Graphical Abstracts

Carbohydr. Res. **2001,** *331*, 347

Glycosyl transfer: a history of the concept's development and view of its major contributions to biochemistry

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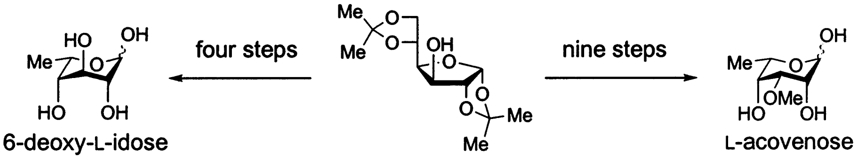
An account of the evolution of the glycosyl transfer concept during the first half of the 20th century.

Carbohydr. Res. **2001,** *331*, 369

Synthesis of 6-deoxy-L-idose and L-acovenose from 1,2:5,6-di-*O*-isopropylidene-α-D-glucofuranose

Shang-Cheng Hung, Shankar R. Thopate, Ramachandra Puranik

Institute of Chemistry, Academia Sinica, Taipei 115, Taiwan, ROC



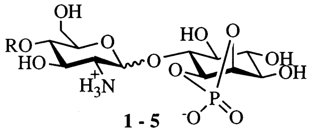
Carbohydr. Res. **2001,** *331*, 375

Synthesis of inositol glycan cyclic phosphates

Christine H. Jaworek, Sarah Iacobucci, Pericles Calias, Marc d'Alarcao

Michael Chemistry Laboratory, Department of Chemistry, Tufts University, Medford, MA 02155, USA

Syntheses of tri-, tetra-, and pentasaccharide cyclic phosphates **1**–**5** are reported.



1 - 5

R = α-D-Man-(1-4)-
α-D-Man-(1-6)-α-D-Man-(1-4)-
α-D-Man-(1-2)-α-D-Man-(1-6)-α-D-Man-(1-4)-

Carbohydr. Res. **2001,** *331*, 393

NMR studies of mannitol-terminating oligosaccharides derived by reductive alkaline hydrolysis from brain glycoproteins

Heide Kogelberg, Wengang Chai, Ten Feizi, Alexander M. Lawson

The Glycosciences Laboratory, Imperial College School of Medicine, Northwick Park Hospital, Harrow, Middlesex HA1 3UJ, UK

The complete identification of four mannitol-terminating oligosaccharide alditols from the assignment of ^{1}H and ^{13}C NMR chemical shifts is described.

GlcNAcβ-(1 → 2)Manol   Galβ-(1 → 4)GlcNAcβ-(1 → 2)Manol

Galβ-(1 → 4)[Fucα-(1 → 3)]GlcNAcβ-(1 → 2)Manol   NeuAcα-(2 → 3)Galβ-(1 → 4)GlcNAcβ-(1 → 2)Manol

Carbohydr. Res. **2001,** *331*, 403

Novel oligosaccharides synthesized from sucrose donor and cellobiose acceptor by alternansucrase

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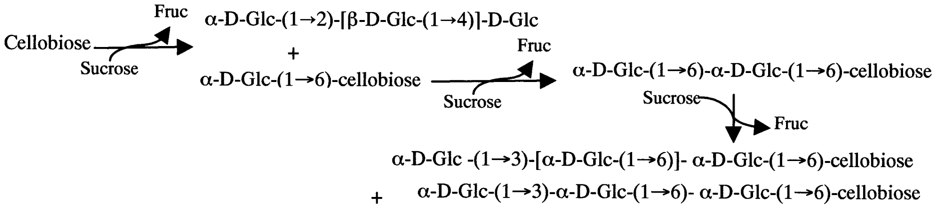

Carbohydr. Res. **2001,** *331*, 413

Structural characterisation of the exopolysaccharide produced by *Streptococcus thermophilus* EU20

Valerie M. Marshall,[a] Helen Dunn,[a] Mark Elvin,[a] Neil McLay,[b] Yucheng Gu,[b] Andrew P. Laws[b]

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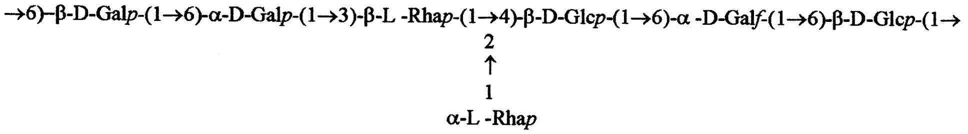
Structure of the novel eps from *Streptococcus thermophilus* EU20.



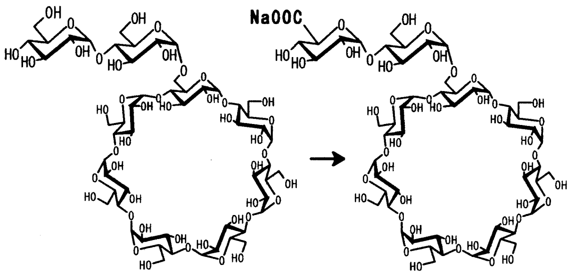
$$\rightarrow 6)\text{-}\beta\text{-D-Gal}p\text{-}(1\rightarrow 6)\text{-}\alpha\text{-D-Gal}p\text{-}(1\rightarrow 3)\text{-}\beta\text{-L-}\underset{\substack{2\\ \uparrow\\ 1\\ \alpha\text{-L-Rha}p}}{\text{Rha}p}\text{-}(1\rightarrow 4)\text{-}\beta\text{-D-Glc}p\text{-}(1\rightarrow 6)\text{-}\alpha\text{-D-Gal}f\text{-}(1\rightarrow 6)\text{-}\beta\text{-D-Glc}p\text{-}(1\rightarrow$$

Carbohydr. Res. **2001,** *331,* 423

Synthesis of branched cyclomaltooligosaccharide carboxylic acids (cyclodextrin carboxylic acids) by microbial oxidation

Toshihiro Ishiguro, Takako Fuse, Masahide Oka, Takashi Kurasawa, Masanari Nakamichi, Yoshihiro Yasumura, Masahiko Tsuda, Takamasa Yamaguchi, Ikuo Nogami

Biotechnology Department, Pharmaceutical Research Division, Takeda Chemical Industries Ltd., 2-17-85 Jusohonmachi, Yodogawa-ku, Osaka 532-8686, Japan



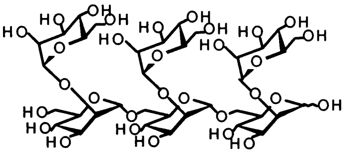
Carbohydr. Res. **2001,** *331,* 431

Facile synthesis of a comb-like mannohexaose: a trimer of the disaccharide repeating unit of the cell-wall mannans of *Aphanoascus mephitalus* and related species

Linsen Heng, Jun Ning, Fanzuo Kong

Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, PO Box 2871, Beijing 100085, People's Republic of China

The comb-like mannohexaose **1** has been synthesized using 6-*O*-acetyl-2-*O*-benzoyl-3,4-di-*O*-benzyl-α-D-mannopyranosyl trichloroacetimidate as the key glycosyl donor in the 'inverse Schmidt' procedure.



1

Carbohydr. Res. **2001,** *331,* 439

Synthesis of *N*^{4}-(2-acetamido-2-deoxy-β-D-glucopyranosyl)-L-asparagine analogues. *n*-Butyramide, 3-chloropropionamide, 3-aminopropionamide, and isovaleramide analogues

Jerry J. Kaylor, John M. Risley

Department of Chemistry, The University of North Carolina at Charlotte, 9201 University City Boulevard, Charlotte, NC 28223-0001, USA

The synthesis of β-D-GlcNAc-R, where R = $-NHCOCH_2CH_2CH_3$, $-NHCOCH_2CH_2Cl$, $-NHCOCH_2CH_2NH_2$, and $-NHCOCH_2CH(CH_3)_2$ is described.

Carbohydr. Res. **2001,** *331,* 445

Glycosylation of 2-thiohydantoin derivatives. Synthesis of some novel S-alkylated and S-glucosylated hydantoins

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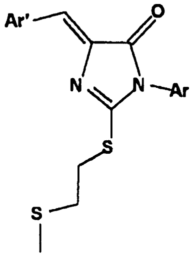
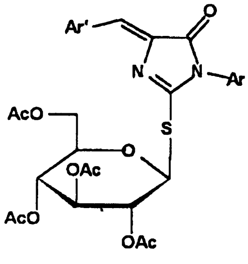
A number of 3-aryl-5-((*Z*)-arylidene)-2-(2-methylthioethyl)-2-thiohydantoins (**3a**–**f**) and 3-aryl-5-((*Z*)-arylidene)-2-(2′,3′,4′,6′-tetra-*O*-acetyl-β-D-glucopyranosyl)-2-thiohydantoins (**7a**–**n**) were prepared from the reaction of 3-aryl-5-((*Z*)-arylidene)-2-thiohydantoins (**2a**–**n**) with methylthioethyl chloride or 2′,3′,4′,6′-tetra-*O*-acetyl-α-D-glucopyranosyl bromide via three different routes.



3a-f



7a-n

Carbohydr. Res. **2001,** *331,* 455

A new fluorescent assay for sialyltransferase

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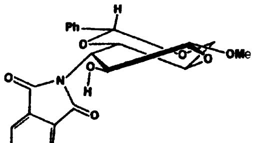
Carbohydr. Res. **2001,** *331,* 461

Boat conformations

Synthesis, NMR spectroscopy, and molecular dynamics of methyl 4,6-*O*-benzylidene-3-deoxy-3-phthalimido-α-D-altropyranoside derivatives

Bruce Coxon, Robert C. Reynolds

National Institute of Child Health and Human Development, National Institutes of Health, Bethesda MD 20892-2720, USA



2d

Addition of the elements of phthalimide to methyl 2,3-anhydro-4,6-*O*-benzylidene-α-D-mannopyranoside (**1**) under fusion conditions has yielded methyl 4,6-*O*-benzylidene-3-deoxy-3-phthalimido-α-D-altropyranoside (**2**). The conformation of the pyranose ring of **2** has been shown to be non-chair by ^{1}H NMR spectroscopy, in contrast to the conformations of related derivatives having smaller substituents at C-3. Molecular dynamics simulations of **2** in explicit chloroform-*d* solvent have indicated four principal conformational possibilities. Of these, the $^7C_5/^1S_5$ chair/skew boat form **2d** has the lowest potential energy, and is largely consistent with the observed vicinal ^{1}H–^{1}H NMR coupling constants.