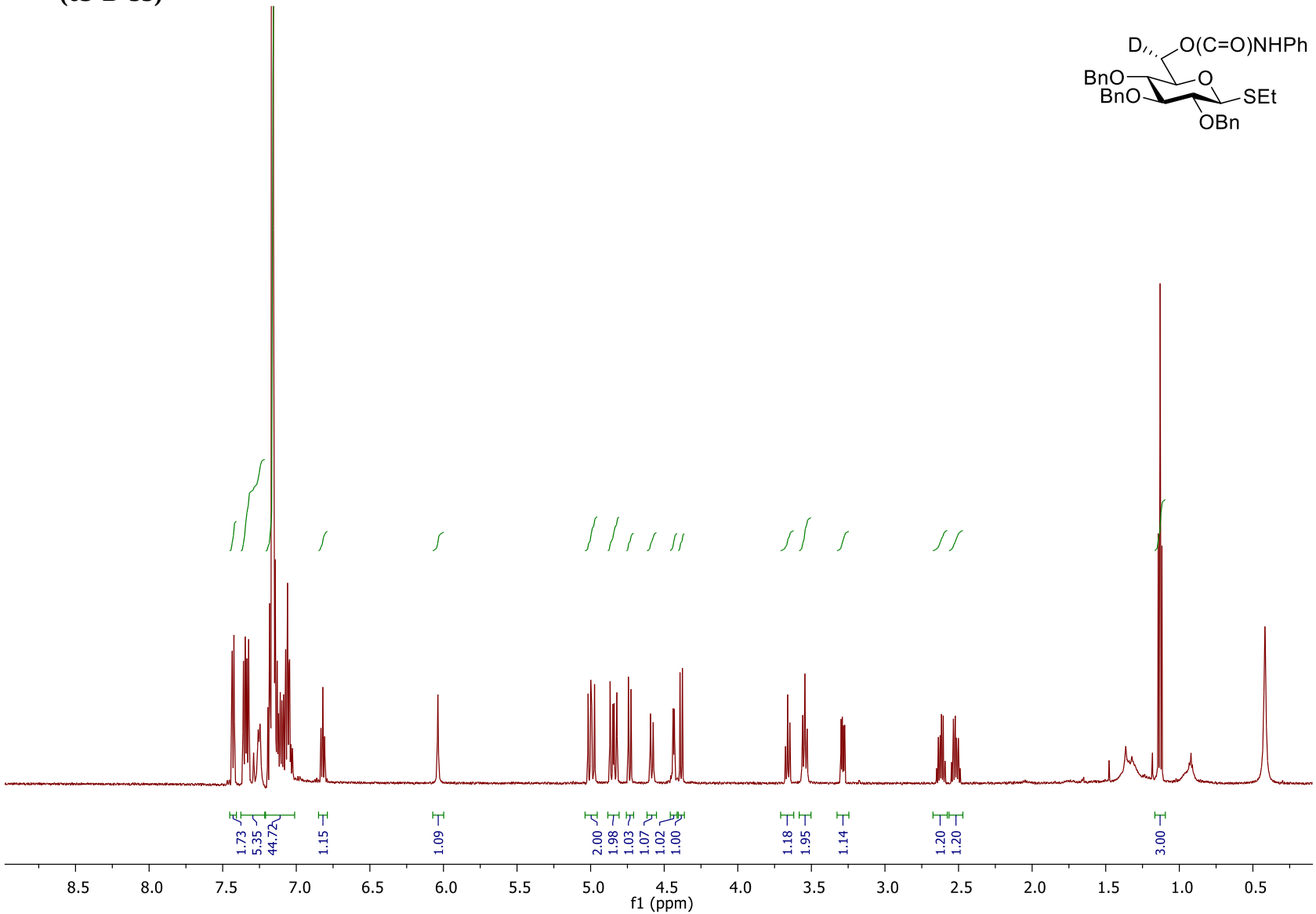


^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Ethyl 2,3,4-tri-*O*-benzyl-(6*S*)-[6-$^{2}H_1$]-6-*O*-(*N*-phenylcarbamoyl)-1-thio-β-D-glucopyranoside **(6*S*-D-35)**

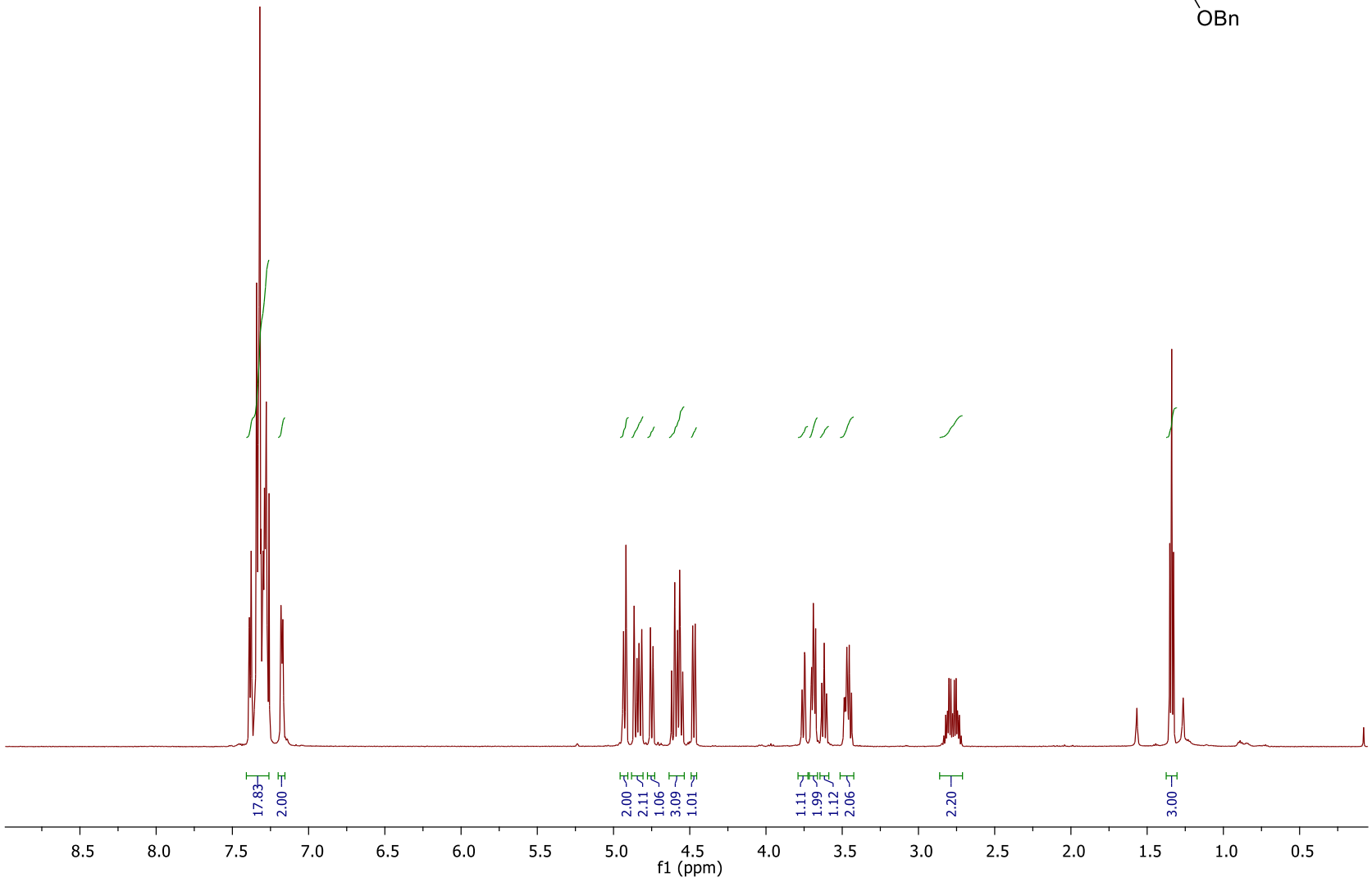




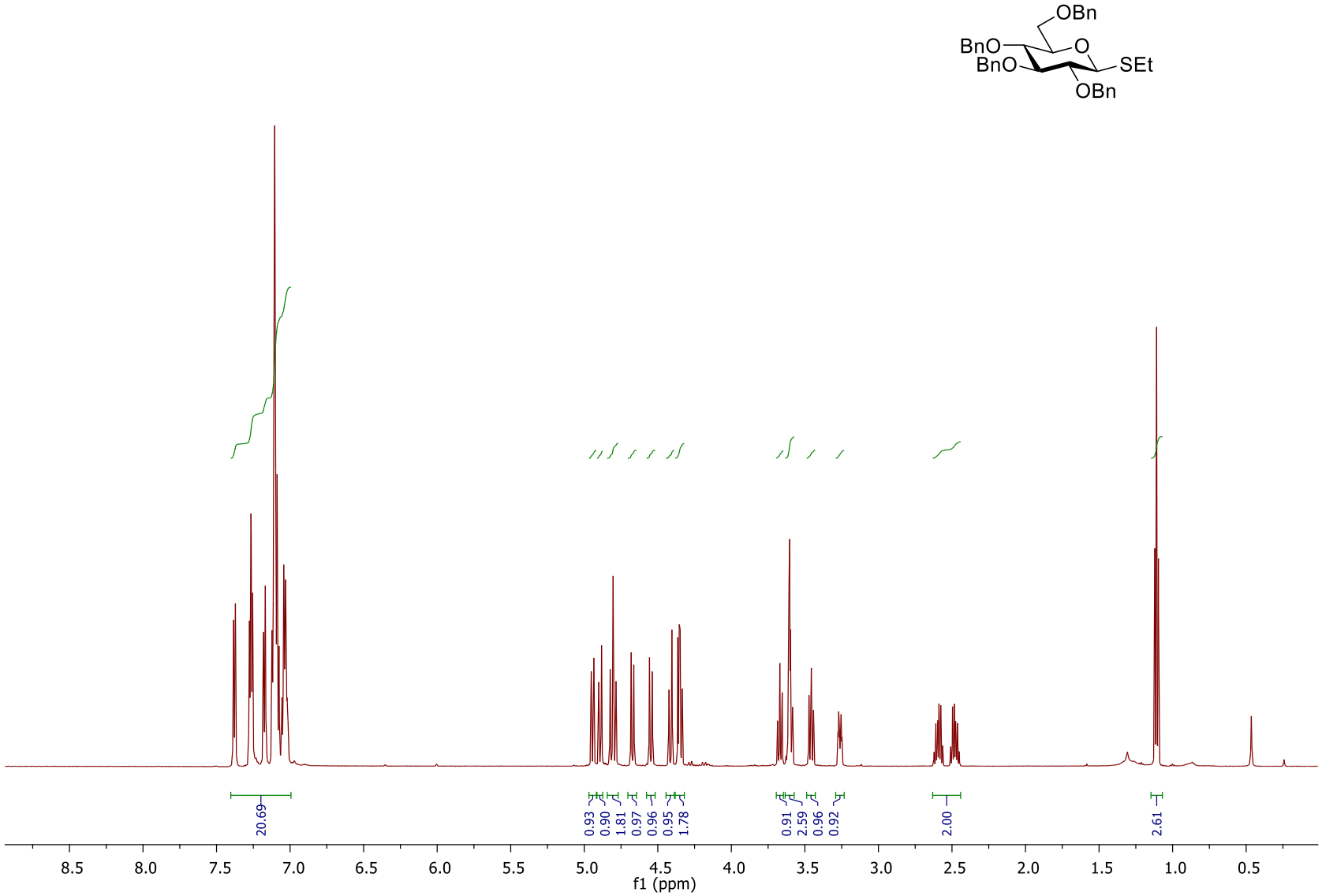
^{1}H NMR (600 MHz, C_6D_6) Spectrum of Ethyl 2,3,4-tri-*O*-benzyl-(6*S*)-[6-$^{2}H_1$]-6-*O*-(*N*-phenylcarbamoyl)-1-thio-β-D-glucopyranoside **(6*S*-D-35)**



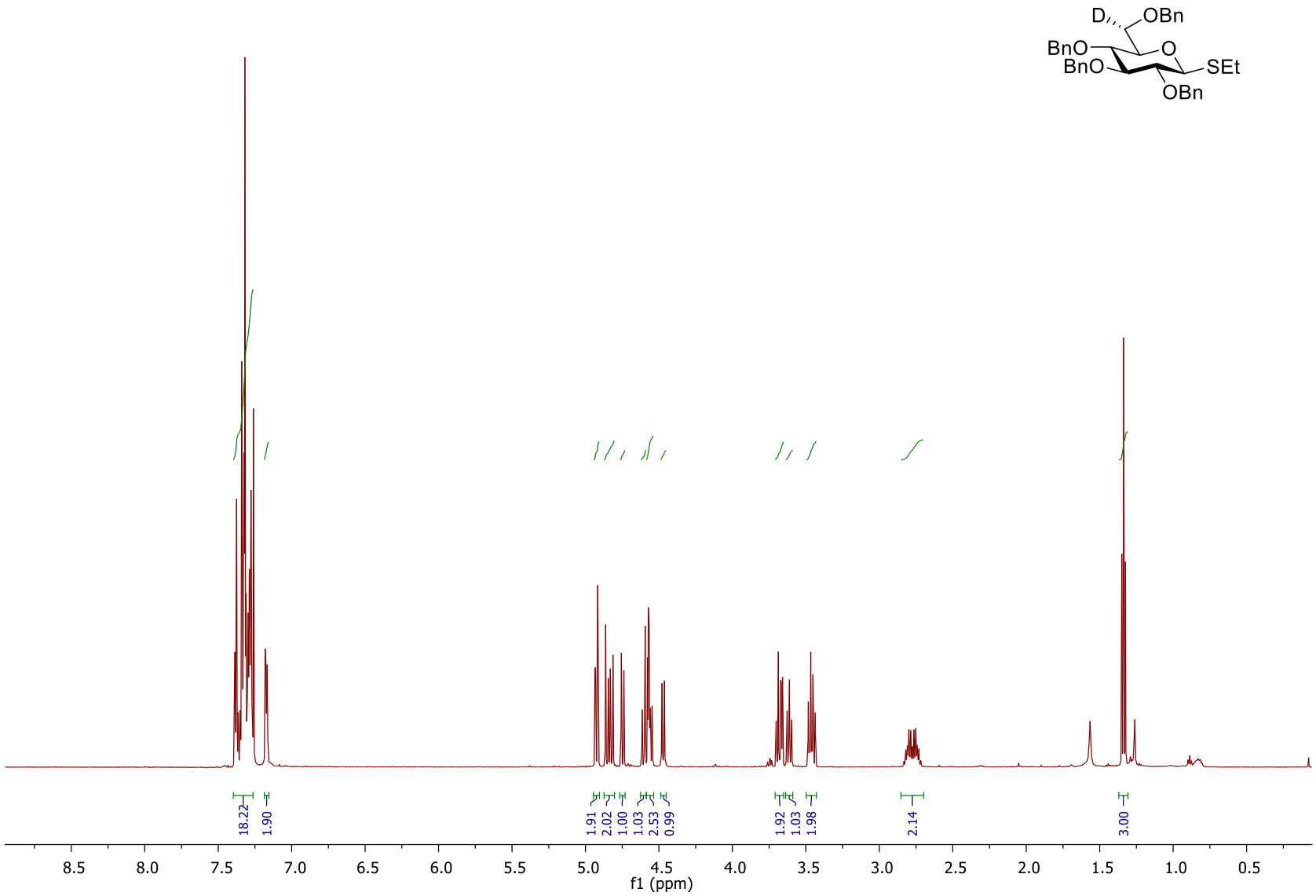
^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Ethyl 2,3,4,6-tetra-*O*-benzyl-1-thio-β-D-glucopyranoside **(36)**



^{1}H NMR (600 MHz, C_6D_6) Spectrum of Ethyl 2,3,4,6-tetra-*O*-benzyl-1-thio-β-D-glucopyranoside **(36)**



^{1}H NMR (600 MHz, $CDCl_3$) Spectrum of Ethyl (6*S*)-[6-$^{2}H_1$]-2,3,4,6-tetra-*O*-benzyl-1-thio-β-D-glucopyranoside **(6*S*-D-36)**



^{1}H NMR (600 MHz, C_6D_6) Spectrum of Ethyl (6*S*)-[6-$^{2}H_1$]-2,3,4,6-tetra-*O*-benzyl-1-thio-β-D-glucopyranoside **(6*S*-D-36)**