

Supplementary Information

Synthesis of a biotinylated penta- α -(1 $\rightarrow$ 6)-D-glucoside based on the rational design of an α -stereoselective glucosyl donor

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Table S1. ¹H NMR signals of ring protons of selected compounds.

Compound	Residue	H-1 (<i>J</i> _{1,2})	H-2 (<i>J</i> _{2,3})	H-3 (<i>J</i> _{3,4})	H-4 (<i>J</i> _{4,5})	H-5 (<i>J</i> _{5,6})	H-6 (<i>J</i> _{6,6'})	H-6' (<i>J</i> _{6',5})
28a	α-(1-6)-Glc	5.00	3.56	3.98	3.62	3.78	3.85	3.84
		(3.49)	(9.2)	(9.3)	(9.5)			
29	β-OMP-Glc	4.83	3.54	3.68	3.70	3.54	3.82	3.74
	α-(1-6)-Glc	5.06	3.52	5.69	3.70	3.86	3.85	3.85
		(3.54)	(9.6)	(9.6)				
	β-OMP-Glc	4.93	3.54	3.75	3.68	3.65	3.82	3.74
30a	α-(1-6)-Glc	4.93	3.54	4.00	3.57	3.98	4.52	4.33
				(9.2)			(12.0)	(4.5)
	β-OMP-Glc	4.84	3.52	3.69	3.68	3.57	3.84	3.75
		(7.86)				(5.2)	(11,6)	
30b	β-(1-6)-Glc	4.52	3.50	3.62	3.46	3.52	4.68	4.40
		(7.81)	(9.0)	(9.0)	(9.0)		(11.9)	(4.5)
	β-OMP-Glc	4.92	3.68	3.74	3.65	3.72	4.16	3.79
	α-(1-6)-Glc	4.96	3.45	5.62	3.60	4.01	4.53	4.30
31a		(3.43)	(9.6)	(9.6)			(11.5)	(4.2)
	β-OMP-Glc	4.85	3.47	3.66	3.64	3.60	3.82	3.75
	α-(1-6)-Glc	4.97	3.41	5.62	3.54	3.97	4.52	4.38
		(3.5)	(9.6)	(9.5)	(9.6)			(3.8)
32a	β-OMP-Glc	4.85	3.46	3.68	3.67	5.58	3.81	3.75
	α-(1-6)-Glc	5.16	3.51	5.65	3.72	3.75	3.82	3.80
		(3.6)	(10.0)	(9.6)	(9.5)			
	β-OMP-Glc	4.90	3.28	5.25	3.84	3.56	3.80	3.76
37a		(7.8)	(9.6)	(9.6)				
	β-(1-6)-Glc	5.00	3.59	5.23	3.67	3.29	3.91	3.79
		(7.7)	(10.0)	(9.5)				
	β-OMP-Glc	4.43	3.41	5.24	3.72	3.60	4.21	3.67
38a		(7.7)	(9.5)	(9.5)				
	α-(1-6)-Glc	4.97	3.68	5.55	3.45	3.77	3.82	3.80
	α-Glc	5.10	3.32	3.91	3.57	4.01	3.72	3.72
			(9.1)	(9.1)				
38b	α-(1-6)-Glc	4.97	3.68	5.55	3.45	3.77	3.81	3.81
	β-Glc	4.65	3.17	3.59	3.45	3.71	3.64	3.64
39a	α-(1-6)-Glc	5.12	3.49	5.63	3.75	3.73	3.87	3.86
	α-Glc	5.50	3.14	5.48	3.65	4.00	3.82	3.71
		(3.6)	(9.7)	(9.6)				
Compound	Residue	H-1 (<i>J</i> _{1,2})	H-2	H-3	H-4	H-5	H-6	H-6'

			<i>(J_{2,3})</i>	<i>(J_{3,4})</i>	<i>(J_{4,5})</i>	<i>(J_{5,6})</i>	<i>(J_{6,6'})</i>	<i>(J_{6',5})</i>
39b	α -(1-6)-Glc	5.12	3.49	5.63	3.75	3.73	3.87	3.86
	β -Glc	4.51 (7.5)	2.96 (9.3)	3.12	3.75	3.46	3.81	3.71
42b	α -(1-6)-Glc	5.04 (3.6)	3.40 (9.5)	5.55 (9.5)	3.56 (9.5)	3.8	3.85	3.80
	β -(1-6)-Glc	4.30 (7.8)	3.22	3.55 (9.1)	3.67	3.36	3.77	3.72
	α -OC ₃ H ₆ NHTFA-Glc	4.53 (3.2)	3.50 (9.6)	3.86	3.37	3.8	4.09	3.72
45	α -(1-6)-Glc	4.83 (3.4)	3.4 (9.6)	5.56 (9.6)	3.54 (9.6)	4.05	4.55 (12.0)	4.41 (4.1)
	α -OC ₃ H ₆ NHTFA-Glc	4.57	3.4	3.90	3.37	3.83	3.65	3.61
47	α -(1-6)-Glc	4.84 (3.4)	3.44 (9.6)	5.51 (9.6)	3.65 (9.6)	3.79	3.84	3.82
	α -OC ₃ H ₆ NHTFA-Glc	4.55 (3.3)	3.41	3.85	3.38	3.83	3.65	3.58
48	α -(1-6)-Glc	4.81	3.39 (10.0)	5.51 (9.6)	3.55 (9.6)	3.73	3.76	3.65
	α -OC ₃ H ₆ NHTFA-Glc	4.56	3.43	3.89	3.42	3.82	3.61	3.56
49	α -(1-6)-Glc	5.11 (3.4)	3.41 (9.6)	5.65 (9.6)	3.56 (9.6)	3.94	4.57 (12.1)	4.42 (3.9)
	α -(1-6)-Glc	4.70 (3.1)	3.11 (10.0)	3.44 (9.5)	3.74	3.80	3.80	3.67
	α -OC ₃ H ₆ NHTFA-Glc	4.57	3.40	3.87	3.37	3.80	3.63	3.57
50	α -(1-6)-Glc	5.21 (3.5)	3.42	5.66 (9.6)	3.63 (9.6)	3.73	3.73	3.72
	α -(1-6)-Glc	4.47 (3.4)	3.11 (9.6)	5.47 (9.6)	3.80	3.84	3.88	3.71
	α -OC ₃ H ₆ NHTFA-Glc	4.61 (4.0)	3.47	3.92 (9.0)	3.45	3.82	3.70	3.64
51	α -(1-6)-Glc	5.19 (3.4)	3.48	5.70 (9.6)	3.60	3.97	4.61	4.47
	α -(1-6)-Glc	5.01 (3.5)	3.17 (9.9)	5.56 (9.5)	3.83	3.82	3.87	3.86
	α -(1-6)-Glc	4.75 (3.4)	3.11 (10.0)	5.44 (9.5)	3.76	3.80	3.74	3.60
	α -OC ₃ H ₆ NHTFA-Glc	4.57	3.42	3.90	3.43	3.79	3.64	3.58

Compound	Residue	H-1 ($J_{1,2}$)	H-2 ($J_{2,3}$)	H-3 ($J_{3,4}$)	H-4 ($J_{4,5}$)	H-5 ($J_{5,6}$)	H-6 ($J_{6,6'}$)	H-6' ($J_{6',5}$)
52	α -(1-6)-Glc	5.15 (3.5)	3.45	5.66 (9.6)	3.64	3.69	3.75	3.68
	α -(1-6)-Glc	5.02 (3.5)	3.20 (10.0)	5.56 (9.5)	3.82	3.83	3.85	3.66
	α -(1-6)-Glc	4.76 (3.5)	3.15 (10.0)	5.44 (9.5)	3.76	3.81	3.80	3.65
	α -OC ₃ H ₆ NHTFA-Glc	4.61	3.43	3.90	3.45	3.75	3.67	3.59
53	α -(1-6)-Glc	5.16 (3.4)	3.48 (9.9)	5.70 (9.6)	3.60	3.97	4.61	4.46
	α -(1-6)-Glc	5.04 (3.5)	3.19 (9.9)	5.52	3.65	3.82	3.86	3.63
	α -(1-6)-Glc	5.01 (3.5)	3.15 (9.9)	5.52	3.65	3.78	3.85	3.63
	α -(1-6)-Glc	4.75 (3.4)	3.11 (10.0)	5.43 (9.5)	3.65	3.77	3.86	3.62
	α -OC ₃ H ₆ NHTFA-Glc	4.60 (3.6)	3.42 (9.4)	3.90 (9.2)	3.43	3.77	3.66	3.58

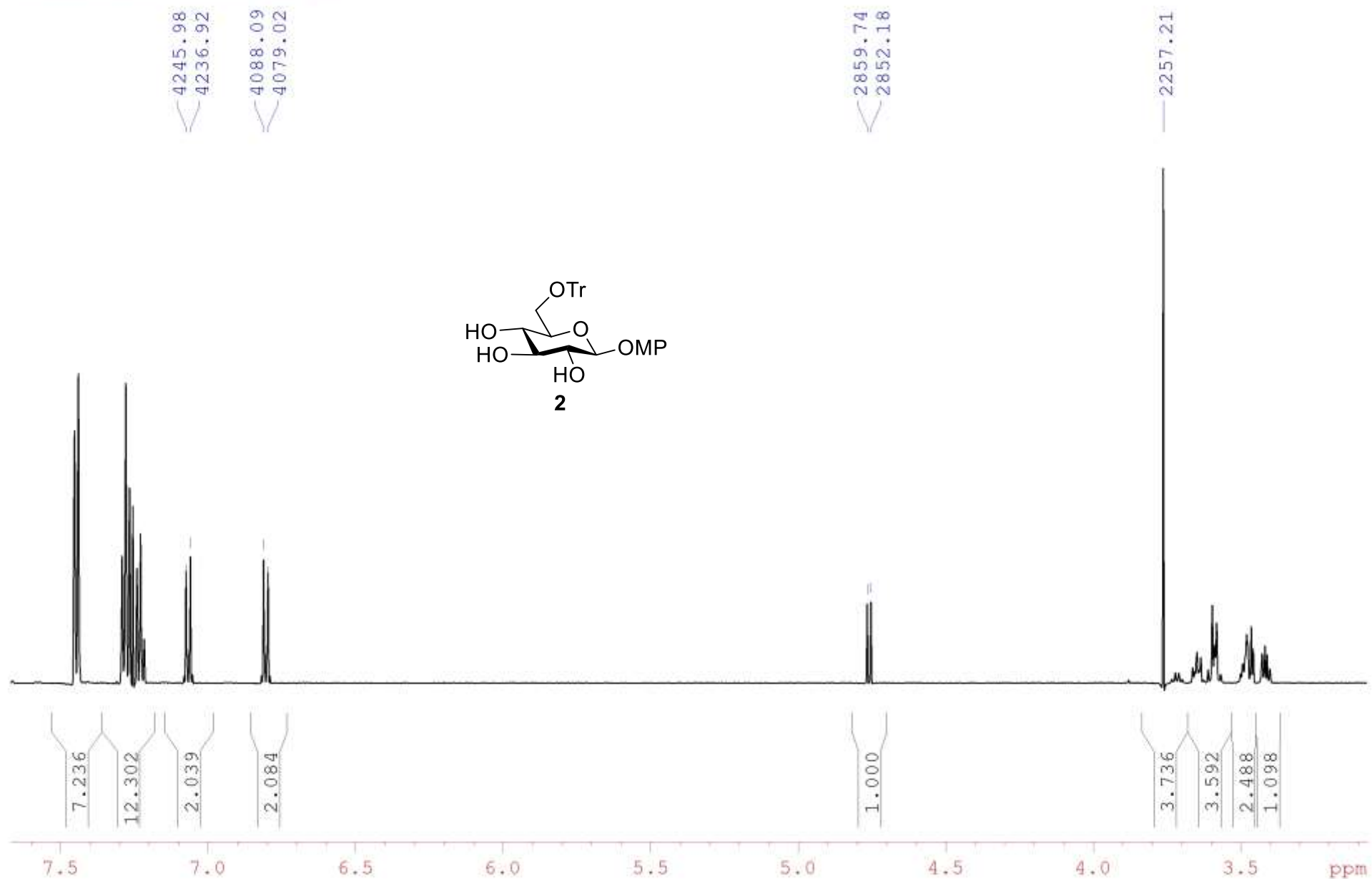
Table S2. ¹³C NMR signals of ring carbons of selected compounds.

Compound	Residue	C-1	C-2	C-3	C-4	C-5	C-6
28a	α -(1-6)-Glc	97.0	80.5	81.9	77.9	71.7	63.0
	β -OMP-Glc	103.3	82.2	84.6	77.7	74.9	65.6
29	α -(1-6)-Glc	96.7	77.7	74.8	-	71.1	62.8
	β -OMP-Glc	102.8	82.0	84.5	77.5	75.0	65.7
30a	α -(1-6)-Glc	97.2	80.3	81.8	77.4	68.7	64.2
	β -OMP-Glc	103.2	82.2	84.6	77.7	74.7	66.2
30b	β -(1-6)-Glc	103.7	82.3	84.7	78.1	72.8	64.0
	β -OMP-Glc	102.2	82.0	84.6	77.7	75.4	68.4
31a	α -(1-6)-Glc	97.0	77.5	73.4	76.3	68.4	64.0
	β -OMP-Glc	102.6	82.0	84.5	77.2	74.4	66.3
32a	α -(1-6)-Glc	97.1	77.3	73.3	76.2	68.2	64.8
	β -OMP-Glc	102.6	82.0	84.5	77.5	74.8	66.3
37a	α -(1-6)-Glc	96.9	77.8	74.1	76.3	71.4	62.8
	β -OMP-Glc	102.9	79.3	75.3	75.4	75.2	65.0
37b	β -(1-6)-Glc	103.5	78.9	75.6	75.0	75.6	62.5
	β -OMP-Glc	102.6	79.9	76.4	76.1	76.2	67.8

Compound	Residue	C-1	C-2	C-3	C-4	C-5	C-6
38a	α -(1-6)-Glc	96.9	76.3	74.1	74.9	71.3	62.7
	α -Glc	91.2	80.2	81.7	77.8	70.6	66.2
38b	α -(1-6)-Glc	96.9	76.3	74.1	74.9	71.3	62.7
	β -Glc	97.4	83.2	84.5	77.8	71.3	66.1
39a	α -(1-6)-Glc	97.0	77.9	74.5	76.3	71.4	62.7
	α -Glc	91.0	78.1	73.3	75.4	70.9	65.4
39b	α -(1-6)-Glc	97.0	77.9	74.5	76.3	71.4	62.7
	β -Glc	97.3	80.6	75.0	75.6	75.0	65.4
42b	α -(1-6)-Glc	96.9	77.7	74.3	77.5	71.2	62.8
	β -(1-6)-Glc	103.3	82.1	84.7	76.4	75.0	65.6
	α -OC ₃ H ₆ NHTFA-Glc	97.9	79.7	82.3	78.0	70.7	67.7
45	α -(1-6)-Glc	96.6	76.2	73.3	76.2	68.3	64.7
	α -OC ₃ H ₆ NHTFA-Glc	97.6	80.0	82.4	78.1	70.5	66.5
47	α -(1-6)-Glc	96.4	77.8	74.1	76.2	71.2	62.7
	α -OC ₃ H ₆ NHTFA-Glc	97.5	79.9	82.4	78.0	70.5	66.6
48	α -(1-6)-Glc	96.8	77.5	73.4	75.7	70.5	61.5
	α -OC ₃ H ₆ NHTFA-Glc	97.7	79.9	82.4	78.0	70.5	66.6
49	α -(1-6)-Glc	96.8	77.3	73.3	76.1	68.4	64.7
	α -(1-6)-Glc	96.7	77.7	73.3	75.9	70.5	65.2
	α -OC ₃ H ₆ NHTFA-Glc	97.6	80.0	82.4	78.1	70.8	66.5
50	α -(1-6)-Glc	96.8	77.3	73.3	76.1	68.4	61.5
	α -(1-6)-Glc	96.7	77.7	73.3	76.0	70.5	65.2
	α -OC ₃ H ₆ NHTFA-Glc	97.6	80.0	82.5	78.1	70.8	66.5
51	α -(1-6)-Glc	96.9	77.4	73.3	76.2	68.5	64.7
	α -(1-6)-Glc	97.0	77.7	73.2	75.6	70.6	65.2
	α -(1-6)-Glc	96.7	77.8	73.2	75.6	70.9	65.2
	α -OC ₃ H ₆ NHTFA-Glc	97.6	80.0	82.4	78.1	70.8	66.5
52	α -(1-6)-Glc	97.0	77.4	73.3	75.7	70.5	61.5
	α -(1-6)-Glc	97.0	77.7	73.2	75.6	70.7	65.2
	α -(1-6)-Glc	96.8	77.7	73.2	75.6	70.7	65.2
	α -OC ₃ H ₆ NHTFA-Glc	97.6	80.0	82.4	78.8	70.6	66.4
53	α -(1-6)-Glc	96.9	77.4	73.4	76.2	68.5	64.7
	α -(1-6)-Glc	97.1	77.8	73.3	75.6	71.0	65.1
	α -(1-6)-Glc	97.1	77.8	73.3	75.6	71.0	65.1
	α -(1-6)-Glc	96.7	77.9	73.3	75.6	70.6	65.3
	α -OC ₃ H ₆ NHTFA-Glc	97.6	80.1	82.4	78.1	70.6	66.4

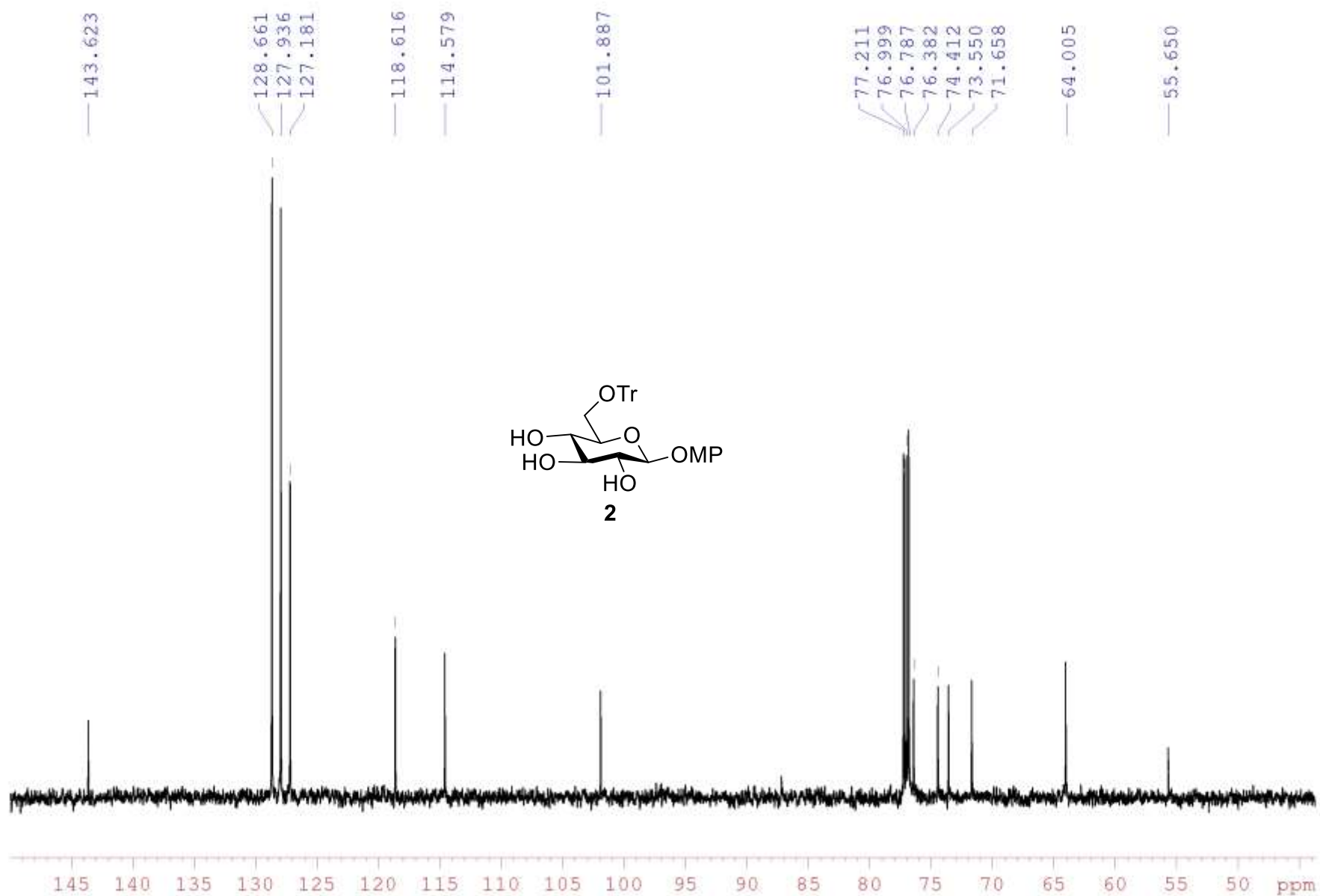
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/BOJA BD1159 CDCl₃ 600 MHz



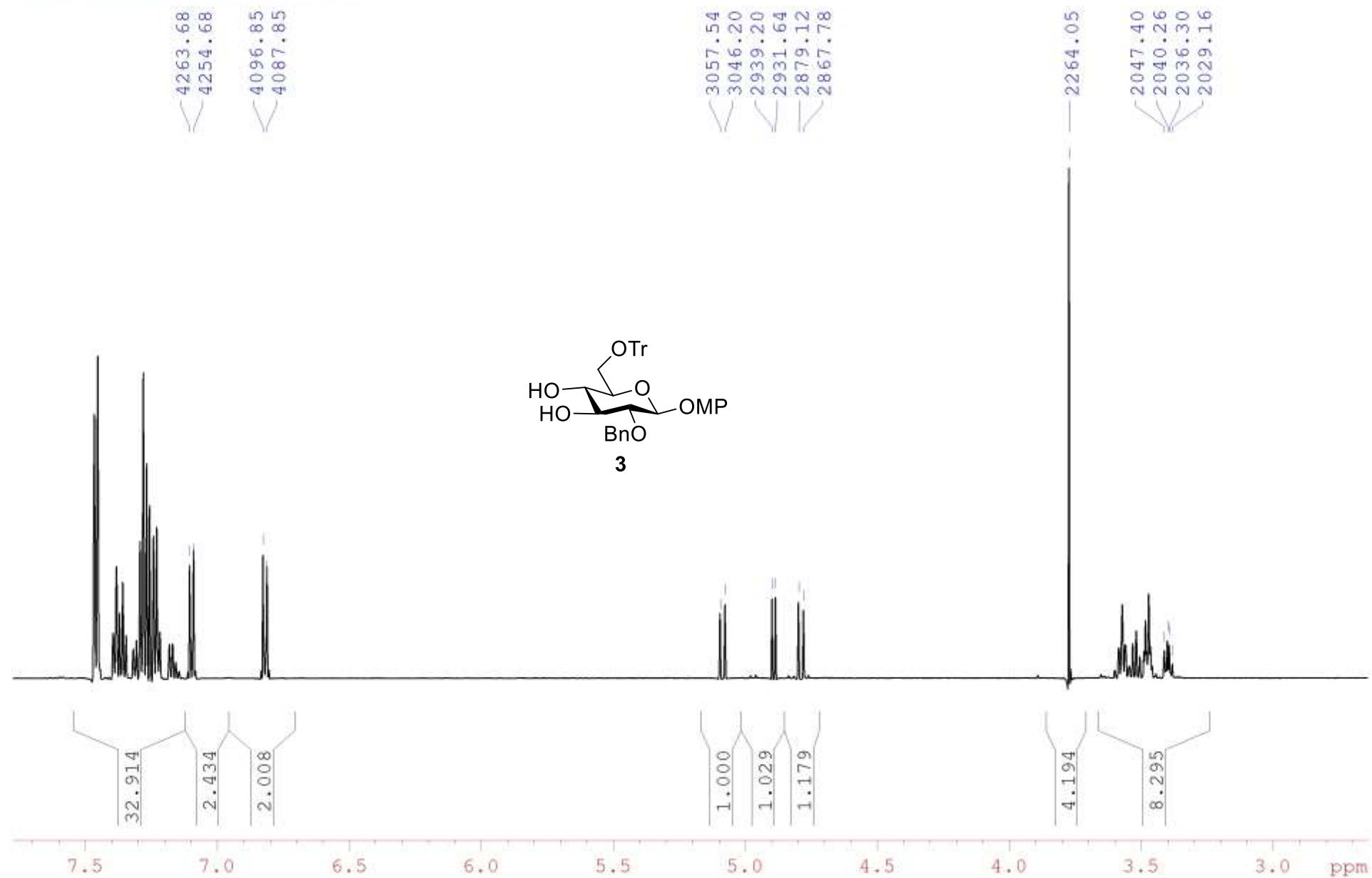
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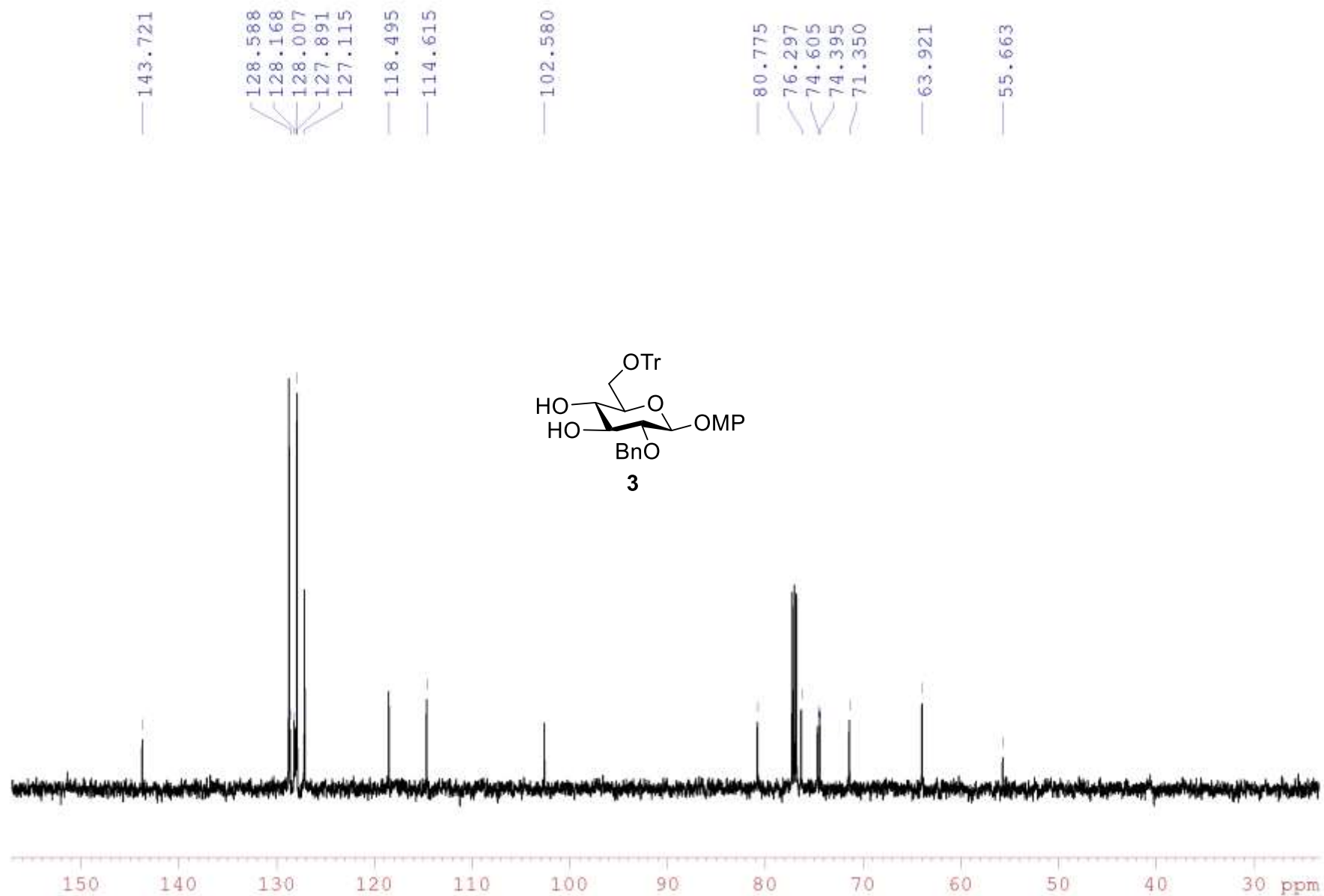
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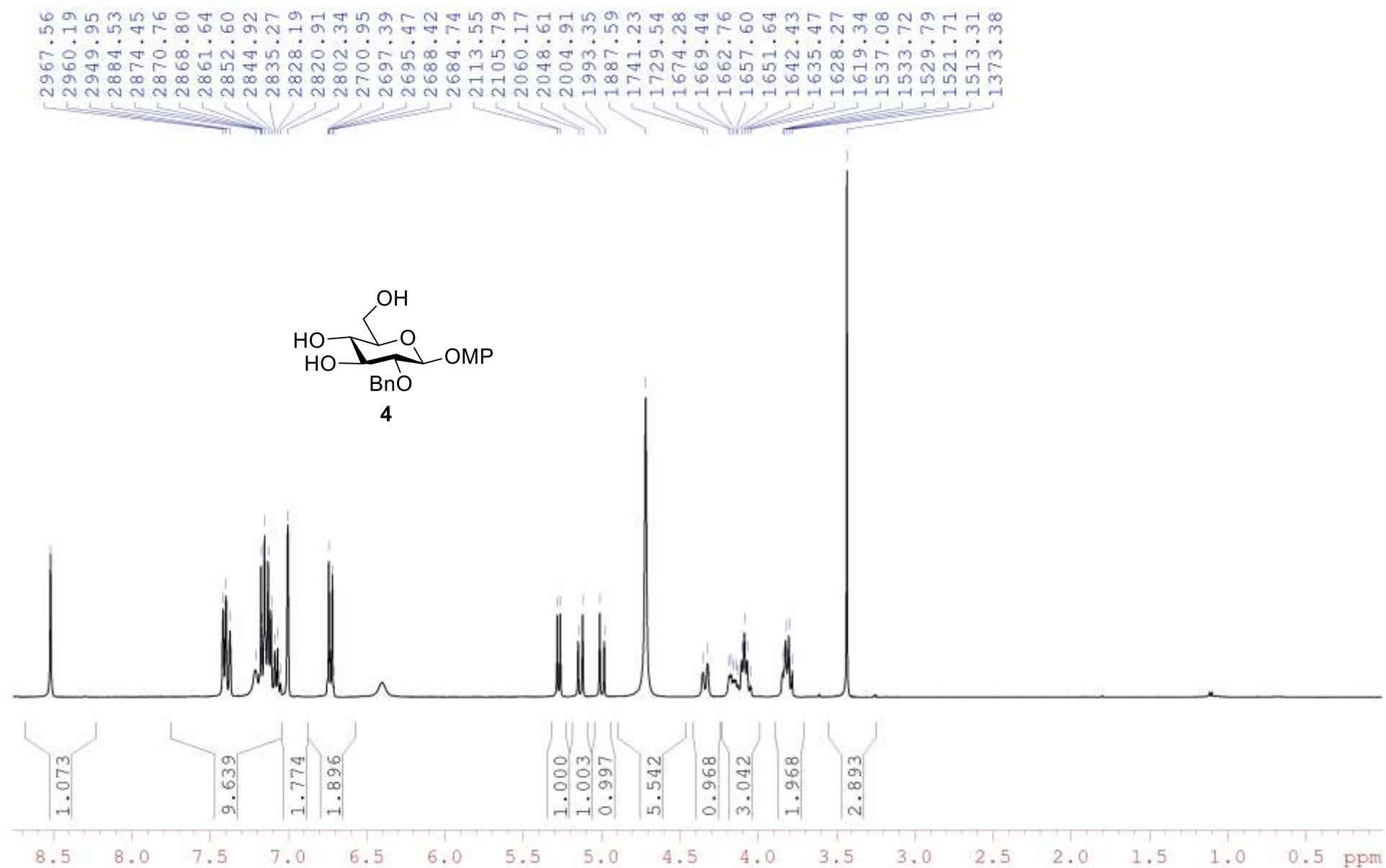
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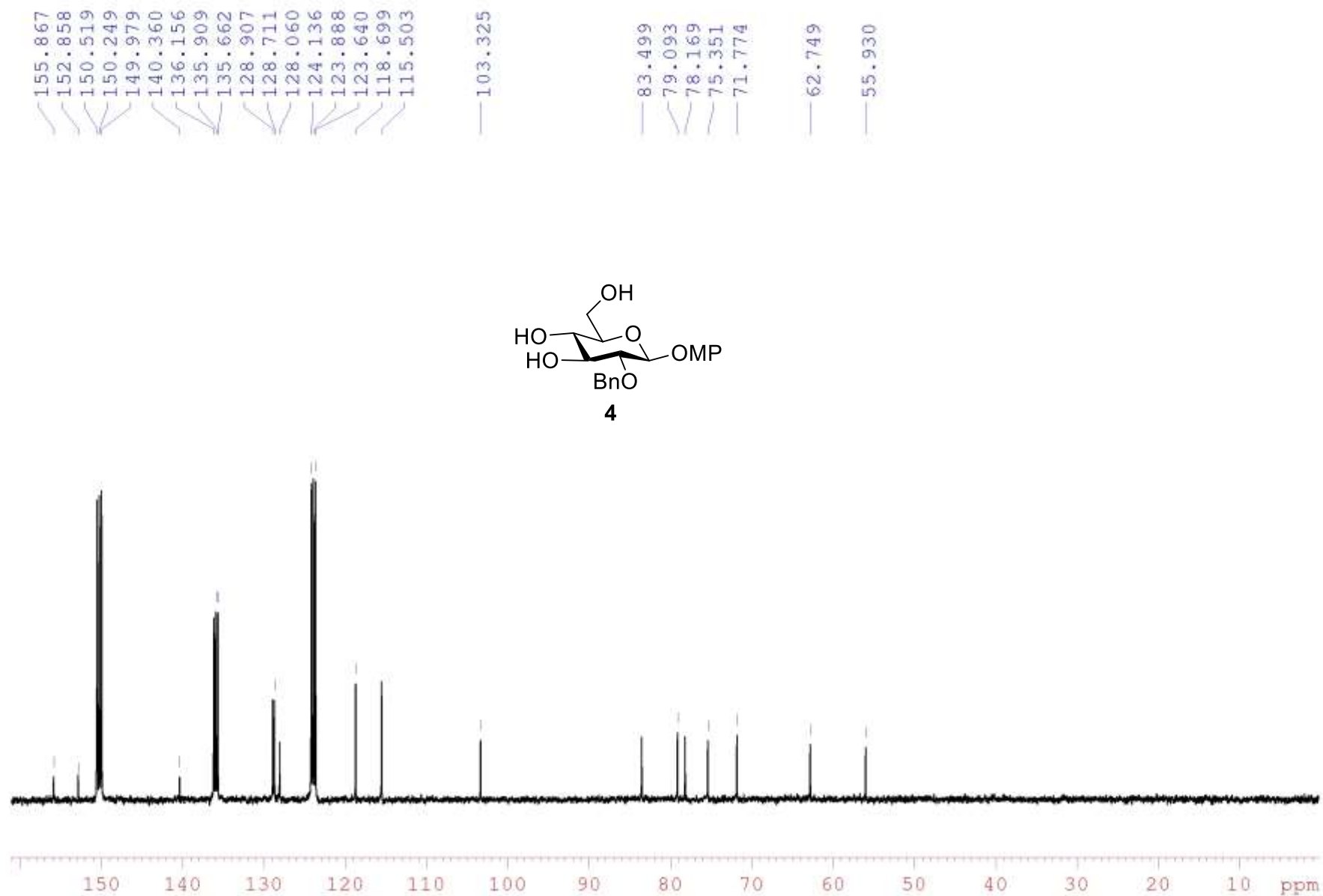
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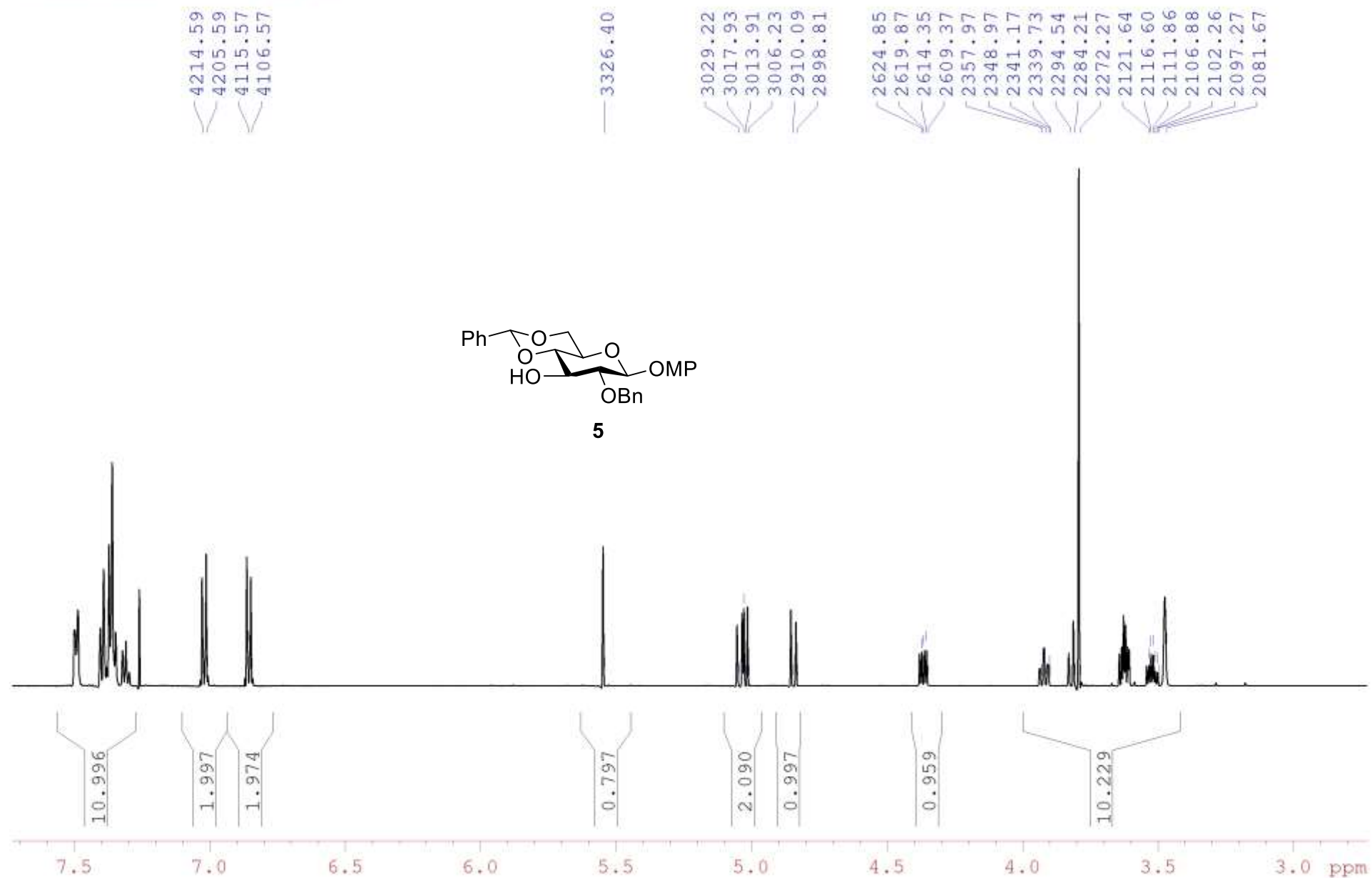
***p*-Methoxyphenyl 2-*O*-benzyl- β -D-glucopyranoside (4)**

BD2023c Py-d5 100.6 MHz



***p*-Methoxyphenyl 2-*O*-benzyl-4,6-*O*-benzylidene- β -D-glucopyranoside (5)**

/BOJA BD2027 CDC13 600 MHz



p-Methoxyphenyl 2-*O*-benzyl-4,6-*O*-benzylidene- β -D-glucopyranoside (5)

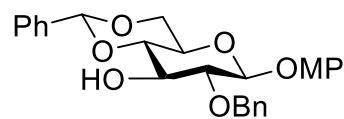
/BOJA BD2027

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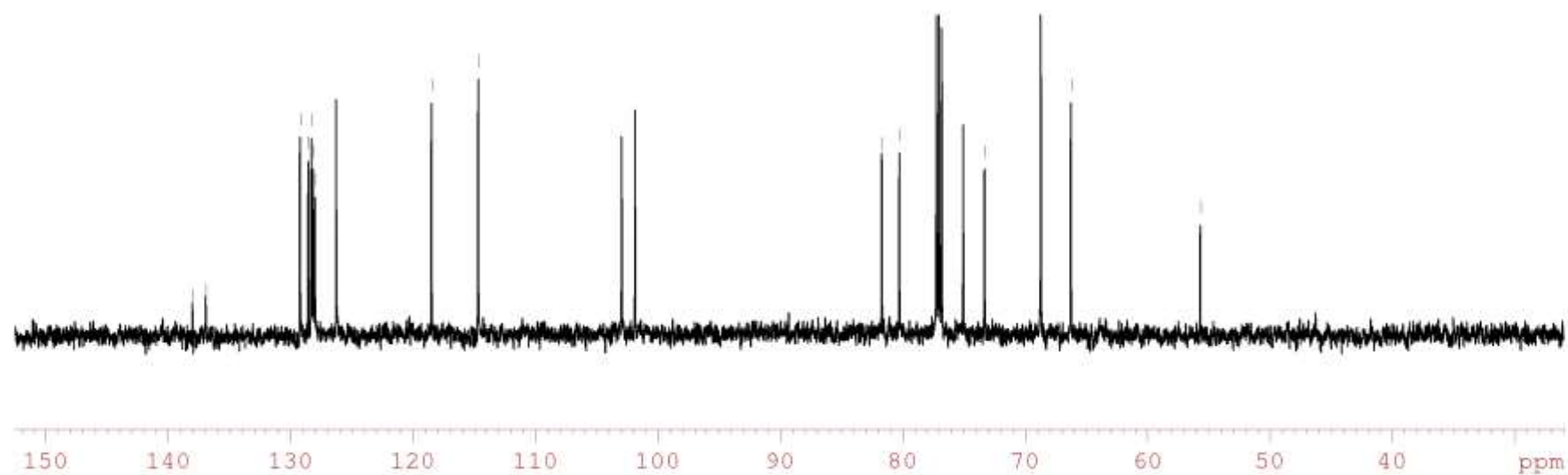
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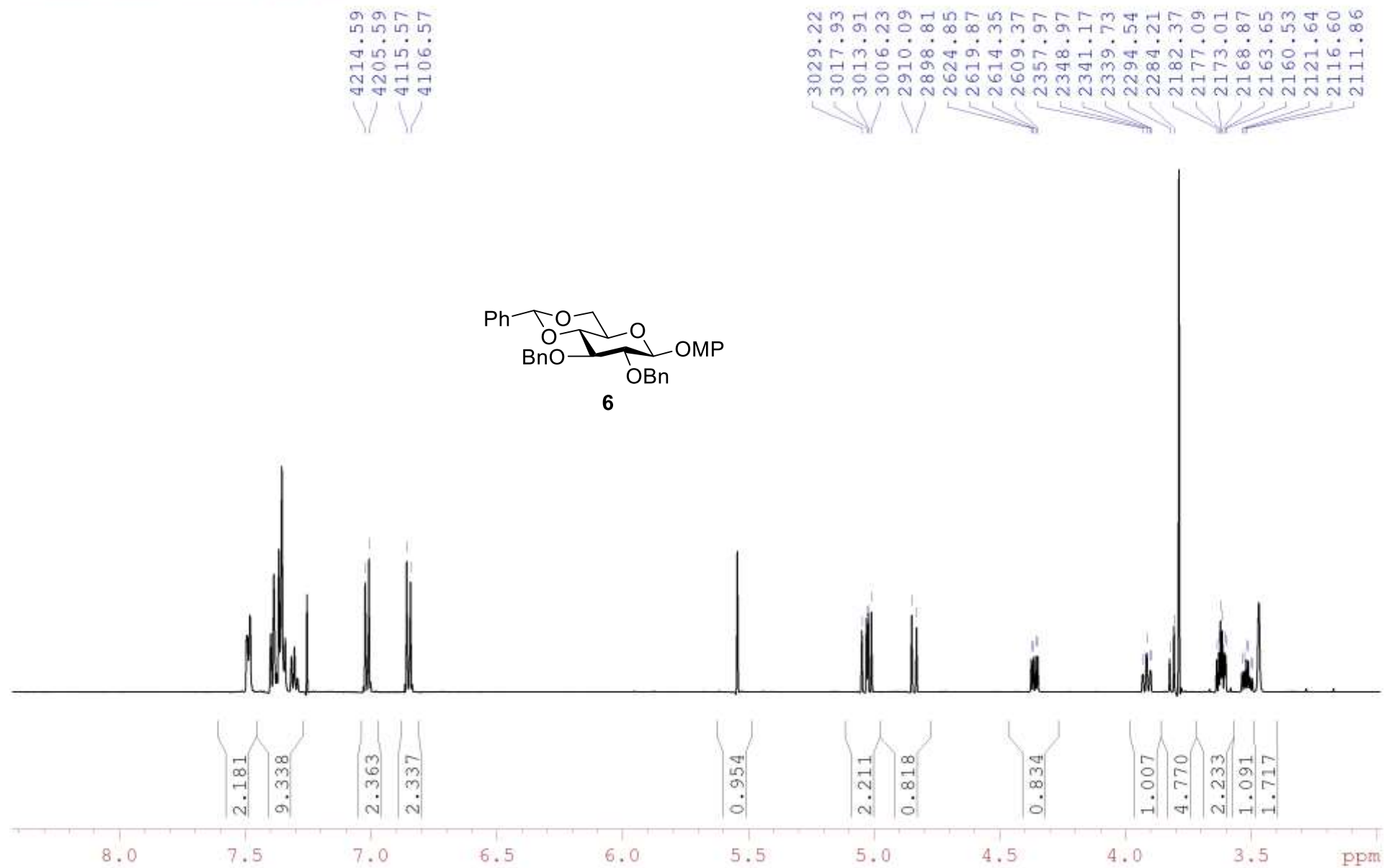


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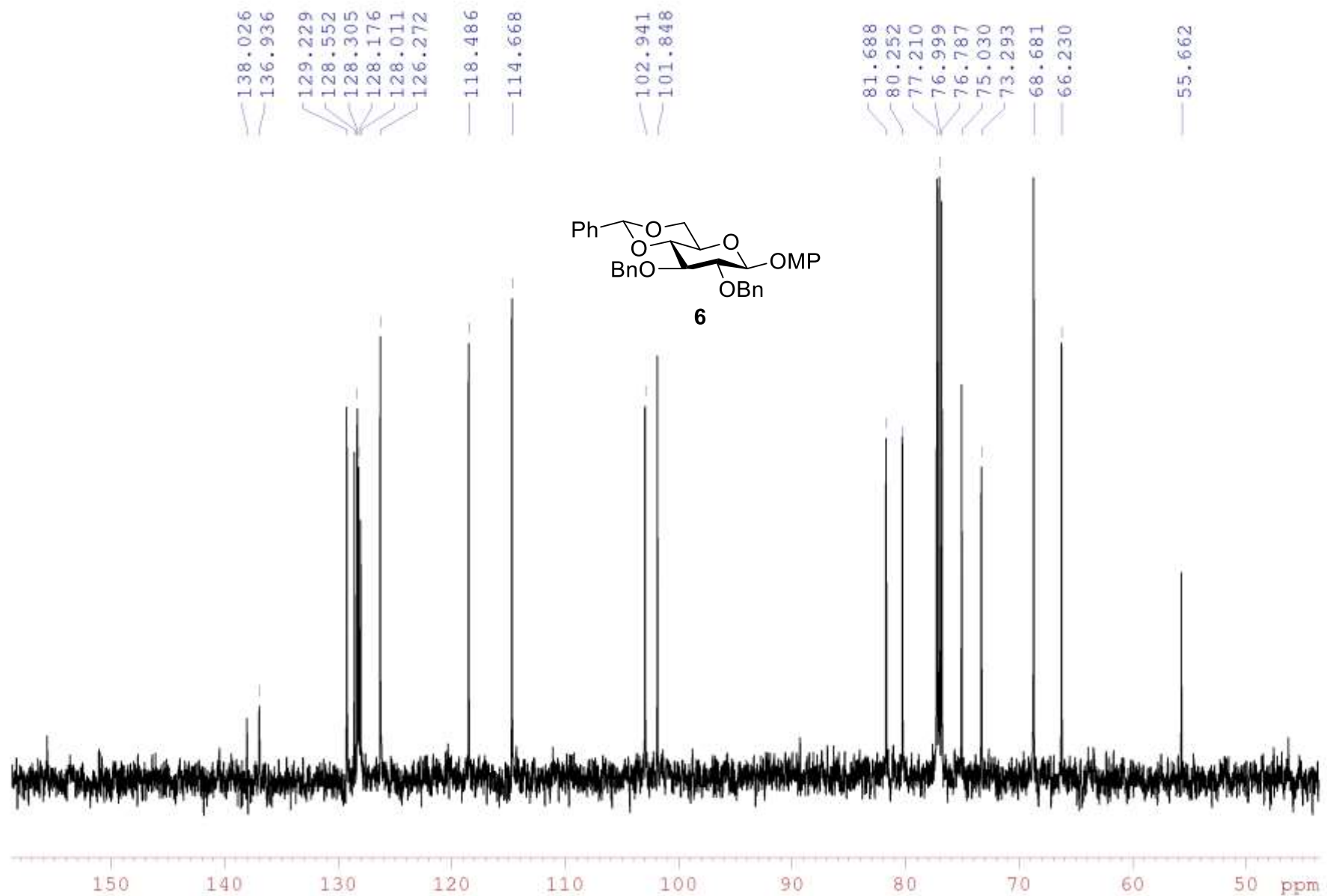
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/BOJA BD2027 CDC13 600 MHz

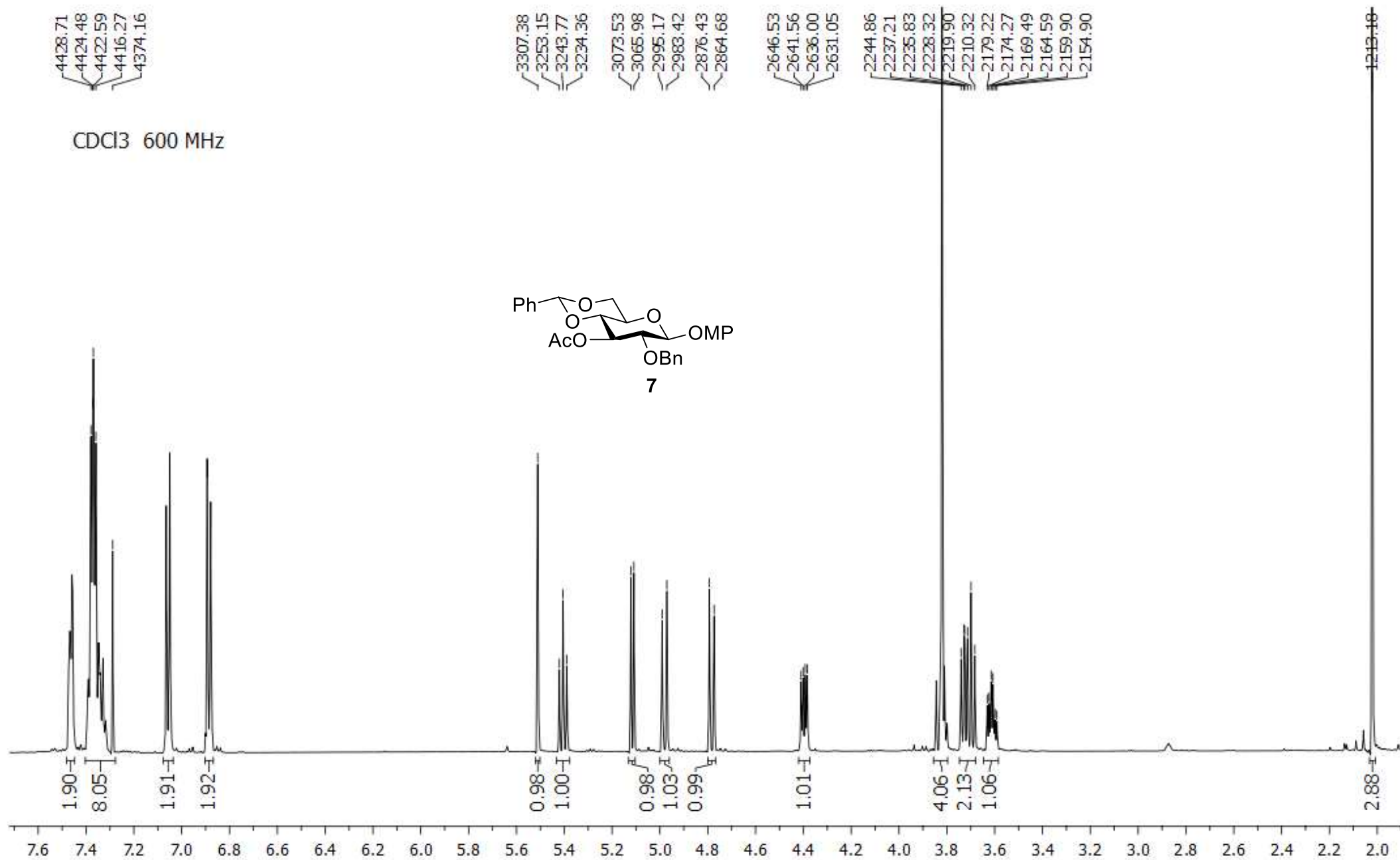


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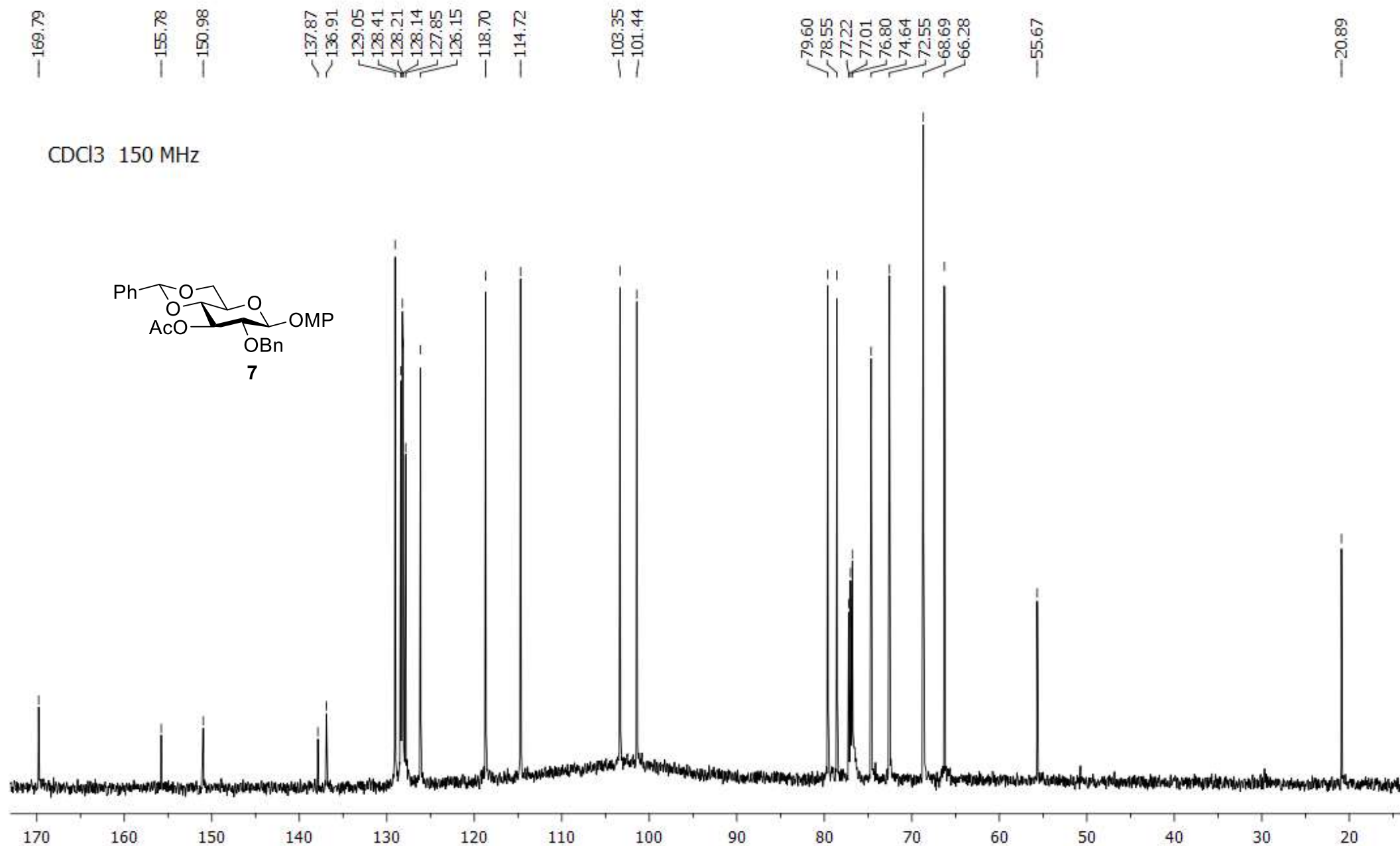
/BOJA BD2027 CDC13 151 MHz



***p*-Methoxyphenyl 3-*O*-acetyl-2-*O*-benzyl-4,6-*O*-benzyliden- β -D-glucopyranoside (7)**

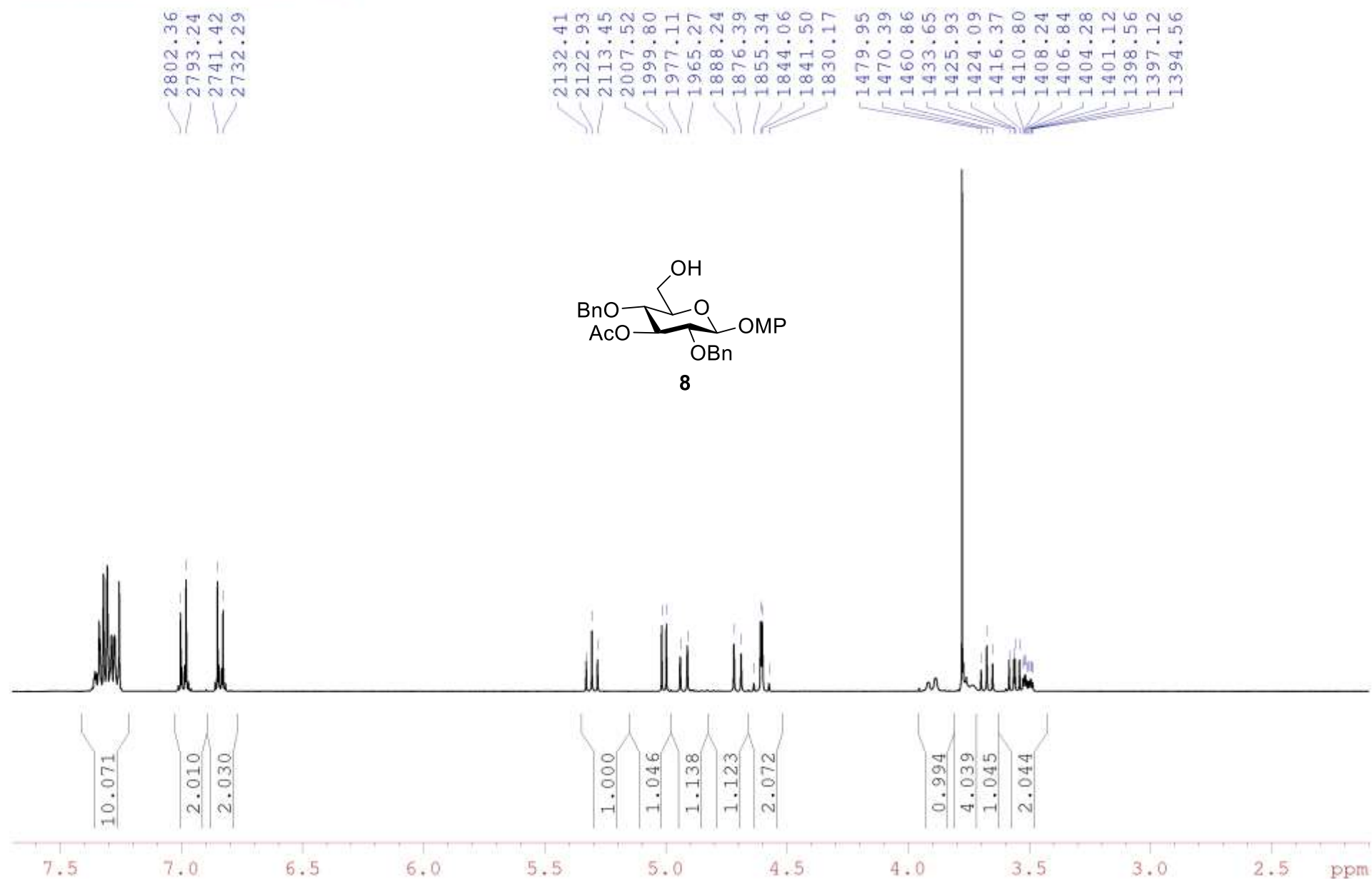


***p*-Methoxyphenyl 3-*O*-acetyl-2-*O*-benzyl-4,6-*O*-benzyliden- β -D-glucopyranoside (7)**



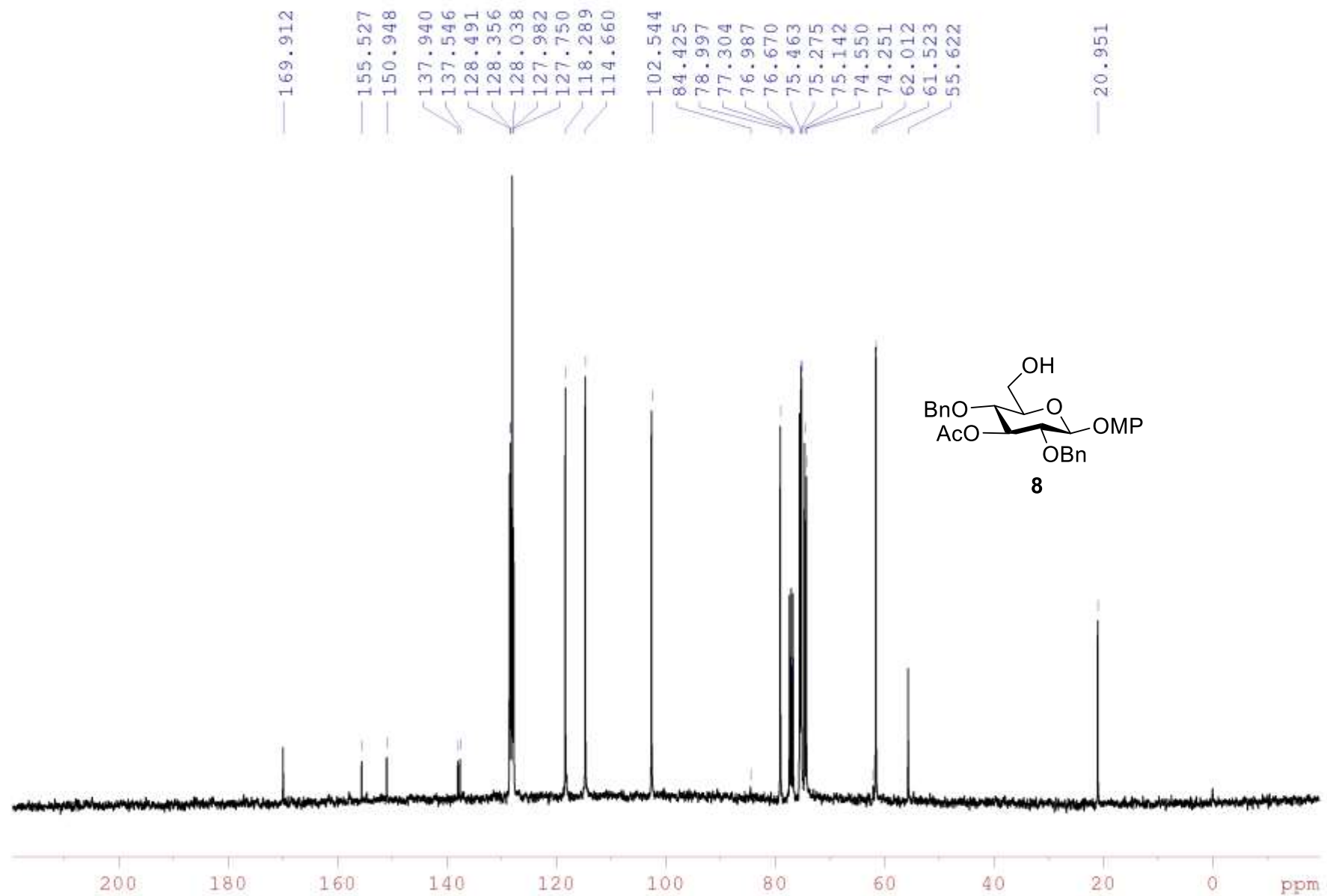
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/BOJA BD2071c CDCl₃ 400 MHz



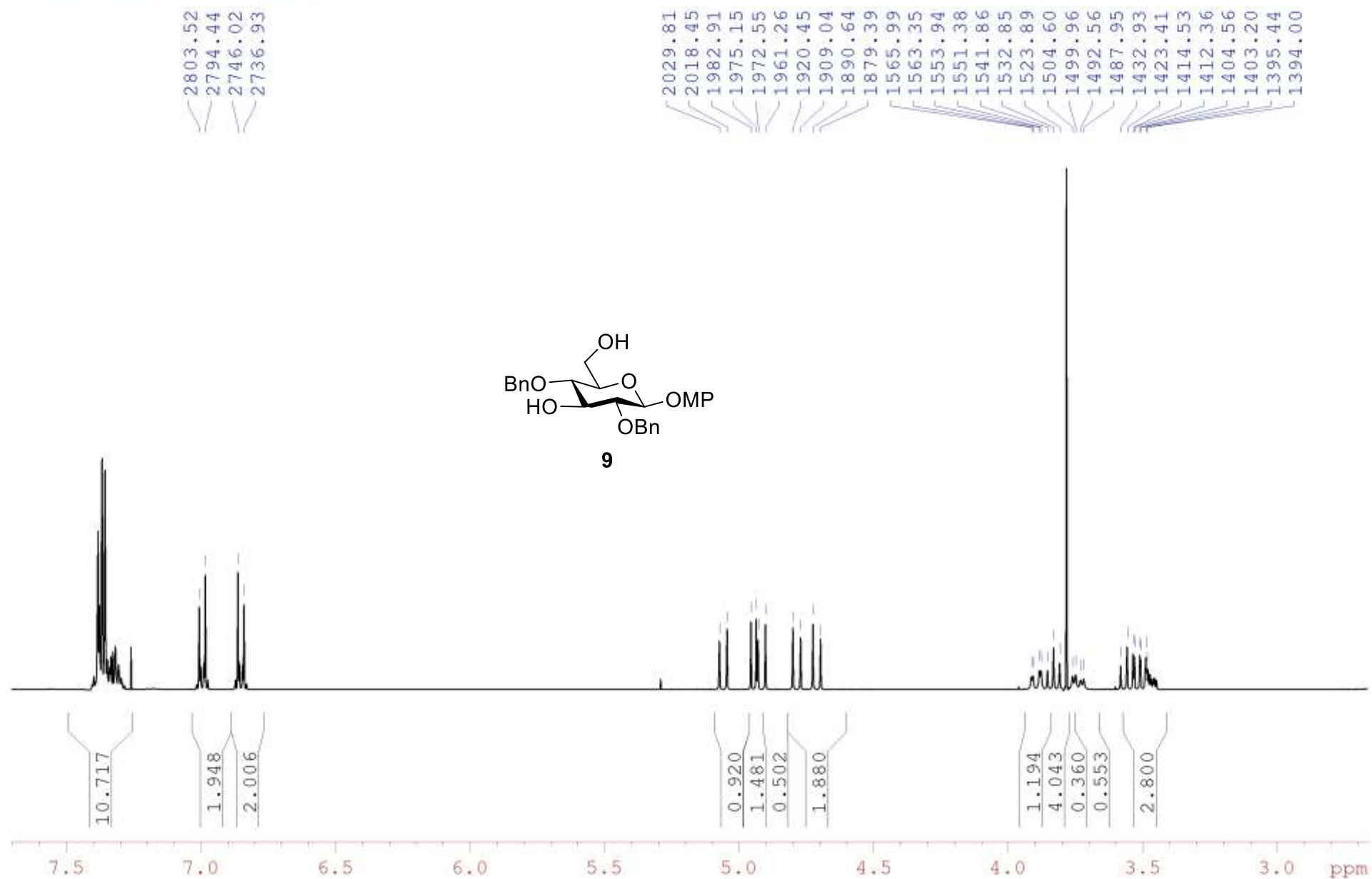
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BOJA BD2071c 13C CDC13 100.6 MH



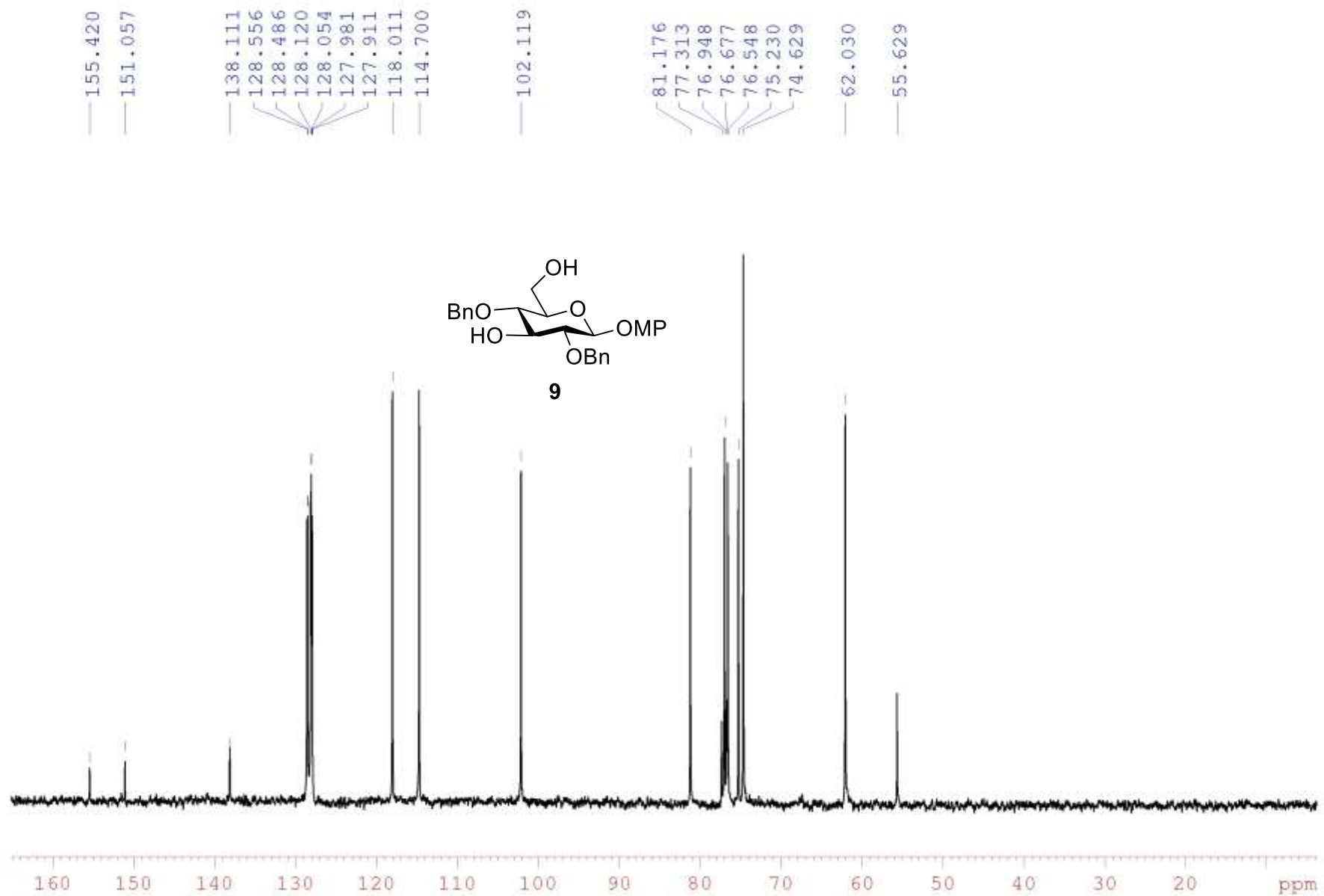
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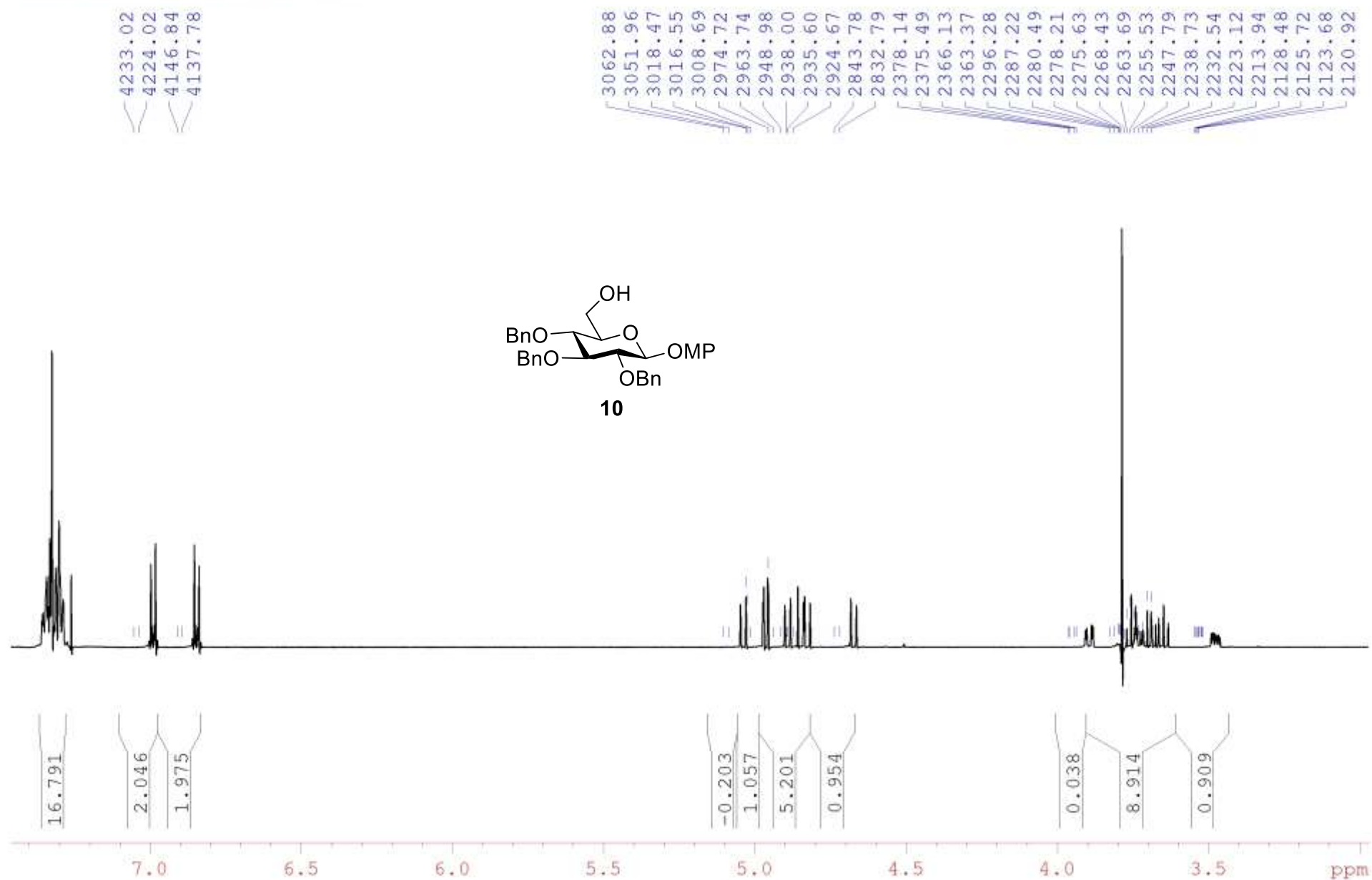
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¹BOJA BD2060 13C CDC13 100.6 MHz:



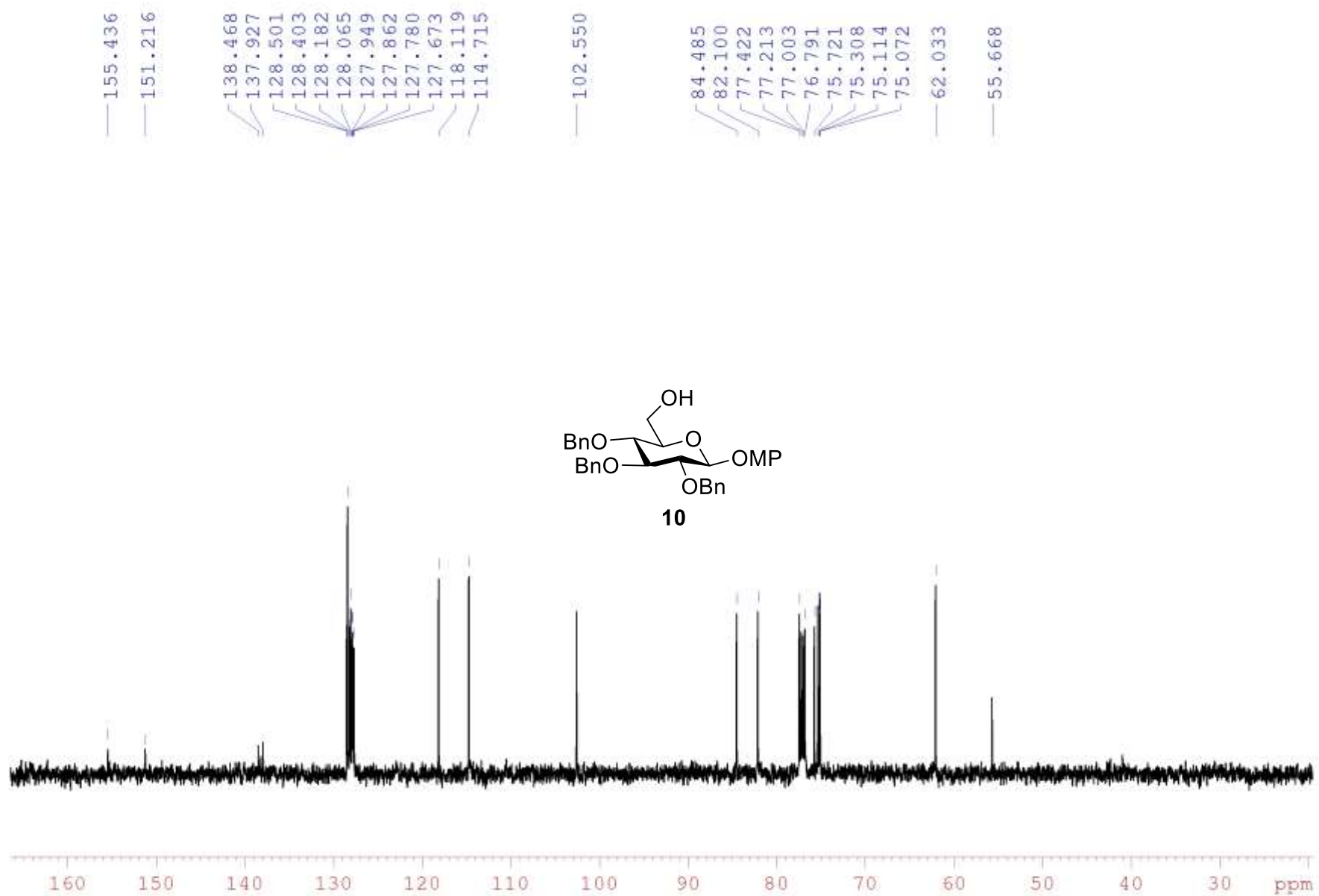
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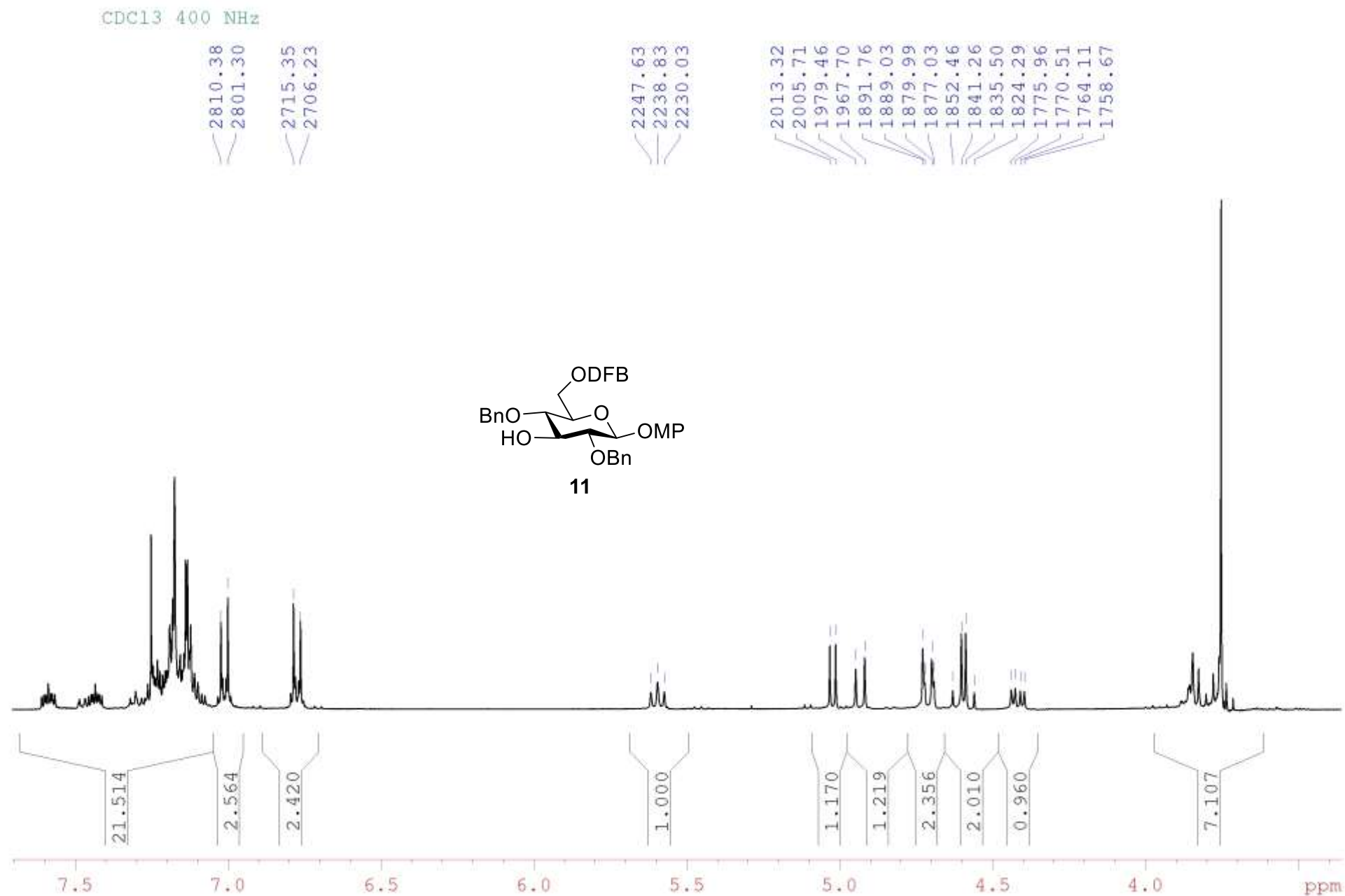


***p*-Methoxyphenyl 2,3,4-tri-*O*-benzyl- β -D-glucopyranoside (10)**

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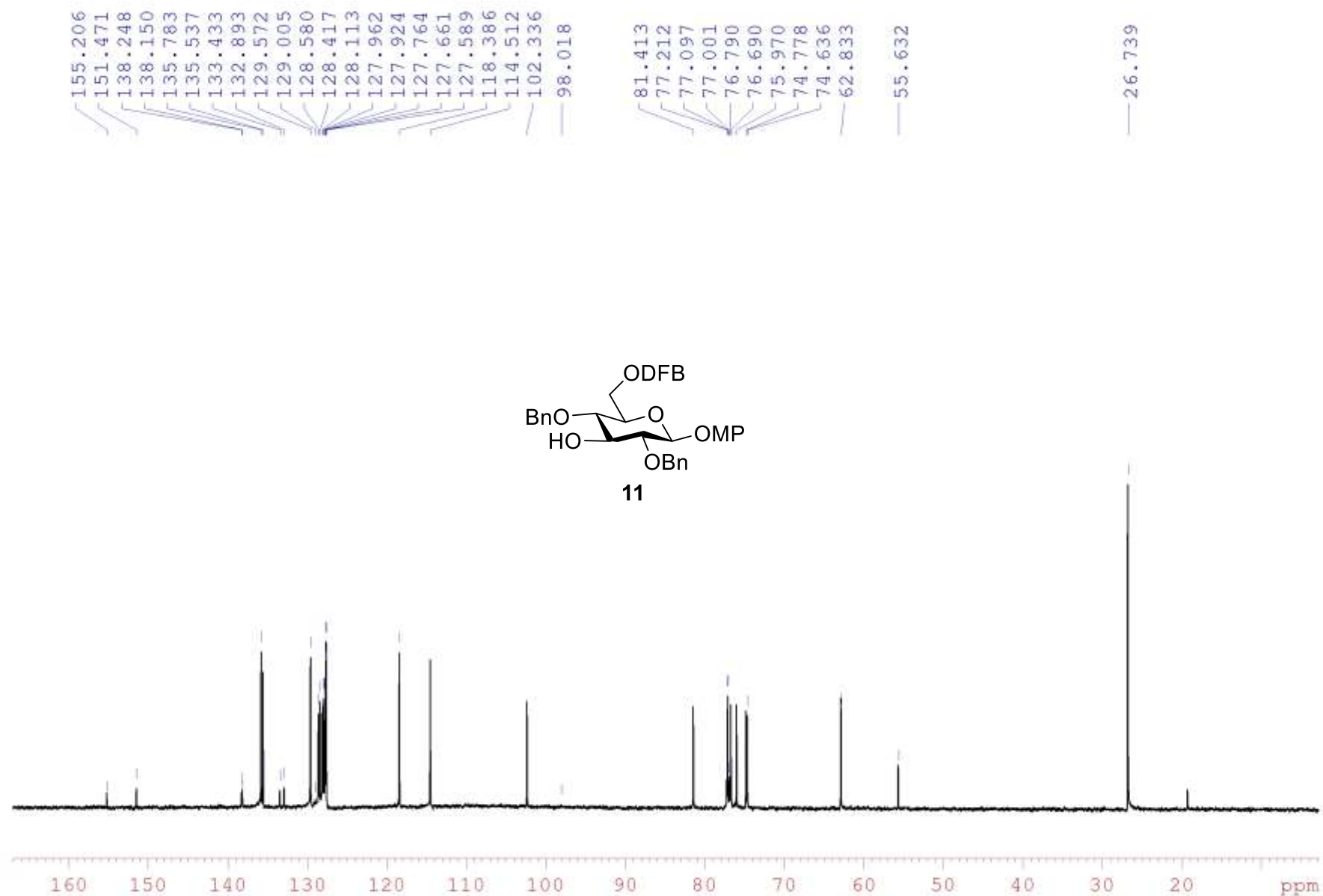


p-Methoxyphenyl 2,4-di-*O*-benzyl-6-*O*-(2,5-difluorobenzoyl)- β -D-glucopyranoside (11)



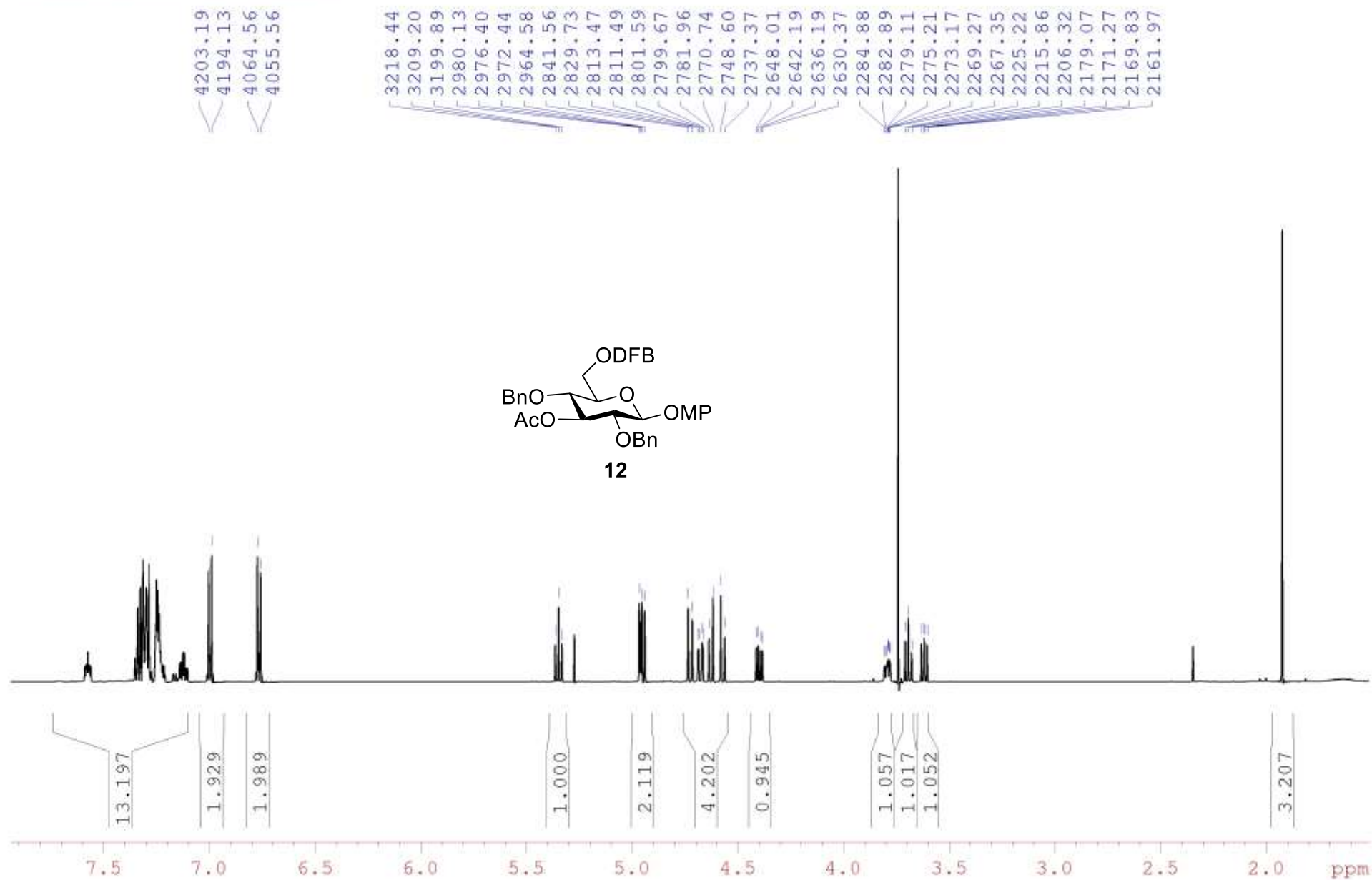
***p*-Methoxyphenyl 2,4-di-*O*-benzyl-6-*O*-(2,5-difluorobenzoyl)- β -D-glucopyranoside (11)**

/BOJA BD1050c CDC13 150.9 MHz



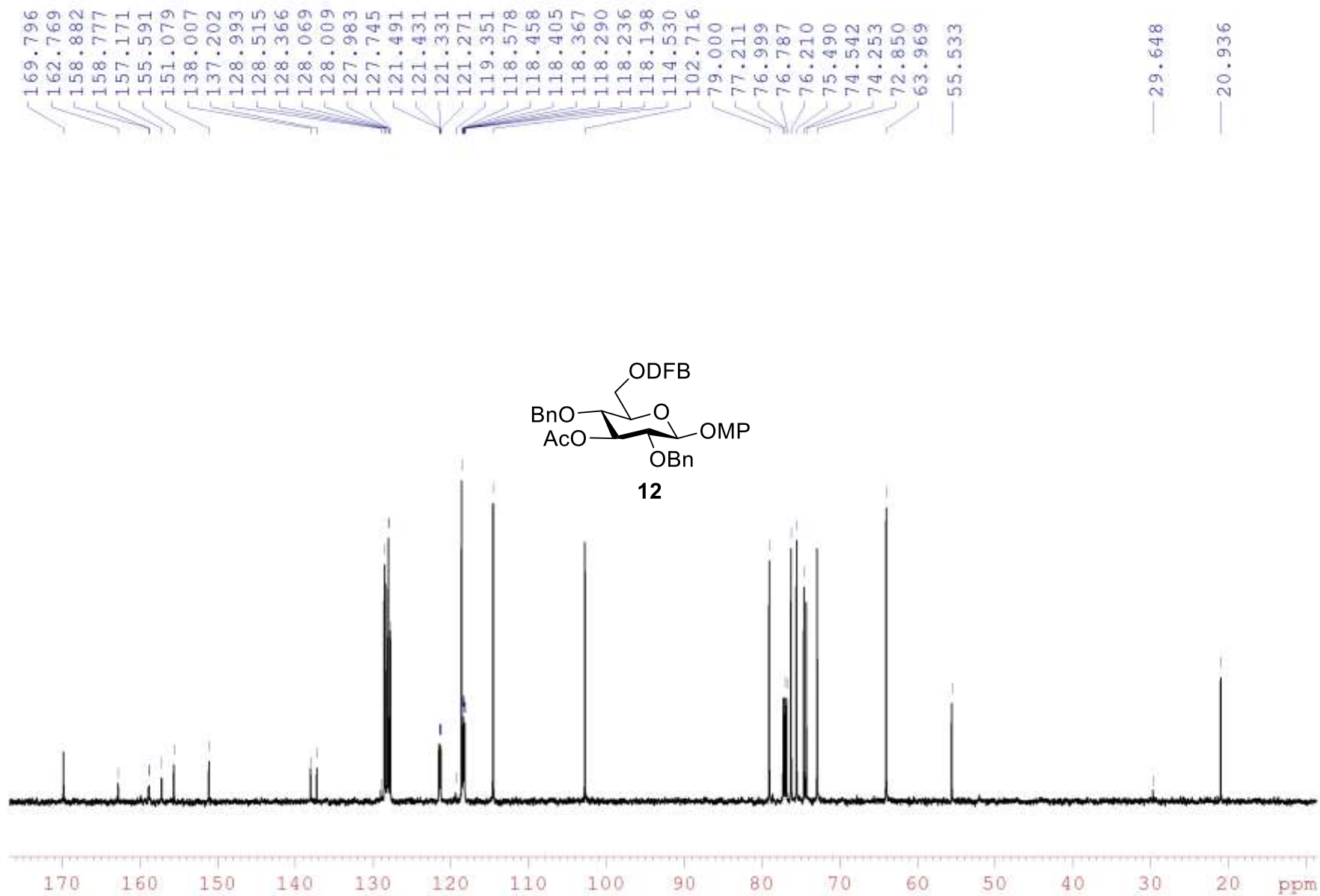
***p*-Methoxyphenyl 3-*O*-acetyl-2,4-di-*O*-benzyl-6-*O*-(2,5-difluorobenzoyl)- β -D-glucopyranoside (12)**

/BOJA BD2030c CDC13 600MHz



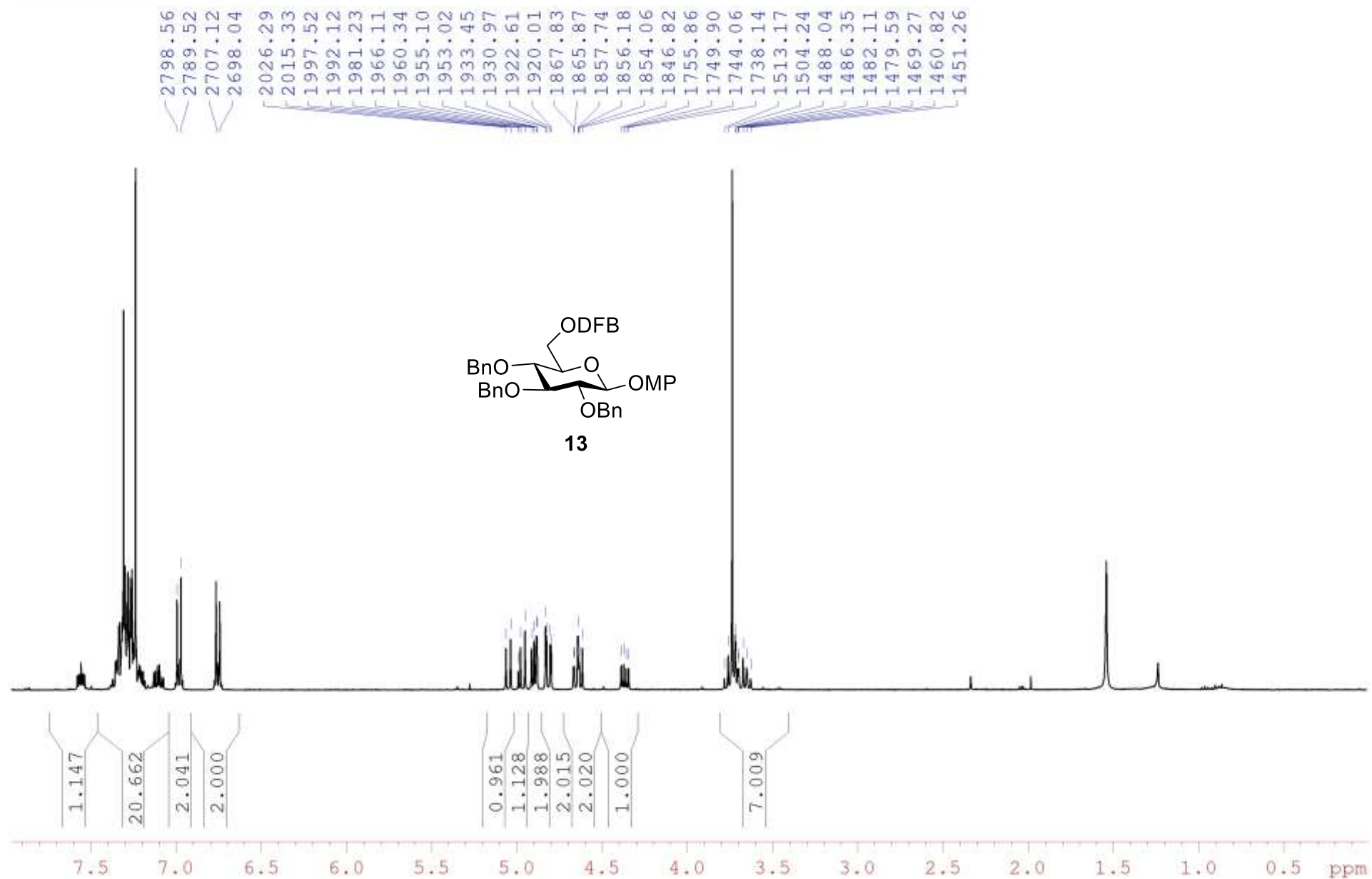
***p*-Methoxyphenyl 3-*O*-acetyl-2,4-di-*O*-benzyl-6-*O*-(2,5-difluorobenzoyl)- β -D-glucopyranoside (12)**

/BOJA BD2030c CDC13 150.9 MHz



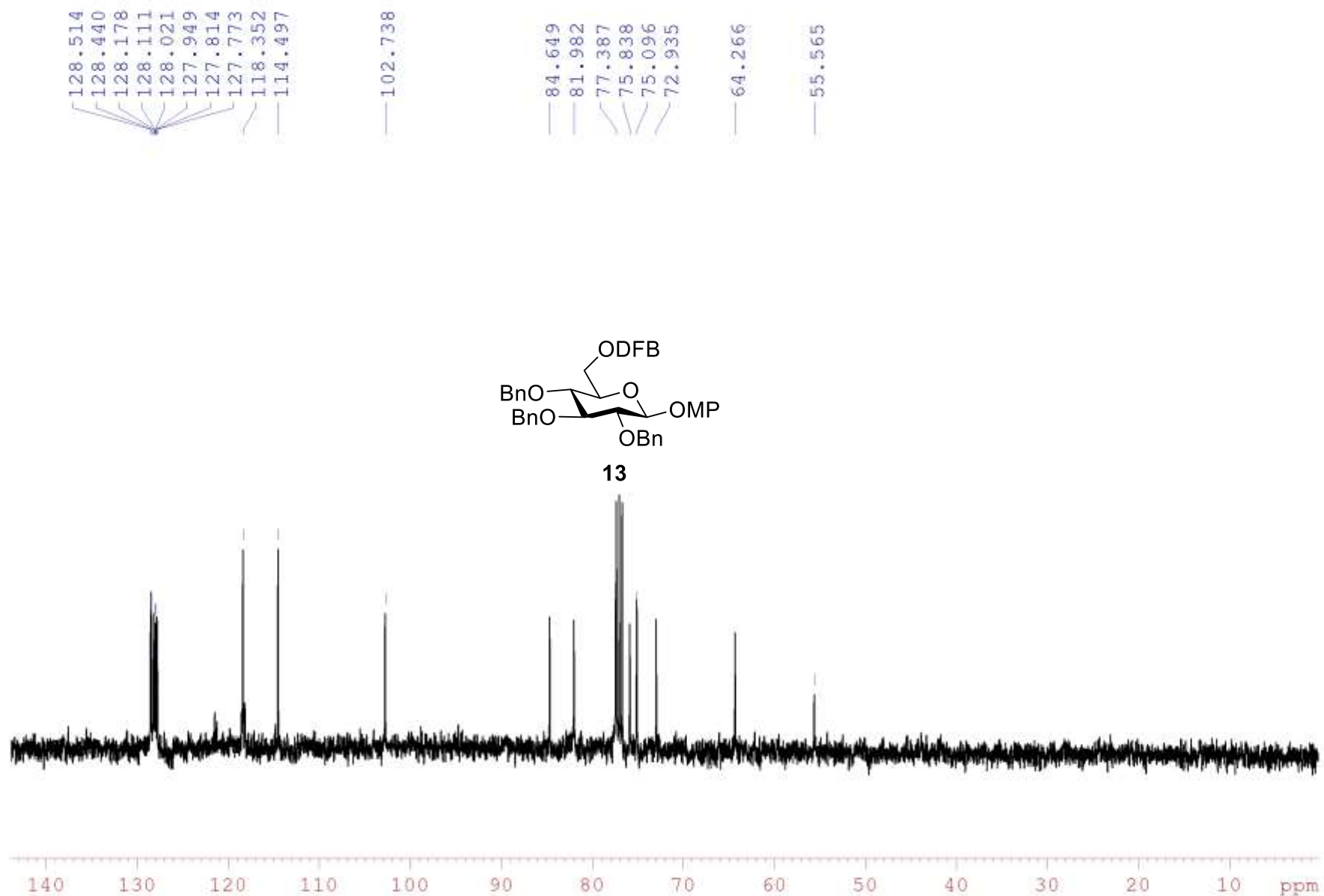
***p*-Methoxyphenyl 2,3,4-tri-*O*-benzyl-6-*O*-(2,5-difluorobenzoyl)- β -D-glucopyranoside (13)**

/BOJA BD2185 CDC13 400MHz



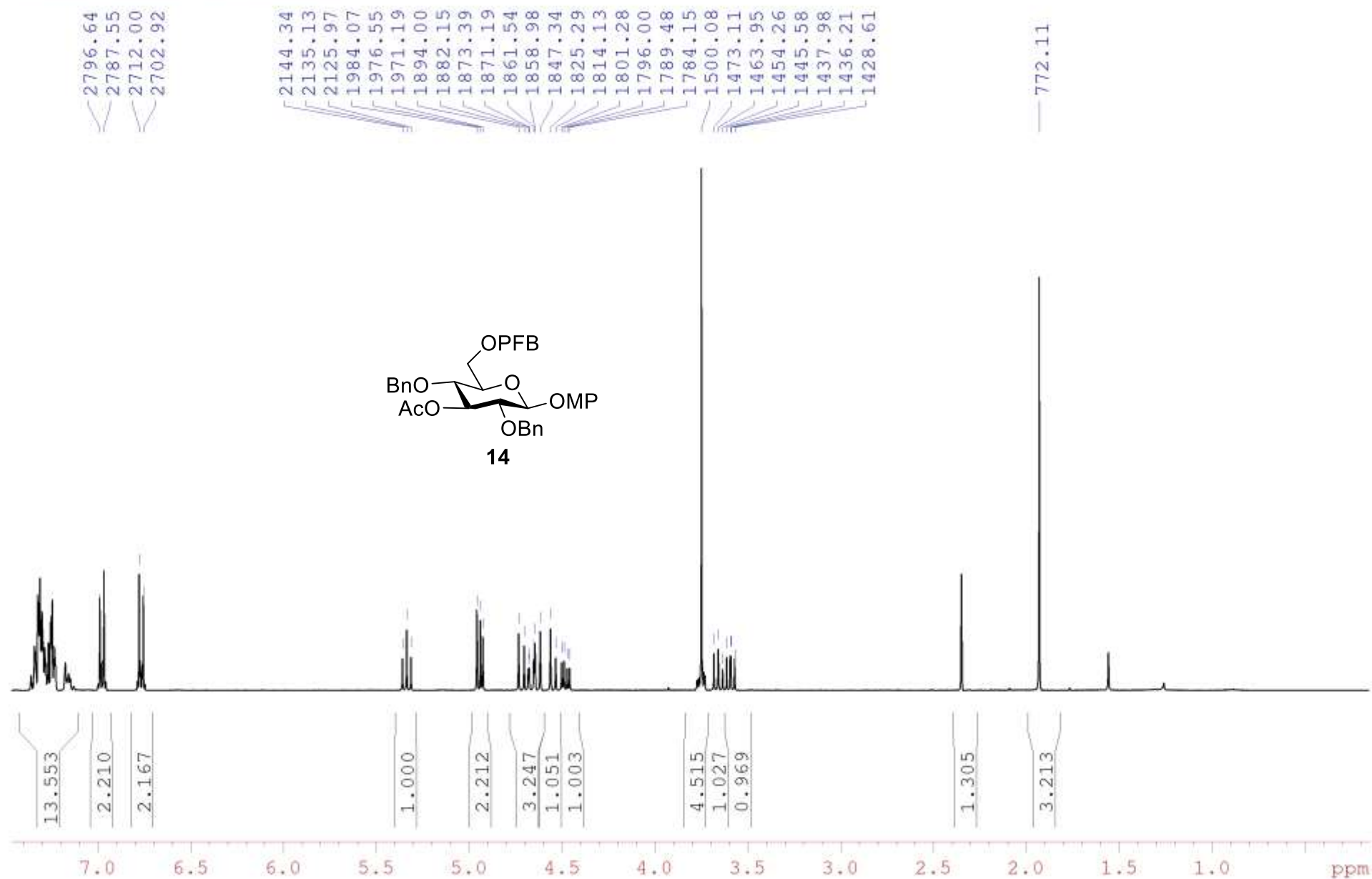
***p*-Methoxyphenyl 2,3,4-tri-*O*-benzyl-6-*O*-(2,5-difluorobenzoyl)- β -D-glucopyranoside (13)**

/BOJA BD2185 CDCl₃ 100.6 MHz



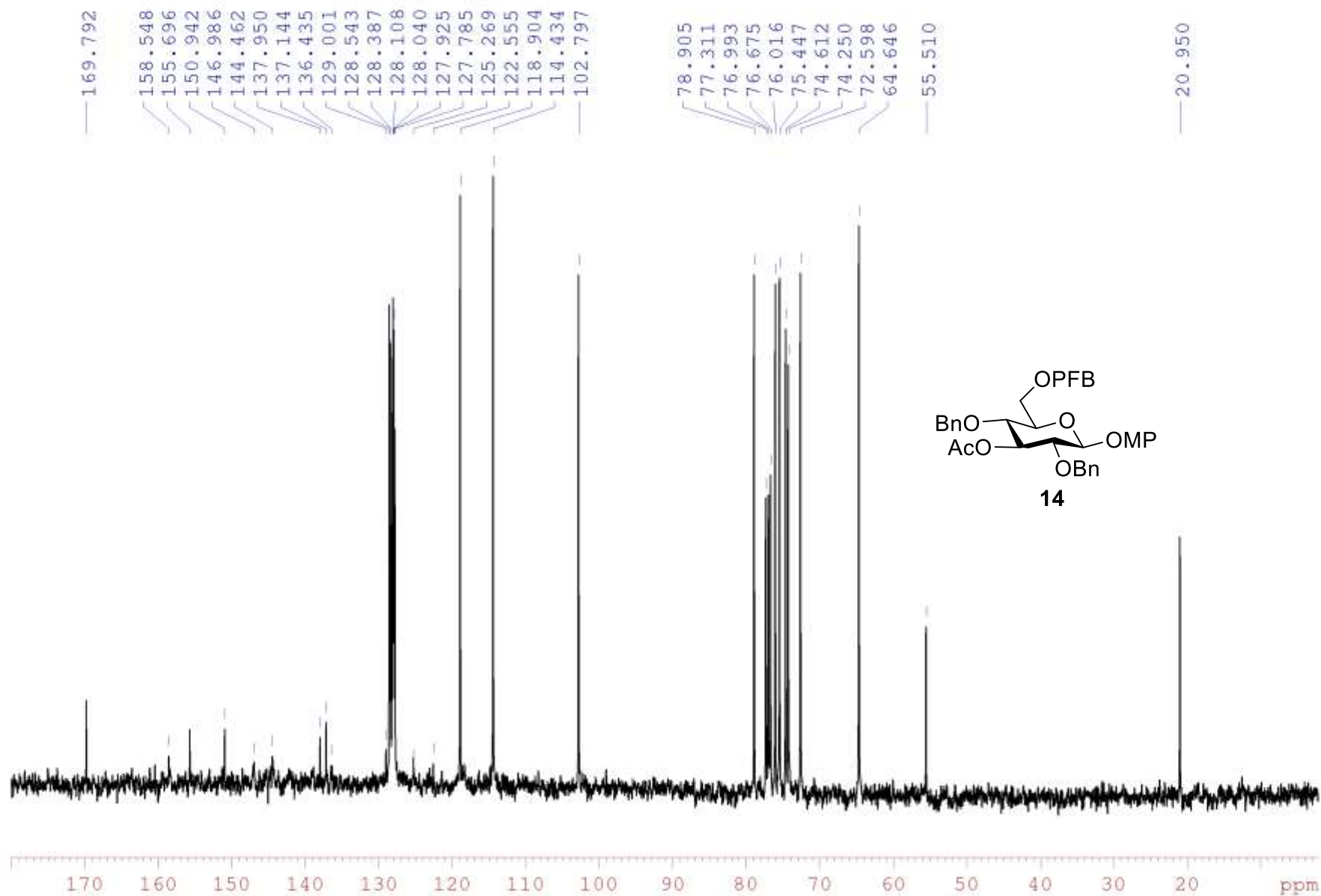
***p*-Methoxyphenyl 3-*O*-acetyl-2,4-di-*O*-benzyl-6-*O*-pentafluorobenzoyl- β -D-glucopyranoside (14)**

/BOJA BD2084C CDC13 400MHz



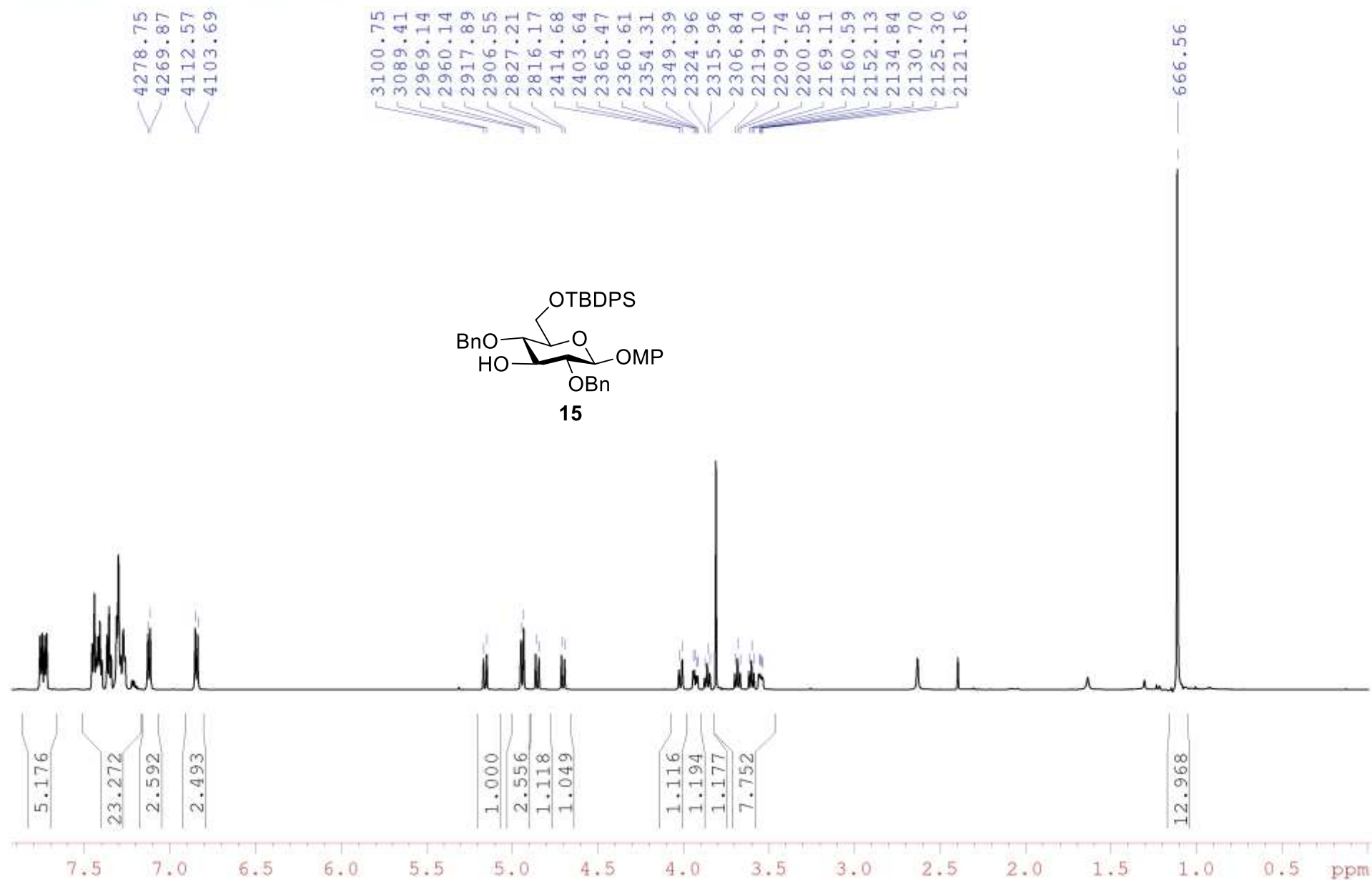
***p*-Methoxyphenyl 3-*O*-acetyl-2,4-di-*O*-benzyl-6-*O*-pentafluorobenzoyl- β -D-glucopyranoside (14)**

BOJA BD2084C 13C CDC13 100.6 MH



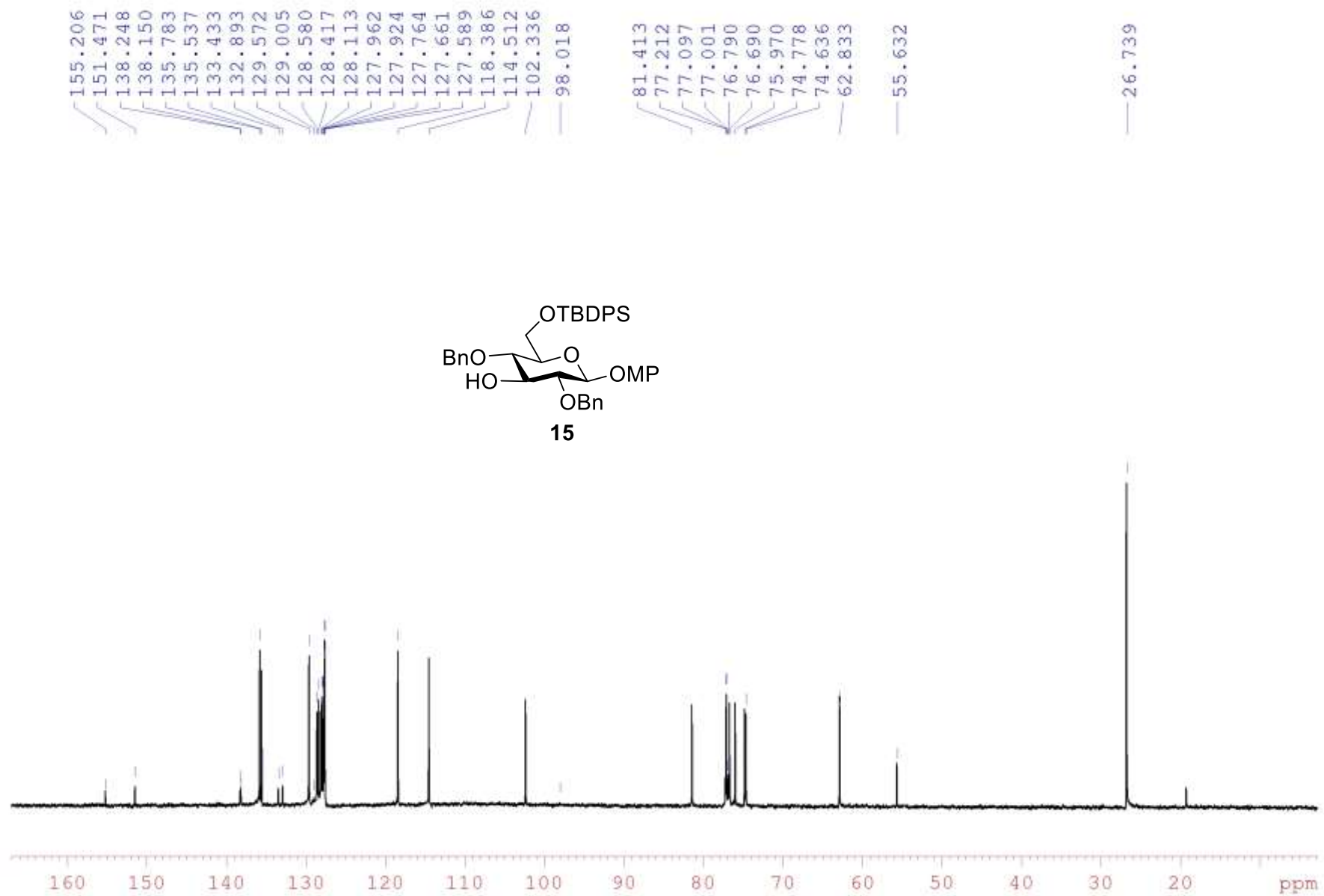
***p*-Methoxyphenyl 2,4-di-*O*-benzyl-6-*O*-*tert*-butyldiphenylsilyl- β -D-glucopyranoside (15)**

/BOJA BD1050c CDC13 600 MHz



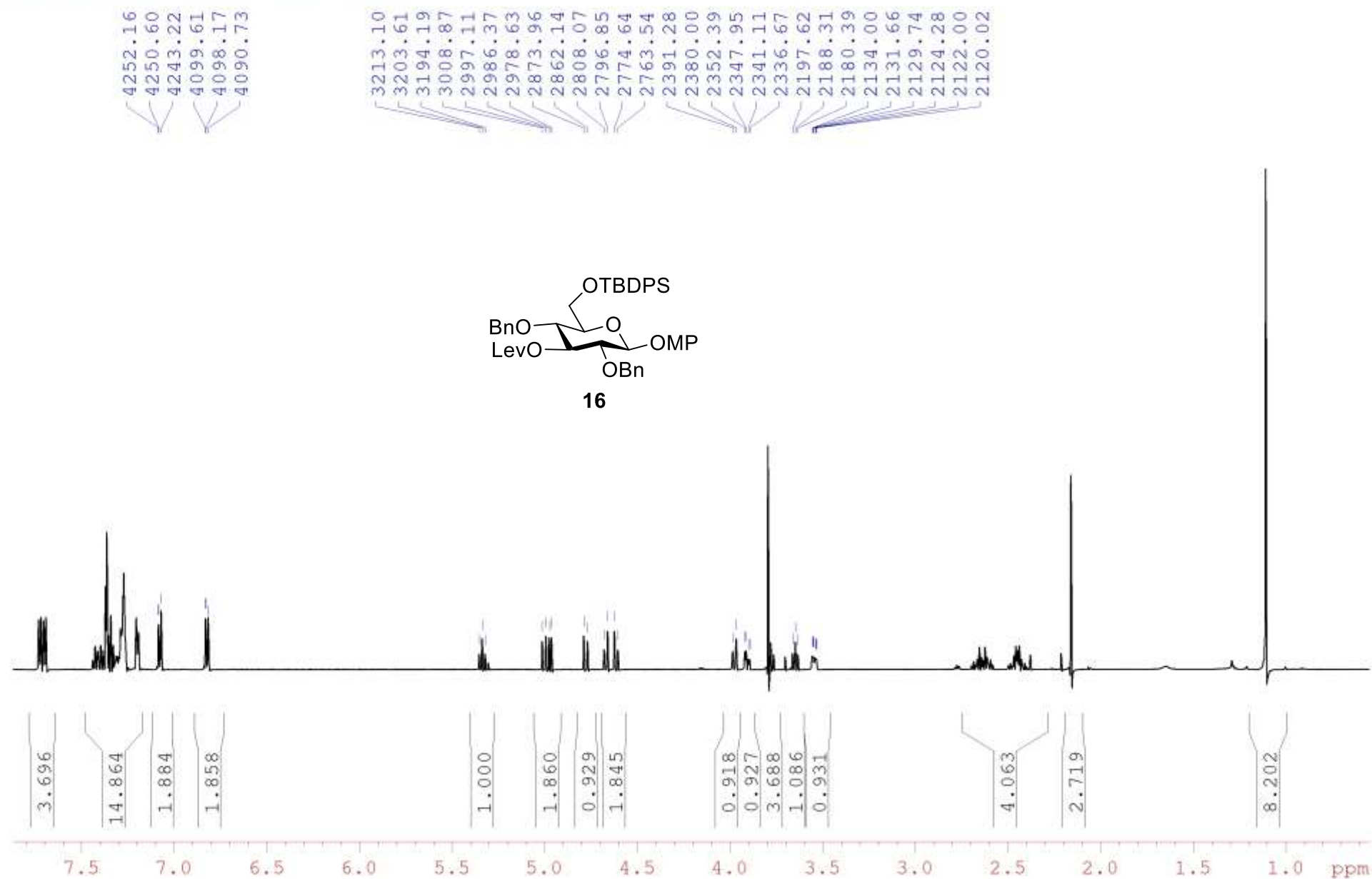
***p*-Methoxyphenyl 2,4-di-*O*-benzyl-6-*O*-*tert*-butyldiphenylsilyl- β -D-glucopyranoside (15)**

/BOJA BD1050c CDC13 150.9 MHz



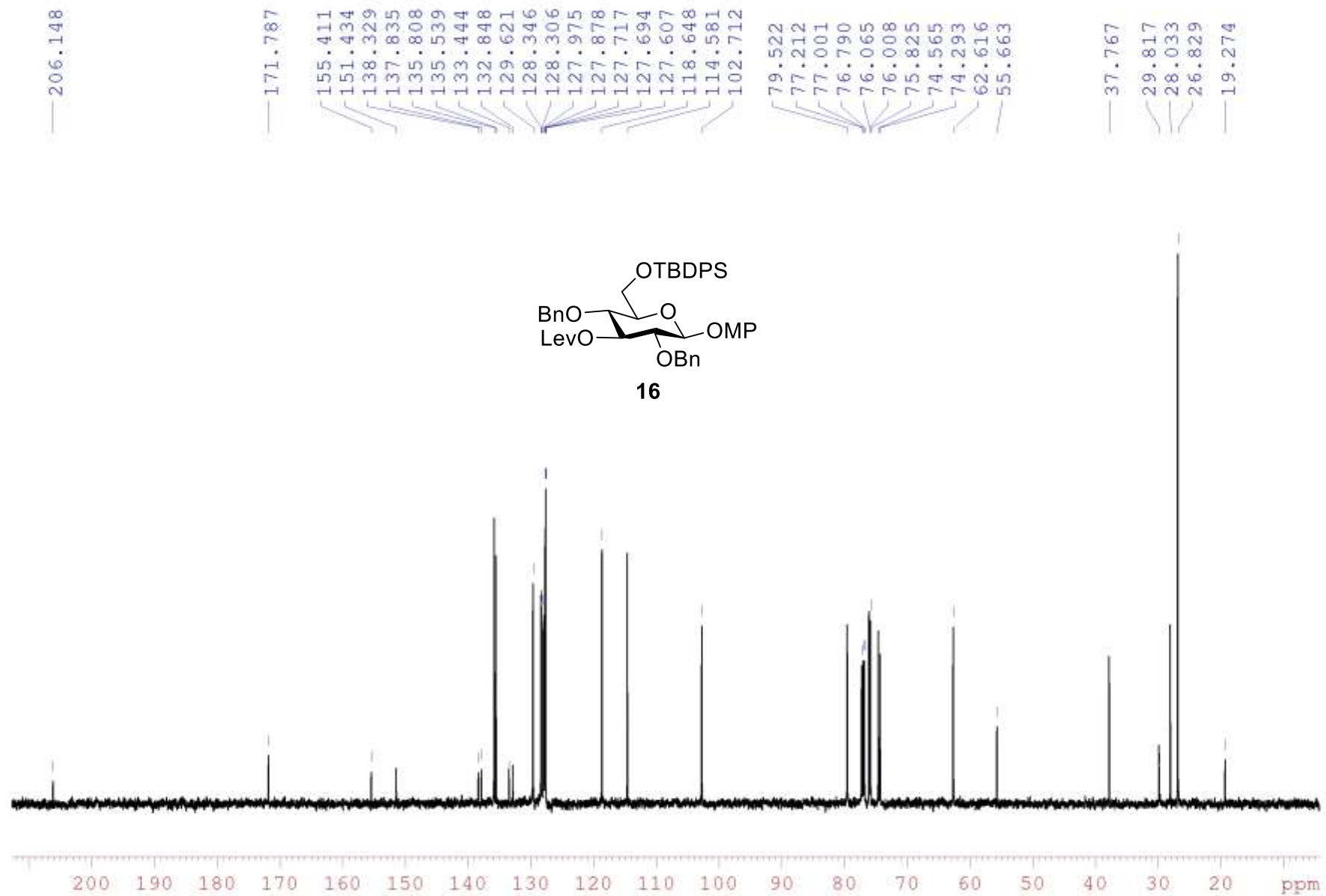
***p*-Methoxyphenyl 2,4-di-*O*-benzyl-6-*O*-*tert*-butyldiphenylsilyl-3-*O*-levulinoyl- β -D-glucopyranoside (16)**

BOJA BD1004b 303K 1H CDC13 600MH



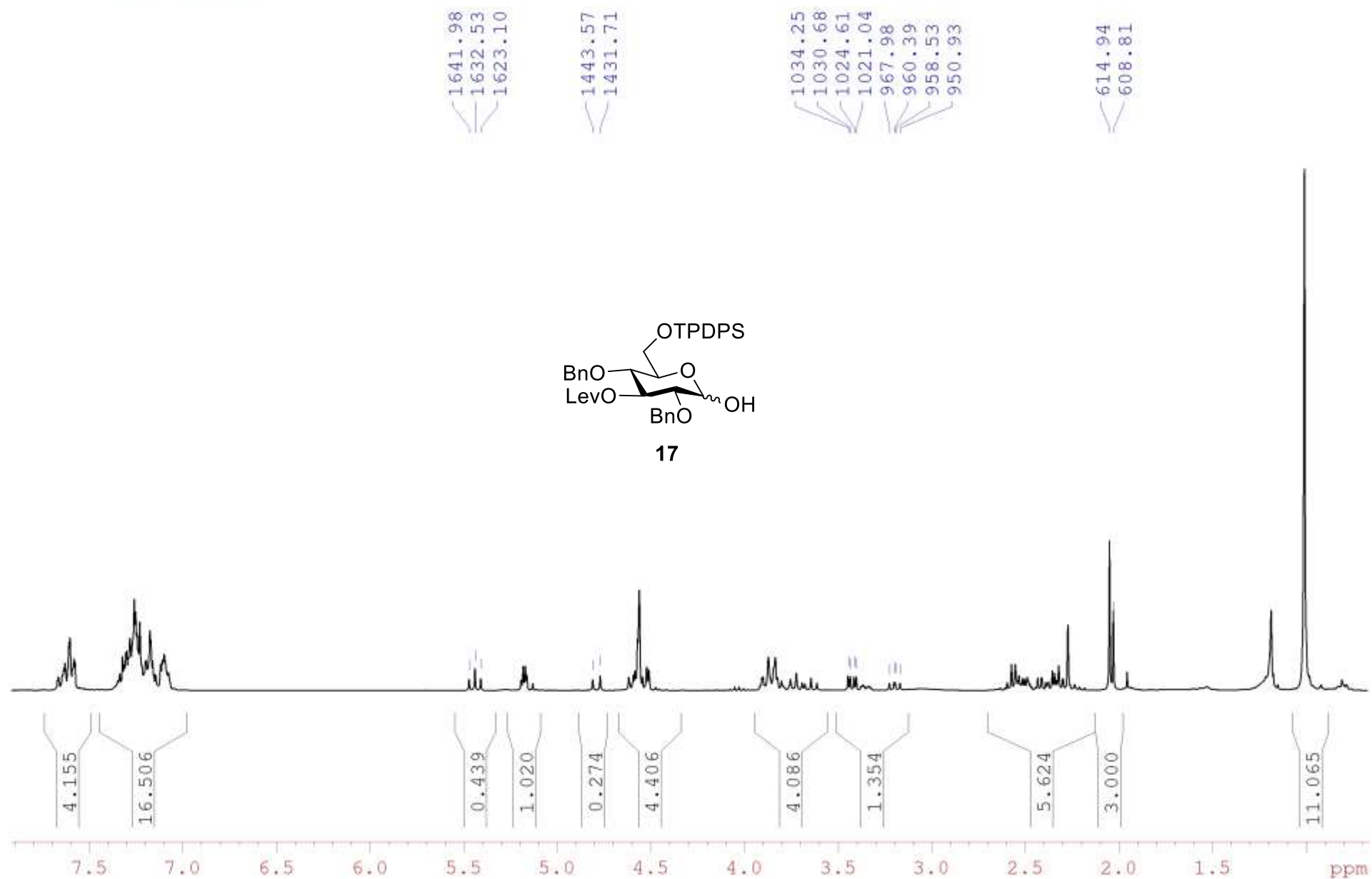
***p*-Methoxyphenyl 2,4-di-*O*-benzyl-6-*O*-*tert*-butyldiphenylsilyl-3-*O*-levulinoyl- β -D-glucopyranoside (16)**

BOJA BD1004b 13C CDC13 150.9 MH

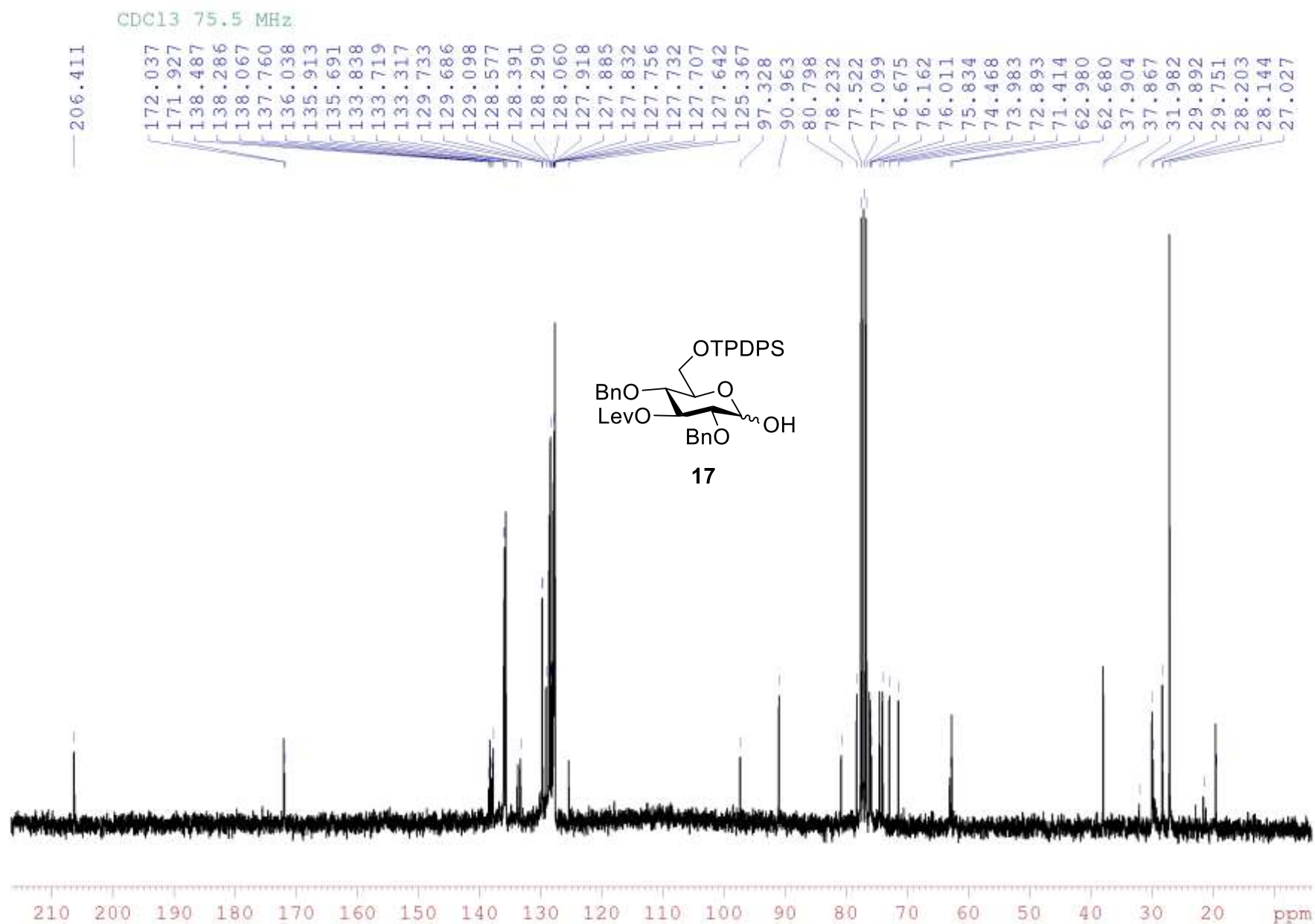


2,4-Di-*O*-benzyl-6-*O*-*tert*-butyldiphenylsilyl-3-*O*-levulinoyl-D-glucopyranose (17)

CDC13 300 MHz

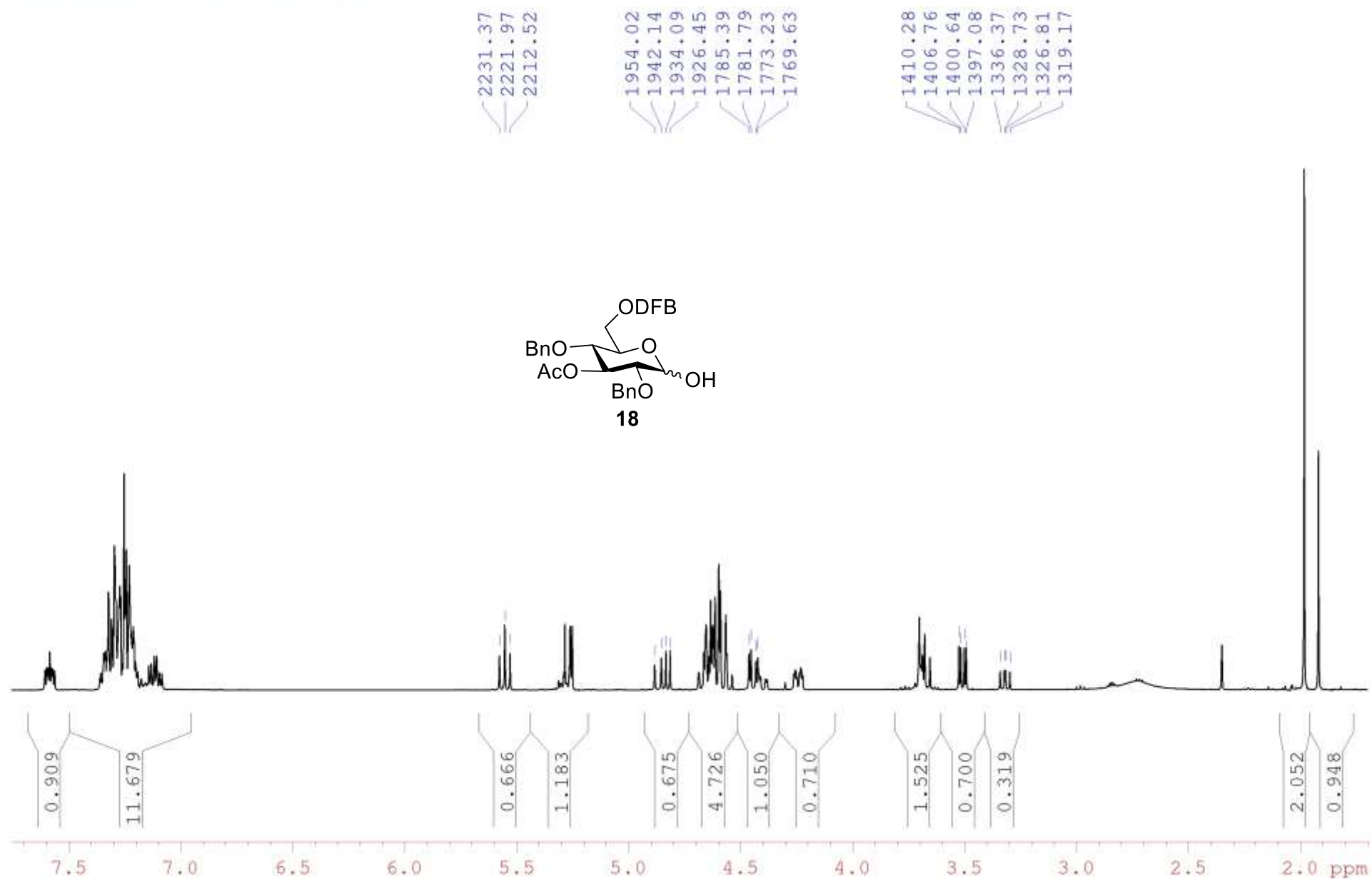


2,4-Di-*O*-benzyl-6-*O*-*tert*-butyldiphenylsilyl-3-*O*-levulinoyl-D-glucopyranose (17)



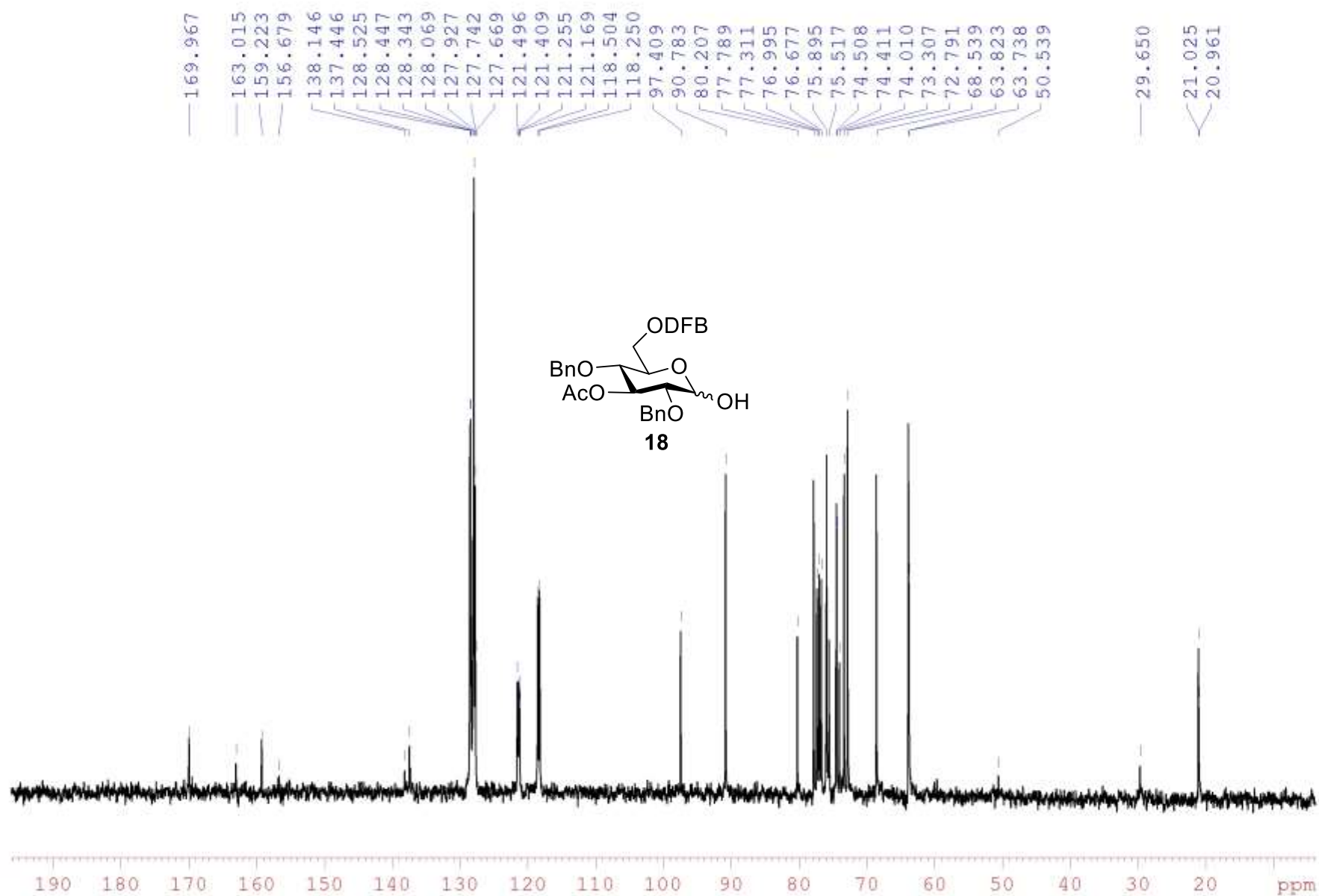
3-O-acetyl-2,4-di-O-benzyl-6-O-(2,5-difluorobenzoyl)-D-glucopyranose (**18**)

/BOJA BD2032c CDC13 400 MHz



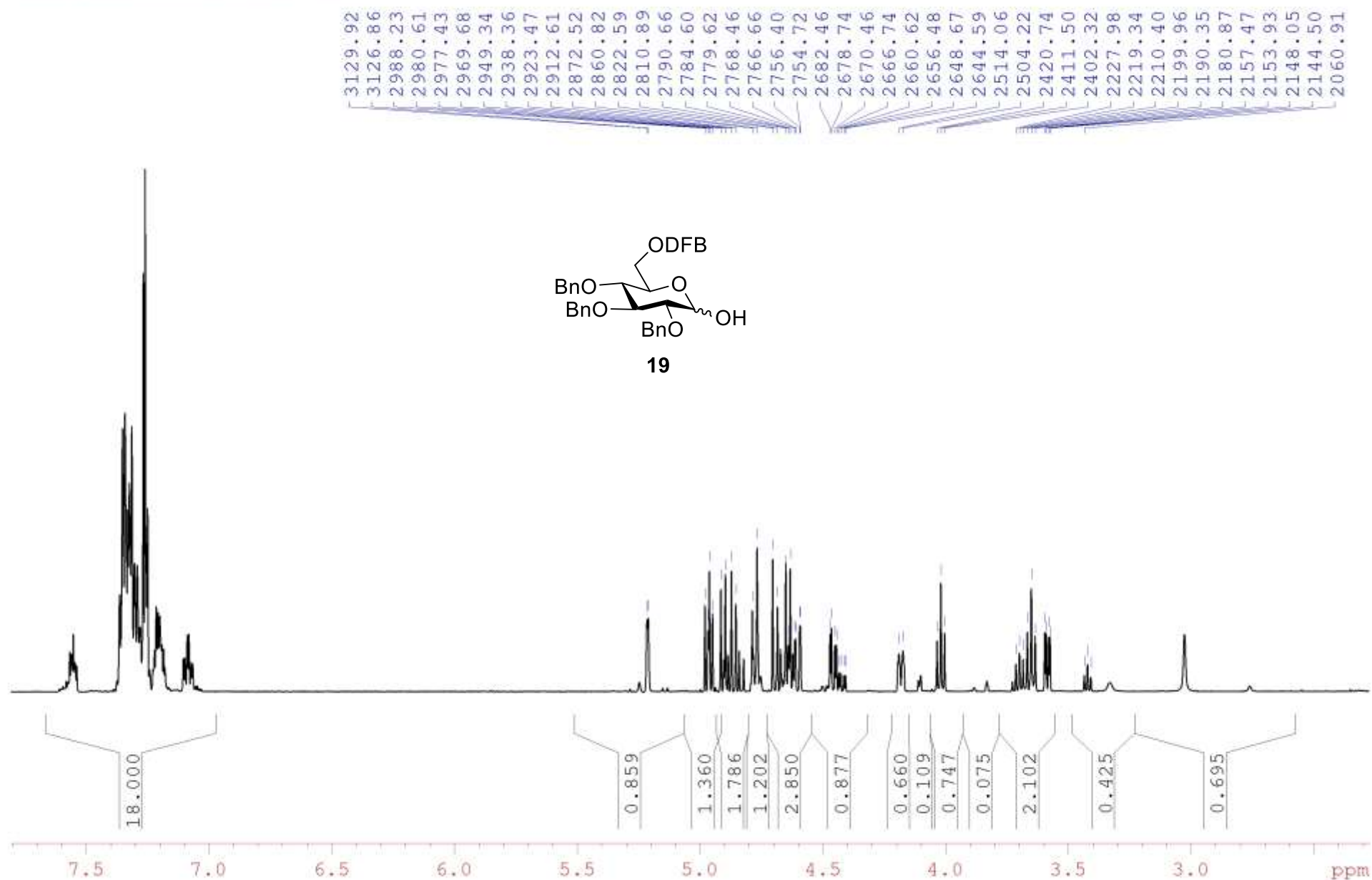
3-O-acetyl-2,4-di-O-benzyl-6-O-(2,5-difluorobenzoyl)-D-glucopyranose (**18**)

/BOJA BD2032c CDC13 100.6 MHz



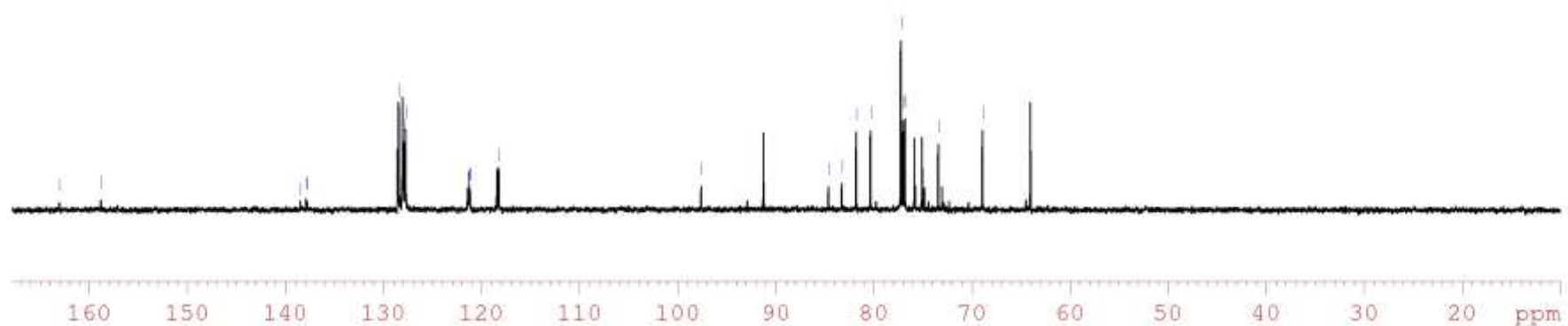
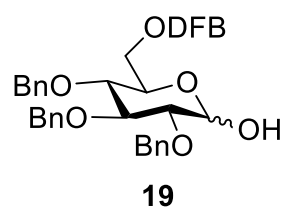
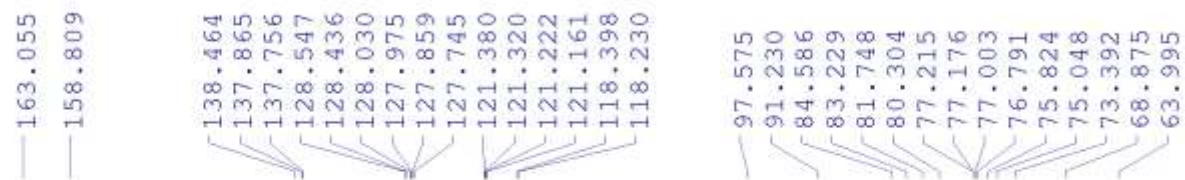
2,3,4-tri-*O*-benzyl-6-*O*-(2,5-difluorobenzoyl)-D-glucopyranose (**19**)

/BOJA BD2053c CDCl₃ 600 MHz



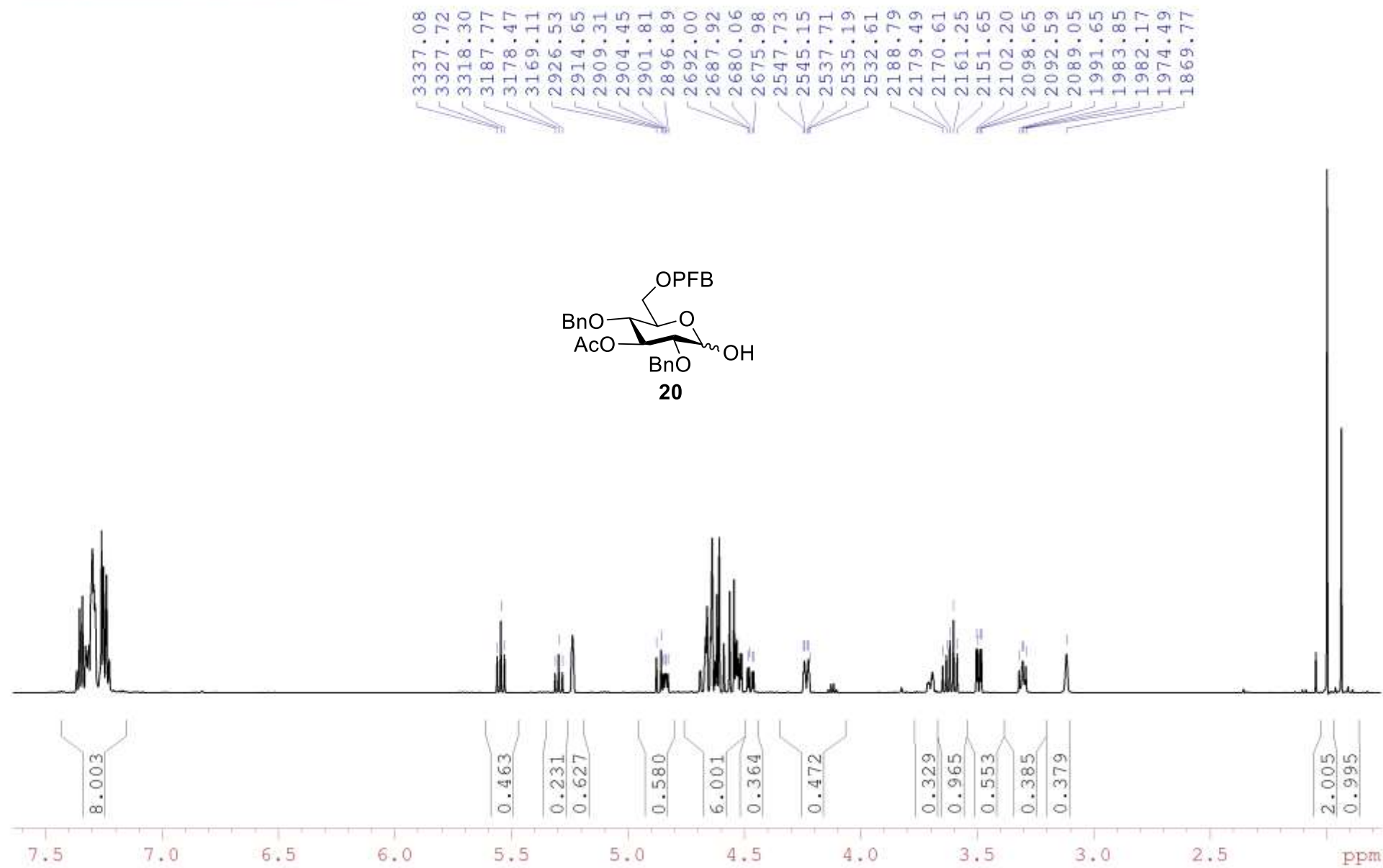
2,3,4-tri-*O*-benzyl-6-*O*-(2,5-difluorobenzoyl)-D-glucopyranose (**19**)

/BOJA BD2053c CDC13 150.9 MHz



3-O-Acetyl-2,4-di-O-benzyl-6-O-(pentafluorobenzoyl)-D-glucopyranose (20)

/BOJA BD2085d CDC13 600 MHz



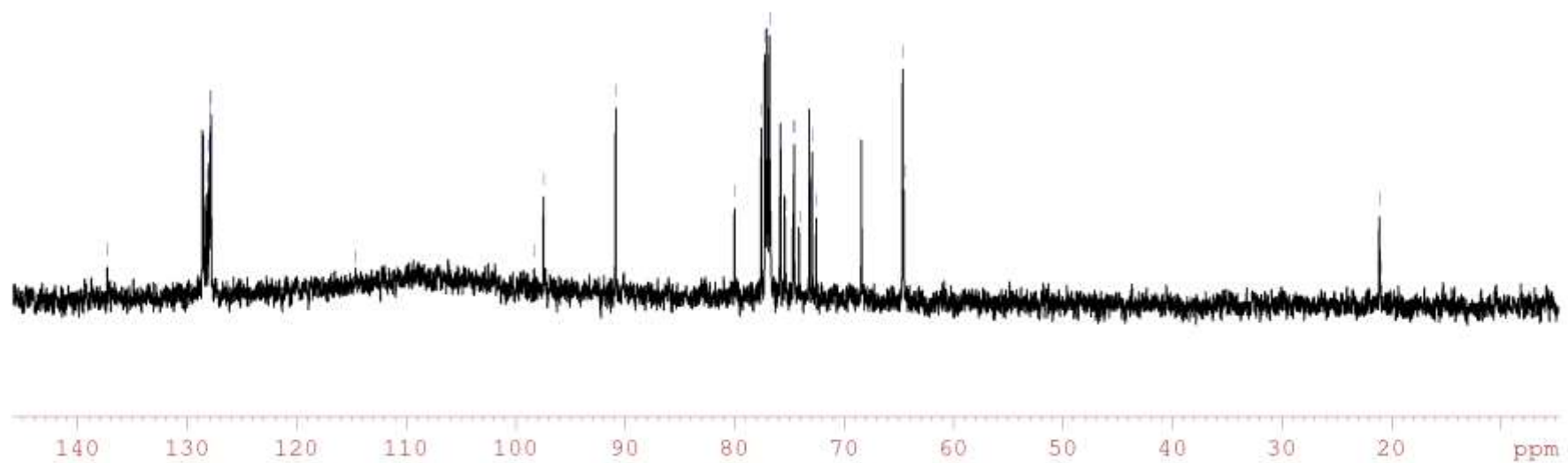
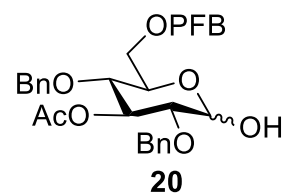
3-O-Acetyl-2,4-di-O-benzyl-6-O-(pentafluorobenzoyl)-D-glucopyranose (20)

/BOJA BD2085d CDCl₃ 150.9 MHz

137.284
128.582
128.494
128.404
128.179
128.068
127.996
127.933
127.874
127.825
— 114.588

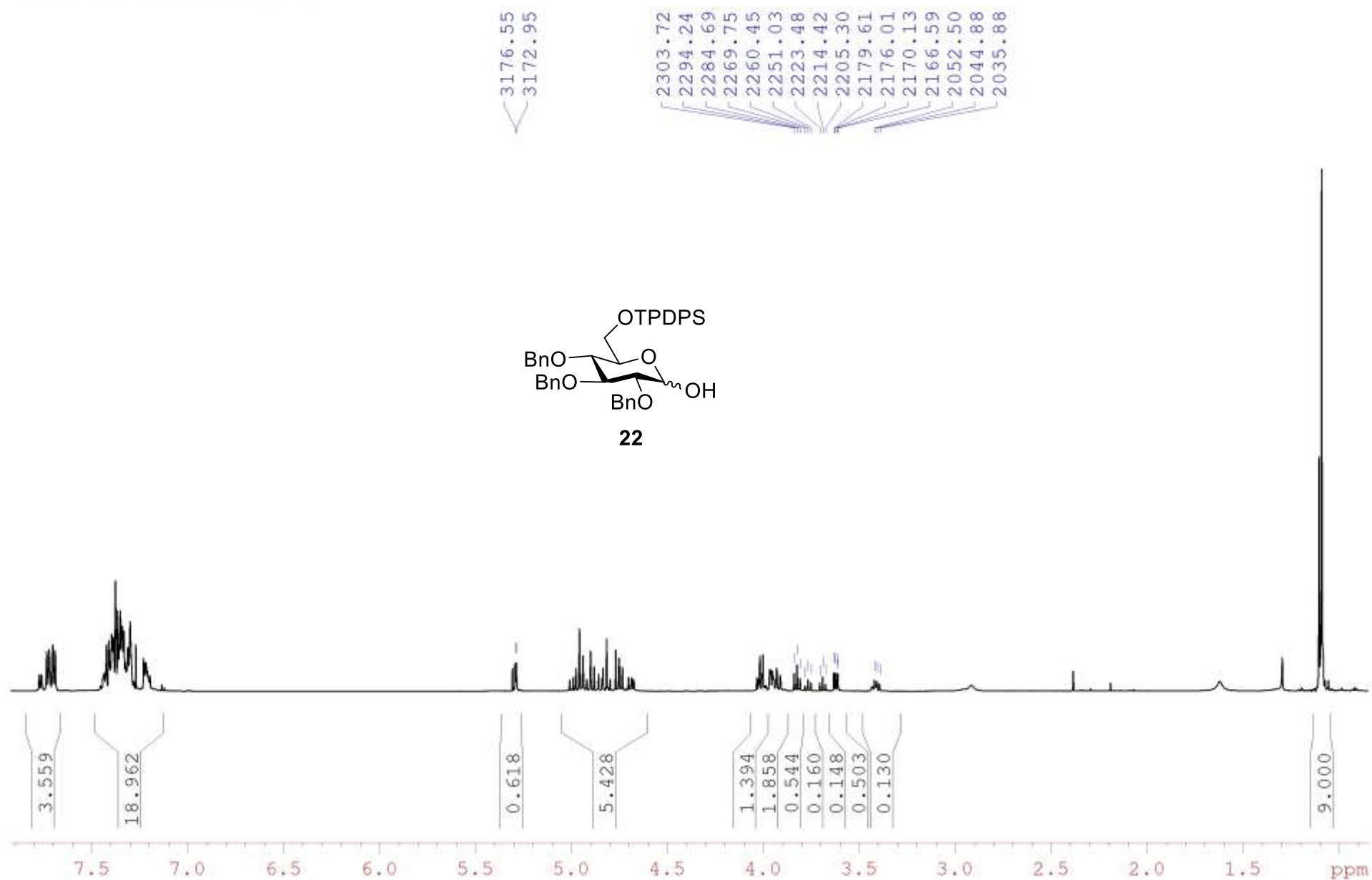
98.271
97.421
90.829
79.970
77.526
77.207
76.996
76.784
75.827
75.765
75.388
74.619
74.517
74.077
73.149
72.887
72.512
68.379
64.613
64.517

21.058
20.993



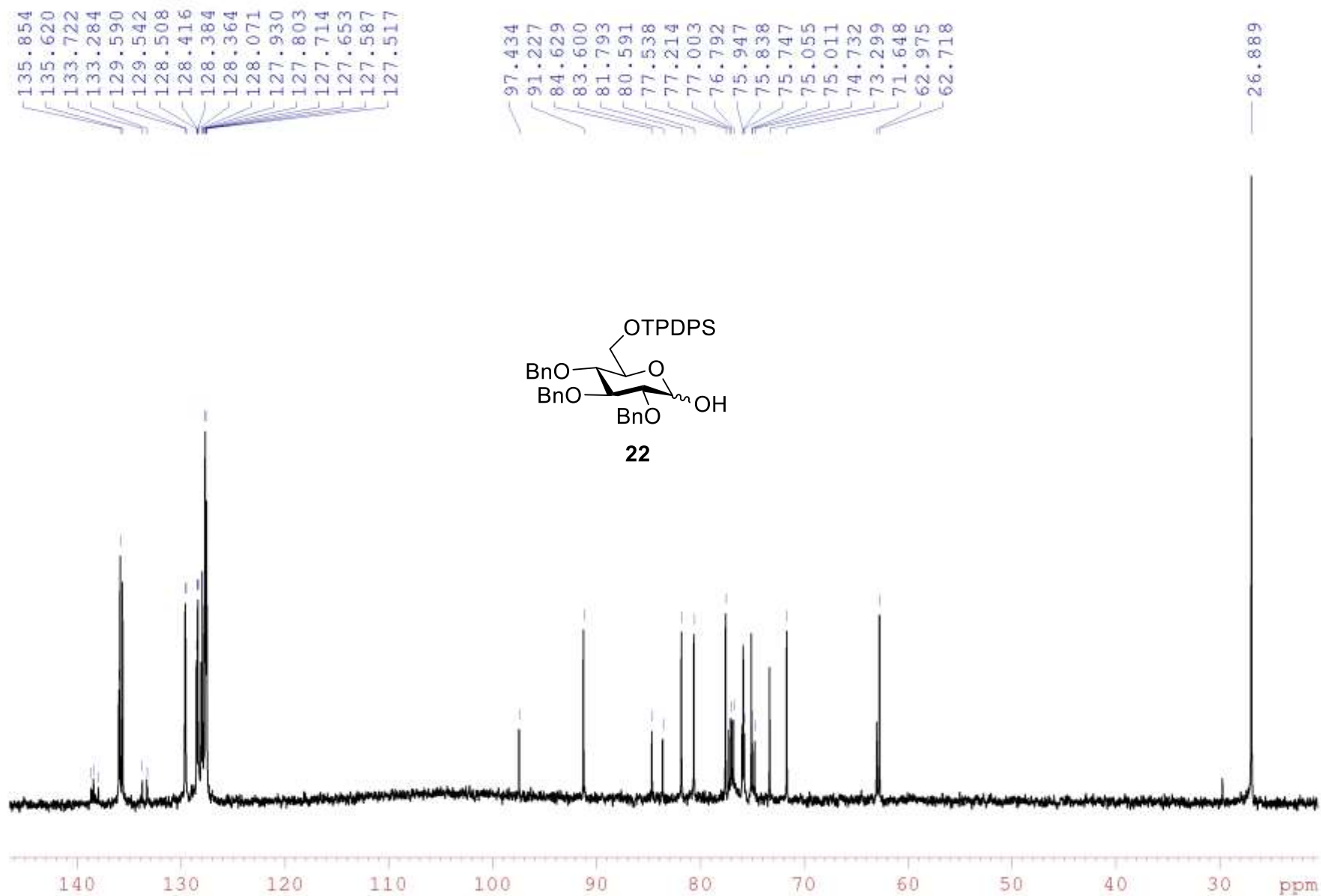
2,3,4-Tri-*O*-benzyl-6-*O*-*tert*-butyldiphenylsilyl-D-glucopyranose (22)

/BOJA BD1036 CDCl₃ 600 MHz



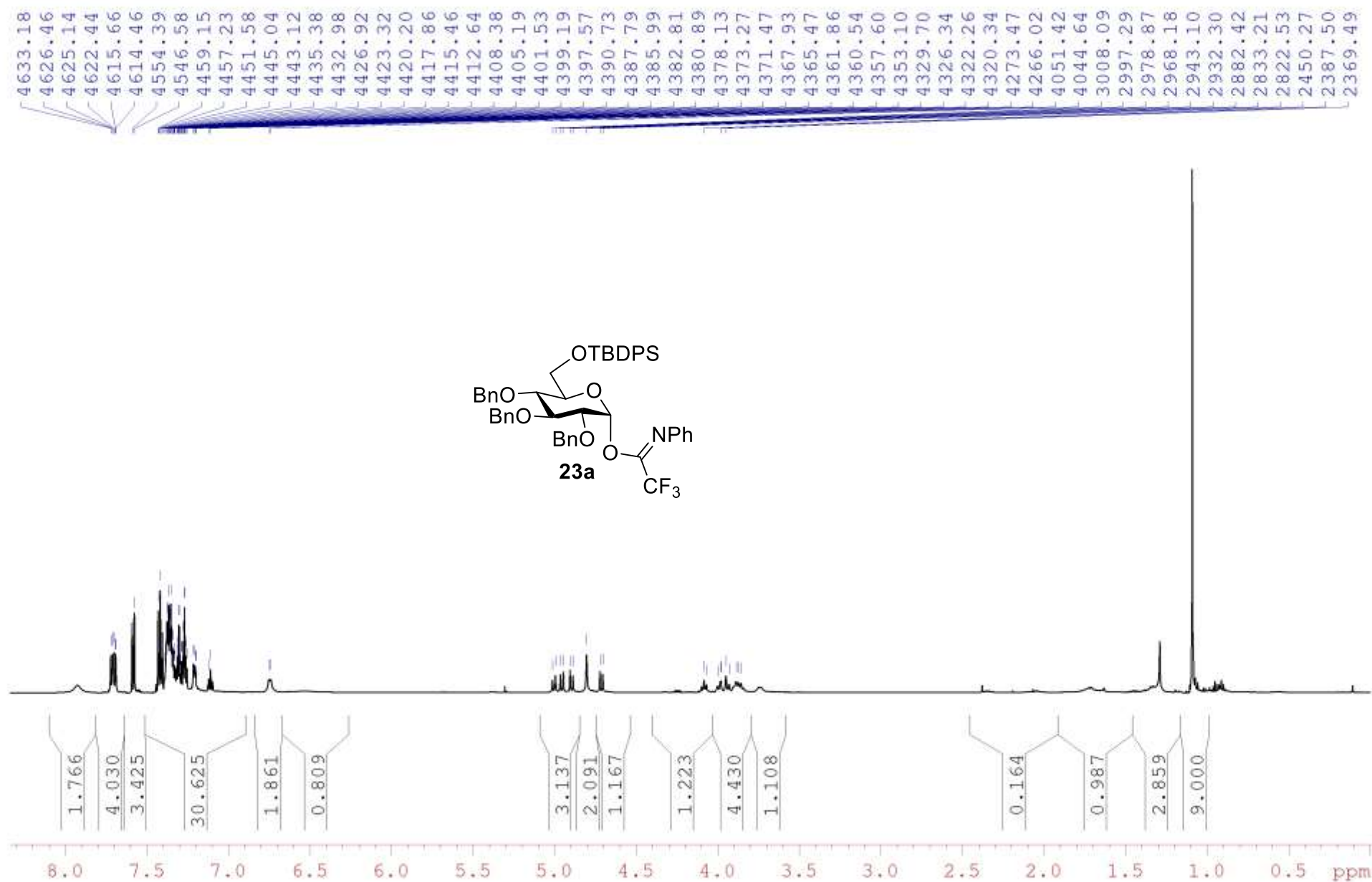
2,3,4-Tri-*O*-benzyl-6-*O*-*tert*-butyldiphenylsilyl-D-glucopyranose (22)

/BOJA BD1036 CDC13 150.9 MHz



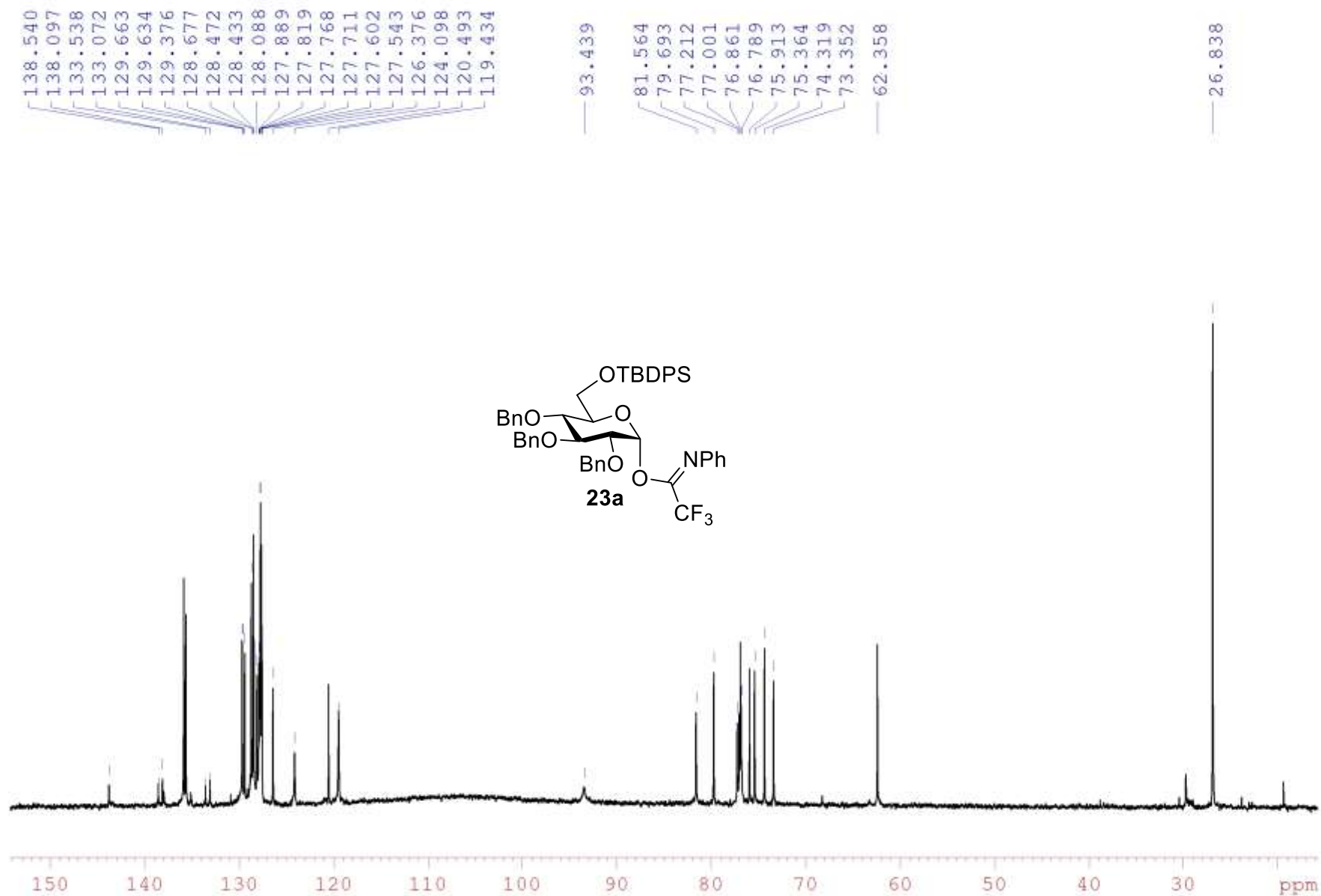
O-(2,3,4-Tri-O-benzyl-6-O-*tert*-butyldiphenylsilyl- α -D-glucopyranosyl) N-phenyltrifluoroacetimidate (**23**)

/BOJA BD1040u CDC13 600 MHz



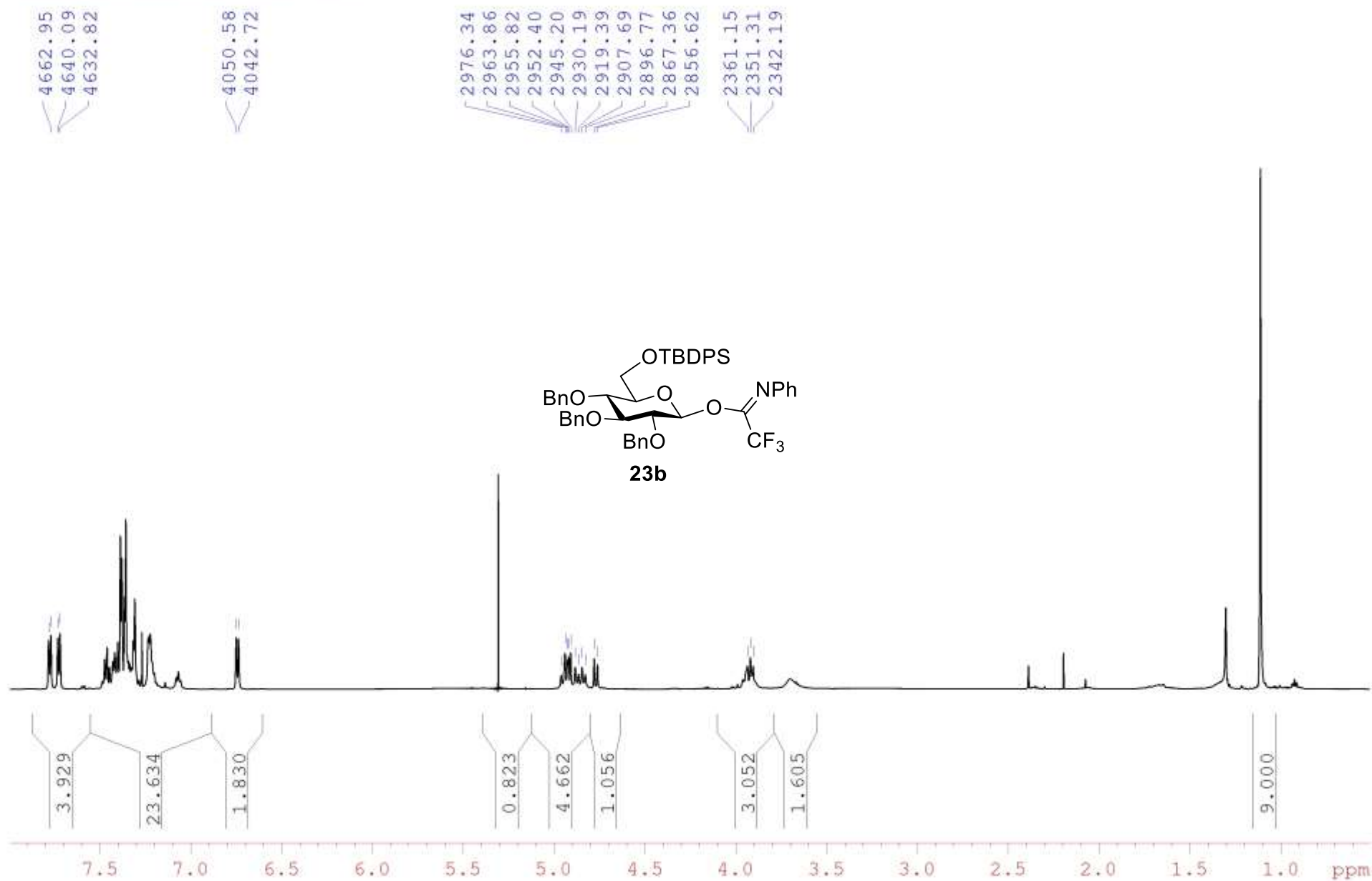
O-(2,3,4-Tri-O-benzyl-6-O-*tert*-butyldiphenylsilyl- α -D-glucopyranosyl) N-phenyltrifluoroacetimide (23)

/BOJA BD1040u CDCl₃ 150.9 MHz



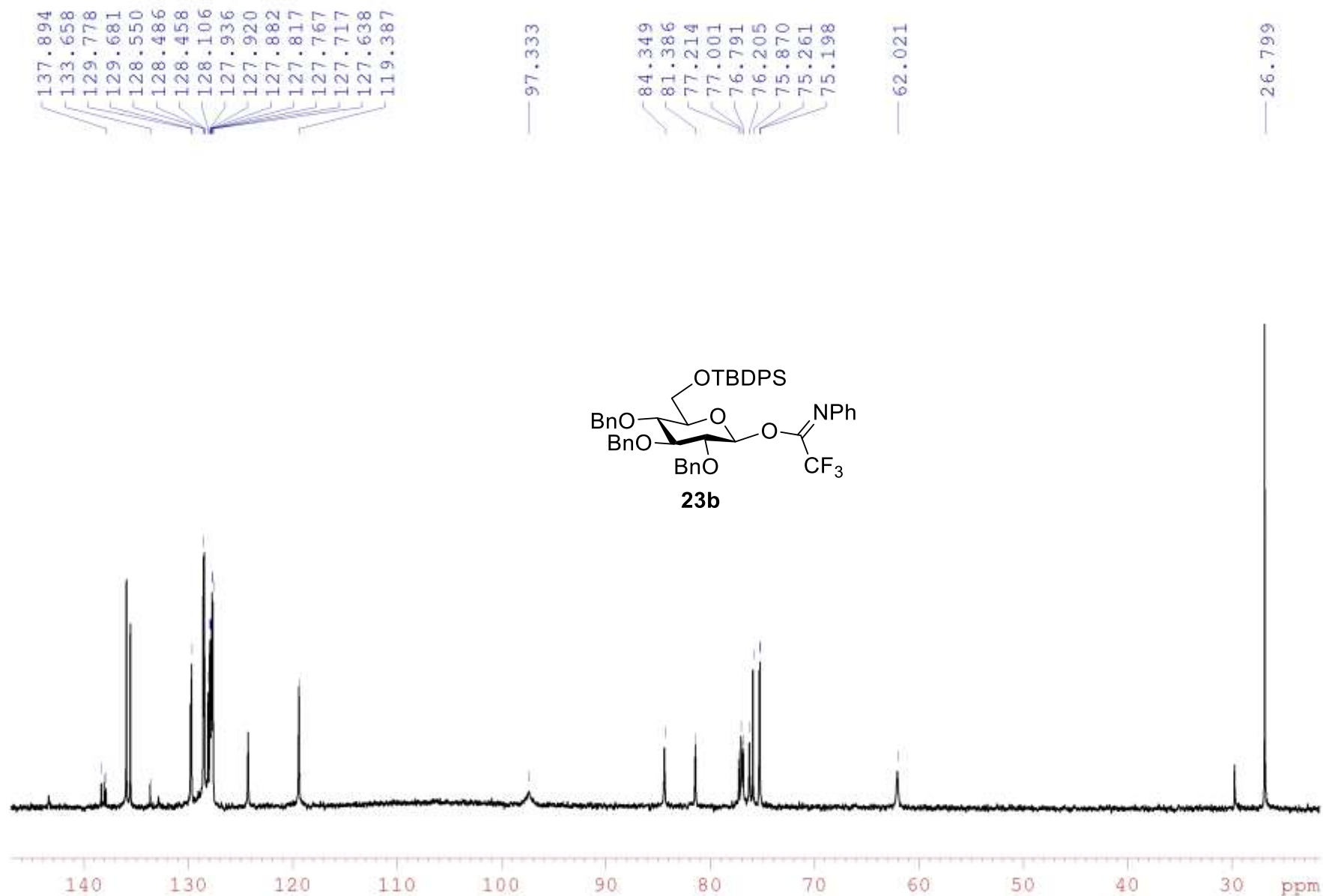
O-(2,3,4-Tri-O-benzyl-6-O-*tert*-butyldiphenylsilyl- β -D-glucopyranosyl) N-phenyltrifluoroacetimide (23)

/BOJA BD1040D CDCl₃ 600 MHz



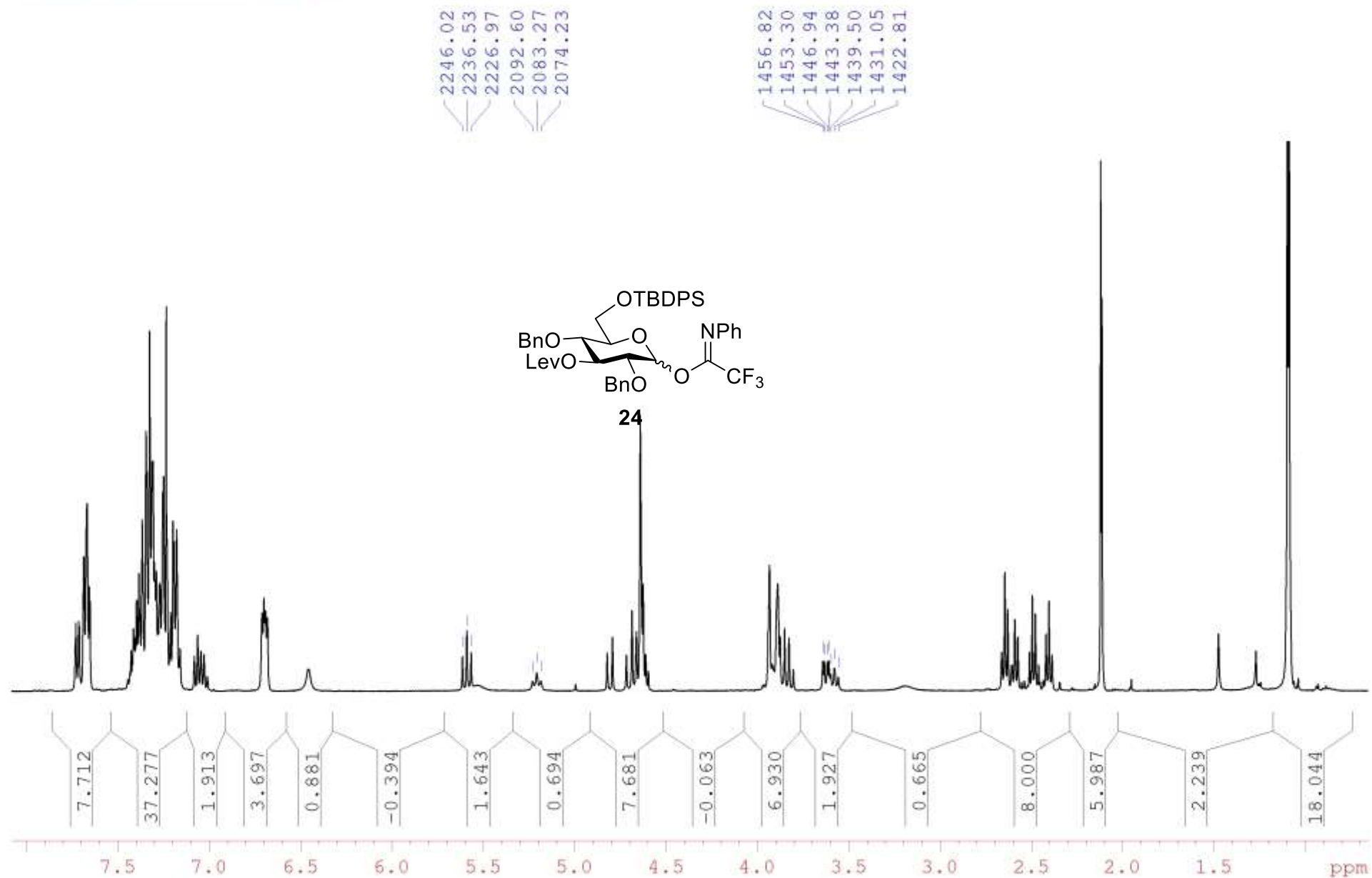
O-(2,3,4-Tri-O-benzyl-6-O-*tert*-butyldiphenylsilyl-D-glucopyranosyl) N-phenyltrifluoroacetimidate (23)

/BOJA BD1040D CDCl₃ 150.9 MHz



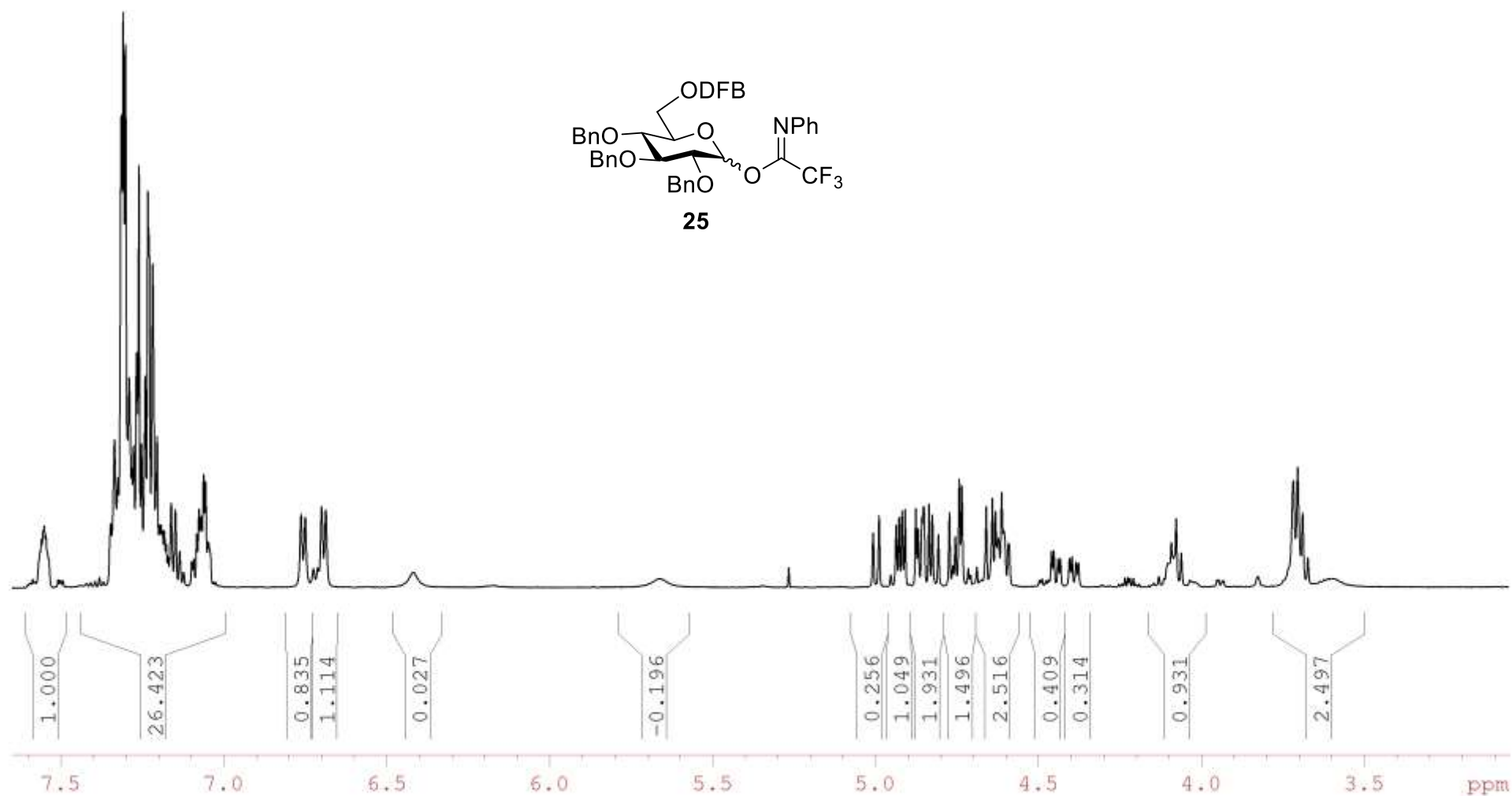
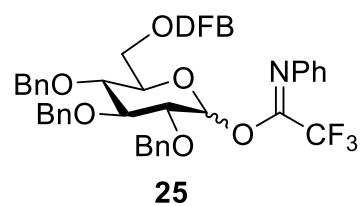
O-(2,4-Di-O-benzyl-6-O-*tert*-butyldiphenylsilyl-3-O-levulinoyl-D-glucopyranosyl) N-phenyltrifluoroacetimidate (24)

/BOJA BD2191 CDC13 400 MHz



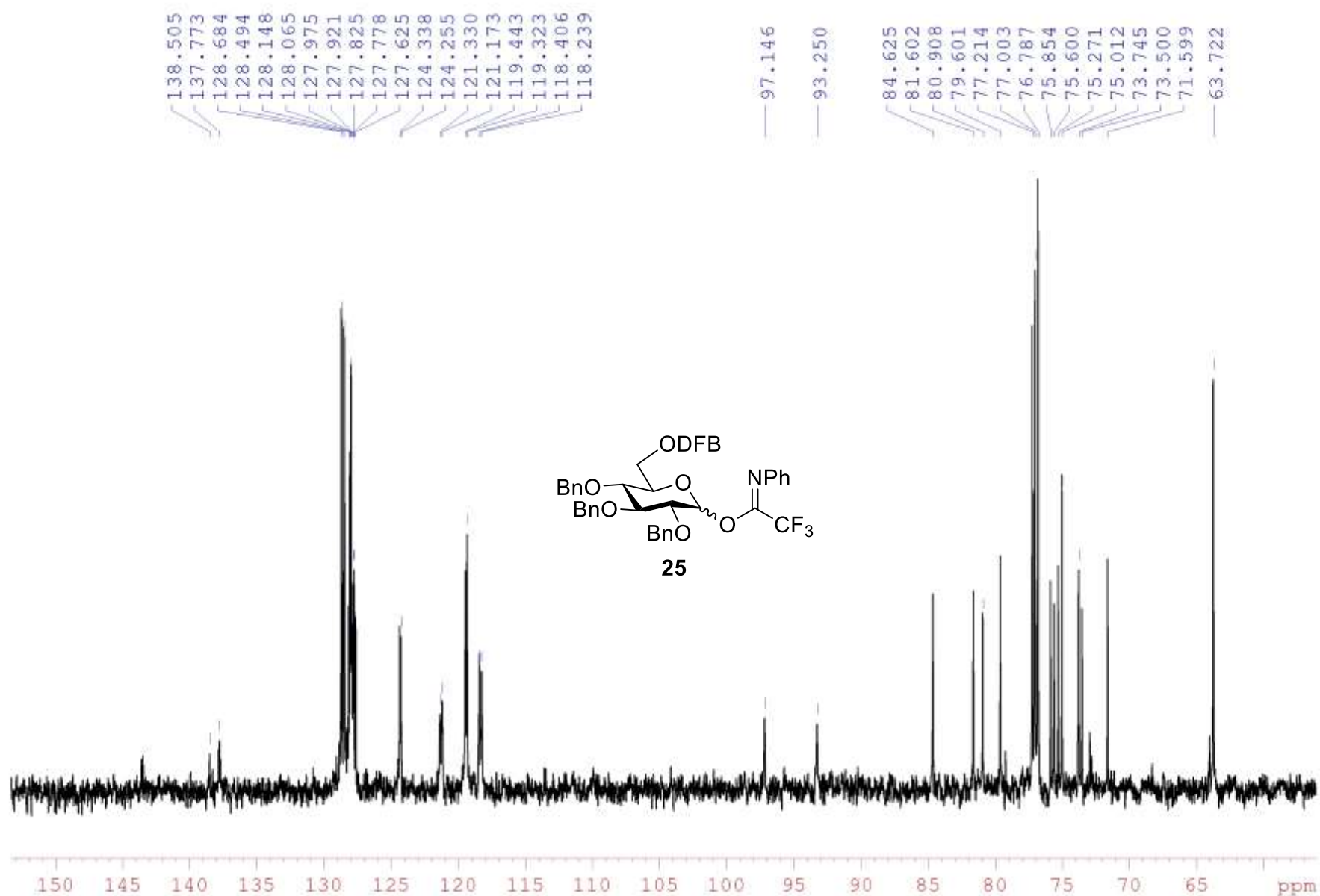
O-(2,3,4-tri-O-benzyl-6-O-(2,5-difluorobenzoyl)-D-glucopyranosyl) N-phenyltrifluoroacetimidate (25)

/BOJA BD2057 CDC13 600 MHz



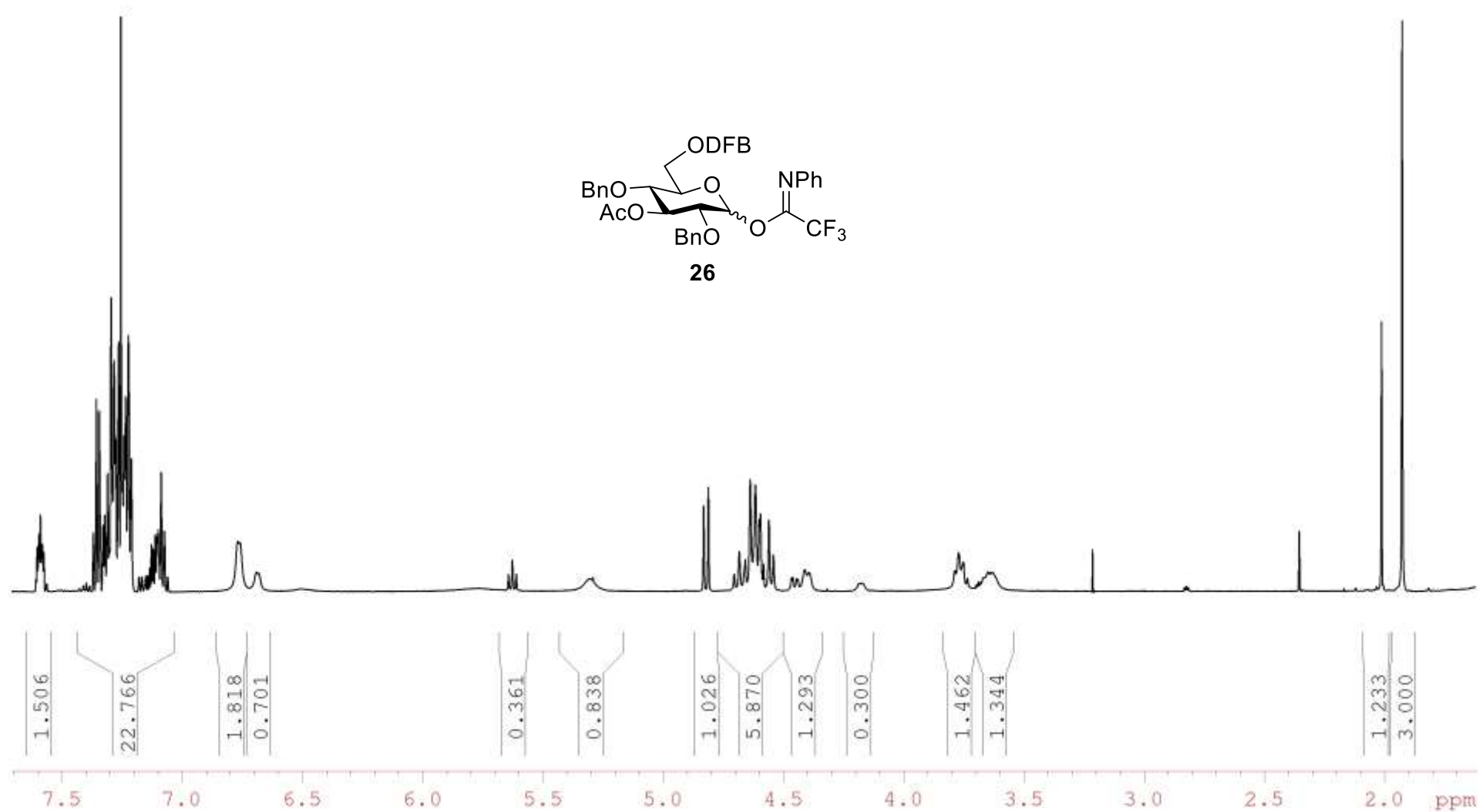
O-(2,3,4-tri-O-benzyl-6-O-(2,5-difluorobenzoyl)-D-glucopyranosyl) N-phenyltrifluoroacetimidate (25)

/BOJA BD2057 CDC13 150.9 MHz



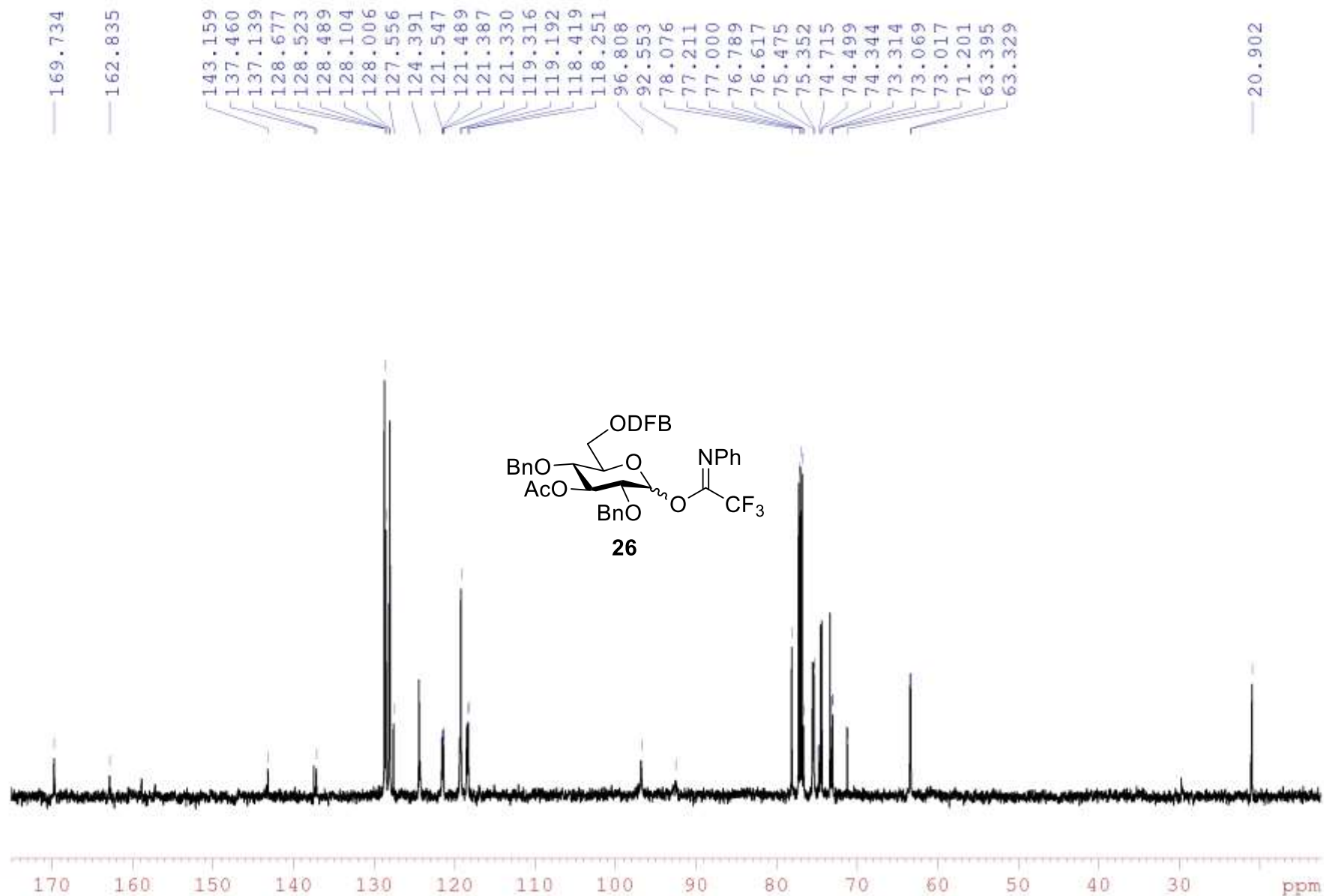
O-(3-O-Acetyl-2,4-di-O-benzyl-6-O-(2,5-difluorobenzoyl)-D-glucopyranosyl) N-phenyltrifluoroacetimidate (26)

/BOJA BD1037 CDCl₃ 600 MHz



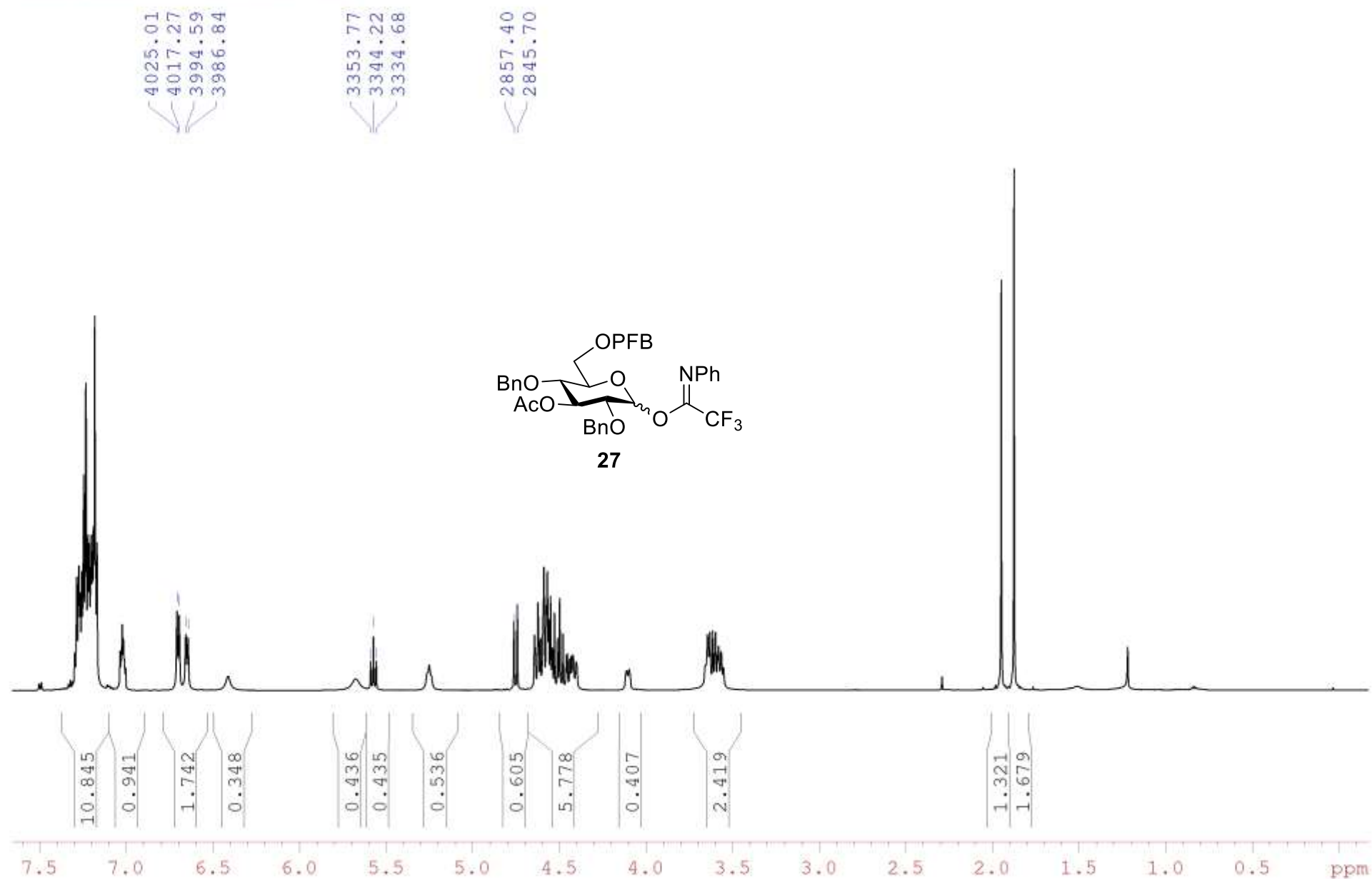
O-(3-O-Acetyl-2,4-di-O-benzyl-6-O-(2,5-difluorobenzoyl)-D-glucopyranosyl) N-phenyltrifluoroacetimidate (26)

/BOJA BD1037 CDC13 150.9 MHz



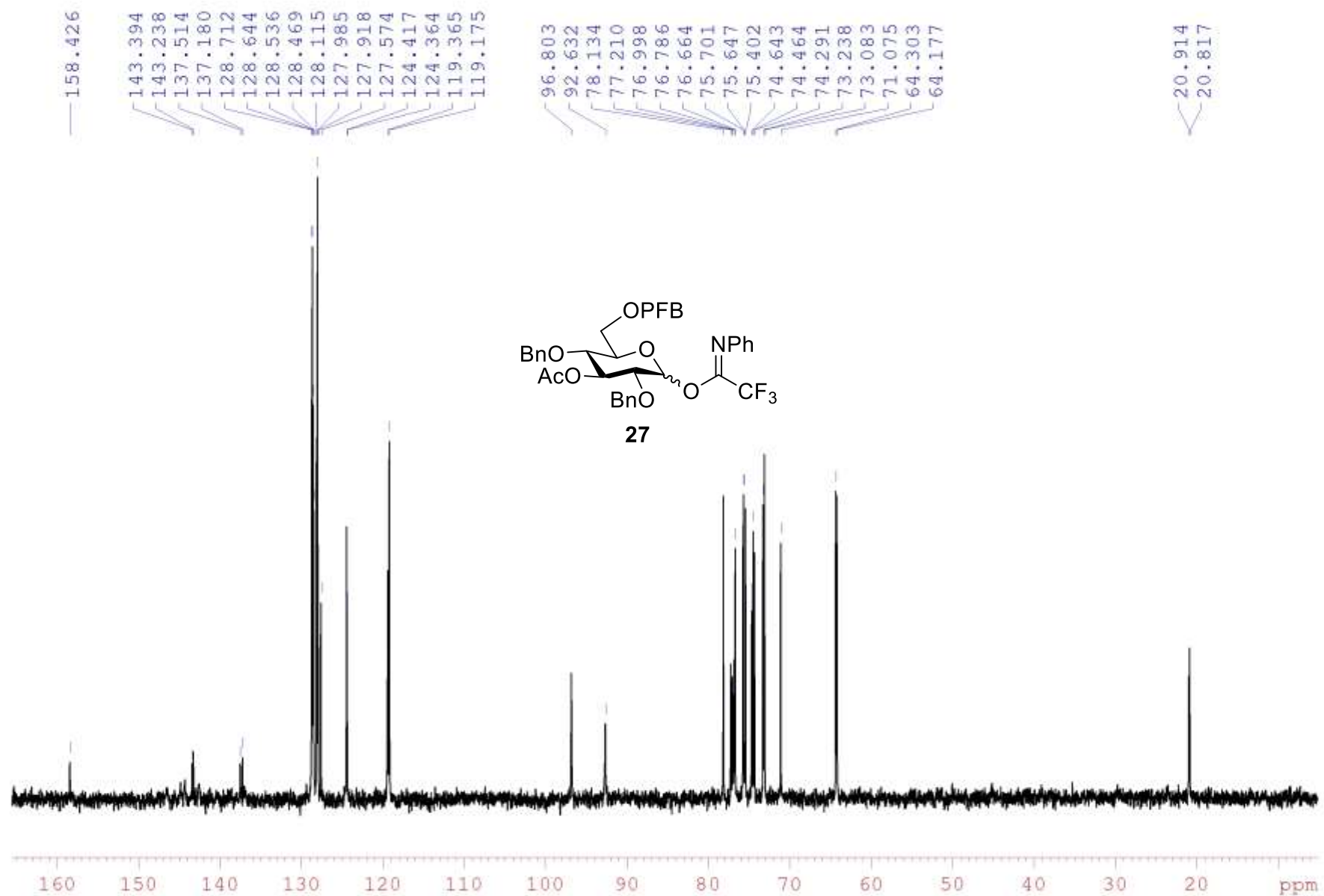
O-(3-O-Acetyl-2,4-di-O-benzyl-6-O-pentafluorobenzoyl-D-glucopyranosyl) N-phenyltrifluoroacetimidate (27)

/BOJA BD21321 CDC13 600 MHz



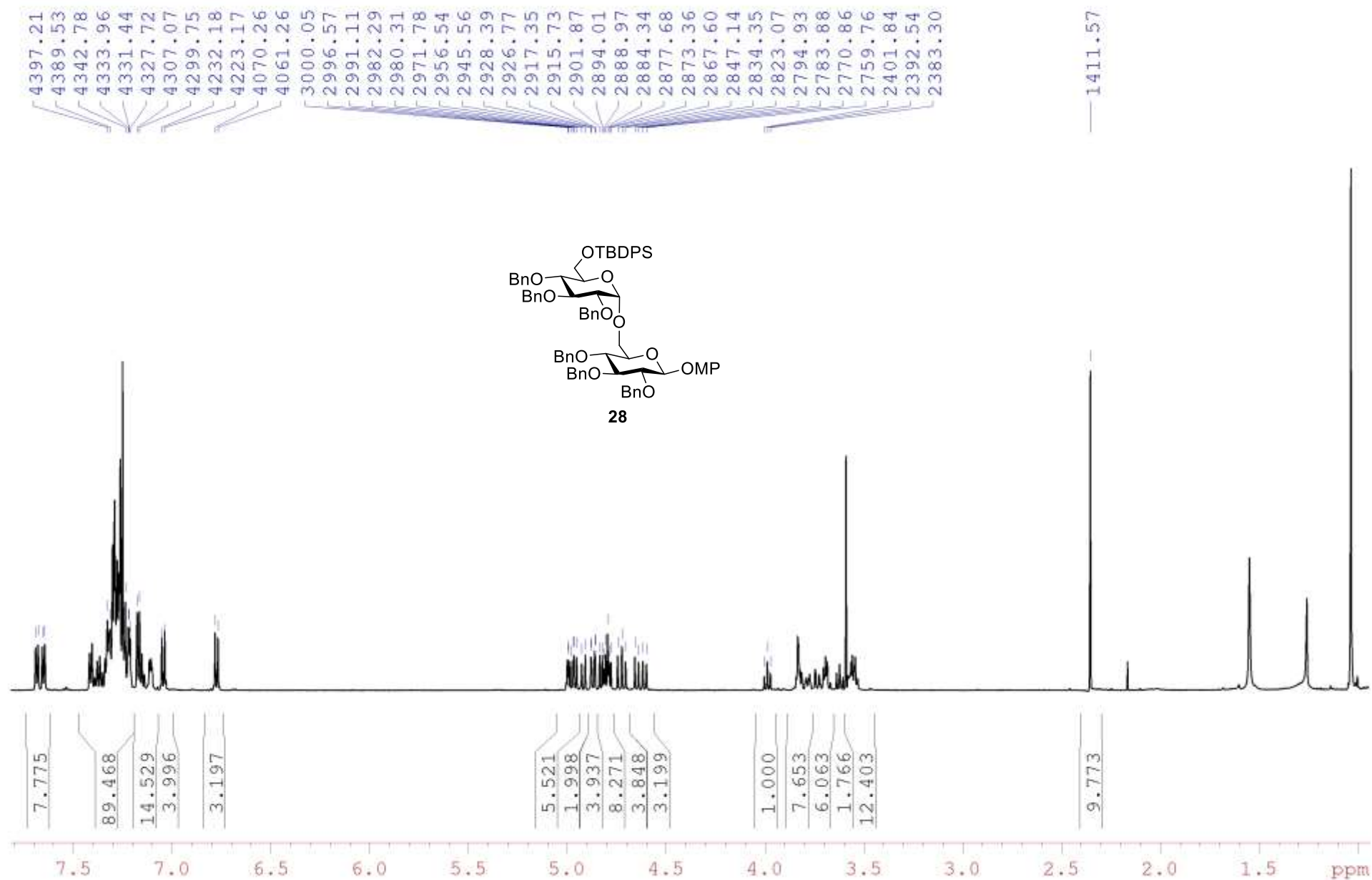
O-(3-O-Acetyl-2,4-di-O-benzyl-6-O-pentafluorobenzoyl-D-glucopyranosyl) N-phenyltrifluoroacetimidate (27)

/BOJA BD2132i CDC13 150.9 MHz



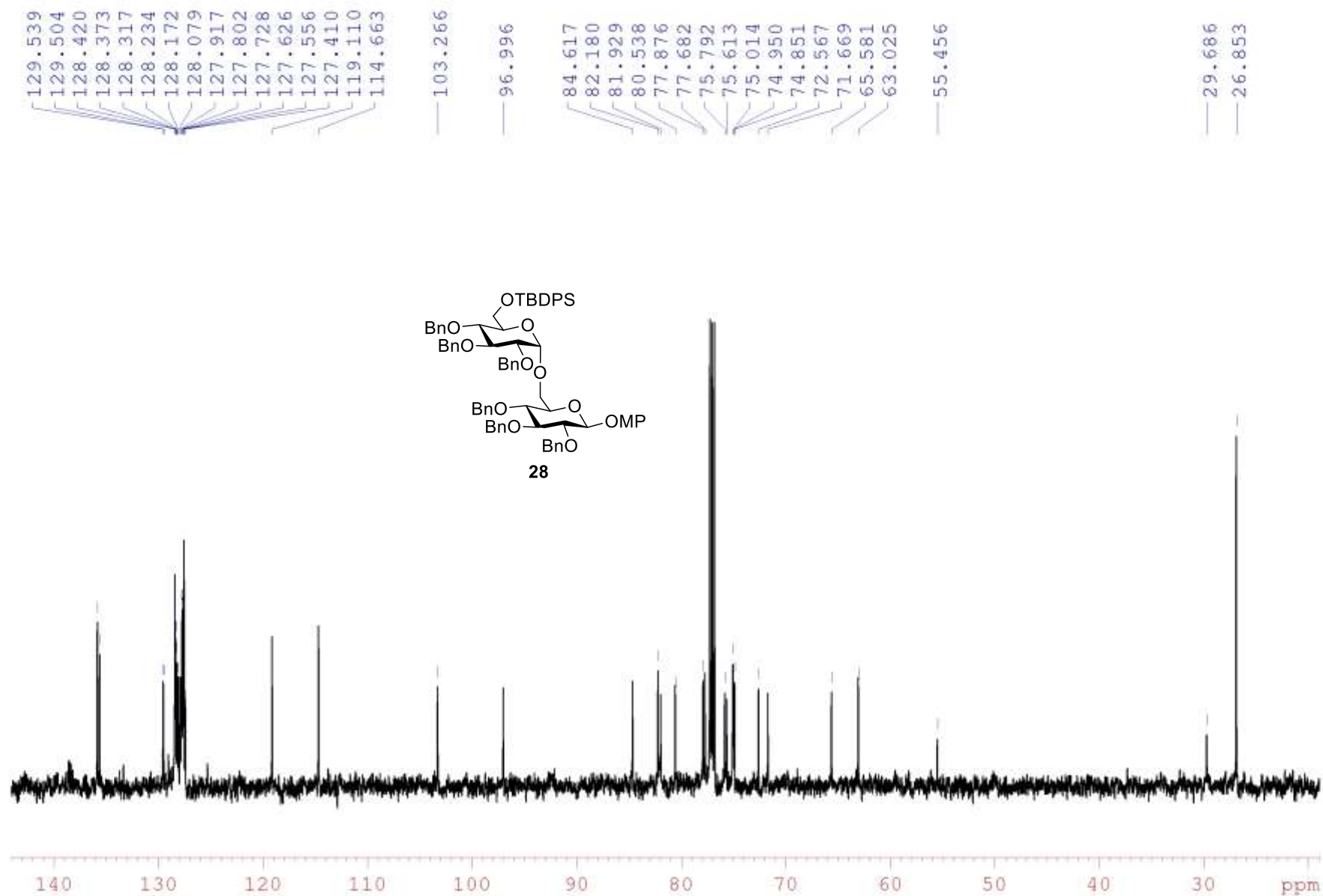
p-Methoxyphenyl 2,3,4-tri-*O*-benzyl-6-*O*-*tert*-butyldiphenylsilyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-*O*-benzyl- β -D-glucopyranoside (28 α)

/BOJA BD2011c CDCl₃ 600 MHz



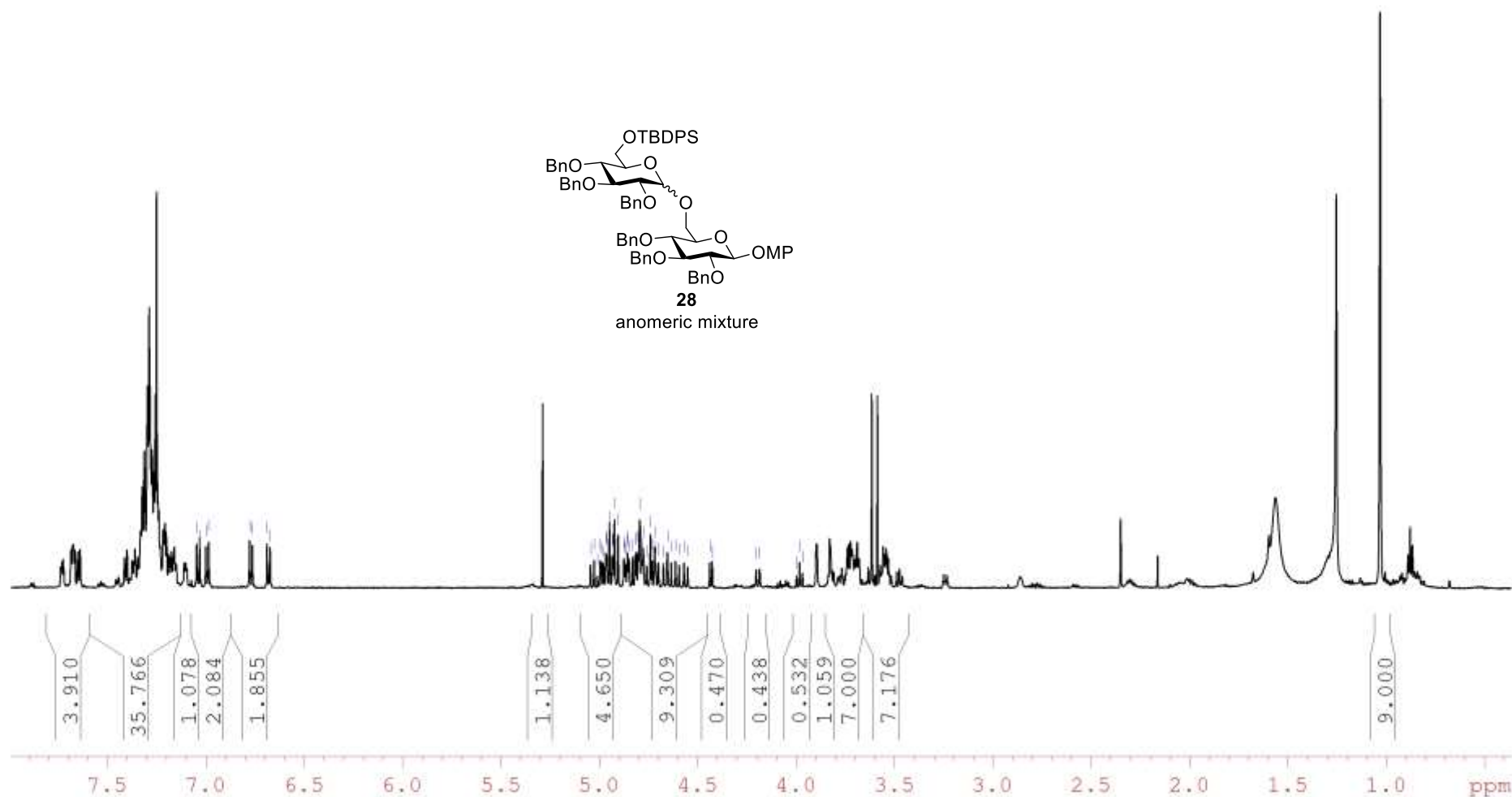
p-Methoxyphenyl 2,3,4-tri-*O*-benzyl-6-*O*-*tert*-butyldiphenylsilyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-*O*-benzyl- β -D-glucopyranoside (**28** α)

/BOJA BD2011c CDCl₃ 150.9 MHz



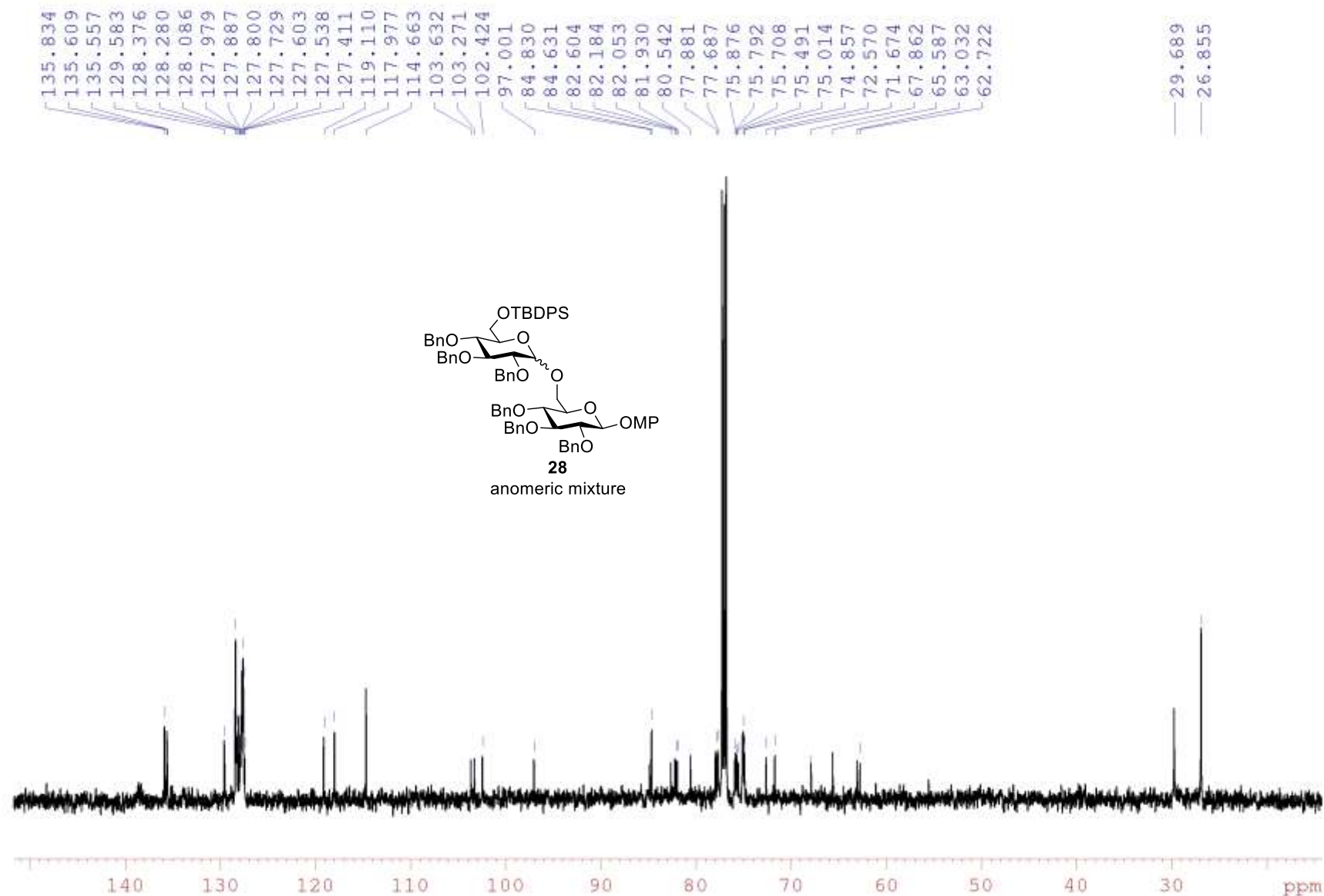
p-Methoxyphenyl 2,3,4-tri-*O*-benzyl-6-*O*-*tert*-butyldiphenylsilyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-*O*-benzyl- β -D-glucopyranoside (**28 α**) and *p*-methoxyphenyl 2,3,4-tri-*O*-benzyl-6-*O*-*tert*-butyldiphenylsilyl- β -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-*O*-benzyl- β -D-glucopyranoside (**28 β**)

/BOJA BD2011d CDC13 600MHz



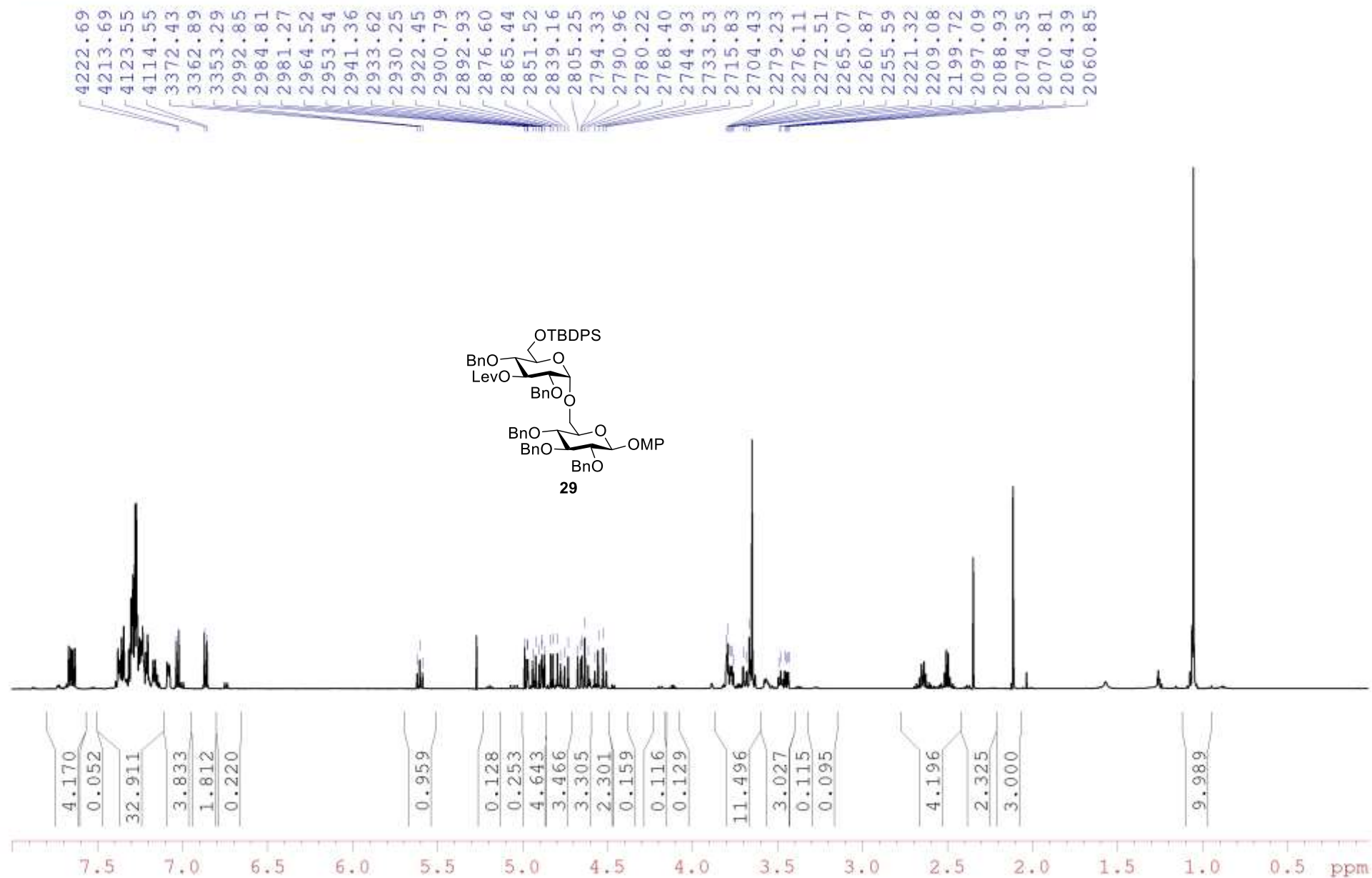
p-Methoxyphenyl 2,3,4-tri-*O*-benzyl-6-*O*-*tert*-butyldiphenylsilyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-*O*-benzyl- β -D-glucopyranoside (**28 α**) and *p*-methoxyphenyl 2,3,4-tri-*O*-benzyl-6-*O*-*tert*-butyldiphenylsilyl- β -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-*O*-benzyl- β -D-glucopyranoside (**28 β**)

/BOJA BD2011d CDC13 150.9 MHz



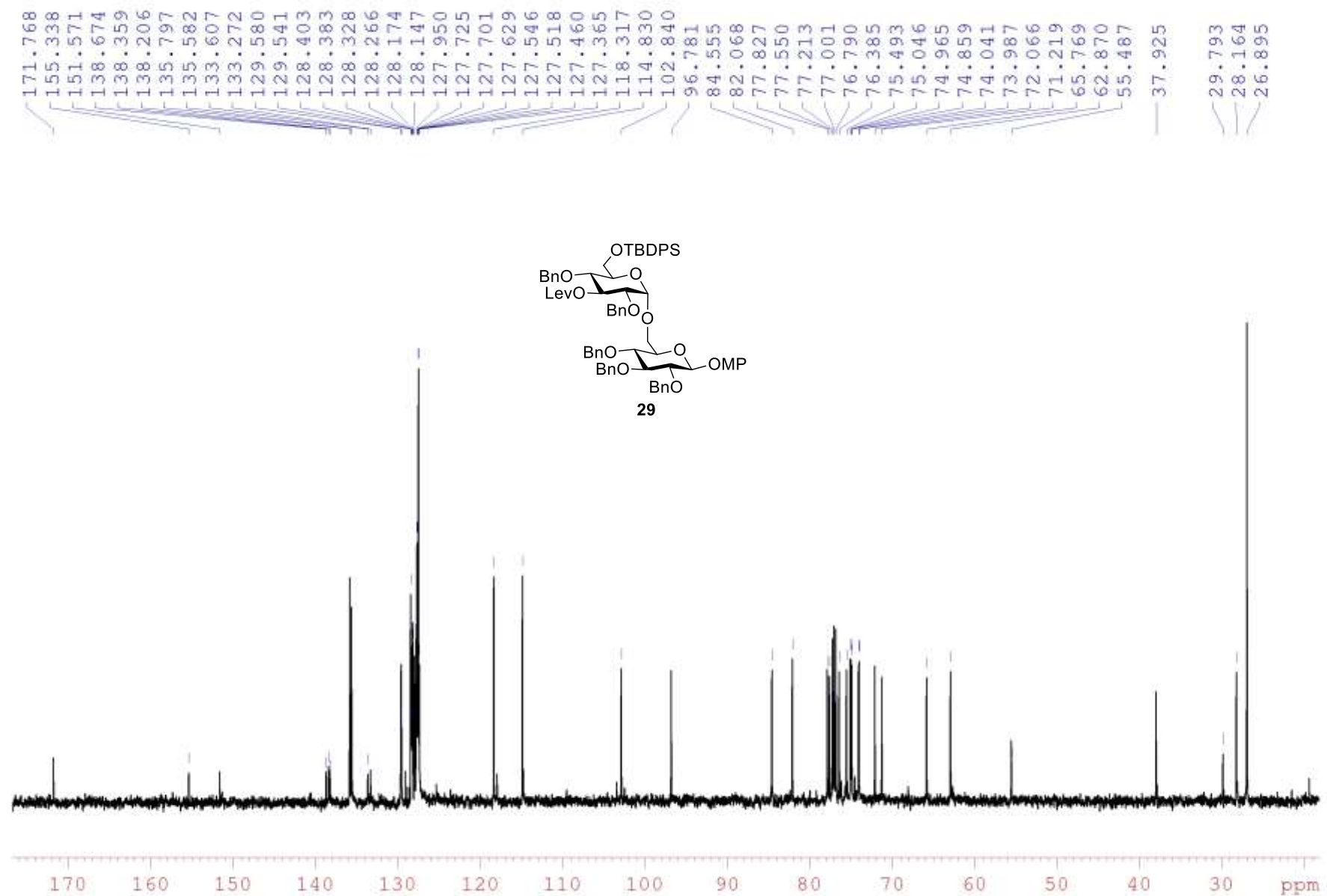
***p*-Methoxyphenyl 2,4-di-*O*-benzyl-6-*O*-*tert*-butyldiphenylsilyl-3-*O*-levulinoyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-*O*-benzyl- β -D-glucopyranoside (29)**

/BOJA BD2047c CDC13 600 MHz



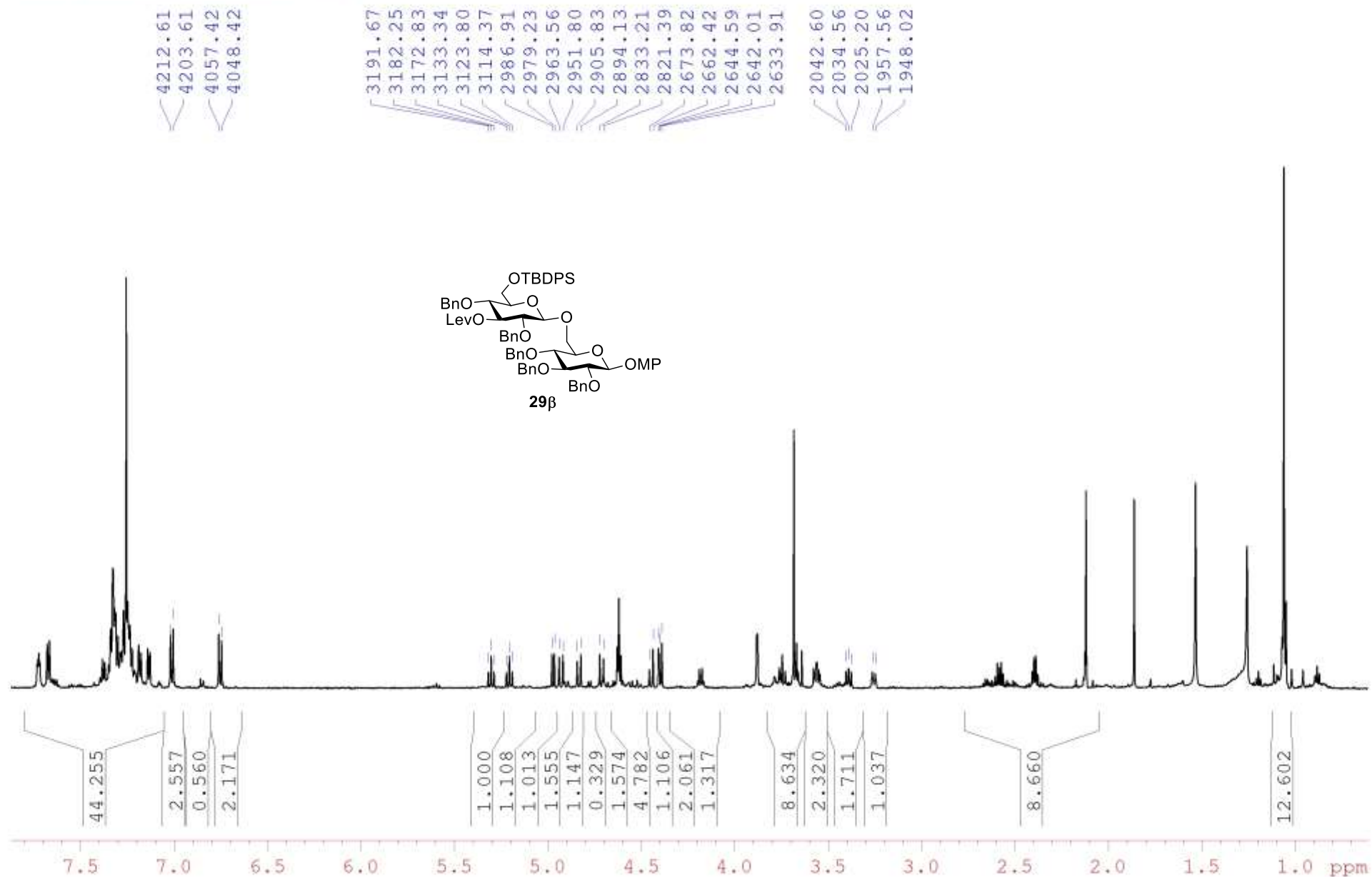
***p*-Methoxyphenyl 2,4-di-*O*-benzyl-6-*O*-*tert*-butyldiphenylsilyl-3-*O*-levulinoyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-*O*-benzyl- β -D-glucopyranoside (29)**

/BOJA BD2047c CDC13 150.9 MHz



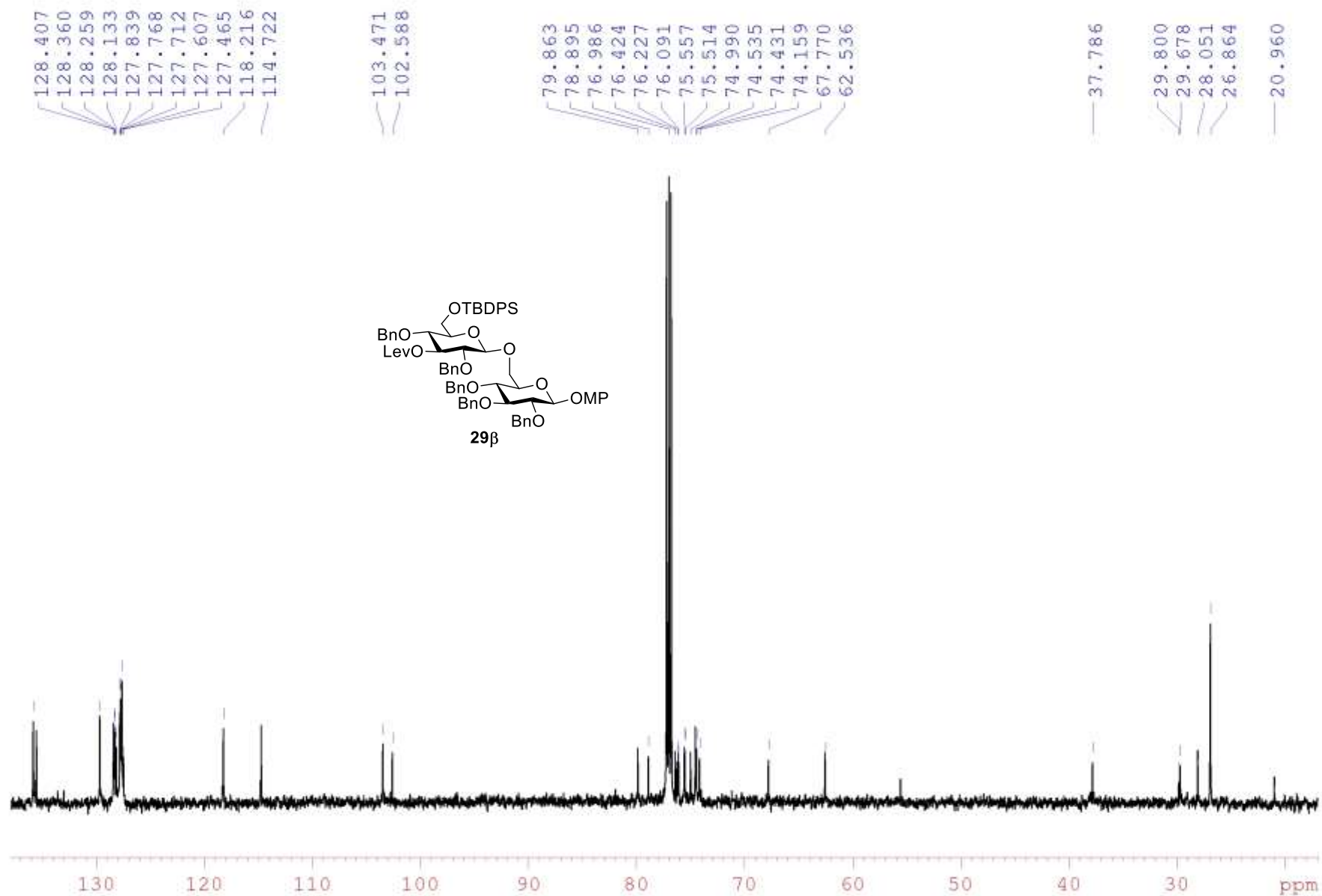
Methoxyphenyl 2,4-di-O-benzyl-6-O-*tert*-butyldiphenylsilyl-3-O-levulinoyl- β -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl- β -D-glucopyranoside (**29 β**)

/BOJA BD2074b CDC13 600 MHz



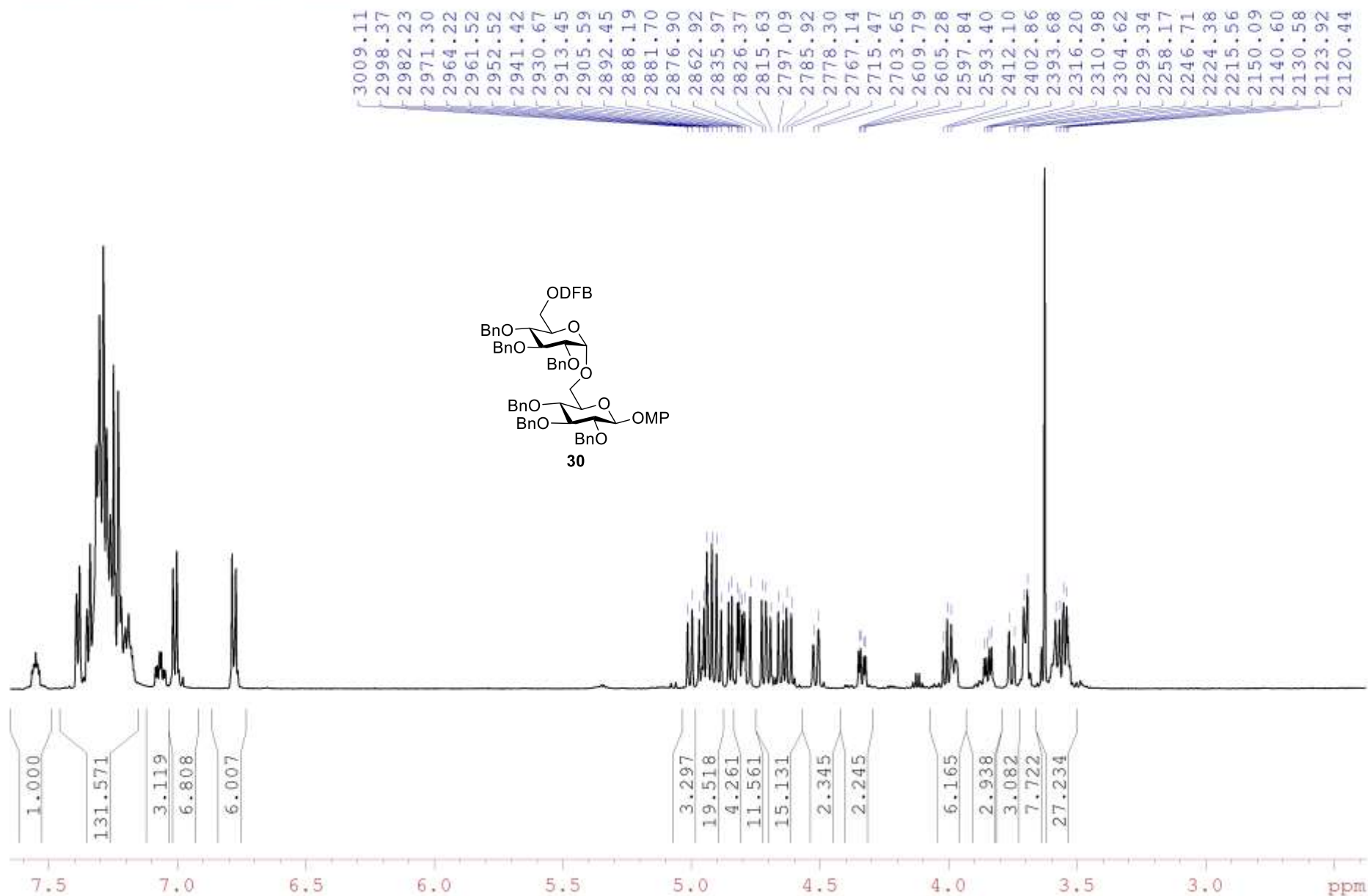
Methoxyphenyl 2,4-di-O-benzyl-6-O-*tert*-butyldiphenylsilyl-3-O-levulinoyl- β -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl- β -D-glucopyranoside (29 β)

/BOJA BD2074b CDC13 150.9 MHz



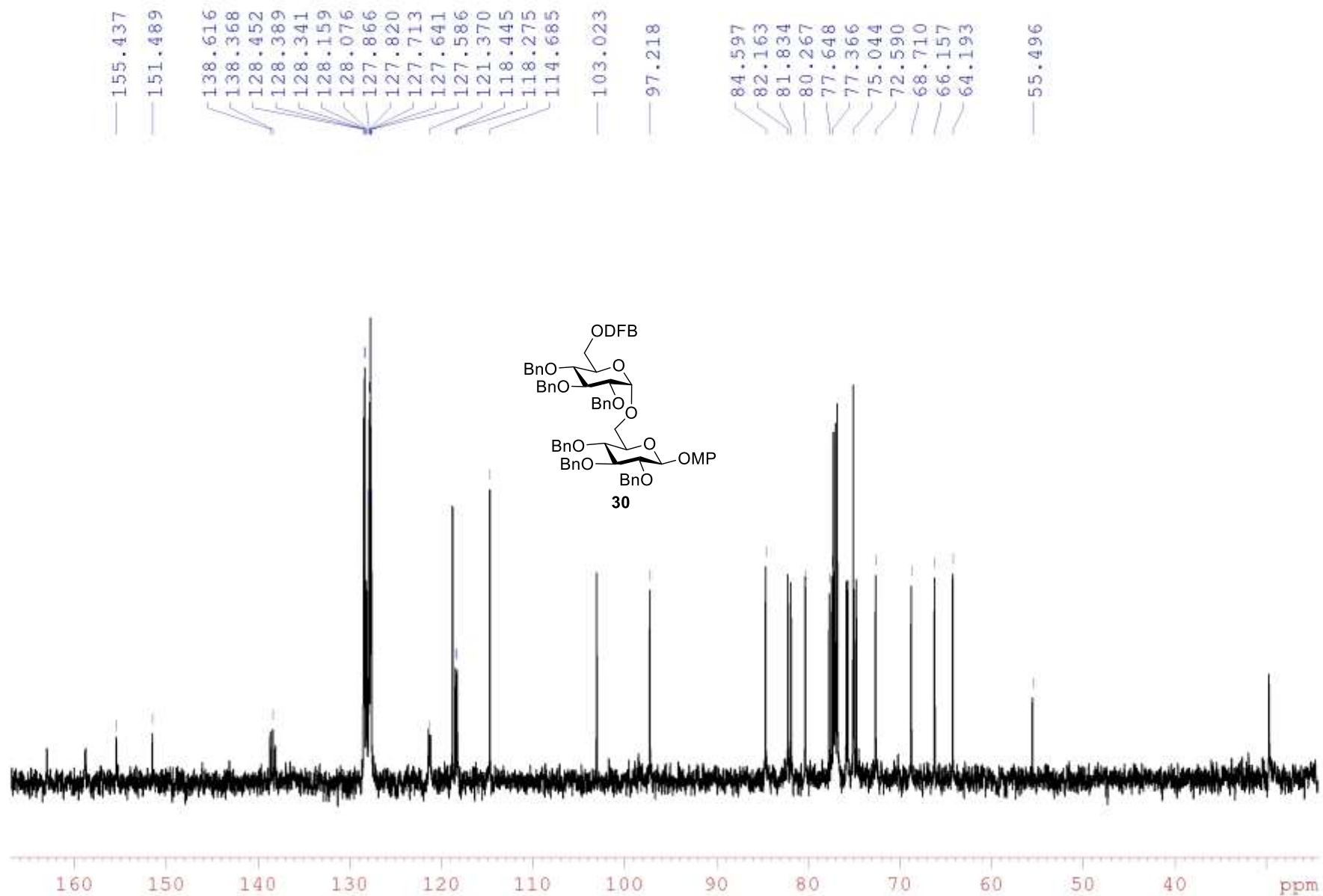
p-Methoxyphenyl 2,3,4-tri-*O*-benzyl-6-*O*-(2,5-difluorobenzoyl)- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-*O*-benzyl- β -D-glucopyranoside (**30 α**)

/BOJA BD2058 CDC13 600 MHz

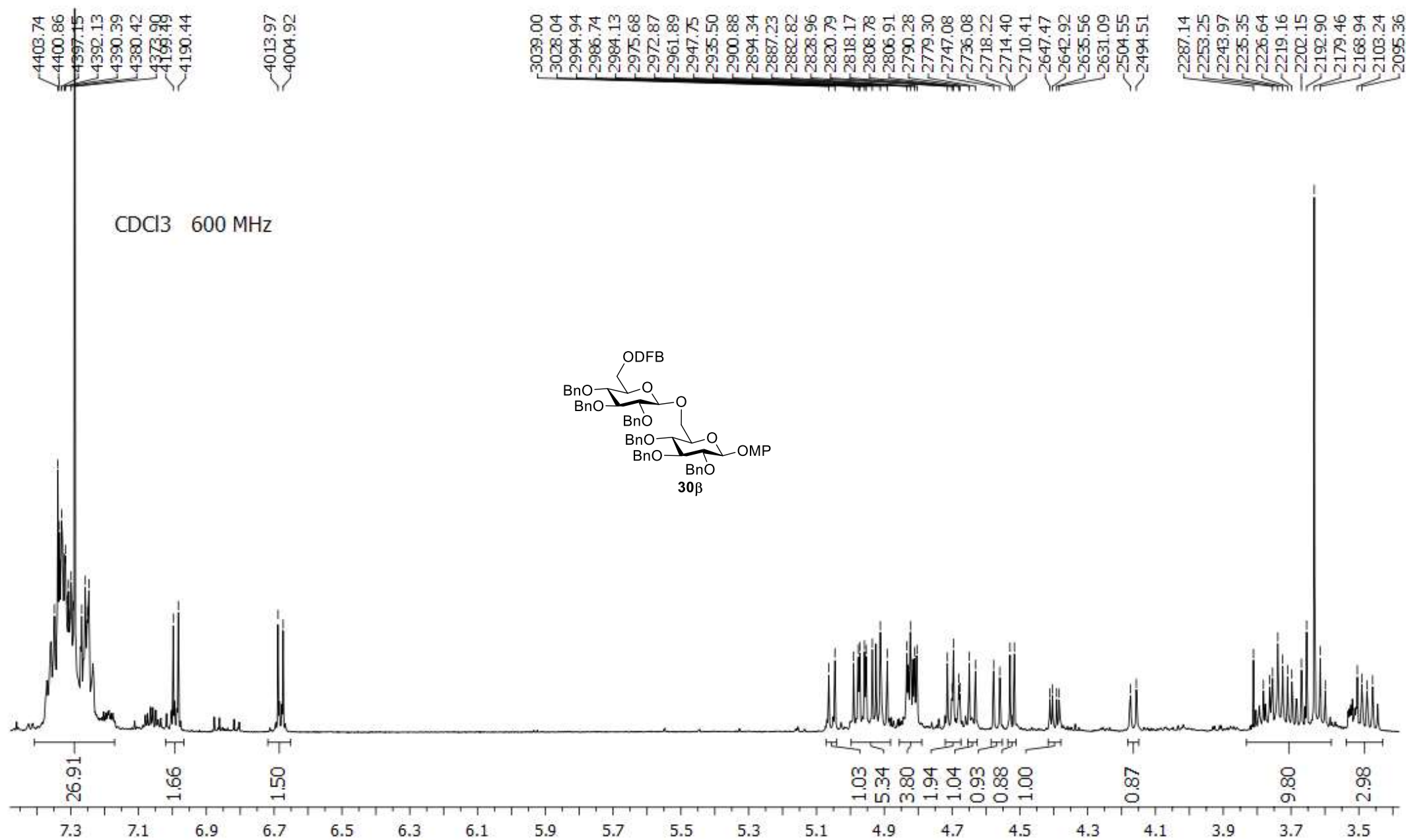


p-Methoxyphenyl 2,3,4-tri-*O*-benzyl-6-*O*-(2,5-difluorobenzoyl)- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-*O*-benzyl- β -D-glucopyranoside (**30 α**)

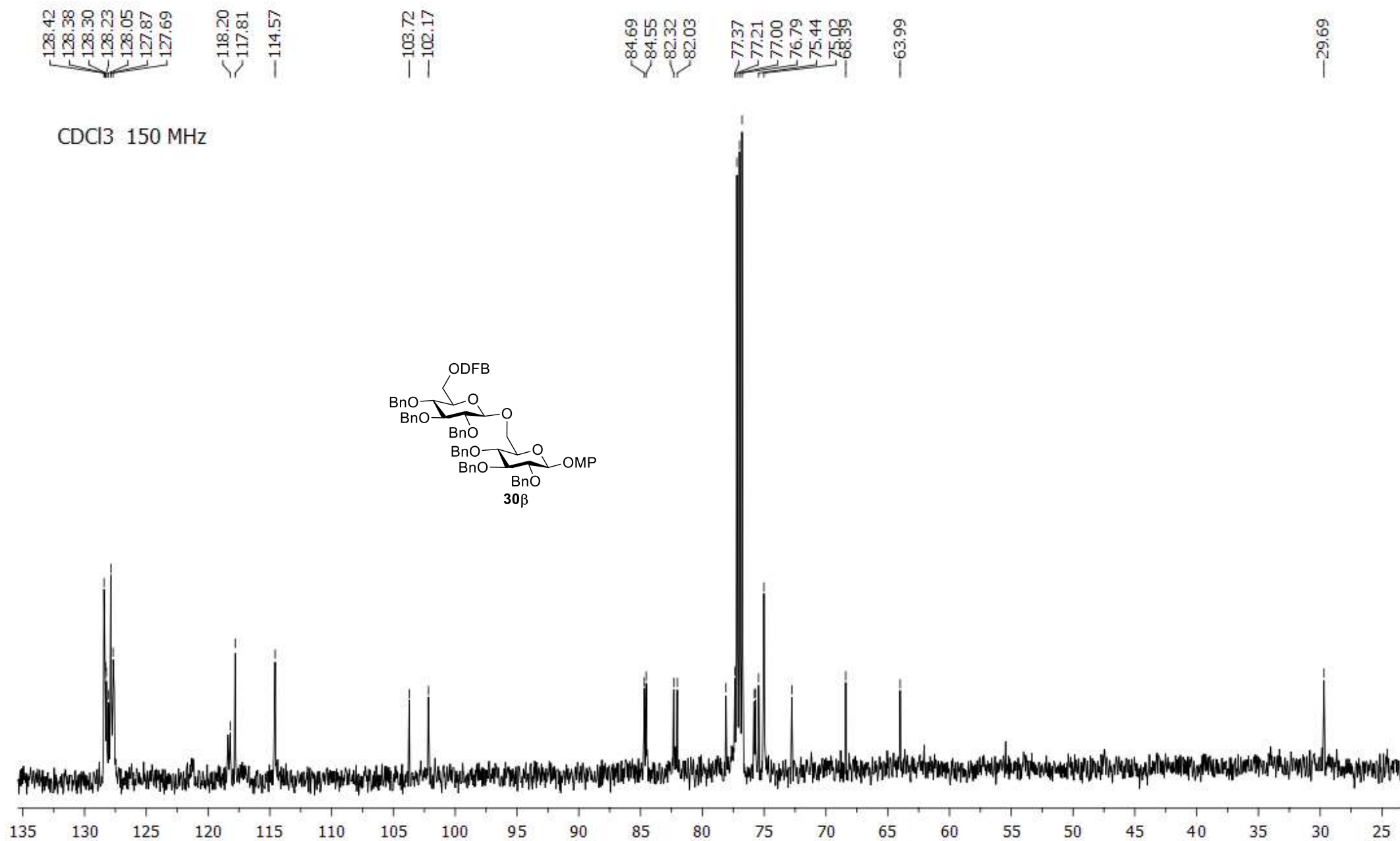
/B0JA BD2058 CDC13 150.9 MHz



p-Methoxyphenyl 2,3,4-tri-*O*-benzyl-6-*O*-(2,5-difluorobenzoyl)- β -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-*O*-benzyl- β -D-glucopyranoside (**30 β**)

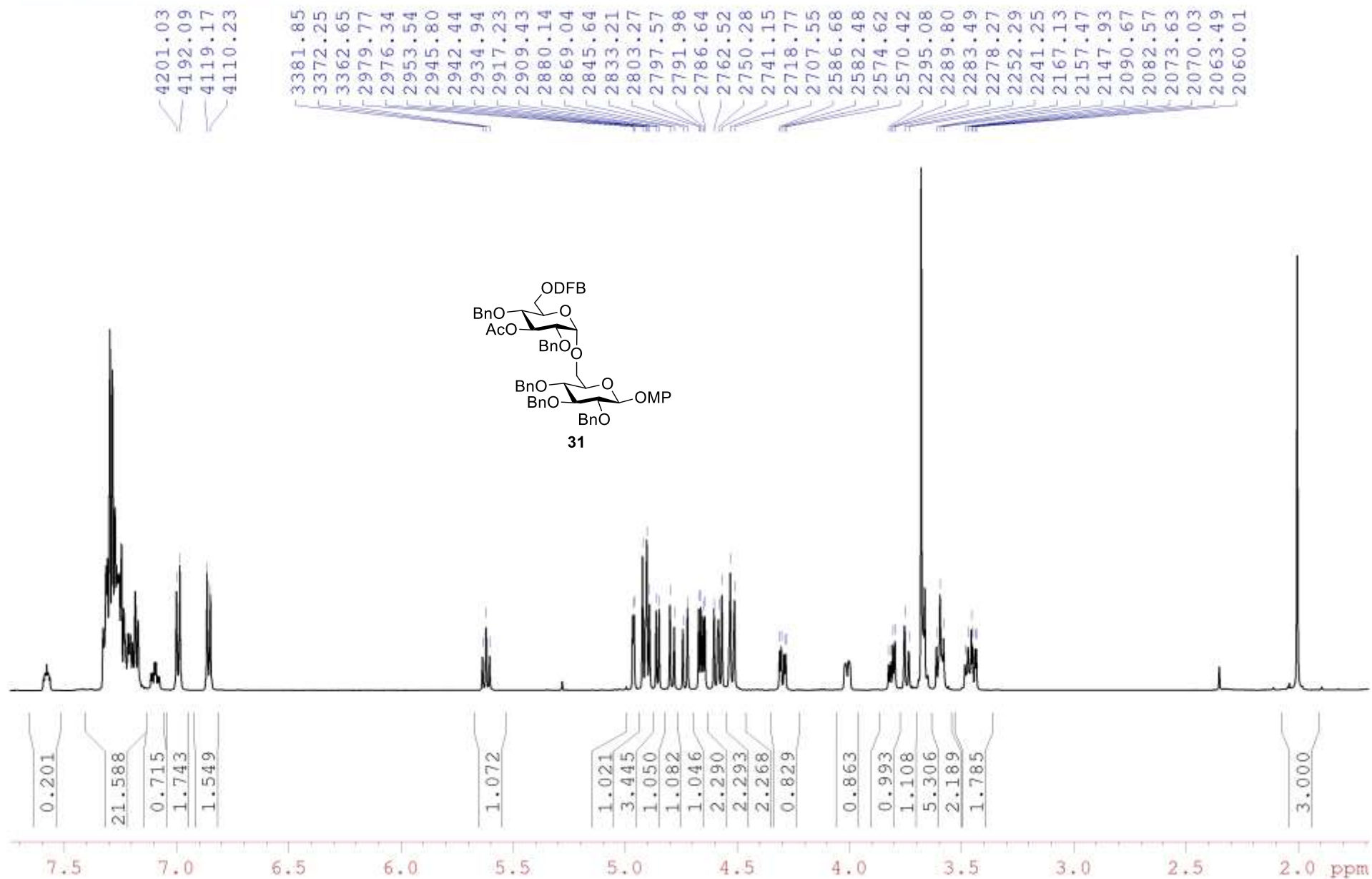


***p*-Methoxyphenyl 2,3,4-tri-*O*-benzyl-6-*O*-(2,5-difluorobenzoyl)- β -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-*O*-benzyl- β -D-glucopyranoside (**30 β**)**



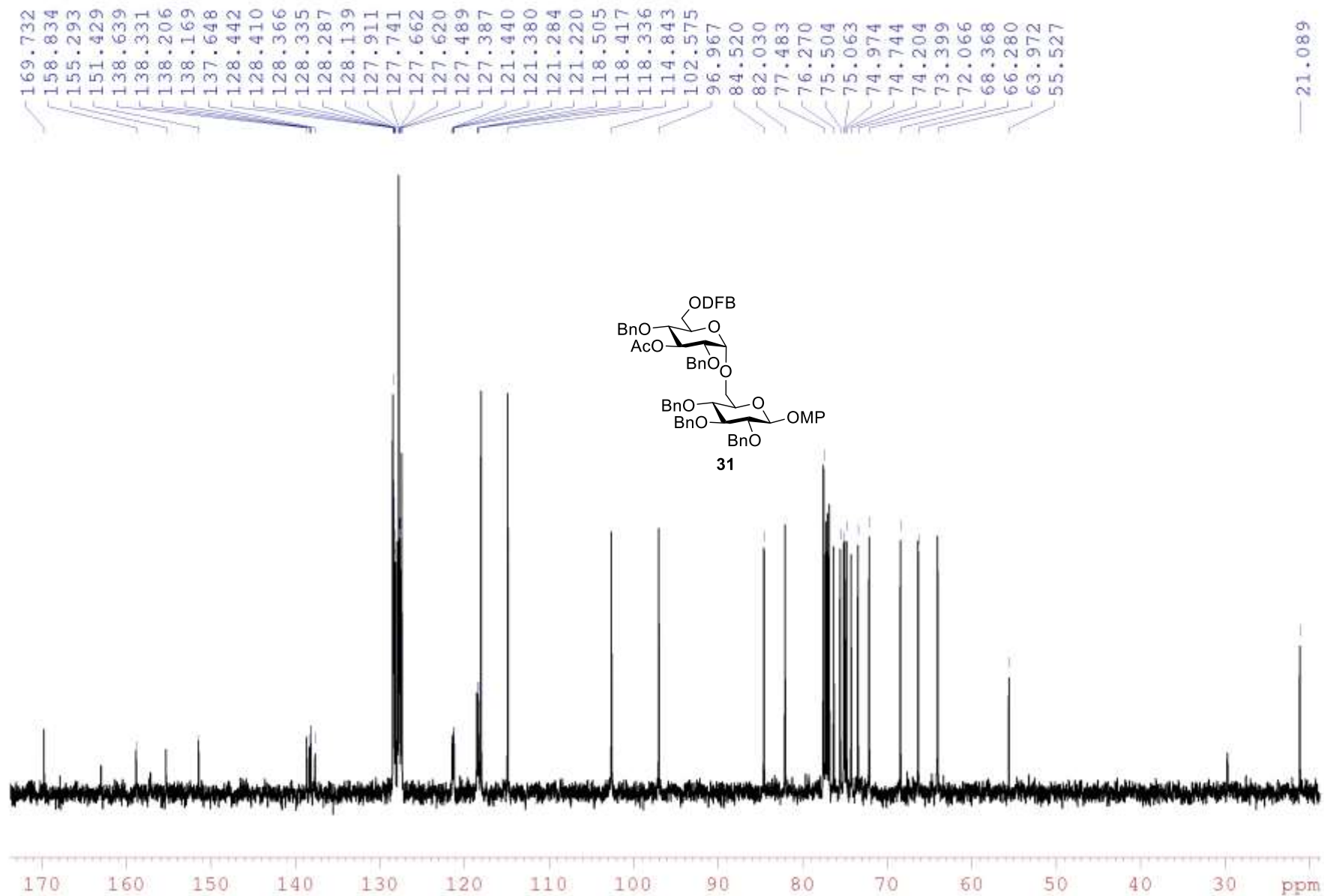
p-Methoxyphenyl 3-*O*-acetyl-2,4-di-*O*-benzyl-6-*O*-(2,5-difluorobenzoyl)- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-*O*-benzyl- β -D-glucopyranoside (31 α)

/BOJA BD2039u CDCl₃ 600 MHz



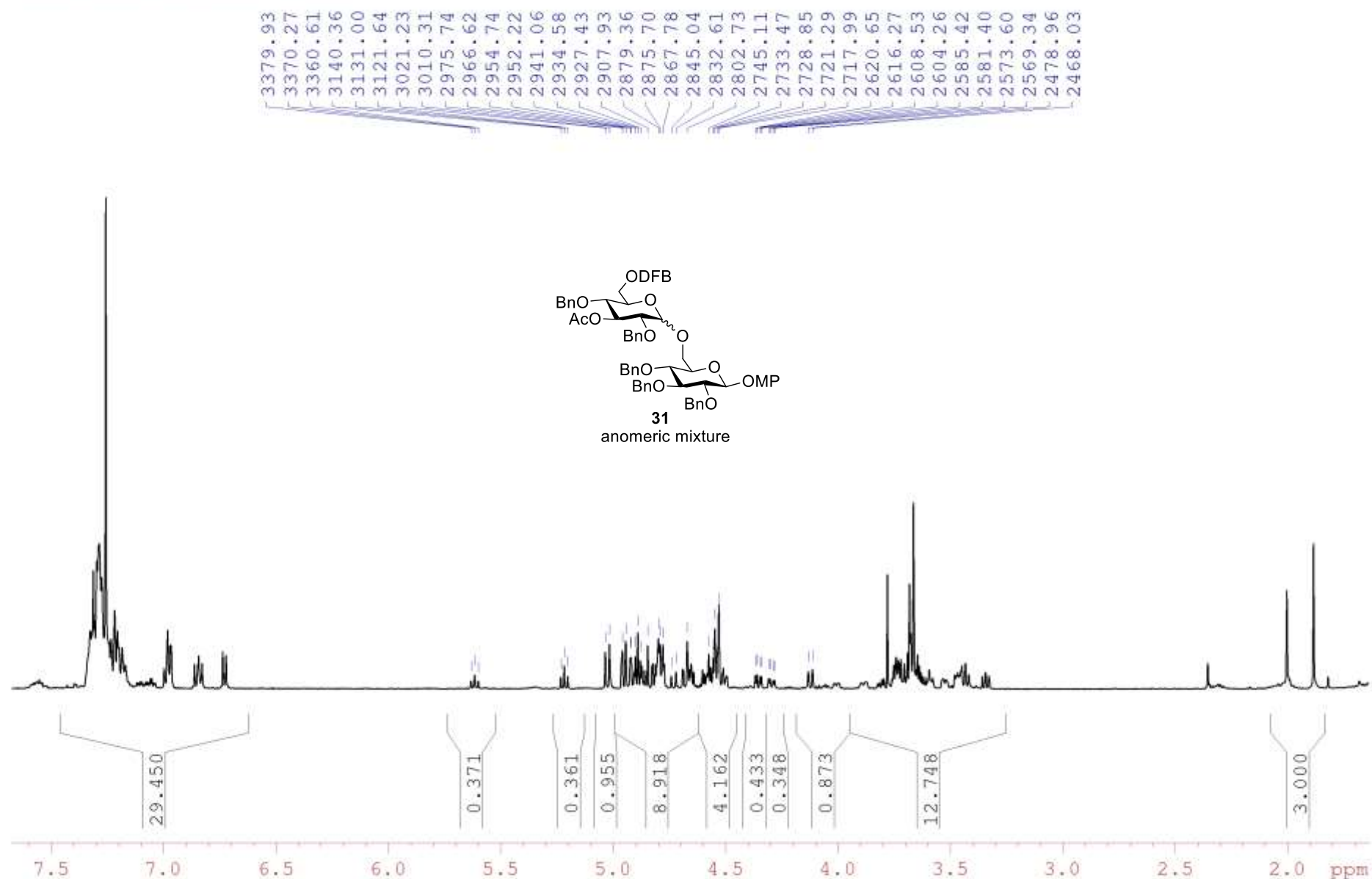
***p*-Methoxyphenyl 3-*O*-acetyl-2,4-di-*O*-benzyl-6-*O*-(2,5-difluorobenzoyl)- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-*O*-benzyl- β -D-glucopyranoside (31 α)**

/BOJA BD2039u CDC13 150.9 MHz

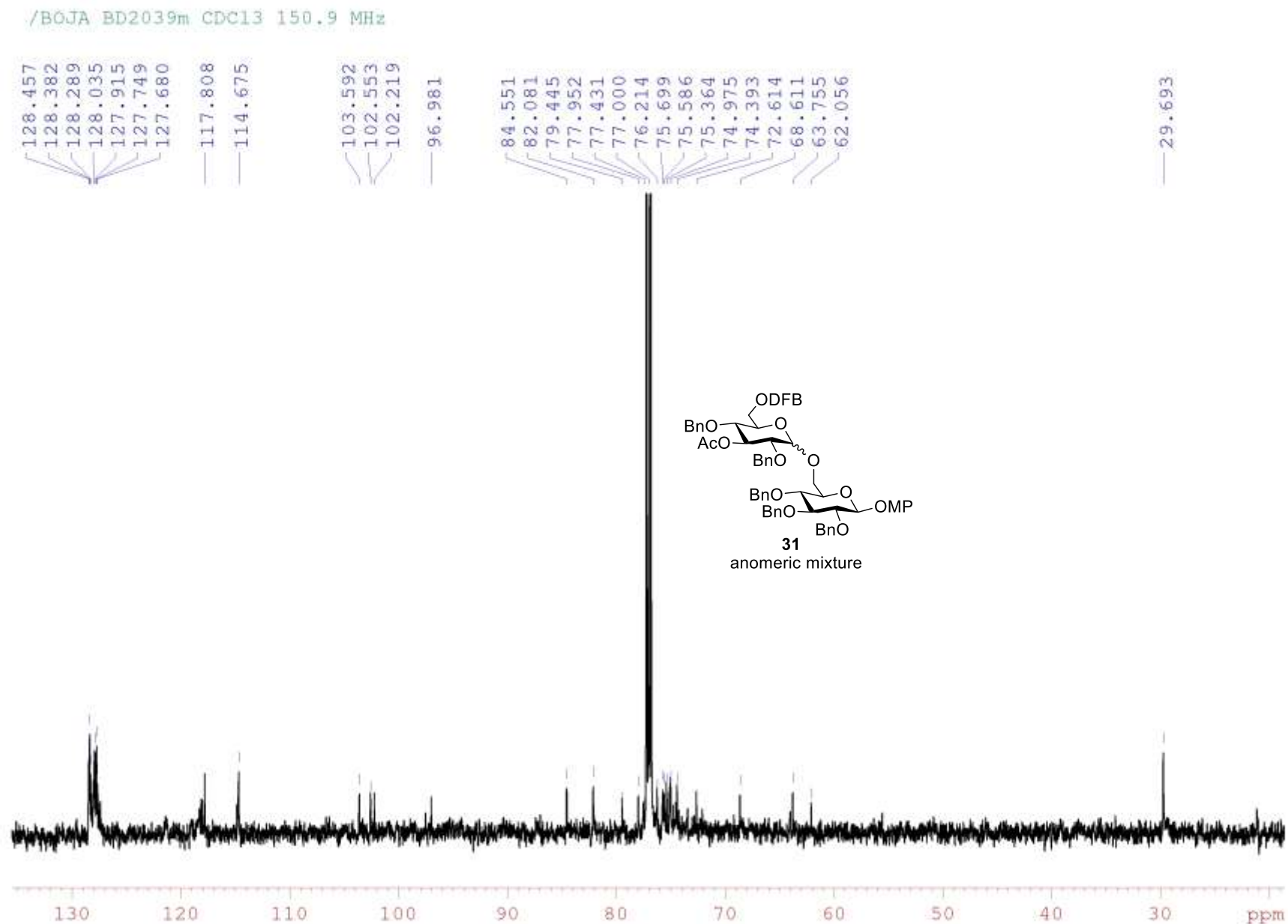


***p*-Methoxyphenyl 3-*O*-acetyl-2,4-di-*O*-benzyl-6-*O*-(2,5-difluorobenzoyl)- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-*O*-benzyl- β -D-glucopyranoside (31 α) and *p*-methoxyphenyl 3-*O*-acetyl-2,4-di-*O*-benzyl-6-*O*-(2,5-di-fluorobenzoyl)- β -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-*O*-benzyl- β -D-glucopyranoside (31 β)**

/BOJA BD2039m CDC13 600MHz

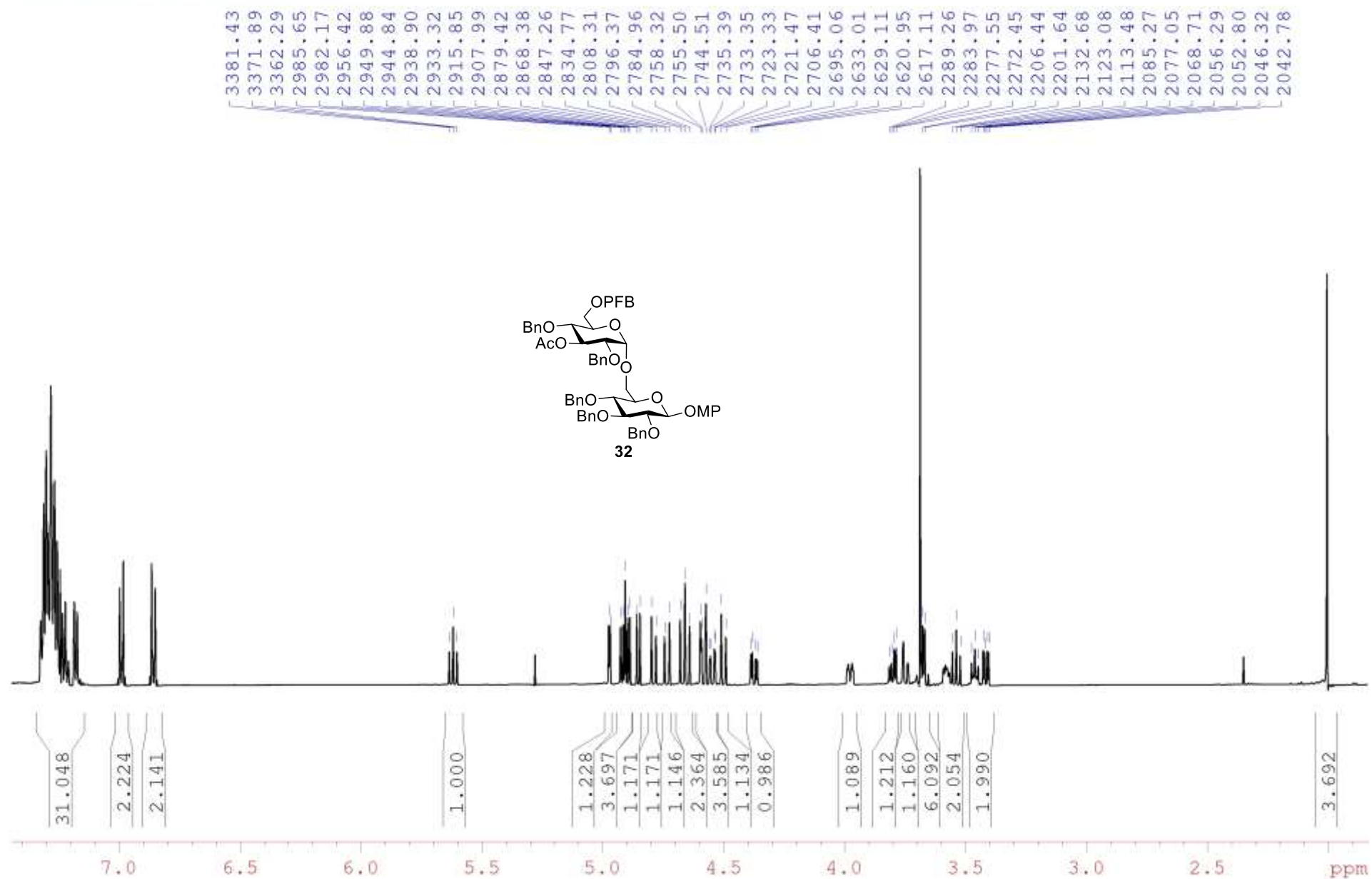


p-Methoxyphenyl 3-*O*-acetyl-2,4-di-*O*-benzyl-6-*O*-(2,5-difluorobenzoyl)- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-*O*-benzyl- β -D-glucopyranoside (**31** α) and *p*-methoxyphenyl 3-*O*-acetyl-2,4-di-*O*-benzyl-6-*O*-(2,5-di-fluorobenzoyl)- β -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-*O*-benzyl- β -D-glucopyranoside (**31** β)



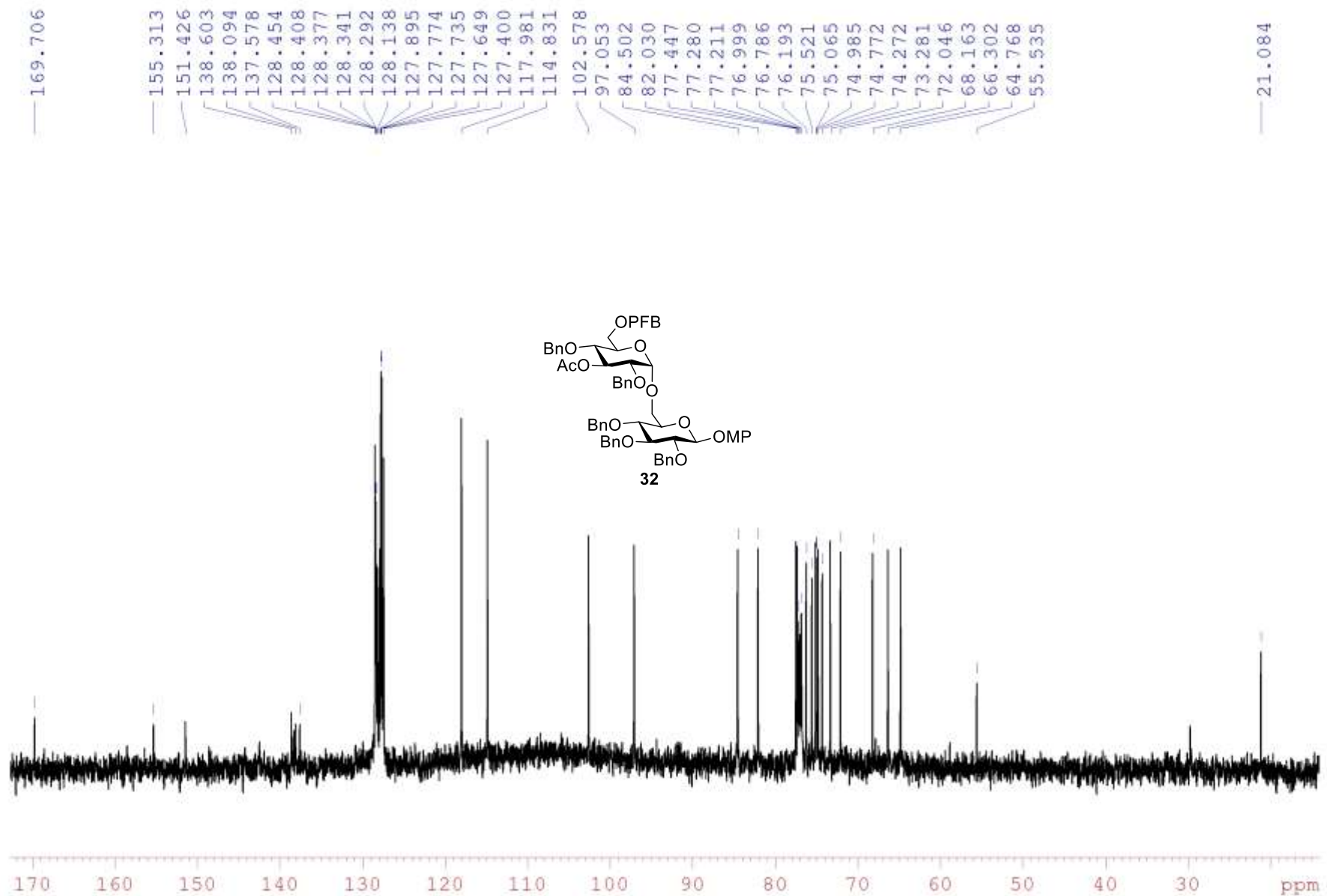
p-Methoxyphenyl 3-*O*-acetyl-2,4-di-*O*-benzyl-6-*O*-pentafluorobenzoyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-*O*-benzyl- β -D-glucopyranoside (**32 α**)

/BOJA BD2089u CDC13 600 MHz



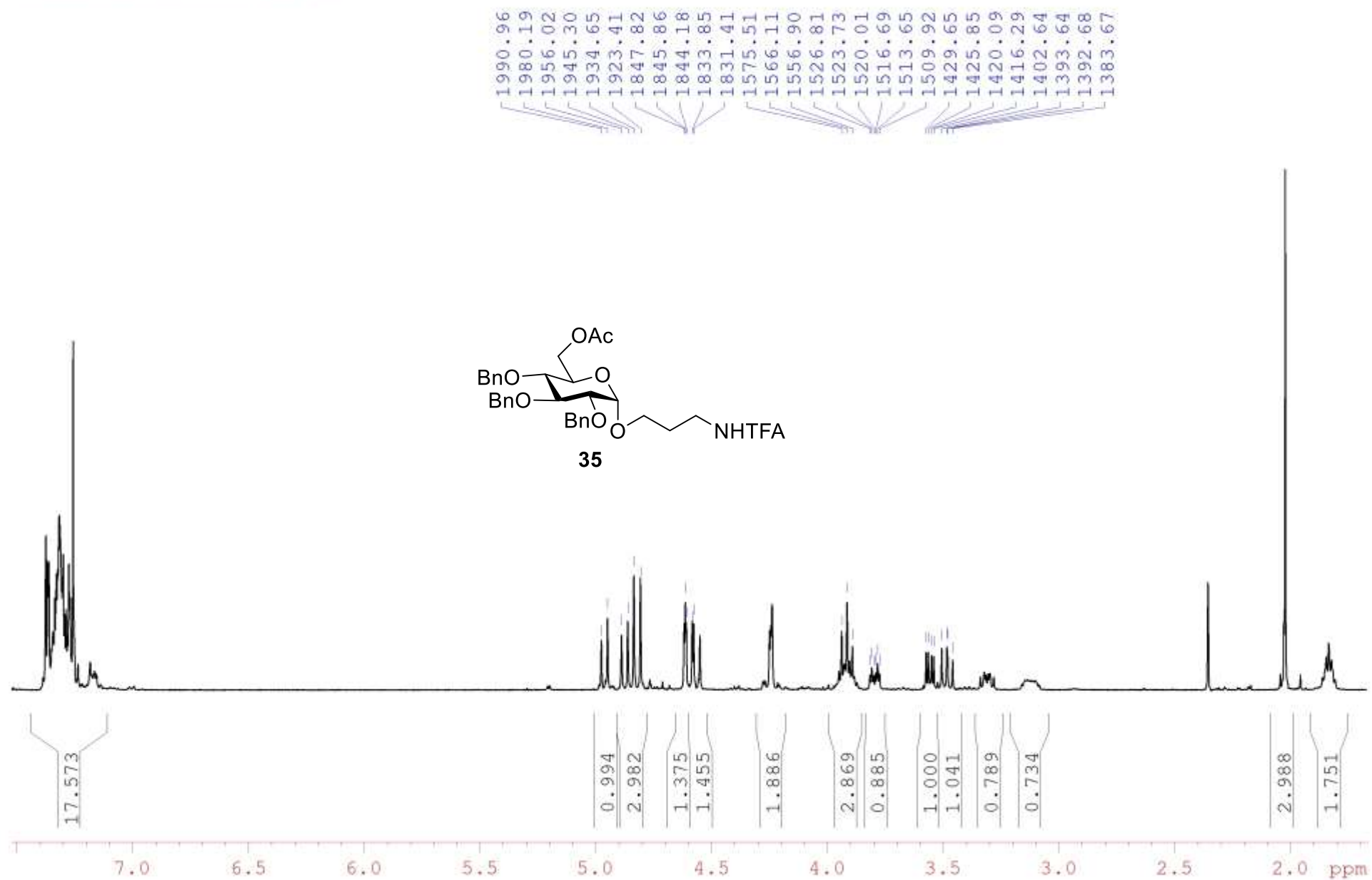
***p*-Methoxyphenyl 3-*O*-acetyl-2,4-di-*O*-benzyl-6-*O*-pentafluorobenzoyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-*O*-benzyl- β -D-glucopyranoside (32 α)**

/BOJA BD2089u CDC13 150.9 MHz



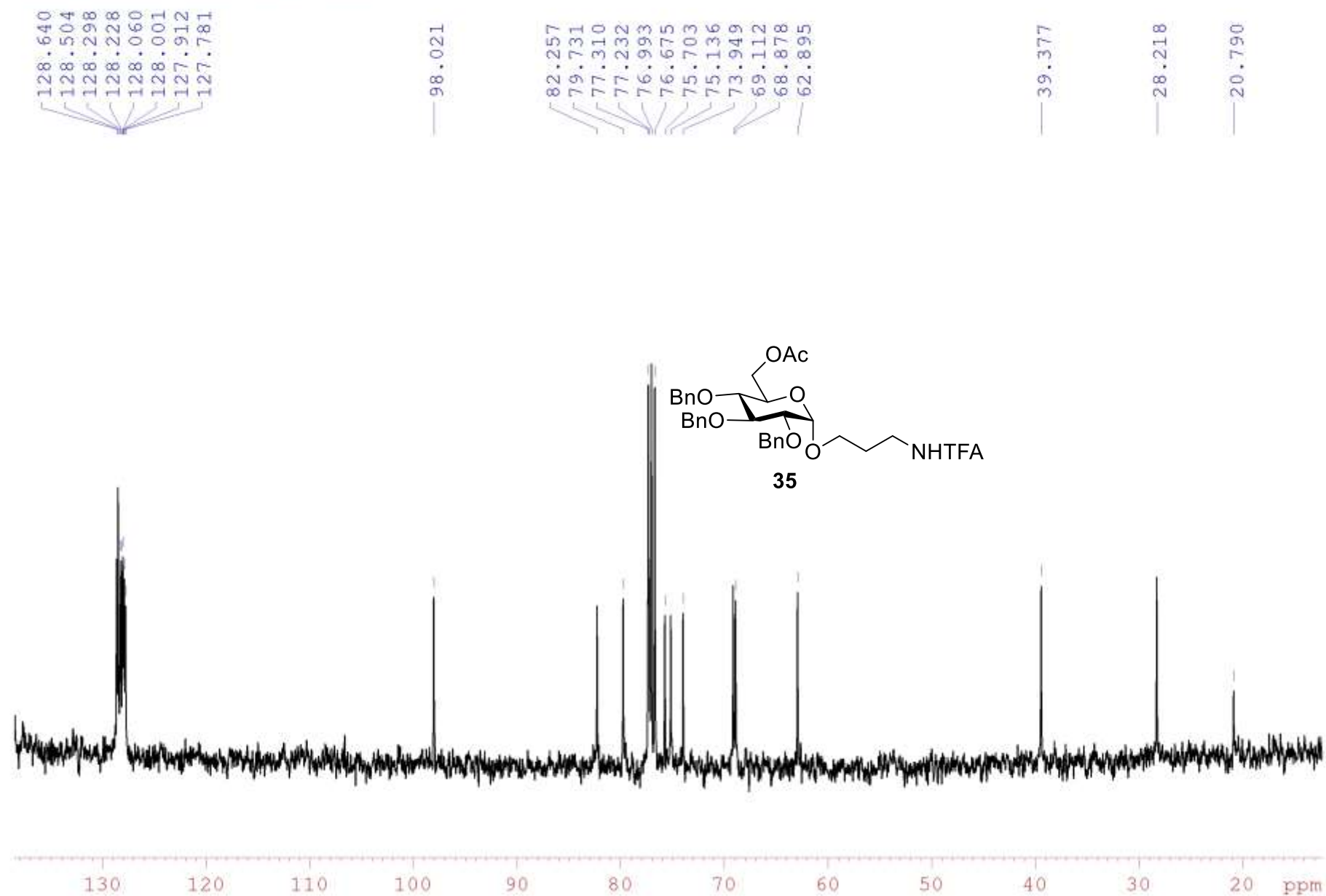
3-Trifluoroacetamidopropyl 2,3,4-tri-*O*-benzyl-6-*O*-acetyl- α -D-glucopyranoside (35)

/BOJA BD2113 CDCl₃ 400 MHz



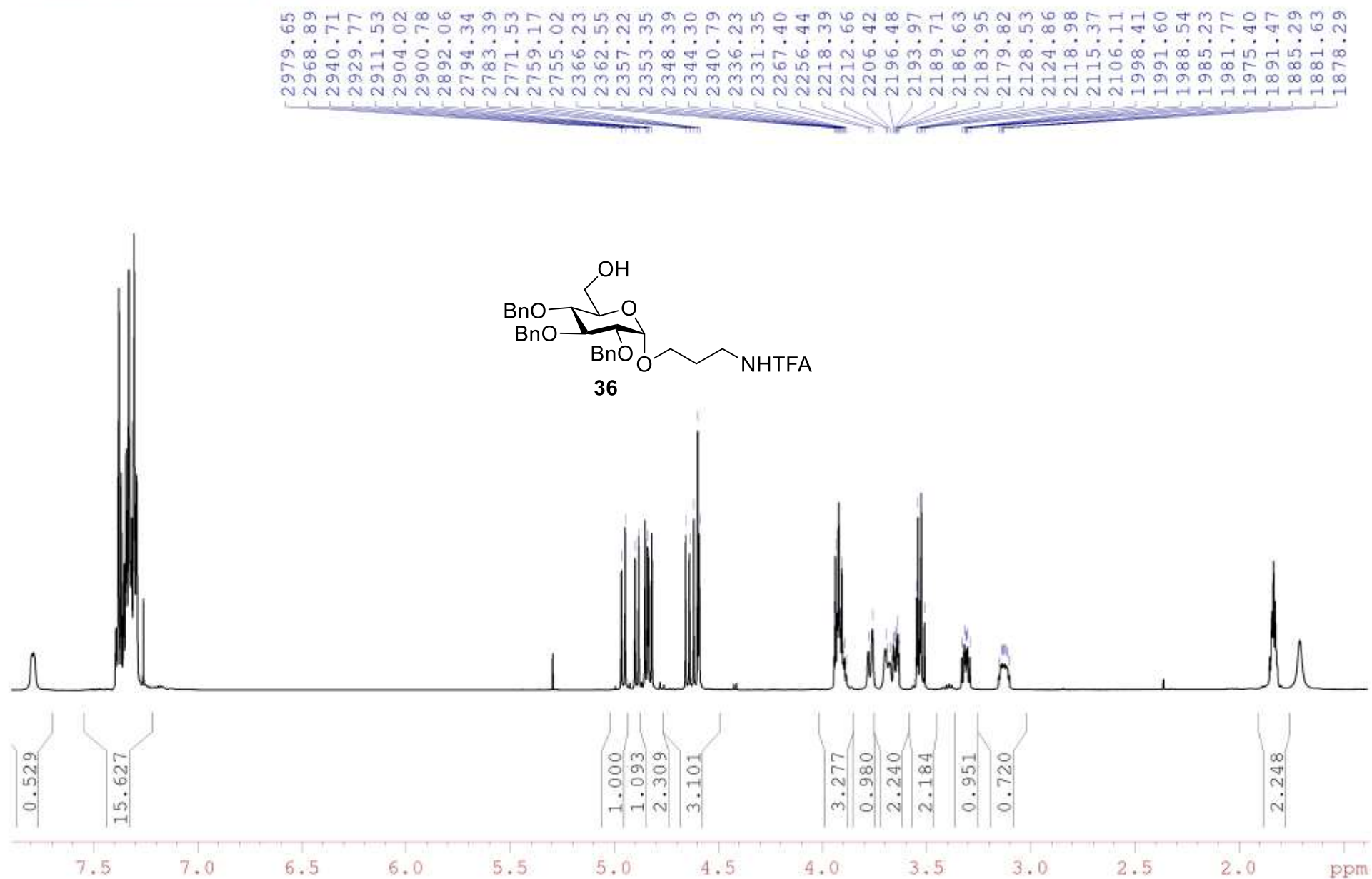
3-Trifluoroacetamidopropyl 2,3,4-tri-*O*-benzyl-6-*O*-acetyl- α -D-glucopyranoside (35)

/BOJA BD2113 CDCl₃ 100.6 MHz



3-Trifluoroacetamidopropyl 2,3,4-tri-*O*-benzyl- α -D-glucopyranoside (36)

/BOJA BD1096 CDC13 600 MHz



3-Trifluoroacetamidopropyl 2,3,4-tri-*O*-benzyl- α -D-glucopyranoside (36)

/BOJA BD1096 CDCl₃ 150.9 MHz

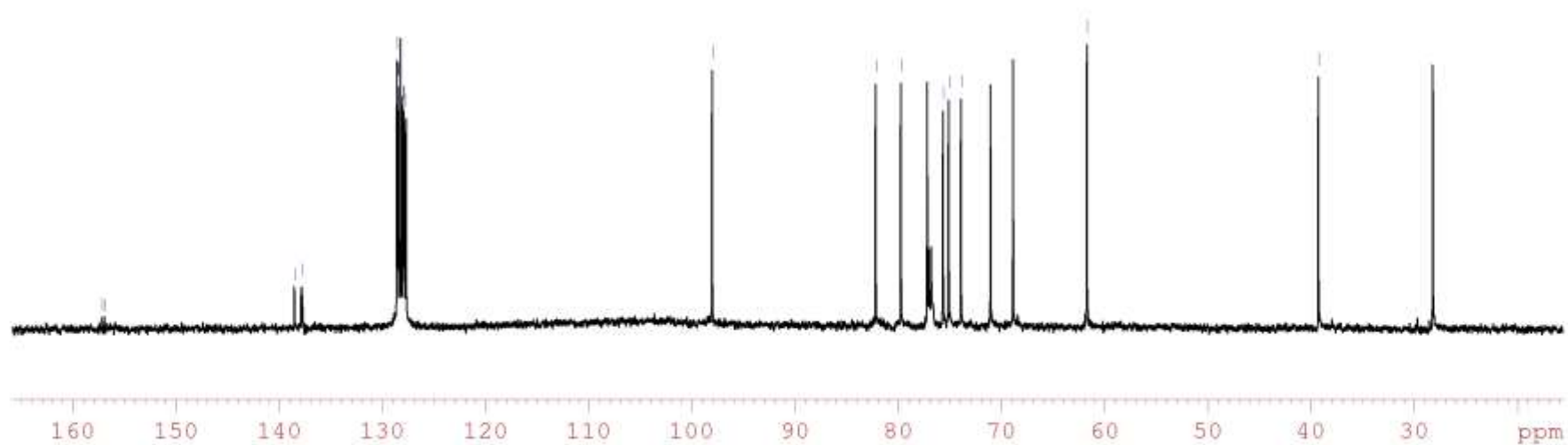
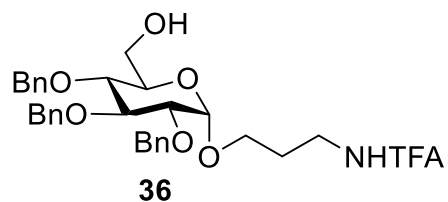
157.187
156.943
138.532
137.862
137.742
128.590
128.507
128.448
128.237
128.216
128.019
127.957
127.881
127.704

98.033

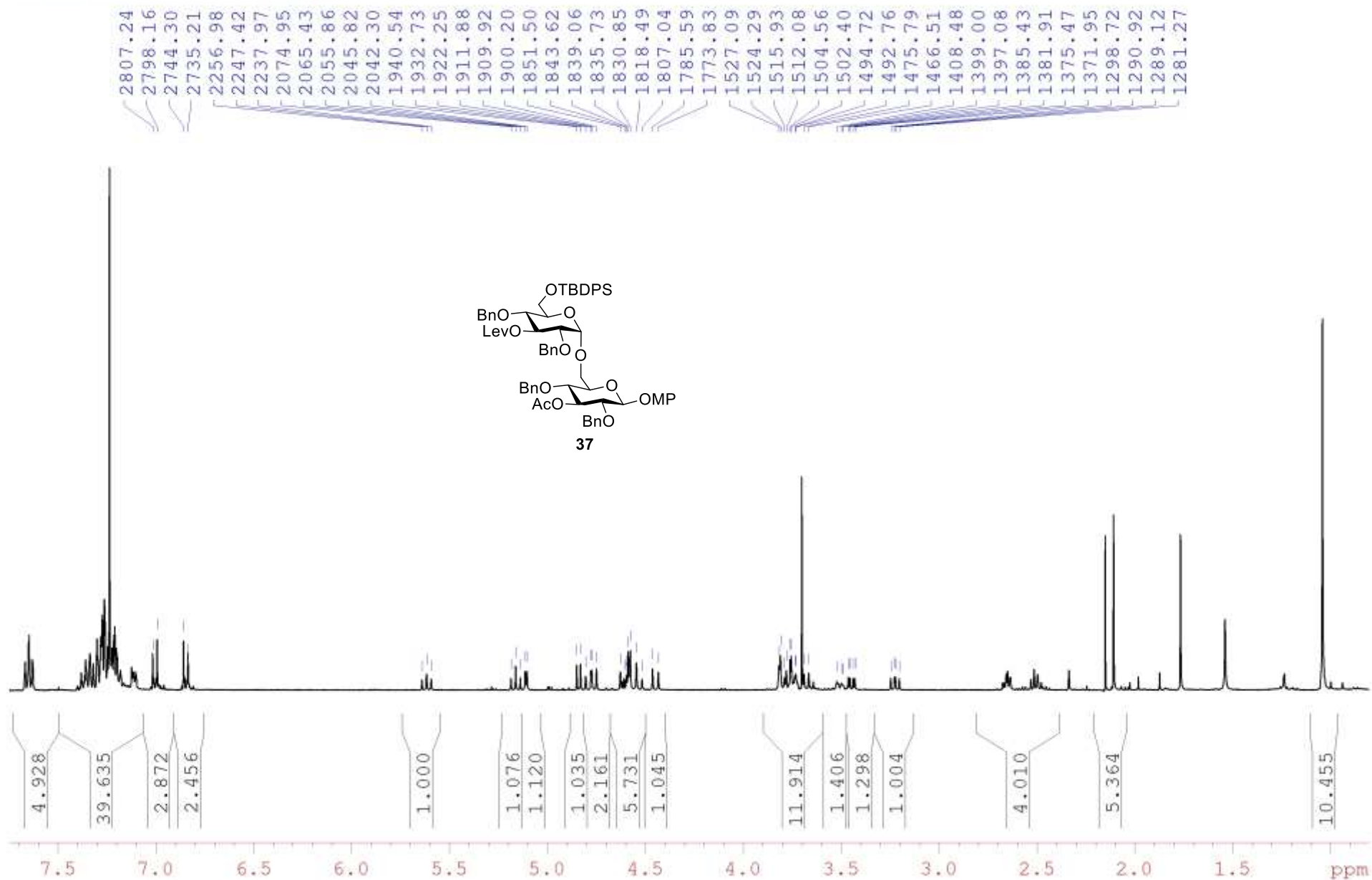
82.177
79.738
77.171
75.645
75.095
73.905
71.039
68.862
61.703

39.259

28.161

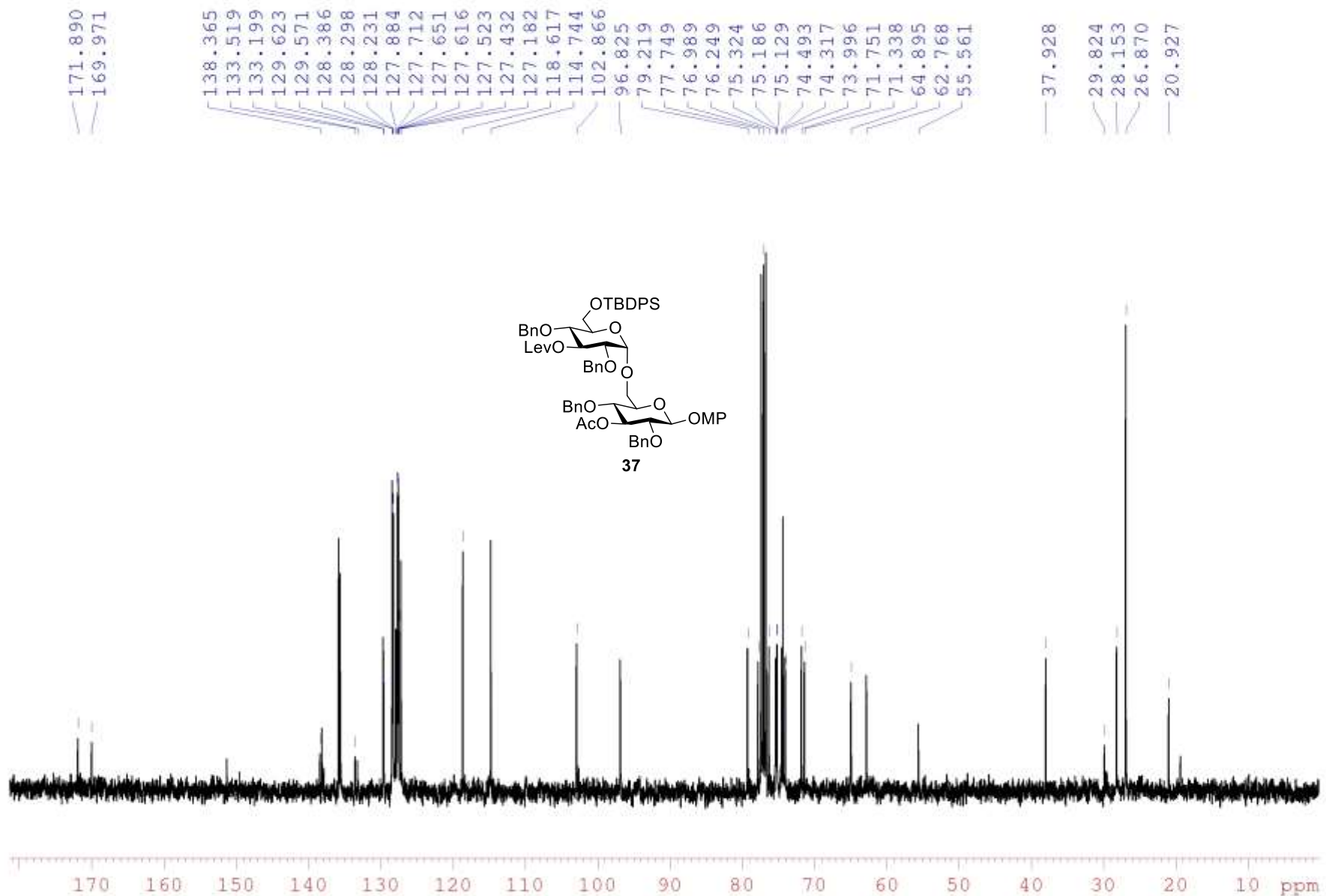


***p*-Methoxyphenyl 2,4-di-*O*-benzyl-6-*O*-*tert*-butyldiphenylsilyl-3-*O*-levulinoyl- α -glucopyranosyl-(1 $\rightarrow$ 6)-3-*O*-acetyl-2,4-di-*O*-benzyl- β -*D*-glucopyranoside
(37)** /BOJA BD2192 CDCl₃ 400 MHz



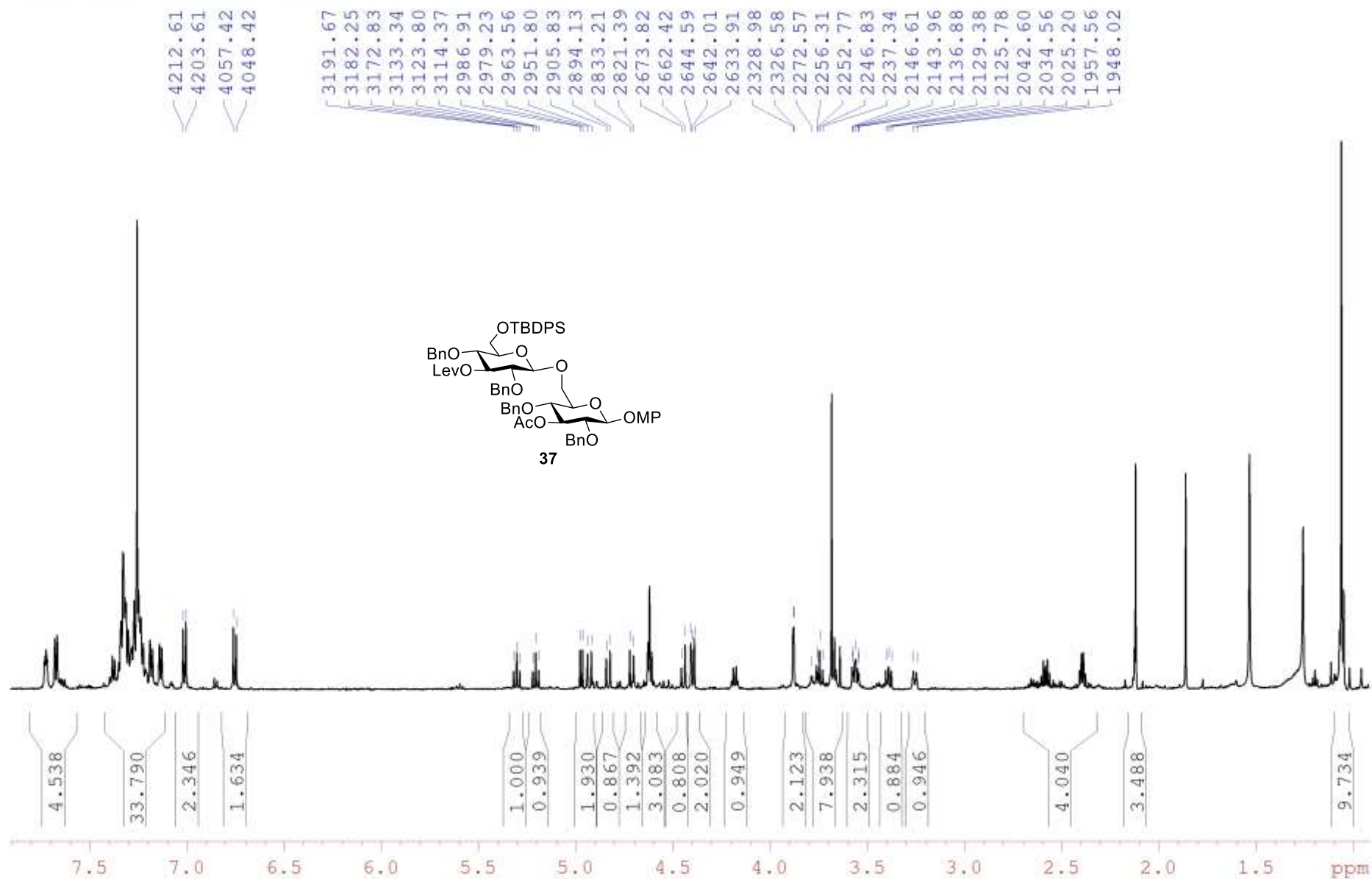
***p*-Methoxyphenyl 2,4-di-*O*-benzyl-6-*O*-*tert*-butyldiphenylsilyl-3-*O*-levulinoyl- α -glucopyranosyl-(1 $\rightarrow$ 6)-3-*O*-acetyl-2,4-di-*O*-benzyl- β -D-glucopyranoside
(37)**

/BOJA BD2192 CDC13 100.6 MHz



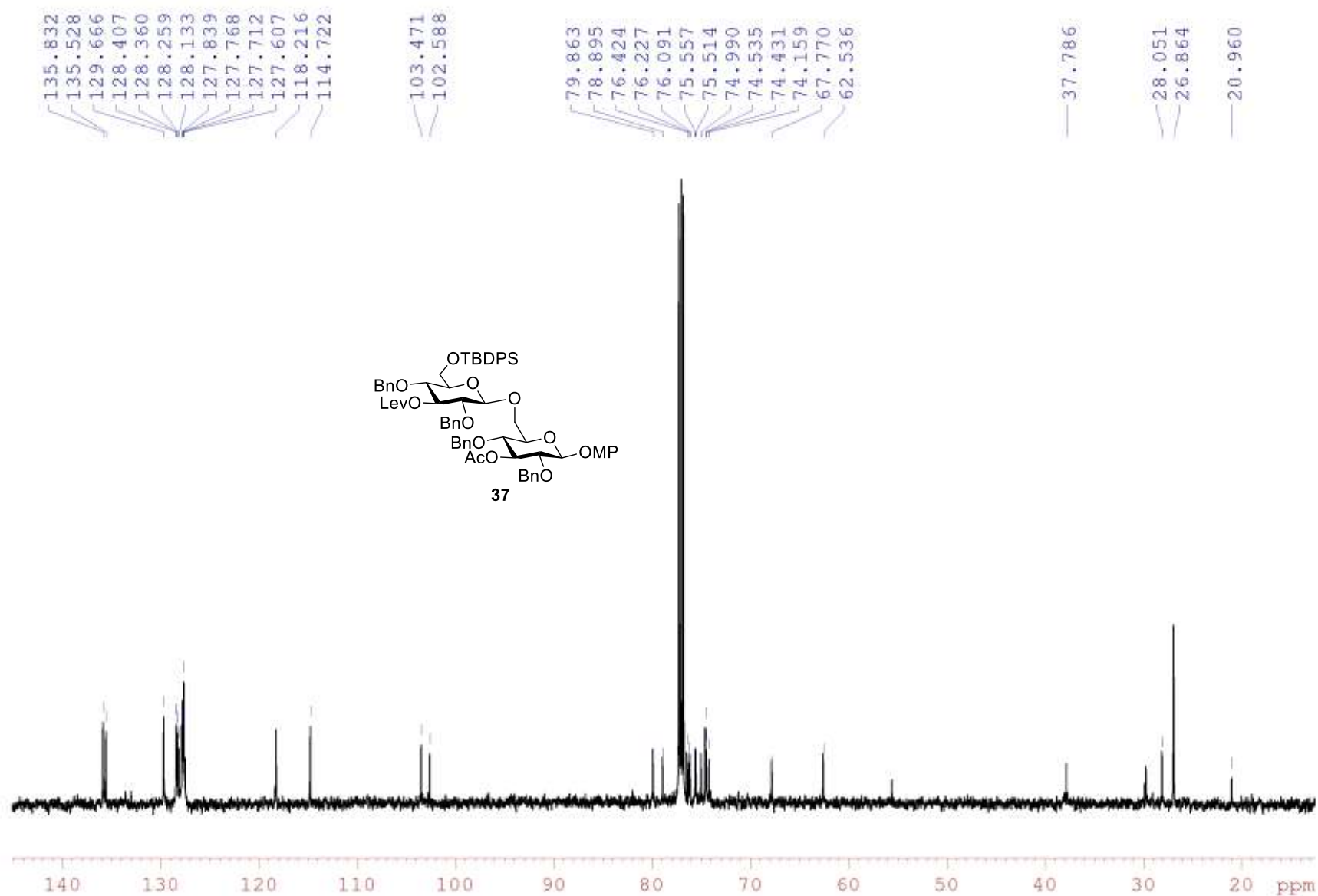
***p*-methoxyphenyl 2,4-di-*O*-benzyl-6-*O*-*tert*-butyldiphenylsilyl-3-*O*-levulinoyl- β -D-glucopyranosyl-(1 $\rightarrow$ 6)-3-*O*-acetyl-2,4-di-*O*-benzyl- β -D-glucopyranoside (37 β)**

/BOJA BD2074b CDC13 600 MHz



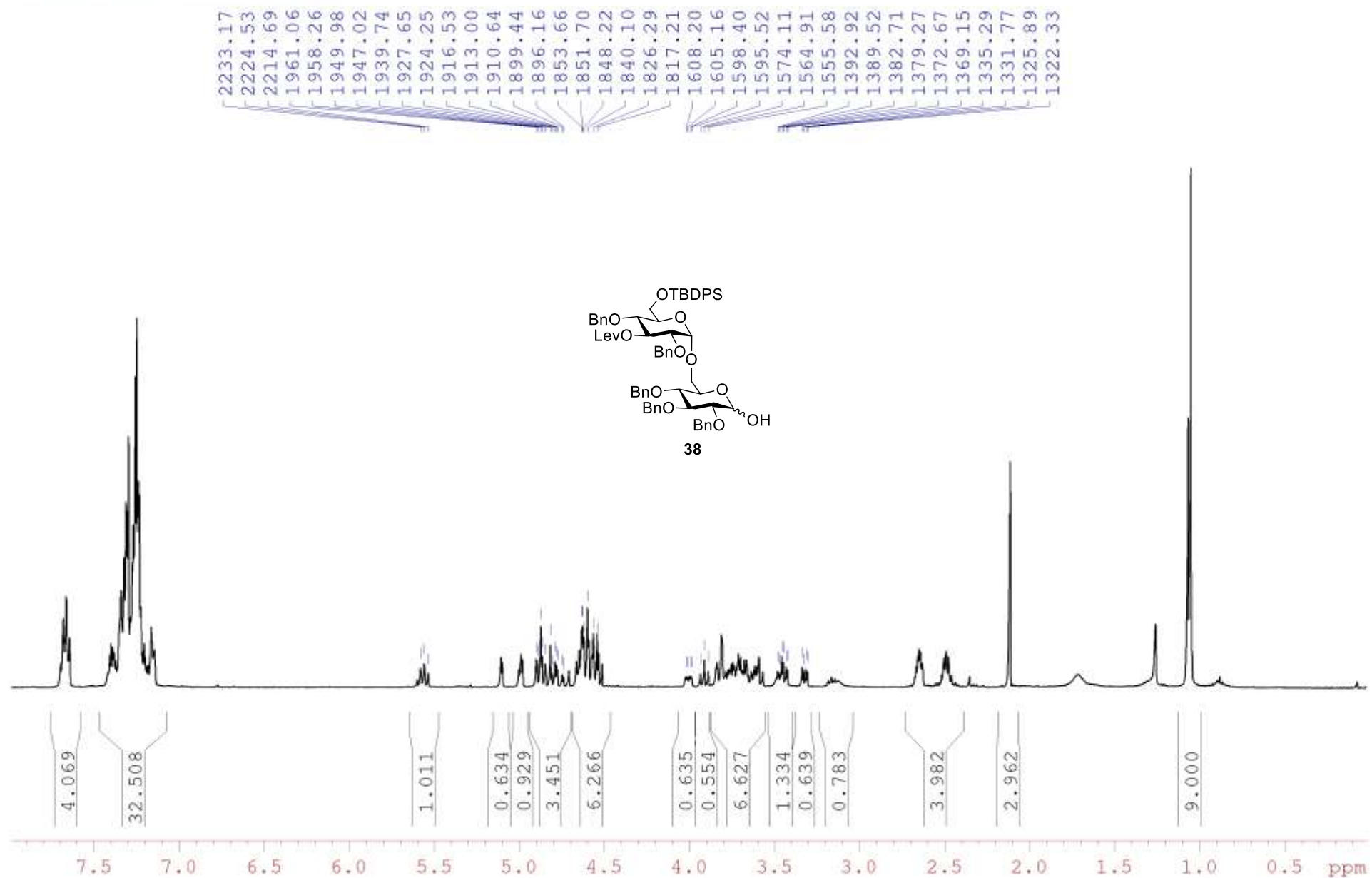
***p*-methoxyphenyl 2,4-di-O-benzyl-6-O-*tert*-butyldiphenylsilyl-3-O-levulinoyl- β -D-glucopyranosyl-(1 $\rightarrow$ 6)-3-O-acetyl-2,4-di-O-benzyl- β -D-glucopyranoside (37 β)**

/BOJA BD2074b CDC13 150.9 MHz



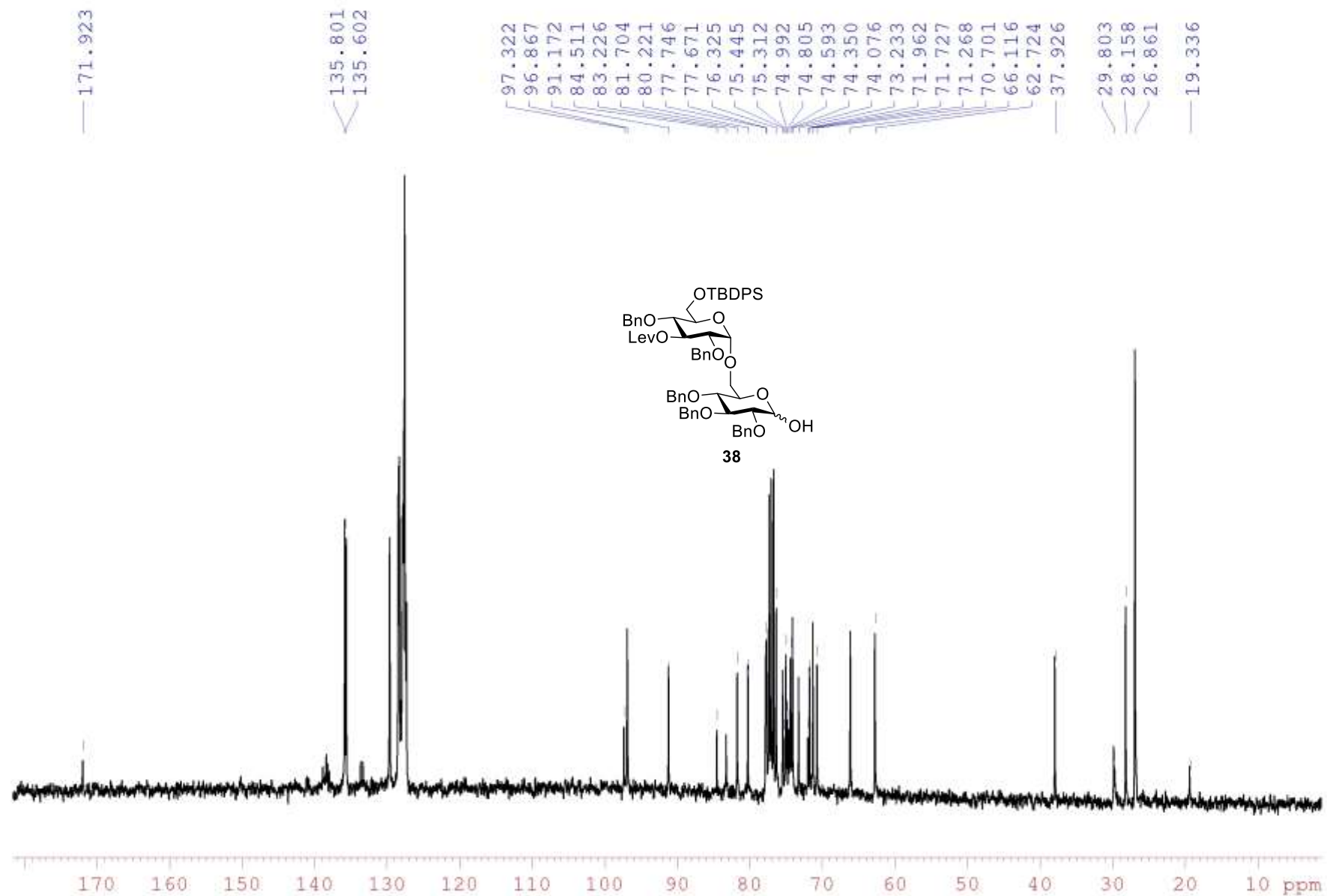
12,4-di-O-benzyl-6-O-*tert*-butyldiphenylsilyl-3-O-levulinoyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl-D-glucopyranose (38)

/BOJA BD2049 CDC13 400 MHz



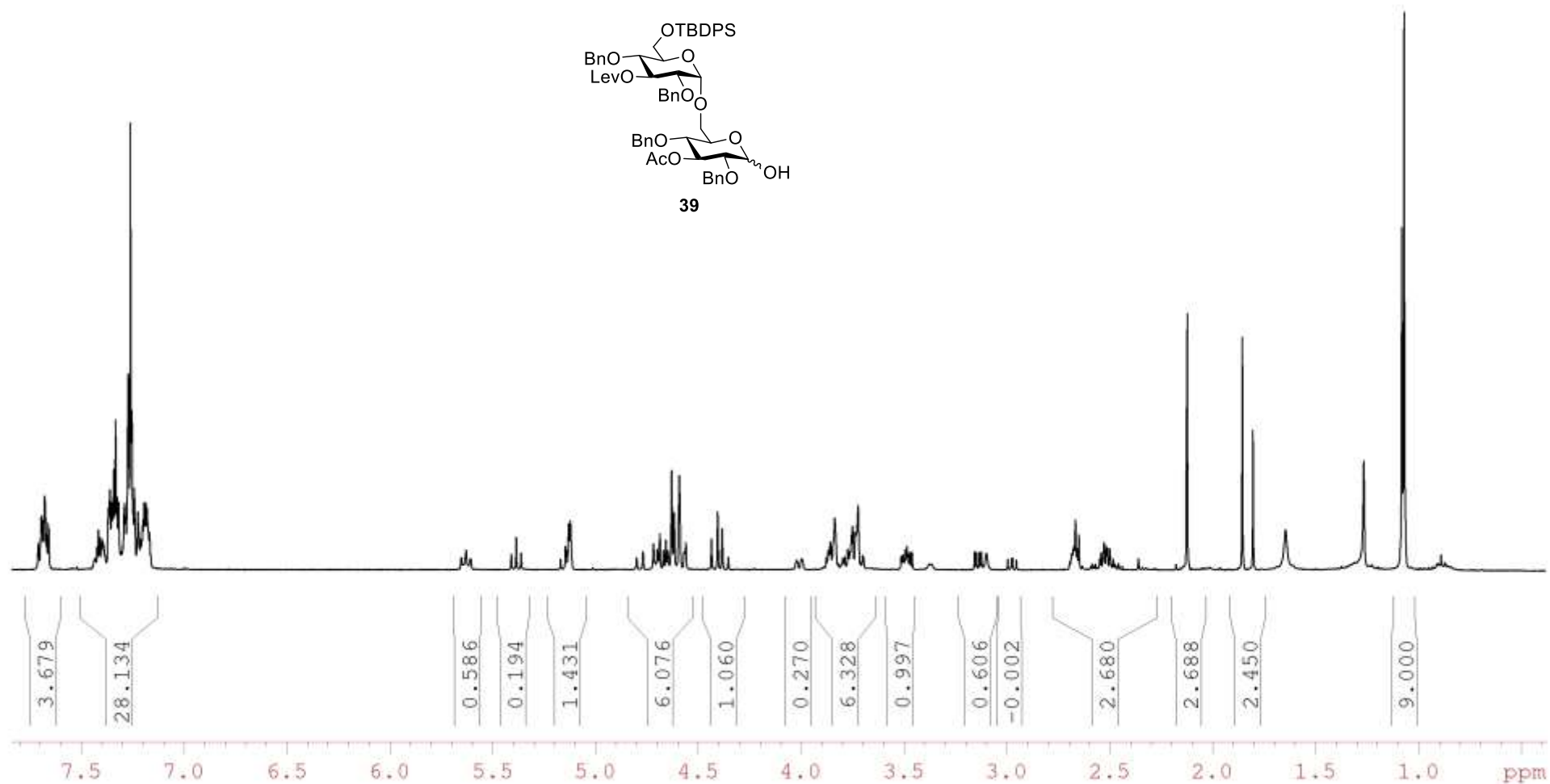
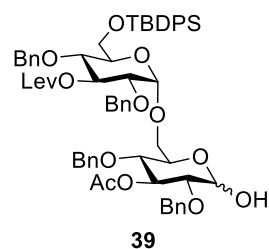
2,4-di-O-benzyl-6-O-*tert*-butyldiphenylsilyl-3-O-levulinoyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl-D-glucopyranose (38)

/BOJA BD2049 CDCl₃ 100.6 MHz



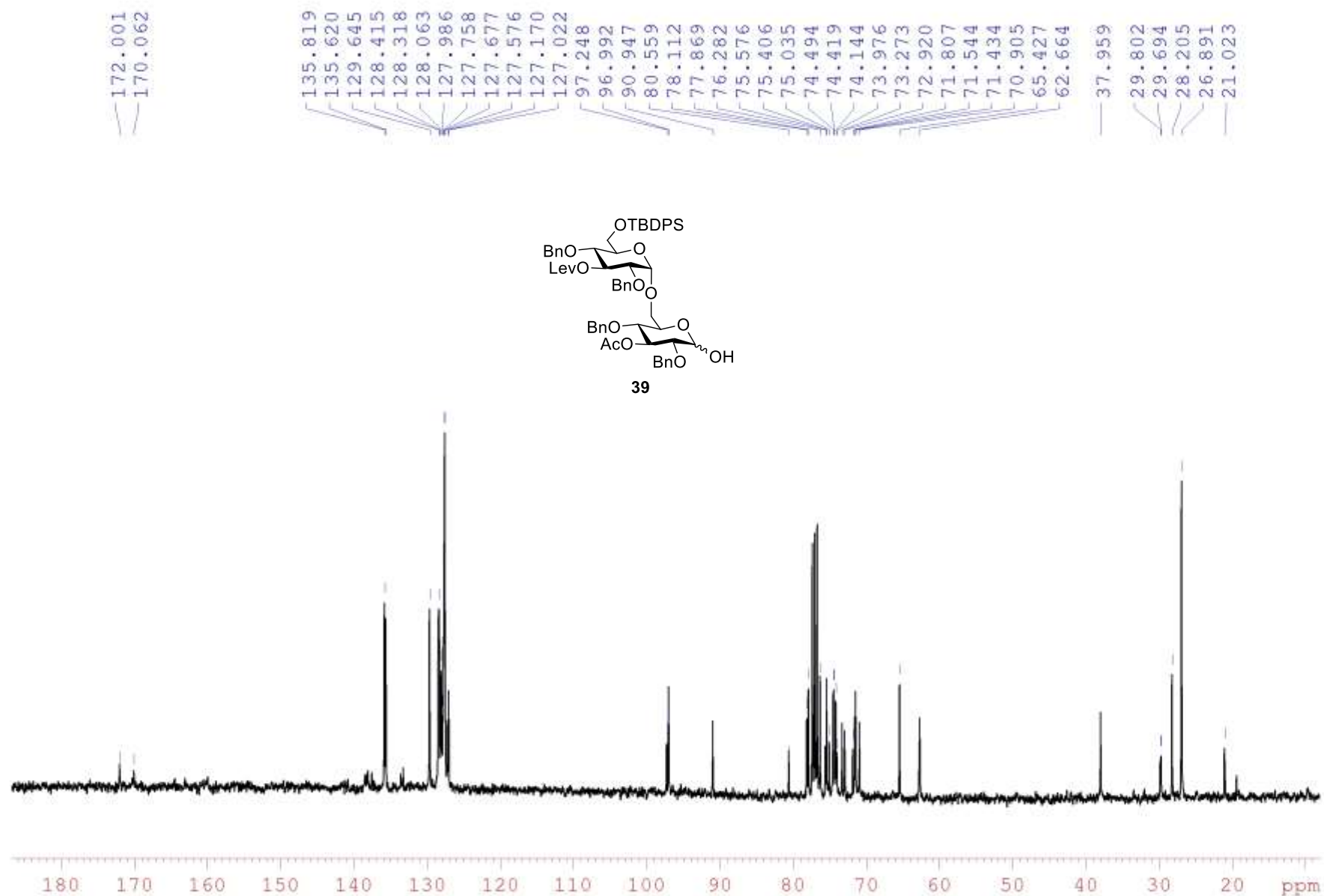
2,4-di-O-benzyl-6-O-*tert*-butyldiphenylsilyl-3-O-levulinoyl- α -glucopyranosyl-(1 $\rightarrow$ 6)-3-O-acetyl-2,4-di-O-benzyl-D-glucopyranose (39)

/BOJA BD2078 CDC13 400 MHz



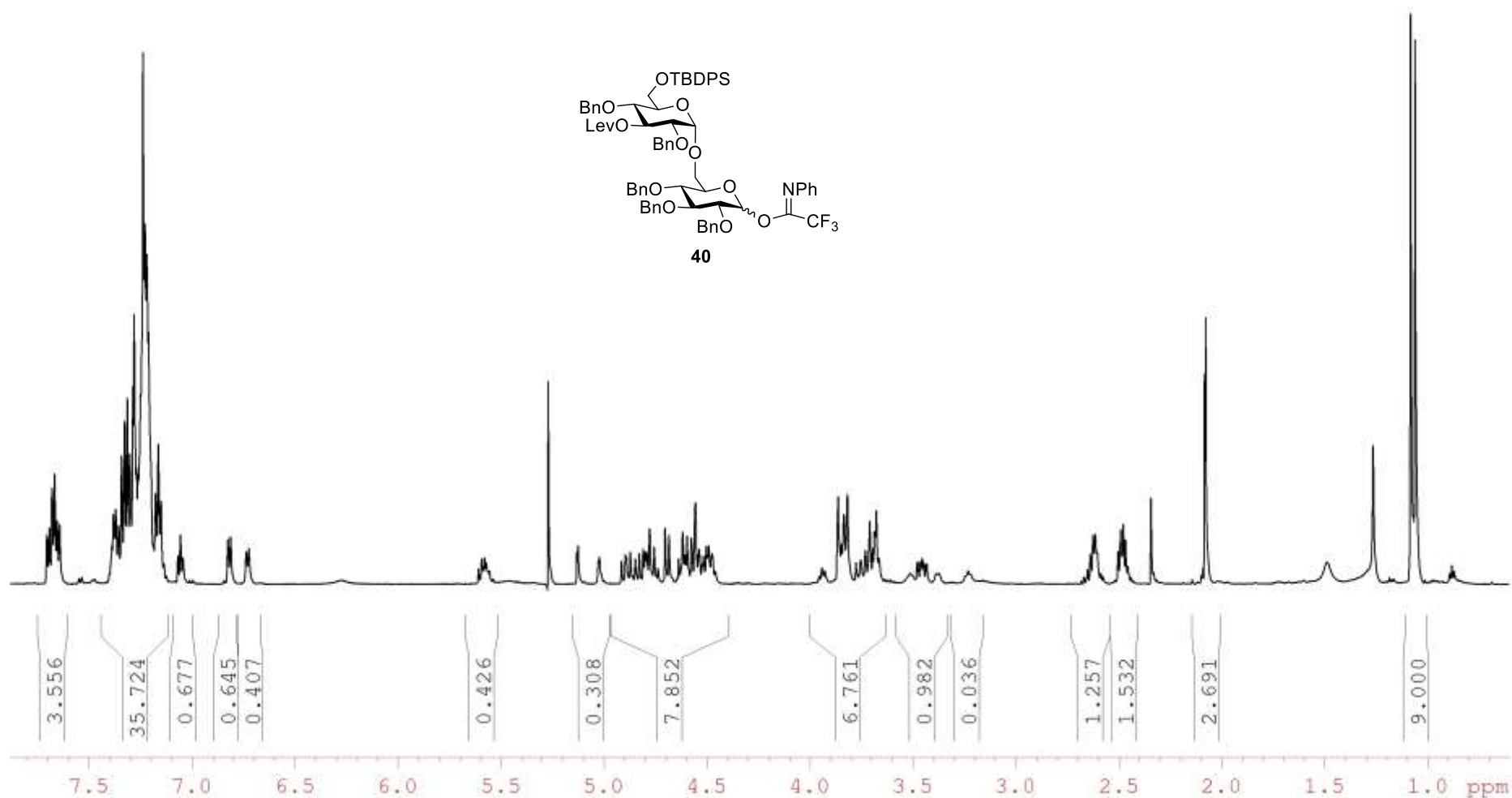
2,4-di-O-benzyl-6-O-*tert*-butyldiphenylsilyl-3-O-levulinoyl- α -glucopyranosyl-(1 $\rightarrow$ 6)-3-O-acetyl-2,4-di-O-benzyl-D-glucopyranose (39)

/BOJA BD2078 CDC13 100.6 MHz



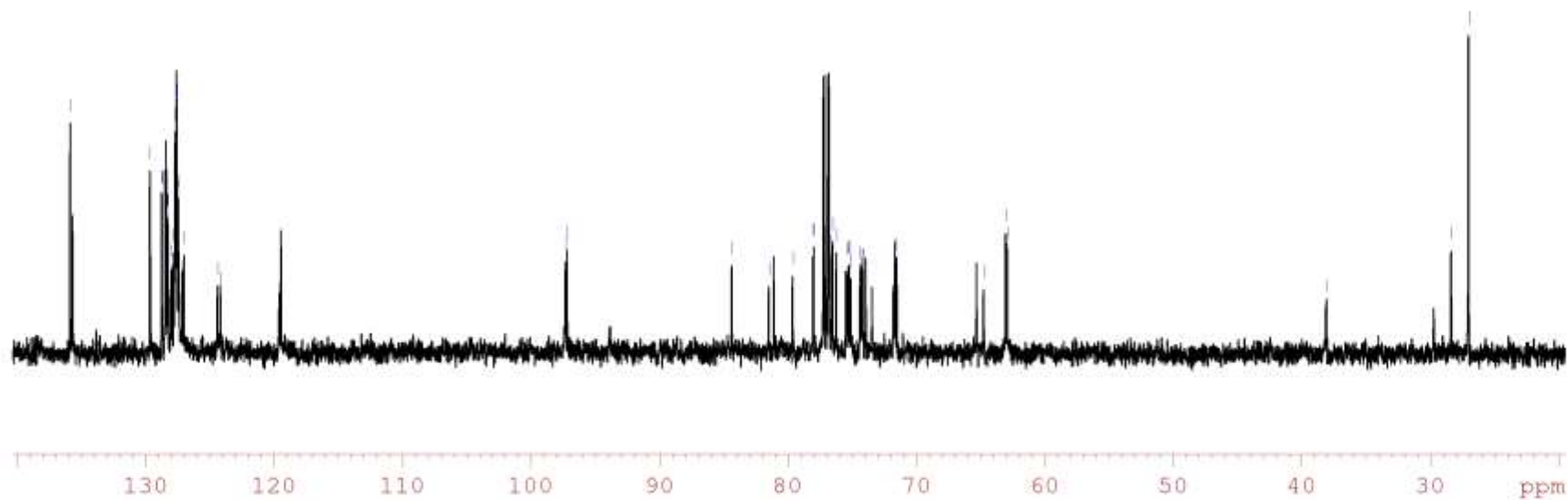
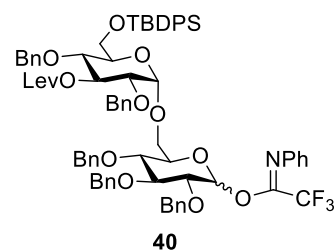
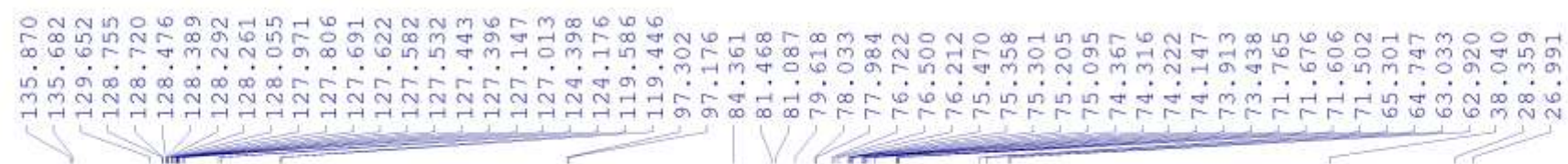
O-(2,4-di-O-benzyl-6-O-*tert*-butyldiphenylsilyl-3-O-levulinoyl- α -glucopyranosyl-(1 $\rightarrow$ 6)-3-O-acetyl-2,4-di-O-benzyl-D-glucopyranosyl) N-lphenyltrifluoroacetimidate (40)

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/BOJA BD2052 CDC13 600 MHz
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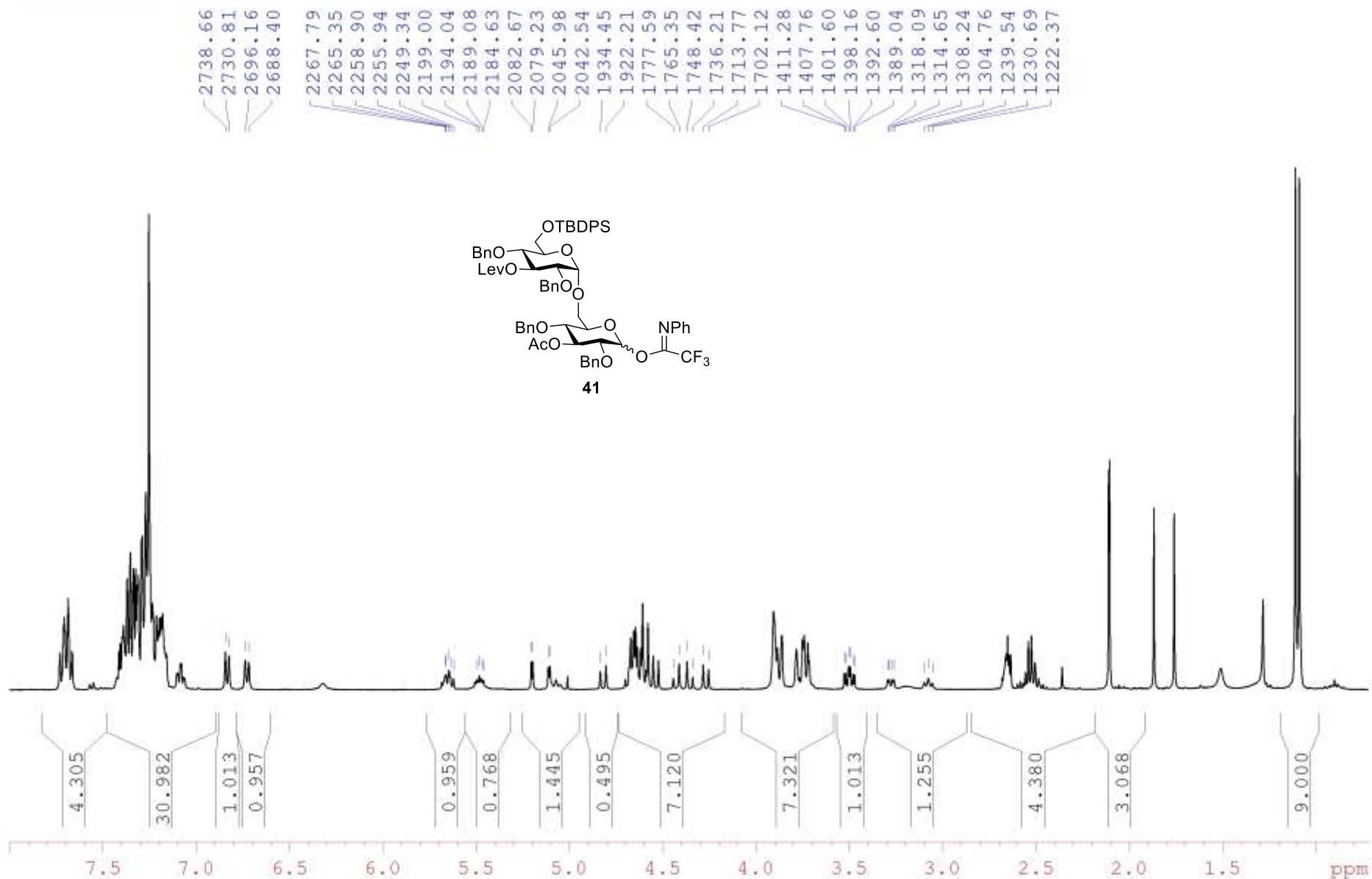
O-(2,4-di-O-benzyl-6-O-*tert*-butyldiphenylsilyl-3-O-levulinoyl- α -glucopyranosyl-(1 $\rightarrow$ 6)-3-O-acetyl-2,4-di-O-benzyl-D-glucopyranosyl) N-phenyltrifluoroacetimide (40)

/BOJA BD2052 CDCl₃ 150.9 MHz

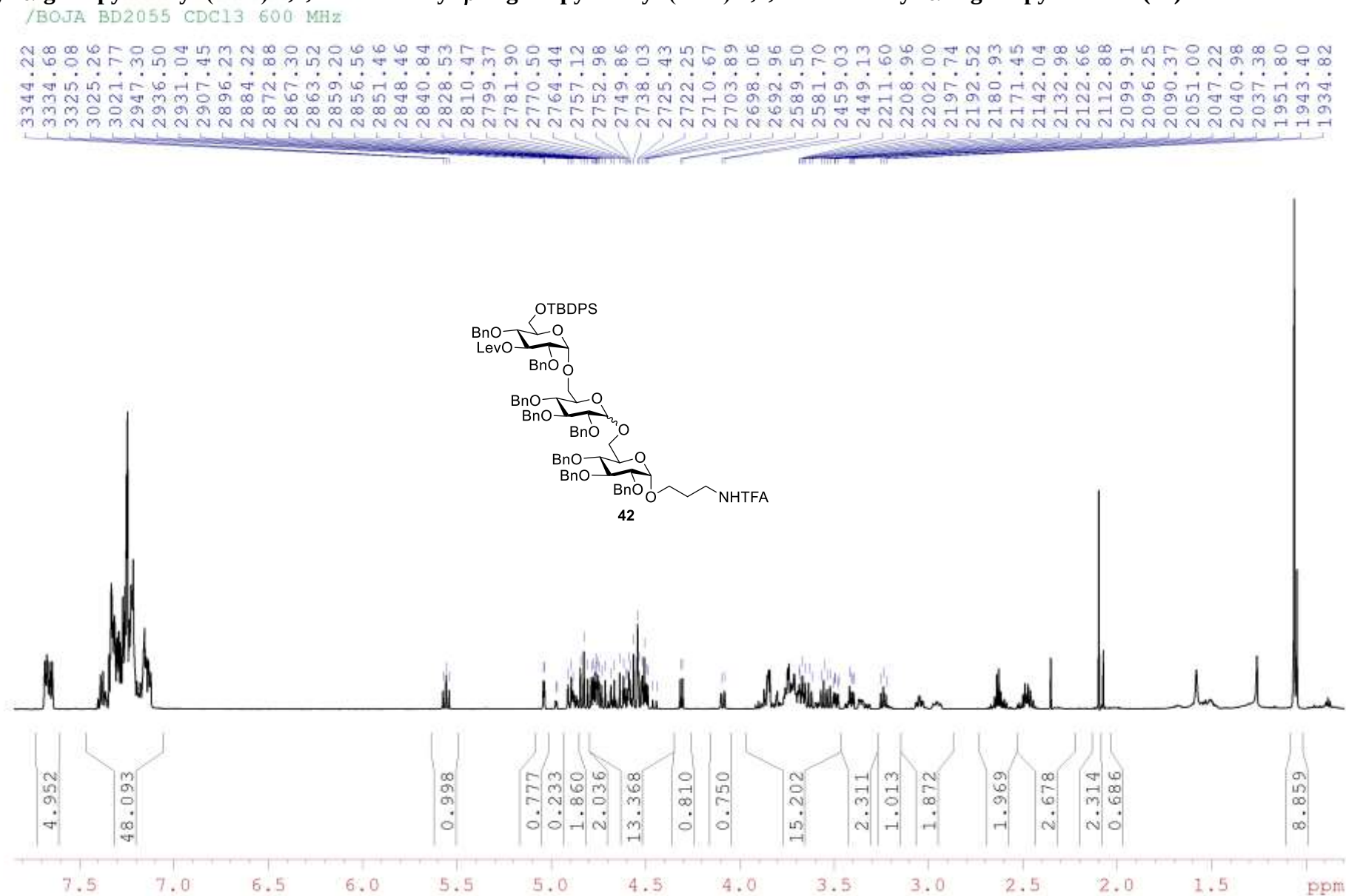


O-(2,4-di-O-benzyl-6-O-*tert*-butyldiphenylsilyl-3-O-levulinoyl- α -glucopyranosyl-(1 $\rightarrow$ 6)-3-O-acetyl-2,4-di-O-benzyl-D-glucopyranosyl) N-phenyltrifluoroacetimide (41)

/BOJA BD2197 CDCl₃ 400 MHz

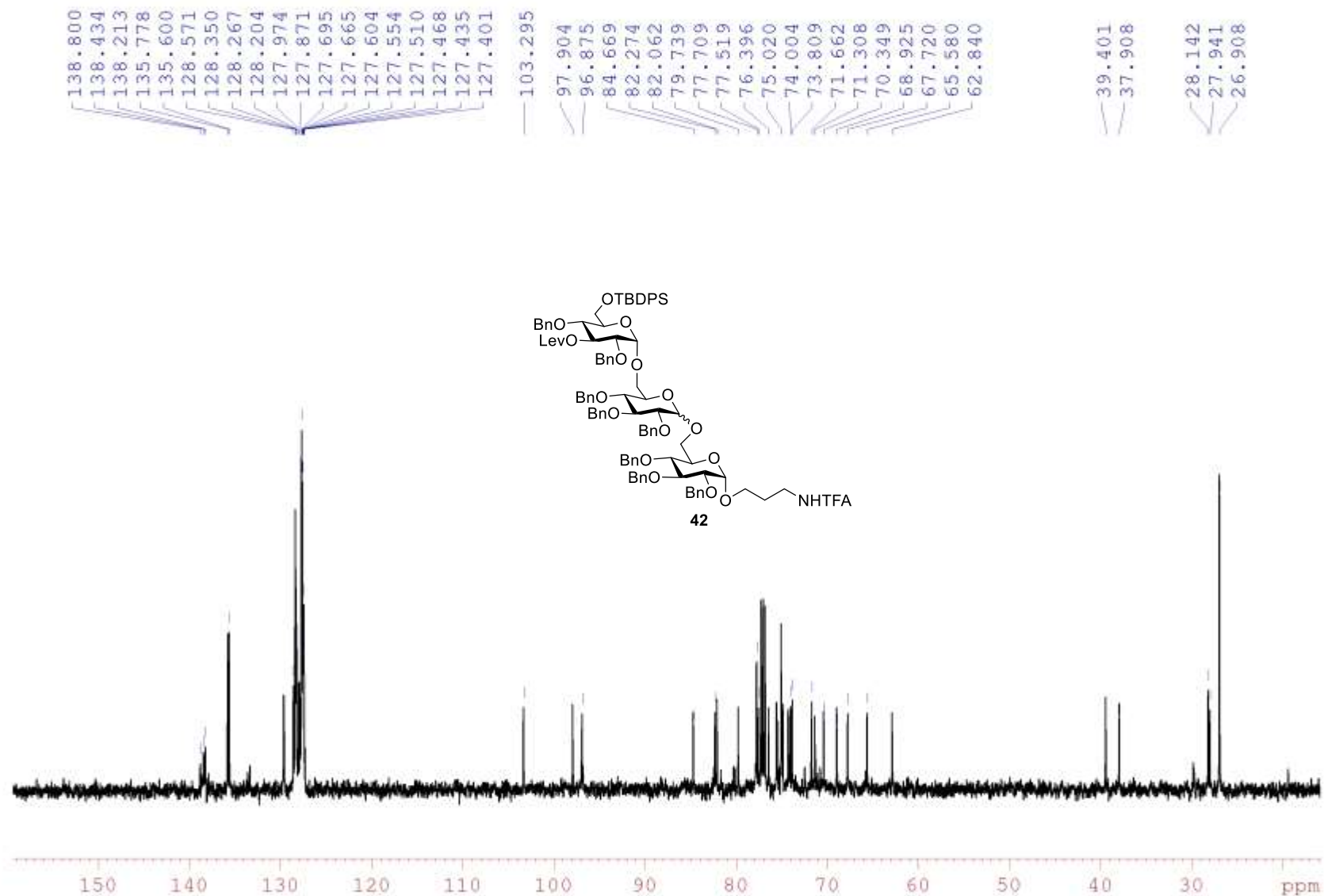


Mixture of 3-trifluoroacetamidopropyl 2,4-di-O-benzyl-6-O-*tert*-butyldiphenylsilyl-3-O-levulinoyl- α -glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl- α -D-glucopyranoside and 3-trifluoroacetamidopropyl 2,4-di-O-benzyl-6-O-*tert*-butyldiphenylsilyl-3-O-levulinoyl- α -glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl- β -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl- α -D-glucopyranoside (42)

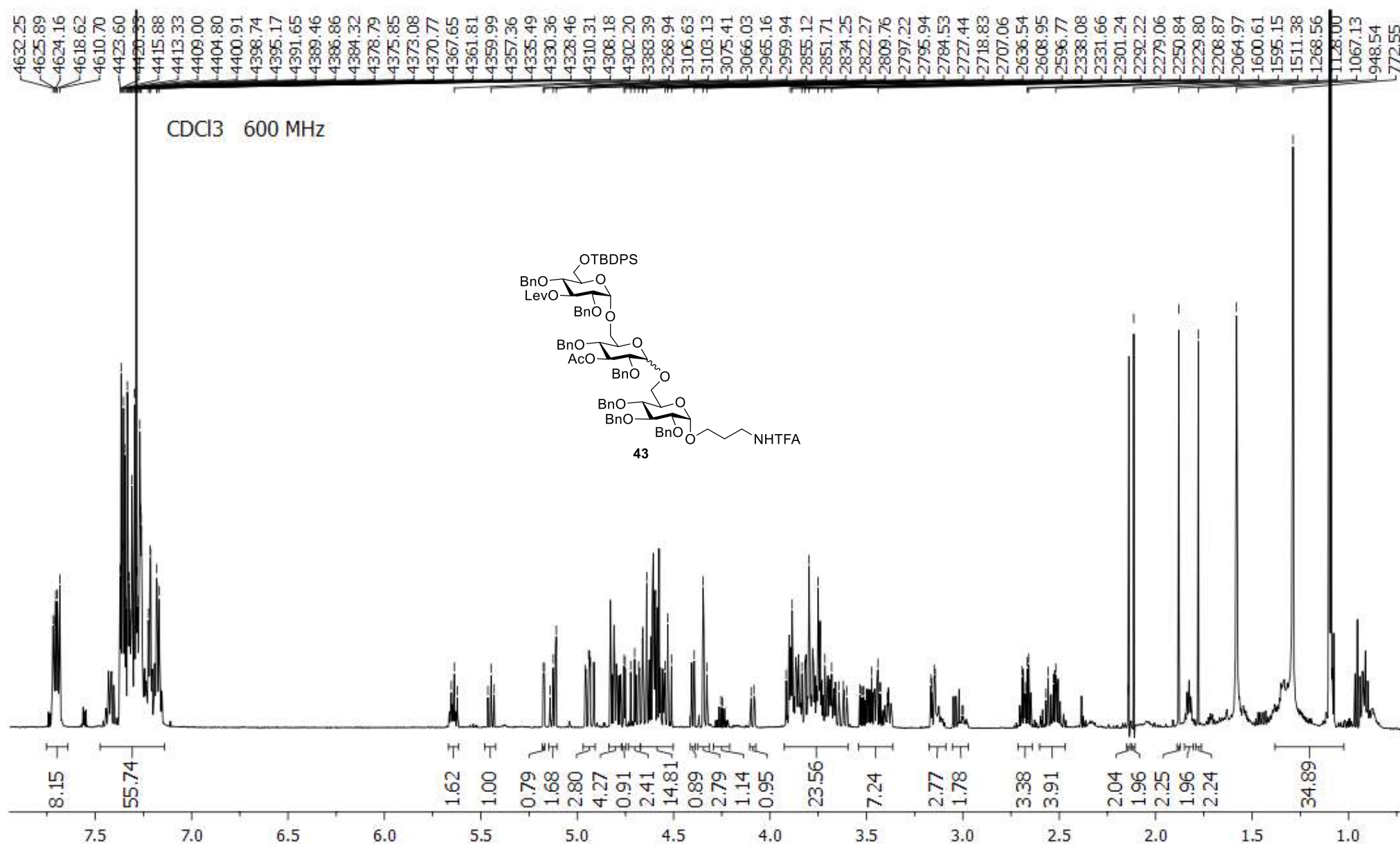


Mixture of 3-trifluoroacetamidopropyl 2,4-di-O-benzyl-6-O-*tert*-butyldiphenylsilyl-3-O-levulinoyl- α -glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl- α -D-glucopyranoside and 3-trifluoroacetamidopropyl 2,4-di-O-benzyl-6-O-*tert*-butyldiphenylsilyl-3-O-levulinoyl- α -glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl- β -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl- α -D-glucopyranoside (42)

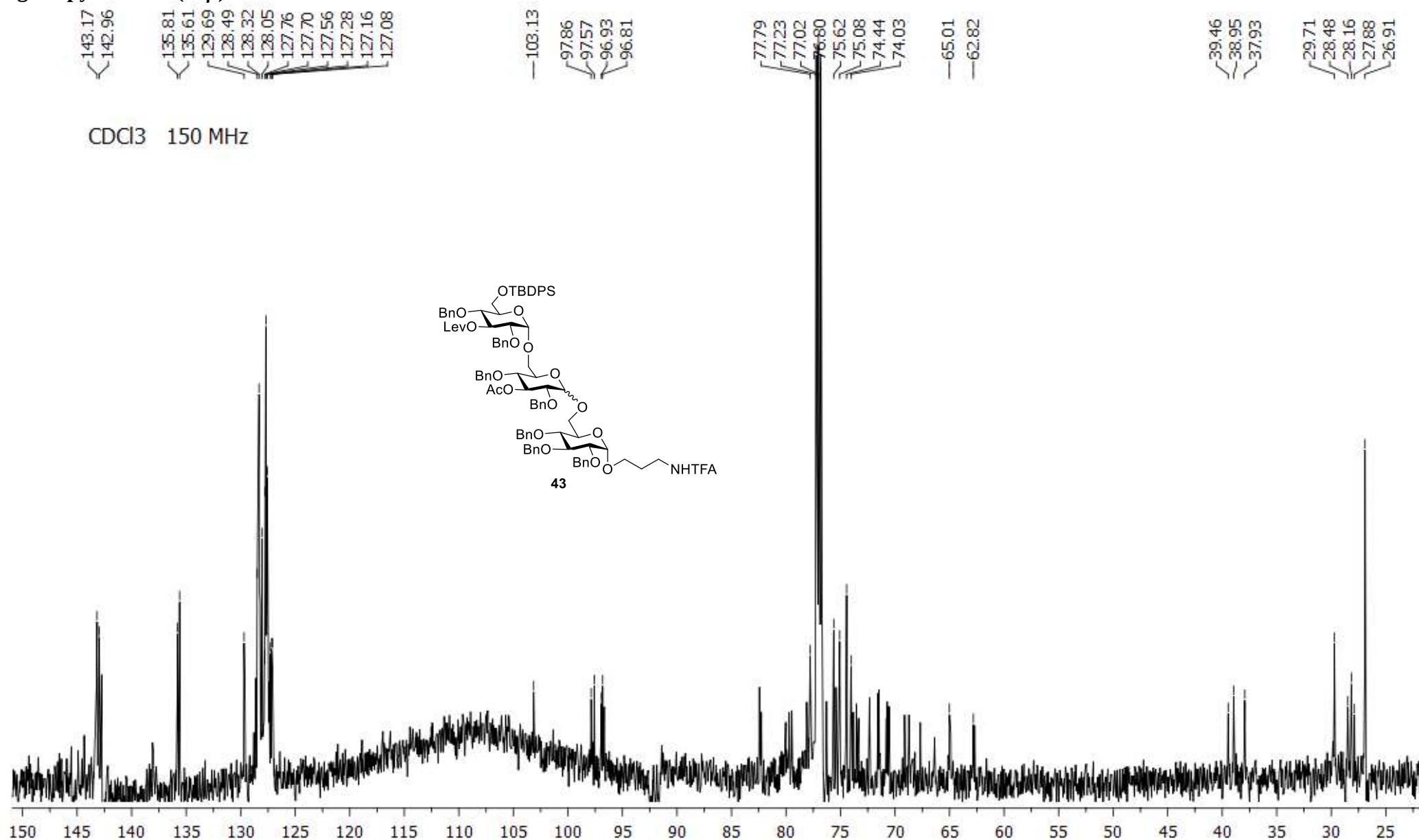
/BOJA BD2055 CDC13 150.9 MHz



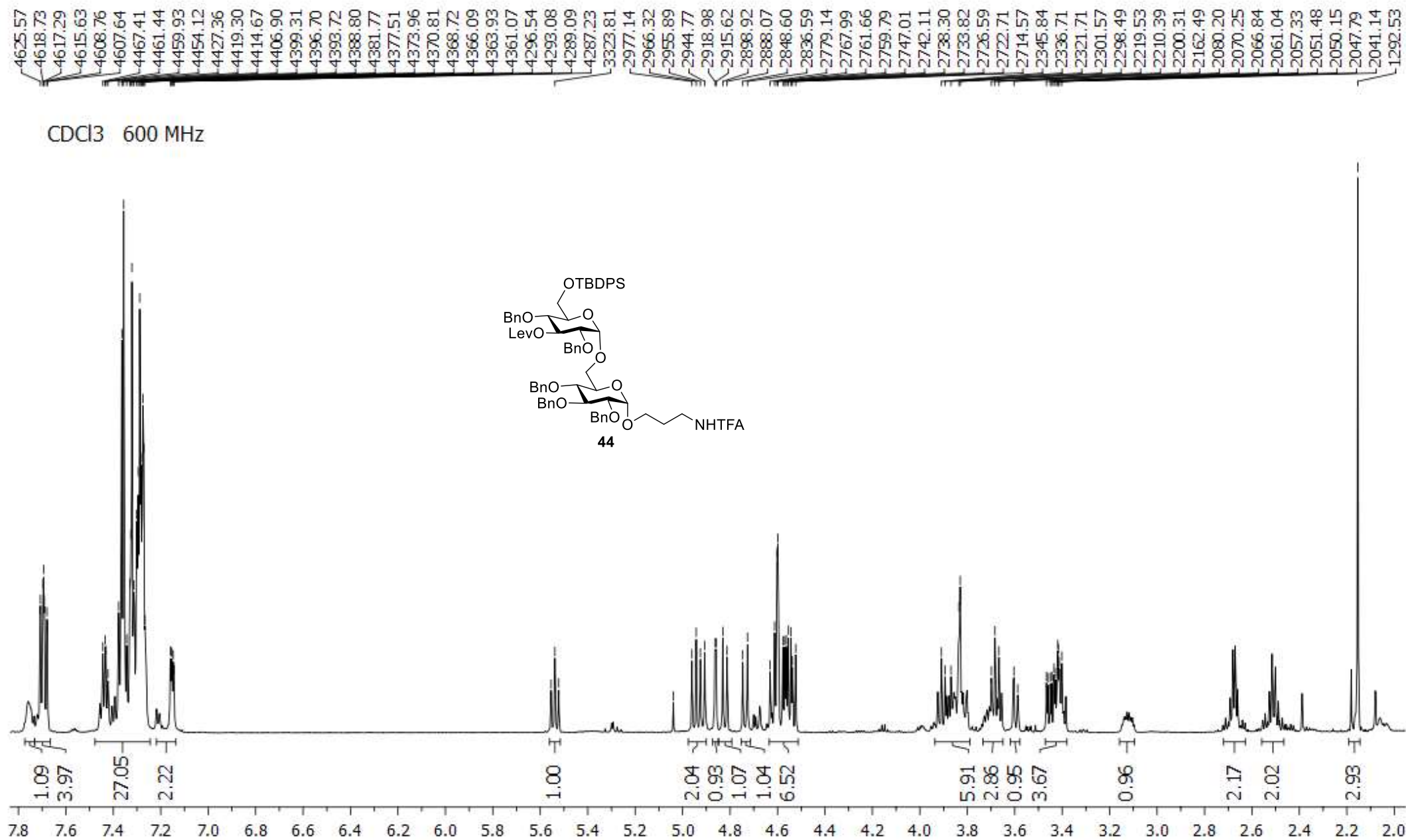
Mixture of 3-Trifluoroacetamidopropyl 2,4-di-O-benzyl-6-O-*tert*-butyldiphenylsilyl-3-O-levulinoyl- α -glucopyranosyl-(1 $\rightarrow$ 6)-3-O-acetyl-2,4-di-O-benzyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl- α -D-glucopyranoside (43 α) and 3-trifluoroacetamidopropyl 2,4-di-O-benzyl-6-O-*tert*-butyldiphenylsilyl-3-O-levulinoyl- α -glucopyranosyl-(1 $\rightarrow$ 6)-3-O-acetyl-2,4-di-O-benzyl- β -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl- α -D-glucopyranoside (43 β)



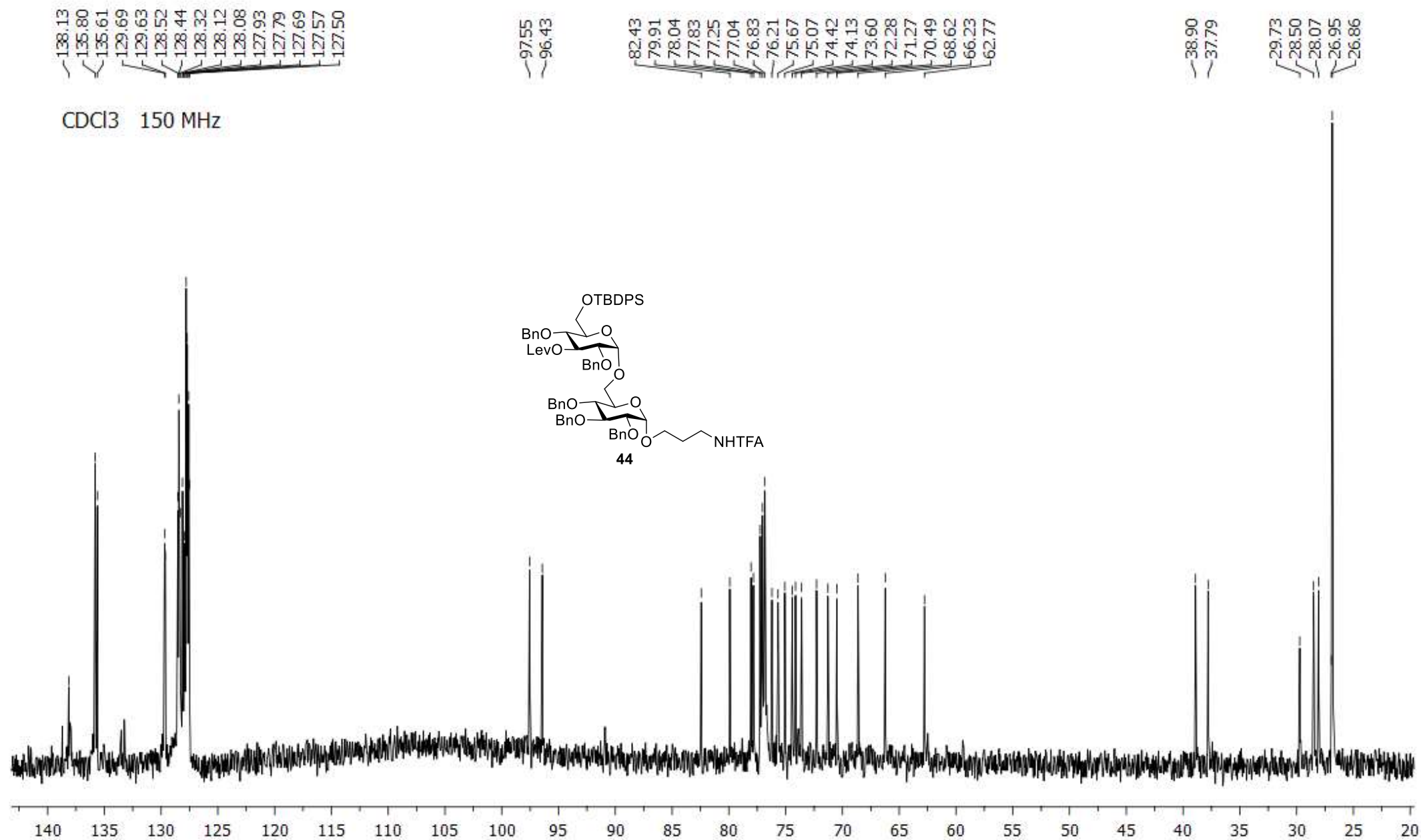
Mixture of 3-Trifluoroacetamidopropyl 2,4-di-O-benzyl-6-O-*tert*-butyldiphenylsilyl-3-O-levulinoyl- α -glucopyranosyl-(1 $\rightarrow$ 6)-3-O-acetyl-2,4-di-O-benzyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl- α -D-glucopyranoside (43 α) and 3-trifluoroacetamidopropyl 2,4-di-O-benzyl-6-O-*tert*-butyldiphenylsilyl-3-O-levulinoyl- α -glucopyranosyl-(1 $\rightarrow$ 6)-3-O-acetyl-2,4-di-O-benzyl- β -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl- α -D-glucopyranoside (43 β)



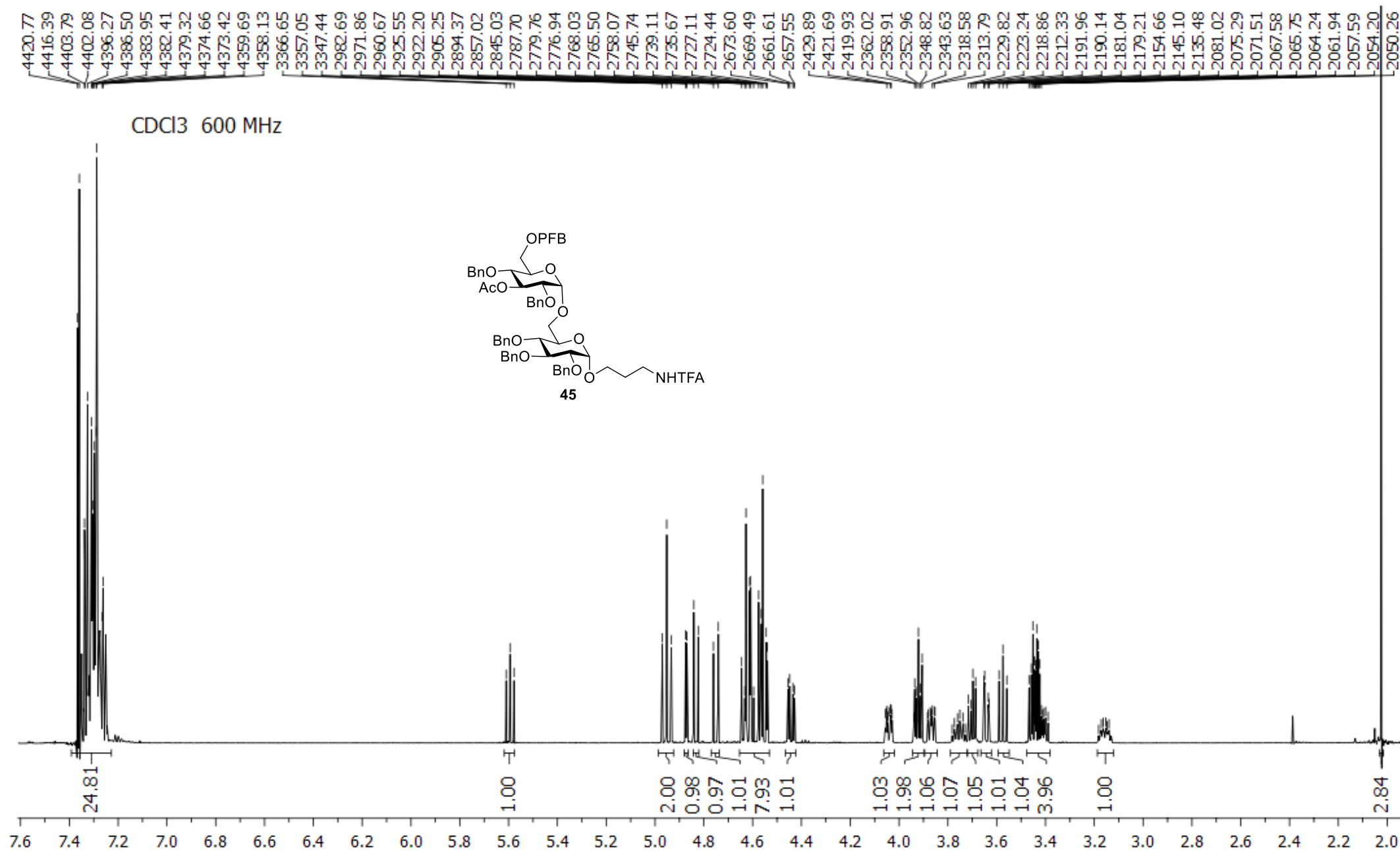
3-Trifluoroacetamidopropyl 2,4-di-O-benzyl-6-O-*tert*-butyldiphenylsilyl-3-O-levulinoyl- α -glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl- α -D-glucopyranoside (44)



3-Trifluoroacetamidopropyl 2,4-di-O-benzyl-6-O-*tert*-butyldiphenylsilyl-3-O-levulinoyl- α -glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl- α -D-glucopyranoside (44)



3-Trifluoroacetamidopropyl 3-O-acetyl-2,4-di-O-benzyl-6-O-pentafluorobenzoyl- α -glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl- α -D-glucopyranoside (45)



3-Trifluoroacetamidopropyl 3-O-acetyl-2,4-di-O-benzyl-6-O-pentafluorobenzoyl- α -glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl- α -D-glucopyranoside (45)

138.69
137.86
128.47
128.39
128.07
127.88
127.71
127.58
127.44

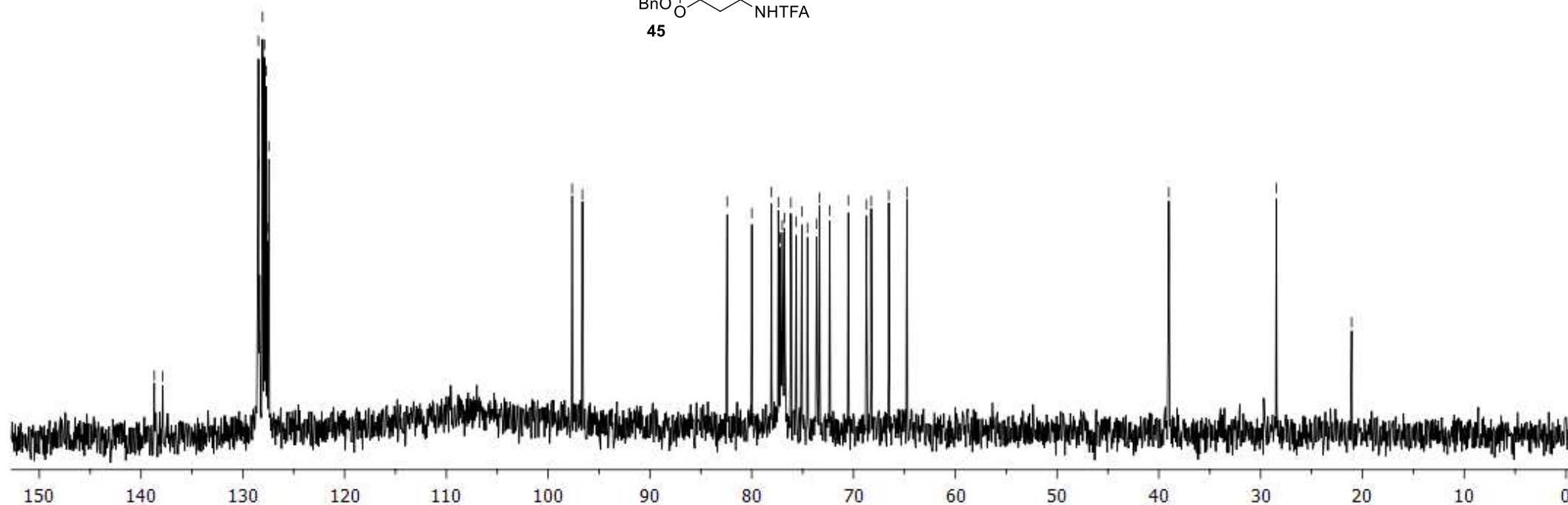
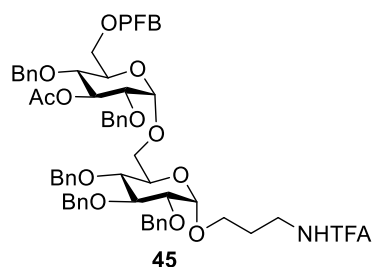
97.64
96.63
82.41
79.99
78.06
77.39
77.21
77.00
76.79
76.16
75.62
75.07
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73.62
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70.51
68.72
68.25
66.53
64.75

39.02

28.46

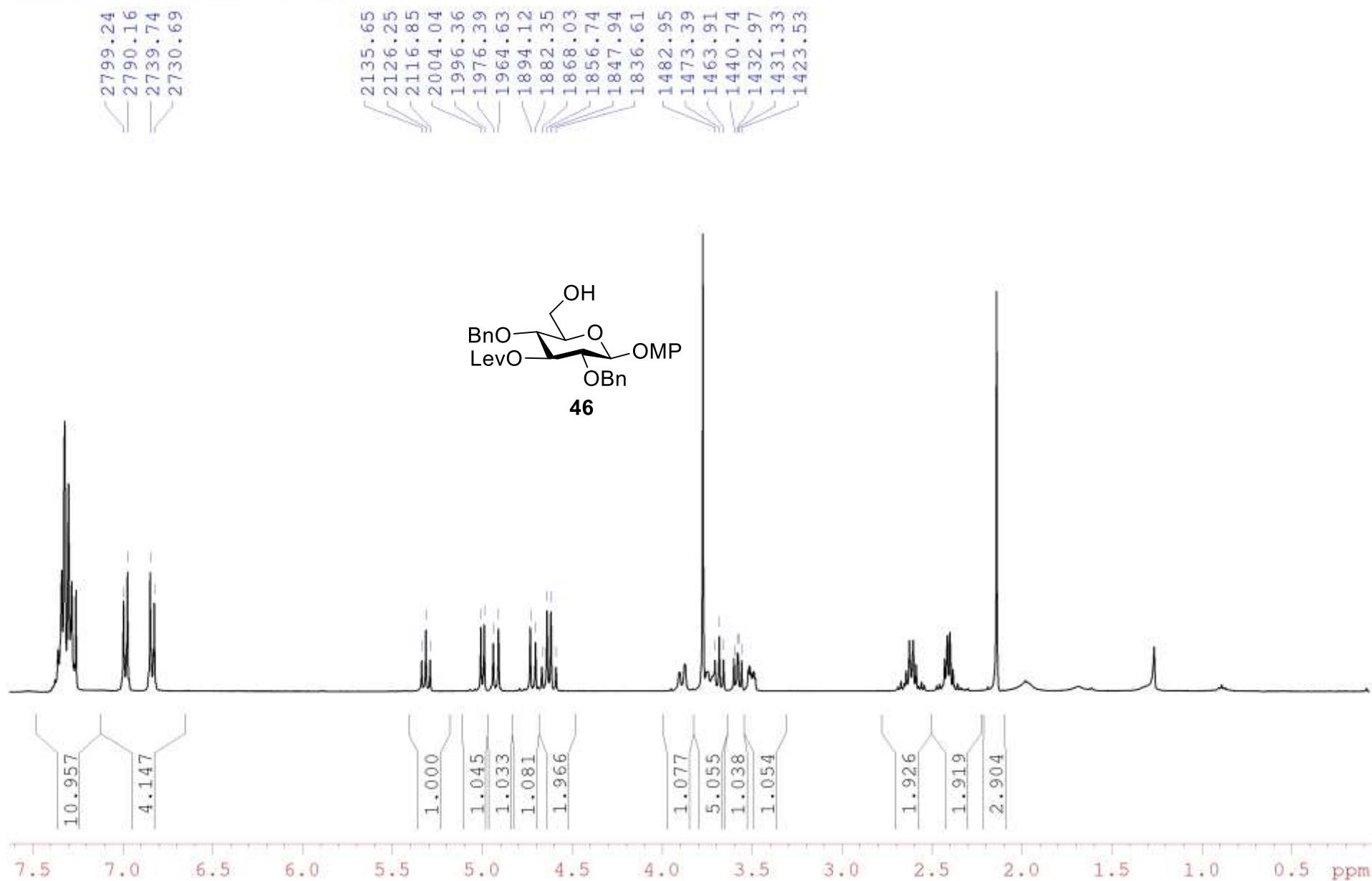
21.06

CDCl₃ 150 MHz



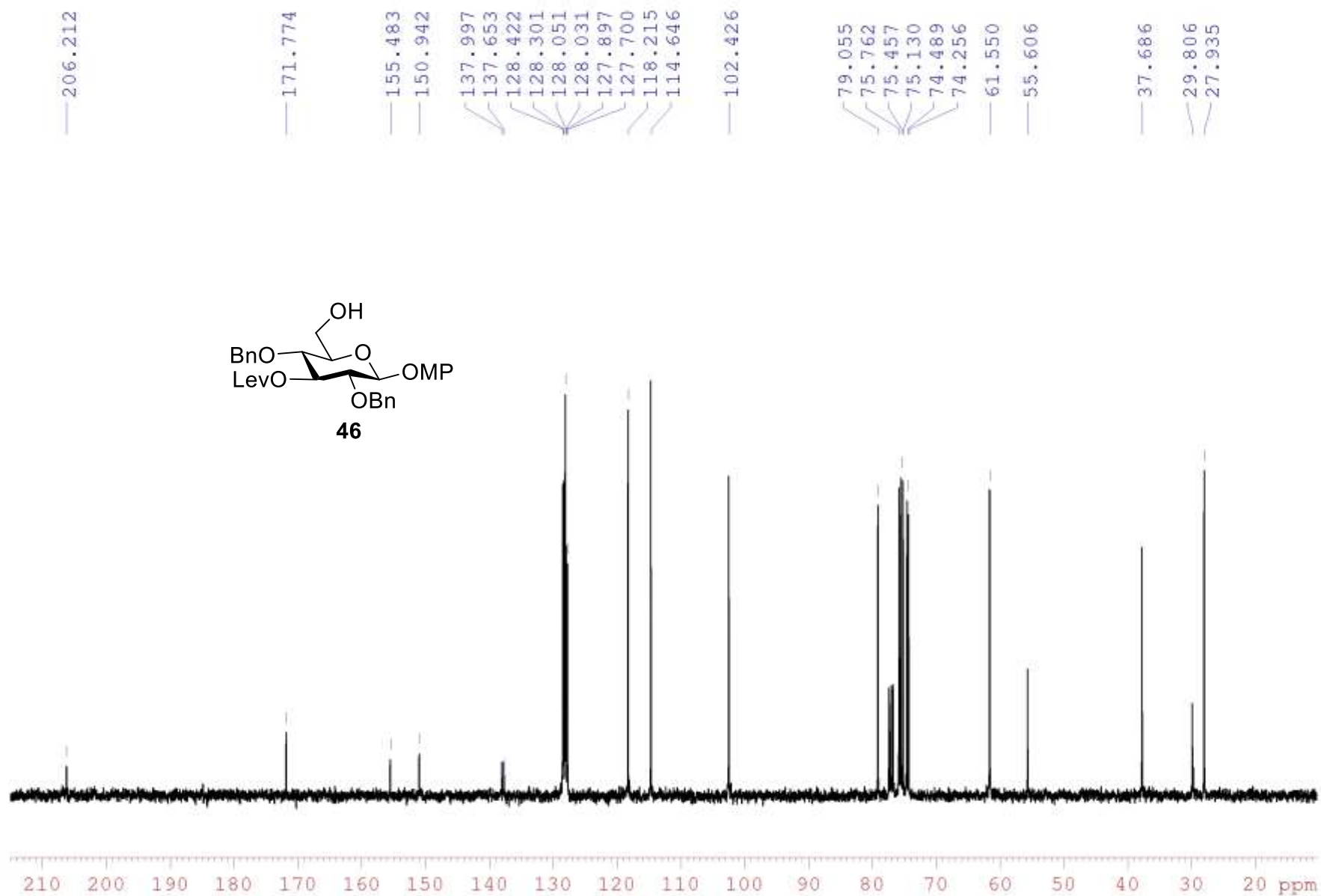
***p*-Methoxyphenyl 2,4-di-*O*-benzyl-3-*O*-levulinoyl- β -D-glucopyranoside (46)**

/BOJA BD2196 CDC13, 400 MHz



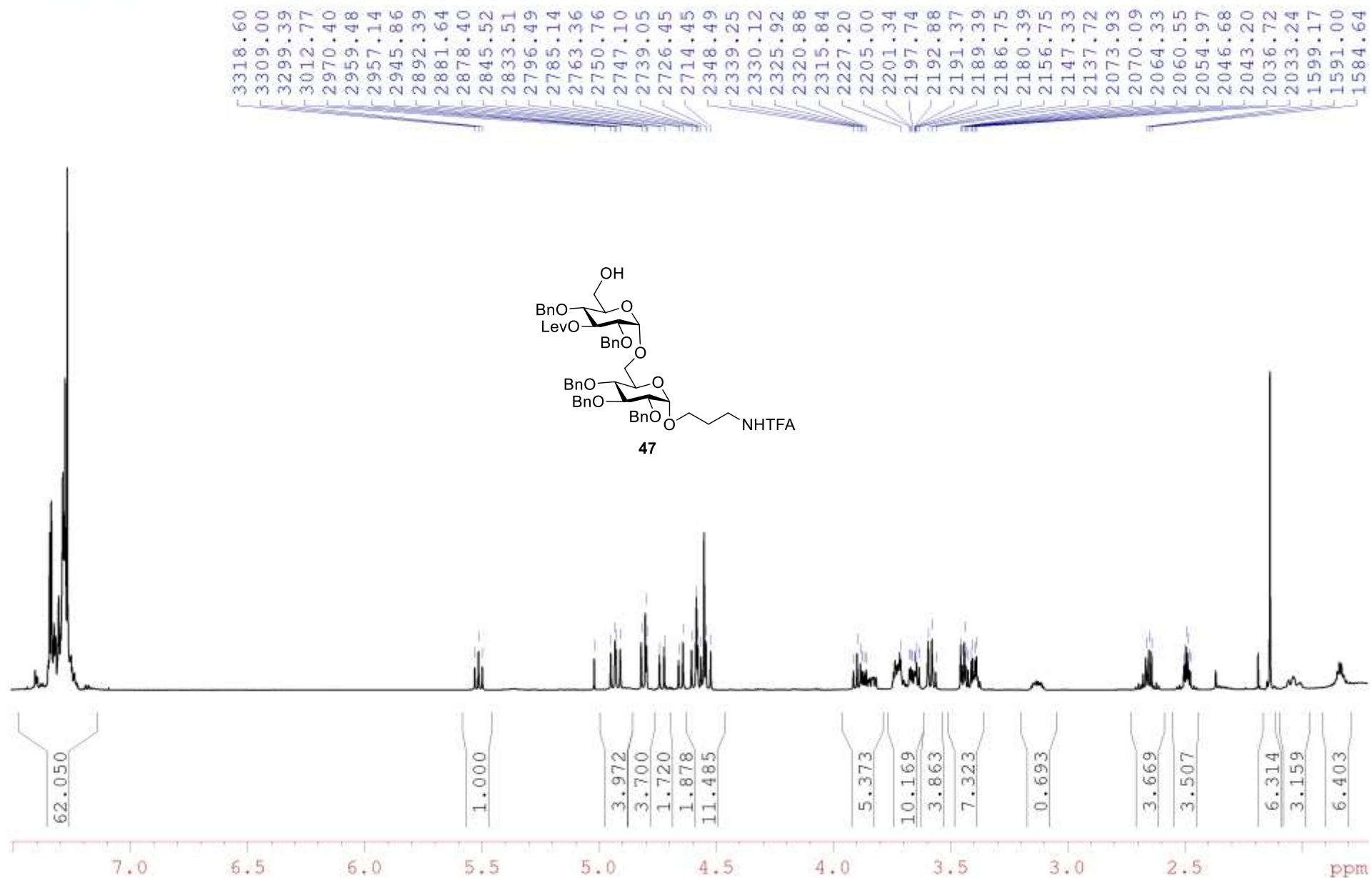
***p*-Methoxyphenyl 2,4-di-*O*-benzyl-3-*O*-levulinoyl- β -D-glucopyranoside (46)**

/BOJA BD2196 CDC13 100.6 MHz



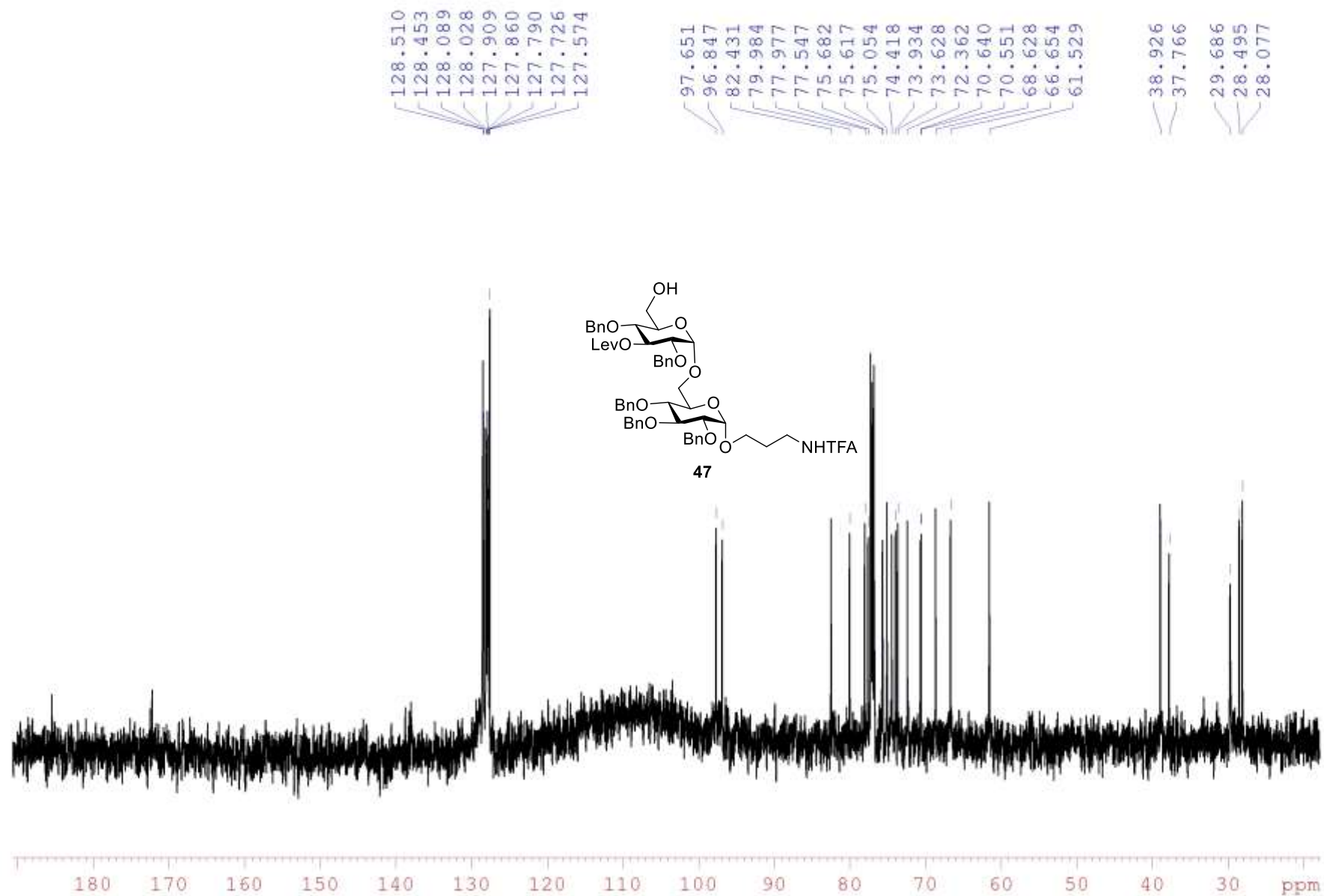
3-Trifluoroacetamidopropyl 2,4-di-O-benzyl-3-O-levulinoyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl- α -D-glucopyranoside (47)

/BOJA BD1099 CDCl₃ 600 MHz



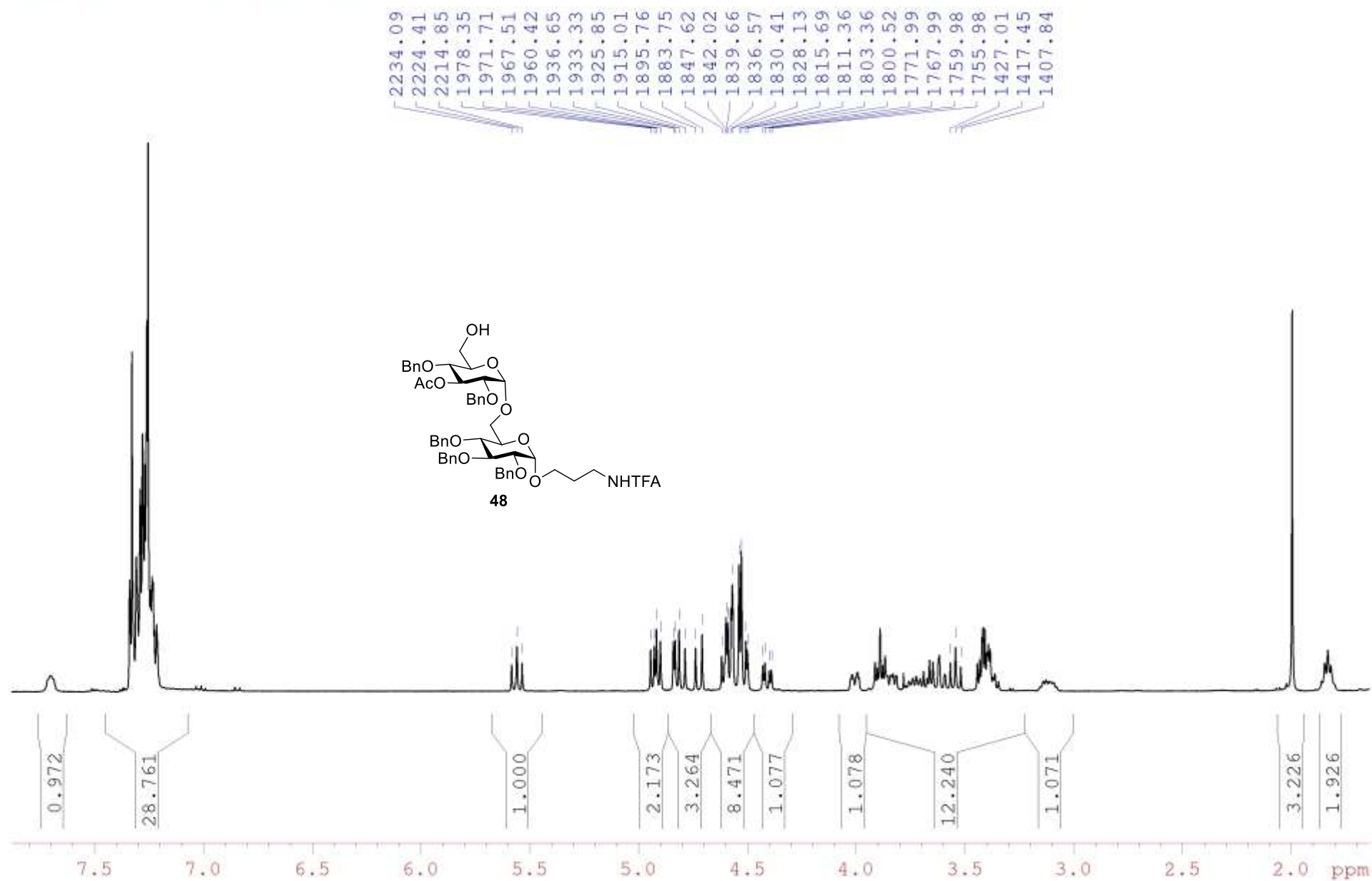
3-Trifluoroacetamidopropyl 2,4-di-O-benzyl-3-O-levulinoyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl- α -D-glucopyranoside (47)

/BOJA BD1099 CDCl₃ 150.9 MHz



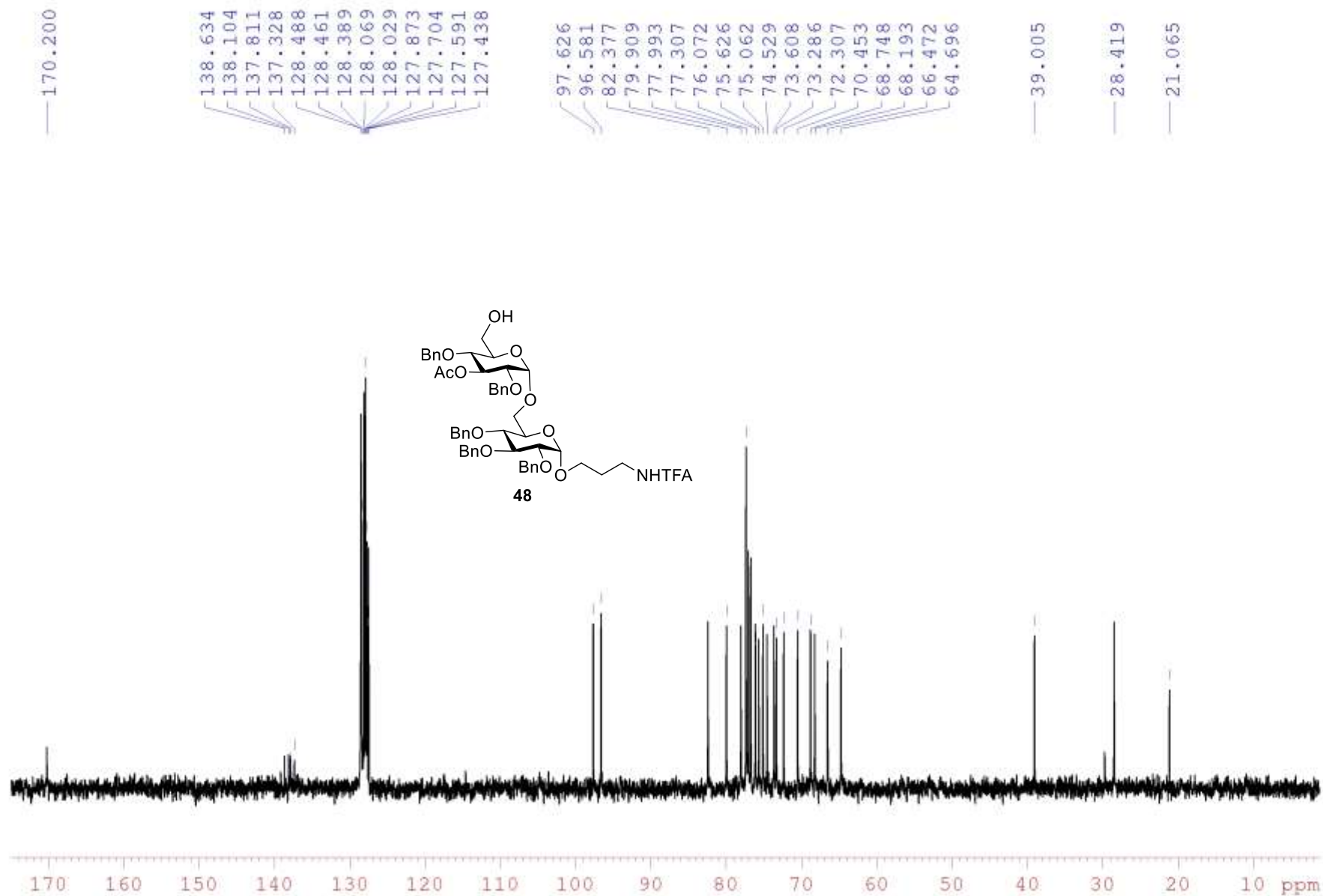
3-Trifluoroacetamidopropyl 3-O-acetyl-2,4-di-O-benzyl- α -glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl- α -D-glucopyranoside (48)

/BOJA BD21223p CDC13, 400 MHz



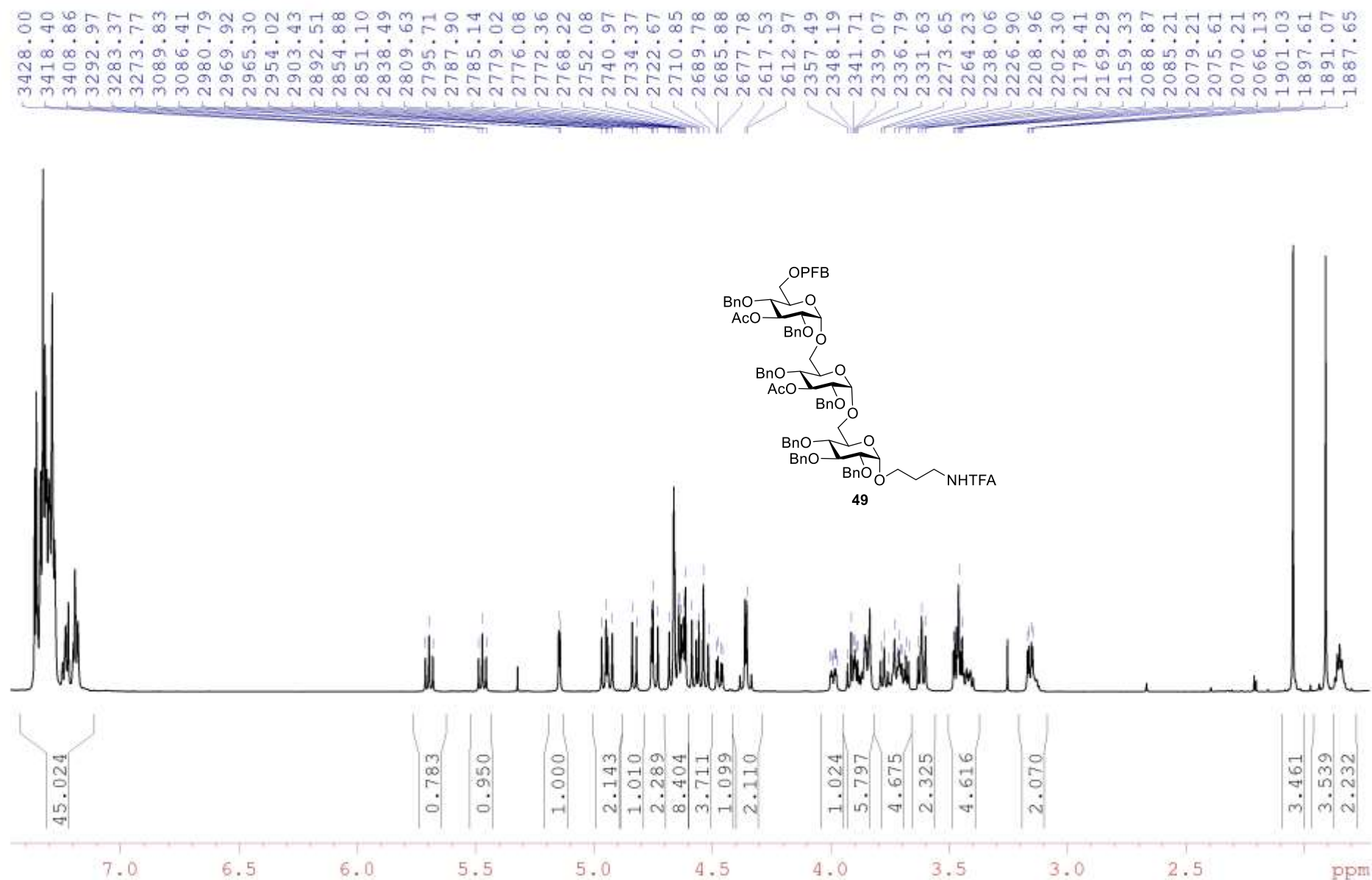
3-Trifluoroacetamidopropyl 3-O-acetyl-2,4-di-O-benzyl- α -glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl- α -D-glucopyranoside (48)

/BOJA BD21223p CDC13, 100.6 MHz



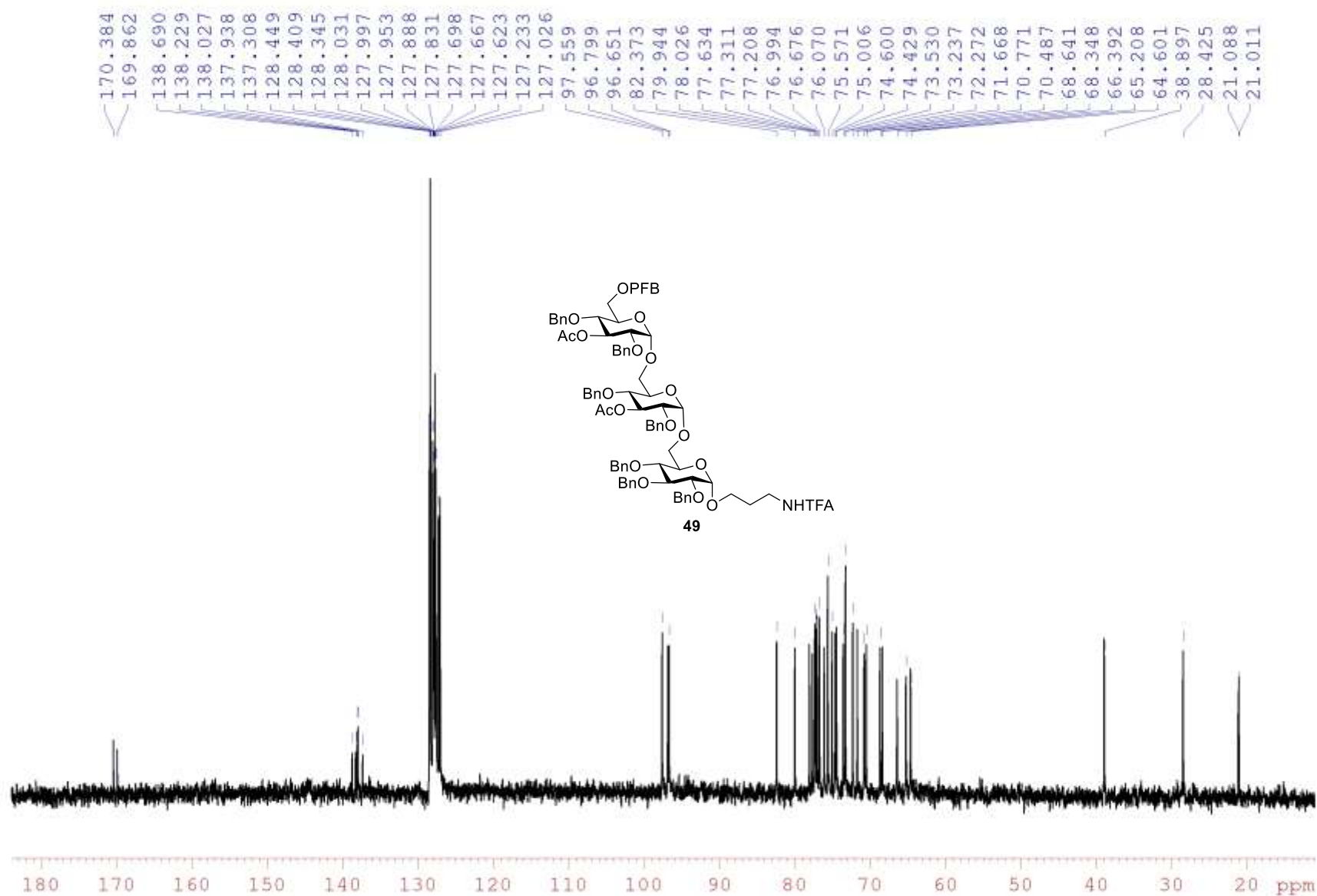
O-3-Trifluoroacetaminopropyl 3-O-acetyl-2,4-di-O-benzyl-6-O-pentafluorobenzoyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-3-O-acetyl-2,4-di-O-benzyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl- α -D-glucopyranoside (49)

BD2129c CDCl₃ 600 MHz



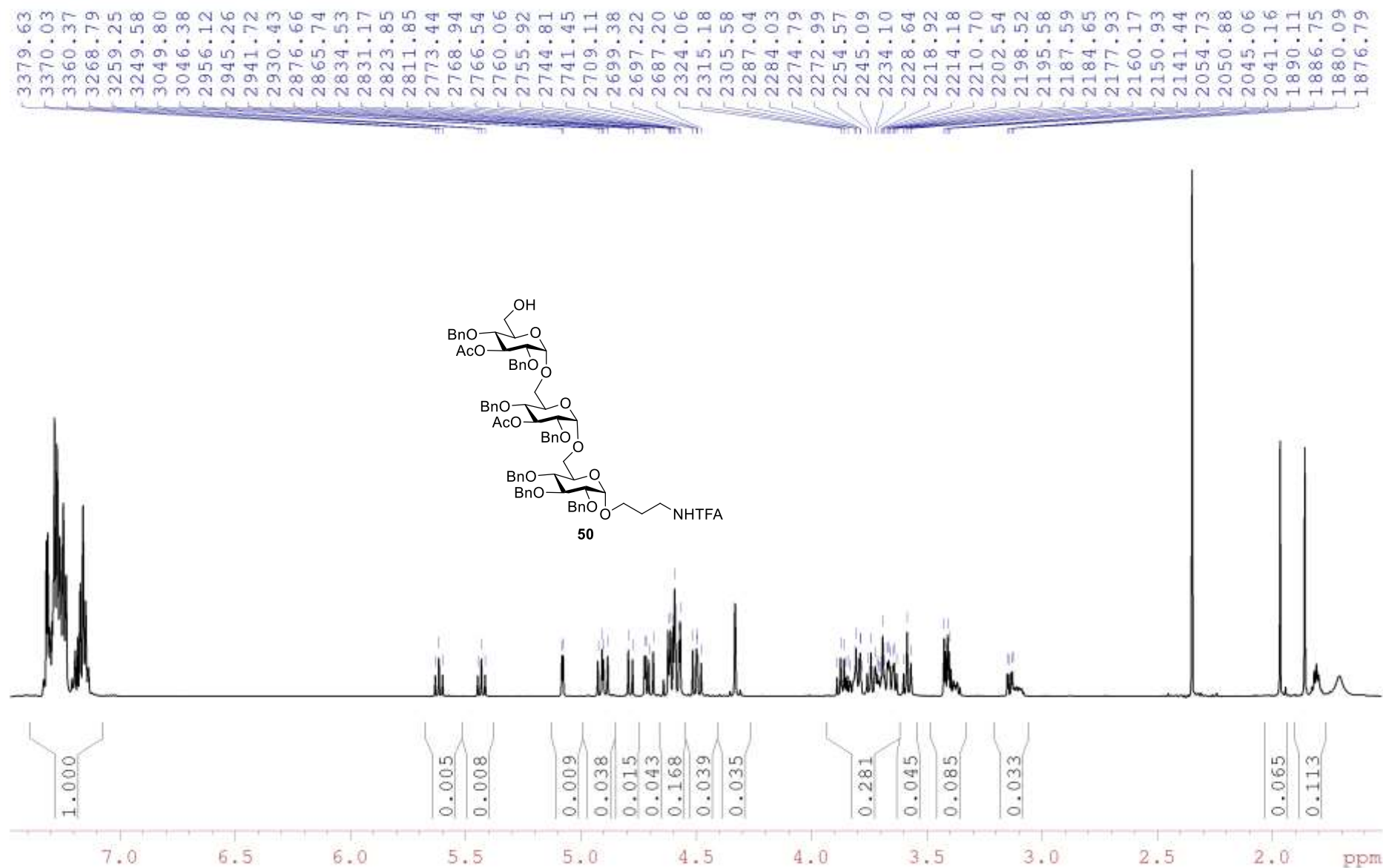
O-3-Trifluoroacetaminopropyl 3-O-acetyl-2,4-di-O-benzyl-6-O-pentafluorobenzoyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-3-O-acetyl-2,4-di-O-benzyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl- α -D-glucopyranoside (49)

/BOJA BD2129cdry CDC13 400 MHz



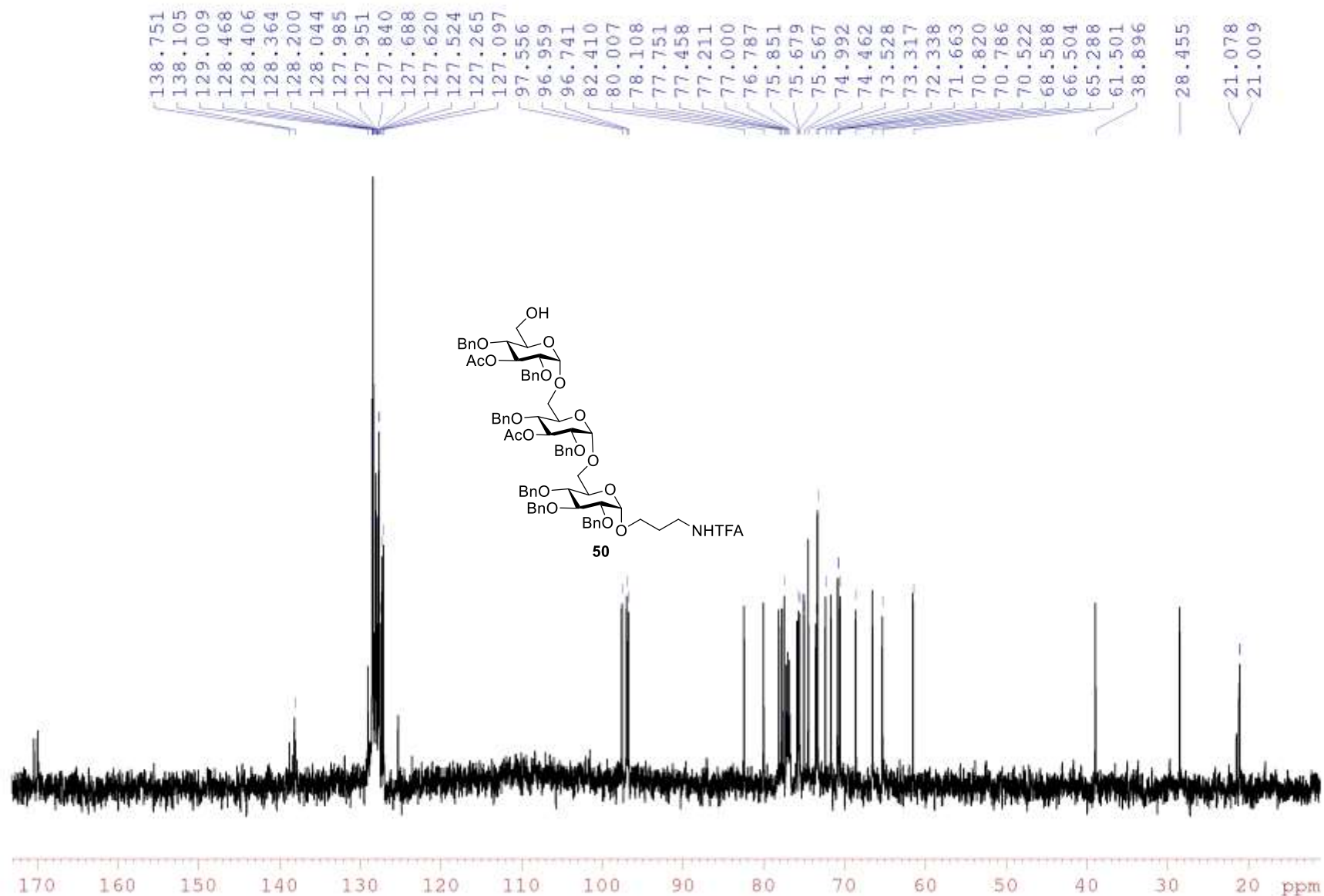
O-3-Trifluoroacetaminopropyl 3-O-acetyl-2,4-di-O-benzyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-3-O-acetyl-2,4-di-O-benzyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl- α -D-glucopyranoside (50)

/BOJA BD2133 CDCl₃ 600 MHz



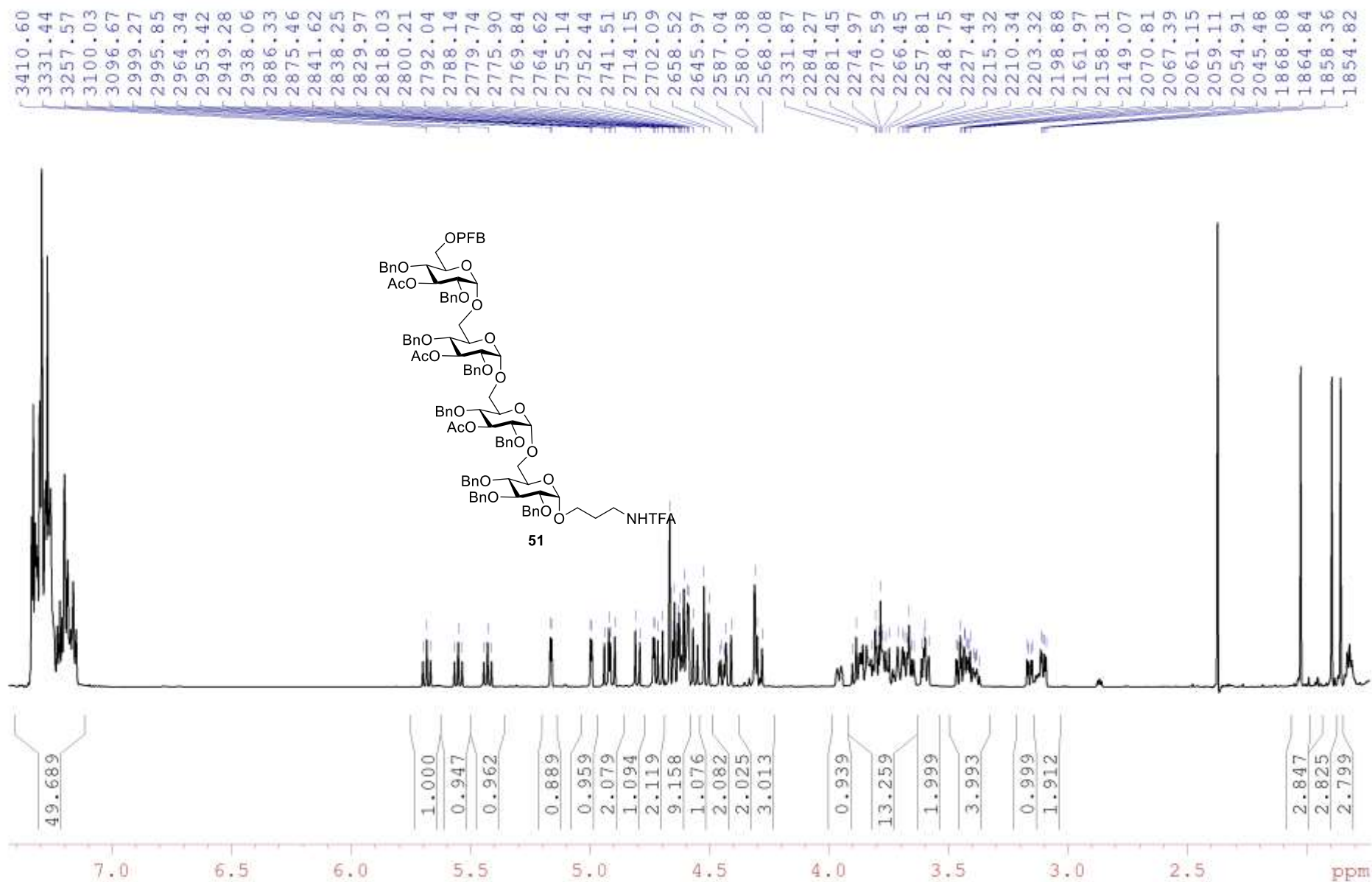
O-3-Trifluoroacetaminopropyl 3-O-acetyl-2,4-di-O-benzyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-3-O-acetyl-2,4-di-O-benzyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl- α -D-glucopyranoside (50)

/BOJA BD2133 CDCl₃ 150.9 MHz



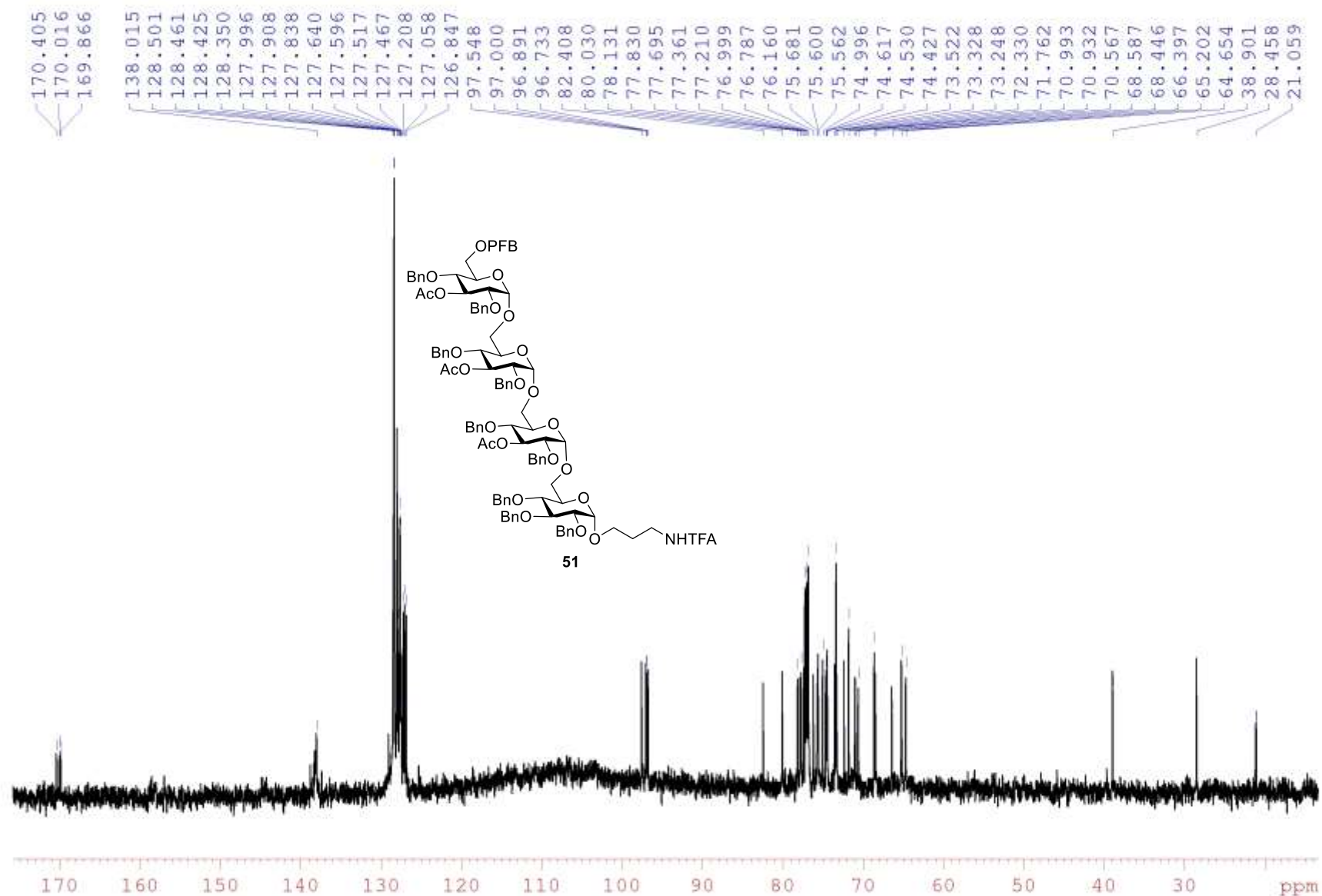
O-3-Trifluoroacetaminopropyl 3-O-acetyl-2,4-di-O-benzyl-6-O-pentafluorobenzoyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-3-O-acetyl-2,4-di-O-benzyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-3-O-acetyl-2,4-di-O-benzyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl- α -D-glucopyranoside (51)

/BOJA BD2139c CDCl₃ 600 MHz



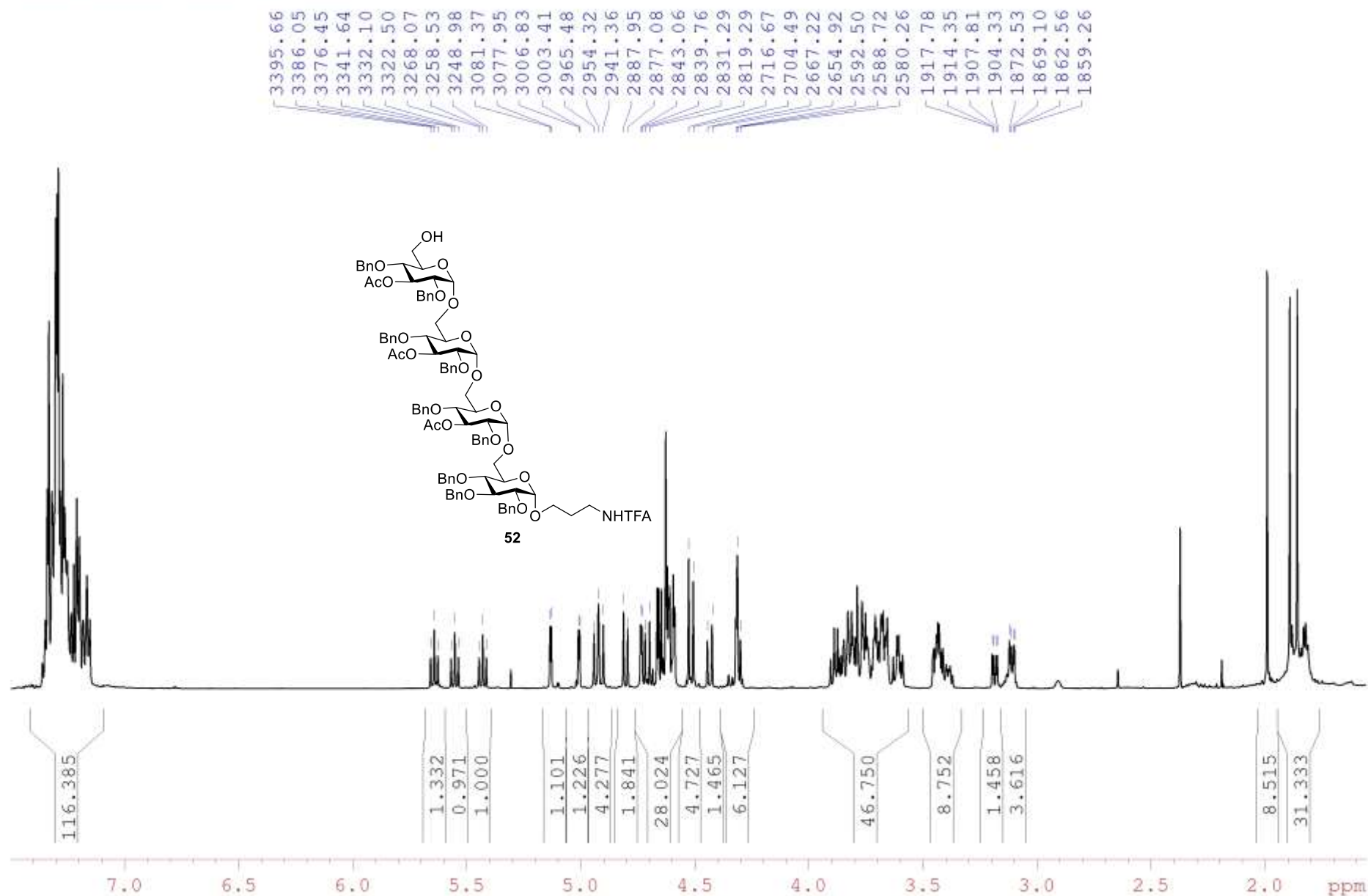
O-3-Trifluoroacetaminopropyl 3-O-acetyl-2,4-di-O-benzyl-6-O-pentafluorobenzoyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-3-O-acetyl-2,4-di-O-benzyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-3-O-acetyl-2,4-di-O-benzyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl- α -D-glucopyranoside (51)

/BOJA BD2139c CDC13 150.9 MHz



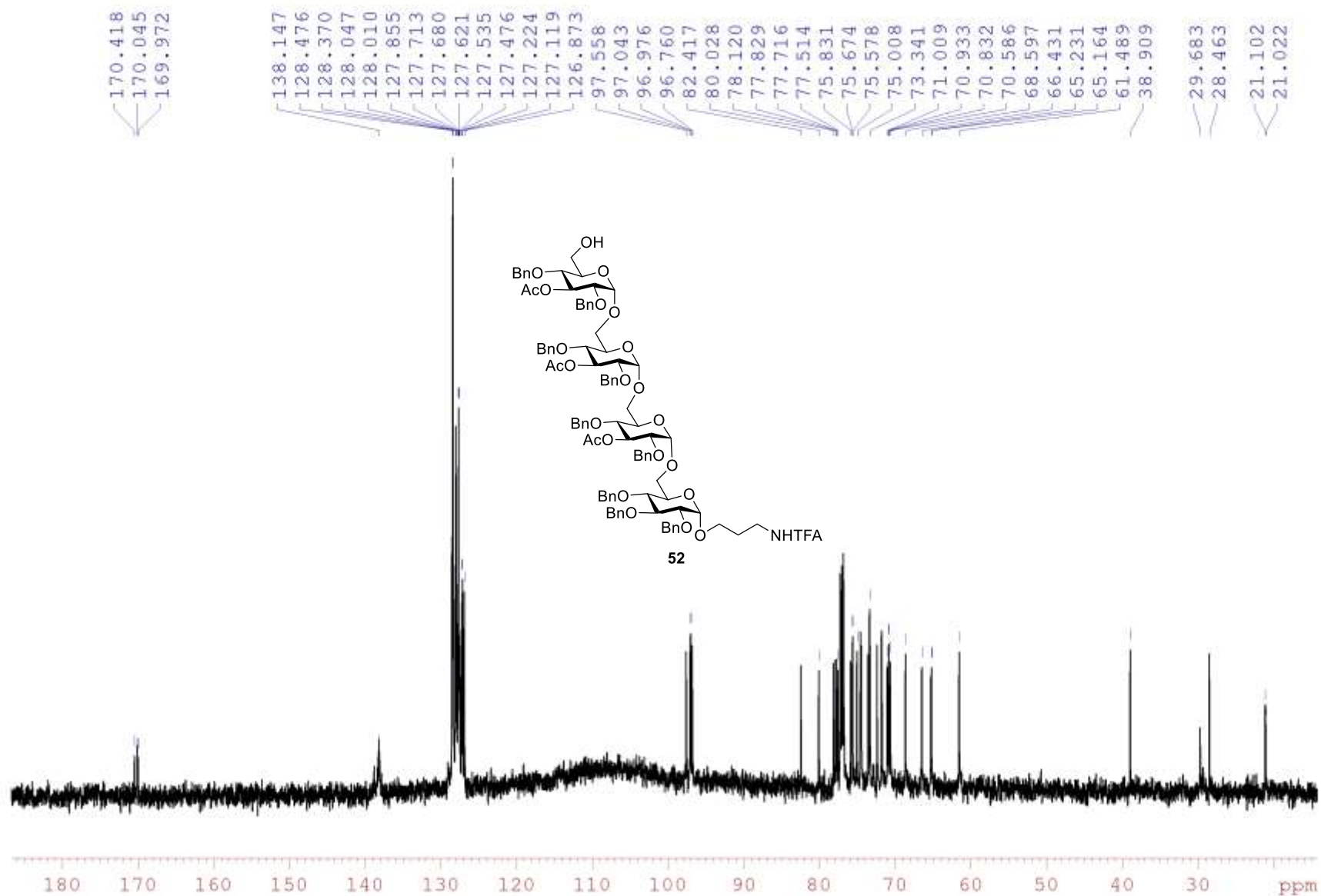
O-3-Trifluoroacetaminopropyl 3-O-acetyl-2,4-di-O-benzyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-3-O-acetyl-2,4-di-O-benzyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-3-O-acetyl-2,4-di-O-benzyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl- α -D-glucopyranoside (52)

/BOJA BD2138 CDC13 600 MHz



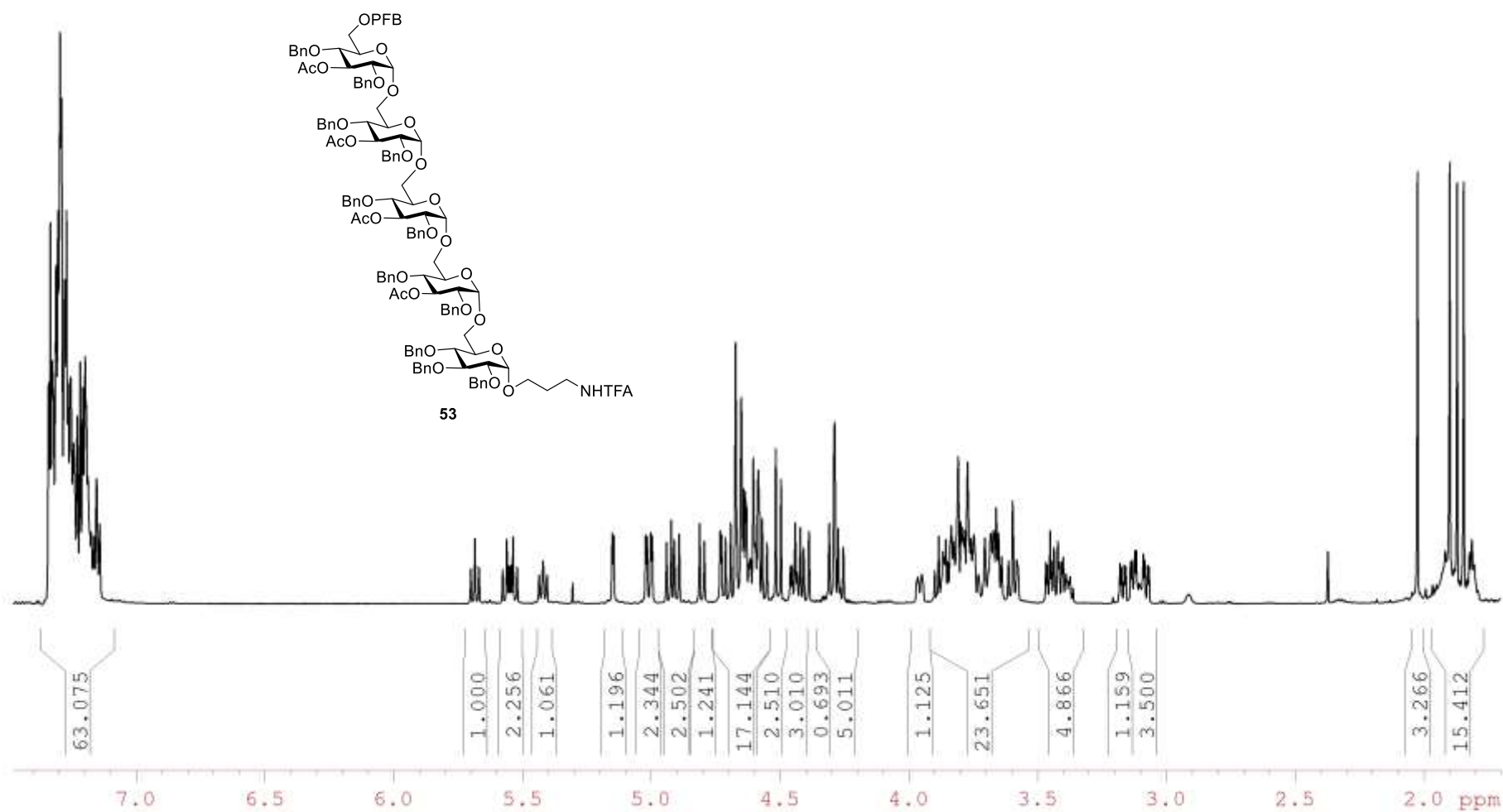
O-3-Trifluoroacetaminopropyl 3-O-acetyl-2,4-di-O-benzyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-3-O-acetyl-2,4-di-O-benzyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-3-O-acetyl-2,4-di-O-benzyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl- α -D-glucopyranoside (52)

/BOJA BD2138 CDC13 150.9 MHz



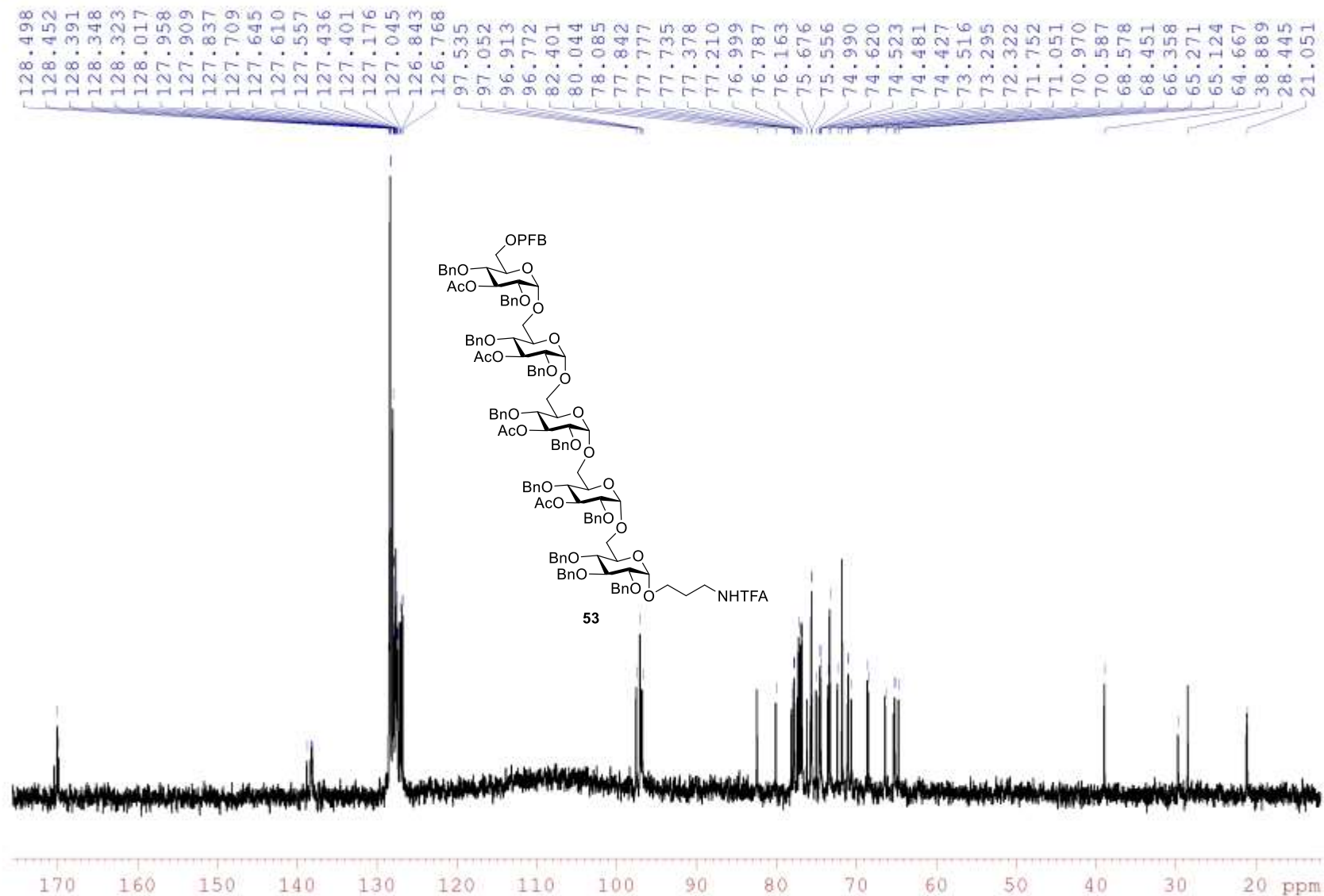
O-3-Trifluoroacetaminopropyl 3-O-acetyl-2,4-di-O-benzyl-6-O-pentafluorobenzoyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-3-O-acetyl-2,4-di-O-benzyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-3-O-acetyl-2,4-di-O-benzyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-3-O-acetyl-2,4-di-O-benzyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl- α -D-glucopyranoside (53)

/BOJA BD2143c CDC13 600 MHz



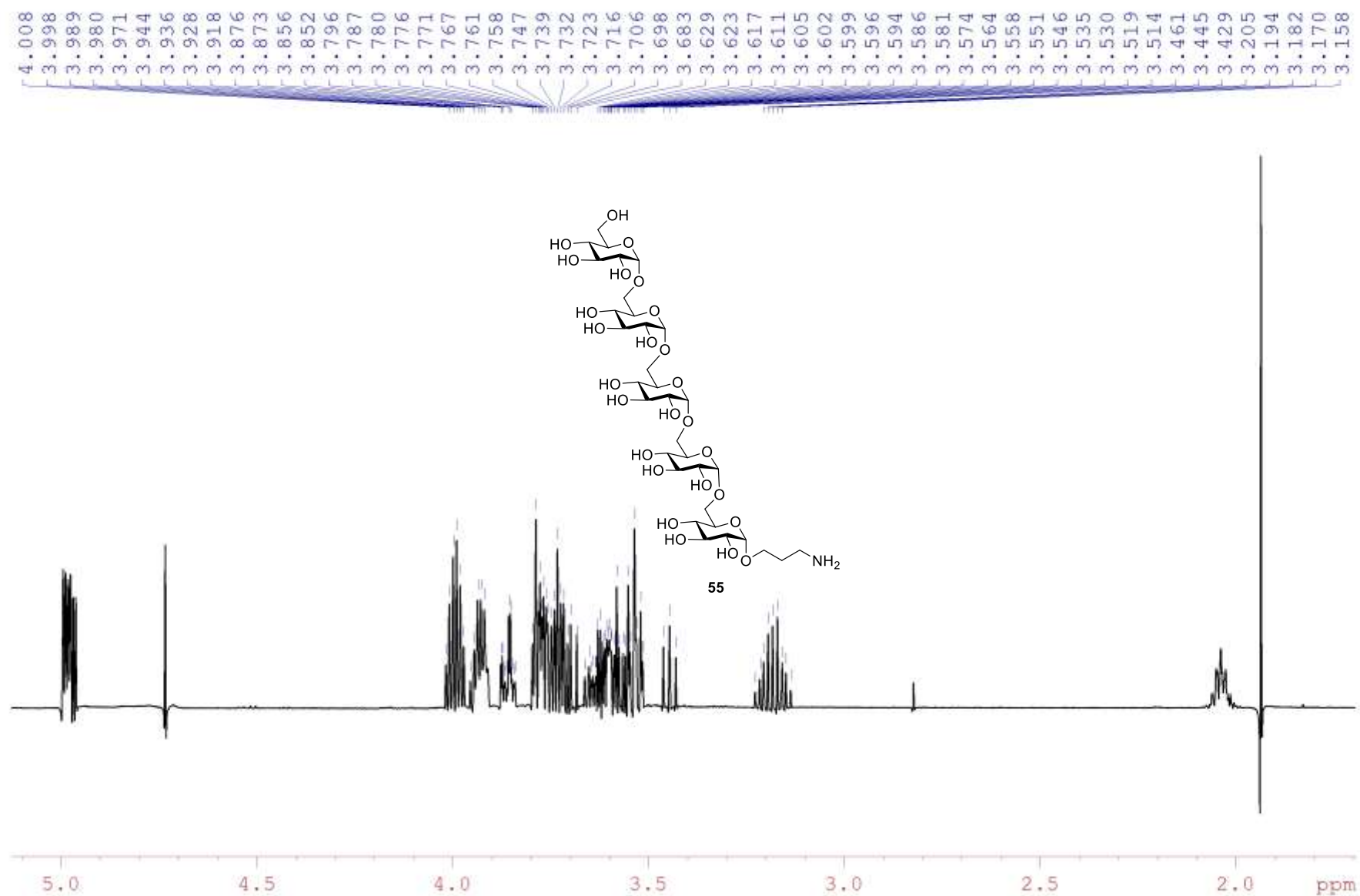
O-3-Trifluoroacetaminopropyl 3-O-acetyl-2,4-di-O-benzyl-6-O-pentafluorobenzoyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-3-O-acetyl-2,4-di-O-benzyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-3-O-acetyl-2,4-di-O-benzyl- α -D-glucopyranosyl-(1 $\rightarrow$ 6)-2,3,4-tri-O-benzyl- α -D-glucopyranoside (53)

/BOJA BD2143c CDCl₃ 150.9 MHz



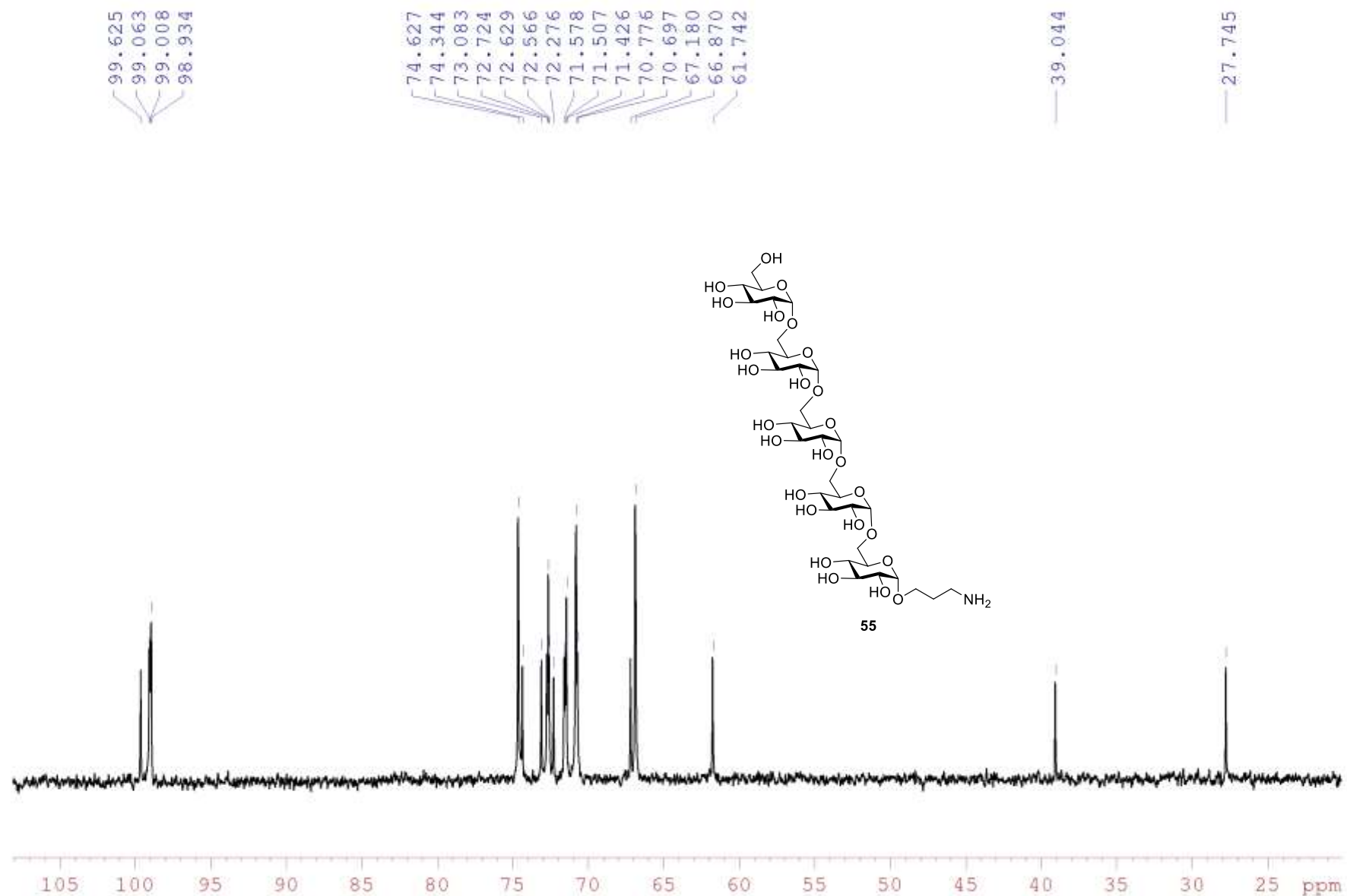
3-Aminopropyl α -D-glucopyranosyl-(1 $\rightarrow$ 6)- α -D-glucopyranosyl-(1 $\rightarrow$ 6)- α -D-glucopyranosyl-(1 $\rightarrow$ 6)- α -D-glucopyranoside (55)

/BOJA BD2181 D2O 600 MHz

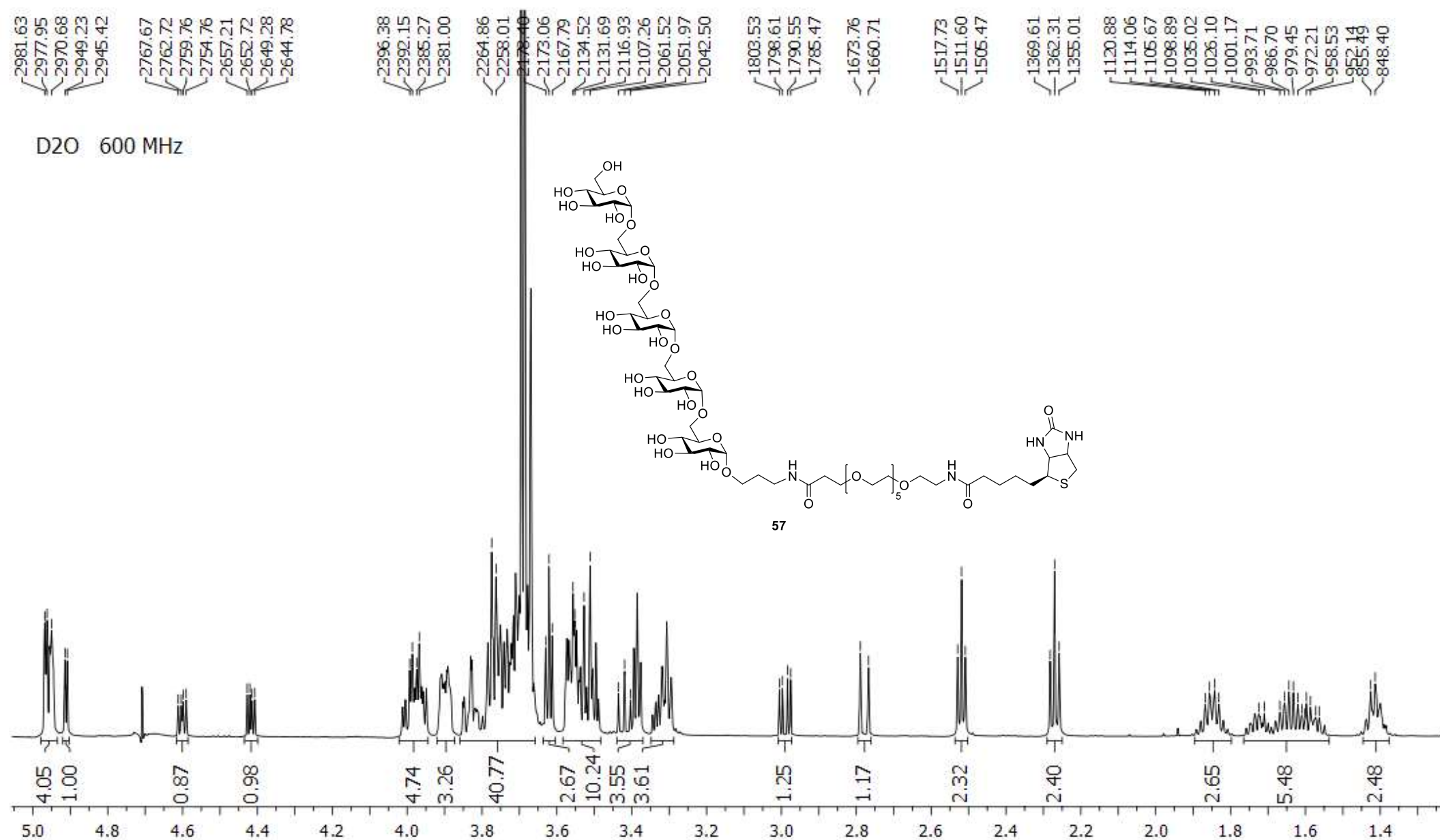


3-Aminopropyl α -D-glucopyranosyl-(1 $\rightarrow$ 6)- α -D-glucopyranosyl-(1 $\rightarrow$ 6)- α -D-glucopyranosyl-(1 $\rightarrow$ 6)- α -D-glucopyranoside (55)

/BOJA BD2181 D2O 150.9 MHz



Conjugate of the pentasaccharide with biotin (57)



Conjugate of the pentasaccharide with biotin (57)

