

## Supporting Information for

### Synthesis of a Pseudodisaccharide Suitable for Synthesis of Ring I Modified 4,5-2-Deoxystreptamine Type Aminoglycoside Antibiotics.

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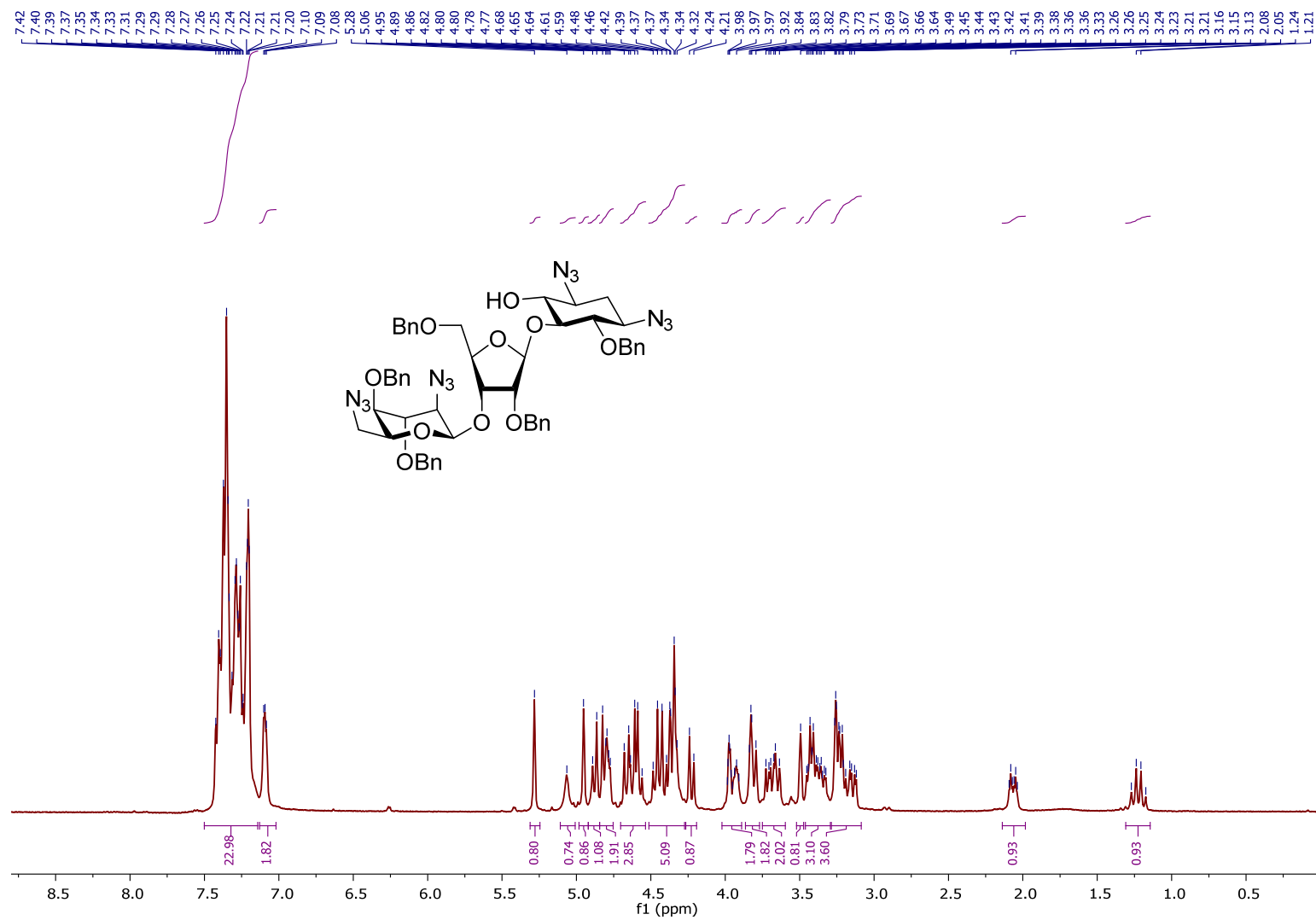
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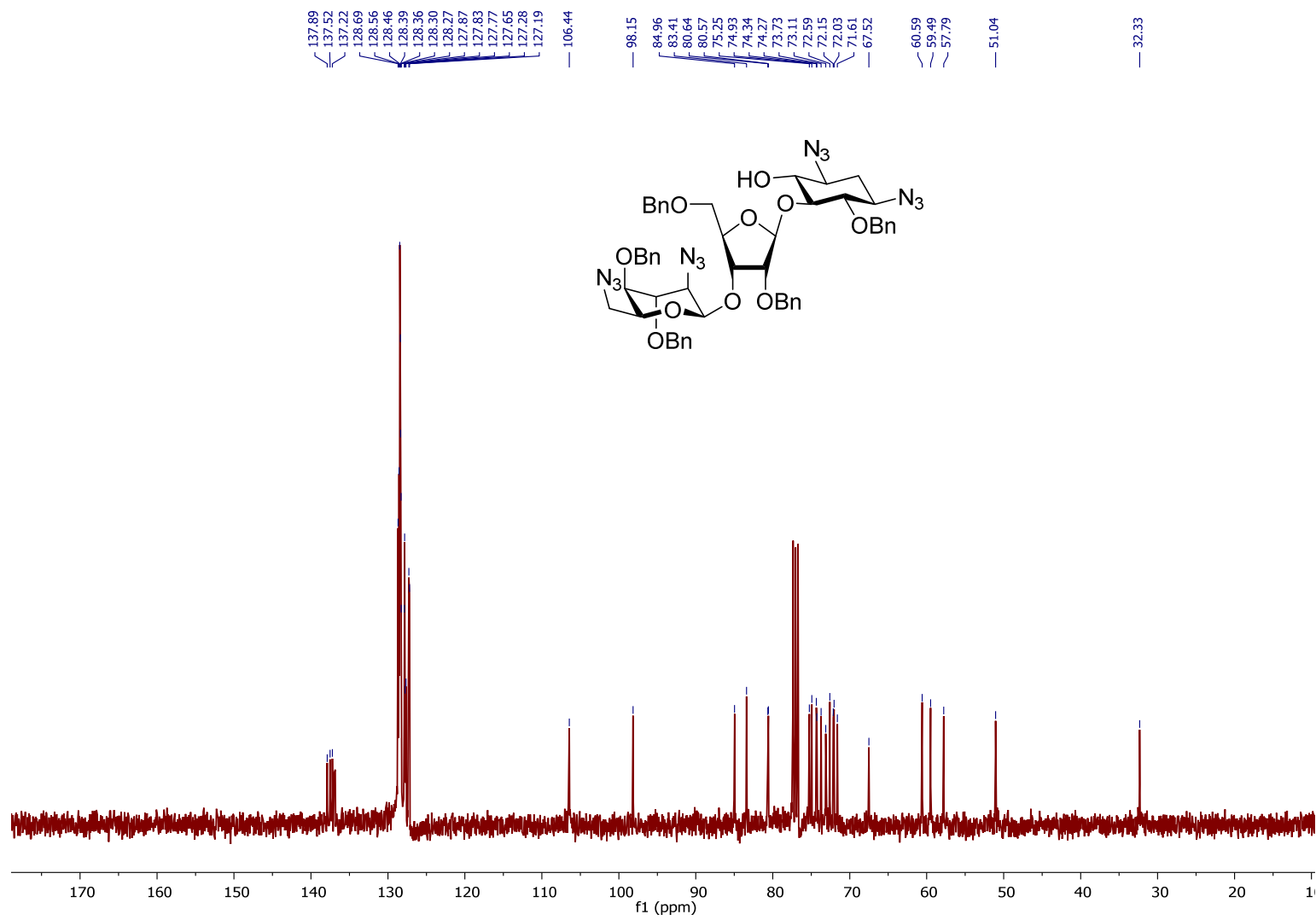
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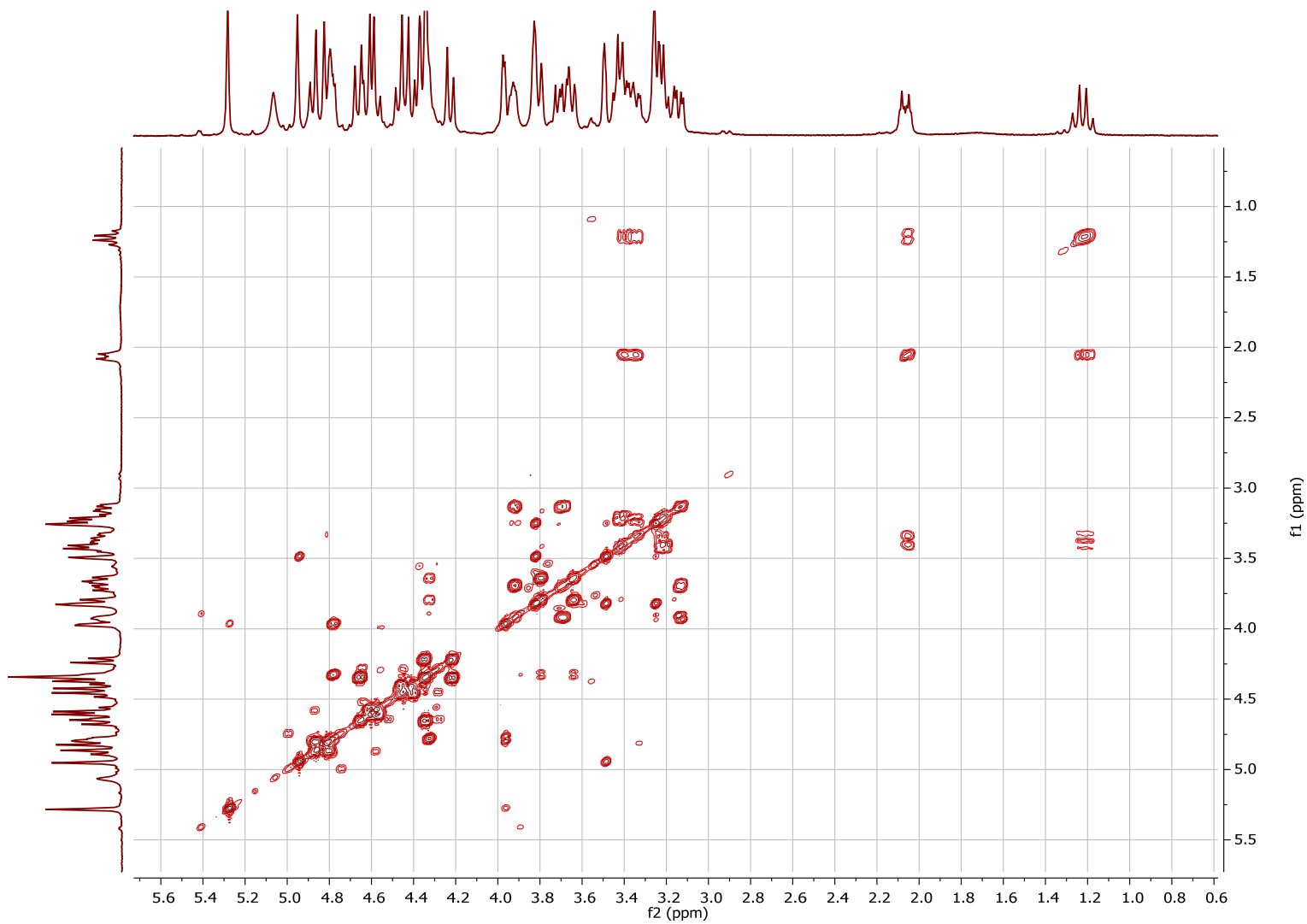
**<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) of (1*R*,3*S*,4*R*,5*S*,6*R*)-1,3-Diazido-1,3-dideamino-5-*O*-[2',5'-dibenzyl-3'-*O*-(2'',6''-diazido-2'',6''-dideamino-3'',4''-di-*O*-benzyl- $\alpha$ -L-idopyranosyl)- $\beta$ -D-ribofuranosyl]-6-*O*-benzyl-2- deoxystreptamine (3)**



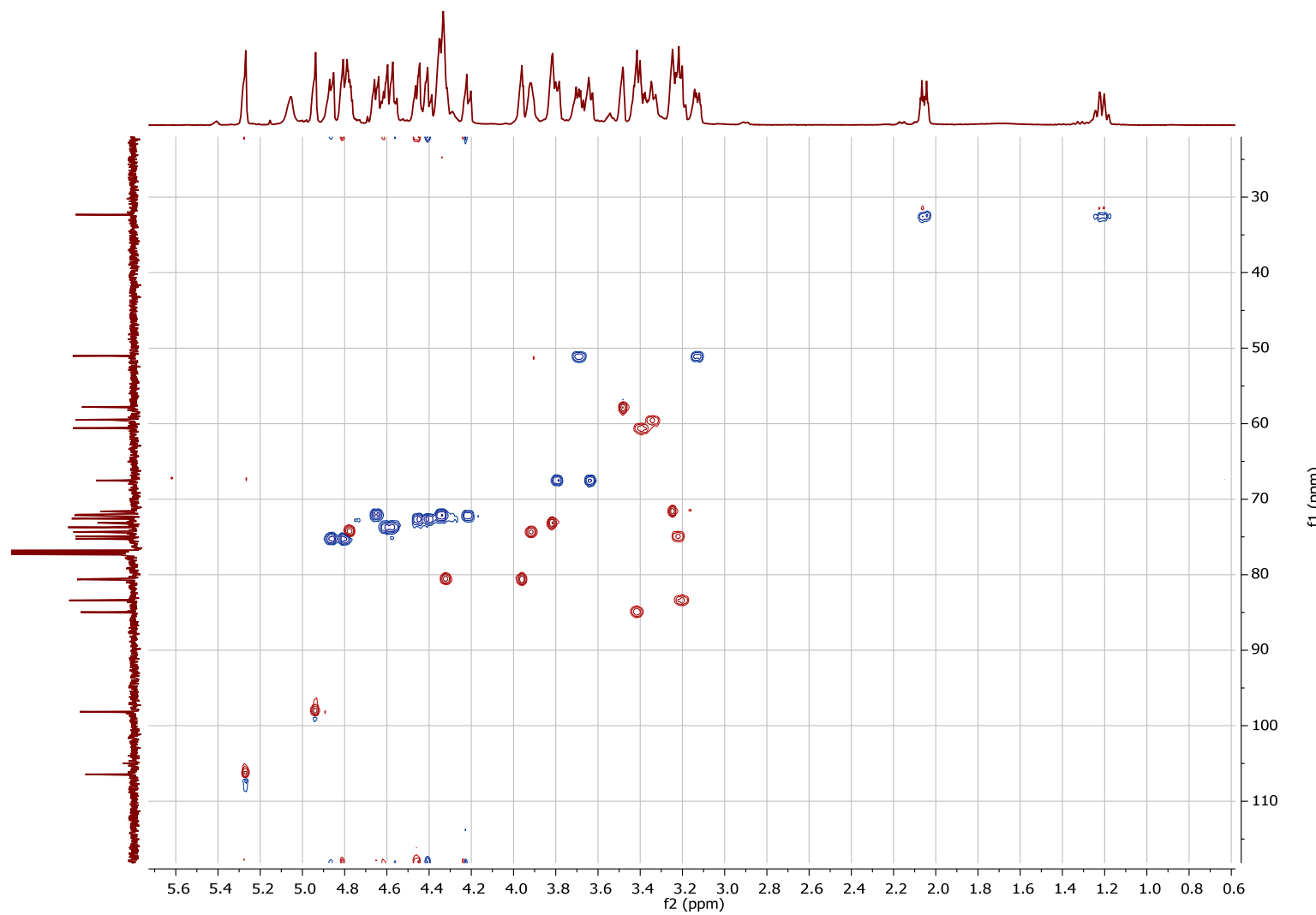
$^{13}\text{C}\{^1\text{H}\}$  NMR (100 MHz,  $\text{CDCl}_3$ ) of (1*R*,3*S*,4*R*,5*S*,6*R*)-1,3-Diazido-1,3-dideamino-5-*O*-[2',5'-dibenzyl-3'-*O*-(2'',6''-diazido-2'',6''-dideamino-3'',4''-di-*O*-benzyl- $\alpha$ -L-idopyranosyl)- $\beta$ -D-ribofuranosyl]-6-*O*-benzyl-2-deoxystreptamine (3)



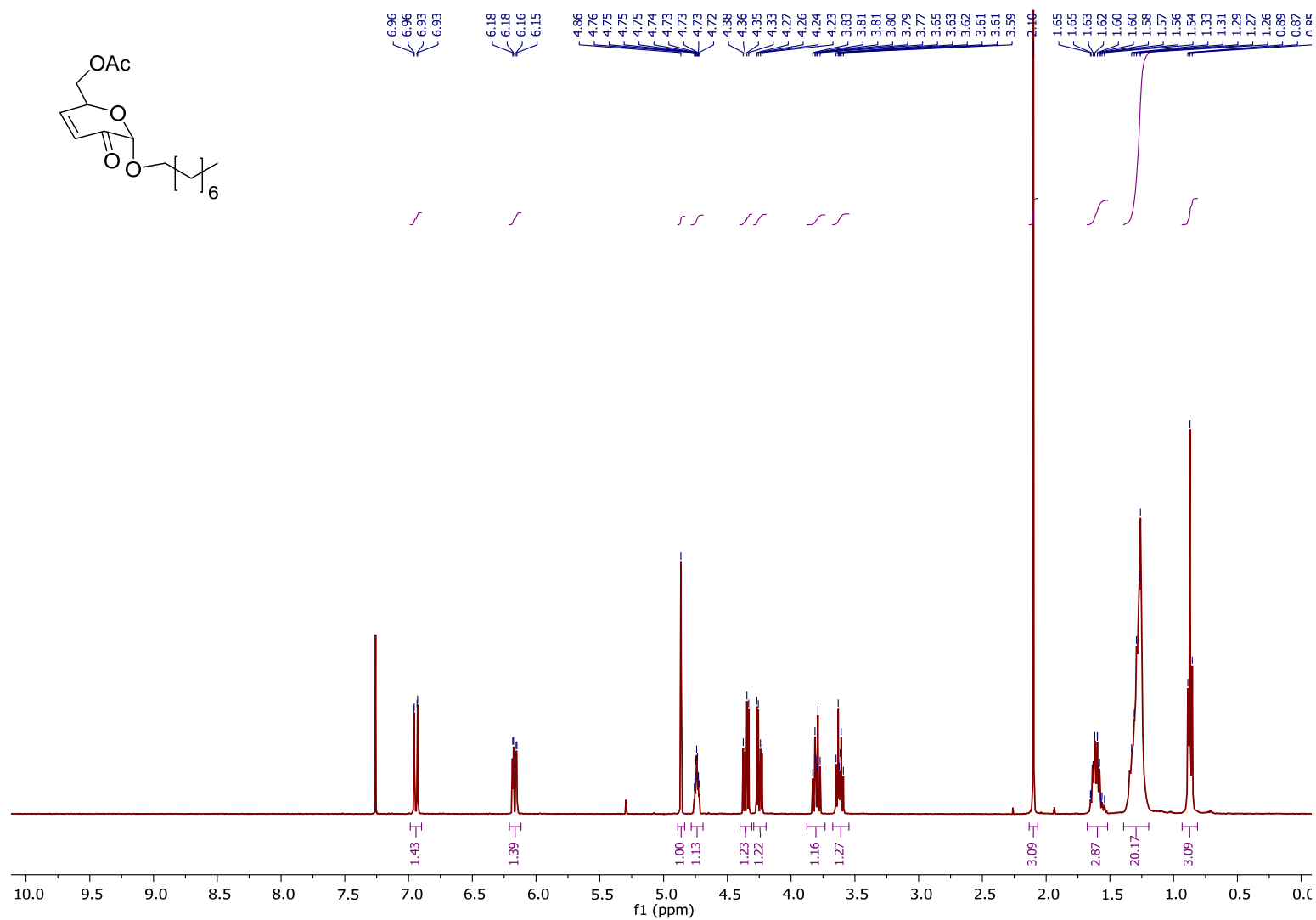
COSY spectrum (CDCl<sub>3</sub>) of (1*R*,3*S*,4*R*,5*S*,6*R*)-1,3-Diazido-1,3-dideamino-5-*O*-[2',5'-dibenzyl-3'-*O*-(2'',6''-diazido-2'',6''-dideamino-3'',4''-di-*O*-benzyl- $\alpha$ -L-idopyranosyl)- $\beta$ -D-ribofuranosyl]-6-*O*-benzyl-2- deoxystreptamine (3)



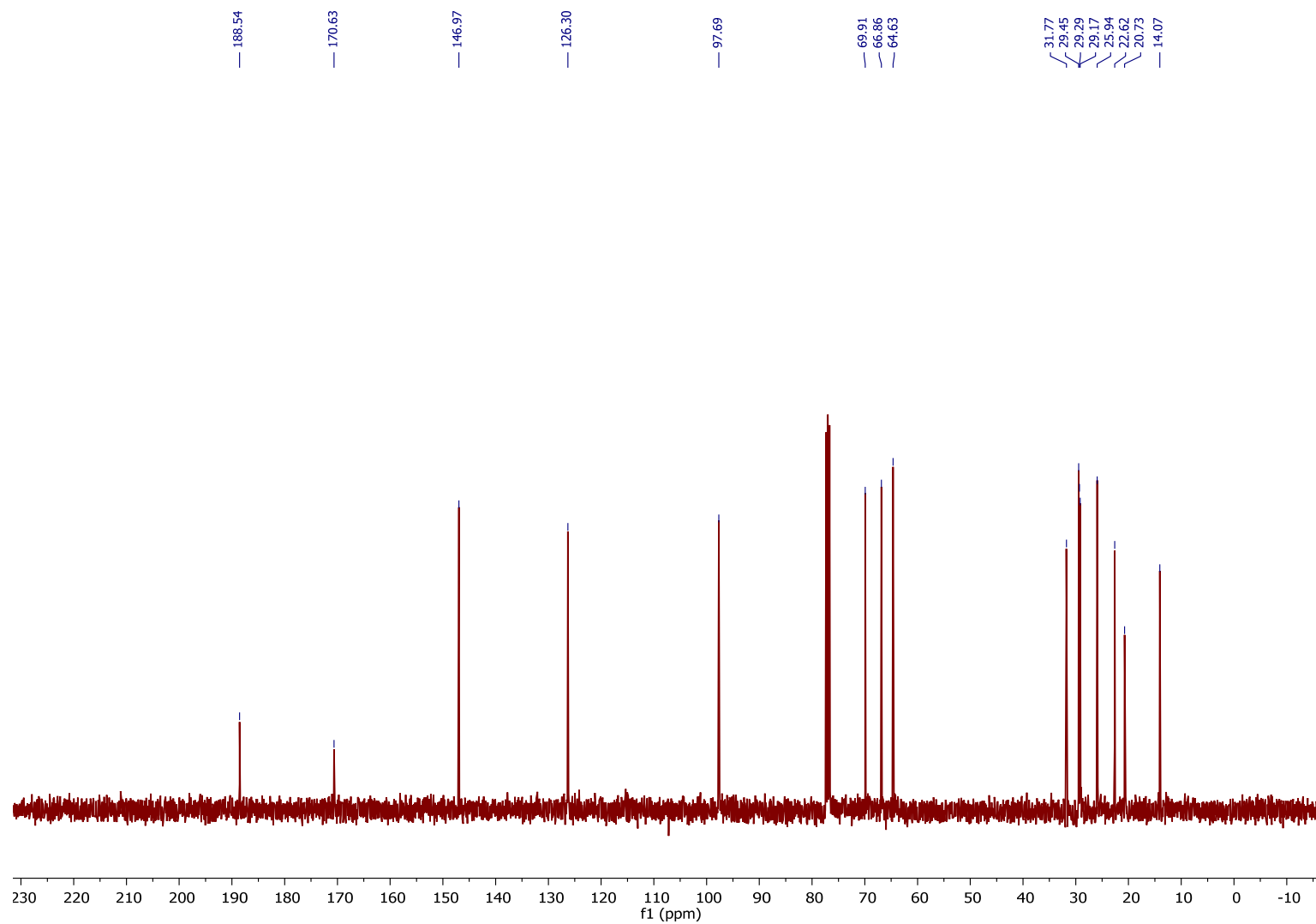
HSQC spectrum (CDCl<sub>3</sub>) of (1*R*,3*S*,4*R*,5*S*,6*R*)-1,3-Diazido-1,3-dideamino-5-*O*-[2',5'-dibenzyl-3'-*O*-(2'',6''-diazido-2'',6''-dideamino-3'',4''-di-*O*-benzyl- $\alpha$ -L-idopyranosyl)- $\beta$ -D-ribofuranosyl]-6-*O*-benzyl-2- deoxystreptamine (3)



**<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) of Octyl 6-*O*-acetyl-3,4-dideoxy- $\alpha$ -D-glycero-hex-3-enopyranosid-2-ulose (7)**

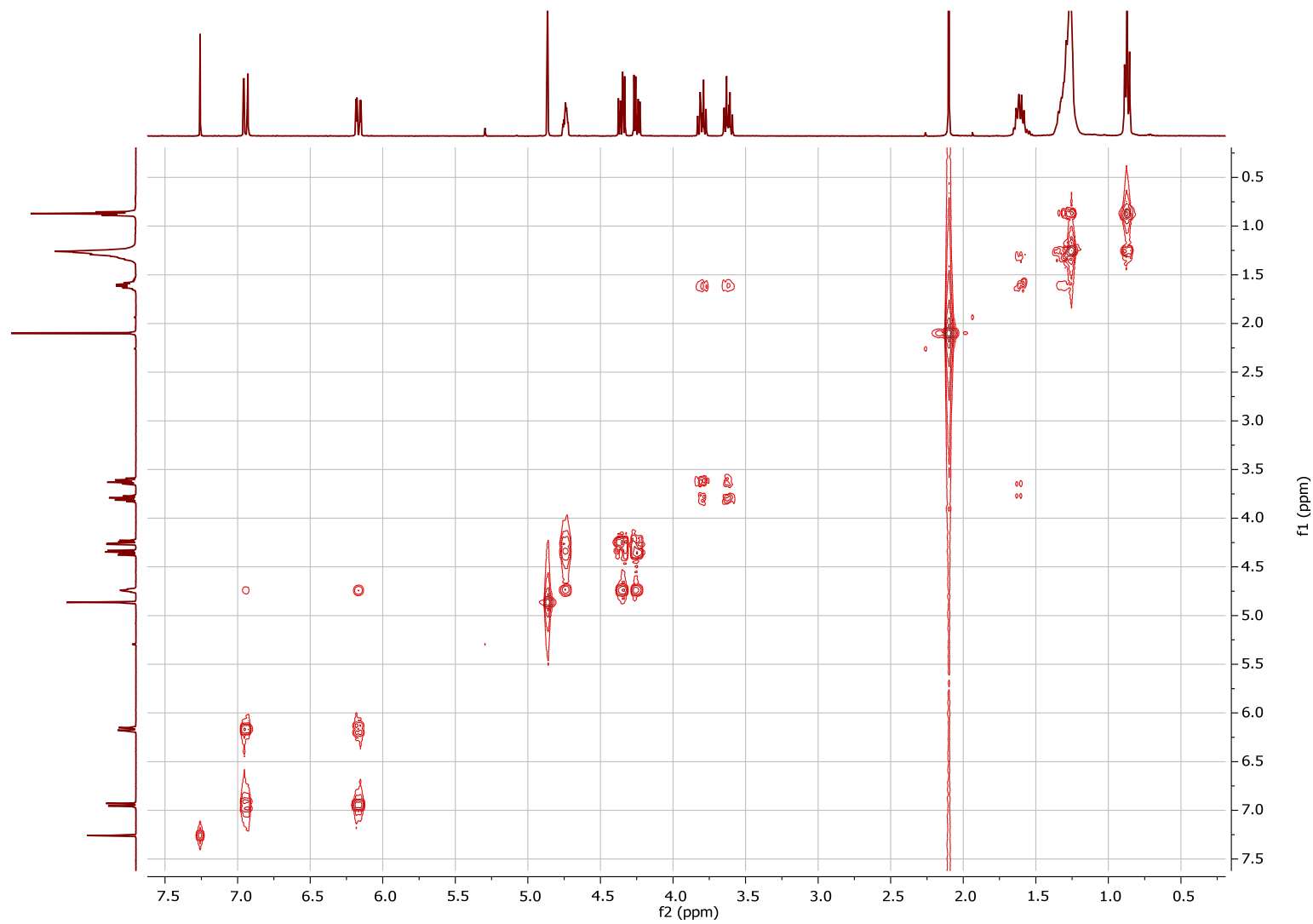


**$^{13}\text{C}\{^1\text{H}\}$  NMR (100 MHz,  $\text{CDCl}_3$ ) of Octyl 6-*O*-acetyl-3,4-dideoxy- $\alpha$ -D-glycero-hex-3-enopyranosid-2-ulose (7)**

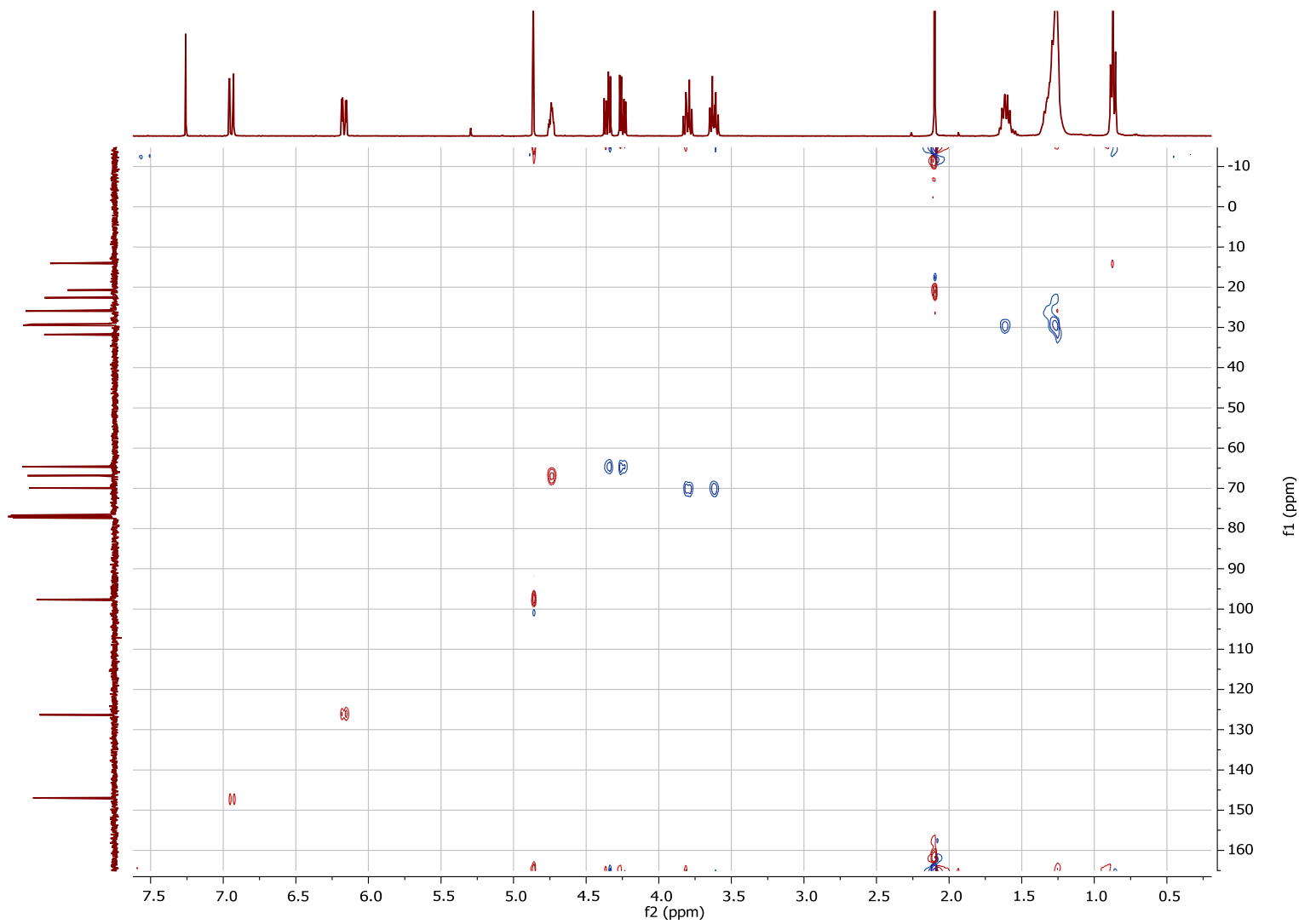




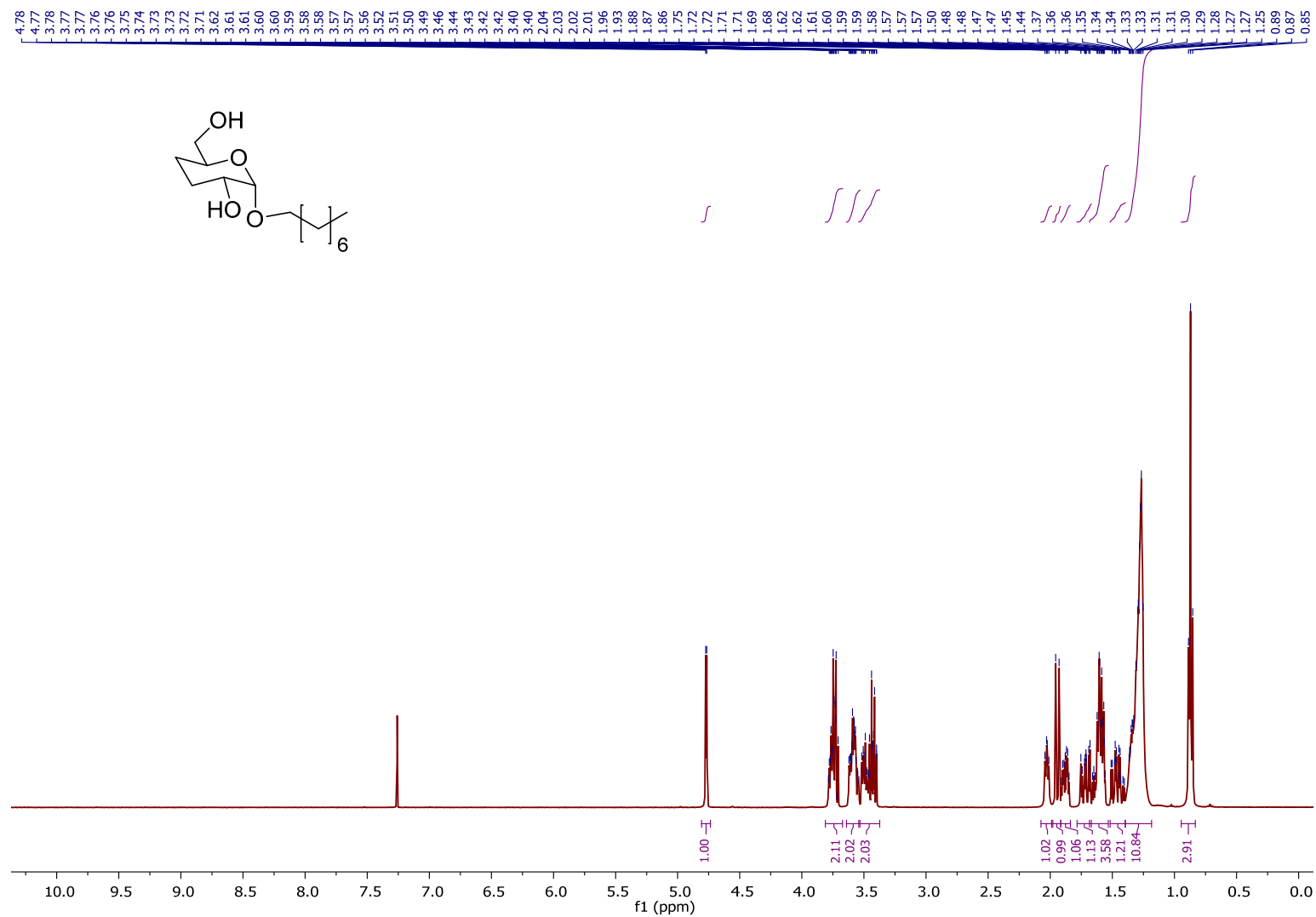
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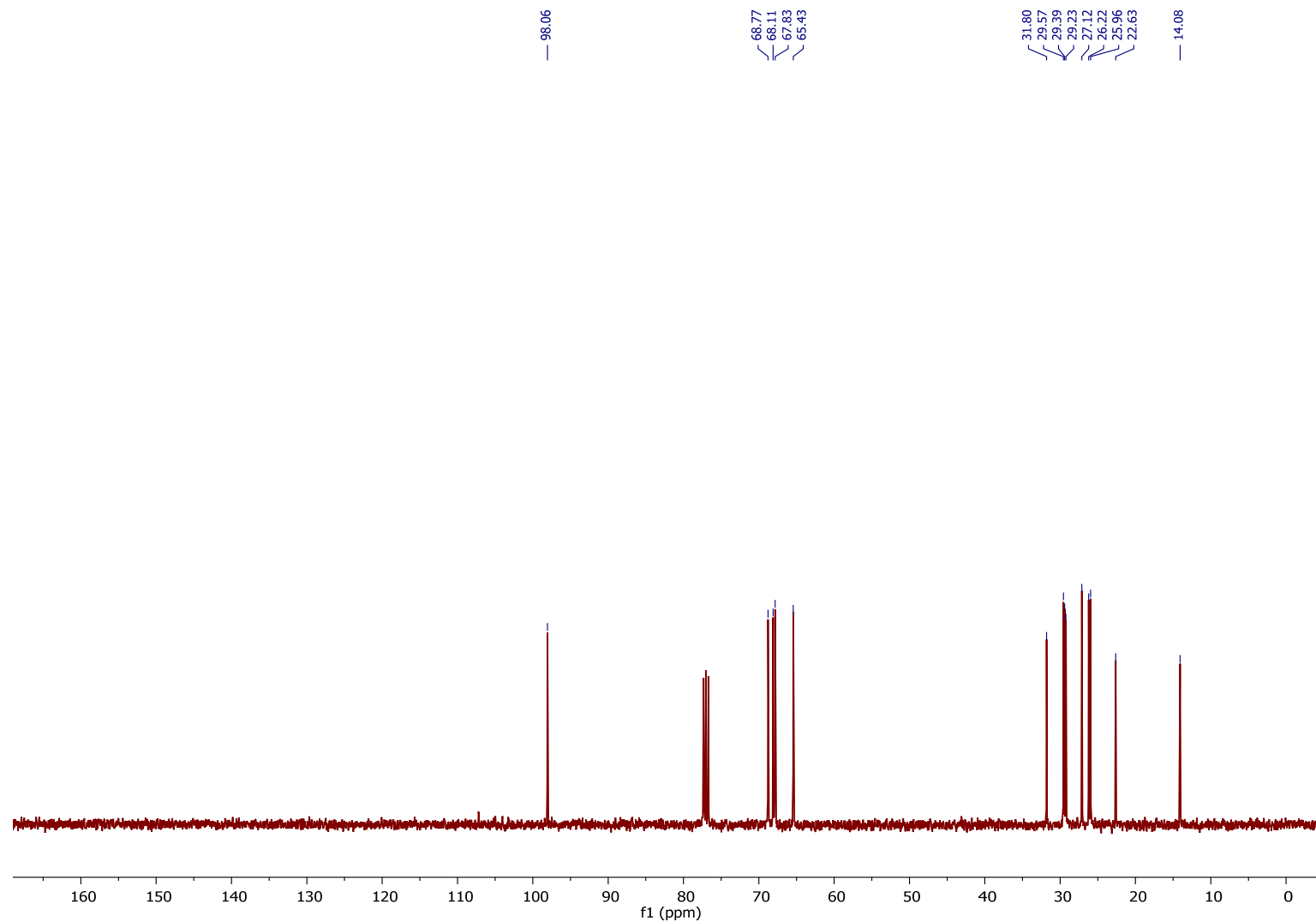
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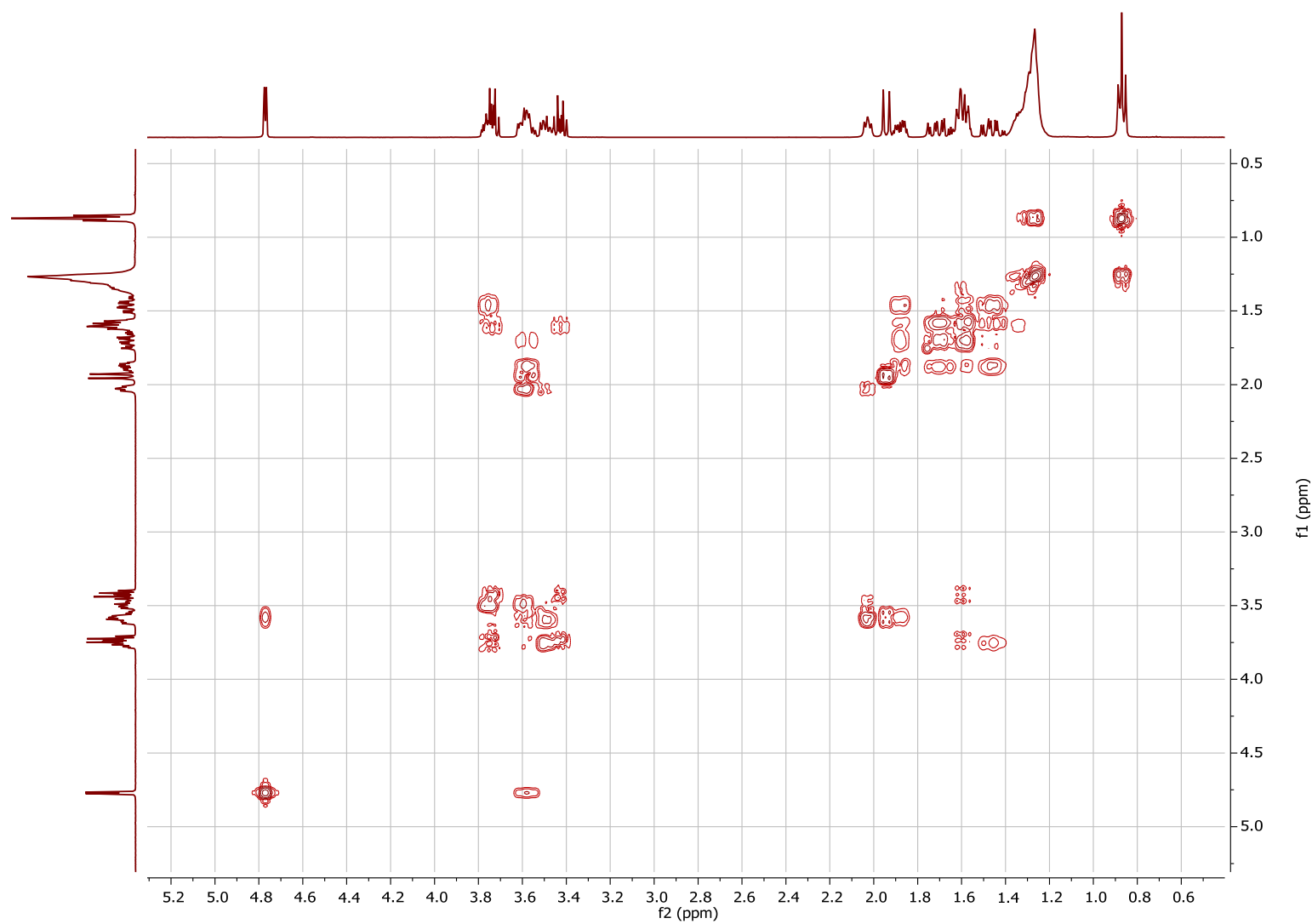
**<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) of Octyl 3,4-dideoxy- $\alpha$ -D-erythro-hexopyranoside (8)**



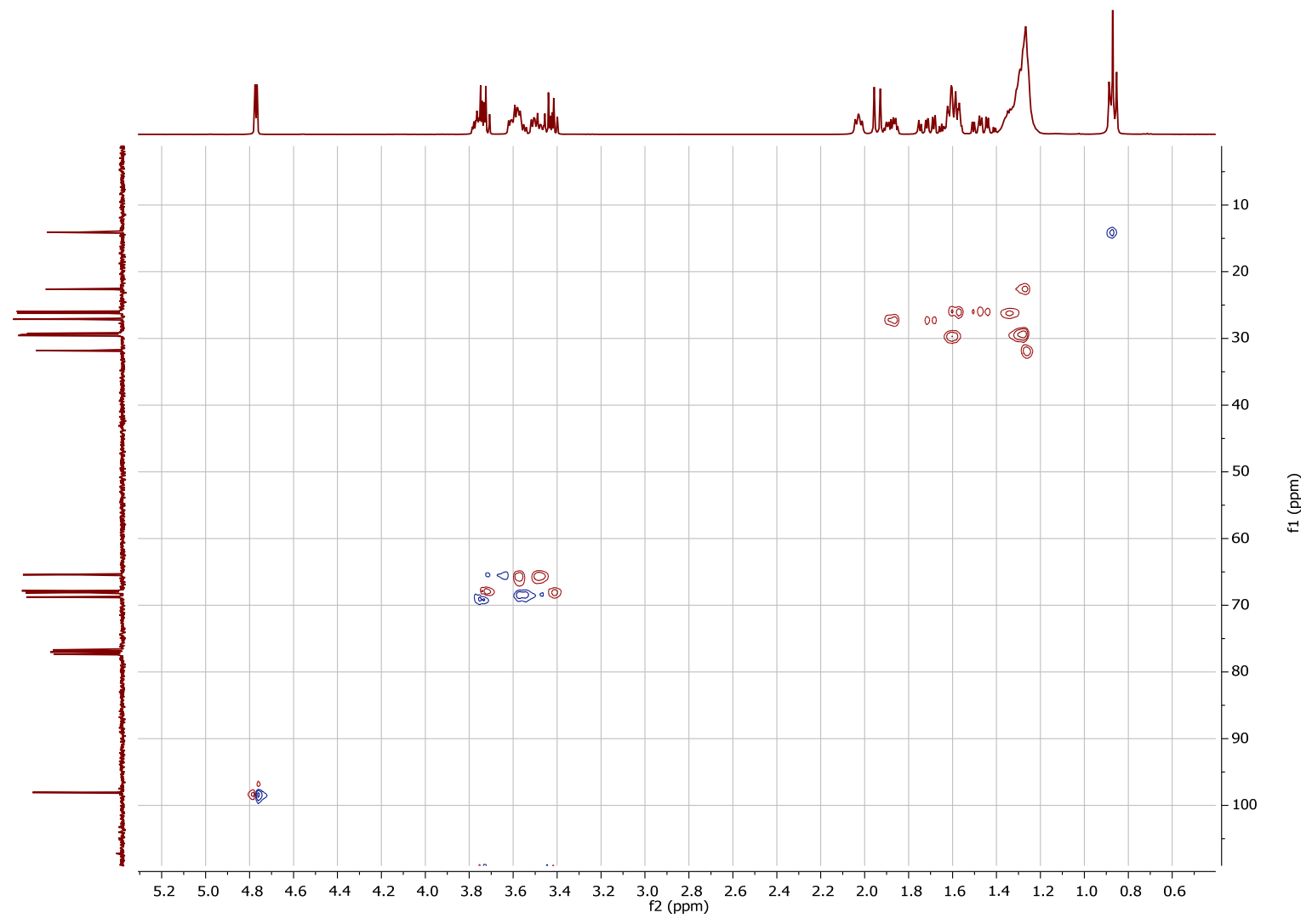
**$^{13}\text{C}\{^1\text{H}\}$  NMR (100 MHz,  $\text{CDCl}_3$ ) of Octyl 3,4-dideoxy- $\alpha$ -D-erythro-hexopyranoside (8)**



COSY spectrum (CDCl<sub>3</sub>) of Octyl 3,4-dideoxy- $\alpha$ -D-erythro-hexopyranoside (8)

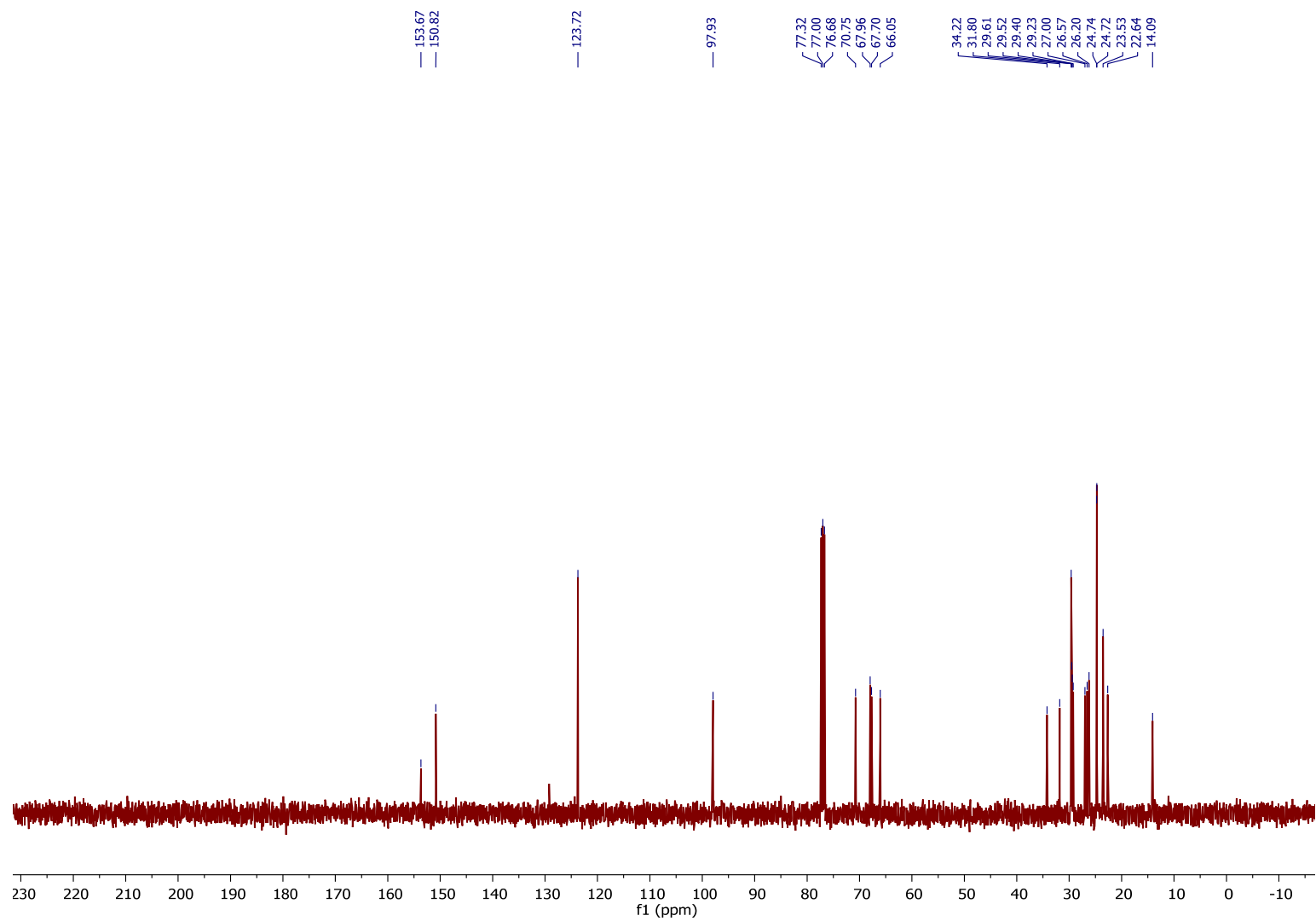


HSQC spectrum (CDCl<sub>3</sub>) of Octyl 3,4-dideoxy- $\alpha$ -D-erythro-hexopyranoside (8)



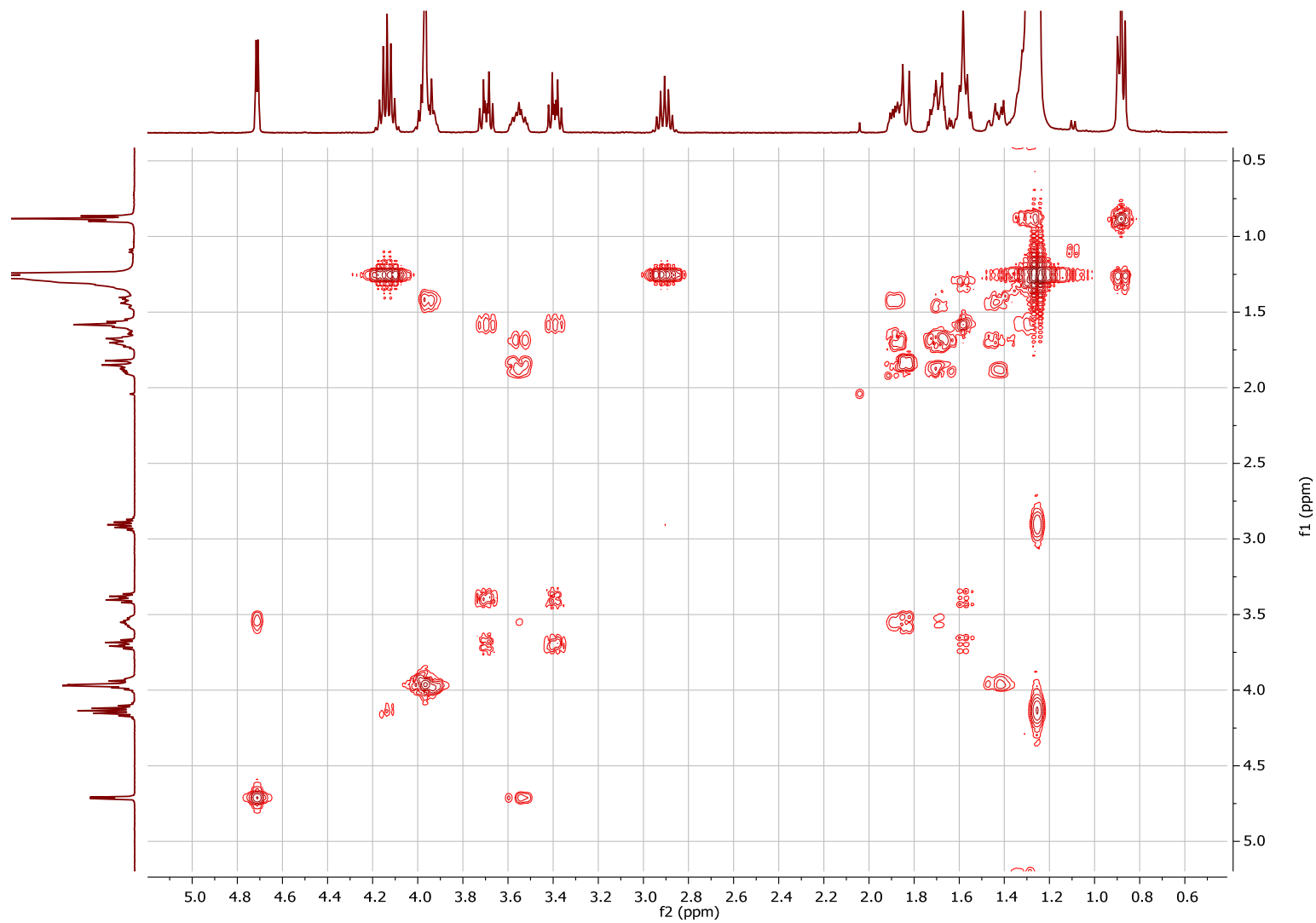


**$^{13}\text{C}\{^1\text{H}\}$  NMR (100 MHz,  $\text{CDCl}_3$ ) of Octyl 3,4-dideoxy-6-*O*-trisyl- $\alpha$ -D-erythro-hexopyranoside (9)**

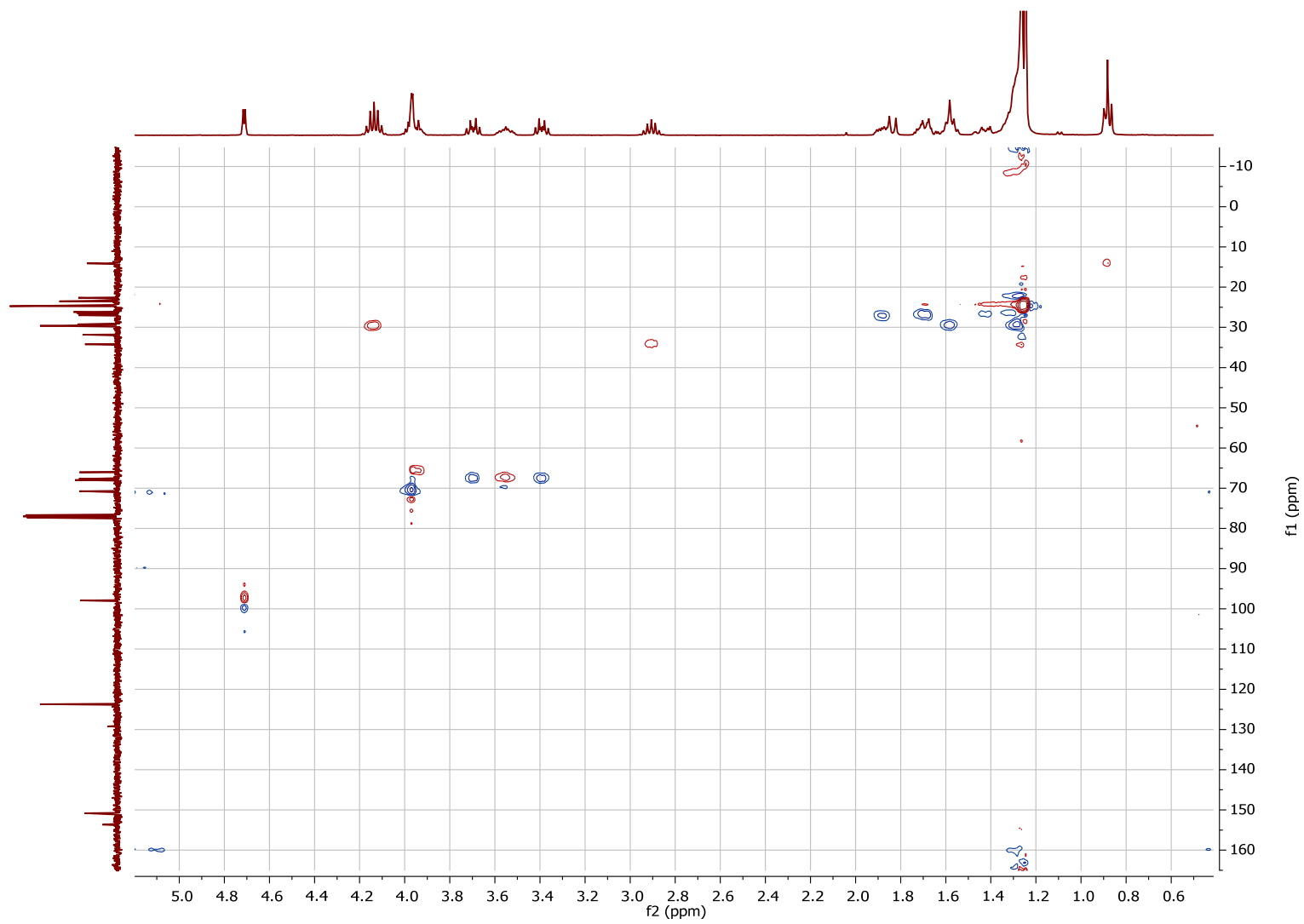




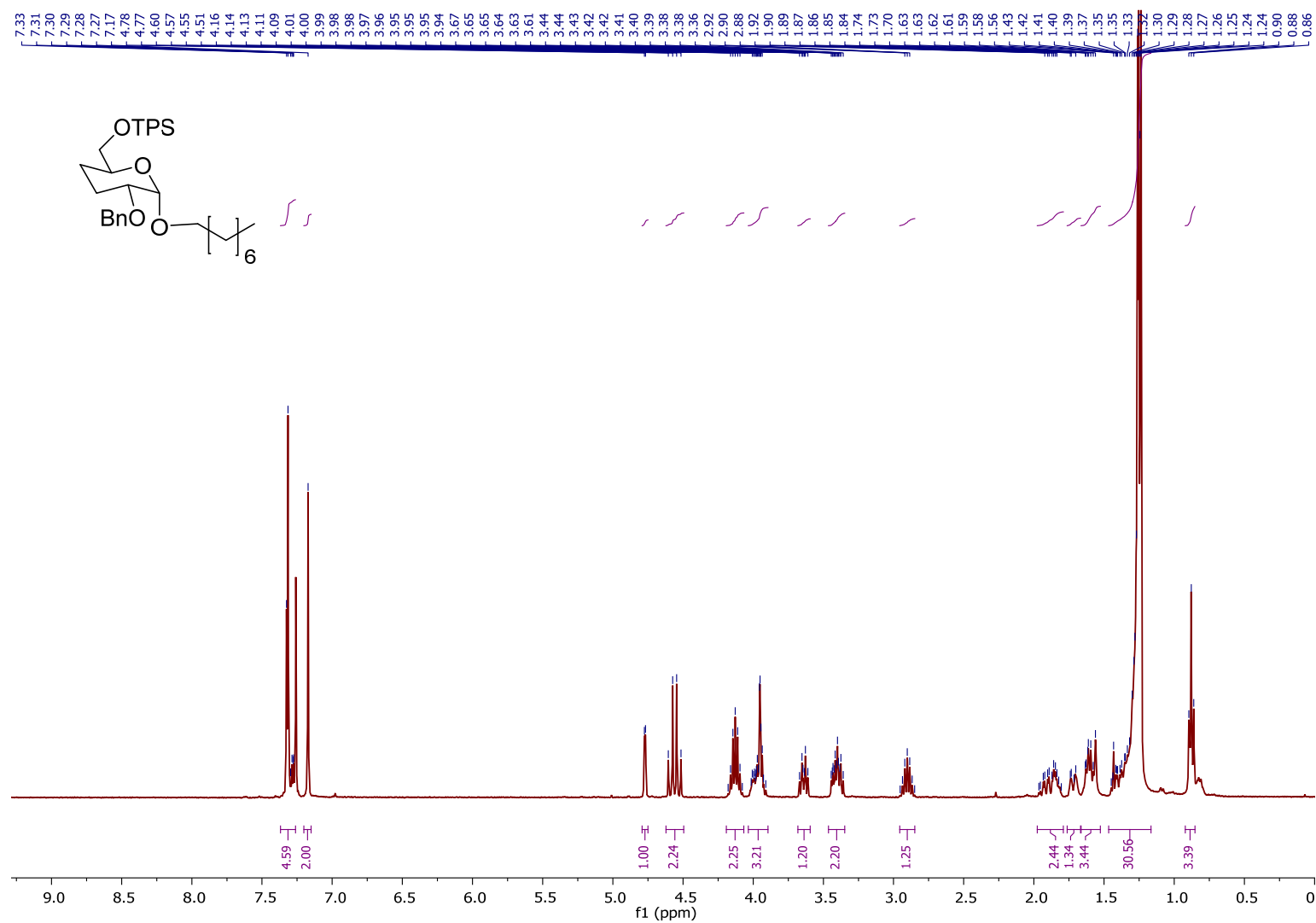
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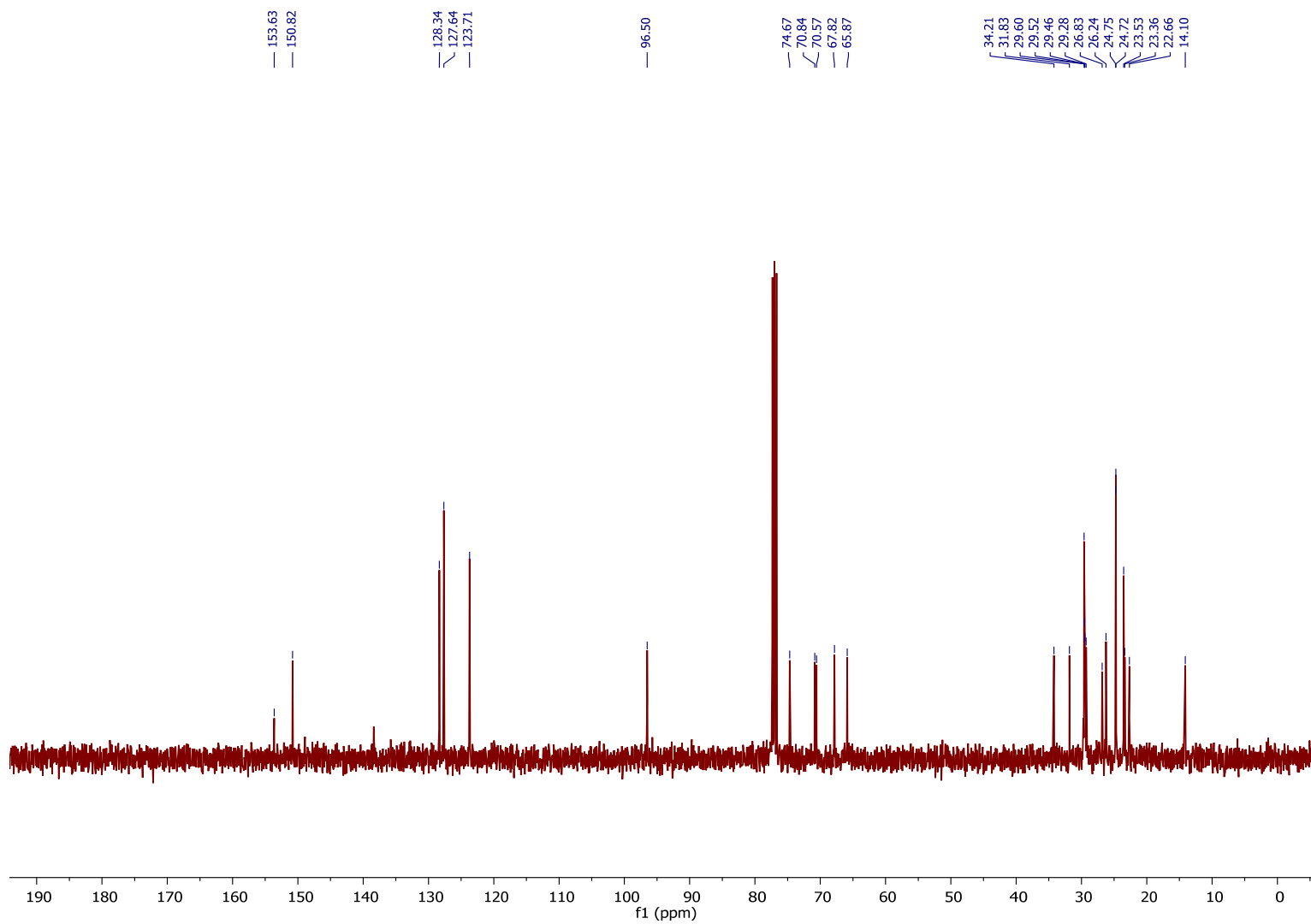
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**<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) of Octyl 2-*O*-benzyl-3,4-dideoxy-6-*O*-trisyl- $\alpha$ -D-erythro-hexopyranoside (10)**

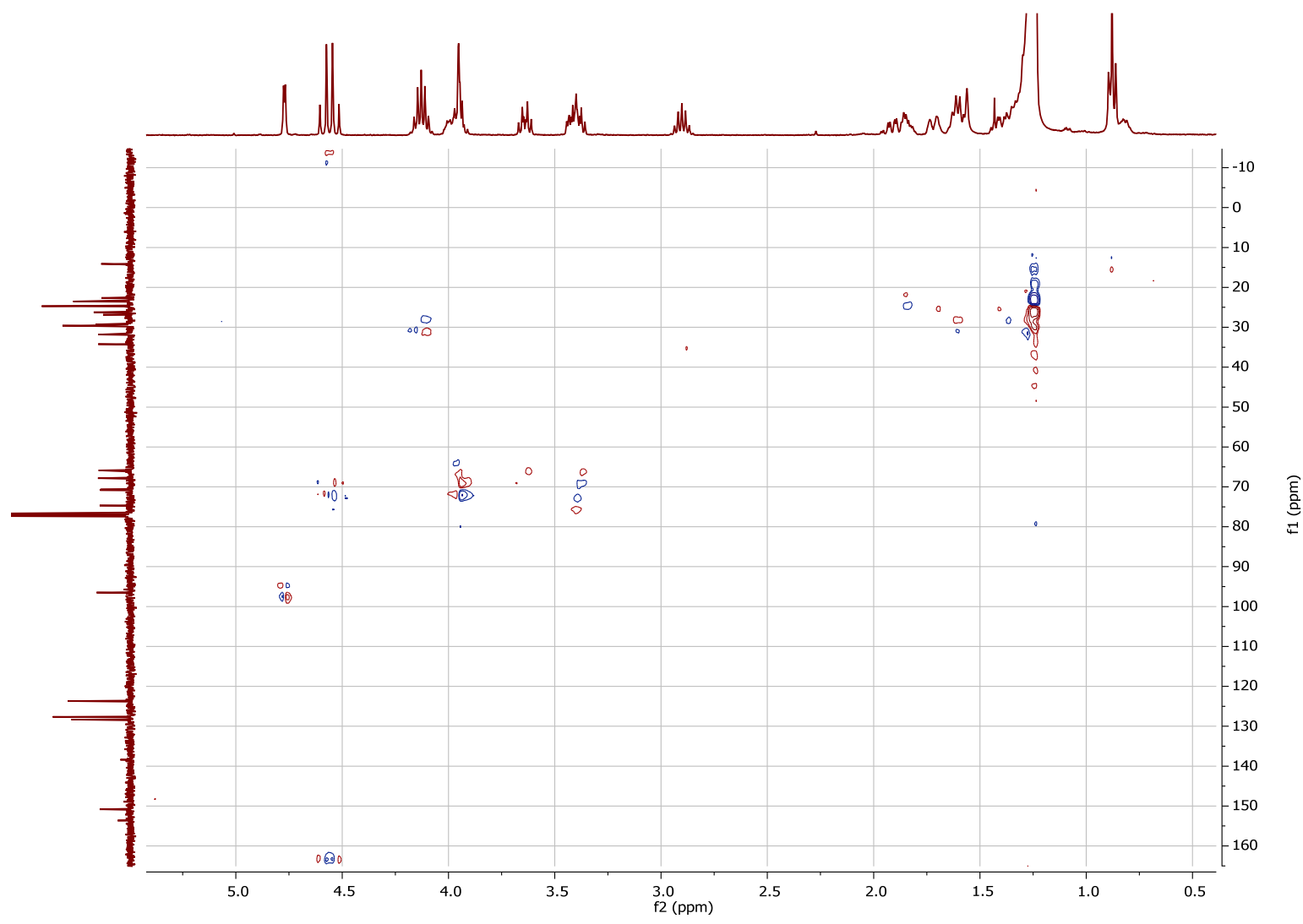


**$^{13}\text{C}\{^1\text{H}\}$  NMR (100 MHz,  $\text{CDCl}_3$ ) of Octyl 2-*O*-benzyl-3,4-dideoxy-6-*O*-trisyl- $\alpha$ -D-erythro-hexopyranoside (10)**

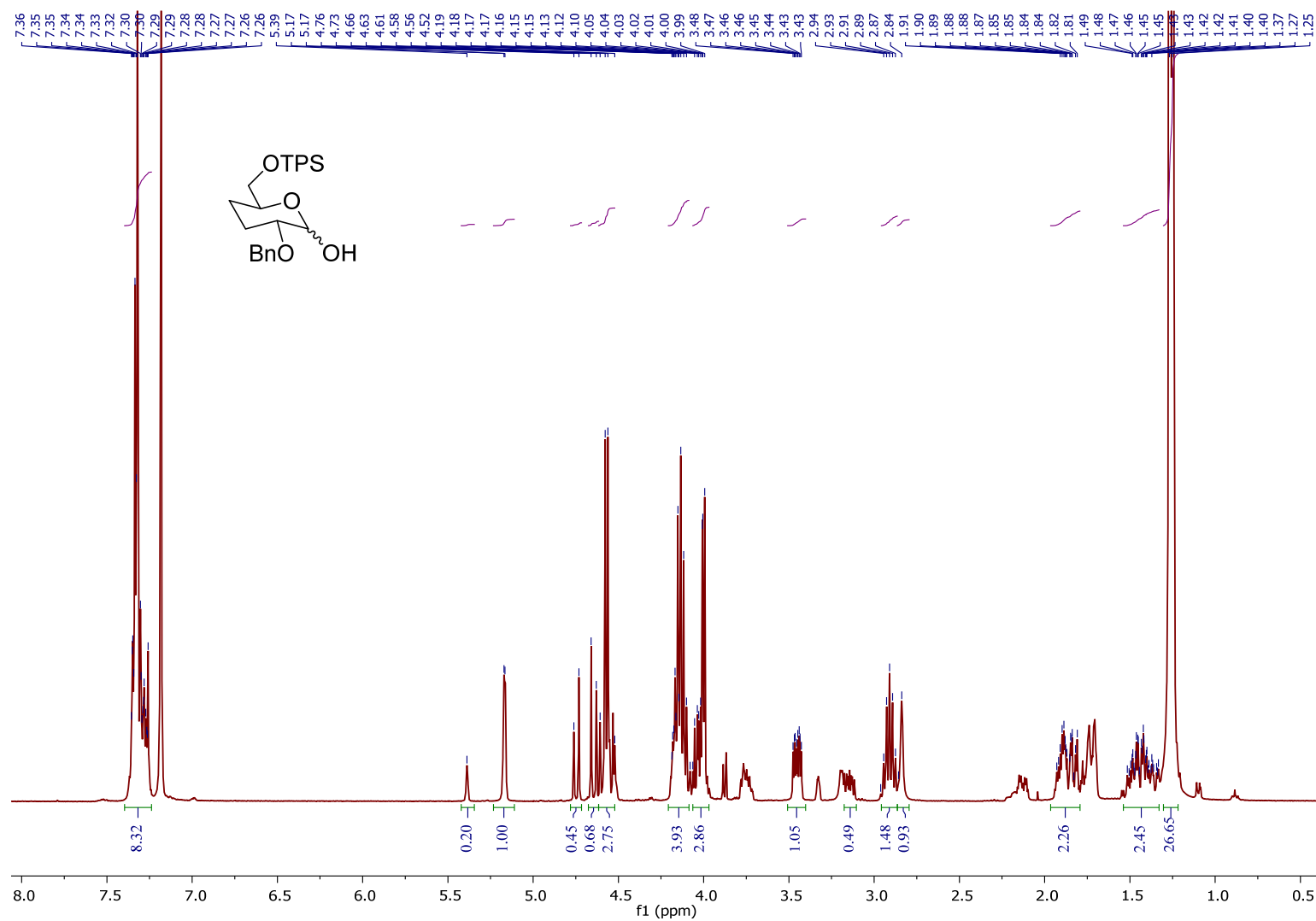




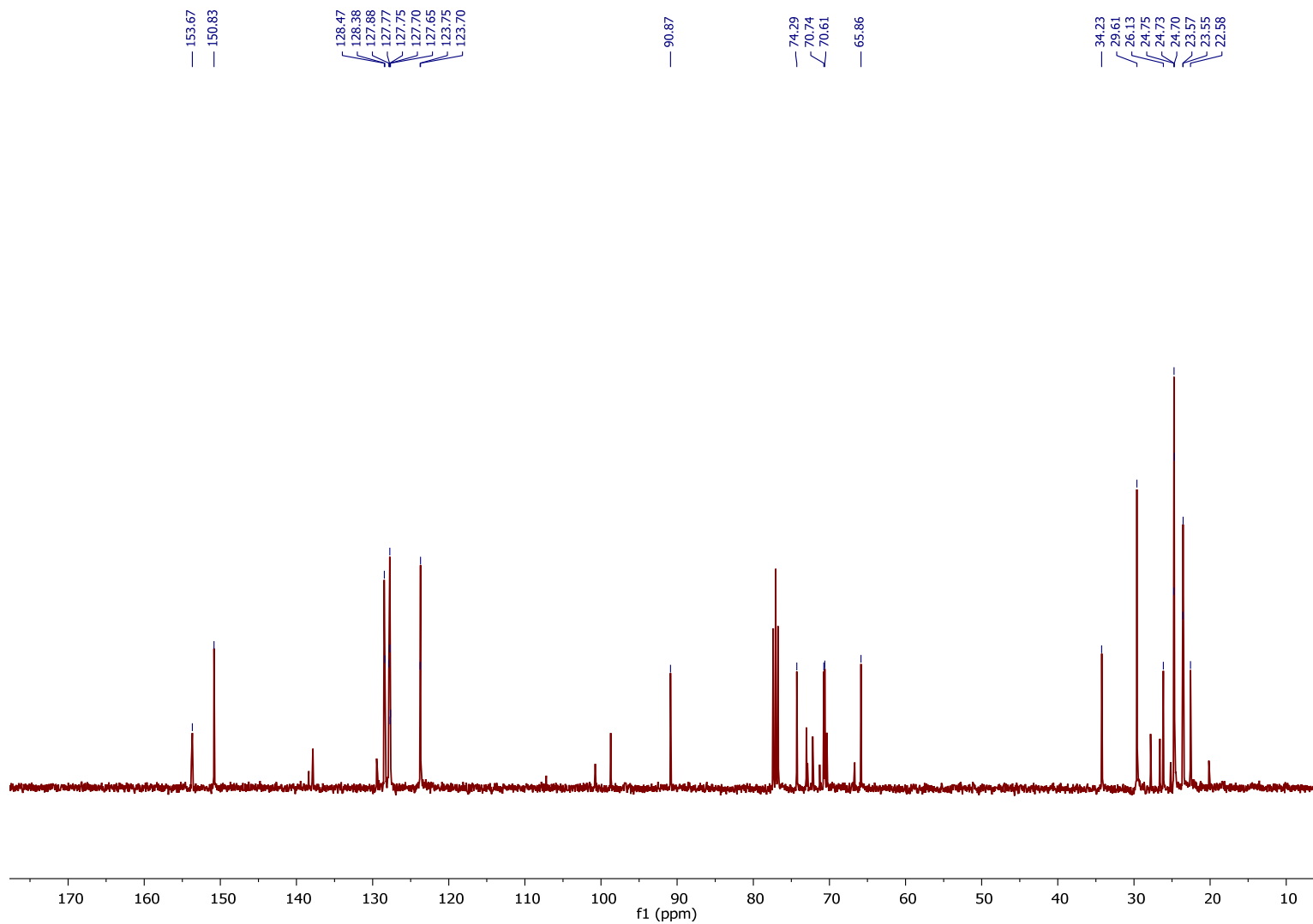
HSQC spectrum (CDCl<sub>3</sub>) of Octyl 2-*O*-benzyl-3,4-dideoxy-6-*O*-trisyl- $\alpha$ -D-erythro-hexopyranoside (10)



**<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) of 2-*O*-Benzyl-3,4-dideoxy-6-*O*-trisyl- $\alpha,\beta$ -D-erythro-hexopyranose (11)**

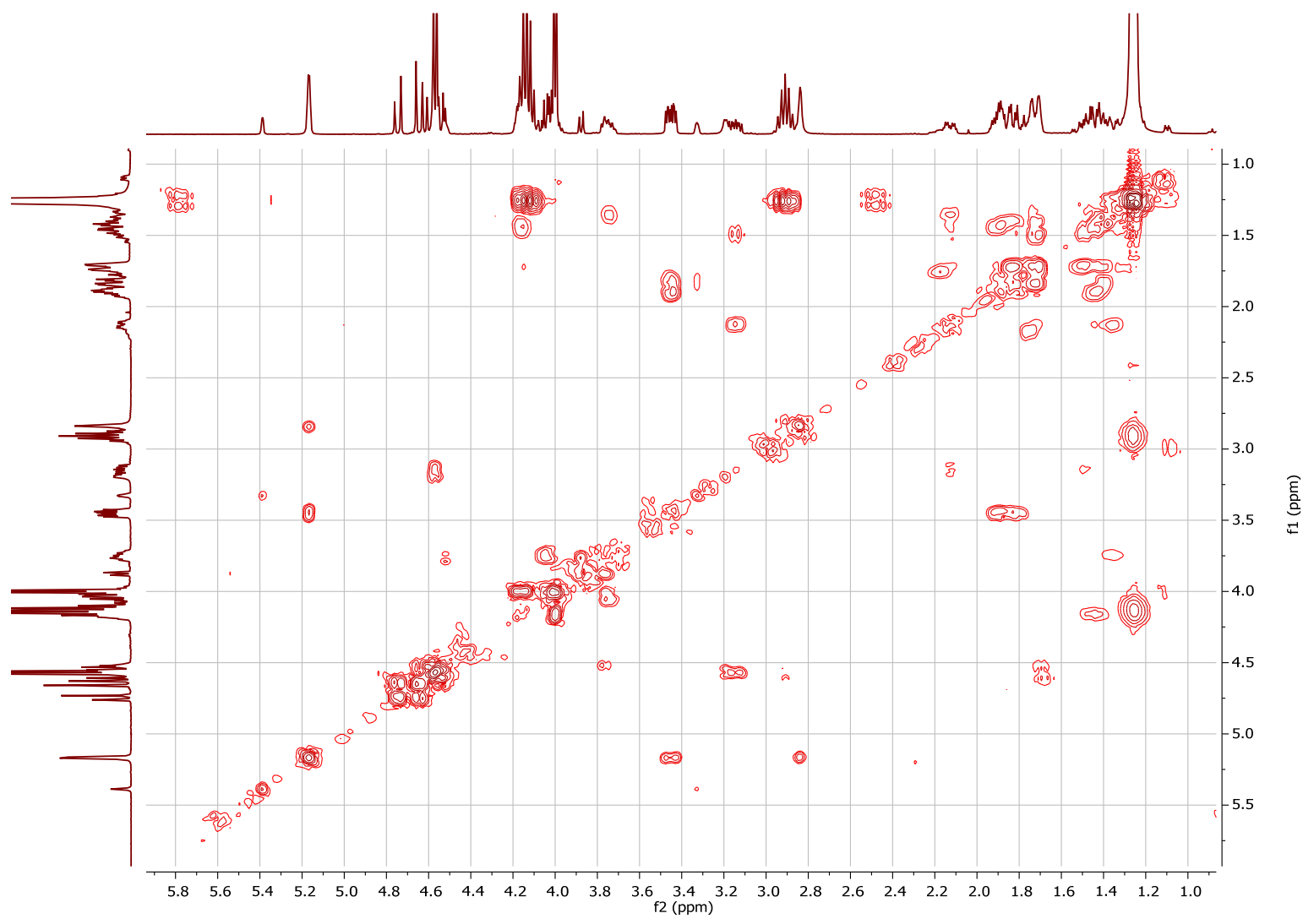


$^{13}\text{C}\{^1\text{H}\}$  NMR (100 MHz,  $\text{CDCl}_3$ ) of 2-*O*-Benzyl-3,4-dideoxy-6-*O*-trisyl- $\alpha,\beta$ -D-erythro-hexopyranose (11)

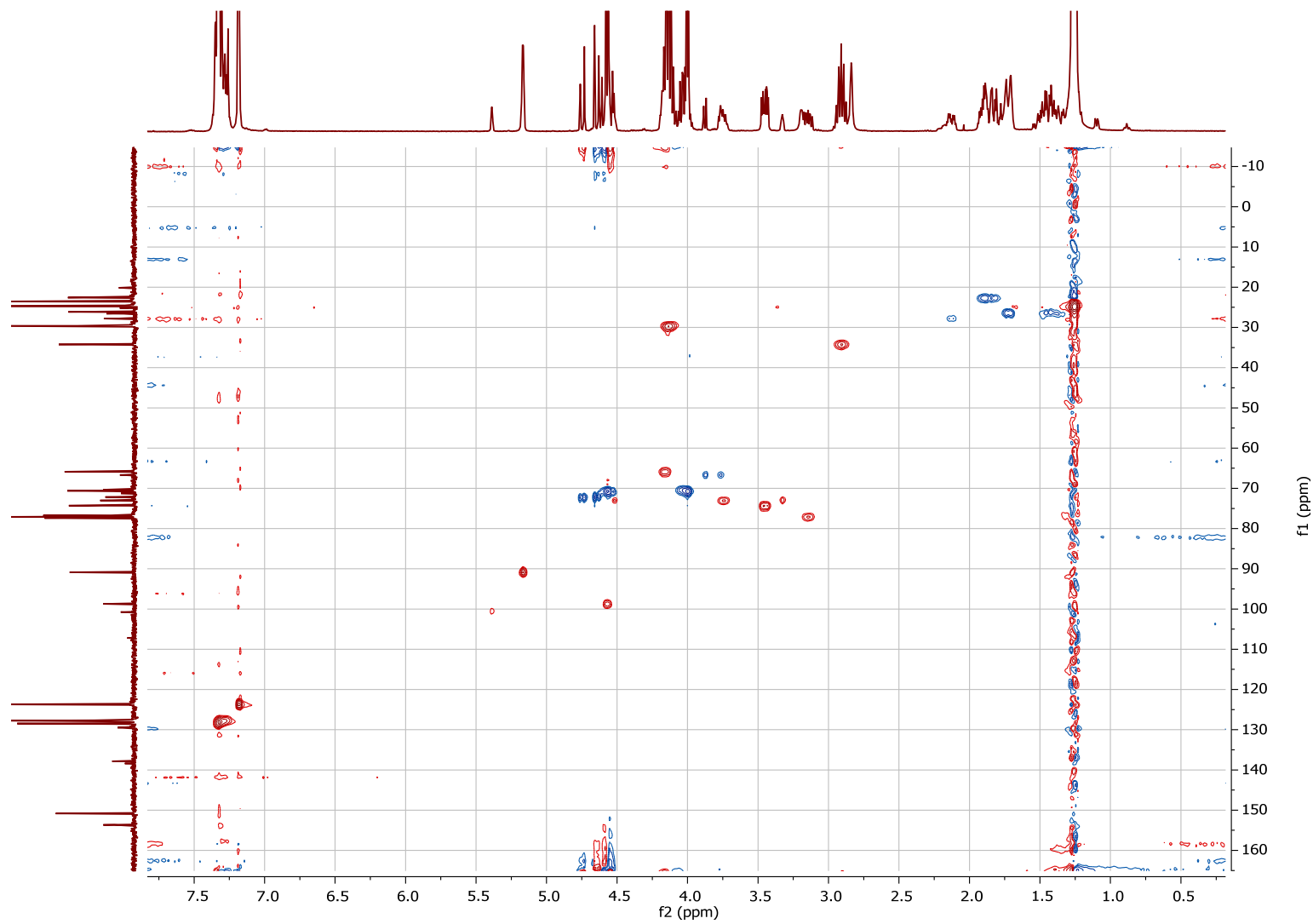




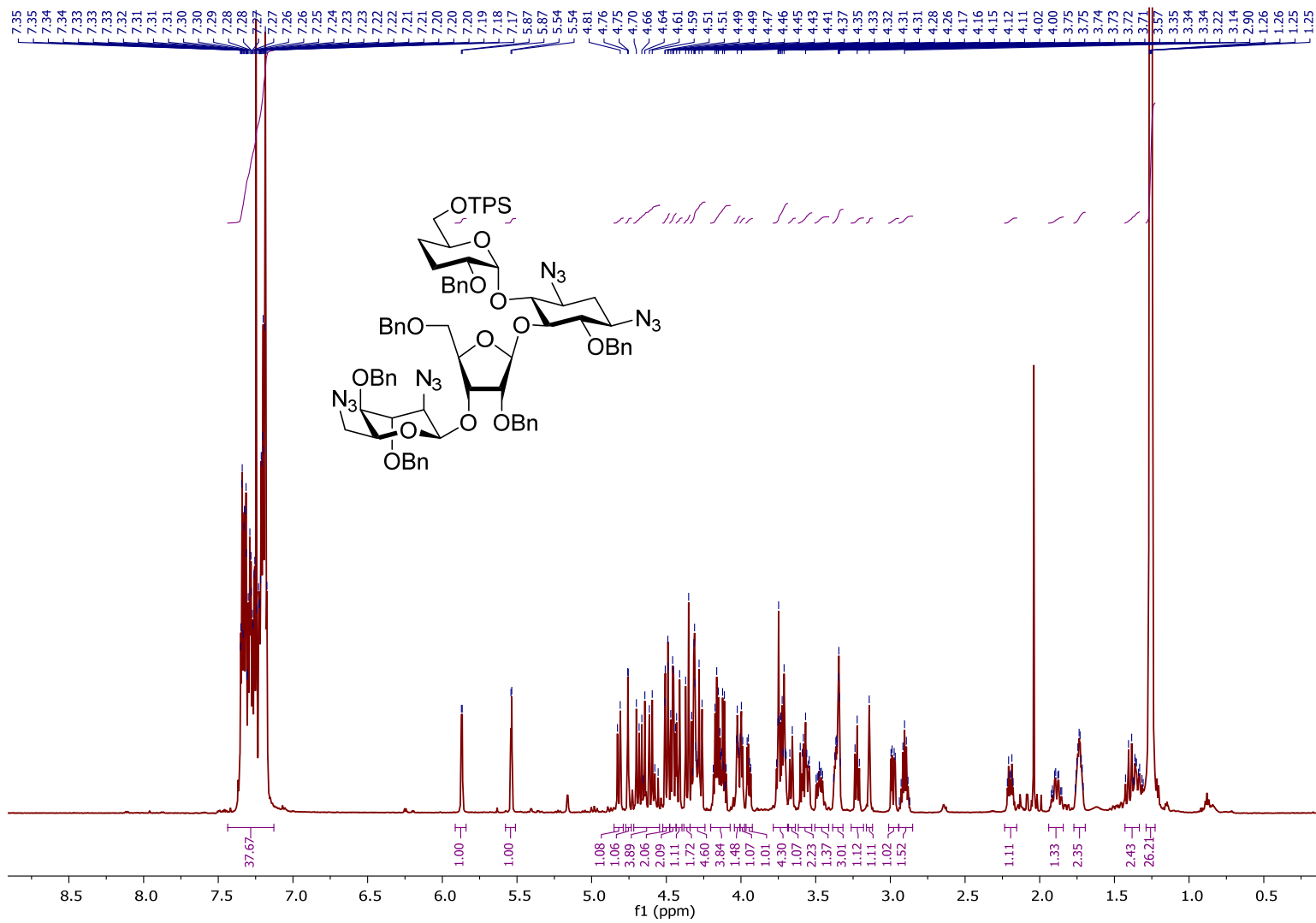
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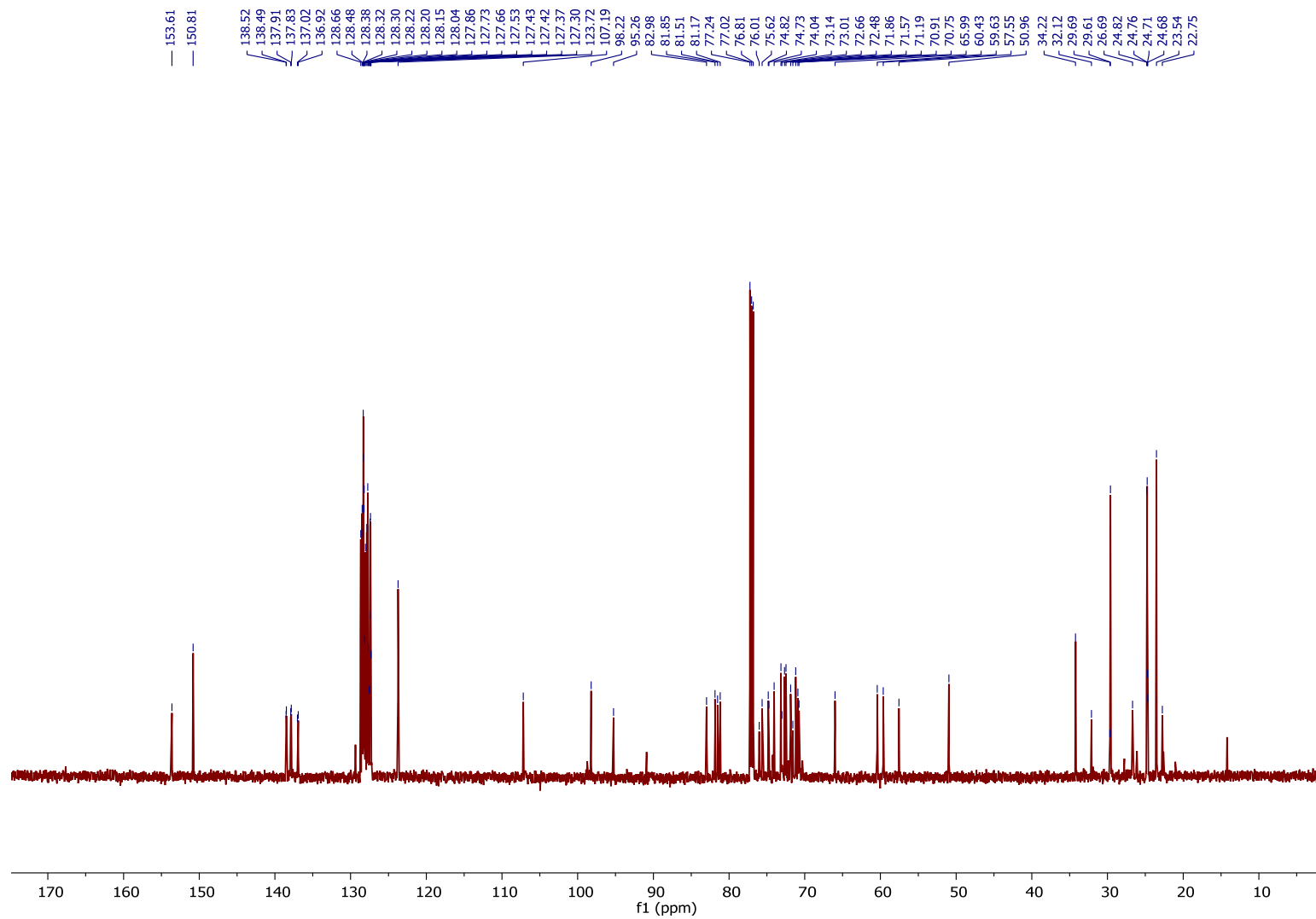
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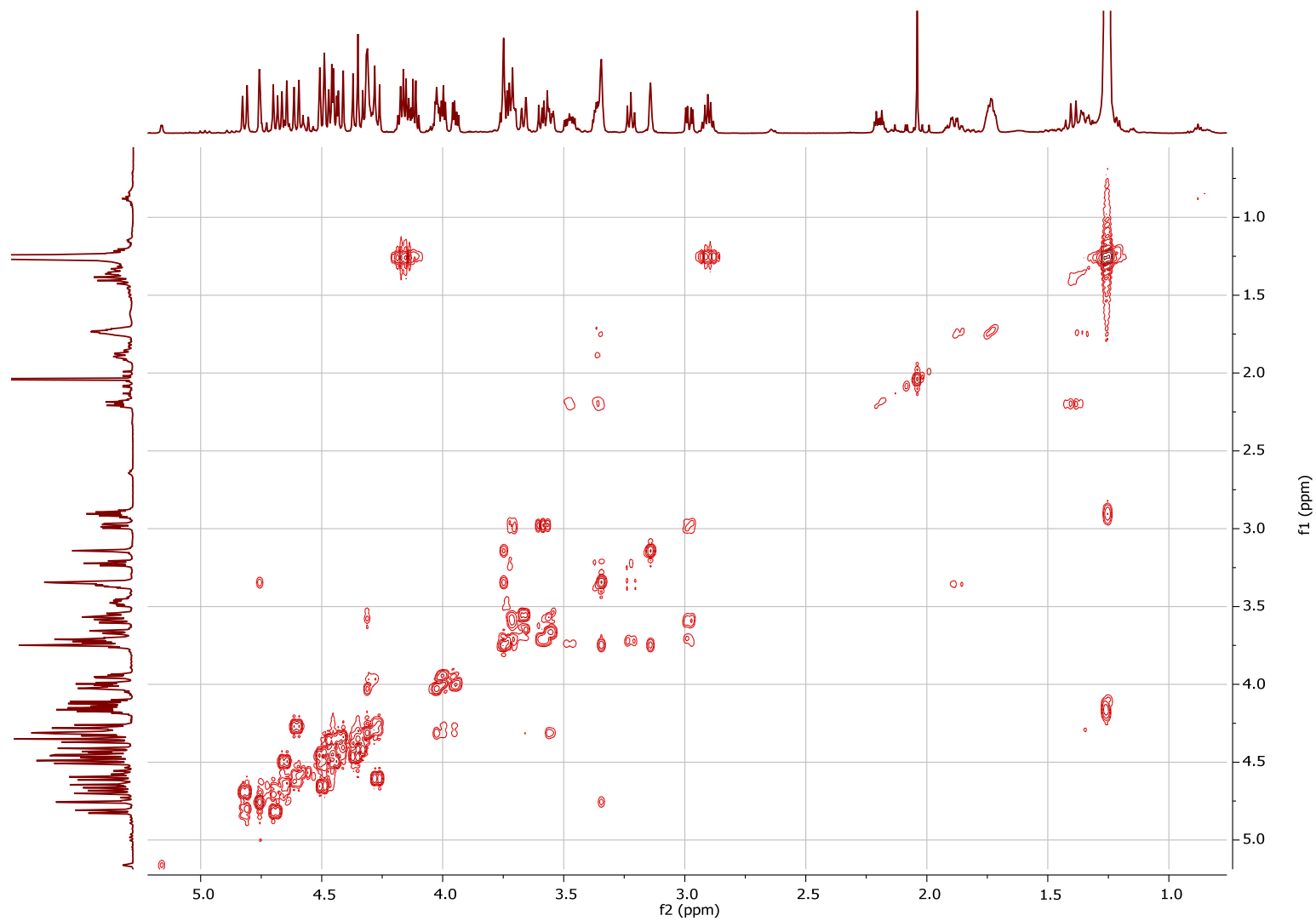
**<sup>1</sup>H NMR (600 MHz, CDCl<sub>3</sub>) of 1,3,2''',6'''-Tetraazido-6,2'',5'',3''',4'''-penta-*O*-benzyl-1,3,2',2''',6'''-pentadeamino-2'-benzyloxy-3',4'-dideoxy-6'-*O*-trisyl paromomycin (12)**



**$^{13}\text{C}\{^1\text{H}\}$  NMR (151 MHz,  $\text{CDCl}_3$ ) of 1,3,2''',6'''-Tetraazido-6,2'',5'',3''',4'''-penta-*O*-benzyl-1,3,2',2''',6'''-pentadeamino-2'-benzyloxy-3',4'-dideoxy-6'-*O*-trisyl paromomycin (12)**



**COSY spectrum (CDCl<sub>3</sub>) of 1,3,2''',6'''-Tetraazido-6,2'',5'',3''',4'''-penta-*O*-benzyl-1,3,2',2''',6'''-pentadeamino-2'-benzyloxy-3',4'-dideoxy-6'-*O*-trisyl paromomycin (12)**



HSQC spectrum (CDCl<sub>3</sub>) of 1,3,2''',6'''-Tetraazido-6,2'',5'',3''',4'''-penta-*O*-benzyl-1,3,2',2''',6'''-pentadeamino-2'-benzyloxy-3',4'-dideoxy-6'-*O*-trisyl paromomycin (12)

