

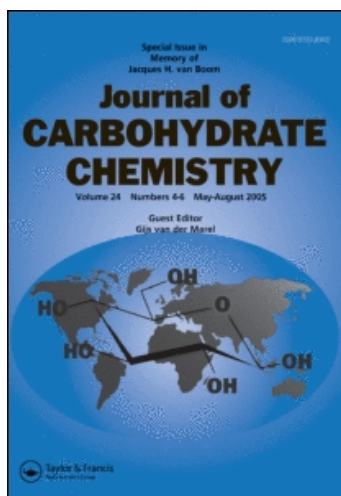
This article was downloaded by:

On: 23 January 2011

Access details: *Access Details: Free Access*

Publisher *Taylor & Francis*

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



Journal of Carbohydrate Chemistry

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t713617200>

Erratum

To cite this Article (1994) 'Erratum', *Journal of Carbohydrate Chemistry*, 13: 2, 343 – 346

To link to this Article: DOI: 10.1080/07328309408009197

URL: <http://dx.doi.org/10.1080/07328309408009197>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.informaworld.com/terms-and-conditions-of-access.pdf>

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

ERRATUM

The following Tables are printed as a correction to the *Journal of Carbohydrate Chemistry*, Volume 12, Numbers 4 + 5, 1993, pages 651-667. The manuscript is "Synthesis of β -Mannopyranosides by Enzymatic Approaches" by N. Taubken, B. Sauerbrei, and J. Thiem.

TABLE 1. Yields of Alkyl β -Mannopyranosides 3a-i.

Product	Aglycon		Yield (%) with β -Mannosidase [E.C. 3.2.1.25]	Yield (%) with β -Galactosidase [E.C. 3.2.1.23]
3a	Methanol (2a)		67	37
3b	Ethanol (2b)		75	49
3c	1-Propanol (2c)		48	20 a
3d	1-Butanol (2d)		19	18
3e	1-Hexanol (2e)		6	9 b
3f	1-Octanol (2f)		2	2 b
3g	2-Propanol (2g)		16	25
3h	2-Butanol (2h)		2	15
3i	c-Hexanol (2i)		3	7 b

a. In addition, 6 % of the anomeric glucosides were obtained (see text).

b. In addition, about 1 % (3f)/ 2 % (3e)/ 3 % (3i) of the β -glucosides were formed (see text).

TABLE 2. ¹H NMR Data of Alkyl β-D-Mannopyranosides 3a-i.

Compound	Chemical Shift δ/ppm ^a							H(aglycon) ^b
	H1	H2	H3	H4	H5	H6A	H6B	
3a	4.63	4.04	3.70	3.62	3.43	3.98	3.79	3.56(3H)
3b	4.70	4.03	3.70	3.62	3.43	3.98	3.79	3.99(1H); 3.77(1H); 1.27(3H)
3c	4.72	4.03	3.69	3.62	3.41	3.98	3.78	3.89(1H); 3.66(1H); 1.65(2H); 0.94(3H)
3d	4.71	4.03	3.68	3.62	3.41	3.97	3.78	3.94(1H); 3.72(1H); 1.64(2H); 1.41(2H); 0.95(3H)
3e	4.71	4.03	3.69	3.62	3.41	3.97	3.78	3.93(1H); 3.71(1H); 1.66(2H); 1.36(6H); 0.92(3H)
3f	4.77	4.03	3.69	3.62	3.42	3.97	3.78	3.93(1H); 3.71(1H); 1.66(1H), 1.39-1.32(8H); 0.91(3H)
3g	4.83	3.99	3.69	3.63	3.44	3.98	3.78	4.18(1H); 1.28(3H); 1.24(3H)
3h ^c	4.82/ 4.78	3.98/ 4.02	3.70/ 3.68	3.62	3.41	3.97	3.78	1.21/1.26(3H); 3.94/3.93(1H); 1.66/1.55(2H); 0.95/0.93(3H)
3i	4.86	3.98	3.96	3.63	3.41	3.96	3.78	3.82(1H); 2.00(2H); 1.78(2H); 1.45-1.25(5H); 1.59(1H of C4')

a. ¹H NMR spectra were recorded in D₂O with acetone as internal standard at 2.28 ppm.

The coupling constants are very similar for all mannosyl residues of 3a-i:

$J_{1,2} < 1.0$ Hz; $J_{2,3} = 3.0 - 3.2$ Hz; $J_{3,4} = 9.4 - 10.0$ Hz; $J_{4,5} = 9.4 - 9.6$ Hz;

$J_{5,6A} = 2.0 - 2.2$ Hz; $J_{5,6B} = 6.4 - 6.6$ Hz; $J_{6A,6B} = 12.0 - 12.2$ Hz.

b. The signals of the aglycon are given in increasing distance from the anomeric centre.

c. For aglyconic protons and H1 - H3 two signals were obtained, respectively, which belong to the compound with either (R)- or (S)-configuration at C2'.

TABLE 3. ^1H NMR Data of 4-Nitrophenyl Disaccharides 6 - 11.

Com- pound	Sugar Unit ^b	Chemical Shift δ /ppm ^a							Ac	Nitro- phenyl
		H1 (J _{1,2})	H2 (J _{2,3})	H3 (J _{3,4})	H4 (J _{4,5})	H5 (J _{5,6A})	H6A (J _{5,6B})	H6B (J _{6A,6B})		
6	Glc	5.40 (7.5)	3.81 (9.0)	3.74 (9.2)	3.49 (9.3)	3.63 (2.0)	3.86 (5.6)	3.68 (12.1)	7.17, 8.19	
	Glc'	4.75 (8.0)	3.22 (9.4)	3.44 (9.0)	3.32 (9.4)	3.27 (2.6)	3.27 (6.0)	3.26 (12.0)		
7	Glc	5.21 (8.0)	3.59 (9.6)	3.84 (9.2)	3.70 (9.6)	c n.d.	3.88 n.d.	c (12.0)	7.17, 8.19	
	Glc'	5.37 (3.8)	3.52 (9.8)	3.63 (9.2)	3.35 (9.1)	3.65 (2.0)	3.78 (6.0)	c (12.0)		
8	NAcGlc	5.19 (8.1)	3.88 (10.3)	3.56 (9.2)	3.39 (10.1)	3.72 (1.7)	4.12 (6.4)	3.65 (11.2)	1.92 7.07 8.15	
	NAcGlc'	4.41 (8.6)	3.60 (10.2)	n.d. (9.2)	3.32 (9.6)	3.39 (1.3)	3.79 (5.6)	3.60 (12.0)		1.88
9	Man	5.68 (1.6)	4.18 (3.2)	4.13 (9.5)	3.91 (9.0)	d (2.0)	3.87 n.d.	d (12.2)	7.20 8.18	
	Man'	4.68 (<1)	3.96 (2.9)	3.57 (9.7)	3.48 (9.4)	3.36 (2.0)	d (7.2)	d (12.2)		
10	Man	5.40 (<1)	4.18 (2.1)	e n.d.	e n.d.	e n.d.	e n.d.	e n.d.	7.09 8.13	
	Man'	4.65 (<1)	3.96 (2.9)	3.54 (9.7)	3.45 (9.5)	3.33 (2.1)	e (6.6)	e n.d.		
11	Man	5.25 (1.0)	5.58 (3.5)	5.20 (9.2)	3.98 (9.2)	3.80 (3.0)	4.34 (6.1)	4.23 (12.2)	1.93 - 6.98 2.28 8.12	
	Man'	4.69 (<1)	5.37 (3.2)	4.98 (9.8)	5.16 (9.6)	3.59 (3.1)	4.09 (5.6)	4.24 (12.2)		(7s, 3H each)

a. ^1H NMR spectra of 6 - 10 were recorded in D_2O with acetonitrile as internal standard at 1.98 ppm; 11 was measured in CDCl_3 .

b. reducing terminus: Hex; nonreducing terminus: Hex'.

c. 3.67 - 3.76 (mc, 3H) d. 3.62 - 3.70 (mc, 4H)

e. 3.58 - 3.86 (mc, 7H) n.d.: not determined

TABLE 4. ^{13}C NMR Data of 3a-e, g-i, 6, 7 and 11.

Compound	Chemical Shift $\delta/\text{ppm}^{\text{a}}$							
	C1	C2	C3	C4	C5	C6	C(aglycon) ^b	
3a	97.82	67.08	69.73	63.66	73.02	57.83	53.68	
3b	96.42	67.52	69.91	63.74	73.14	57.94	62.45; 11.12	
3c	96.72	67.52	69.99	63.82	73.18	58.01	68.54; 19.06; 6.56	
3d	96.70	67.51	69.98	63.80	73.16	57.98	66.69; 27.73; 15.43; 9.99	
3e	96.68	67.52	69.98	63.79	73.16	57.98	67.00; 27.74; 25.47; 21.70; 18.83; 10.22	
3g	94.65	68.06	70.07	63.79	73.14	57.99	19.17; 68.92(CH); 17.73	
3h ^c	95.86	67.87	70.10	63.81	73.14	58.00	16.73/ 15.07; 74.86/73.56(CH); 94.35 68.17 26.10/25.13(CH ₂); 6.11/ 6.64	
3i	94.47	68.12	70.06	63.74	73.12	57.96	74.78(CH); 29.73; 21.94; 20.64; 20.81; 28.30	
6	Glc	95.97	79.23	73.23	66.96	73.96	58.49	159.45, 114.20 (2C), 124.17 (2C), 140.65
	Glc'	100.81	71.66	73.41	67.15	73.82	58.07	
7	Glc	97.29	70.64	73.87	74.39	72.93	58.48	159.87, 114.51 (2C), 124.12(2C), 140.64
	Glc'	97.66	69.68	70.85	67.35	70.76	58.46	
10	Man	94.68	68.14	70.41	72.75	74.07	58.64	113.95 (2C), 123.71 (2C), 145.95
	Man'	97.84	67.32	68.93	64.32	73.99	58.00	

a. ^{13}C NMR spectra were recorded in D_2O with acetone as internal standard at 27.14 ppm.

b,c. see Table 2.

TABLE 5. Incubation Times and Optical Rotations.

Incubation Times	Compounds								
	3a	3b	3c	3d	3e	3f	3g	3h	3i
with β -mannosidase	1 d	1 d	2 d	2 d	3 d	5 d	5d	5 d	3 d
with β -galactosidase	2 d	3 d	2 d	2 d	6 d	5 d	2d	3 d	10 d
Opt. Rotation $[\alpha]_{\text{D}}^{20}$	-54.3°	-22.9°	-25.6°	-26.2°	n. d.	n. d.	-40.0°	-35.1°	n. d.
Concentration (g/ 100 mL) in H_2O	0.48	0.69	0.16	0.23			0.23	0.25	

n. d.: not determined, due to impurities and small amounts of product