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Special Issue

Synthetic Carbohydrate Chemistry

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Edmonton, AB, T6G 2G2, Canada

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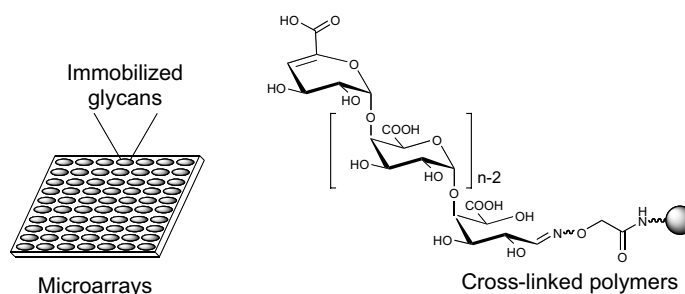
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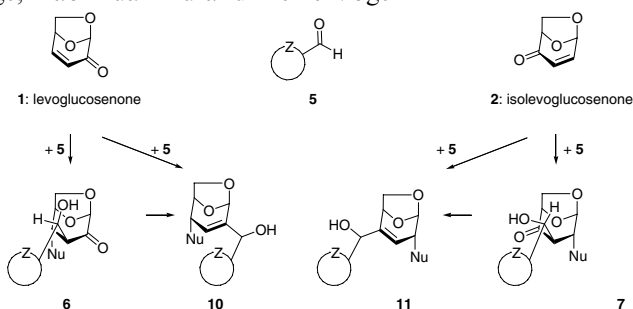
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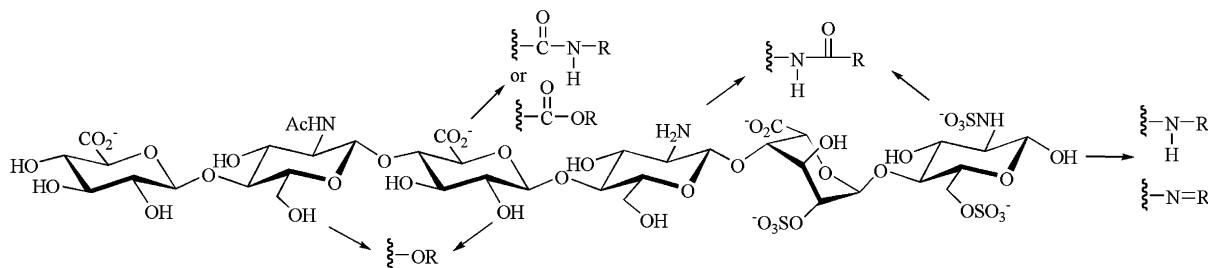
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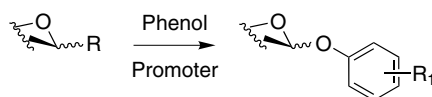
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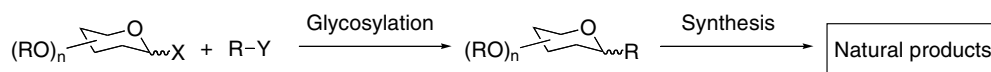
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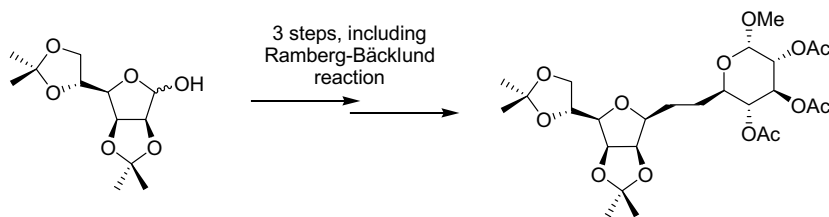
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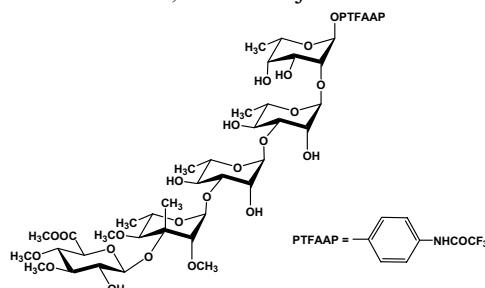


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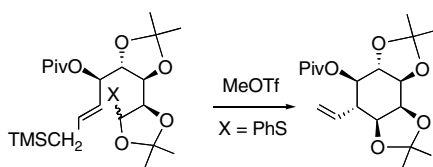
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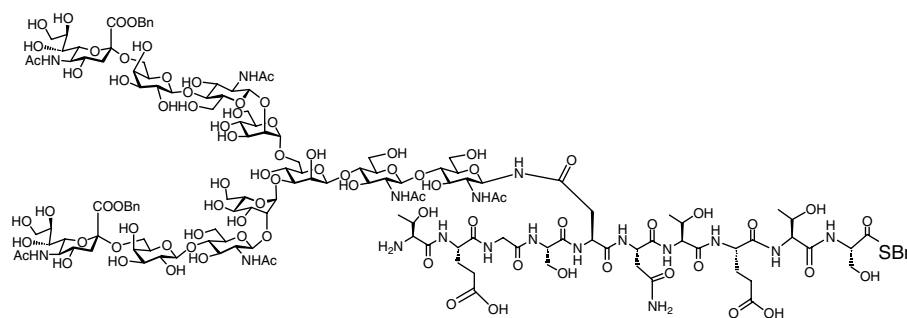
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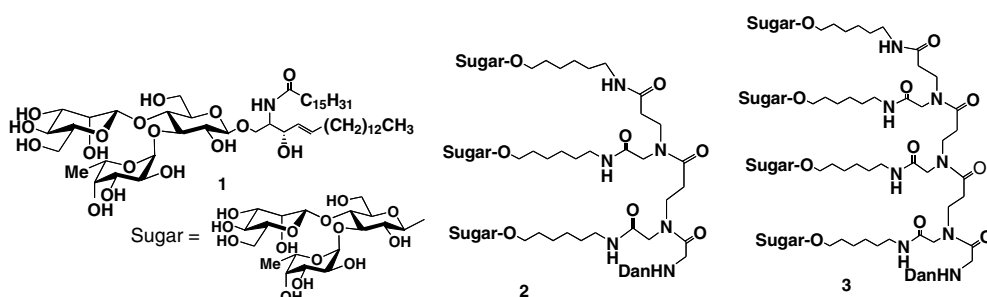
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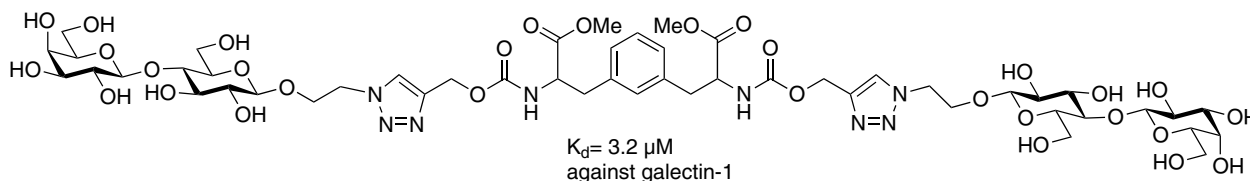
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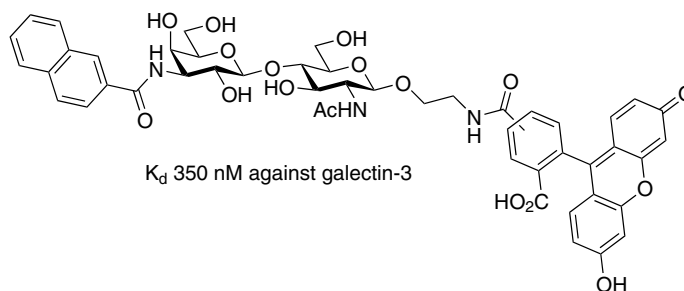
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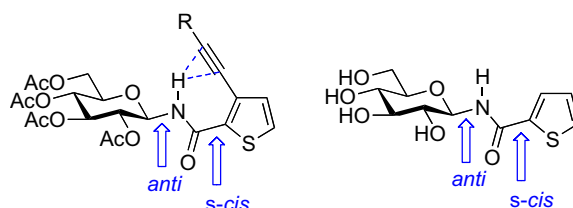
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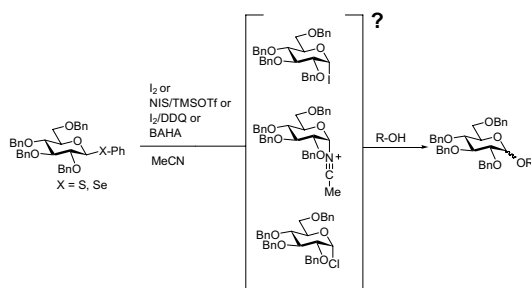


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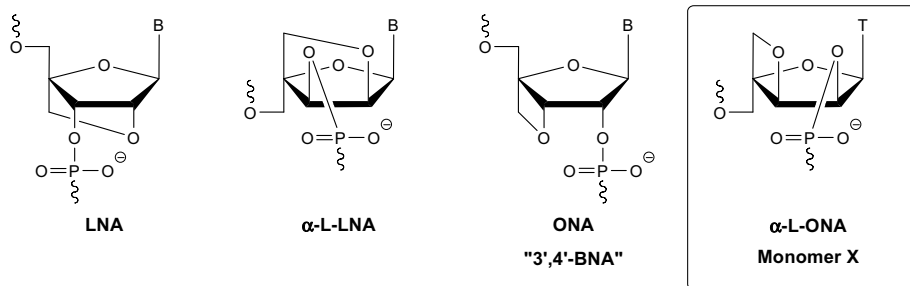
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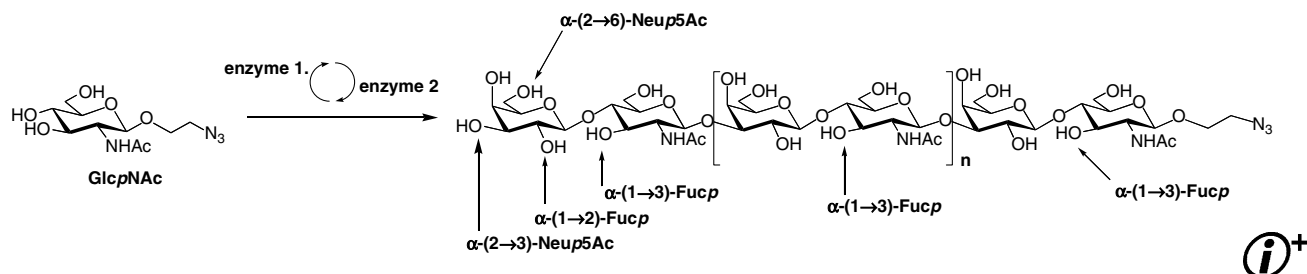
galacto-type, X = OBn, Y = H
gluco-type, X = H, Y = OBn

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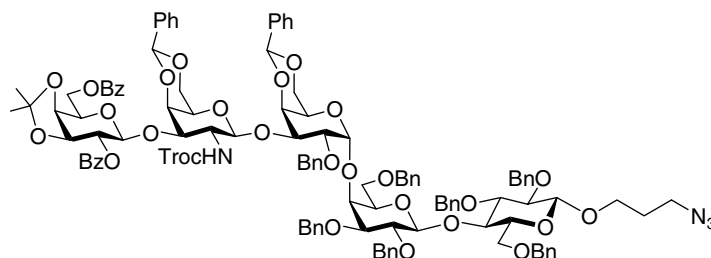
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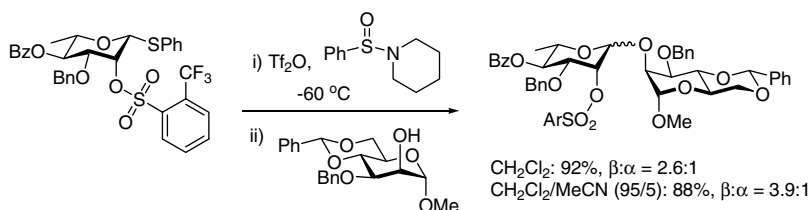
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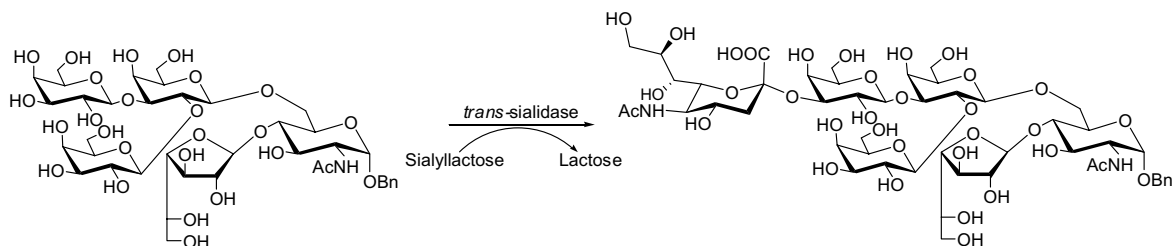
Isao Ohtsuka, Takuro Ako, Rumiko Kato, Shusaku Daikoku, Satomi Koroghi, Takuya Kanemitsu and Osamu Kanie*

Linkage position		2	3	4	6
Anomeric configuration	Fuc	α α β β	α α β β	α α β β	α α β β
	Gal	α β α β	α β α β	α β α β	α β α β

Synthesis of the O-linked pentasaccharide in glycoproteins of *Trypanosoma cruzi* and selective sialylation by recombinant *trans*-sialidase

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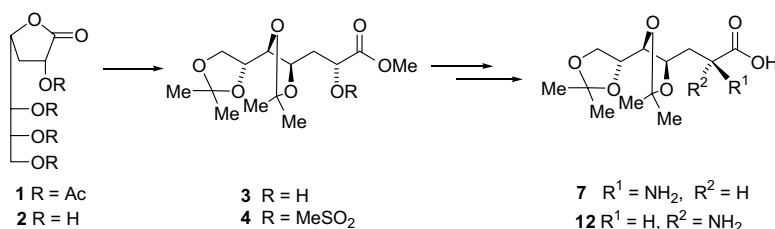
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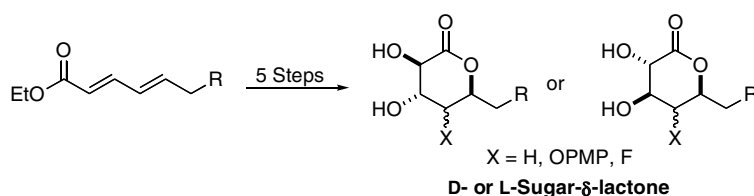
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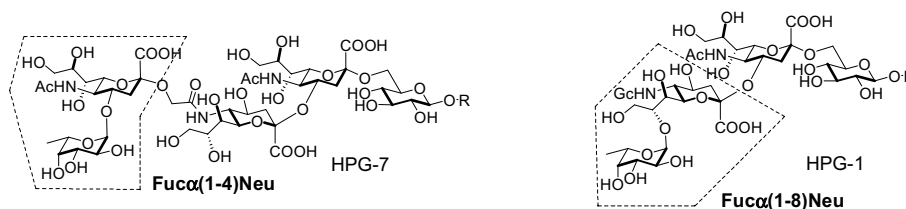
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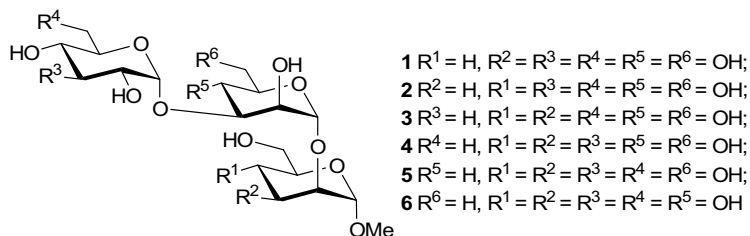
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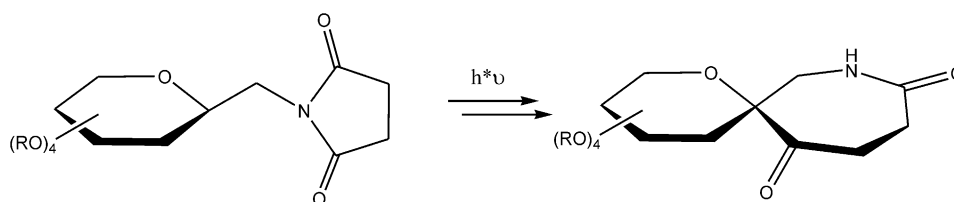
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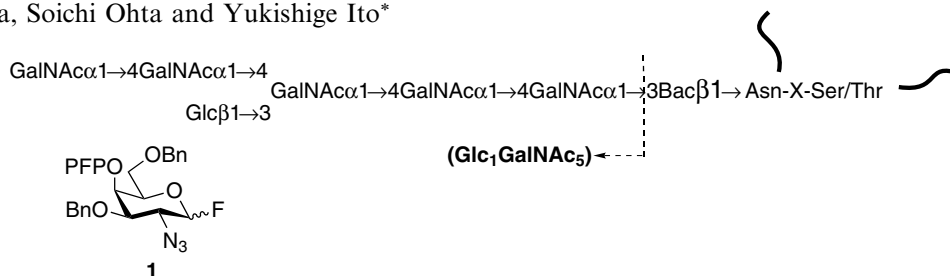
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A stereoselective 1,2-*cis* glycosylation toward the synthesis of a novel *N*-linked glycan from the Gram-negative bacterium, *Campylobacter jejuni*

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Akihiro Ishiwata, Soichi Ohta and Yukishige Ito*

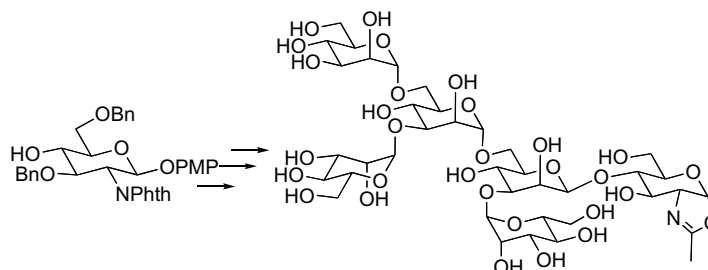


Novel glycoprotein oligosaccharide derived from *Campylobacter jejuni* was synthesized stereoselectively using 4-*O*-pentafluoropropionyl (PFP) protected GalNAc donor **1**.

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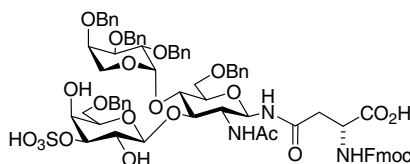
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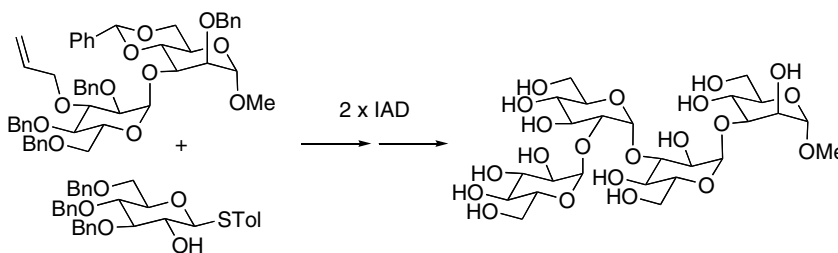
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**Synthesis of the Glc₃Man N-glycan tetrasaccharide by iterative allyl IAD**

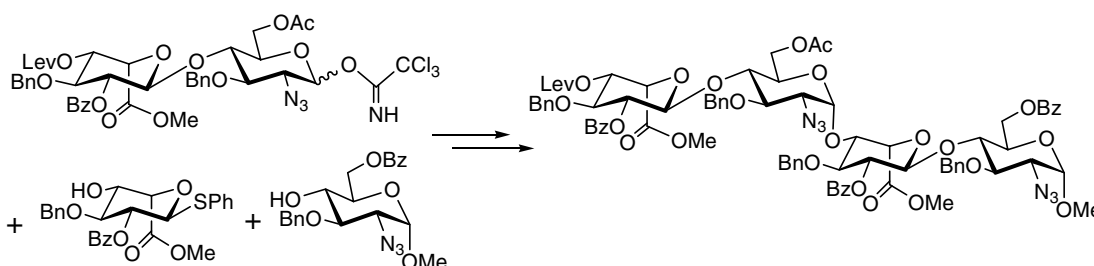
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**Toward synthesis of the regular sequence of heparin: synthesis of two tetrasaccharide precursors**

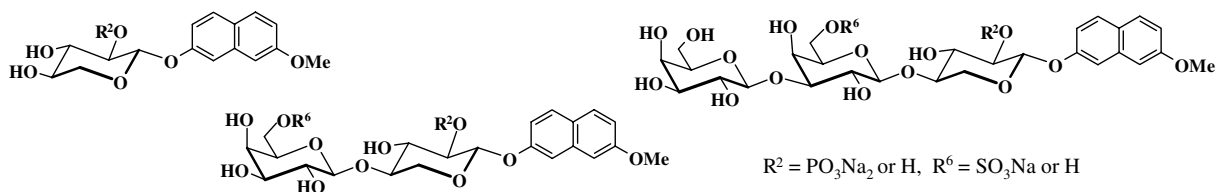
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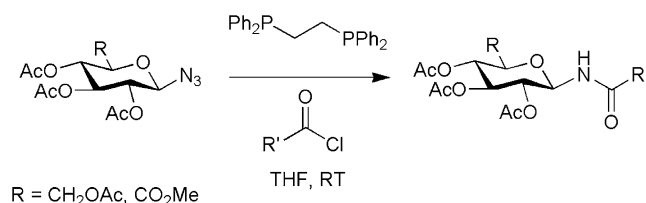
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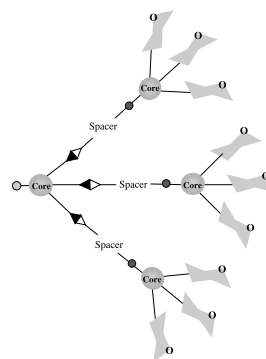
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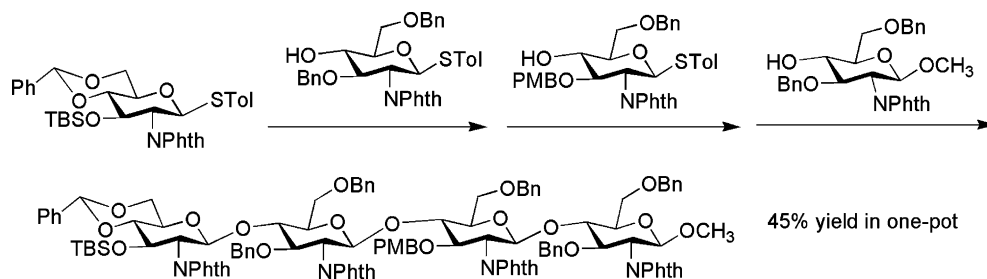
Anupama Patel and Thisbe K. Lindhorst*

A modular approach to oligomannoside mimetics was exemplified with the synthesis of nonavalent glycodendrons with flexible spacer lengths.

**Iterative one-pot syntheses of chitotetroses**

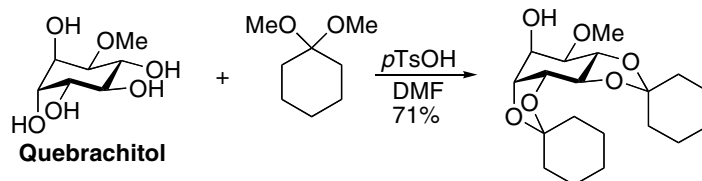
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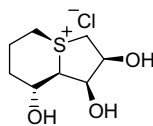
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Synthesis of thioswainsonine as a potential glycosidase inhibitor

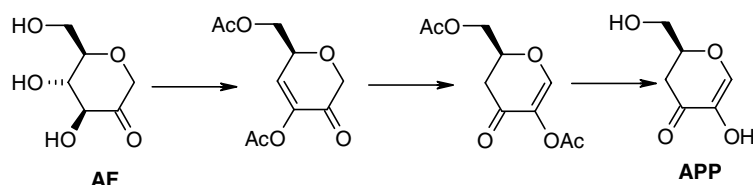
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Nag S. Kumar and B. Mario Pinto*

**A new chemical synthesis of Ascopyrone P from 1,5-anhydro-D-fructose**

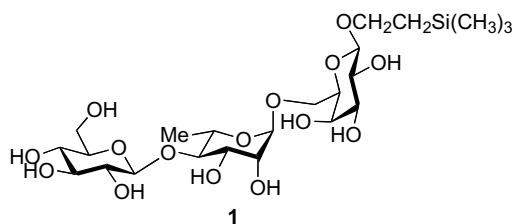
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Mikkel Andreassen and Inge Lundt*

**Convergent synthesis of a trisaccharide as its 2-(trimethylsilyl)ethyl glycoside related to the flavonoid triglycoside from *Gymnema sylvestre***

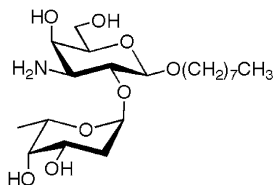
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Balaram Mukhopadhyay* and Robert A. Field*

**Synthesis of *n*-octyl 2,6-dideoxy- α -L-lyxo-hexopyranosyl-(1 $\rightarrow$ 2)-3-amino-3-deoxy- β -D-galactopyranoside, an analog of the H-disaccharide antigen**

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Yu Bai, Shuang-Jun Lin, Guizhong Qi, Monica M. Palcic and Todd L. Lowary*



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The image displays two chemical structures of 1,2,3,4-tetrahydro-2H-imidazoles. The left structure features a 2-(dimethylaminomethyl)-1H-naphthalen-1-yl group attached to the 4-position of the imidazole ring. The right structure features a 2-(dimethylaminomethyl)-1H-naphthalen-1-yl group attached to the 2-position and a 2-methoxyethyl group attached to the 4-position of the imidazole ring.

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$$\text{PO-} \begin{array}{c} \diagup \text{O} \diagdown \\ \text{C} \quad \text{C} \\ \diagdown \quad \diagup \\ (\text{PO})_n \quad \text{S-R} \end{array} \xrightarrow[\text{DCM, H}_2\text{O}]{\text{NIS, TFA}} \text{PO-} \begin{array}{c} \diagup \text{O} \diagdown \\ \text{C} \quad \text{C} \\ \diagdown \quad \diagup \\ (\text{PO})_n \quad \text{OH} \end{array}$$

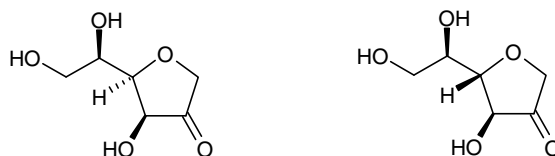
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The reaction scheme illustrates the synthesis of a branched oligosaccharide. It begins with a trisaccharide core (BnO, OBn, OBn) reacting through 5-6 steps to form a γ -sugar amino acid intermediate (FmocHN, HO, HO, HO, OMe). This intermediate then reacts with various amino acids (AA₁, AA₂, AA₃, AA₄) to form a branched oligosaccharide structure.

Synthesis of 1,4-anhydro-D-fructose and 1,4-anhydro-D-tagatose

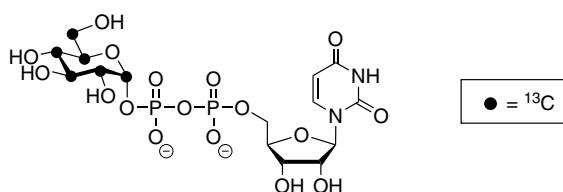
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Gyula Dekany, Inge Lundt,* Andreas J. Steiner and Arnold E. Stütz

**A convenient gram-scale synthesis of uridine diphospho(¹³C₆)glucose**

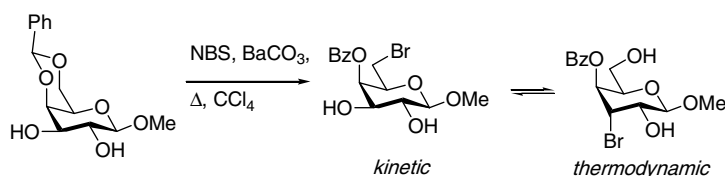
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Zoran Dinev, Ahmad Z. Wardak, Robert T. C. Brownlee and Spencer J. Williams*

**On the regioselectivity of the Hanessian–Hullar reaction in 4,6-O-benzylidene protected galactopyranosides**

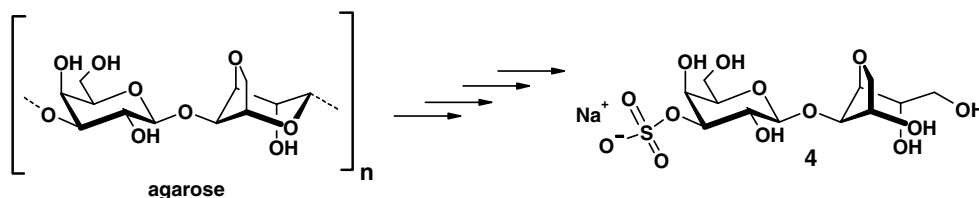
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David Crich,* Qingjia Yao and Albert A. Bowers

**Semi-synthesis of a 3-O-sulfated red seaweed galactan-derived disaccharide alditol**

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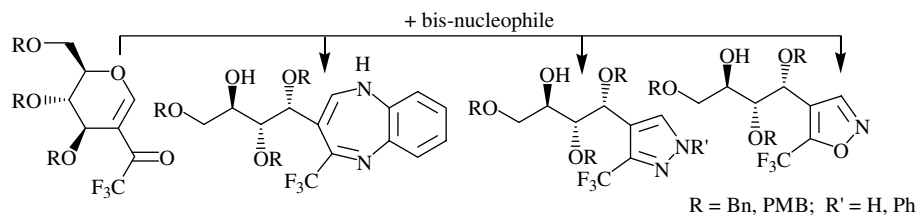
Alan G. Gonçalves, Miguel D. Nosedá, M. Eugênia R. Duarte and T. Bruce Grindley*



Fluorinated acyclo-C-nucleoside analogues from glycals in two steps

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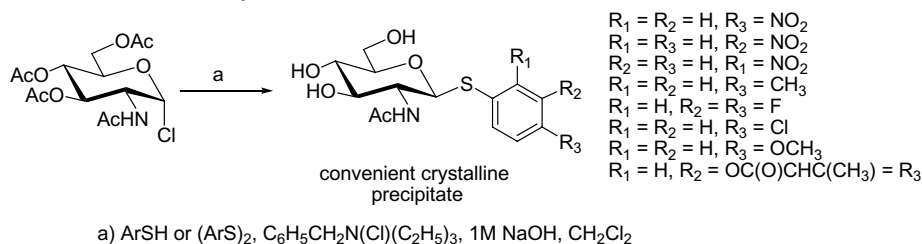
Constantin Mamat, Martin Hein and Ralf Miethchen*



A highly concise preparation of O-deacetylated arylthioglycosides of N-acetyl-D-glucosamine from 2-acetamido-3,4,6-tri-O-acetyl-2-deoxy-α-D-glucopyranosyl chloride and aryl thiols or disulfides

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Keith A. Stubbs, Matthew S. Macauley and David J. Vocadlo*



A direct preparation of O-deacetylated arylthioglycosides of N-acetyl-D-glucosamine from 2-acetamido-2-deoxy-1-thio-β-D-glucopyranosyl chloride and aryl thiols or disulfides.



*Corresponding author

i+ Supplementary data available via ScienceDirect

COVER

Image represents a key process of malaria parasites multiplying in, and rupturing from the human blood cell. The parasite surface is coated with glycosylphosphatidylinositols (GPIs), which have been identified as the malaria toxin by a collaborative effort between the research groups headed by Peter Seeberger (Swiss Federal Institute of Technology (ETH) Zürich, Switzerland) and Louis Schofield (Walter and Eliza Hall Institute of Medical Research, Australia). The space filling model represents the native GPI molecule from malaria parasite that has been chemically synthesized by the Seeberger group. Professor Peter Seeberger was presented with the Carbohydrate Research Award at the 13th European Carbohydrate Symposium (Bratislava, 2005).

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