

Subject Index of Volume 329

Absorption–emission spectra

Acid–base properties of the reaction product of sialic acid with fluorogenic reagent, 1,2-diamino-4,5-methylenedioxybenzene (DMB) 447

Acetyl group

Novel acetylated triterpenoid saponins in a chromatographic fraction from *Quillaja saponaria* Molina 817

Acid–base properties

Acid–base properties of the reaction product of sialic acid with fluorogenic reagent, 1,2-diamino-4,5-methylenedioxybenzene (DMB) 447

Acidic surface glycan

Structure of the acidic microcapsular glycan from the reference strain (C.D.C. 6320-58) for *Serratia marcescens* serotype O14:K12 227

Acosamine

A short and efficient transformation of rhamnose into activated daunosamine, acosamine, ristosamine and *epi*-daunosamine derivatives, and synthesis of an anthracycline antibiotic acosaminyl-*ε*-*iso*-rhodomycinone 861

Acosaminyl-*ε*-*iso*-rhodomycinone

A short and efficient transformation of rhamnose into activated daunosamine, acosamine, ristosamine and *epi*-daunosamine derivatives, and synthesis of an anthracycline antibiotic acosaminyl-*ε*-*iso*-rhodomycinone 861

Actinobacillus suis

The first description of a (1 → 6)-β-*D*-glucan in prokaryotes: (1 → 6)-β-*D*-glucan is a common component of *Actinobacillus suis* and is the basis for a serotyping system 121

Adenophostin

C-Glycoside based mimics of *D*-*myo*-inositol 1,4,5-trisphosphate 7

Agaricus bisporus

Double oxidation of *D*-xylose to *D*-glycero-pentoses-2,3-diulose (2,3-diketo-*D*-xylose) by pyranose dehydrogenase from the mushroom *Agaricus bisporus* 219

Aging

6-Deoxy-6-fluoro-*L*-ascorbic acid: crystal structure and oxidative degradation 477

Alcohols

A mild and selective cleavage of trityl ethers by CBr₄–MeOH 885
Diffusion of short chain alcohols from amorphous maltose–water mixtures above and below their glass transition temperature 377

Alditols

Molecular recognition of carbohydrates by a resorcinarene. Selective transport of alditols through a supported liquid membrane 409
The thio-Mitsunobu reaction of *D*-Glucitol, *D*-Mannitol, Galactitol and 1-Seleno-*D*-xylitol 781

Aldoses

A kinetic estimate of the free aldehyde content of aldoses 359

Alginate

Action of *Azotobacter vinelandii* poly-β-*D*-mannuronic acid C-5-epimerase on synthetic *D*-glucuronans 913

Alternan

X-ray structure determination and modeling of the cyclic tetrasaccharide *cyclo*-{ → 6)-α-*D*-Glc_p-(1 → 3)-α-*D*-Glc_p-(1 → 6)-α-*D*-Glc_p-(1 → 3)-α-*D*-Glc_p-(1 → } 655

Altropyranoside

Boat conformations. Analysis and simulation of the complex ¹H NMR spectrum of methyl 2,6:3,4-dianhydro-α-*D*-altropyranoside 131

6'-Aminoacetyltransferase

Synthesis of kanamycin A analogs containing a 6-amino-6-deoxyglycofuranose moiety 325

6-Amino-3,5,6-trideoxy-*D*- or -*L*-erythro hexofuranose

Synthesis of kanamycin A analogs containing a 6-amino-6-deoxyglycofuranose moiety 325

Amorphous carbohydrate

Diffusion of short chain alcohols from amorphous maltose–water mixtures above and below their glass transition temperature 377

Amylose

Characterization of doubly substituted polysaccharide derivatives 367

2,5-Anhydro-*D*-glucitol derivatives

Synthesis of 4-substituted phenyl 2,5-anhydro-1,6-dithio-α-*D*-gluco- and -α-*L*-guloseptanosides possessing antithrombotic activity 25

2,5-Anhydro-1,6-dithio-α-*L*-gulo- and -α-*D*-glucoseptanosides

Synthesis of 4-substituted phenyl 2,5-anhydro-1,6-dithio-α-*D*-gluco- and -α-*L*-guloseptanosides possessing antithrombotic activity 25

1,2-Anhydro-*myo*-inositol

New syntheses of 1*D*- and 1*L*-1,2-anhydro-*myo*-inositol and assessment of their glycosidase inhibitory activities 301

1,5-Anhydroribitol

Authentic standards for the reductive-cleavage method. The positional isomers of partially methylated and acetylated or benzoyleated 1,5-anhydroribitol 189

3,6-Anhydro-3-thio-*D*-glucofuranosides

Synthesis of 4-substituted phenyl 3,6-anhydro-1,3-dithio-*D*-glucofuranosides and -pyranosides as well as 2,6-anhydro-1,2-dithio-α-*D*-altrofuranosides possessing antithrombotic activity 525

3,6-Anhydro-3-thio-*D*-glucopyranosides

Synthesis of 4-substituted phenyl 3,6-anhydro-1,3-dithio-*D*-glucofuranosides and -pyranosides as well as 2,6-anhydro-1,2-dithio-α-*D*-altrofuranosides possessing antithrombotic activity 525

Anthracycline

A short and efficient transformation of rhamnose into activated daunosamine, acosamine, ristosamine and *epi*-daunosamine derivatives, and synthesis of an anthracycline antibiotic acosaminyl-*ε*-*iso*-rhodomycinone 861

Antithrombotic thioglycosides

Synthesis of 4-cyano- and 4-nitrophenyl 2,5-anhydro-1,6-dithio-α-*D*-gluco- and -α-*L*-guloseptanosides carrying different substituents at C-3 and C-4 269

Antitumor activity

Synthesis of glycosides bearing the disaccharide of OSW-1 or its 1 → 4-linked analogue and their antitumor activities 495

Ascorbic acid

6-Deoxy-6-fluoro-*L*-ascorbic acid: crystal structure and oxidative degradation 477

Aspen wood (*Populus tremula*)

Characterization of acetylated 4-*O*-methylglucuronoxylan isolated from aspen employing ¹H and ¹³C NMR spectroscopy 807

Aspergillus aculeatus

Purification and characterisation of a β -galactosidase from *Aspergillus aculeatus* with activity towards (modified) exopolysaccharides from *Lactococcus lactis* subsp. *cremoris* B39 and B891 75

Azido glycoside primer

Azido glycoside primer: a versatile building block for the biocombinatorial synthesis of glycosphingolipid analogues 755

Azopyrazolone

Heterocyclic derivatives of sugars: the formation of 1-glycosyl-3-methylpyrazol-5-ones from hydrazones 169

Azotobacter vinelandii

Action of *Azotobacter vinelandii* poly- β -D-mannuronic acid C-5-epimerase on synthetic D-glucuronans 913

Bacillus clausii BT-21

Purification and characterisation of a malto-oligosaccharide-forming amylase active at high pH from *Bacillus clausii* BT-21 97

1,5-Benzodiazepine C-nucleoside

Novel ring transformation of 5-(2,3,5-tri-*O*-benzoyl- β -D-ribofuranosyl)isoxazole-4-carbaldehyde with 1,2-diaminobenzenes to 3-cyano-1,5-benzodiazepine C-nucleosides 681

Birch reduction

Introduction of monosaccharides having functional groups onto a carbosilane dendrimer: A broadly applicable one-pot reaction in liquid ammonia involving Birch reduction and subsequent S_N2 reaction 765

Blood group antigens

Synthesis of the Lewis b hexasaccharide and squarate acid-HSA conjugates thereof with various saccharide loadings 309

Boat conformations

Boat conformations. Analysis and simulation of the complex ¹H NMR spectrum of methyl 2,6:3,4-dianhydro- α -D-altropyranoside 131

Branched-chain sugars

Synthesis of branched-chain sugar derivatives from 1,2;5,6-di-*O*-isopropylidene- α -D-ribo-hexofuranos-3-ulose and 1,2;4,5-di-*O*-isopropylidene- β -D-erythro-2-hexulopyranos-3-ulose 901

Browning

Synthesis of 1-deoxy-D-erythro-hexo-2,3-diulose, a major hexose Maillard intermediate 515

Capsule

The first description of a (1 \rightarrow 6)- β -D-glucan in prokaryotes: (1 \rightarrow 6)- β -D-glucan is a common component of *Actinobacillus suis* and is the basis for a serotyping system 121

Carbohydrate

An efficient and concise regioselective synthesis of α -(1 \rightarrow 5)-linked L-arabinofuranosyl oligosaccharides 17

Carbohydrate labelling

Heterocyclic derivatives of sugars: the formation of 1-glycosyl-3-methylpyrazol-5-ones from hydrazones 169

Carbon-13-proton chemical shift correlation

Boat conformations. Analysis and simulation of the complex ¹H NMR spectrum of methyl 2,6:3,4-dianhydro- α -D-altropyranoside 131

Carbon tetrabromide

A mild and selective cleavage of trityl ethers by CBr₄-MeOH 885

Carbosilane dendrimers

Introduction of monosaccharides having functional groups onto a carbosilane dendrimer: A broadly applicable one-pot reaction in liquid ammonia involving Birch reduction and subsequent S_N2 reaction 765

Cationised potato starch

The substitution pattern in cationised and oxidised potato starch granules 621

C-2 Branched carbohydrates

Preparation of various C-2 branched carbohydrates using intramolecular radical reactions 731

²C₅ chair

Synthesis of 1-deoxy-D-erythro-hexo-2,3-diulose, a major hexose Maillard intermediate 515

⁴C₁ Conformation

β -Selective O-rhamnosylation with a rhamnosyl trichloroacetimidate that has the ⁴C₁ conformation 889

CDw60

Immunocytochemical localization of CDw60 antigens on human peripheral T cells 791

C- β -D-Xyloside

Synthesis of C-pentopyranosylphloroacetophenone derivatives and their anomerization 855

Cell adhesion

Synthesis and glycan priming activity of acetylated disaccharides 287

Cellulose

Characterization of doubly substituted polysaccharide derivatives 367

Cell wall

Immunostimulant (1 \rightarrow 3)-D-glucans from the cell wall of *Cryphonectria parasitica* (Murr.) Barr strain 263 441

C-5-Epimerase

Action of *Azotobacter vinelandii* poly- β -D-mannuronic acid C-5-epimerase on synthetic D-glucuronans 913

C-Glycosyl compound

An effective synthesis of isoorientin: the regioselective synthesis of a 6-C-glucosylflavone 507

6-C-Glycosyl flavone

An effective synthesis of isoorientin: the regioselective synthesis of a 6-C-glucosylflavone 507

C-Glycosylflavonoid

Synthesis of C-pentopyranosylphloroacetophenone derivatives and their anomerization 855

C-Glycosylic compound

Synthesis of C-pentopyranosylphloroacetophenone derivatives and their anomerization 855

Chemical shifts

Effect of substitution pattern on ¹H, ¹³C NMR chemical shifts and ¹J_{CH} coupling constants in heparin derivatives 239

Chemical synthesis

Chemical synthesis of sulfated oligosaccharides with a β -D-Gal-(1 \rightarrow 3)-[β -D-Gal-(1 \rightarrow 4)-(α -L-Fuc-(1 \rightarrow 3)- β -D-GlcNAc-(1 \rightarrow 6)]- α -D-GalNAc sequence 561

Chemoselective glycosylation

Intermolecular aglycon transfer of ethyl thioglycosides can be prevented by judicious choice of protecting groups 709

chiro-Inositol

New syntheses of 1D- and 1L-1,2-anhydro-*myo*-inositol and assessment of their glycosidase inhibitory activities 301

Chitosan

Characterization of doubly substituted polysaccharide derivatives 367

Circular dichroism spectra

Complexation of sucrose with cobalt(III)bis(phenanthroline) 195

1,2-*cis* Glycofuranosyl azides

Stereoselective synthesis of 1,2-*cis*- and 2-deoxyglycofuranosyl azides from glycosyl halides 317

C- α -L-Arabinoside

Synthesis of C-pentopyranosylphloroacetophenone derivatives and their anomerization 855

C- β -L-Arabinoside

Synthesis of C-pentopyranosylphloroacetophenone derivatives and their anomerization 855

¹³C NMR

X-Ray diffraction and high resolution NMR analysis of methyl D-glucopyranuronate derivatives 249

C-Nucleoside

Novel ring transformation of 5-(2,3,5-tri-*O*-benzoyl- β -D-ribofuranosyl)isoxazole-4-carbaldehyde with 1,2-diaminobenzenes to 3-cyano-1,5-benzodiazepine C-nucleosides 681

Complexation

Complexation of sucrose with cobalt(III)bis(phenanthroline) 195
Complexation of trivalent lanthanide cations by inositols in the solid state: crystal structure and an FT-IR study of $\text{PrCl}_3 \cdot \text{myo-inositol} \cdot 9 \text{ H}_2\text{O}$ 847

Complexes

NMR study of the complexation of D-gulonic acid with tungsten(VI) and molybdenum(VI) 387

Conduritol B epoxide

New syntheses of 1D- and 1L-1,2-anhydro-*myo*-inositol and assessment of their glycosidase inhibitory activities 301

Conformation

Effect of substitution pattern on ^1H , ^{13}C NMR chemical shifts and $^1J_{\text{CH}}$ coupling constants in heparin derivatives 239
The cytokine stimulating activity of (1 \rightarrow 3)- β -D-glucans is dependent on the triple helix conformation 587
The kinetics of periodate oxidation of carbohydrates: a calorimetric approach 87

Core

The structure of the carbohydrate backbone of the core-lipid A region of the lipopolysaccharide from *Proteus mirabilis* serotype O28 351

Covalent glycosyl-enzyme intermediate

The synthesis, testing and use of 5-fluoro- α -D-galactosyl fluoride to trap an intermediate on green coffee bean α -galactosidase and identify the catalytic nucleophile 539

Critical micelle concentration

Synthesis and amphiphilic properties of glycosyl-1,4-benzodiazepin-2,5-diones 207

Cryphonectria parasitica

Immunostimulant (1 \rightarrow 3)-D-glucans from the cell wall of *Cryphonectria parasitica* (Murr.) Barr strain 263 441

Crystallization

Isothermal and non-isothermal crystallization in amorphous sucrose and lactose at low moisture contents 423

Crystallography

Chemical synthesis of sulfated oligosaccharides with a β -D-Gal-(1 \rightarrow 3)- β -D-Gal-(1 \rightarrow 4)-(α -L-Fuc-(1 \rightarrow 3)- β -D-GlcNAc-(1 \rightarrow 6))- α -D-GalNAc sequence 561

Crystal structure

Crystal structures of heptakis(2,6-di-*O*-ethyl)cyclomaltoheptaose [heptakis(2,6-di-*O*-ethyl)- β -cyclodextrin]. Solvent-regulated helical assembly of macrocycles 597

Crystal structures

Complexation of trivalent lanthanide cations by inositols in the solid state: crystal structure and an FT-IR study of $\text{PrCl}_3 \cdot \text{myo-inositol} \cdot 9 \text{ H}_2\text{O}$ 847
X-ray structure determination and modeling of the cyclic tetrasaccharide *cyclo*-{ \rightarrow 6)- α -D-Glcp-(1 \rightarrow 3)- α -D-Glcp-(1 \rightarrow 6)- α -D-Glcp-(1 \rightarrow 3)- α -D-Glcp-(1 \rightarrow) 655

Cyanation

The cyanation reaction of O-acetylated S-glycosyl phosphorothioates 687

3-Cyano-1,5-benzodiazepine

Novel ring transformation of 5-(2,3,5-tri-*O*-benzoyl- β -D-ribofuranosyl)isoxazole-4-carbaldehyde with 1,2-diaminobenzenes to 3-cyano-1,5-benzodiazepine C-nucleosides 681

Cyclic-tetrasaccharide

X-ray structure determination and modeling of the cyclic tetrasaccharide *cyclo*-{ \rightarrow 6)- α -D-Glcp-(1 \rightarrow 3)- α -D-Glcp-(1 \rightarrow 6)- α -D-Glcp-(1 \rightarrow 3)- α -D-Glcp-(1 \rightarrow) 655

Cyclocondensation

Novel ring transformation of 5-(2,3,5-tri-*O*-benzoyl- β -D-ribofura-

nosyl)isoxazole-4-carbaldehyde with 1,2-diaminobenzenes to 3-cyano-1,5-benzodiazepine C-nucleosides 681

Cyclodextrin glycosyltransferase

Two-step enzymatic synthesis of maltooligosaccharide esters 57

Cyclooligosaccharides

Host-guest complex formation in cyclotriakis-(1 \rightarrow 6)-[α -D-glucopyranosyl-(1 \rightarrow 4)- β -D-glucopyranosyl] 647

Cyclotriakis-(1 \rightarrow 6)-[α -D-glucopyranosyl-(1 \rightarrow 4)- β -D-glucopyranosyl]

Host-guest complex formation in cyclotriakis-(1 \rightarrow 6)-[α -D-glucopyranosyl-(1 \rightarrow 4)- β -D-glucopyranosyl] 647

 β -D-Allyl mannoside

Synthesis of allyl 2-*O*-(α -L-arabinofuranosyl)-6-*O*-(α -D-mannopyranosyl)- β -D-mannopyranoside, a unique plant N-glycan motif containing arabinose 431

D-arabino-Hex-2-ulopyranosonates

N-Glycosidation of D-arabino-hex-2-ulosonic acid 693

Daunosamine

A short and efficient transformation of rhamnose into activated daunosamine, acosamine, ristosamine and *epi*-daunosamine derivatives, and synthesis of an anthracycline antibiotic acosaminyl- ϵ -iso-rhodomyconone 861

2D DQF-COSY

Chemical synthesis of sulfated oligosaccharides with a β -D-Gal-(1 \rightarrow 3)- β -D-Gal-(1 \rightarrow 4)-(α -L-Fuc-(1 \rightarrow 3)- β -D-GlcNAc-(1 \rightarrow 6))- α -D-GalNAc sequence 561

1-Deoxy-D-erythro-hexo-2,3-diulose

Synthesis of 1-deoxy-D-erythro-hexo-2,3-diulose, a major hexose Maillard intermediate 515

2-Deoxyglycofuranosyl azides

Stereoselective synthesis of 1,2-*cis*- and 2-deoxyglycofuranosyl azides from glycosyl halides 317

2-Deoxy-2-trichloroacetamido-D-galacto derivatives

Syntheses of β -D-GalpNAc4SO₃-(1 \rightarrow 4)-L-IdopA2SO₃, a disaccharide fragment of dermatan sulfate, and of its methyl α -L-glycoside derivative 667

Depurination

A kinetic estimate of the free aldehyde content of aldoses 359

Dermatan sulfate disaccharides

Syntheses of β -D-GalpNAc4SO₃-(1 \rightarrow 4)-L-IdopA2SO₃, a disaccharide fragment of dermatan sulfate, and of its methyl α -L-glycoside derivative 667

(1 \rightarrow 6)- β -D-Glucan

The first description of a (1 \rightarrow 6)- β -D-glucan in prokaryotes: (1 \rightarrow 6)- β -D-glucan is a common component of *Actinobacillus suis* and is the basis for a serotyping system 121

D-Glucuronic acid

Action of *Azotobacter vinelandii* poly- β -D-mannuronic acid C-5-epimerase on synthetic D-glucuronans 913

D-Glucuronic acid derivatives

X-Ray diffraction and high resolution NMR analysis of methyl D-glucopyranuronate derivatives 249

D-glycero-Pentos-2,3-diulose

Double oxidation of D-xylose to D-glycero-pentos-2,3-diulose (2,3-diketo-D-xylose) by pyranose dehydrogenase from the mushroom *Agaricus bisporus* 219

D-Gulonic acid

NMR study of the complexation of D-gulonic acid with tungsten(VI) and molybdenum(VI) 387

Diabetes

6-Deoxy-6-fluoro-L-ascorbic acid: crystal structure and oxidative degradation 477

1,2-Diamino-4,5-methylenedioxybenzene (DMB)

Acid-base properties of the reaction product of sialic acid with fluorogenic reagent, 1,2-diamino-4,5-methylenedioxybenzene (DMB) 447

2,6:3,4-Dianhydride

Boat conformations. Analysis and simulation of the complex ^1H NMR spectrum of methyl 2,6:3,4-dianhydro- α -D-altropyranoside 131

Diaxial interaction

Synthesis of C-pentopyranosylphloroacetophenone derivatives and their anomerization 855

Dicarbonyl sugars

Double oxidation of D-xylose to D-glycero-pentos-2,3-diulose (2,3-diketo-D-xylose) by pyranose dehydrogenase from the mushroom *Agaricus bisporus* 219

Dielectric relaxation

Effect of molecular structure and water content on the dielectric relaxation behaviour of amorphous low molecular weight carbohydrates above and below their glass transition 839

Diffusion

Diffusion of short chain alcohols from amorphous maltose–water mixtures above and below their glass transition temperature 377

Diffusion coefficient

Studies of the complexation of sugars by diffusion-ordered NMR spectroscopy 1

Diffusion-ordered spectroscopy

Studies of the complexation of sugars by diffusion-ordered NMR spectroscopy 1

2,3-Diketo-D-xylose

Double oxidation of D-xylose to D-glycero-pentos-2,3-diulose (2,3-diketo-D-xylose) by pyranose dehydrogenase from the mushroom *Agaricus bisporus* 219

Diode array detector

High-performance anion-exchange chromatography — DAD as a tool for the identification and quantification of oligogalacturonic acids in pectin depolymerisation 907

Disaccharides

Comparative study of new α -galactosidases in transglycosylation reactions 65

Distribution

On the galactosyl distribution of commercial galactomannans 609

DOSY

Studies of the complexation of sugars by diffusion-ordered NMR spectroscopy 1

2D ROESY

Chemical synthesis of sulfated oligosaccharides with a β -D-Gal-(1 \rightarrow 3)- β -D-Gal-(1 \rightarrow 4)-(α -L-Fuc-(1 \rightarrow 3)- β -D-GlcNAc-(1 \rightarrow 6))- α -D-GalNAc sequence 561

DSC

Isothermal and non-isothermal crystallization in amorphous sucrose and lactose at low moisture contents 423

D-threo-Pentos-2-ulose

Double oxidation of D-xylose to D-glycero-pentos-2,3-diulose (2,3-diketo-D-xylose) by pyranose dehydrogenase from the mushroom *Agaricus bisporus* 219

D-Xylose

Double oxidation of D-xylose to D-glycero-pentos-2,3-diulose (2,3-diketo-D-xylose) by pyranose dehydrogenase from the mushroom *Agaricus bisporus* 219

Electronic spectra

Characterization of new oxovanadium(IV) complexes of saccharides 41

Energy-filtered transmission electron microscopy

Immunocytochemical localization of CDw60 antigens on human peripheral T cells 791

Enzymatic glycosylation

Synthesis of α -Gal epitope derivatives with a galactosyltransferase–epimerase fusion enzyme 873

Enzymic modification

Purification and characterisation of a β -galactosidase from *Aspergillus aculeatus* with activity towards (modified) exopolysaccharides from *Lactococcus lactis* subsp. *cremoris* B39 and B891 75

4-Epimer

X-ray crystal structure analysis of 4,7,8,9-tetra-O-acetyl-N-acetyl-2,3-dehydro-2-deoxy-4-epi-neuraminic acid methyl ester 253

Epitopes

Synthesis of α -Gal epitope derivatives with a galactosyltransferase–epimerase fusion enzyme 873

Exopolysaccharide

Purification and characterisation of a β -galactosidase from *Aspergillus aculeatus* with activity towards (modified) exopolysaccharides from *Lactococcus lactis* subsp. *cremoris* B39 and B891 75

Structure of a viscous exopolysaccharide produced by *Lactobacillus helveticus* K16 465

Facilitated transport

Molecular recognition of carbohydrates by a resorcinarene. Selective transport of alditols through a supported liquid membrane 409

Fluorescence

Host–guest complex formation in cyclotriakis-(1 \rightarrow 6)-[α -D-glucopyranosyl-(1 \rightarrow 4)- β -D-glucopyranosyl] 647

5-Fluoro- α -D-galactopyranosyl fluoride

The synthesis, testing and use of 5-fluoro- α -D-galactosyl fluoride to trap an intermediate on green coffee bean α -galactosidase and identify the catalytic nucleophile 539

Formyl glycal

Preparation of various C-2 branched carbohydrates using intramolecular radical reactions 731

Free aldehyde

A kinetic estimate of the free aldehyde content of aldoses 359

Free volume

Dynamic oscillation measurements of starch networks at temperatures above 100 °C 179

FT-IR

Complexation of trivalent lanthanide cations by inositols in the solid state: crystal structure and an FT-IR study of $\text{PrCl}_3 \cdot \text{myo-inositol} \cdot 9 \text{H}_2\text{O}$ 847

Fungi

Immunostimulant (1 \rightarrow 3)-D-glucans from the cell wall of *Cryptosporidia parvula* (Murr.) Barr strain 263 441

Furanose

An efficient and concise regioselective synthesis of α -(1 \rightarrow 5)-linked L-arabinofuranosyl oligosaccharides 17

Fusion protein

Synthesis of α -Gal epitope derivatives with a galactosyltransferase–epimerase fusion enzyme 873

Galabiosyl donor

Galabiosyl donors; efficient synthesis from 1,2,3,4,6-penta-O-acetyl- β -D-galactopyranose 49

Galactoglucomannan

Galactoglucomannan from the secondary cell wall of *Picea abies* L. Karst 635

Galactomannan

On the galactosyl distribution of commercial galactomannans 609

Galactose

On the galactosyl distribution of commercial galactomannans 609

 α -Galactosidase

The synthesis, testing and use of 5-fluoro- α -D-galactosyl fluoride to trap an intermediate on green coffee bean α -galactosidase and identify the catalytic nucleophile 539

 β -Galactosidase

Purification and characterisation of a β -galactosidase from *Aspergillus aculeatus* with activity towards (modified) exopolysaccharides from *Lactococcus lactis* subsp. *cremoris* B39 and B891 75

Glass transition

Diffusion of short chain alcohols from amorphous maltose–water mixtures above and below their glass transition temperature 377
Effect of molecular structure and water content on the dielectric relaxation behaviour of amorphous low molecular weight carbohydrates above and below their glass transition 839

Globo series

Galabiosyl donors; efficient synthesis from 1,2,3,4,6-penta-*O*-acetyl- β -*D*-galactopyranose 49

Glucan

Immunostimulant (1 \rightarrow 3)-*D*-glucans from the cell wall of *Cryphonectria parasitica* (Murr.) Barr strain 263 441

Glucose-6-phosphate dehydrogenase

A novel enzymic determination of maltose 699

Glucuronic acid

Synthesis of 3-*O*-sulfoglucuronyl lacto-*N*-neotetraose 2-aminoethyl glycoside and biotinylated neoglycoconjugates thereof 717

Glycation

6-Deoxy-6-fluoro-*L*-ascorbic acid: crystal structure and oxidative degradation 477

Glyco amino acids

N-Glycosidation of *D*-arabino-hex-2-ulosonic acid 693

Glycoconjugates

Synthesis of the Lewis b hexasaccharide and squarate acid–HSA conjugates thereof with various saccharide loadings 309

Glycodendrimers

Introduction of monosaccharides having functional groups onto a carbosilane dendrimer: A broadly applicable one-pot reaction in liquid ammonia involving Birch reduction and subsequent S_N2 reaction 765

Glyco-[2,1-*d*]-2-oxazolines

The application of the intermediate 2-methyl-glyco-[2,1-*d*]-2-oxazolines for glycoside synthesis 895

Glycolipids

Galabiosyl donors; efficient synthesis from 1,2,3,4,6-penta-*O*-acetyl- β -*D*-galactopyranose 49

Glycophorin A

Solid-phase synthesis of the glycopeptide of human glycophorin AM bearing the consecutive sialyl-T antigen 773

Glycosidase inhibition

New syntheses of 1*D*- and 1*L*-1,2-anhydro-*myo*-inositol and assessment of their glycosidase inhibitory activities 301

Glycosidation reactions

Synthesis of 4-substituted phenyl 2,5-anhydro-1,6-dithio- α -*D*-gluco- and - α -*L*-guloseptanosides possessing antithrombotic activity 25

Synthesis of 4-substituted phenyl 3,6-anhydro-1,3-dithio-*D*-glucofuranosides and -pyranosides as well as 2,6-anhydro-1,2-dithio- α -*D*-altrofuranosides possessing antithrombotic activity 525

Glycoside primers

Synthesis and glycan priming activity of acetylated disaccharides 287

Glycosylation reactions

Syntheses of β -*D*-GalpNAc4SO₃-(1 \rightarrow 4)-*L*-IdopA2SO₃, a disaccharide fragment of dermatan sulfate, and of its methyl α -*L*-glycoside derivative 667

Glycosyl-1,4-benzodiazepin-2,5-diones

Synthesis and amphiphilic properties of glycosyl-1,4-benzodiazepin-2,5-diones 207

Glycosyl cyanide

The cyanation reaction of *O*-acetylated *S*-glycosyl phosphorothioates 687

Glycosyl halides

The application of the intermediate 2-methyl-glyco-[2,1-*d*]-2-oxazolines for glycoside synthesis 895

Glycosyl halides, azide displacement

Stereoselective synthesis of 1,2-*cis*- and 2-deoxyglycofuranosyl azides from glycosyl halides 317

GM3 oligosaccharide lactone

An NMR study of the lactonization of α -*N*-acetylneuraminyl-(2 \rightarrow 3)-lactose 471

Gradient-enhanced 2D HSQC

Boat conformations. Analysis and simulation of the complex ¹H NMR spectrum of methyl 2,6:3,4-dianhydro- α -*D*-altropyranoside 131

Halide-ion catalysis

The application of the intermediate 2-methyl-glyco-[2,1-*d*]-2-oxazolines for glycoside synthesis 895

Helical assembly

Crystal structures of heptakis(2,6-di-*O*-ethyl)cyclomaltoheptaose [heptakis(2,6-di-*O*-ethyl)- β -cyclodextrin]. Solvent-regulated helical assembly of macrocycles 597

Helicobacter pylori

Synthesis of the Lewis b hexasaccharide and squarate acid–HSA conjugates thereof with various saccharide loadings 309

Hemicellulose, extraction

Characterization of acetylated 4-*O*-methylglucuronoxylan isolated from aspen employing ¹H and ¹³C NMR spectroscopy 807

Heparin

Effect of substitution pattern on ¹H, ¹³C NMR chemical shifts and ¹J_{CH} coupling constants in heparin derivatives 239

Heptakis(2,6-di-*O*-ethyl)- β -cyclodextrin

Crystal structures of heptakis(2,6-di-*O*-ethyl)cyclomaltoheptaose [heptakis(2,6-di-*O*-ethyl)- β -cyclodextrin]. Solvent-regulated helical assembly of macrocycles 597

Heptose

Structure of the lipopolysaccharide core region of *Hafnia alvei* strains 1185 and 1204 233

High-performance anion-exchange chromatography with pulsed amperometric detection

Suitability and limitations of methods for characterisation of activity of malto-oligosaccharide-forming amylases 109

High solids

Viscoelastic properties of pectin–co-solute mixtures at iso-free-volume states 399

High solids systems

Dynamic oscillation measurements of starch networks at temperatures above 100 °C 179

HNK-1

Synthesis of 3-*O*-sulfoglucuronyl lacto-*N*-neotetraose 2-aminoethyl glycoside and biotinylated neoglycoconjugates thereof 717

¹H NMR

Preparation, chemical and crystal structures of *N*-(2-acetamido-3,4,6-tri-*O*-acetyl-2-deoxy- β -*D*-glucopyranosyl)pyridinium chloride 703

X-Ray diffraction and high resolution NMR analysis of methyl *D*-glucopyranuronate derivatives 249

HPAEC

High-performance anion-exchange chromatography — DAD as a tool for the identification and quantification of oligogalacturonic acids in pectin depolymerisation 907

HPLC separation

Examination of the active sites of human salivary α -amylase (HSA) 579

Human salivary α -amylase

Examination of the active sites of human salivary α -amylase (HSA) 579

Hydrogenolysis

An effective synthesis of isoorientin: the regioselective synthesis of a 6-*C*-glycosylflavone 507

Hydrolysis

Lactones of methyl 3-*O*-[(*R*)- and (*S*)-1-carboxyethyl]- α -D-glucopyranosyl-, and manno-pyranosides 257

Immunoelectron microscopy

Immunocytochemical localization of CDw60 antigens on human peripheral T cells 791

Immunological activity

Immunostimulant (1 \rightarrow 3)-D-glucans from the cell wall of *Cryphonectria parasitica* (Murr.) Barr strain 263 441

Inclusion complexes

Host–guest complex formation in cyclotriakis-(1 \rightarrow 6)-[α -D-glucopyranosyl-(1 \rightarrow 4)- β -D-glucopyranosyl] 647

Infrared spectra

Characterization of new oxovanadium(IV) complexes of saccharides 41

Inhibitors

Synthesis and glycan priming activity of acetylated disaccharides 287

Intermolecular migration

The intermolecular migration of polyol stannylenes as a reaction contributing to the regioselectivity of substitution 215

Internal residue loss

FAB CIDMS/MS analysis of partially methylated maltotrioses derived from methylated amylose: a study of the substituent distribution 341

Intramolecular radical cyclization–fragmentation reaction

Preparation of various C-2 branched carbohydrates using intramolecular radical reactions 731

Iso-free-volume state

Viscoelastic properties of pectin–co-solute mixtures at iso-free-volume states 399

Isoorientin

An effective synthesis of isoorientin: the regioselective synthesis of a 6-*C*-glucosylflavone 507

Isothermal calorimetry

The kinetics of periodate oxidation of carbohydrates: a calorimetric approach 87

Isoxazole carbaldehyde

Novel ring transformation of 5-(2,3,5-tri-*O*-benzoyl- β -D-ribofuranosyl)isoxazole-4-carbaldehyde with 1,2-diaminobenzenes to 3-cyano-1,5-benzodiazepine *C*-nucleosides 681

 $^1J_{\text{CH}}$ coupling constants

Effect of substitution pattern on ^1H , ^{13}C NMR chemical shifts and $^1J_{\text{CH}}$ coupling constants in heparin derivatives 239

Kanamycin analogs

Synthesis of kanamycin A analogs containing a 6-amino-6-deoxyglycofuranose moiety 325

Kdo

Synthesis of neoglycoproteins containing D-glycero-D-talo-oct-2-ulopyranosylonic acid (Ko) ligands corresponding to core units from *Burkholderia* and *Acinetobacter* lipopolysaccharide 549

2-Keto-D-xylose

Double oxidation of D-xylose to D-glycero-pentos-2,3-diulose (2,3-diketo-D-xylose) by pyranose dehydrogenase from the mushroom *Agaricus bisporus* 219

Kinetics

The kinetics of periodate oxidation of carbohydrates: a calorimetric approach 87

Ko

Synthesis of neoglycoproteins containing D-glycero-D-talo-oct-2-ulopyranosylonic acid (Ko) ligands corresponding to core units from *Burkholderia* and *Acinetobacter* lipopolysaccharide 549

Lactobacillus helveticus

Structure of a viscous exopolysaccharide produced by *Lactobacillus helveticus* K16 465

Lactococcus lactis subsp. *cremoris*

Purification and characterisation of a β -galactosidase from *Aspergillus aculeatus* with activity towards (modified) exopolysaccharides from *Lactococcus lactis* subsp. *cremoris* B39 and B891 75

Lactones

Lactones of methyl 3-*O*-[(*R*)- and (*S*)-1-carboxyethyl]- α -D-glucopyranosyl-, and manno-pyranosides 257

Lactonization

Synthesis of 3-*O*-sulfoglucuronyl lacto-*N*-neotetraose 2-aminoethyl glycoside and biotinylated neoglycoconjugates thereof 717

Lactose

Isothermal and non-isothermal crystallization in amorphous sucrose and lactose at low moisture contents 423

Lactosyl ceramide analogue

Azido glycoside primer: a versatile building block for the biocombinatorial synthesis of glycosphingolipid analogues 755

Lanthanide

Complexation of trivalent lanthanide cations by inositols in the solid state: crystal structure and an FT-IR study of $\text{PrCl}_3 \cdot \text{myo-inositol} \cdot 9\text{H}_2\text{O}$ 847

Lanthanide cations

Studies of the complexation of sugars by diffusion-ordered NMR spectroscopy 1

L-Arabinose

Synthesis of allyl 2-*O*-(α -L-arabinofuranosyl)-6-*O*-(α -D-mannopyranosyl)- β -D-mannopyranoside, a unique plant *N*-glycan motif containing arabinose 431

Lewis antigens

Intermolecular aglycon transfer of ethyl thioglycosides can be prevented by judicious choice of protecting groups 709

L-Iduronic acid

Action of *Azotobacter vinelandii* poly- β -D-mannuronic acid C-5-epimerase on synthetic D-glucuronans 913

Lintnerisation

The substitution pattern in cationised and oxidised potato starch granules 621

Lipase

Two-step enzymatic synthesis of maltooligosaccharide esters 57

Lipopolysaccharide

Full structure of the O-specific polysaccharide of *Proteus mirabilis* O24 containing 3,4-*O*-[(*S*)-1-carboxyethylidene]-D-galactose 453

Structure of the O-specific polysaccharide of *Mesorhizobium huakuii* IFO15243T 459

Structure of the O-specific polysaccharides of the lipopolysaccharides of *Xanthomonas campestris* pv. *vignicola* GSPB 2795 and GSPB 2796 831

The first description of a (1 \rightarrow 6)- β -D-glucan in prokaryotes: (1 \rightarrow 6)- β -D-glucan is a common component of *Actinobacillus suis* and is the basis for a serotyping system 121

Lipopolysaccharides

Synthesis of neoglycoproteins containing D-glycero-D-talo-oct-2-ulopyranosylonic acid (Ko) ligands corresponding to core units from *Burkholderia* and *Acinetobacter* lipopolysaccharide 549

L-Malic acid chloralid

Synthesis of *N*⁴-(2-acetamido-2-deoxy- β -D-glucopyranosyl)-L-asparagine analogues: Succinamide, L-2-hydroxysuccinamide, and L-2-hydroxysuccinamic acid hydrazide analogues 487

Long-range coupling constants

Boat conformations. Analysis and simulation of the complex ^1H NMR spectrum of methyl 2,6:3,4-dianhydro- α -D-altropyranoside 131

LPS

The structure of the carbohydrate backbone of the core–lipid A region of the lipopolysaccharide from *Proteus mirabilis* serotype O28 351

LPS core

Structure of the lipopolysaccharide core region of *Hafnia alvei* strains 1185 and 1204 233

- Macrocyclic structure
Crystal structures of heptakis(2,6-di-*O*-ethyl)cyclomaltoheptaose [heptakis(2,6-di-*O*-ethyl)- β -cyclodextrin]. Solvent-regulated helical assembly of macrocycles 597
- Maillard reaction
6-Deoxy-6-fluoro-L-ascorbic acid: crystal structure and oxidative degradation 477
Synthesis of 1-deoxy-D-*erythro*-hexo-2,3-diulose, a major hexose Maillard intermediate 515
- Maltooligosaccharide esters
Two-step enzymatic synthesis of maltooligosaccharide esters 57
- Malto-oligosaccharide-forming amylase
Purification and characterisation of a malto-oligosaccharide-forming amylase active at high pH from *Bacillus clausii* BT-21 97
Suitability and limitations of methods for characterisation of activity of malto-oligosaccharide-forming amylases 109
- Malto-oligosaccharides
Purification and characterisation of a malto-oligosaccharide-forming amylase active at high pH from *Bacillus clausii* BT-21 97
- Maltooligosides
Examination of the active sites of human salivary α -amylase (HSA) 579
- Maltose
A novel enzymic determination of maltose 699
- Maltose 1-epimerase
A novel enzymic determination of maltose 699
- Maltose phosphorylase
A novel enzymic determination of maltose 699
- Mannanase
On the galactosyl distribution of commercial galactomannans 609
- Mannoglucan
A facile synthesis of the tetrasaccharide repeating unit of mannoglucan from *Microellobosporia grisea* 199
- Mannose
On the galactosyl distribution of commercial galactomannans 609
- Mass spectrometry
FAB CIDMS/MS analysis of partially methylated maltotrioses derived from methylated amylose: a study of the substituent distribution 341
Host–guest complex formation in cyclotriakis-(1 \rightarrow 6)-[α -D-glucopyranosyl-(1 \rightarrow 4)- β -D-glucopyranosyl] 647
The synthesis, testing and use of 5-fluoro- α -D-galactosyl fluoride to trap an intermediate on green coffee bean α -galactosidase and identify the catalytic nucleophile 539
- Master curve
Isothermal and non-isothermal crystallization in amorphous sucrose and lactose at low moisture contents 423
- Mechanism
Rearrangement of sugar 1,2-orthoesters to glycosidic products: a mechanistic implication 879
- Mesorhizobium huakuii*
Structure of the O-specific polysaccharide of *Mesorhizobium huakuii* IFO15243T 459
- Methyl 2-(acetylmethylamino)-2-deoxy- β -D-glucopyranoside
Authentic standards for the reductive-cleavage method. The positional isomers of partially methylated and acetylated or benzoylated methyl 2-(acetylmethylamino)-2-deoxy- β -D-glucopyranoside 799
- Methylated amylose
FAB CIDMS/MS analysis of partially methylated maltotrioses derived from methylated amylose: a study of the substituent distribution 341
- 2-Methylbenzyl group
An effective synthesis of isoorientin: the regioselective synthesis of a 6-*C*-glucosylflavone 507
- Microwave oven, fractionation
Characterization of acetylated 4-*O*-methylglucuronoxylan isolated from aspen employing ^1H and ^{13}C NMR spectroscopy 807
- Mitsunobu reaction
The thio-Mitsunobu reaction of D-Glucitol, D-Mannitol, Galactitol and 1-Seleno-D-xylitol 781
- Mixtures
Effect of molecular structure and water content on the dielectric relaxation behaviour of amorphous low molecular weight carbohydrates above and below their glass transition 839
- 'Moisture term'
Dynamic oscillation measurements of starch networks at temperatures above 100 °C 179
- Molecular dynamics
Boat conformations. Analysis and simulation of the complex ^1H NMR spectrum of methyl 2,6:3,4-dianhydro- α -D-altropyranoside 131
- Molecular modeling
X-ray structure determination and modeling of the cyclic tetrasaccharide *cyclo*-{ \rightarrow 6)- α -D-Glcp-(1 \rightarrow 3)- α -D-Glcp-(1 \rightarrow 6)- α -D-Glcp-(1 \rightarrow 3)- α -D-Glcp-(1 \rightarrow) } 655
- Molecular weight
The cytokine stimulating activity of (1 \rightarrow 3)- β -D-glucans is dependent on the triple helix conformation 587
- Molybdenum
NMR study of the complexation of D-gulonic acid with tungsten(VI) and molybdenum(VI) 387
- Monocytes
The cytokine stimulating activity of (1 \rightarrow 3)- β -D-glucans is dependent on the triple helix conformation 587
- myo*-Inositol
C-Glycoside based mimics of D-*myo*-inositol 1,4,5-trisphosphate 7
Complexation of trivalent lanthanide cations by inositols in the solid state: crystal structure and an FT-IR study of PrCl_3 /*myo*-inositol-9 H_2O 847
- N^4 -(2-Acetamido-2-deoxy- β -D-glucopyranosyl)succinamides
Synthesis of N^4 -(2-acetamido-2-deoxy- β -D-glucopyranosyl)-L-asparagine analogues: Succinamide, L-2-hydroxysuccinamide, and L-2-hydroxysuccinamic acid hydrazide analogues 487
- β -*N*-Acetylglucosaminyl-L-asparagine analogues
Synthesis of N^4 -(2-acetamido-2-deoxy- β -D-glucopyranosyl)-L-asparagine analogues: Succinamide, L-2-hydroxysuccinamide, and L-2-hydroxysuccinamic acid hydrazide analogues 487
- N*-Acetylneuraminic acid (Neu5Ac)
Acid–base properties of the reaction product of sialic acid with fluorogenic reagent, 1,2-diamino-4,5-methylenedioxybenzene (DMB) 447
- N*-Acetylneuraminyllactose lactonization
An NMR study of the lactonization of α -*N*-acetylneuraminyllactose (2 \rightarrow 3)-lactose 471
- Neoglycoconjugates
Synthesis of 3-*O*-sulfoglucuronyl lacto-*N*-neotetraose 2-aminoethyl glycoside and biotinylated neoglycoconjugates thereof 717
- Neoglycoproteins
Synthesis of neoglycoproteins containing D-*glycero*-D-*talo*-oct-2-ulopyranosylonic acid (Ko) ligands corresponding to core units from *Burkholderia* and *Acinetobacter* lipopolysaccharide 549
- N*-Glycosides
N-Glycosidation of D-*arabino*-hex-2-ulosonic acid 693
- NMR
Effect of substitution pattern on ^1H , ^{13}C NMR chemical shifts and $^1J_{\text{CH}}$ coupling constants in heparin derivatives 239
NMR study of the complexation of D-gulonic acid with tungsten(VI) and molybdenum(VI) 387
Structure of a viscous exopolysaccharide produced by *Lactobacillus helveticus* K16 465
The structure of the carbohydrate backbone of the core–lipid A region of the lipopolysaccharide from *Proteus mirabilis* serotype O28 351

NMR spectroscopy

Solution conformation of various uridine diphosphoglucose salts as probed by NMR spectroscopy 141

O-Acetylation

Characterization of acetylated 4-*O*-methylglucuronoxylan isolated from aspen employing ^1H and ^{13}C NMR spectroscopy 807

O-Antigen

Structure of the acidic microcapsular glycan from the reference strain (C.D.C. 6320-58) for *Serratia marcescens* serotype O14:K12 227

The structure of the carbohydrate backbone of the core–lipid A region of the lipopolysaccharide from *Proteus mirabilis* serotype O28 351

O-Chain polysaccharide

Structure of the O-specific polysaccharides of the lipopolysaccharides of *Xanthomonas campestris* pv. *vignicola* GSPB 2795 and GSPB 2796 831

1,2-*O*-[1-(*exo*- and *endo*-Cyano)ethylidene]-glycopyranose

The cyanation reaction of O-acetylated *S*-glycosyl phosphorothioates 687

Oligogalacturonic acids

High-performance anion-exchange chromatography — DAD as a tool for the identification and quantification of oligogalacturonic acids in pectin depolymerisation 907

Oligosaccharide

An efficient and concise regioselective synthesis of α -(1 \rightarrow 5)-linked L-arabinofuranosyl oligosaccharides 17

Intermolecular aglycon transfer of ethyl thioglycosides can be prevented by judicious choice of protecting groups 709

Oligosaccharide library

Azido glycoside primer: a versatile building block for the biocombinatorial synthesis of glycosphingolipid analogues 755

Oligosaccharides

A facile synthesis of the tetrasaccharide repeating unit of man-noglucan from *Microellobosporia grisea* 199

Oligosaccharides, biocombinatorial synthesis

Azido glycoside primer: a versatile building block for the biocombinatorial synthesis of glycosphingolipid analogues 755

Oligosaccharide synthesis

Synthesis of the Lewis b hexasaccharide and squarate acid–HSA conjugates thereof with various saccharide loadings 309

2-*O*-(4-Methoxybenzoyl)- β -D-xylopyranosyl-(1 \rightarrow 3)-2-*O*-acetyl- α -L-arabinopyranosides

Synthesis of glycosides bearing the disaccharide of OSW-1 or its 1 \rightarrow 4-linked analogue and their antitumor activities 495

Oral antithrombotic activity

Synthesis of 4-substituted phenyl 2,5-anhydro-1,6-dithio- α -D-glucosyl- and - α -L-guloseptanosides possessing antithrombotic activity 25

Synthesis of 4-substituted phenyl 3,6-anhydro-1,3-dithio-D-glucopyranosides and -pyranosides as well as 2,6-anhydro-1,2-dithio- α -D-altrofuransides possessing antithrombotic activity 525

Organic media

Two-step enzymatic synthesis of maltooligosaccharide esters 57

O-Specific polysaccharide

Structure of the O-specific polysaccharide of *Mesorhizobium huakuii* IFO15243T 459

O-Specific polysaccharides

Structure of the lipopolysaccharide core region of *Hafnia alvei* strains 1185 and 1204 233

O-specific polysaccharide structure

Full structure of the O-specific polysaccharide of *Proteus mirabilis* O24 containing 3,4-*O*-[(*S*)-1-carboxyethylidene]-D-galactose 453

Oxidised potato starch

The substitution pattern in cationised and oxidised potato starch granules 621

Partially methylated and acylated

Authentic standards for the reductive-cleavage method. The positional isomers of partially methylated and acetylated or benzoylated methyl 2-(acetylmethylamino)-2-deoxy- β -D-glucopyranoside 799

Pectin

High-performance anion-exchange chromatography — DAD as a tool for the identification and quantification of oligogalacturonic acids in pectin depolymerisation 907

Viscoelastic properties of pectin–co-solute mixtures at iso-free-volume states 399

Pectolytic enzymes

High-performance anion-exchange chromatography — DAD as a tool for the identification and quantification of oligogalacturonic acids in pectin depolymerisation 907

Pentafluorophenyl succinamate

Synthesis of *N*⁴-(2-acetamido-2-deoxy- β -D-glucopyranosyl)-L-asparagine analogues: Succinamide, L-2-hydroxysuccinamide, and L-2-hydroxysuccinamic acid hydrazide analogues 487

Periodate oxidation

The kinetics of periodate oxidation of carbohydrates: a calorimetric approach 87

Peripheral T lymphocytes

Immunocytochemical localization of CDw60 antigens on human peripheral T cells 791

Phase transfer catalysis

Stereoselective synthesis of 1,2-*cis*- and 2-deoxyglycofuranosyl azides from glycosyl halides 317

 β -Phosphoglucomutase

A novel enzymic determination of maltose 699

Phytolaccagenic acid

Novel acetylated triterpenoid saponins in a chromatographic fraction from *Quillaja saponaria* Molina 817

Phytopathogenic bacteria

Structure of the O-specific polysaccharides of the lipopolysaccharides of *Xanthomonas campestris* pv. *vignicola* GSPB 2795 and GSPB 2796 831

Picea abies L. Karst

Galactoglucomannan from the secondary cell wall of *Picea abies* L. Karst 635

Pinitol

New syntheses of 1D- and 1L-1,2-anhydro-*myo*-inositol and assessment of their glycosidase inhibitory activities 301

Plant *N*-glycan

Synthesis of allyl 2-*O*-(α -L-arabinofuranosyl)-6-*O*-(α -D-mannopyranosyl)- β -D-mannopyranoside, a unique plant *N*-glycan motif containing arabinose 431

Polygalacturonate

High-performance anion-exchange chromatography — DAD as a tool for the identification and quantification of oligogalacturonic acids in pectin depolymerisation 907

Polysaccharide characterization

Characterization of doubly substituted polysaccharide derivatives 367

Polysaccharide derivatives

Characterization of doubly substituted polysaccharide derivatives 367

Polyuronic acids

Action of *Azotobacter vinelandii* poly- β -D-mannuronic acid C-5-epimerase on synthetic D-glucuronans 913

Positional isomers

Authentic standards for the reductive-cleavage method. The positional isomers of partially methylated and acetylated or benzoylated 1,5-anhydrosorbitol 189

Protein modification

Synthesis of 1-deoxy-D-*erythro*-hexo-2,3-diulose, a major hexose Maillard intermediate 515

Protein–oligosaccharide interactions

Galabiosyl donors; efficient synthesis from 1,2,3,4,6-penta-*O*-acetyl- β -D-galactopyranose 49

Proteus mirabilis

Full structure of the O-specific polysaccharide of *Proteus mirabilis* O24 containing 3,4-*O*-[(*S*)-1-carboxyethylidene]-D-galactose 453

Proteus mirabilis

The structure of the carbohydrate backbone of the core–lipid A region of the lipopolysaccharide from *Proteus mirabilis* serotype O28 351

Pummerer reaction

Synthesis of 4-cyano- and 4-nitrophenyl 2,5-anhydro-1,6-dithio- α -D-glucosyl- and - α -L-guloseptanosides carrying different substituents at C-3 and C-4 269

Pyranose dehydrogenase

Double oxidation of D-xylose to D-glycero-pentos-2,3-diulose (2,3-diketo-D-xylose) by pyranose dehydrogenase from the mushroom *Agaricus bisporus* 219

Pyranosides

Lactones of methyl 3-*O*-[(*R*)- and (*S*)-1-carboxyethyl]- α -D-glucosyl-, galactosyl-, and manno-pyranosides 257

Pyrazolone

Heterocyclic derivatives of sugars: the formation of 1-glycosyl-3-methylpyrazol-5-ones from hydrazones 169

Pyridinium salt

Preparation, chemical and crystal structures of *N*-(2-acetamido-3,4,6-tri-*O*-acetyl-2-deoxy- β -D-glucopyranosyl)pyridinium chloride 703

Pyruvic acid acetal

Full structure of the O-specific polysaccharide of *Proteus mirabilis* O24 containing 3,4-*O*-[(*S*)-1-carboxyethylidene]-D-galactose 453

Quebrachitol

New syntheses of 1D- and 1L-1,2-anhydro-*myo*-inositol and assessment of their glycosidase inhibitory activities 301

Quillaic acid

Novel acetylated triterpenoid saponins in a chromatographic fraction from *Quillaja saponaria* Molina 817

Quillaja saponaria Molina

Novel acetylated triterpenoid saponins in a chromatographic fraction from *Quillaja saponaria* Molina 817

Quinoxalinone derivative

Acid–base properties of the reaction product of sialic acid with fluorogenic reagent, 1,2-diamino-4,5-methylenedioxybenzene (DMB) 447

Rearrangement

Rearrangement of sugar 1,2-orthoesters to glycosidic products: a mechanistic implication 879

Rearrangement reactions

Synthesis of 4-substituted phenyl 3,6-anhydro-1,3-dithio-D-glucopyranosides and -pyranosides as well as 2,6-anhydro-1,2-dithio- α -D-altrofuransides possessing antithrombotic activity 525

Reductive-cleavage

Authentic standards for the reductive-cleavage method. The positional isomers of partially methylated and acetylated or benzoylated methyl 2-(acetylmethylamino)-2-deoxy- β -D-glucopyranoside 799

Reductive-cleavage method

Authentic standards for the reductive-cleavage method. The positional isomers of partially methylated and acetylated or benzoylated 1,5-anhydrosorbitol 189

Regio- and stereoselective synthesis

A facile synthesis of the tetrasaccharide repeating unit of mannoglucan from *Microellabosporia grisea* 199

Regioselective reaction

An efficient and concise regioselective synthesis of α -(1 \rightarrow 5)-linked L-arabinofuranosyl oligosaccharides 17

Regiospecific electrophilic attack

The intermolecular migration of polyol stannylenes as a reaction contributing to the regioselectivity of substitution 215

Resorcinarene

Molecular recognition of carbohydrates by a resorcinarene. Selective transport of alditols through a supported liquid membrane 409

Rheological glass transition temperature

Viscoelastic properties of pectin–co-solute mixtures at iso-free-volume states 399

Ristosamine

A short and efficient transformation of rhamnose into activated daunosamine, acosamine, ristosamine and *epi*-daunosamine derivatives, and synthesis of an anthracycline antibiotic acosaminyl- ϵ -isomerhodomyconine 861

(25*R*)-Ruscogenin-1-yl β -D-xylopyranosyl-(1 \rightarrow 3)-[β -D-glucopyranosyl-(1 \rightarrow 2)]- β -D-fucopyranoside

Synthesis of (25*R*)-ruscogenin-1-yl β -D-xylopyranosyl-(1 \rightarrow 3)-[β -D-glucopyranosyl-(1 \rightarrow 2)]- β -D-fucopyranoside 745

Saccharide complexes

Characterization of new oxovanadium(IV) complexes of saccharides 41

Saccharide primer, glycosylation

Azido glycoside primer: a versatile building block for the biocombinatorial synthesis of glycosphingolipid analogues 755

Saccharogenic and chromogenic methods

Suitability and limitations of methods for characterisation of activity of malto-oligosaccharide-forming amylases 109

Saponin

Synthesis of (25*R*)-ruscogenin-1-yl β -D-xylopyranosyl-(1 \rightarrow 3)-[β -D-glucopyranosyl-(1 \rightarrow 2)]- β -D-fucopyranoside 745

Saponins

Novel acetylated triterpenoid saponins in a chromatographic fraction from *Quillaja saponaria* Molina 817

Scleroglucan

The cytokine stimulating activity of (1 \rightarrow 3)- β -D-glucans is dependent on the triple helix conformation 587

Secondary cell walls

Galactoglucomannan from the secondary cell wall of *Picea abies* L. Karst 635

 β -Selective O-rhamnosylation

β -Selective O-rhamnosylation with a rhamnosyl trichloroacetimidate that has the 4C_1 conformation 889

Selective protection

C-Glycoside based mimics of D-*myo*-inositol 1,4,5-trisphosphate 7

Selenosugars

The thio-Mitsunobu reaction of D-Glucitol, D-Mannitol, Galactitol and 1-Seleno-D-xylitol 781

Serotyping system

The first description of a (1 \rightarrow 6)- β -D-glucan in prokaryotes: (1 \rightarrow 6)- β -D-glucan is a common component of *Actinobacillus suis* and is the basis for a serotyping system 121

Serratia marcescens

Structure of the acidic microcapsular glycan from the reference strain (C.D.C. 6320-58) for *Serratia marcescens* serotype O14:K12 227

S-Glycosyl phosphorothioate

The cyanation reaction of O-acetylated *S*-glycosyl phosphorothioates 687

Sialic acid

Solid-phase synthesis of the glycopeptide of human glycoporphin AM bearing the consecutive sialyl-T antigen 773

X-ray crystal structure analysis of 4,7,8,9-tetra-*O*-acetyl-*N*-acetyl-2,3-dehydro-2-deoxy-4-*epi*-neuraminic acid methyl ester 253

Sialic acid analogues

Synthesis of branched-chain sugar derivatives from 1,2;5,6-di-*O*-isopropylidene- α -D-ribo-hexofuranos-3-ulose and 1,2;4,5-di-*O*-isopropylidene- β -D-erythro-2-hexulopyranos-3-ulose 901

3'-Sialyllactose lactones, NMR data

An NMR study of the lactonization of α -*N*-acetylneuraminyl-(2 \rightarrow 3)-lactose 471

3'-Sialyllactose lactonization

An NMR study of the lactonization of α -N-acetylneuraminyl-(2 \rightarrow 3)-lactose 471

Sialyl Lewis X

Synthesis and glycan priming activity of acetylated disaccharides 287

Simulated annealing

Boat conformations. Analysis and simulation of the complex ^1H NMR spectrum of methyl 2,6:3,4-dianhydro- α -D-altropyranoside 131

Slow substrate

The synthesis, testing and use of 5-fluoro- α -D-galactosyl fluoride to trap an intermediate on green coffee bean α -galactosidase and identify the catalytic nucleophile 539

(S)-2-Methylbutanoyl group

Novel acetylated triterpenoid saponins in a chromatographic fraction from *Quillaja saponaria* Molina 817

S_N2 reaction

Introduction of monosaccharides having functional groups onto a carbosilane dendrimer: A broadly applicable one-pot reaction in liquid ammonia involving Birch reduction and subsequent S_N2 reaction 765

Solid-phase synthesis

Solid-phase synthesis of the glycopeptide of human glycophorin AM bearing the consecutive sialyl-T antigen 773

Solution conformation

Solution conformation of various uridine diphosphoglucose salts as probed by NMR spectroscopy 141

Spin-lattice relaxation times

Boat conformations. Analysis and simulation of the complex ^1H NMR spectrum of methyl 2,6:3,4-dianhydro- α -D-altropyranoside 131

Stability constants

Molecular recognition of carbohydrates by a resorcinarene. Selective transport of alditols through a supported liquid membrane 409

Stannylenes

The intermolecular migration of polyol stannylenes as a reaction contributing to the regioselectivity of substitution 215

Starch

FAB CIDMS/MS analysis of partially methylated maltotrioses derived from methylated amylose: a study of the substituent distribution 341

Starch gels

Dynamic oscillation measurements of starch networks at temperatures above 100 °C 179

Starch hydrolysis products

Suitability and limitations of methods for characterisation of activity of malto-oligosaccharide-forming amylases 109

Structure

Structure of the O-specific polysaccharides of the lipopolysaccharides of *Xanthomonas campestris* pv. *vignicola* GSPB 2795 and GSPB 2796 831

The structure of the carbohydrate backbone of the core-lipid A region of the lipopolysaccharide from *Proteus mirabilis* serotype O28 351

Substituent distribution

FAB CIDMS/MS analysis of partially methylated maltotrioses derived from methylated amylose: a study of the substituent distribution 341

Substitution pattern

The substitution pattern in cationised and oxidised potato starch granules 621

Substrate specificity

Examination of the active sites of human salivary α -amylase (HSA) 579

Succinamic acid hydrazide

Synthesis of *N*⁴-(2-acetamido-2-deoxy- β -D-glucopyranosyl)-L-as-

paragine analogues: Succinamide, L-2-hydroxysuccinamide, and L-2-hydroxysuccinamic acid hydrazide analogues 487

Sucrose

Isothermal and non-isothermal crystallization in amorphous sucrose and lactose at low moisture contents 423

Sugar hydrazone

Heterocyclic derivatives of sugars: the formation of 1-glycosyl-3-methylpyrazol-5-ones from hydrazones 169

Sugar 1,2-orthoester

Rearrangement of sugar 1,2-orthoesters to glycosidic products: a mechanistic implication 879

Sugars

Complexation of sucrose with cobalt(III)bis(phenanthroline) 195

Sugars, complexation of

Studies of the complexation of sugars by diffusion-ordered NMR spectroscopy 1

Sulfated oligosaccharides

Chemical synthesis of sulfated oligosaccharides with a β -D-Gal-(1 \rightarrow 3)-[β -D-Gal-(1 \rightarrow 4)-(α -L-Fuc-(1 \rightarrow 3)- β -D-GlcNAc-(1 \rightarrow 6)]- α -D-GalNAc sequence 561

Sulfated polysaccharides

Effect of substitution pattern on ^1H , ^{13}C NMR chemical shifts and $^1J_{\text{CH}}$ coupling constants in heparin derivatives 239

Matrix-assisted ultraviolet laser-desorption ionization time-of-flight mass spectrometry of sulfated mannans from the red seaweed *Nothogenia fastigiata* 157

Sulfated xylomannans

Matrix-assisted ultraviolet laser-desorption ionization time-of-flight mass spectrometry of sulfated mannans from the red seaweed *Nothogenia fastigiata* 157

Sulfides

Introduction of monosaccharides having functional groups onto a carbosilane dendrimer: A broadly applicable one-pot reaction in liquid ammonia involving Birch reduction and subsequent S_N2 reaction 765

Sulfonium intermediates

Synthesis of 4-cyano- and 4-nitrophenyl 2,5-anhydro-1,6-dithio- α -D-glucosyl- and - α -L-guloseptanosides carrying different substituents at C-3 and C-4 269

Supported liquid membrane

Molecular recognition of carbohydrates by a resorcinarene. Selective transport of alditols through a supported liquid membrane 409

Synthesis

Novel ring transformation of 5-(2,3,5-tri-O-benzoyl- β -D-ribofuranosyl)isoxazole-4-carbaldehyde with 1,2-diaminobenzenes to 3-cyano-1,5-benzodiazepine C-nucleosides 681

Synthesis of glycosides bearing the disaccharide of OSW-1 or its 1 \rightarrow 4-linked analogue and their antitumor activities 495

Synthesis of (25*R*)-ruscogenin-1-yl β -D-xylopyranosyl-(1 \rightarrow 3)-[β -D-glucopyranosyl-(1 \rightarrow 2)]- β -D-fucopyranoside 745

Tensioactivity

Synthesis and amphiphilic properties of glycosyl-1,4-benzodiazepin-2,5-diones 207

Thermophilic α -galactosidases

Comparative study of new α -galactosidases in transglycosylation reactions 65

Thioglycoside

Intermolecular aglycon transfer of ethyl thioglycosides can be prevented by judicious choice of protecting groups 709

Thioglycosides

Synthesis of 4-substituted phenyl 2,5-anhydro-1,6-dithio- α -D-glucosyl- and - α -L-guloseptanosides possessing antithrombotic activity 25

Synthesis of 4-substituted phenyl 3,6-anhydro-1,3-dithio-D-glucopyranosides and -pyranosides as well as 2,6-anhydro-1,2-dithio- α -D-altrofuranosides possessing antithrombotic activity 525

Thiosugars

The thio-Mitsunobu reaction of D-Glucitol, D-Mannitol, Galactitol and 1-Seleno-D-xylitol 781

TNF- α

The cytokine stimulating activity of (1 \rightarrow 3)- β -D-glucans is dependent on the triple helix conformation 587

1,2-*Trans*-glycosaminides anomerisation

The application of the intermediate 2-methyl-glyco-[2,1-*d*]-2-oxazolines for glycoside synthesis 895

1,2-*Trans*-glycosides of 2-acylamino-2-deoxysugars

The application of the intermediate 2-methyl-glyco-[2,1-*d*]-2-oxazolines for glycoside synthesis 895

Transglycosylation

Comparative study of new α -galactosidases in transglycosylation reactions 65

Two-step enzymatic synthesis of maltooligosaccharide esters 57

Trichloroacetimidate

β -Selective O-rhamnosylation with a rhamnosyl trichloroacetimidate that has the 4C_1 conformation 889

Trityl ethers

A mild and selective cleavage of trityl ethers by CBr₄–MeOH 885

Tungsten

NMR study of the complexation of D-gulonic acid with tungsten(VI) and molybdenum(VI) 387

Urazole

A kinetic estimate of the free aldehyde content of aldoses 359

Uridine diphosphoglucose salts

Solution conformation of various uridine diphosphoglucose salts as probed by NMR spectroscopy 141

UV-MALDI-TOF-MS

Matrix-assisted ultraviolet laser-desorption ionization time-of-flight mass spectrometry of sulfated mannans from the red seaweed *Nothogenia fastigiata* 157

Viscous

Structure of a viscous exopolysaccharide produced by *Lactobacillus helveticus* K16 465

VO²⁺ complexes

Characterization of new oxovanadium(IV) complexes of saccharides 41

Water

Effect of molecular structure and water content on the dielectric relaxation behaviour of amorphous low molecular weight carbohydrates above and below their glass transition 839

Water solubility

Synthesis and amphiphilic properties of glycosyl-1,4-benzodiazepin-2,5-diones 207

Williams–Landel–Ferry kinetics

Dynamic oscillation measurements of starch networks at temperatures above 100 °C 179

Xanthomonas campestris

Structure of the O-specific polysaccharides of the lipopolysaccharides of *Xanthomonas campestris* pv. *vignicola* GSPB 2795 and GSPB 2796 831

X-ray analysis

X-ray crystal structure analysis of 4,7,8,9-tetra-O-acetyl-N-acetyl-2,3-dehydro-2-deoxy-4-epi-neuraminic acid methyl ester 253

X-ray crystallography

Preparation, chemical and crystal structures of *N*-(2-acetamido-3,4,6-tri-O-acetyl-2-deoxy- β -D-glucopyranosyl)pyridinium chloride 703

X-ray diffraction

X-Ray diffraction and high resolution NMR analysis of methyl D-glucopyranuronate derivatives 249

X-ray structural analysis

The thio-Mitsunobu reaction of D-Glucitol, D-Mannitol, Galactitol and 1-Seleno-D-xylitol 781

Xylan, structure

Characterization of acetylated 4-O-methylglucuronoxylan isolated from aspen employing ¹H and ¹³C NMR spectroscopy 807