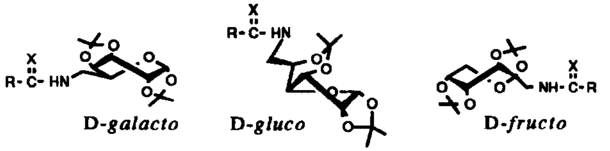
GRAPHICAL ABSTRACTS

Tetrahedron: Asymmetry **1994,** *5,* 2313

SYNTHESIS AND CONFORMATIONAL PROPERTIES OF SUGAR AMIDES AND THIOAMIDES

Carmen Ortiz Mellet, Alberto Moreno Marín, José M. García Fernández, and José Fuentes.
Departamento de Química Orgánica, Facultad de Química, Universidad de Sevilla, Apartado 553, E-41071 Sevilla, Spain.

Sugar thioamides have been prepared by thionation of the corresponding amides. The *E,Z* configurational assignment of the amide (thioamide) bond and the conformational properties of both series of compounds have been studied.


D-*galacto* D-*gluco* D-*fructo*

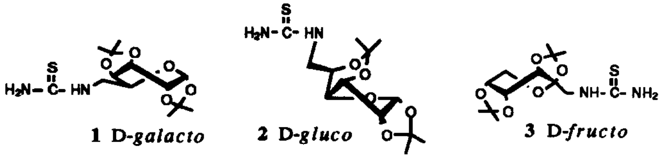
X = O, S
R = H, CH_3

Tetrahedron: Asymmetry **1994,** *5,* 2325

INFLUENCE OF INTRAMOLECULAR HYDROGEN BONDING ON THE CONFORMATIONAL PROPERTIES OF SUGAR THIOUREAS

Carmen Ortiz Mellet, Alberto Moreno Marín, José L. Jiménez Blanco, José M. García Fernández, and José Fuentes.
Departamento de Química Orgánica, Facultad de Química, Universidad de Sevilla, Apartado 553, E-41071 Sevilla, Spain.

Evidence for the stabilization of the *E* isomer of the sugar thioureas **1-3** through formation of a seven-membered intramolecular hydrogen bond has been obtained from DNMR experiments.

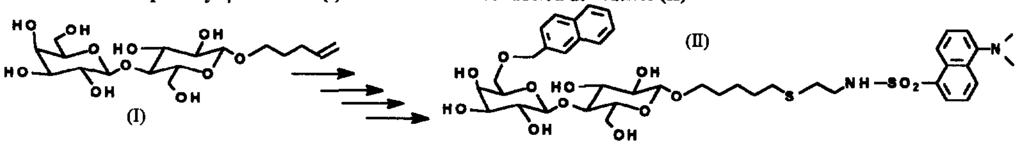

1 D-*galacto* **2** D-*gluco* **3** D-*fructo*

Tetrahedron: Asymmetry **1994,** *5,* 2335

SYNTHESIS OF BI-FLUORESCENCE-LABELED LACTOSIDE A SUBSTRATE FOR CONTINUAL ASSAY OF CERAMIDE GLYCANASE

Koji Matsuoka, Shin-Ichiro Nishimura, and Yuan C. Lee*
Dept. of Biol., Johns Hopkins University, Baltimore, MD 21218

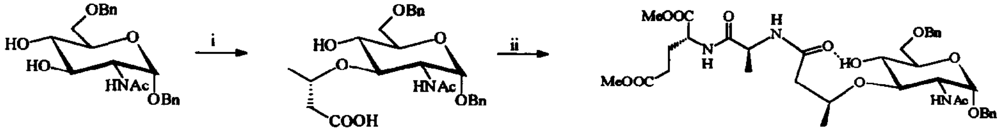
Conversion of n-pentenyl β-lactoside (I) into a fluorescence-labeled derivativie (II)


(I) (II)

Tetrahedron: Asymmetry **1994,** *5,* 2339

Carbohydrates as Nucleophiles in Conjugate Addition for Preparation of Muramic Acid Analogues

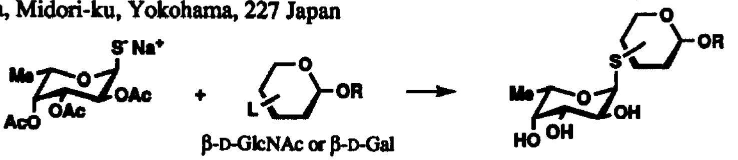
Bernd Becker and Joachim Thiem
Institut für Organische Chemie, Universität Hamburg, Germany


(i) crotonic acid ethylester, p.t.c.; (ii) L-Ala-D-Glu(OMe)OMe, EEDQ

Tetrahedron: Asymmetry **1994**, *5*, 2351

SYNTHESIS OF α-L-FUCOPYRANOSYL DISACCHARIDES WITH THIOGLYCOSIDIC LINKAGE AND CHARACTERIZATION OF α-L-FUCOSIDASES FROM BOVINE KIDNEY AND EPIDIDYMIS BY THEIR INHIBITORY ACTIVITIES.

Hironobu Hashimoto,* Kazuya Shimada, and Shigeomi Horito,
Department of Life Science, Faculty of Bioscience and Biotechnology, Tokyo Institute of Technology,
Nagatsuta, Midori-ku, Yokohama, 227 Japan



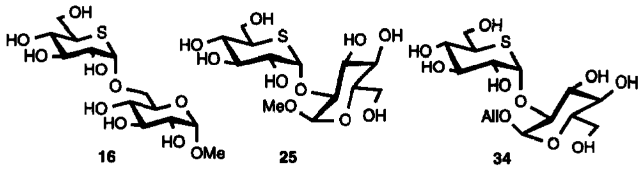
L = leaving groups: 6-OTs, 4-OTf, NTs (2,3-aziridine), O (2,3-oxirane)

Tetrahedron: Asymmetry **1994**, *5*, 2367

SYNTHESIS OF SULFUR ANALOGUES OF METHYL AND ALLYL KOJIBIOSIDES AND METHYL ISOMALTOSIDE AND CONFORMATIONAL ANALYSIS OF THE KOJIBIOSIDES.

Seema Mehta, Kelly L. Jordan, Thomas Weimar, Uwe C. Kreis, Raymond J. Batchelor, Frederick W.B. Einstein, and B. Mario Pinto.
Department of Chemistry, Simon Fraser University,
Burnaby, B.C. Canada, V5A 1S6

The synthesis of methyl 5'-thio-α–D-isomaltoside **16**, and methyl and allyl 5'-thio-α-D-kojibiosides **25** and **34** is described.

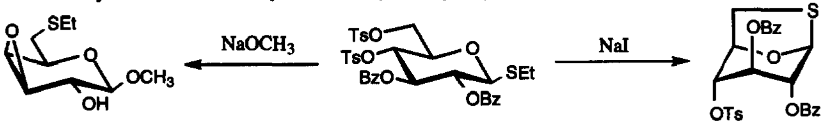


Tetrahedron: Asymmetry **1994**, *5*, 2397

Nucleophile Induced Rearrangements of Thioglycosides: Formation of 6-Thio Glycosides and 1,6 Thioanhydrosugars

Todd L. Lowary and David R. Bundle* Department of Chemistry, University of Alberta, Edmonton, Alberta T6G 2G2, CANADA

Treatment of Ethyl 2,3 di-*O*-benzoyl-4,6-di-*O*-toluenesulfonyl-1-thio-β-D-glucopyranoside with sodium methoxide at low temperature gives Methyl 3,4 anhyro-6-*S*-ethyl-β-D-galactopyranoside, whereas treatment with sodium iodide in reluxing butanone yields 2,3 di-*O*-benzoyl-4-*O*-toluensesulfonyl-1,6 thioanhydro-D-glucopyranose.

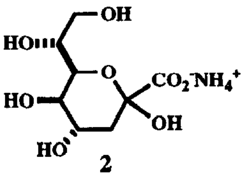


Tetrahedron: Asymmetry **1994**, *5*, 2405

A Synthesis of 3-Deoxy-D-*gluco*-oct-2-ulosonic Acid

Tony K. M. Shing
Department of Chemistry, The Chinese University of Hong Kong, Shatin, Hong Kong

Acyclic 2:3,5:6- and 3:4,5:6-di-*O*-isopropylidene-D-glucoses have been converted by four reactions involving a Wittig chain homologation, a catalytic hydrogenation, an acid hydrolysis and an acetonation into 2,3-dideoxy-5:6,7:8-di-*O*-isopropylidene-D-*gluco*-octono-1,4-lactone which underwent a Wasserman reaction and then a hydrolysis to yield 3-deoxy-D-*gluco*-oct-2-ulosonic acid, isolated as its ammonium salt **2**.



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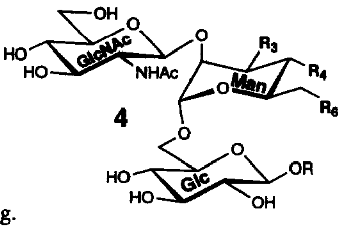
Tetrahedron: Asymmetry **1994,** *5,* 2415

ACCEPTOR-SUBSTRATE RECOGNITION BY N-ACETYL-GLUCOSAMINYLTRANSFERASE-V: ROLE OF THE MANNOSE RESIDUE IN βGlcNAc(1→2)αMan(1→6)βGlc-OR

Shaheer H. Khan[1], Jens Ø. Duus[2], Suzanne C. Crawley[1], Monica M. Palcic[1]
and Ole Hindsgaul[1]*
[1]Department of Chemistry, University of Alberta, Edmonton, AB T6G 2G2
CANADA and[2]Carlsberg Laboratory, Department of Chemistry, DK-2500
Copenhagen-Valby, DENMARK



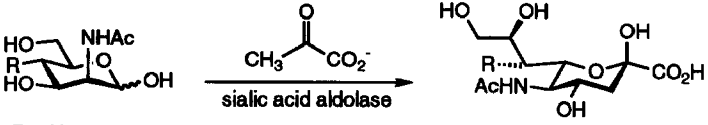
4

Analogs of trisaccharide 4, modified on the Man residue, were synthesized and evaluated as substrates for the title enzyme. The results show that none of the OH-groups on the Man residue are essential for binding.

Tetrahedron: Asymmetry **1994,** *5,* 2437

Enzymatic Synthesis of 7-Deoxy-*N*-acetylneuraminic Acid and 7-*O*-Methyl-*N*-acetylneuraminic Acid.

Randall L. Halcomb, Wolfgang Fitz and Chi-Huey Wong
Department of Chemistry, The Scripps Research Institute,
10666 North Torrey Pines Road, La Jolla, CA 92037



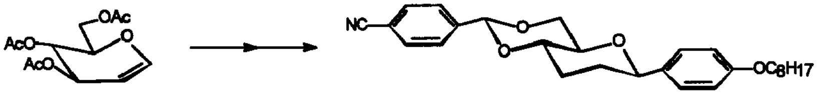
R = H **8**
R = OCH₃ **10**

R = H **11**
R = OCH₃ **12**

Tetrahedron: Asymmetry **1994,** *5,* 2443

SIGN INVERSION OF THE HELICAL PITCH IN CARBOHYDRATE-BASED LIQUID CRYSTALS

V. Vill[a]*, H.-W. Tunger[a], H. Stegemeyer[b], K. Diekmann[b]
a) Organic Chemistry, University of Hamburg, D-20146 Hamburg, Germany
b) Physical Chemistry, University Paderborn, D-33095 Paderborn, Germany



A four-step synthesis, starting from glucal, leads to a homologous series of chiral liquid crystals. On heating, the molecules with an octyl and nonyl chain show an inversion of the helical twist sense of the cholesteric mesophase.

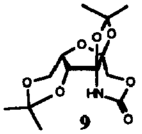
Tetrahedron: Asymmetry **1994,** *5,* 2447

Highly Regio- and Stereo-specific Preparation of a New Carbohydrate-based 1,3-Oxazin-2-one by the INIR Method and its Applications in Some Asymmetric Transformations

Malcolm R. Banks[a], J. I. G. Cadogan[b], Ian Gosney[a], Suneel Gaur[a] and Philip K. G. Hodgson[c], [a]Department of Chemistry, The University of Edinburgh, West Mains Road, Edinburgh, Scotland EH9 3JJ; [b]Department of Chemistry, Imperial College of Science, Technology and Medicine, South Kensington, London, England SW7 AY; [c]BP International, Research and Engineering Centre, Chertsey Road, Sunbury-on Thames, England TW16 7LN.

Gulonic acid acts as a precursor to the chiral 1,3-oxazin-2-one 9

which serves as an efficient auxiliary for aldol and Diels-Alder reactions.



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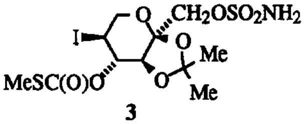
Tetrahedron: Asymmetry **1994,** *5,* 2459

Non-Chair, Six-Membered-Ring Conformations.
Preference for a Twist-Boat (or Skew) Structure in α-L-Sorbopyranose Derivatives

Michael J. Costanzo, Harold R. Almond, Jr., A. Diane Gauthier, and Bruce E. Maryanoff*
Drug Discovery, The R. W. Johnson Pharmaceutical Research Institute, Spring House, Pennsylvania 19477 USA

Proton NMR studies, empirical force field calculations, and the X-ray crystallographic analysis of **3** indicate that the $^3S_0$ skew (or twist-boat) conformation prevails over the possible chair forms in a series of 2,3-*O*-(1-methylethylidene)-α-L-sorbopyranose derivatives.



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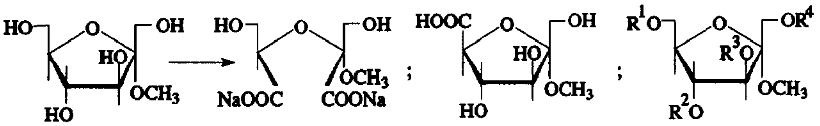
Tetrahedron: Asymmetry **1994,** *5,* 2475

METHYL α-D-FRUCTOFURANOSIDE: SYNTHESIS AND CONVERSION INTO CARBOXYLATES

Louise Johnson, Dorine L. Verraest, Jacco van Haveren, Kimmo Hakala, Joop A. Peters and Herman van Bekkum
Laboratory of Organic Chemistry and Catalysis, Delft University of Technology, Julianalaan 136, 2628 BL Delft, The Netherlands

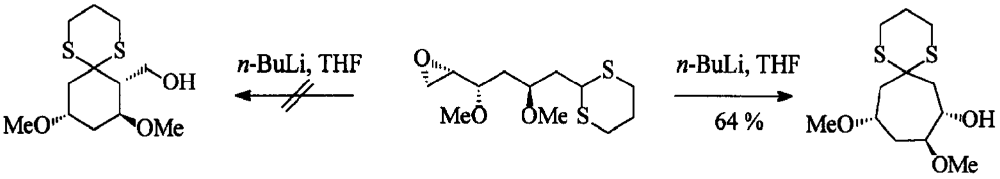


R^1, R^2, R^3, R^4 = H, CH_2COONa

Tetrahedron: Asymmetry **1994,** *5,* 2485

FROM SUGARS TO CARBOCYCLES. 4. EXCLUSIVE SEVEN MEMBERED RING FORMATION FROM D-GLUCOSE

Karsten Krohn*, Stephan Gringard, and Guido Börner
Fachbereich Chemie und Chemietechnik, Universität-GH-Paderborn, Warburger Str. 100, D-33098-Paderborn



Tetrahedron: Asymmetry **1994,** *5,* 2493

Total synthesis of ganglioside GQ1b and the related polysialogangliosides

Hide-Ki Ishida, Hideharu Ishida, Makoto Kiso and Akira Hasegawa
Department of Bioorganic Chemistry, Gifu University, Gifu 501-11, Japan

Galβ(1→3)GalNAcβ(1→4)Galβ(1→4)Glcβ(1→1)Cer
| α(2→3) | α(2→3)
Neu5Ac Neu5Ac
| α(2→8) | α(2→8)
Neu5Ac Neu5Ac **ganglioside GQ1b**

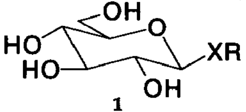
The first total synthesis of ganglioside GQ1b, GT1b and GD1b.

Tetrahedron: Asymmetry **1994,** *5,* 2513

SYNTHESIS OF GLUCOSIDIC DERVATIVES WITH A SPACER ARM BY REVERSE HYDROLYSIS USING ALMOND β-D-GLUCOSIDASE

Almond β-D-glucosidase has been used to synthesise glucosidic derivatives **1** with a spacer arm as aglycone. The method used is based on glycosidase-catalysed reverse hydrolysis in an organic medium. The synthesis of *O*- and *S*-β-glucosides has been achieved.

Gabin Vic and David H. G. Crout
Department of Chemistry, University of Warwick, Coventry CV4 7AL, UK.



1

XR = $O(CH_2)_6OH$ **1a** (61% yield)

XR = $O(CH_2)_6NHCOCF_3$ **1b** (7% yield)

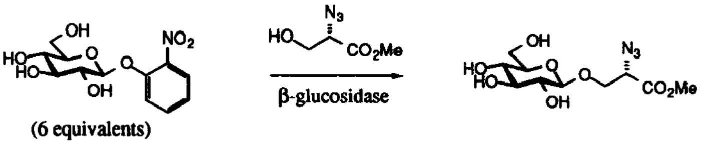
XR = $S(CH_2)_3SH$ **1c** (17% yield)

Tetrahedron: Asymmetry **1994,** *5,* 2517

AN IMPROVED STRATEGY FOR THE STEREOSELECTIVE SYNTHESIS OF GLYCOSIDES USING GLYCOSIDASES AS CATALYSTS.

Anne Baker, Nicholas J. Turner*, and Matthew C. Webberley,
Department of Chemistry, University of Exeter, Stocker Road, Exeter EX4 4QD.

An alternative strategy for the synthesis of glycosides using glycosidases has been developed. This new method uses an *excess* of the glycosyl donor in the presence of *limiting amounts* of the glycosyl acceptor.

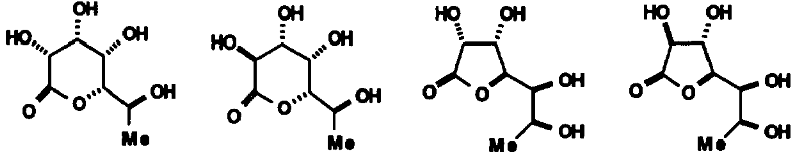


Tetrahedron: Asymmetry **1994,** *5,* 2523

KETALS OF L-RHAMNOHEPTONOLACTONES: POTENTIAL MIMICS OF L-RHAMNOSE

J. R Wheatley,[a] A. R. Beacham,[a] P. M. de Q. Lilley,[b] D. J. Watkin[b] and G. W. J. Fleet[a]*
[a]Dyson Perrins Laboratory, Oxford Centre for Molecular Sciences, South Parks Road,Oxford OX1 3QY, UK
[b]Chemical Crystallography Laboratory, Oxford University, 9, Parks Road, Oxford OX1 3PD, UK

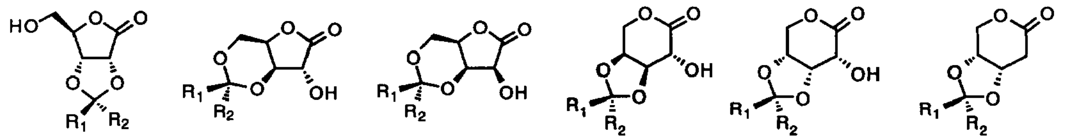
Ketals of γ- and δ-lactones of L-rhamnoheptonic acids are precursors for mimics of L-rhamnose. The crystal structure of a δ-lactone with a flagpole substituent is reported.



Tetrahedron: Asymmetry **1994,** *5,* 2535

Spectroscopic, Crystallographic and Computational Studies of the Formation and Isomerization of Cyclic Acetals and Ketals of Pentonolactones

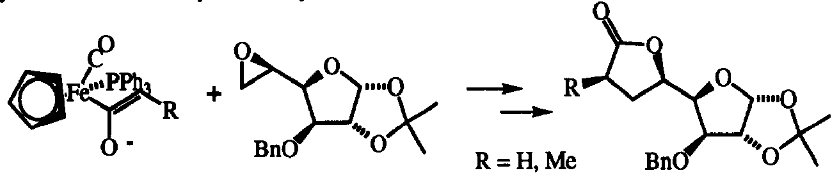
So-Yeop Han,[†,‡] Madeleine M. Joullié,[*,†] Valery V. Fokin[§] and Nicos A. Petasis[*,§]
[†]*Department of Chemistry, University of Pennsylvania, Philadelphia, Pennsylvania 19104, U.S.A.*
[‡]*Department of Chemistry, Ewha Womans University, Seoul 120-750, Korea.*
[§]*Department of Chemistry, University of Southern California, Los Angeles, California 90089, U.S.A.*



Tetrahedron: Asymmetry **1994,** *5,* 2563

Opening of Carbohydrate 5,6-Epoxides with Chiral Acetate and Propionate Enolate Equivalents Attached to the Iron Chiral Auxiliary $[(C_5H_5)Fe(CO)(PPh_3)]$.

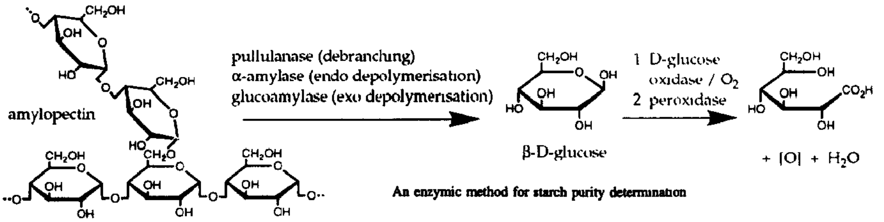
Stephen G. Davies, Helen M. Kellie and Robert Polywka,
The Dyson Perrins Laboratory, University of Oxford, South Parks Road, Oxford OX1 3QY, UK.



Tetrahedron: Asymmetry **1994,** *5,* 2571

EVALUATION OF SOME METHODS OF DETERMINATION OF STARCH FOR LEGISLATIVE PURPOSES IN THE EUROPEAN COMMUNITY

John. F. Kennedy*, Vivian. M. Cabalda and David. W. Taylor
Birmingham Carbohydrate and Protein Technology Group
School of Chemistry, The University of Birmingham, B15 2TT, UK.

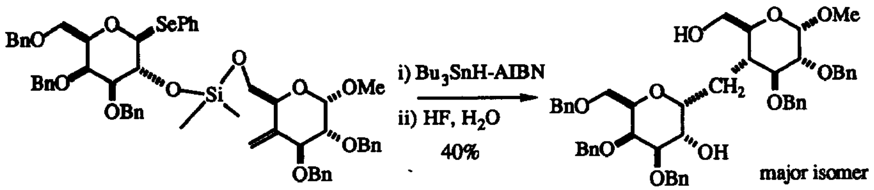


An enzymic method for starch purity determination

Tetrahedron: Asymmetry **1994,** *5,* 2593

The Use of Selenophenyl Galactopyranosides for the Synthesis of α and β-(1→4)-*C*-Disaccharides

Astrid Mallet, Jean-Maurice Mallet, and Pierre Sinaÿ*
Ecole Normale Supérieure, Département de Chimie, URA 1686, 24 rue Lhomond, 75231 Paris Cédex 05, France

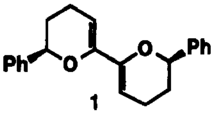


Tetrahedron: Asymmetry **1994,** *5,* 2609

DISPIROKETALS IN SYNTHESIS (PART 17): REGIOSELECTIVE PROTECTION OF D-GLUCOPYRANOSIDE, D-GALACTOPYRANOSIDE AND D-MANNOPYRANOSIDE SUBSTRATES.

Paul J. Edwards, David A. Entwistle, Christophe Genicot, Steven V. Ley,* and Giuseppina Visentin, Department of Chemistry, University of Cambridge, Lensfield Road, Cambridge CB2 1EW, UK.

A series of D-gluco- (e.g. 6), D-galacto- and D-mannopyranosides were regioselectively protected with enantiomerically pure dienes (e.g. 1 and 2)



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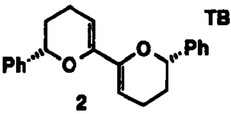

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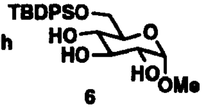

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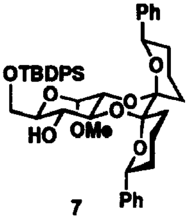

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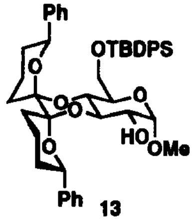

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