

Concise synthesis of sulfoquinovose and sulfoquinovosyl diacylglycerides, and development of a fluorogenic substrate for sulfoquinovosidases

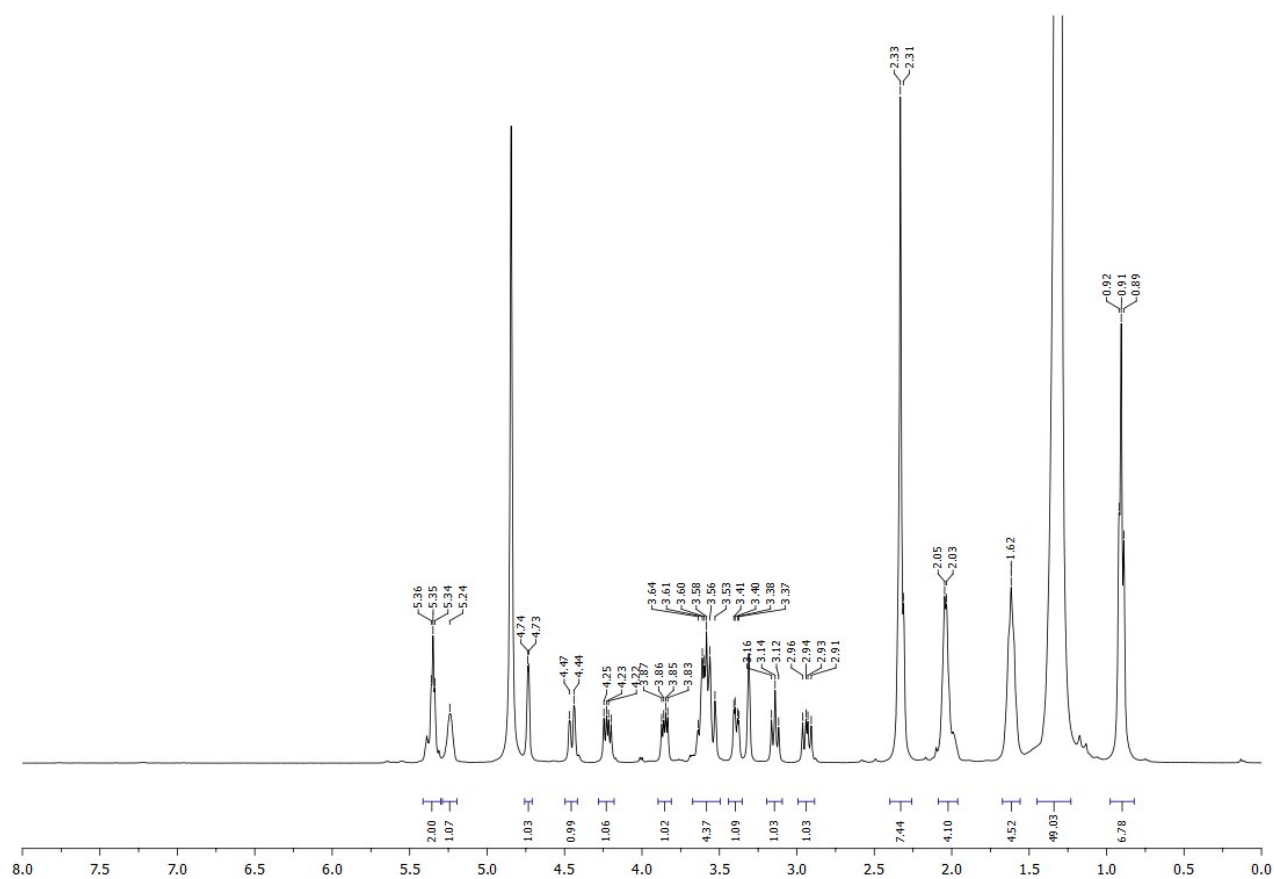
Yunyang Zhang,^{1†} Janice W.-Y. Mui,^{1†} Thimali Arumaperuma,¹ James P. Lingford,² Ethan D. Goddard-Borger,² Jonathan M. White¹ and Spencer J. Williams^{1*}

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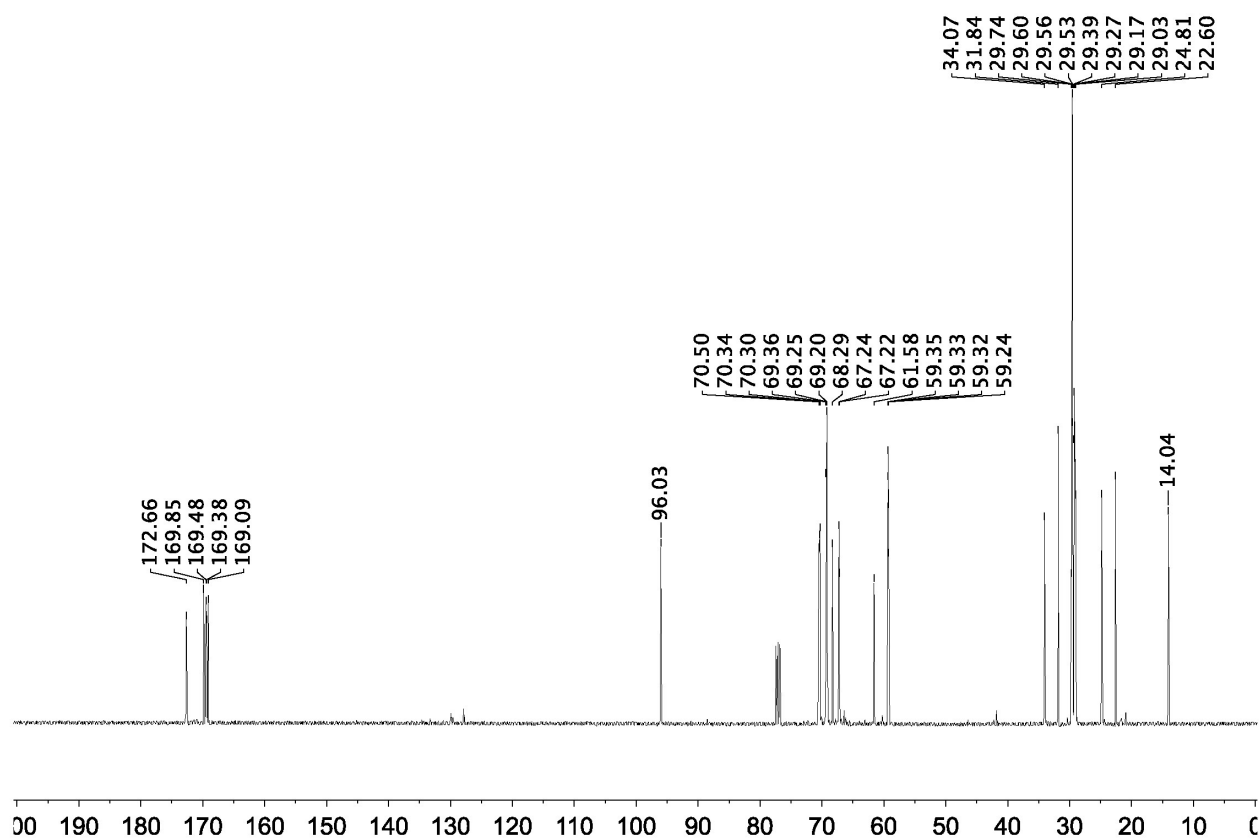
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(2'S)-3'-Bromo-2'-palmitoyloxypropyl 2,3,4,6-tetra-O-methoxyacetyl- α -D-glucopyranoside (10)

^1H NMR

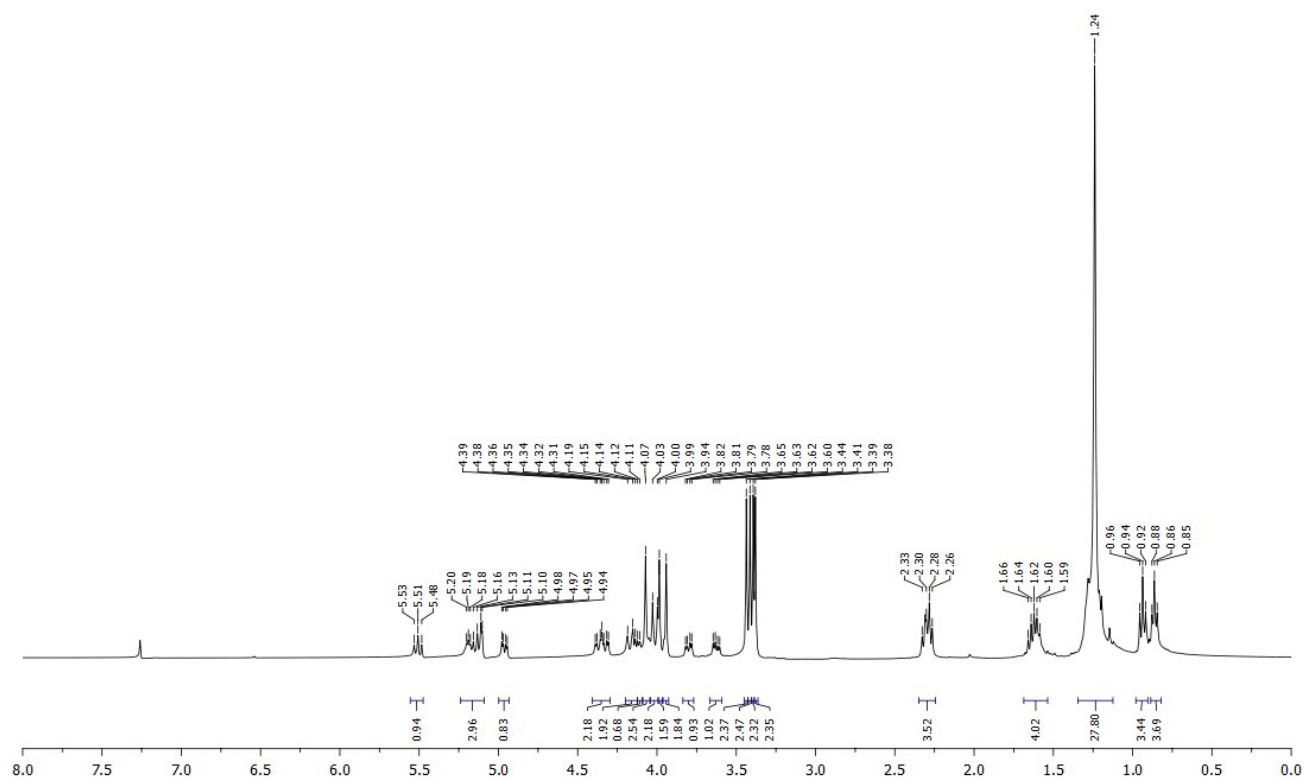


$^{13}\text{C}\{^1\text{H}\}$ NMR

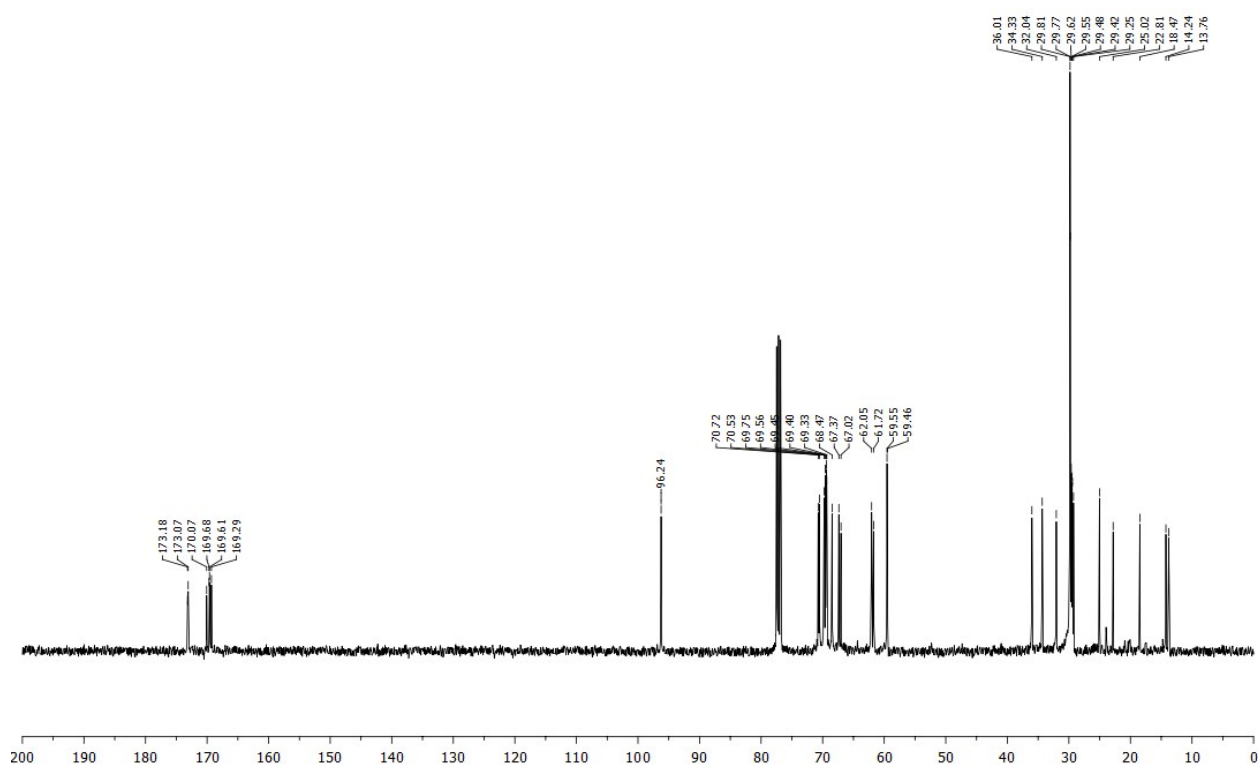


(2'S)-1'-O-Butyl-2'-O-palmitoyl-glycerol 2,3,4,6-tetra-O-methoxyacetyl- α -D-glucopyranoside (11)

^1H NMR

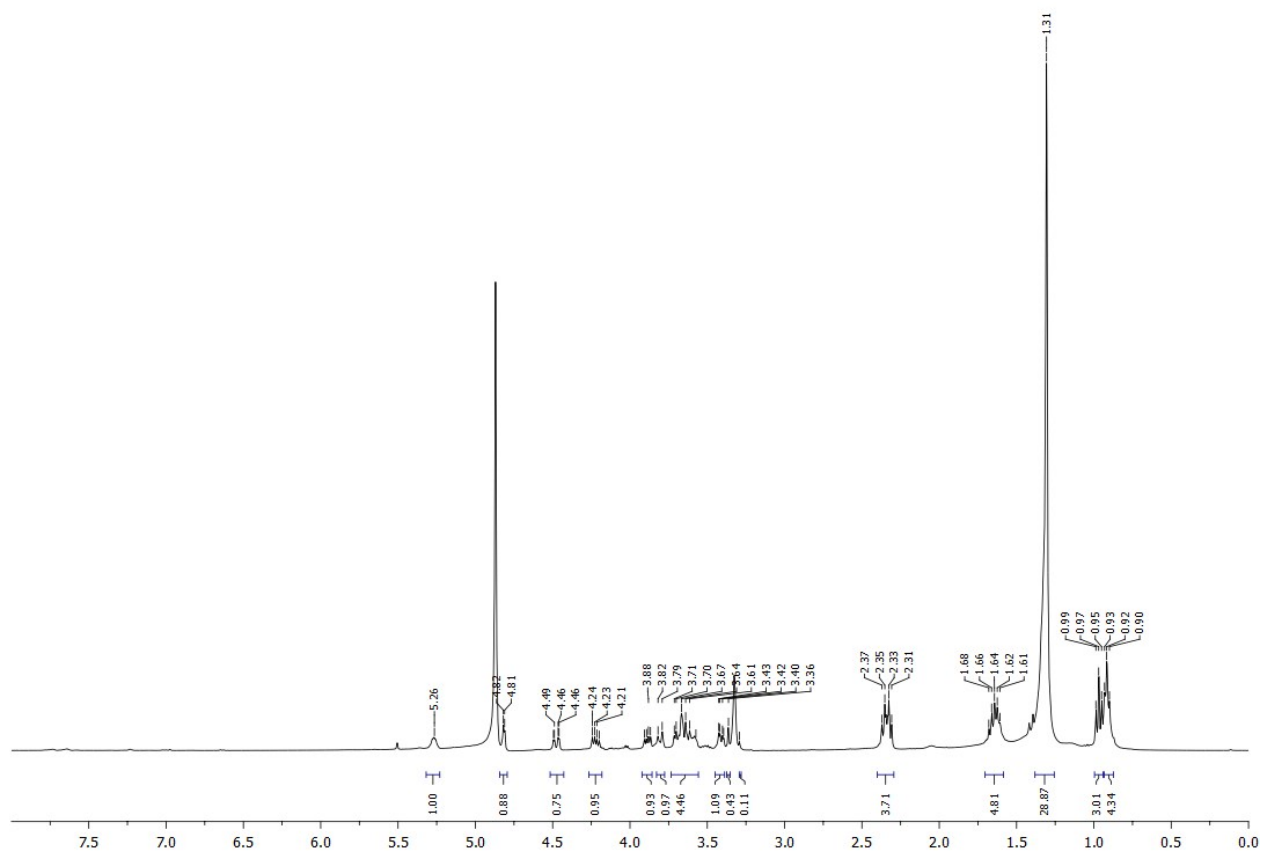


$^{13}\text{C}\{^1\text{H}\}$ NMR

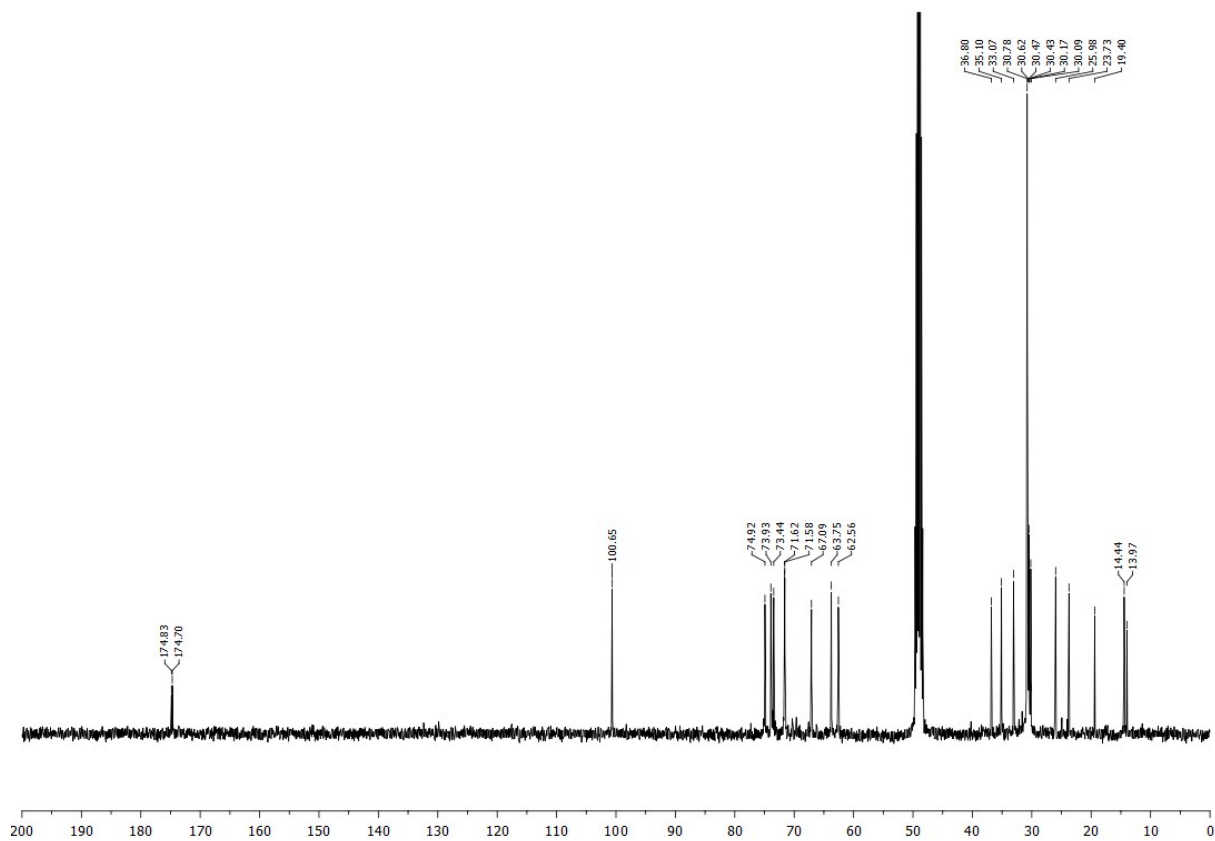


(2'S)-1'-O-Butyl-2'-O-palmitoyl-glycerol α -D-glucopyranoside (13)

^1H NMR

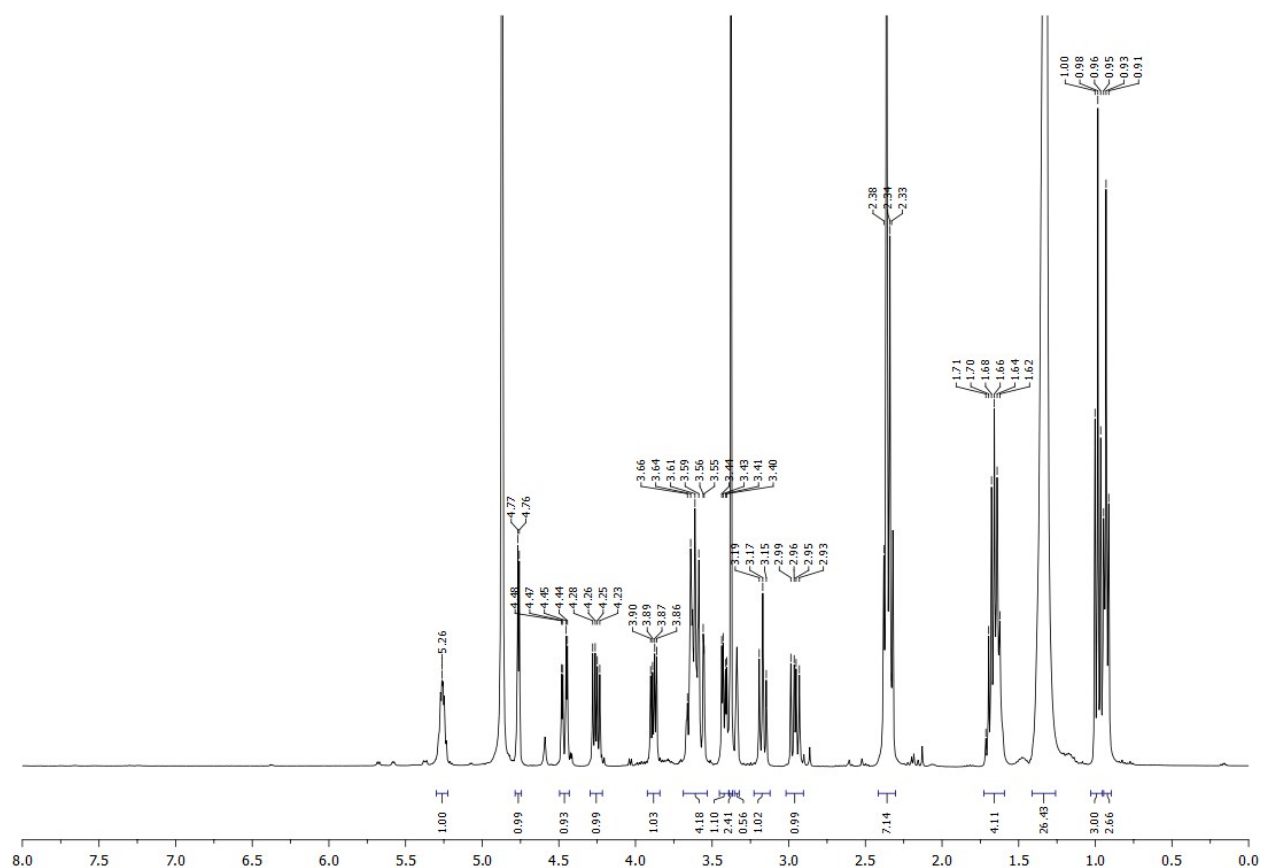


$^{13}\text{C}\{^1\text{H}\}$ NMR

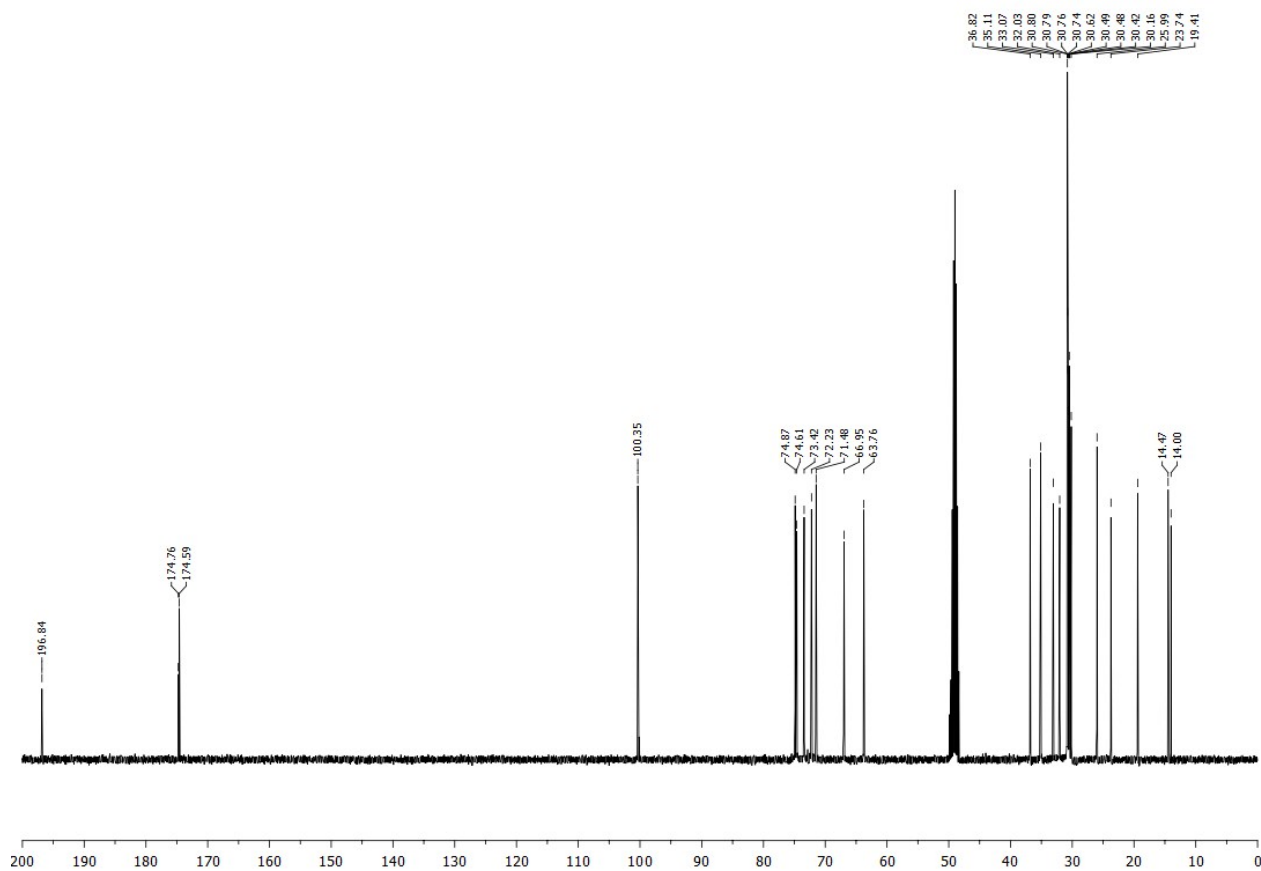


(2'S)-1'-O-Butyl-2'-O-palmitoyl-glycerol 6-S-acetyl-6-deoxy-6-thio- α -D-glucopyranoside (15)

^1H NMR



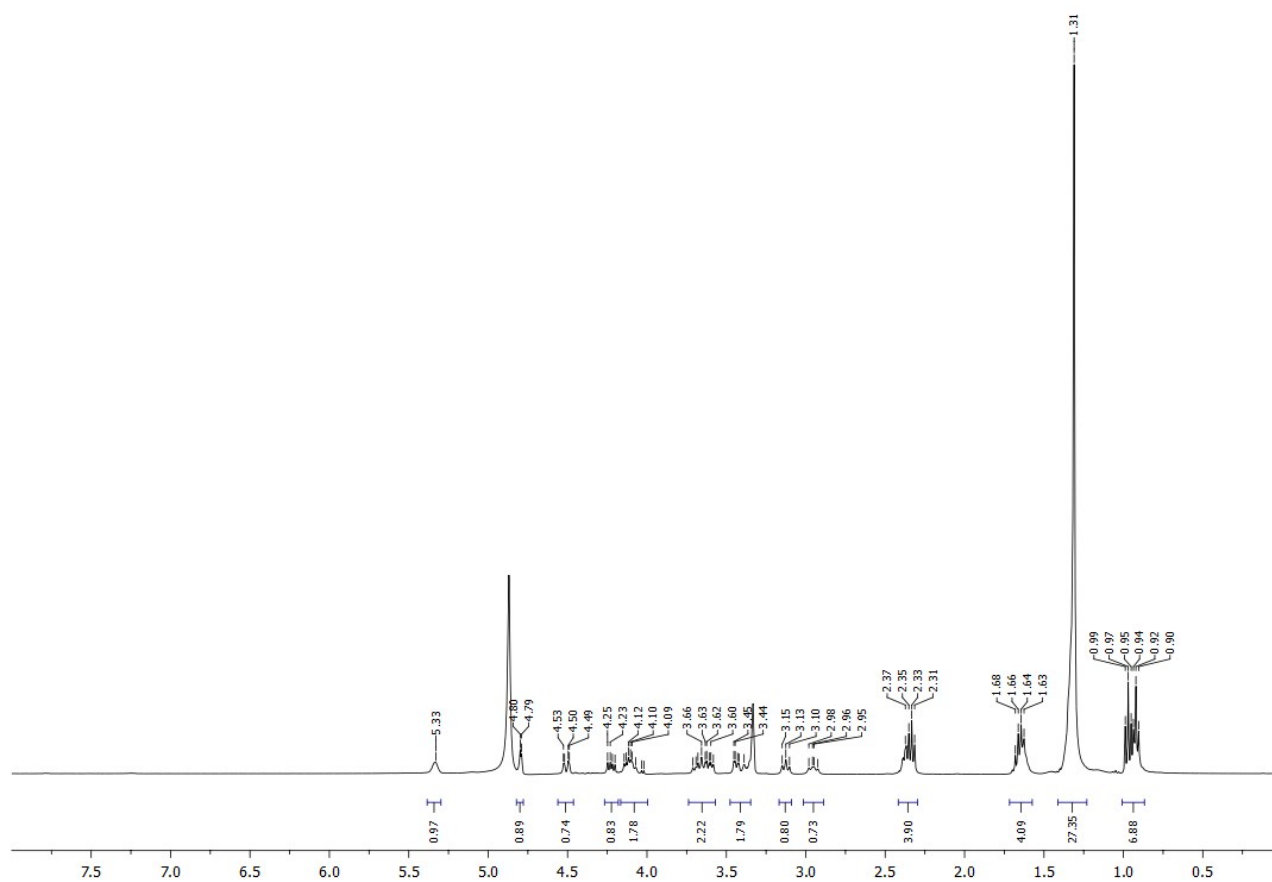
$^{13}\text{C}\{^1\text{H}\}$ NMR



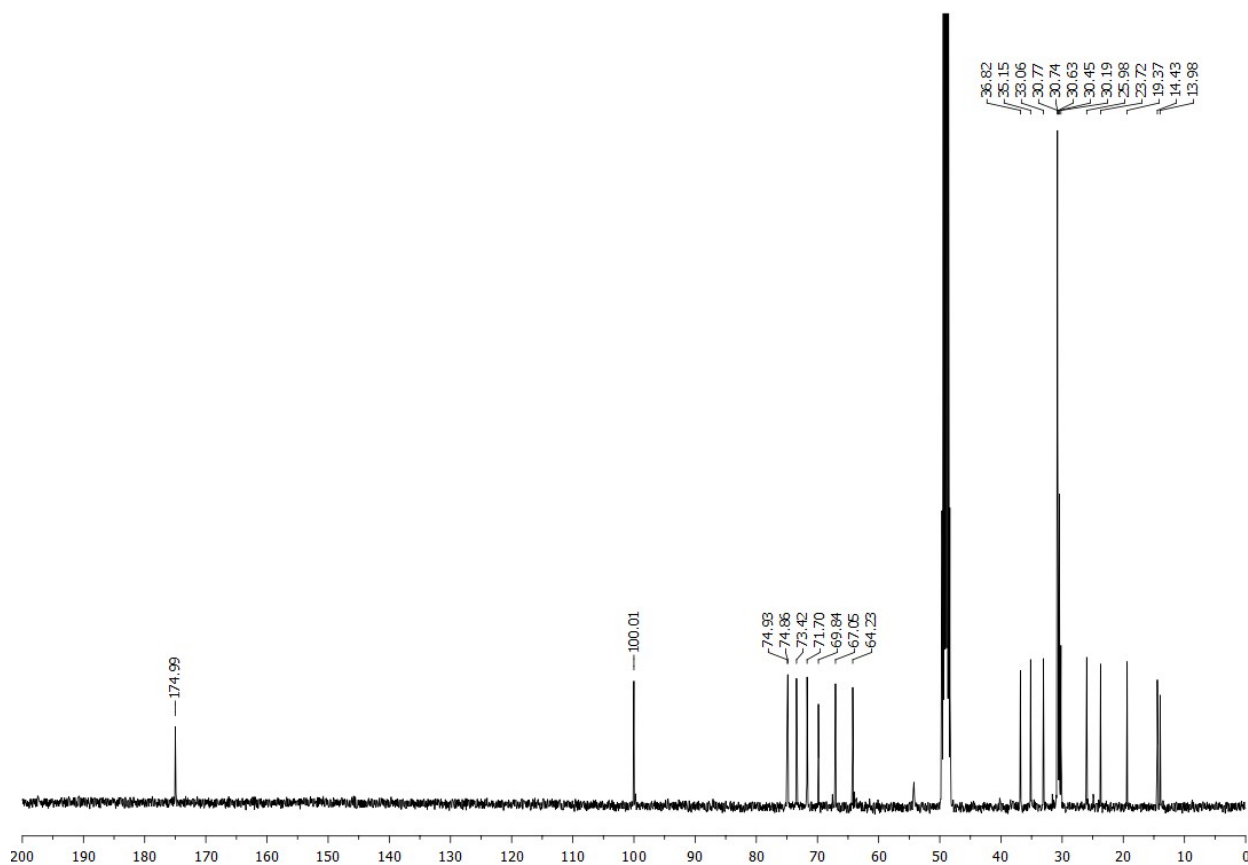
(2'S)-1'-O-Butyl-2'-O-palmitoyl-glycerol 6-deoxy-6-sulfonato- α -D-glucopyranoside, potassium salt

(4)

^1H NMR

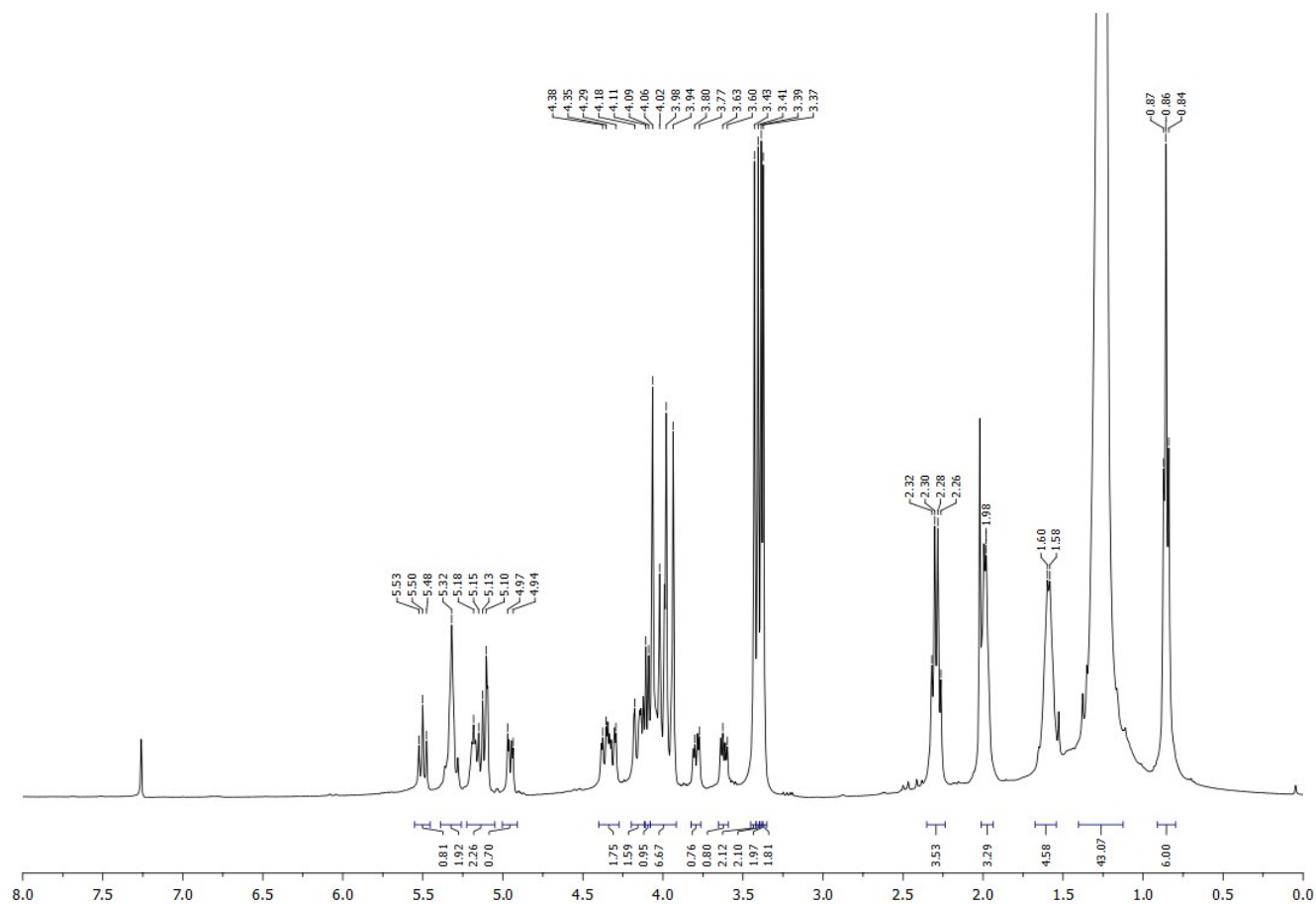


$^{13}\text{C}\{^1\text{H}\}$ NMR

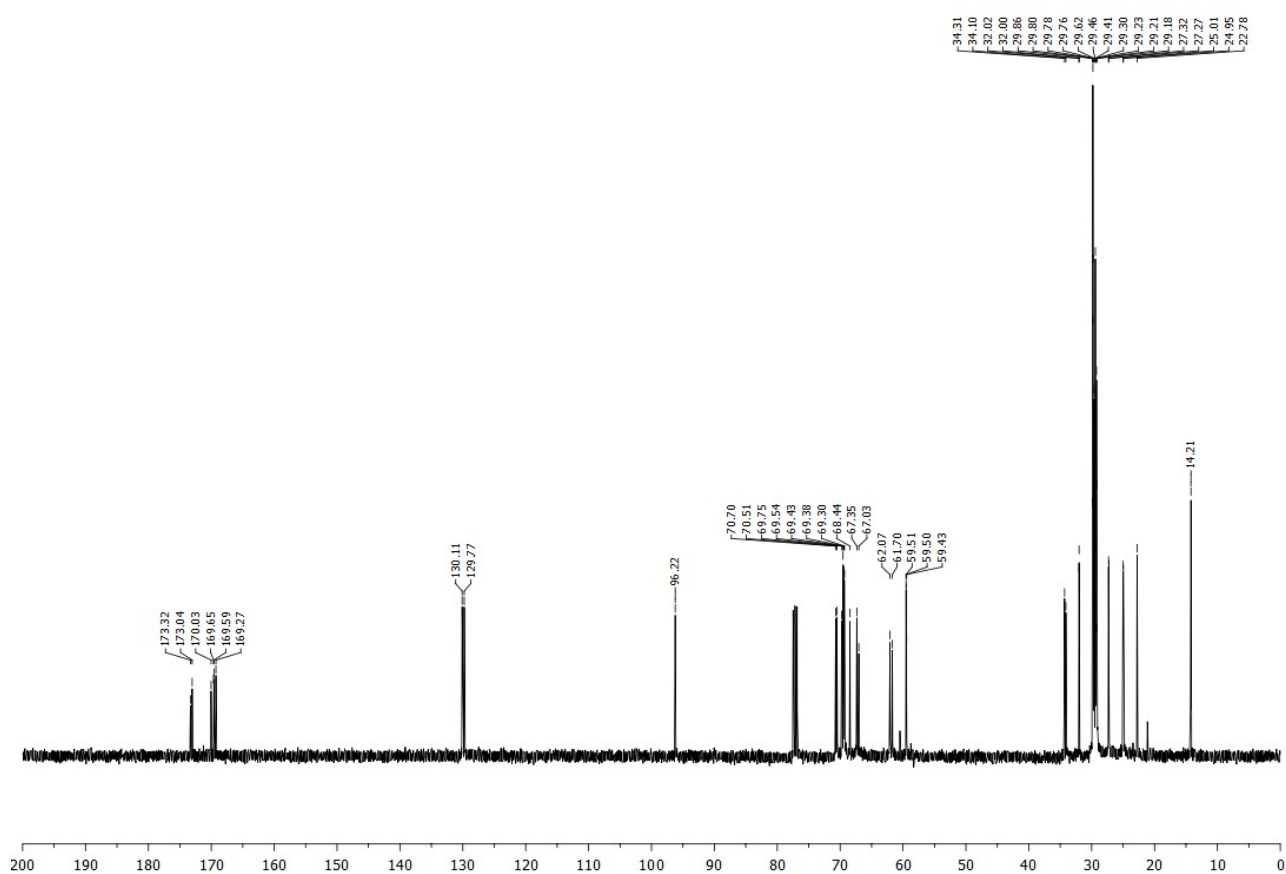


(2'S)-1'-O-Oleoyl-2'-O-palmitoyl-glycerol 2,3,4,6-tetra-O-methoxyacetyl- α -D-glucopyranoside (12)

^1H NMR

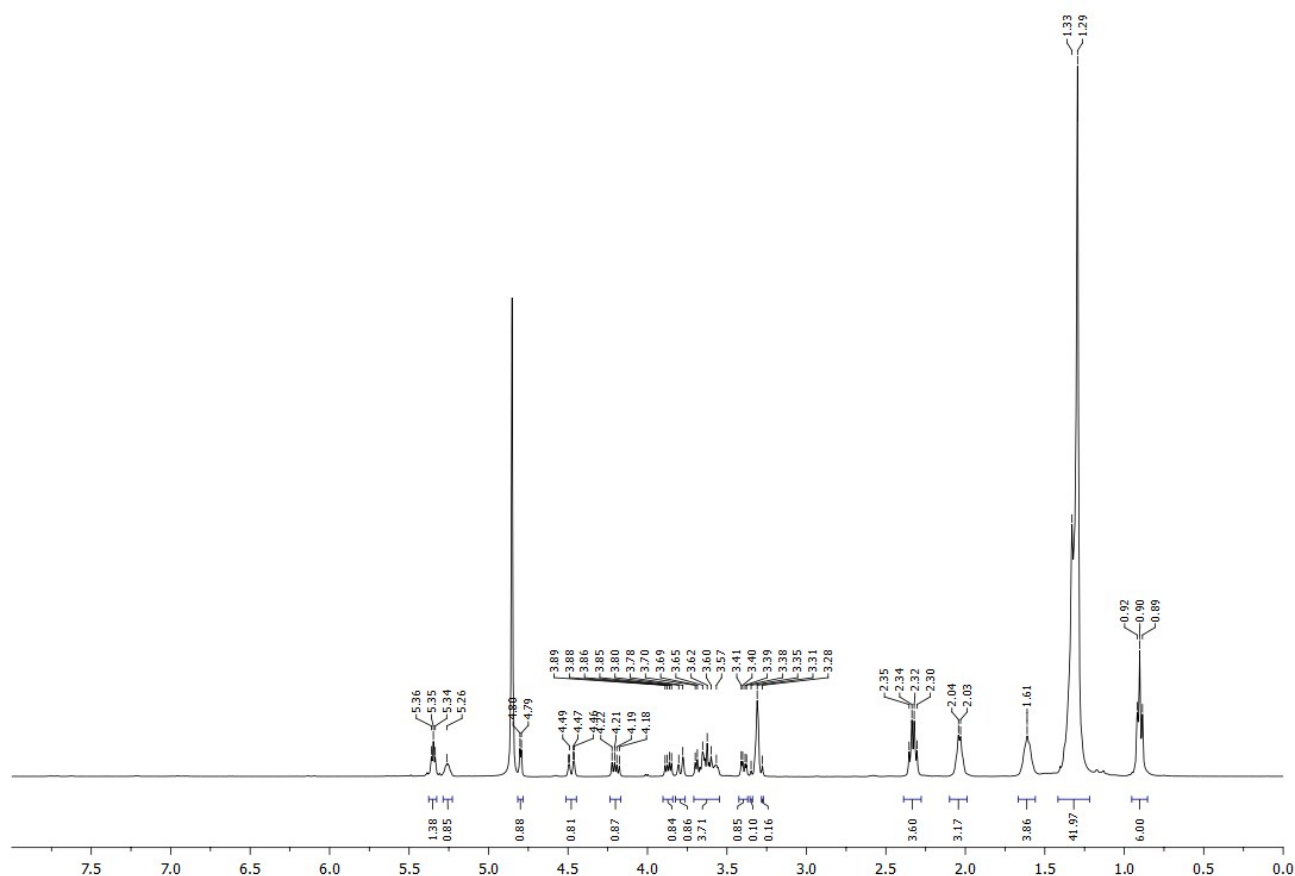


$^{13}\text{C}\{^1\text{H}\}$ NMR

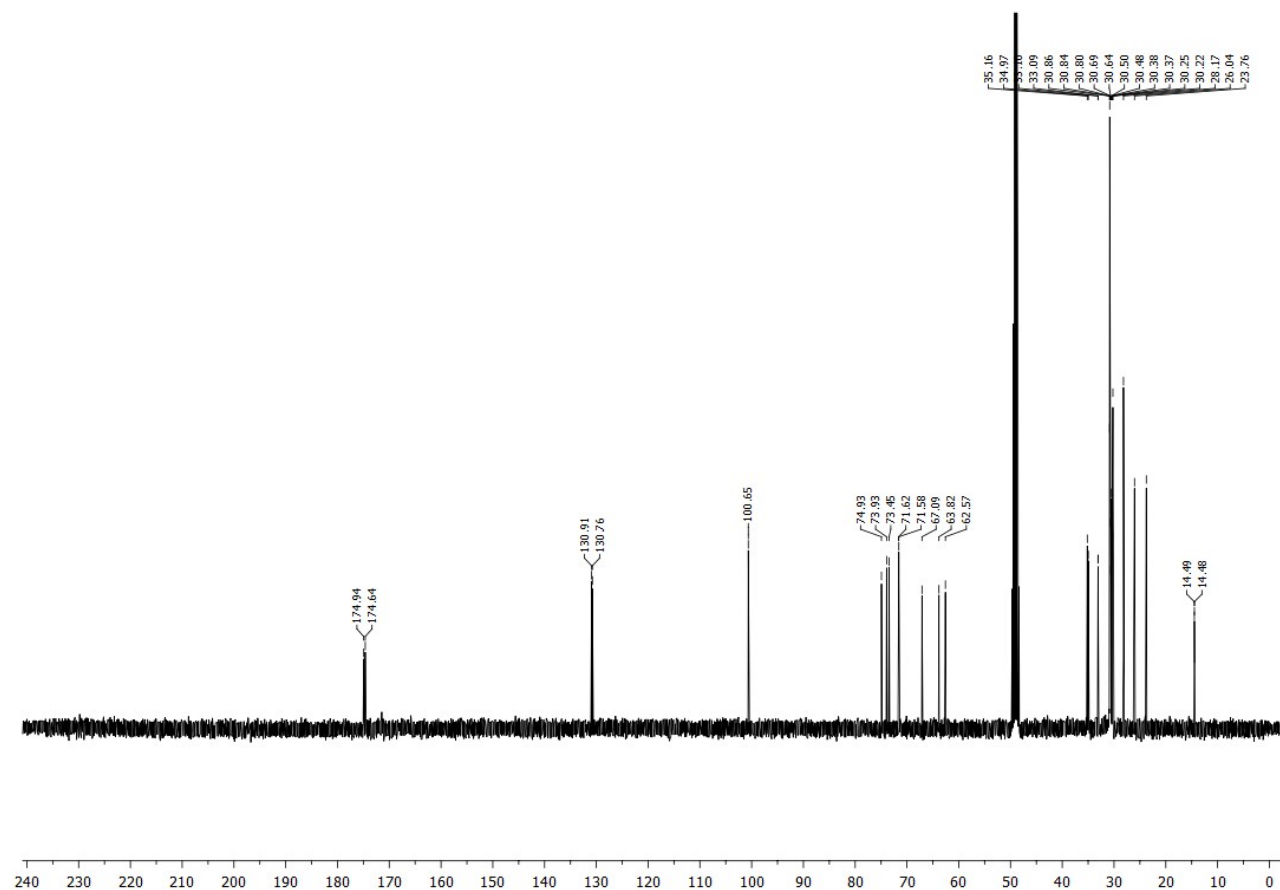


(2'S)-1'-O-Oleoyl-2'-O-palmitoyl-glycerol α -D-glucopyranoside (14)

^1H NMR

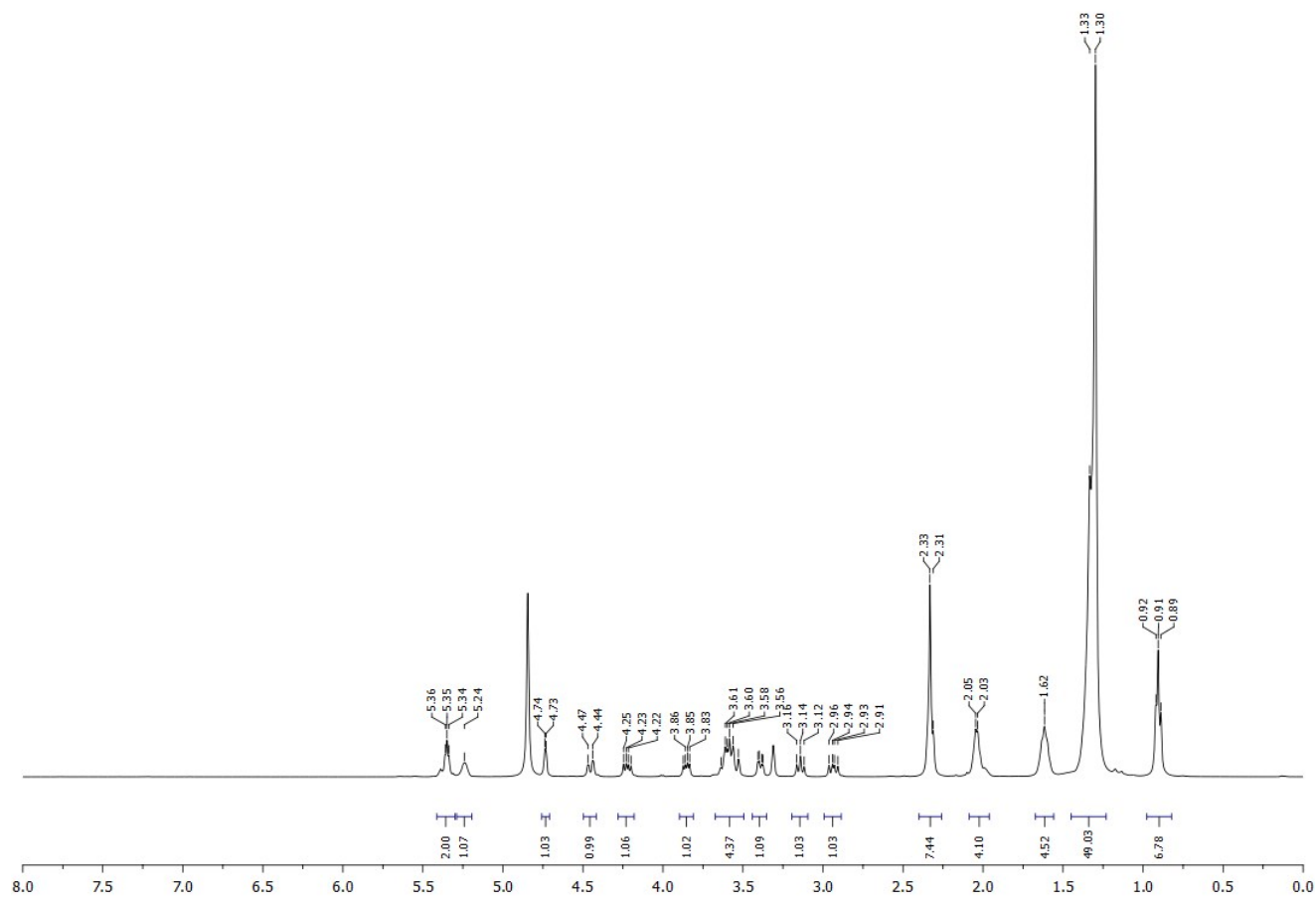


$^{13}\text{C}\{^1\text{H}\}$ NMR

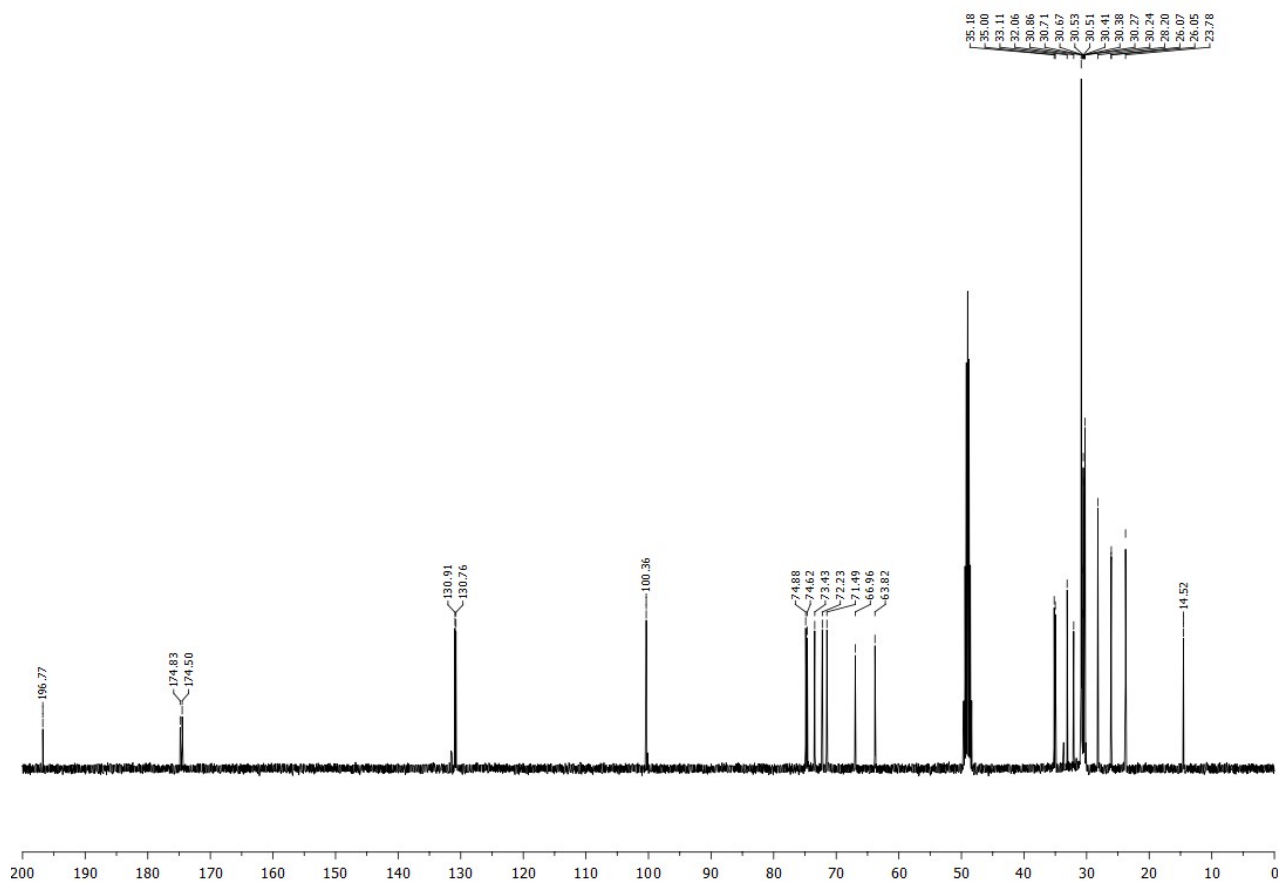


(2'S)-1'-O-oleoyl-2'-O-palmitoyl-glycerol 6-S-acetyl-6-deoxy-6-thio- α -D-glucopyranoside (16)

^1H NMR

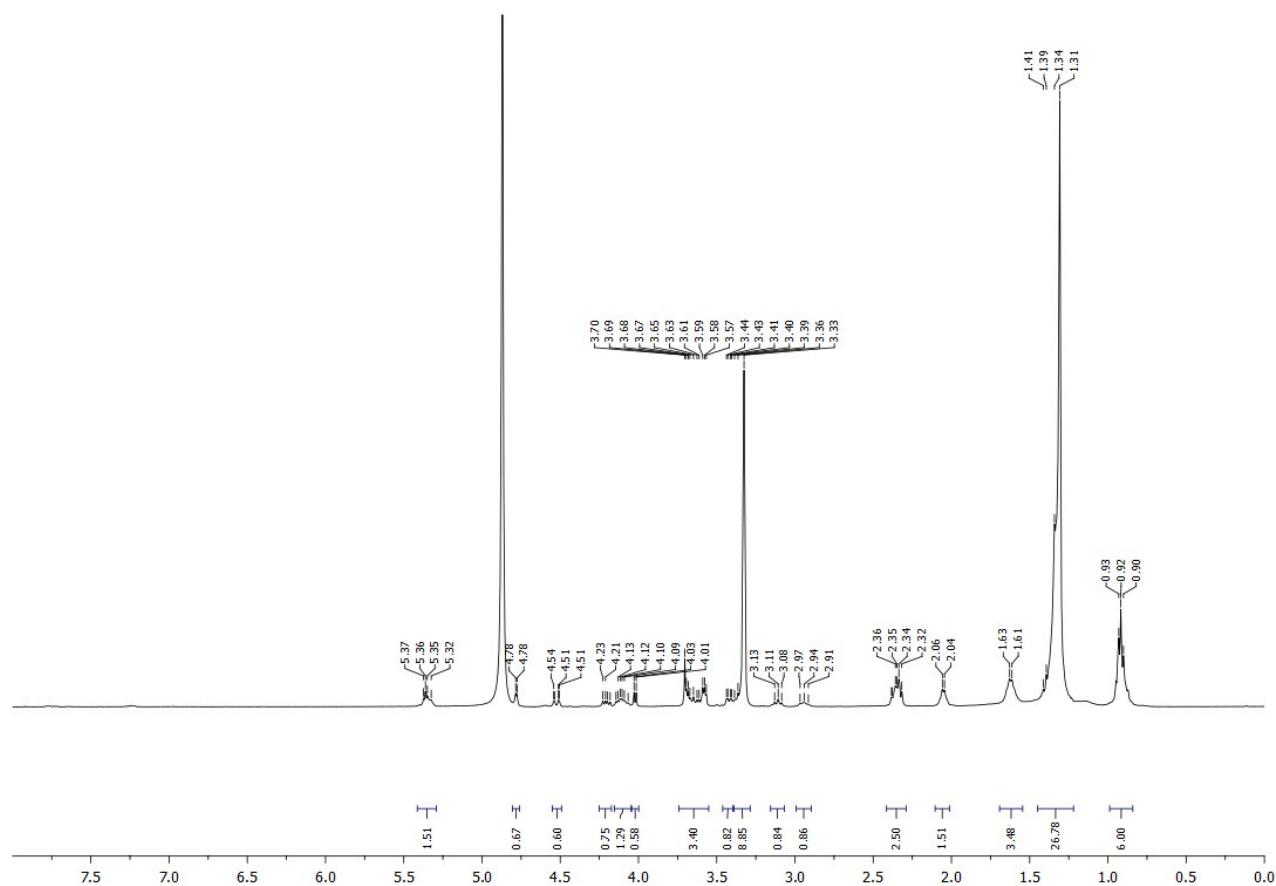


$^{13}\text{C}\{^1\text{H}\}$ NMR

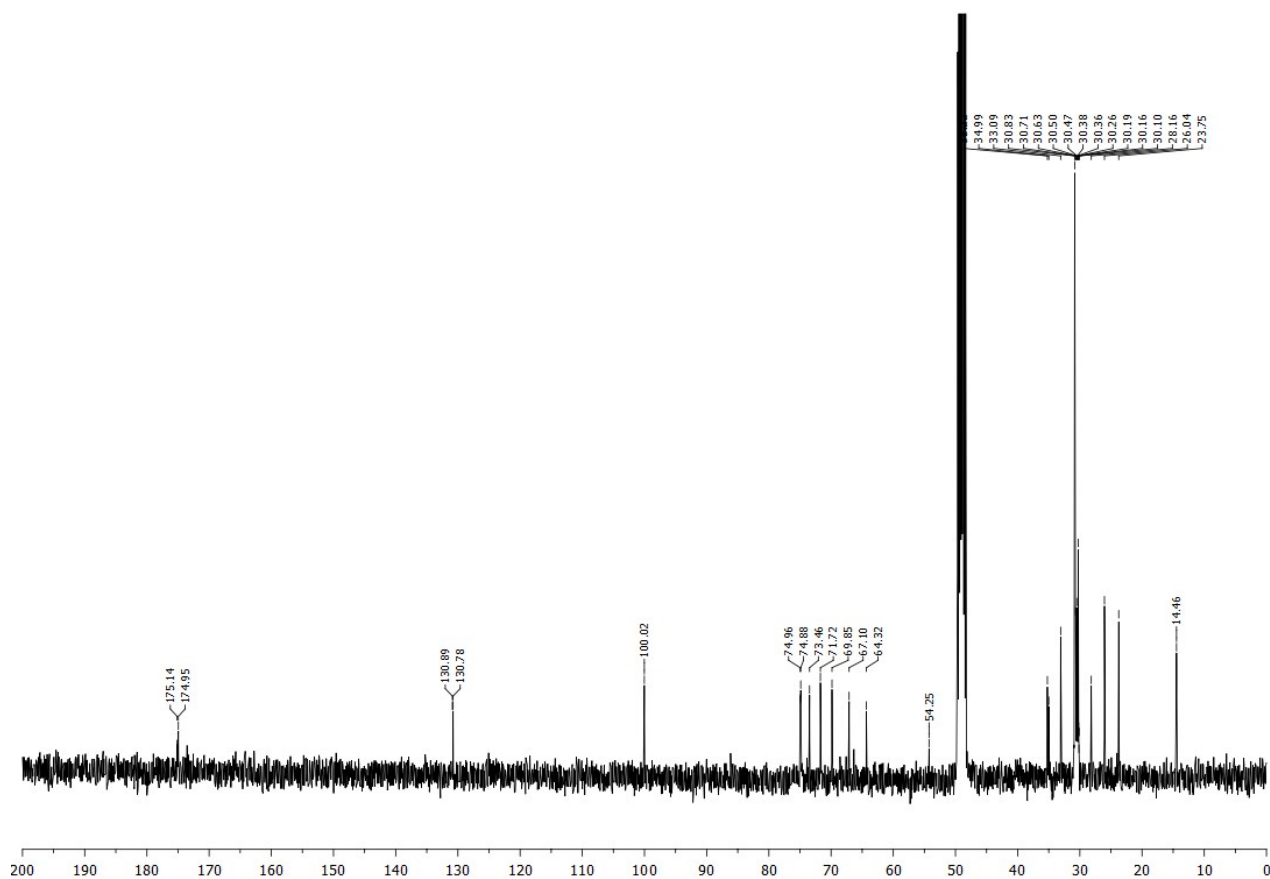


(2'S)-1'-O-Oleoyl-2'-O-palmitoyl-glycerol 6-deoxy-6-sulfonato- α -D-glucopyranoside, potassium salt
(5)

^1H NMR

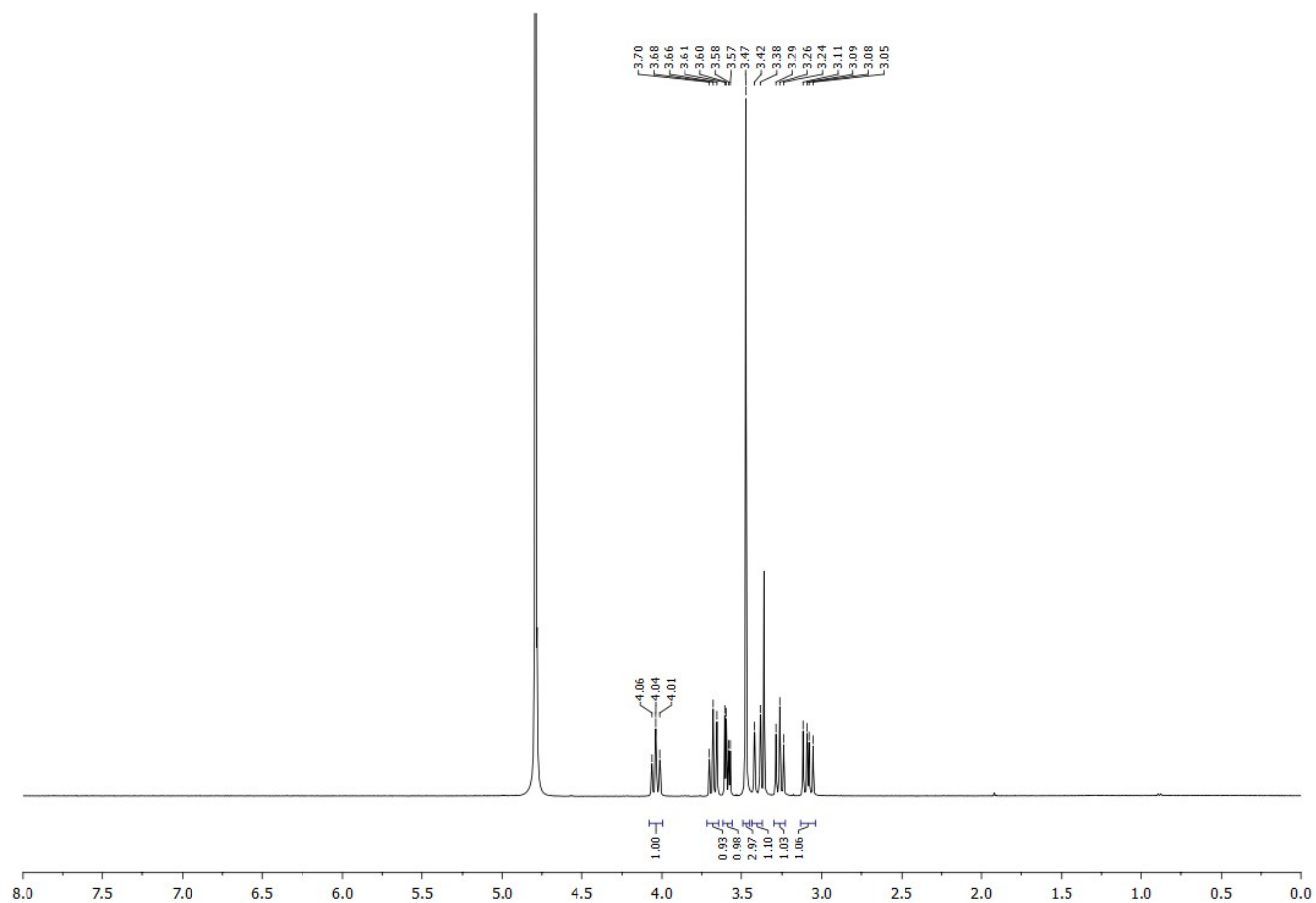


$^{13}\text{C}\{^1\text{H}\}$ NMR

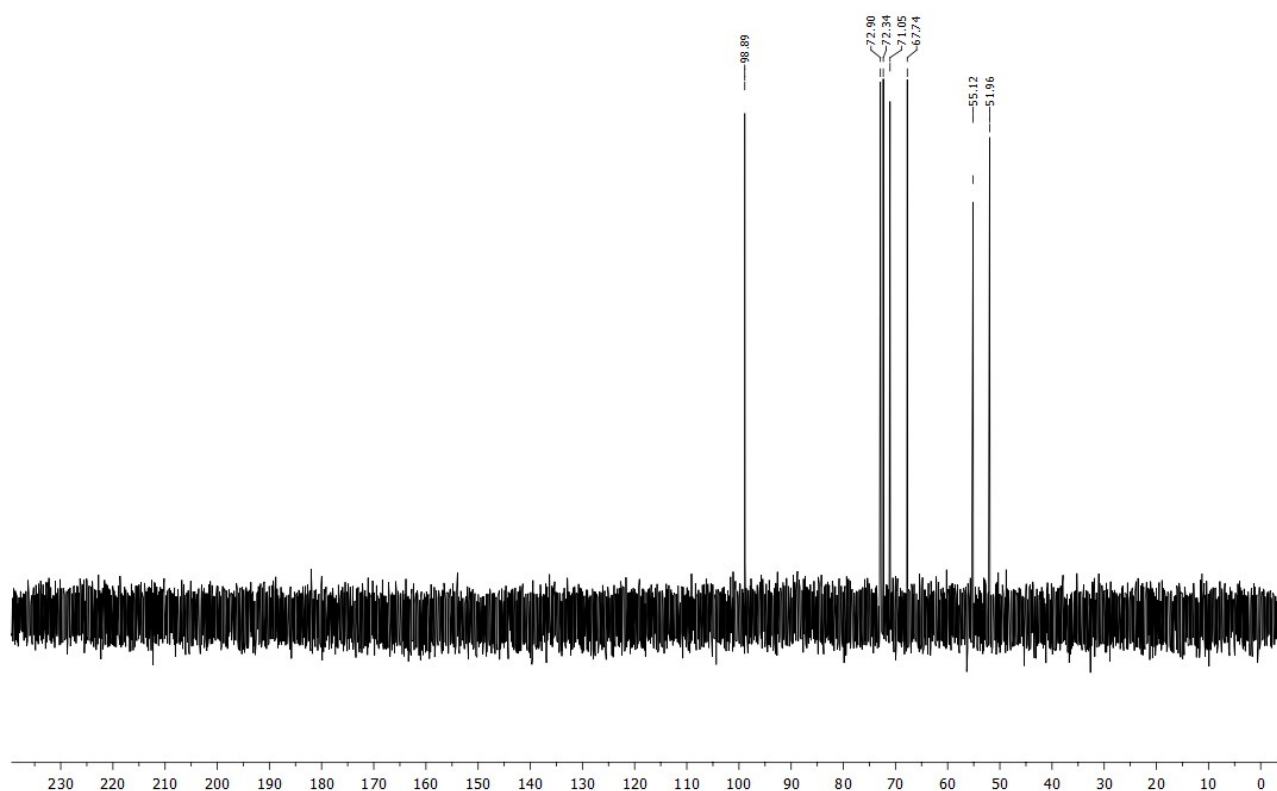


Sodium methyl 6-deoxy-6-sulfonato- α -D-glucopyranoside (19)

^1H NMR

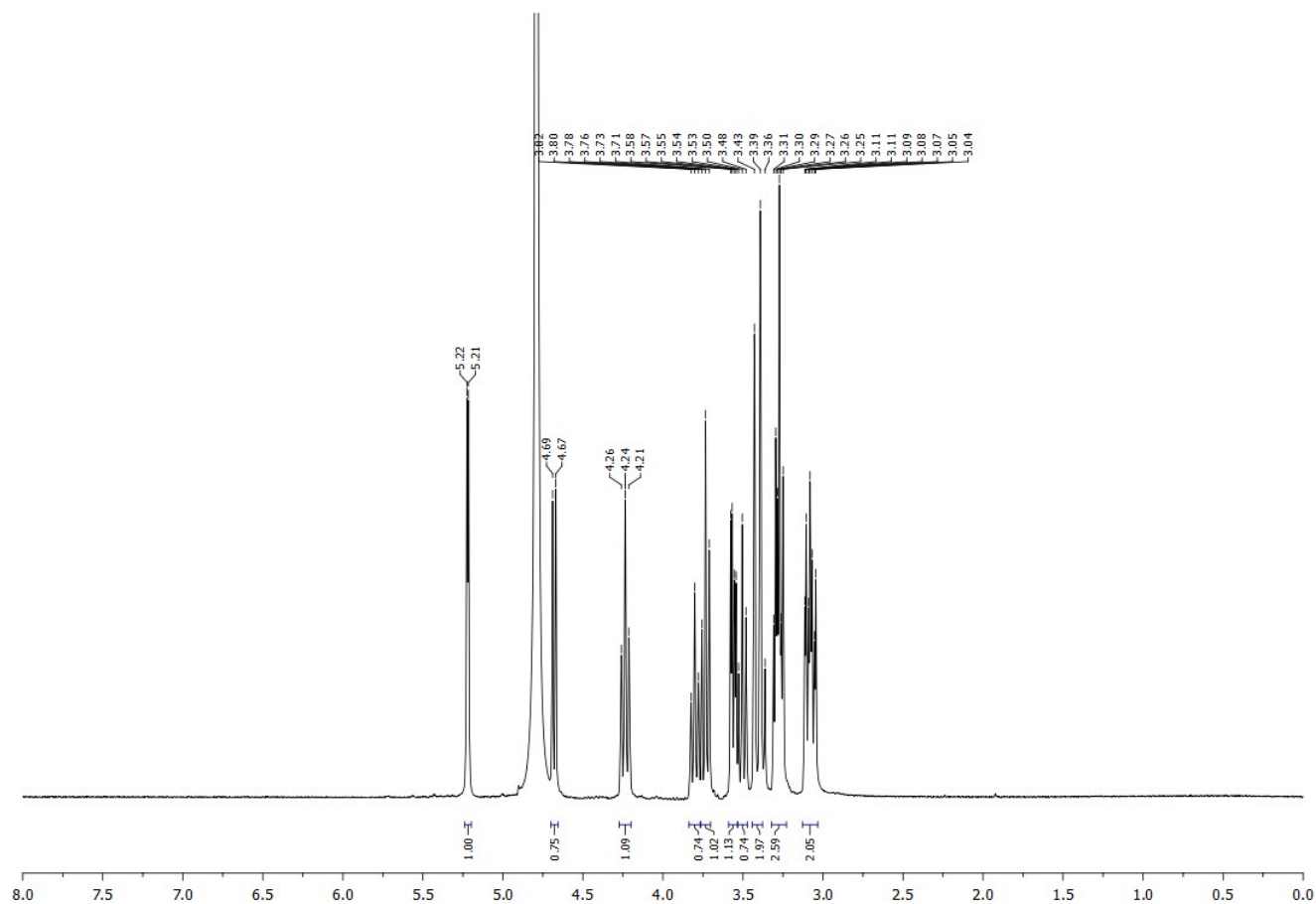


$^{13}\text{C}\{^1\text{H}\}$ NMR

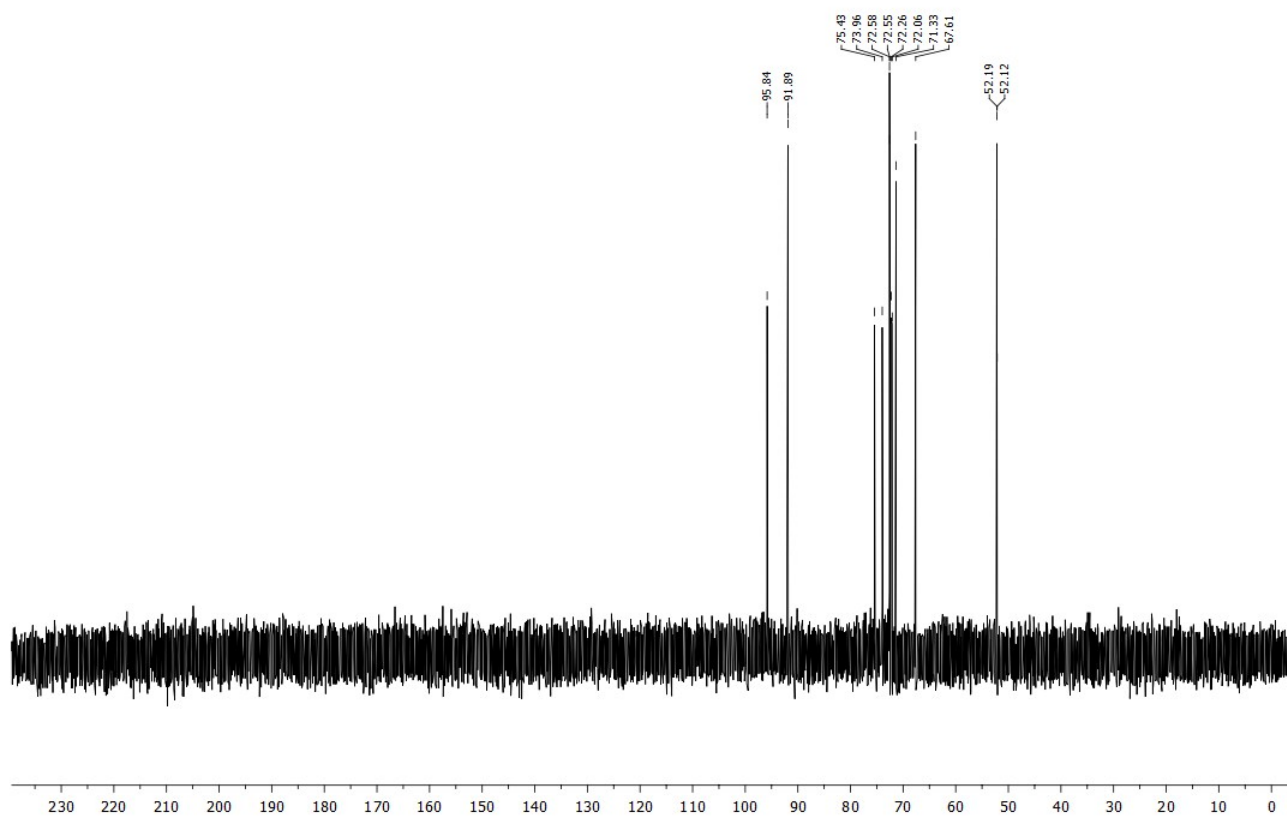


Sodium 6-deoxy-6-sulfonato-D-glucopyranose (1)

^1H NMR

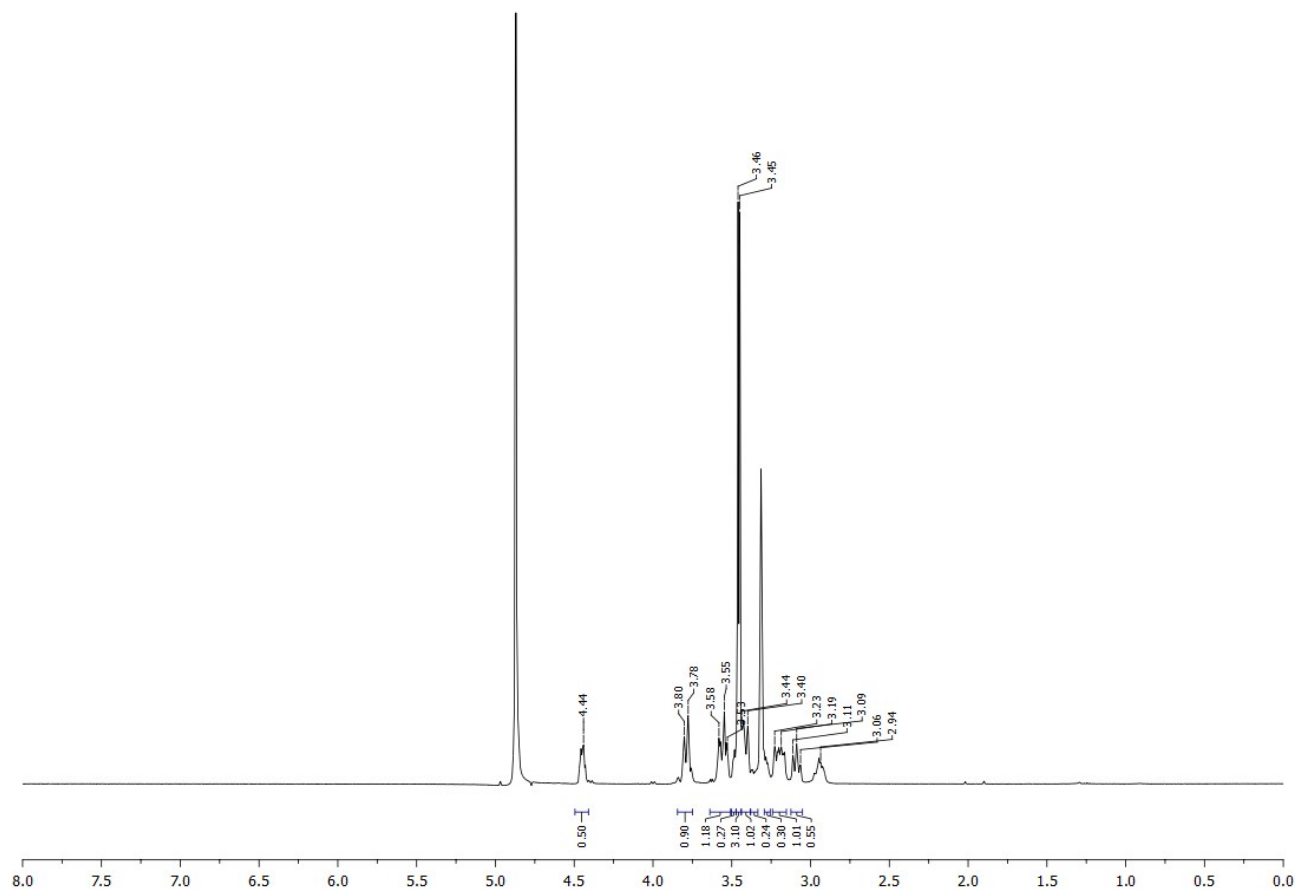


$^{13}\text{C}\{^1\text{H}\}$ NMR

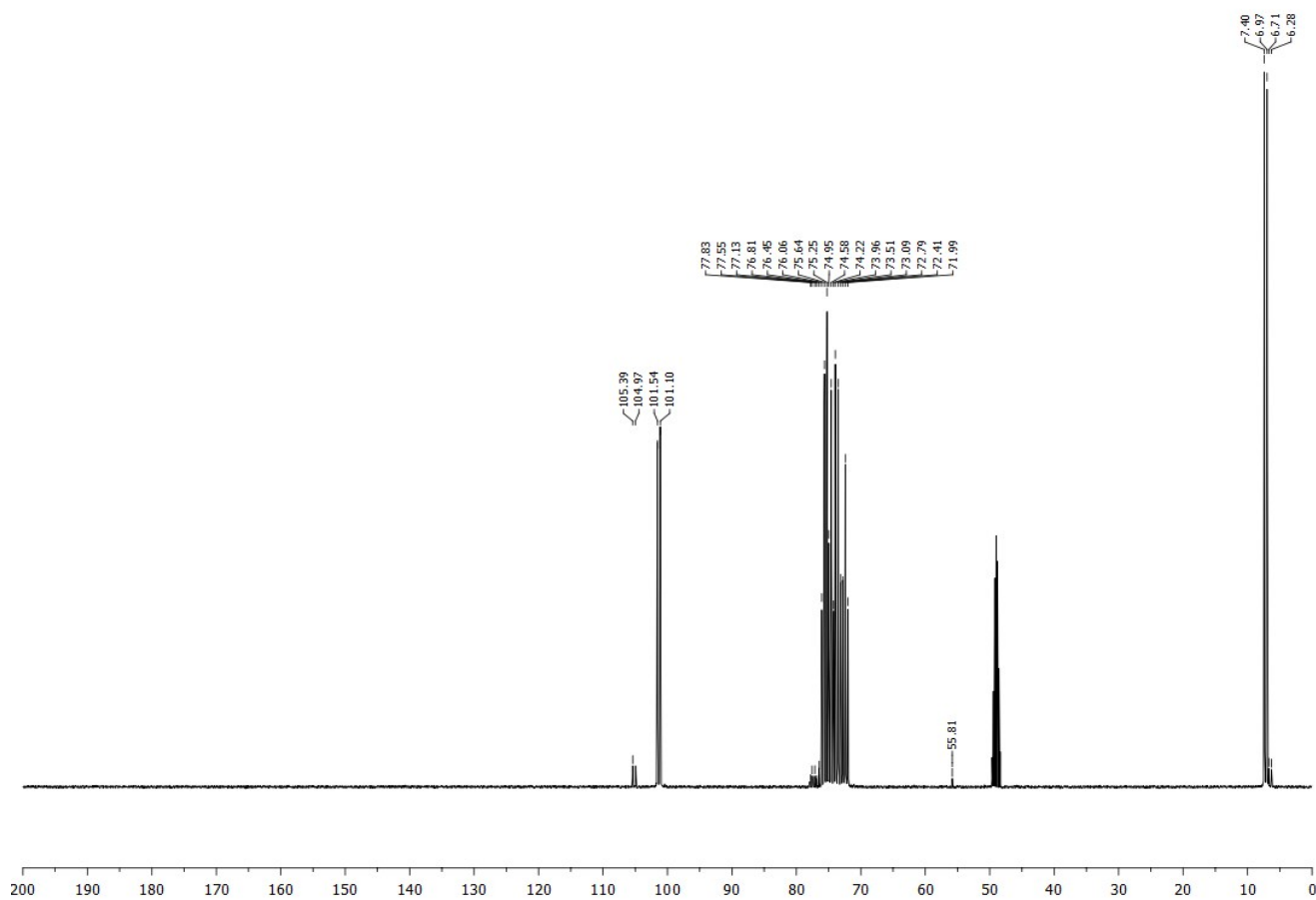


Methyl 6-deoxy-6-iodo-D-($^{13}\text{C}_6$)glucopyranoside (21)

^1H NMR

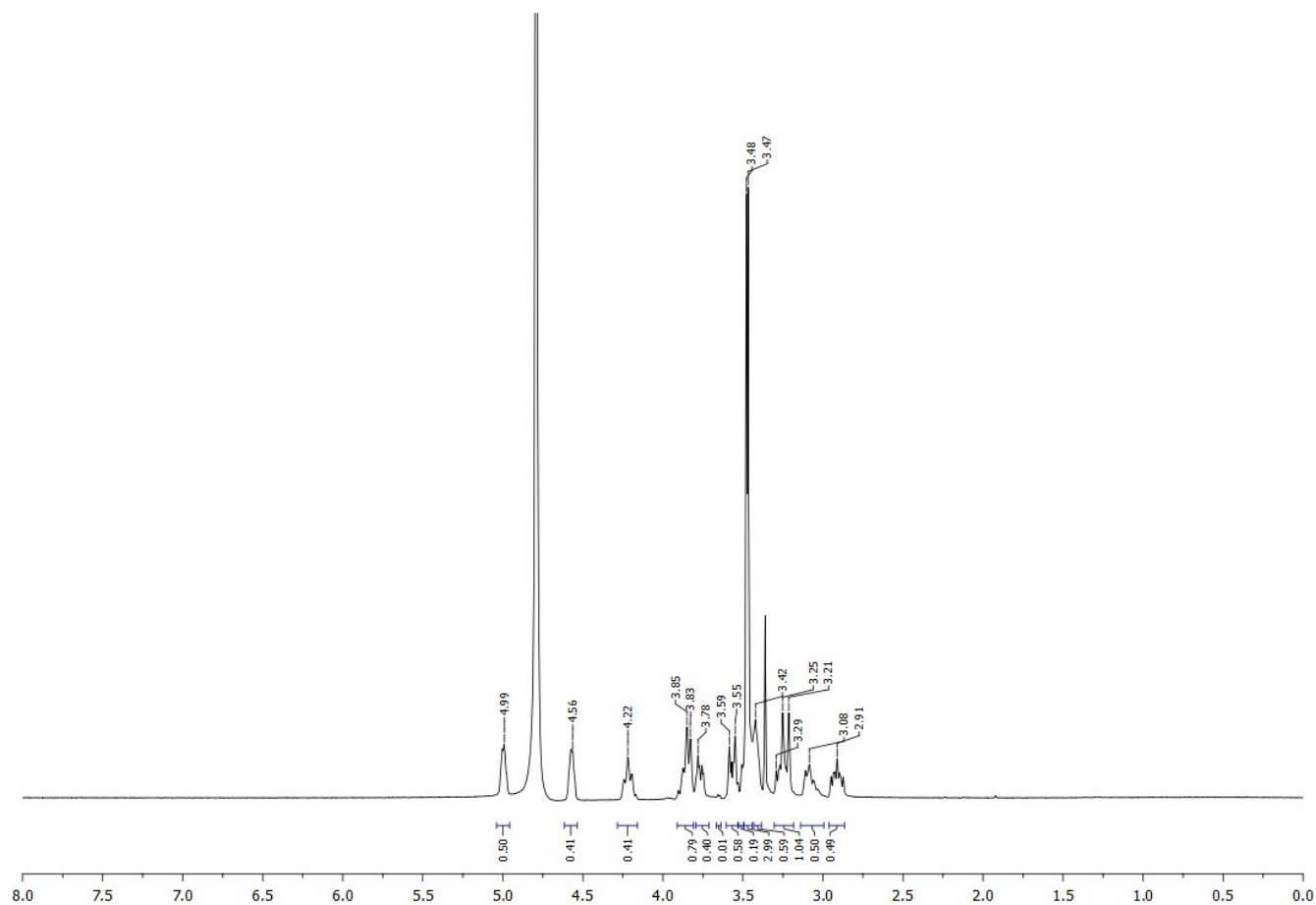


$^{13}\text{C}\{^1\text{H}\}$ NMR

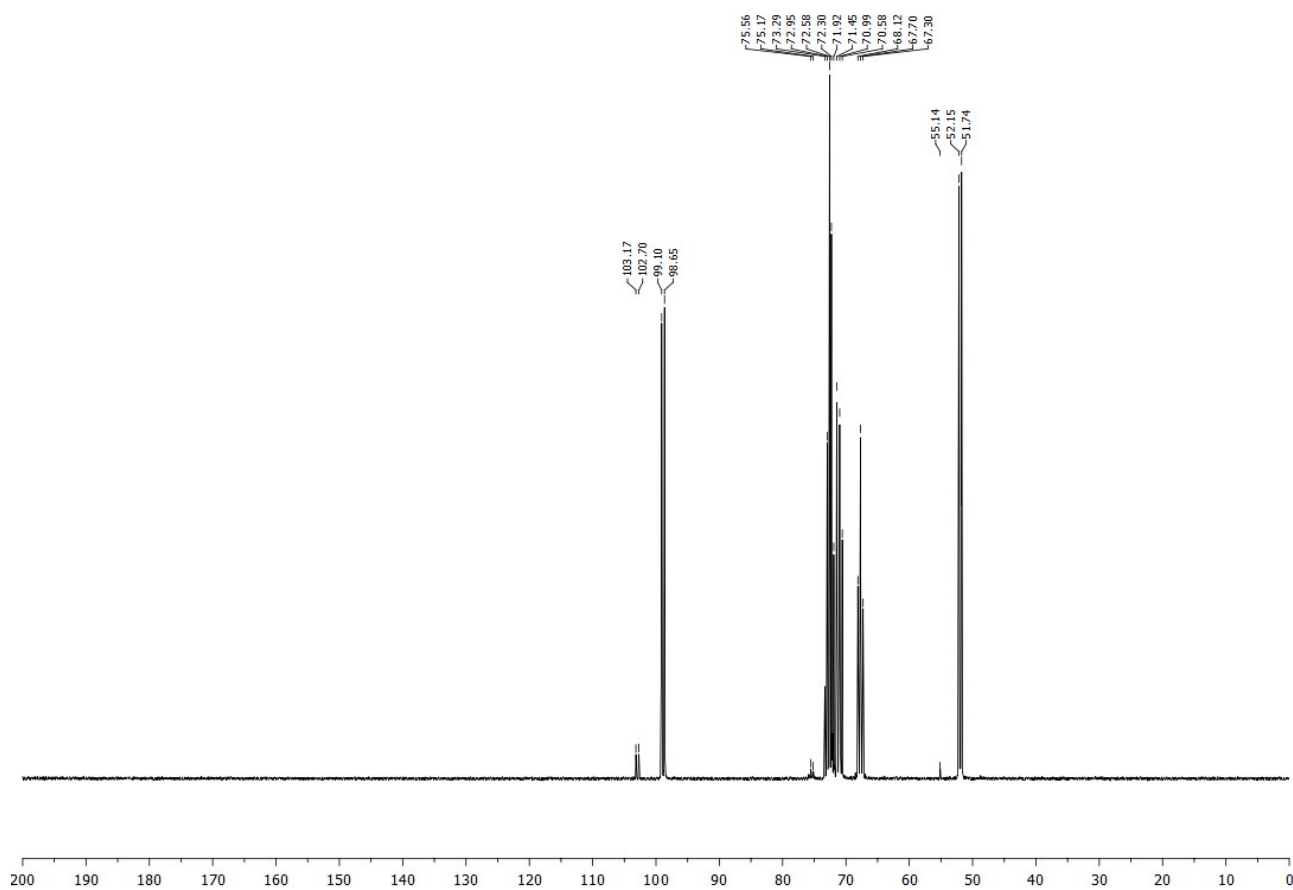


Sodium methyl 6-deoxy-6-sulfonato-D-($^{13}\text{C}_6$)glucopyranoside (22)

^1H NMR

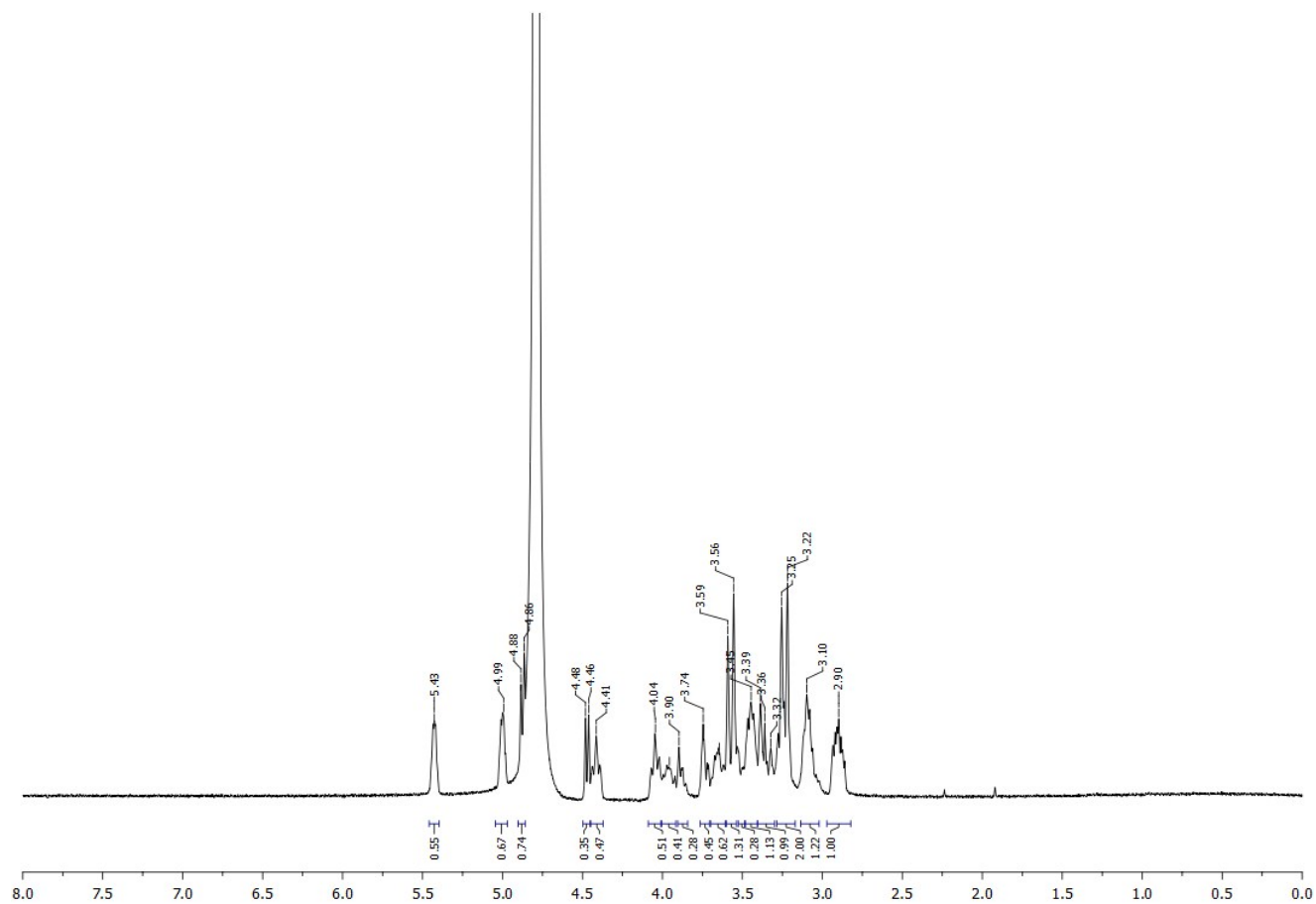


$^{13}\text{C}\{^1\text{H}\}$ NMR

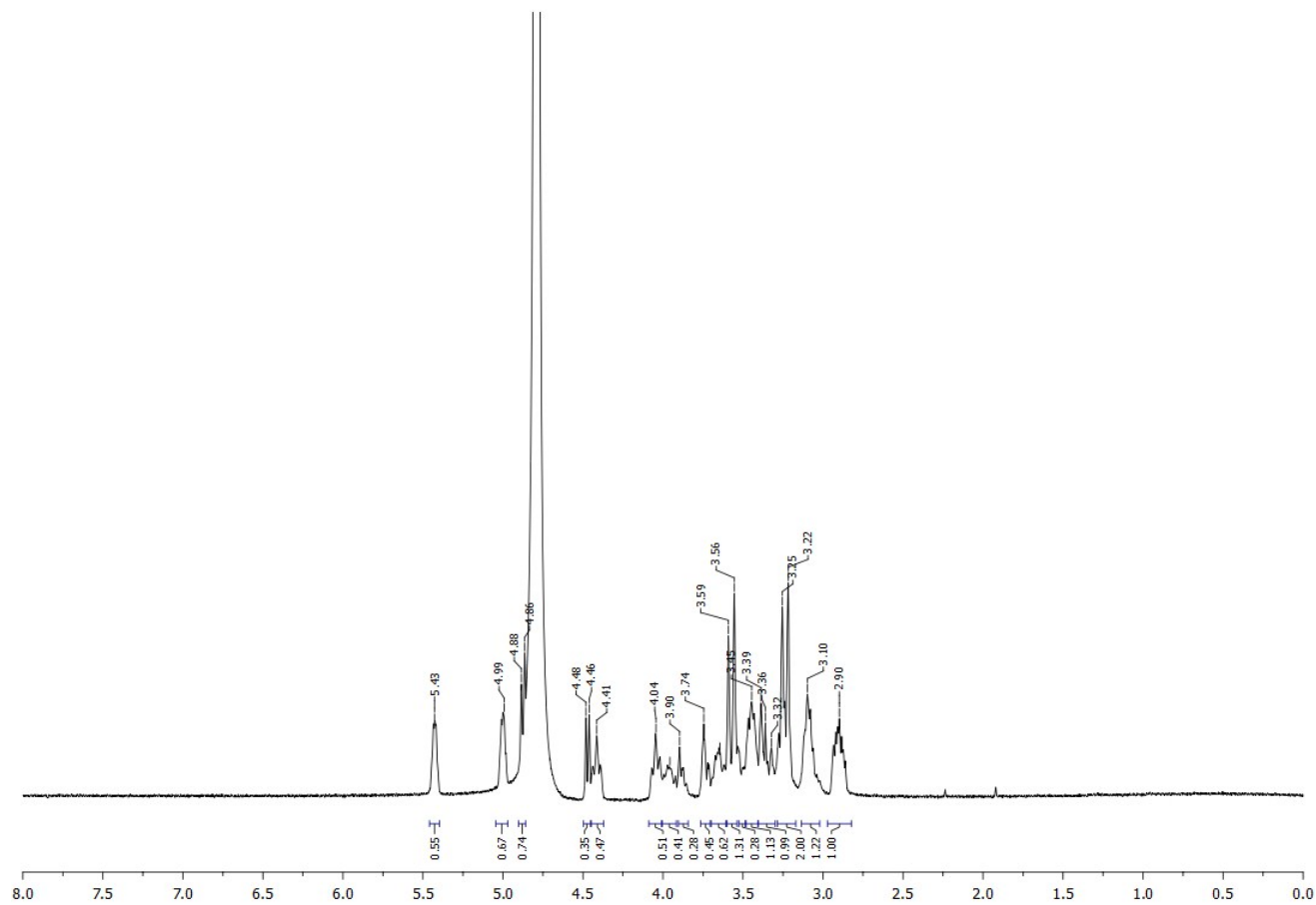


Sodium 6-deoxy-6-sulfonato-D-($^{13}\text{C}_6$)glucopyranose (23)

^1H NMR

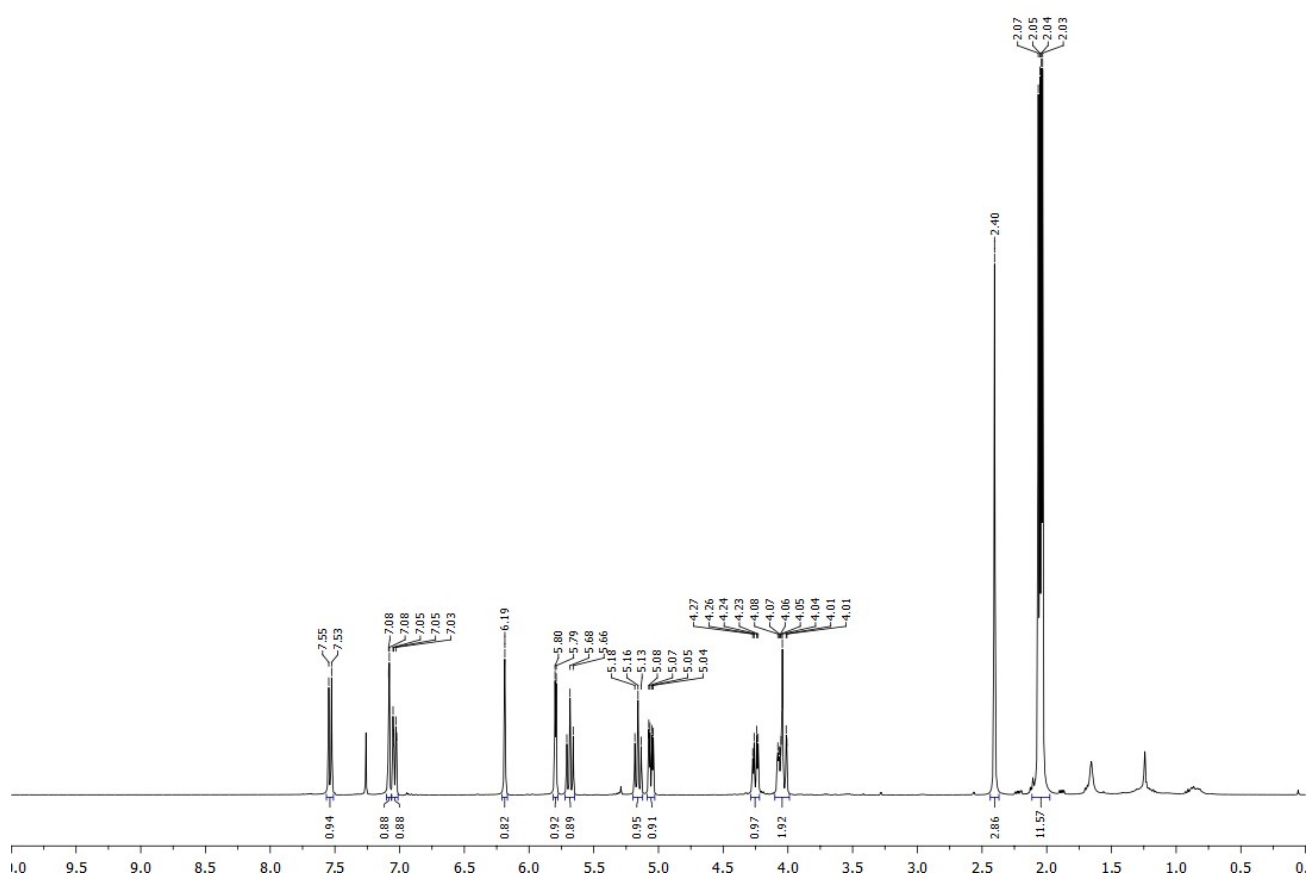


$^{13}\text{C}\{^1\text{H}\}$ NMR

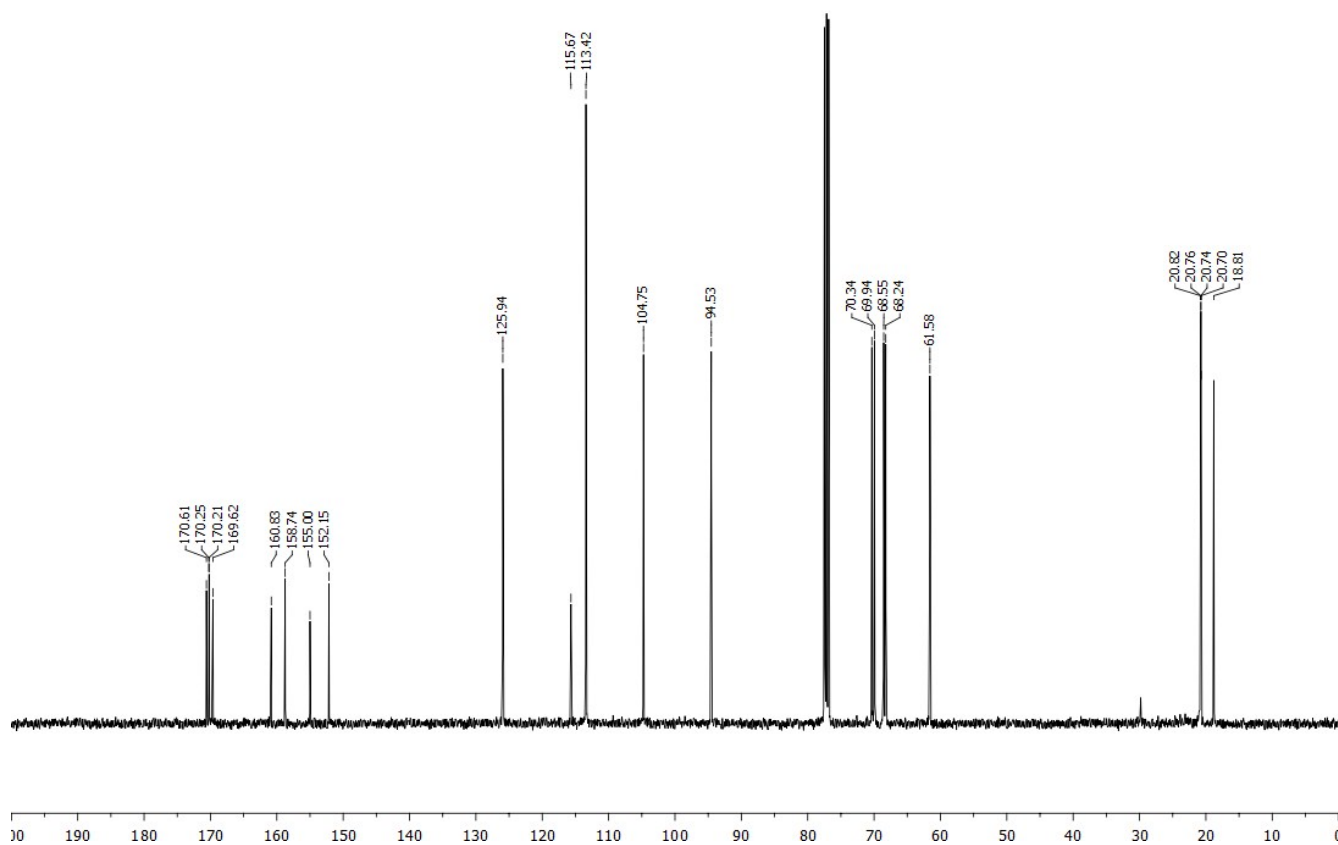


4-Methylumbelliferyl 2,3,4,6-tetra-*O*-acetyl- α -D-glucopyranoside (27)

^1H NMR

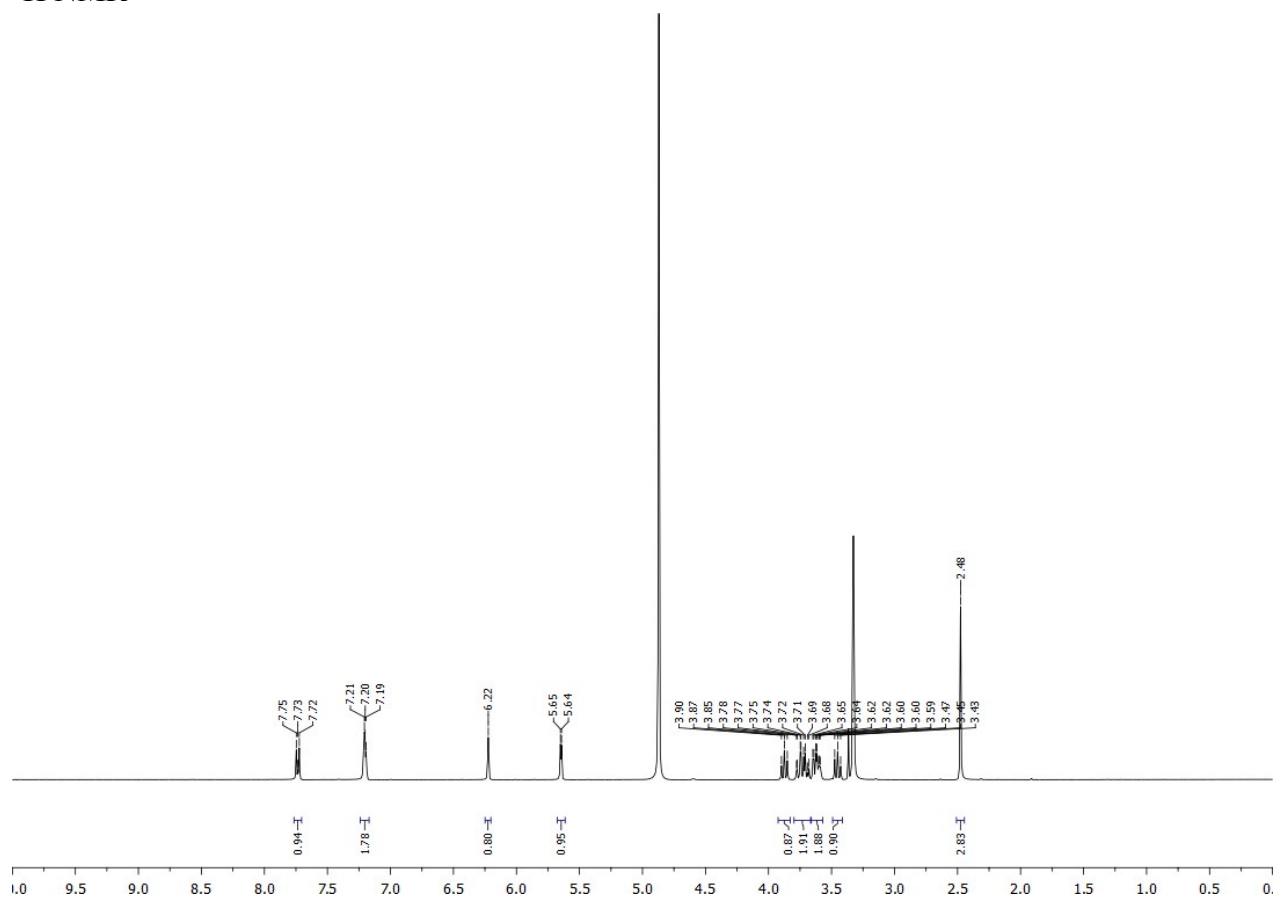


$^{13}\text{C}\{^1\text{H}\}$ NMR

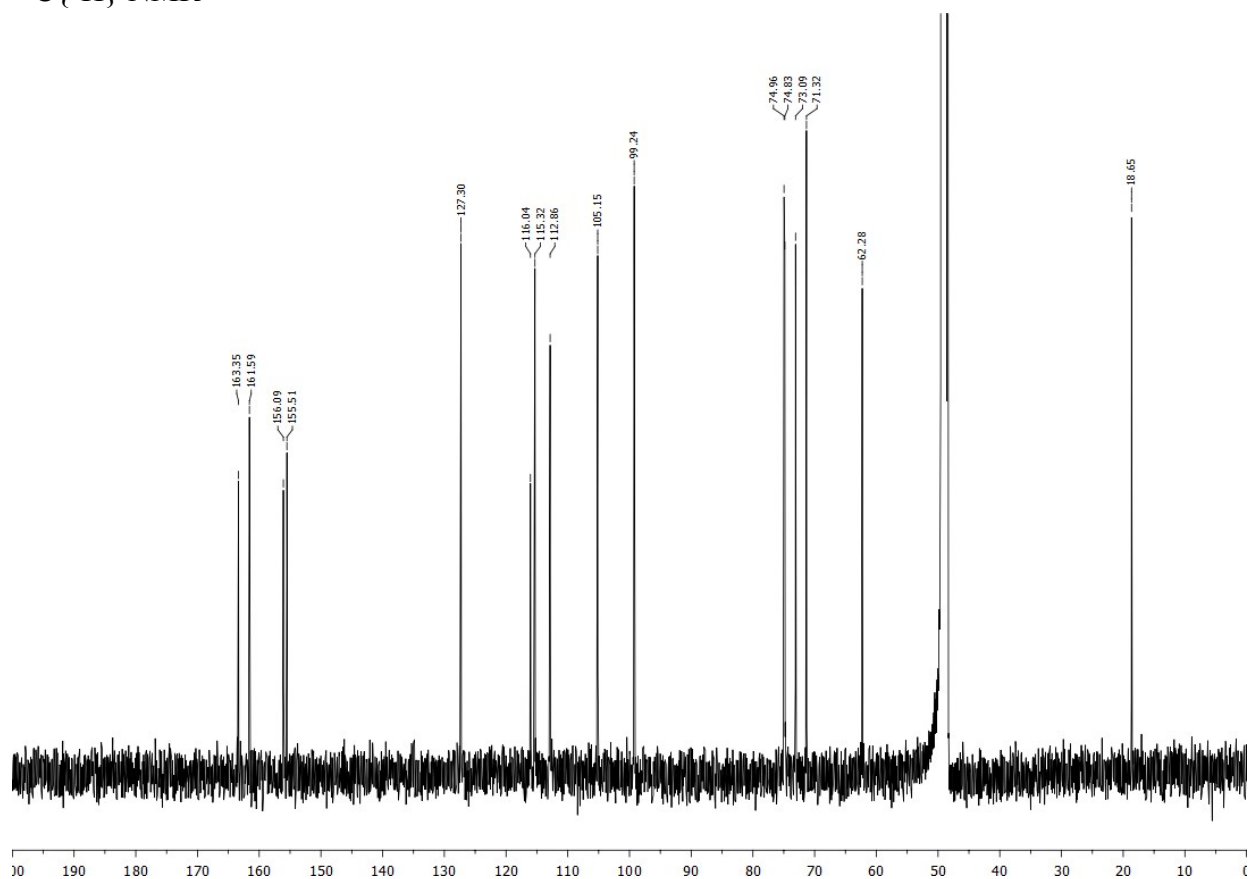


4-Methylumbelliferyl α -D-glucopyranoside (MUGlc, 25)

^1H NMR

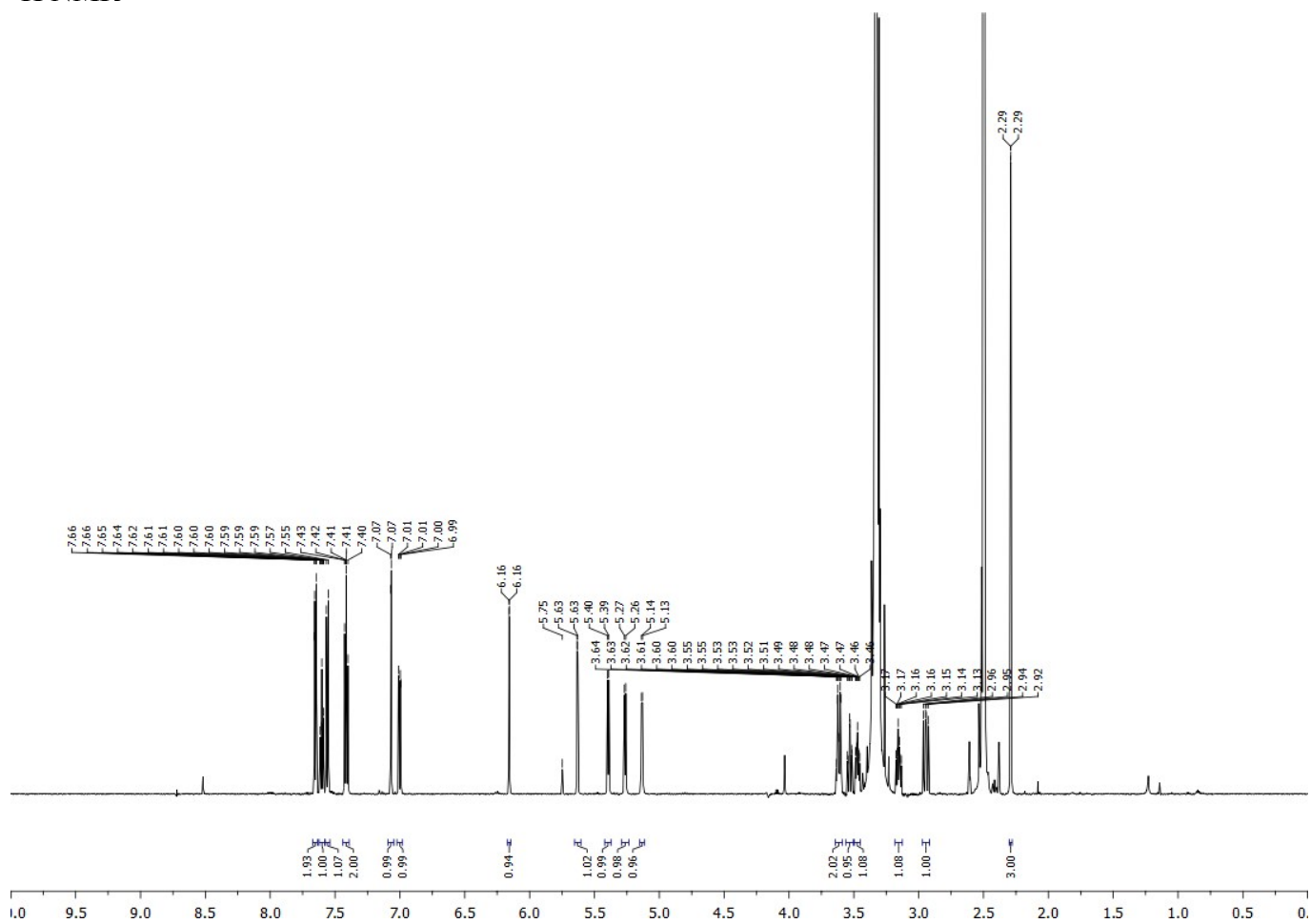


$^{13}\text{C}\{^1\text{H}\}$ NMR

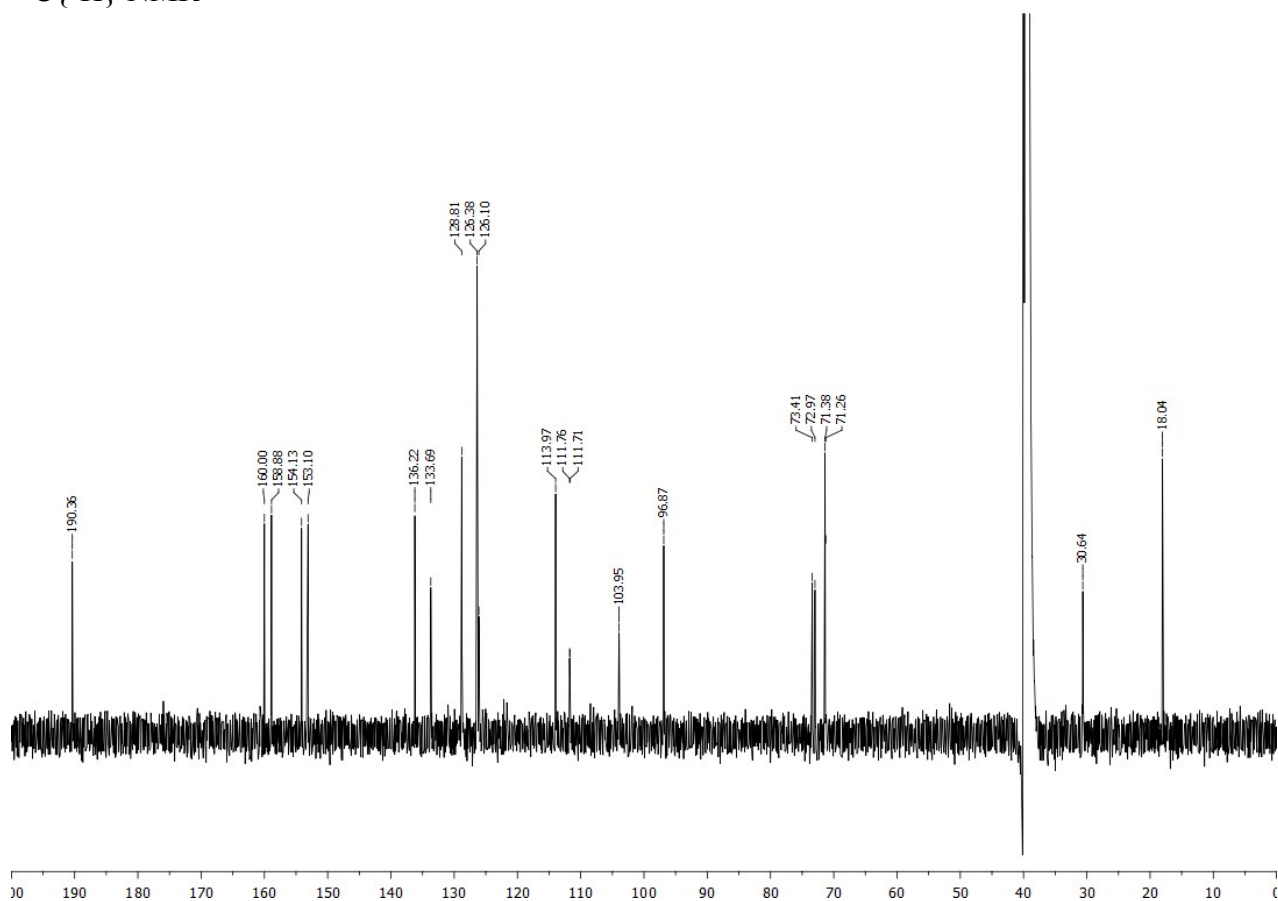


4-Methylumbelliferyl 6-*S*-benzoyl-6-deoxy-6-thio- α -D-glucopyranoside (28)

^1H NMR

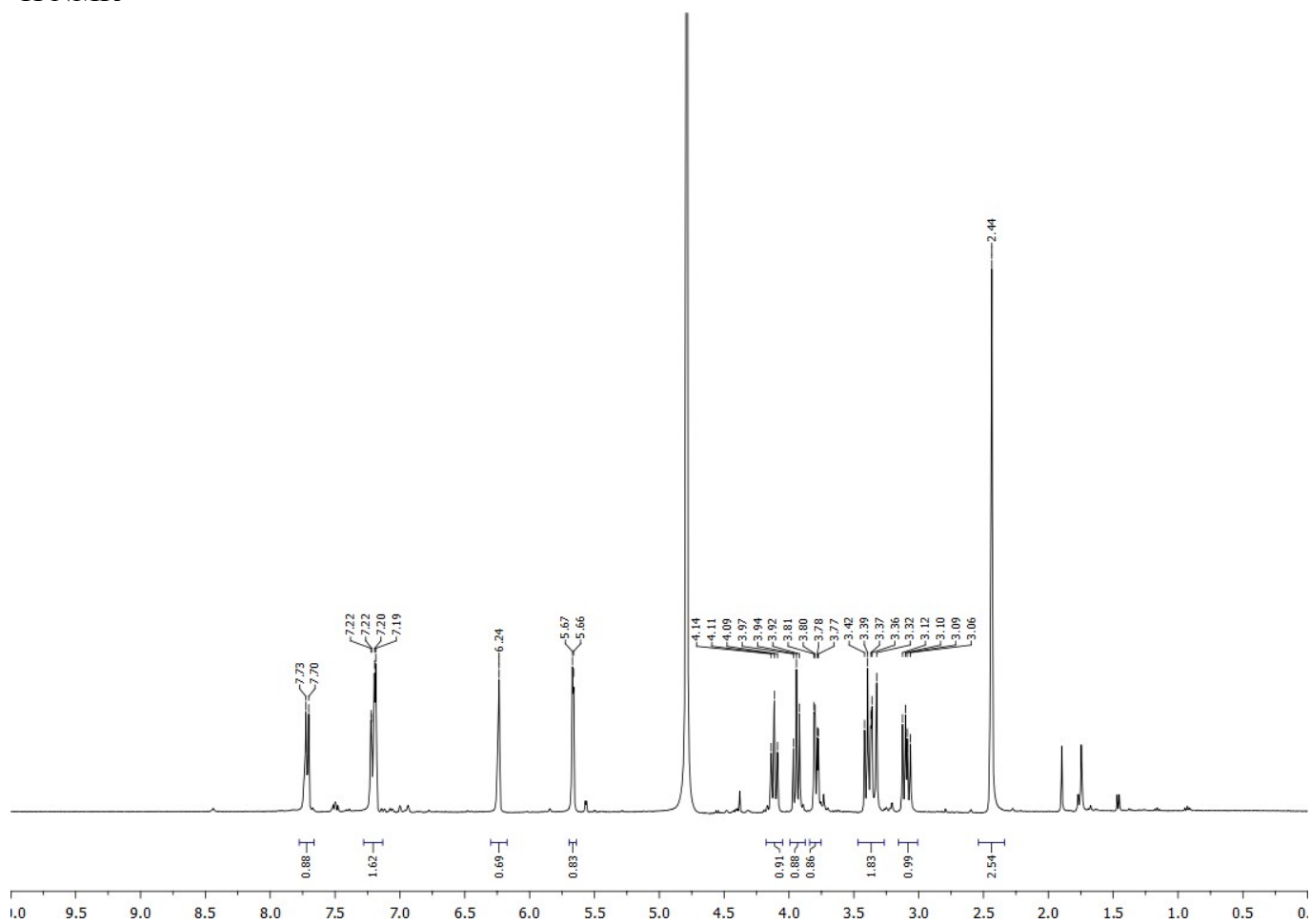


$^{13}\text{C}\{^1\text{H}\}$ NMR



Potassium 4-methylumbelliferyl 6-deoxy-6-sulfonato- α -D-glucopyranoside (MUSQ, 24)

^1H NMR



$^{13}\text{C}\{^1\text{H}\}$ NMR

