

Subject Index of Volume 331

Acarbose

Inhibition of β -glycosidases by acarbose analogues containing cellobiose and lactose structures 13

Acid hydrolysis of starch

Salt-assisted acid hydrolysis of starch to D-glucose under microwave irradiation 9

Actinidia deliciosa

Purification and characterisation of a galactoglucomannan from kiwifruit (*Actinidia deliciosa*) 291

Acylated glycosyl donor

Enzymatic glycosylation using 6-O-acylated sugar donors and acceptors: β -N-acetylhexosaminidase-catalysed synthesis of 6-O,N,N'-triacetylchitobiose and 6'-O,N,N'-triacetylchitobiose 143

Agarans

DL-Galactan hybrids and agarans from gametophytes of the red seaweed *Gymnogongrus torulosus* 27

Alternansucrase

Novel oligosaccharides synthesized from sucrose donor and cellobiose acceptor by alternansucrase 403

Altopyranoside

Boat conformations: Synthesis, NMR spectroscopy, and molecular dynamics of methyl 4,6-O-benzylidene-3-deoxy-3-phthalimido- α -D-altropyranoside derivatives 461

Aminooligosaccharide

Structural revision of isovalertatins M03, M13, and M23 isolated from the culture of *Streptomyces luteogriseus* 69

3-Aminopropionic acid analogue

Synthesis of N^4 -(2-acetamido-2-deoxy- β -D-glucopyranosyl)-L-asparagine analogues. *n*-Butyramide, 3-chloropropionamide, 3-aminopropionamide, and isovaleramide analogues 439

Antitumor agents

Glycosylation of 2-thiohydantoin derivatives. Synthesis of some novel S-alkylated and S-glucosylated hydantoins 445

Antiviral

Glycosylation of 2-thiohydantoin derivatives. Synthesis of some novel S-alkylated and S-glucosylated hydantoins 445

3-Aryl-2-thiohydantoins

Glycosylation of 2-thiohydantoin derivatives. Synthesis of some novel S-alkylated and S-glucosylated hydantoins 445

3-Aryl-5-((Z)-arylidene)-2-(2-methylthioethyl)-2-thiohydantoins

Glycosylation of 2-thiohydantoin derivatives. Synthesis of some novel S-alkylated and S-glucosylated hydantoins 445

3-Aryl-5-((Z)-arylidene)-2-(2',3',4',6'-tetra-O-acetyl- β -D-glucopyranosyl)-2-thiohydantoins

Glycosylation of 2-thiohydantoin derivatives. Synthesis of some novel S-alkylated and S-glucosylated hydantoins 445

Auxiliary phenylseleno group

A study of the donor properties of sialyl phosphites having an auxiliary 3-(S)-phenylseleno group 255

Azidosphingosine

A short and practical route to 3-O-benzoyl azidosphingosine 91

Azotobacter indicus

Structural studies of S-7, another exocellular polysaccharide containing 2-deoxy-*arabino*-hexuronic acid 285

Bacillus stearothermophilus maltogenic amylase

Inhibition of β -glycosidases by acarbose analogues containing cellobiose and lactose structures 13

Bacterial polysaccharide

Structure of the O-specific polysaccharide of *Proteus vulgaris* O4 containing a new component of bacterial polysaccharides, 4,6-dideoxy-4-{*N*-[(*R*)-3-hydroxybutyryl]-L-alanyl}amino-D-glucose 195

Biotin

Synthesis of biotinylated bis(D-glucose) derivatives for glucose transporter photoaffinity labelling 119

Bis-glucose

Synthesis of biotinylated bis(D-glucose) derivatives for glucose transporter photoaffinity labelling 119

Boat conformations

Boat conformations: Synthesis, NMR spectroscopy, and molecular dynamics of methyl 4,6-O-benzylidene-3-deoxy-3-phthalimido- α -D-altropyranoside derivatives 461

Brain glycopeptides

NMR studies of mannitol-terminating oligosaccharides derived by reductive alkaline hydrolysis from brain glycoproteins 393

Branched cyclodextrin carboxylic acids

Synthesis of branched cyclomaltooligosaccharide carboxylic acids (cyclodextrin carboxylic acids) by microbial oxidation 423

Branched cyclomaltooligosaccharide carboxylic acids

Synthesis of branched cyclomaltooligosaccharide carboxylic acids (cyclodextrin carboxylic acids) by microbial oxidation 423

Branching patterns

Investigating the nature of branching in pectin by atomic force microscopy and carbohydrate analysis 337

Buckwheat

Purification and molecular structure of two digalactosyl D-*chiro*-inositols and two trigalactosyl D-*chiro*-inositols from buckwheat seeds 19

n-Butyric acid analogue

Synthesis of N^4 -(2-acetamido-2-deoxy- β -D-glucopyranosyl)-L-asparagine analogues. *n*-Butyramide, 3-chloropropionamide, 3-aminopropionamide, and isovaleramide analogues 439

Capsular polysaccharide

Structural studies of S-7, another exocellular polysaccharide containing 2-deoxy-*arabino*-hexuronic acid 285

Carbohydrate, complexes

Transition metals and carbohydrates: the methyl-4,6-O-benzylidene-2,3-diazo-2,3-dideoxy- α -D-mannopyranoside skeleton as building block for new chiral nitrogen chelates 209

Carbohydrates

Further evidence for the gelation ability-structure correlation in sugar-based gelators 307

Carrageenan

A rapid method for the separation and analysis of carrageenan oligosaccharides released by *iota*- and *kappa*-carrageenase 101
On the structure of κ /1-hybrid carrageenans 271

Carrageenans

DL-Galactan hybrids and agarans from gametophytes of the red seaweed *Gymnogongrus torulosus* 27

Cellobiose–acarbose analogues

Inhibition of β -glycosidases by acarbose analogues containing cellobiose and lactose structures 13

Cellobiose acceptor

Novel oligosaccharides synthesized from sucrose donor and cellobiose acceptor by alternansucrase 403

Chitobiose

Enzymatic glycosylation using 6-O-acylated sugar donors and acceptors: β -*N*-acetylhexosaminidase-catalysed synthesis of 6-*O,N,N'*-triacetylchitobiose and 6'-*O,N,N'*-triacetylchitobiose 143

Chitohexaose

Synthesis of chitotetraose and chitohexaose based on dimethylmaleoyl protection 129

Chitooligomers

Synthesis of chitotetraose and chitohexaose based on dimethylmaleoyl protection 129

Chitosan

Concepts for improved regioselective placement of *O*-sulfo, *N*-sulfo, *N*-acetyl, and *N*-carboxymethyl groups in chitosan derivatives 43

Chitotetraose

Synthesis of chitotetraose and chitohexaose based on dimethylmaleoyl protection 129

3-Chloropropionic acid analogue

Synthesis of *N*⁴-(2-acetamido-2-deoxy- β -D-glucopyranosyl)-L-asparagine analogues. *n*-Butyramide, 3-chloropropionamide, 3-aminopropionamide, and isovaleramide analogues 439

Citrobacter

Structure of the O-specific polysaccharide isolated from the lipopolysaccharide of *Citrobacter gillenii* serotype O12a,12b strain PCM 1544 331

¹³C NMR spectroscopy

DL-Galactan hybrids and agarans from gametophytes of the red seaweed *Gymnogongrus torulosus* 27

¹³C NMR spectroscopy, X-ray crystallography

Preparation, single-crystal X-ray diffraction and high-resolution NMR spectroscopic analyses of *N*-(2,3,4,6-tetra-*O*-acetyl- β -D-glucopyranosyl)trimethylammonium bromide 343

C-nucleoside

Synthesis of pyrrolo[2,1-*f*][1,2,4]triazine *C*-nucleosides. Isosteres of sangivamycin, tubercidin, and toyocamycin 77

Coil-to-helix transition

On the structure of κ /I-hybrid carrageenans 271

Comb-like oligosaccharide

Facile synthesis of a comb-like mannohexaose: a trimer of the disaccharide repeating unit of the cell-wall mannans of *Aphanoascus mephitatus* and related species 431

[1-¹³C]Ribose

Synthesis of isotopically labeled D-[1'-¹³C]ribonucleoside phosphoramidites 83

Cyclic phosphates

Synthesis of inositol glycan cyclic phosphates 375

Cyclomaltodextrin glucanosyltransferase

Inhibition of β -glycosidases by acarbose analogues containing cellobiose and lactose structures 13

D-chiro-Inositol

Purification and molecular structure of two digalactosyl *D-chiro*-inositols and two trigalactosyl *D-chiro*-inositols from buckwheat seeds 19

Deoxyhexuronic acid

Structural studies of S-7, another exocellular polysaccharide containing 2-deoxy-*arabino*-hexuronic acid 285

6-Deoxy-L-idose

Synthesis of 6-deoxy-L-idose and L-acovenose from 1,2:5,6-di-*O*-isopropylidene- α -D-glucofuranose 369

6-Deoxy-L-talose

Synthesis of 6-deoxy-L-idose and L-acovenose from 1,2:5,6-di-*O*-isopropylidene- α -D-glucofuranose 369

Desulfation

Concepts for improved regioselective placement of *O*-sulfo, *N*-sulfo, *N*-acetyl, and *N*-carboxymethyl groups in chitosan derivatives 43

Dextran sulphate

Synthesis and characterisation of dextran and pullulan sulphate 203

 α -D-Glucopyranosides

Synthesis of methyl α -D-glucopyranosyl-(1 \rightarrow 4)- α -D-galactopyranoside and methyl α -D-xylo-hex-4-ulopyranosyl-(1 \rightarrow 4)- α -D-galactopyranoside 247

D-Glucose

Salt-assisted acid hydrolysis of starch to D-glucose under microwave irradiation 9

D-glycero-D-manno-Heptan

Structure of a D-glycero-D-manno-heptan from the lipopolysaccharide of *Helicobacter pylori* 219

5,7-Diamino-3,5,7,9-tetradeoxynon-2-ulosonic acid

Synthesis and identification in bacterial lipopolysaccharides of 5,7-diacetamido-3,5,7,9-tetradeoxy-D-glycero-D-galacto- and -D-glycero-D-talo-non-2-ulosonic acids 233

Diazodiphenylmethane

New evidence for the mechanism of the tin(II) chloride catalyzed reactions of vicinal diols with diazodiphenylmethane in 1,2-dimethoxyethane 239

4,6-Dideoxy-4-*N*-[(*R*)-3-hydroxybutyryl]-L-alanyl}amino-D-glucose

Structure of the O-specific polysaccharide of *Proteus vulgaris* O4 containing a new component of bacterial polysaccharides, 4,6-dideoxy-4-*N*-[(*R*)-3-hydroxybutyryl]-L-alanyl}amino-D-glucose 195

Dimethylmaleoyl

Synthesis of chitotetraose and chitohexaose based on dimethylmaleoyl protection 129

Diols

New evidence for the mechanism of the tin(II) chloride catalyzed reactions of vicinal diols with diazodiphenylmethane in 1,2-dimethoxyethane 239

Diosgenyl α -L-rhamnopyranosyl-(1 \rightarrow 2)-[(α -L-arabinofuranosyl)-(1 \rightarrow 4)]- β -D-glucopyranoside

An improved synthesis of the saponin, polyphyllin D 1

DL-Galactan hybrids

DL-Galactan hybrids and agarans from gametophytes of the red seaweed *Gymnogongrus torulosus* 27

1D-myo-inositol derivatives

Synthesis of inositol glycan cyclic phosphates 375

Enterobacteria

Structure of the O-specific polysaccharide isolated from the lipopolysaccharide of *Citrobacter gillenii* serotype O12a,12b strain PCM 1544 331

Enzymatic acylation

Enzymatic glycosylation using 6-O-acylated sugar donors and acceptors: β -*N*-acetylhexosaminidase-catalysed synthesis of 6-*O,N,N'*-triacetylchitobiose and 6'-*O,N,N'*-triacetylchitobiose 143

Enzyme inhibitors

Inhibition of β -glycosidases by acarbose analogues containing cellobiose and lactose structures 13

Epicoccum nigrum

Structure of epiglucan, a highly side-chain/branched (1 \rightarrow 3;1 \rightarrow 6)- β -glucan from the micro fungus *Epicoccum nigrum* Ehrenb. ex Schlecht 163

Erwinia chrysanthemi

- Pyruvated galactose and oligosaccharides from *Erwinia chrysanthemi* Ech6 extracellular polysaccharide 59

ESIMS^a

- Structural revision of isovalertatins M03, M13, and M23 isolated from the culture of *Streptomyces luteogriseus* 69

Ethanolamine phosphate

- Structure of the O-specific polysaccharide of *Proteus mirabilis* O16 containing ethanolamine phosphate and ribitol phosphate 213

Ethylene glycol

- New evidence for the mechanism of the tin(II) chloride catalyzed reactions of vicinal diols with diazodiphenylmethane in 1,2-dimethoxyethane 239

1,2-Ethylene glycol monodiphenylmethyl ether

- New evidence for the mechanism of the tin(II) chloride catalyzed reactions of vicinal diols with diazodiphenylmethane in 1,2-dimethoxyethane 239

Exopolysaccharide

- Structural characterisation of the exopolysaccharide produced by *Streptococcus thermophilus* EU20 413
- Structure of the exopolysaccharide produced by *Streptococcus thermophilus* S3 173
- Structure of the extracellular polysaccharide produced by *Lactobacillus delbrueckii* subsp. *bulgaricus* 291 183

Extracellular polysaccharide

- Pyruvated galactose and oligosaccharides from *Erwinia chrysanthemi* Ech6 extracellular polysaccharide 59
- Structure of epiglucan, a highly side-chain/branched (1 → 3;1 → 6)-β-glucan from the micro fungus *Epicoccum nigrum* Ehrenb. ex Schlecht 163

Fagopyritol A2

- Purification and molecular structure of two digalactosyl D-*chiro*-inositols and two trigalactosyl D-*chiro*-inositols from buckwheat seeds 19

Fagopyritol A3

- Purification and molecular structure of two digalactosyl D-*chiro*-inositols and two trigalactosyl D-*chiro*-inositols from buckwheat seeds 19

Fagopyritol B2

- Purification and molecular structure of two digalactosyl D-*chiro*-inositols and two trigalactosyl D-*chiro*-inositols from buckwheat seeds 19

Fagopyritol B3

- Purification and molecular structure of two digalactosyl D-*chiro*-inositols and two trigalactosyl D-*chiro*-inositols from buckwheat seeds 19

Fagopyrum esculentum

- Purification and molecular structure of two digalactosyl D-*chiro*-inositols and two trigalactosyl D-*chiro*-inositols from buckwheat seeds 19

Family 4

- Phosphorylation and metabolism of sucrose and its five linkage-isomeric α-D-glucosyl-D-fructoses by *Klebsiella pneumoniae* 149

Fluorescent labeling

- A new fluorescent assay for sialyltransferase 455

FTIR spectroscopy

- Synthesis and characterisation of dextran and pullulan sulphate 203

Galactoglucomannan

- Purification and characterisation of a galactoglucomannan from kiwifruit (*Actinidia deliciosa*) 291

β-Galactosidase

- Inhibition of β-glycosidases by acarbose analogues containing cellobiose and lactose structures 13

Galactosyl cyclitol

- Purification and molecular structure of two digalactosyl D-*chiro*-inositols and two trigalactosyl D-*chiro*-inositols from buckwheat seeds 19

Gels

- Further evidence for the gelation ability–structure correlation in sugar-based gelators 307

(1 → 3;1 → 6)-β-glucan

- Structure of epiglucan, a highly side-chain/branched (1 → 3;1 → 6)-β-glucan from the micro fungus *Epicoccum nigrum* Ehrenb. ex Schlecht 163

Glucitol

- Syntheses of neoglycolipids with hexitol spacers between the saccharidic and the lipidic parts 107

Glucosamine

- Synthesis of chitotetraose and chitohexaose based on dimethylmaleoyl protection 129

Glucose transporters

- Synthesis of biotinylated bis(D-glucose) derivatives for glucose transporter photoaffinity labelling 119

β-Glucosidase

- Inhibition of β-glycosidases by acarbose analogues containing cellobiose and lactose structures 13

α-Glucosidase

- Inhibition of β-glycosidases by acarbose analogues containing cellobiose and lactose structures 13

α-Glucosyl cellobiose

- Novel oligosaccharides synthesized from sucrose donor and cellobiose acceptor by alternansucrase 403

Glycolipid

- A short and practical route to 3-O-benzoyl azidosphingosine 91

Glycoside-2-ulose

- A new synthetic method for preparing indole derivatives from 2-keto glycosides 229

Glycosylamines

- Molecular and crystal structures of N-arylglycopyranosylamines formed by reaction between sulfanilamide and D-ribose, D-arabinose and D-mannose 319

Glycosylation

- An improved synthesis of the saponin, polyphyllin D 1
- Syntheses of neoglycolipids with hexitol spacers between the saccharidic and the lipidic parts 107

GUG-β-CyD

- Synthesis of branched cyclomaltooligosaccharide carboxylic acids (cyclodextrin carboxylic acids) by microbial oxidation 423

Gymnogongrus torulosus

- DL-Galactan hybrids and agarans from gametophytes of the red seaweed *Gymnogongrus torulosus* 27

¹H and ¹³C chemical shifts

- NMR studies of mannitol-terminating oligosaccharides derived by reductive alkaline hydrolysis from brain glycoproteins 393

Helicobacter pylori

- Structure of a D-glycero-D-manno-heptan from the lipopolysaccharide of *Helicobacter pylori* 219

Heparin

- Concepts for improved regioselective placement of O-sulfo, N-sulfo, N-acetyl, and N-carboxymethyl groups in chitosan derivatives 43

Heptasaccharide repeating unit

- Structural characterisation of the exopolysaccharide produced by *Streptococcus thermophilus* EU20 413

¹H NMR spectroscopy

- Boat conformations: Synthesis, NMR spectroscopy, and molecular dynamics of methyl 4,6-O-benzylidene-3-deoxy-3-phthalimido-α-D-altropyranoside derivatives 461
- Preparation, single-crystal X-ray diffraction and high-resolution NMR spectroscopic analyses of N-(2,3,4,6-tetra-O-acetyl-β-D-glucopyranosyl)trimethylammonium bromide 343

κ/ι -Hybrids

On the structure of κ/ι -hybrid carrageenans 271

Hydrogen bonding

Molecular and crystal structures of *N*-arylglycopyranosylamines formed by reaction between sulfanilamide and D-ribose, D-arabinose and D-mannose 319

Hydrogen bonds

Further evidence for the gelation ability–structure correlation in sugar-based gelators 307

Imidate

Syntheses of neoglycolipids with hexitol spacers between the saccharidic and the lipidic parts 107

Indole derivative

A new synthetic method for preparing indole derivatives from 2-keto glycosides 229

Inositol phosphate glycans

Synthesis of inositol glycan cyclic phosphates 375

Iota-carrageenase

A rapid method for the separation and analysis of carrageenan oligosaccharides released by *iota*- and *kappa*-carrageenase 101

Isoaccharose

Inhibition of β -glycosidases by acarbose analogues containing cellobiose and lactose structures 13

Isostere

Synthesis of pyrrolo[2,1-*f*][1,2,4]triazine *C*-nucleosides. Isosteres of sangivamycin, tubercidin, and toyocamycin 77

Isovaleric acid analogue

Synthesis of *N*⁴-(2-acetamido-2-deoxy- β -D-glucopyranosyl)-L-asparagine analogues. *n*-Butyramide, 3-chloropropionamide, 3-aminopropionamide, and isovaleramide analogues 439

Isovalertatin M03

Structural revision of isovalertatins M03, M13, and M23 isolated from the culture of *Streptomyces luteogriseus* 69

Isovalertatin M13

Structural revision of isovalertatins M03, M13, and M23 isolated from the culture of *Streptomyces luteogriseus* 69

Isovalertatin M23

Structural revision of isovalertatins M03, M13, and M23 isolated from the culture of *Streptomyces luteogriseus* 69

Kappa-carrageenase

A rapid method for the separation and analysis of carrageenan oligosaccharides released by *iota*- and *kappa*-carrageenase 101

Keto-disaccharides

Synthesis of methyl α -D-glucopyranosyl-(1 \rightarrow 4)- α -D-galactopyranoside and methyl α -D-xylo-hex-4-ulopyranosyl-(1 \rightarrow 4)- α -D-galactopyranoside 247

2-Keto glycoside

A new synthetic method for preparing indole derivatives from 2-keto glycosides 229

Kiwifruit

Purification and characterisation of a galactoglucomannan from kiwifruit (*Actinidia deliciosa*) 291

Klebsiella pneumoniae

Phosphorylation and metabolism of sucrose and its five linkage-isomeric α -D-glucosyl-D-fructoses by *Klebsiella pneumoniae* 149

Labeled nucleosides

Synthesis of isotopically labeled D-[1'-¹³C]ribonucleoside phosphoramidites 83

L-Acovenose

Synthesis of 6-deoxy-L-idose and L-acovenose from 1,2:5,6-di-*O*-isopropylidene- α -D-glucofuranose 369

Lactic acid bacteria

Structure of the exopolysaccharide produced by *Streptococcus thermophilus* S3 173

Lactobacillus delbrueckii subsp. *bulgaricus*

Structure of the extracellular polysaccharide produced by *Lactobacillus delbrueckii* subsp. *bulgaricus* 291 183

Lactose–acarbose analogues

Inhibition of β -glycosidases by acarbose analogues containing cellobiose and lactose structures 13

Legionaminic acid, identification of

Synthesis and identification in bacterial lipopolysaccharides of 5,7-diacetamido-3,5,7,9-tetradecyloxy-D-glycero-D-galacto- and -D-glycero-D-talo-non-2-ulonic acids 233

Legionella pneumophila

Synthesis and identification in bacterial lipopolysaccharides of 5,7-diacetamido-3,5,7,9-tetradecyloxy-D-glycero-D-galacto- and -D-glycero-D-talo-non-2-ulonic acids 233

Leuconostoc mesenteroides NRRL B-1355 and NRRL B-23192

Novel oligosaccharides synthesized from sucrose donor and cellobiose acceptor by alternansucrase 403

Linkage analysis

Purification and characterisation of a galactoglucomannan from kiwifruit (*Actinidia deliciosa*) 291

Lipopolysaccharide

Structure of a D-glycero-D-manno-heptan from the lipopolysaccharide of *Helicobacter pylori* 219

Structure of the O-specific polysaccharide isolated from the lipopolysaccharide of *Citrobacter gillenii* serotype O12a,12b strain PCM 1544 331

Structure of the O-specific polysaccharide of *Proteus mirabilis* O16 containing ethanolamine phosphate and ribitol phosphate 213

Structure of the O-specific polysaccharide of *Proteus vulgaris* O4 containing a new component of bacterial polysaccharides, 4,6-dideoxy-4- $\{N-[(R)-3\text{-hydroxybutyryl}]-L\text{-alanyl}\}$ amino-D-glucose 195

Lipopolysaccharide components

Synthesis and identification in bacterial lipopolysaccharides of 5,7-diacetamido-3,5,7,9-tetradecyloxy-D-glycero-D-galacto- and -D-glycero-D-talo-non-2-ulonic acids 233

Long-range coupling

A study of the donor properties of sialyl phosphites having an auxiliary 3-(*S*)-phenylseleno group 255

Lycium barbarum L.

Structural characterization of the glycan part of glycoconjugate LbGp2 from *Lycium barbarum* L. 95

Mannitol

Syntheses of neoglycolipids with hexitol spacers between the saccharidic and the lipidic parts 107

Mannitol-terminating oligosaccharides

NMR studies of mannitol-terminating oligosaccharides derived by reductive alkaline hydrolysis from brain glycoproteins 393

Mannose

Facile synthesis of a comb-like mannohexaose: a trimer of the disaccharide repeating unit of the cell-wall mannans of *Aphanoascus mephitatus* and related species 431

Metals

Transition metals and carbohydrates: the methyl-4,6-*O*-benzylidene-2,3-diazo-2,3-dideoxy- α -D-mannopyranoside skeleton as building block for new chiral nitrogen chelates 209

Methylation analysis

DL-Galactan hybrids and agarans from gametophytes of the red seaweed *Gymnogongrus torulosus* 27

Methyl 4,6-*O*-benzylidene-2-*O*-diphenylmethyl- α -D-glucopyranoside

New evidence for the mechanism of the tin(II) chloride catalyzed reactions of vicinal diols with diazodiphenylmethane in 1,2-dimethoxyethane 239

Methyl 4,6-*O*-benzylidene-3-*O*-diphenylmethyl- α -D-glucopyranoside

New evidence for the mechanism of the tin(II) chloride catalyzed reactions of vicinal diols with diazodiphenylmethane in 1,2-dimethoxyethane 239

Microbial oxidation

Synthesis of branched cyclomaltooligosaccharide carboxylic acids (cyclodextrin carboxylic acids) by microbial oxidation 423

Microwave irradiation

Salt-assisted acid hydrolysis of starch to D-glucose under microwave irradiation 9

Molecular dynamics

Boat conformations: Synthesis, NMR spectroscopy, and molecular dynamics of methyl 4,6-*O*-benzylidene-3-deoxy-3-phthalimido- α -D-altropyranoside derivatives 461

Monoetherification

New evidence for the mechanism of the tin(II) chloride catalyzed reactions of vicinal diols with diazodiphenylmethane in 1,2-dimethoxyethane 239

Monosaccharides, structure

Molecular and crystal structures of *N*-arylglucopyranosylamines formed by reaction between sulfanilamide and D-ribose, D-arabinose and D-mannose 319

 β -*N*-Acetylglucosaminyl-L-asparagine analogues

Synthesis of *N*⁴-(2-acetamido-2-deoxy- β -D-glucopyranosyl)-L-asparagine analogues. *n*-Butyramide, 3-chloropropionamide, 3-aminopropionamide, and isovaleramide analogues 439

 β -*N*-Acetylhexosaminidase

Enzymatic glycosylation using 6-*O*-acylated sugar donors and acceptors: β -*N*-acetylhexosaminidase-catalysed synthesis of 6-*O*,*N*,*N'*-triacylchitobiose and 6'-*O*,*N*,*N'*-triacylchitobiose 143

Neoglycolipids

Syntheses of neoglycolipids with hexitol spacers between the saccharidic and the lipidic parts 107

NMR

A rapid method for the separation and analysis of carrageenan oligosaccharides released by *iota*- and *kappa*-carrageenase 101

On the structure of κ /I-hybrid carrageenans 271

NMR spectroscopy

Purification and characterisation of a galactoglucomannan from kiwifruit (*Actinidia deliciosa*) 291

Purification and molecular structure of two digalactosyl D-*chiro*-inositols and two trigalactosyl D-*chiro*-inositols from buckwheat seeds 19

Synthesis and characterisation of dextran and pullulan sulphate 203

N,N-Ligands

Transition metals and carbohydrates: the methyl-4,6-*O*-benzylidene-2,3-diazo-2,3-dideoxy- α -D-mannopyranoside skeleton as building block for new chiral nitrogen chelates 209

Novel cyclodextrin derivatives

Synthesis of branched cyclomaltooligosaccharide carboxylic acids (cyclodextrin carboxylic acids) by microbial oxidation 423

O-Acetyl groups

Location of *O*-acetyl groups in S-657 using the reductive-cleavage method 265

O-antigen

Structure of the *O*-specific polysaccharide isolated from the lipopolysaccharide of *Citrobacter gillenii* serotype O12a,12b strain PCM 1544 331

Structure of the *O*-specific polysaccharide of *Proteus mirabilis* O16 containing ethanolamine phosphate and ribitol phosphate 213

O-Antigen structure

Structure of the *O*-specific polysaccharide of *Proteus vulgaris* O4 containing a new component of bacterial polysaccharides, 4,6-dideoxy-4- $\{N-[(R)-3\text{-hydroxybutyryl}]-L\text{-alanyl}\}$ amino-D-glucose 195

Oligosaccharides

Novel oligosaccharides synthesized from sucrose donor and cellobiose acceptor by alternansucrase 403

Purification and characterisation of a galactoglucomannan from kiwifruit (*Actinidia deliciosa*) 291

O-Linked glycans

NMR studies of mannitol-terminating oligosaccharides derived by reductive alkaline hydrolysis from brain glycoproteins 393

Optical rotation

On the structure of κ /I-hybrid carrageenans 271

O-specific polysaccharide

Structure of the *O*-specific polysaccharide of *Proteus mirabilis* O16 containing ethanolamine phosphate and ribitol phosphate 213

Pentaerythritol

The anomalous reactivity of the bis(dibutylstannylene) acetal of pentaerythritol: a case of triple activation 327

Phenylselenenic acid

A study of the donor properties of sialyl phosphites having an auxiliary 3-(*S*)-phenylseleno group 255

6'-Phospho- α -D-glucosyl-D-fructoses

Phosphorylation and metabolism of sucrose and its five linkage-isomeric α -D-glucosyl-D-fructoses by *Klebsiella pneumoniae* 149

Phospho- α -glucosidase

Phosphorylation and metabolism of sucrose and its five linkage-isomeric α -D-glucosyl-D-fructoses by *Klebsiella pneumoniae* 149

Phosphoramidites

Synthesis of isotopically labeled D-[1'-¹³C]ribonucleoside phosphoramidites 83

Photolabels

Synthesis of biotinylated bis(D-glucose) derivatives for glucose transporter photoaffinity labelling 119

Phthalimido derivative

Boat conformations: Synthesis, NMR spectroscopy, and molecular dynamics of methyl 4,6-*O*-benzylidene-3-deoxy-3-phthalimido- α -D-altropyranoside derivatives 461

Phyllophoraceae (Rhodophyta)

DL-Galactan hybrids and agarans from gametophytes of the red seaweed *Gymnogongrus torulosus* 27

Plant cell walls, gelation

Investigating the nature of branching in pectin by atomic force microscopy and carbohydrate analysis 337

Plant primary cell wall

Purification and characterisation of a galactoglucomannan from kiwifruit (*Actinidia deliciosa*) 291

Polygalacturonic acid

Investigating the nature of branching in pectin by atomic force microscopy and carbohydrate analysis 337

Polyphyllin D

An improved synthesis of the saponin, polyphyllin D 1

Polysaccharide

Location of *O*-acetyl groups in S-657 using the reductive-cleavage method 265

Purification and characterisation of a galactoglucomannan from kiwifruit (*Actinidia deliciosa*) 291

Polysaccharides

On the structure of κ /I-hybrid carrageenans 271

Polysaccharide structure

Structure of a D-*glycero*-D-*manno*-heptan from the lipopolysaccharide of *Helicobacter pylori* 219

Protective groups

Synthesis of chitotetraose and chitohexaose based on dimethylmaleoyl protection 129

Proteus mirabilis

Structure of the *O*-specific polysaccharide of *Proteus mirabilis* O16 containing ethanolamine phosphate and ribitol phosphate 213

Proteus vulgaris

Structure of the *O*-specific polysaccharide of *Proteus vulgaris* O4 containing a new component of bacterial polysaccharides, 4,6-dideoxy-4- $\{N-[(R)-3\text{-hydroxybutyryl}]-L\text{-alanyl}\}$ amino-D-glucose 195

Pseudogluconobacter saccharoketogenes

Synthesis of branched cyclomaltooligosaccharide carboxylic acids (cyclodextrin carboxylic acids) by microbial oxidation 423

Pullulan sulphate

Synthesis and characterisation of dextran and pullulan sulphate 203

Pyranulose glycoside

Synthesis of pyrrolo[2,1-*f*][1,2,4]triazine *C*-nucleosides. Isosteres of sangivamycin, tubercidin, and toyocamycin 77

Pyrrolo[2,1-*f*][1,2,4]-triazine

Synthesis of pyrrolo[2,1-*f*][1,2,4]triazine *C*-nucleosides. Isosteres of sangivamycin, tubercidin, and toyocamycin 77

Pyrrolo[2,1-*f*][1,2,4]triazine *C*-nucleosides

Synthesis of pyrrolo[2,1-*f*][1,2,4]triazine *C*-nucleosides. Isosteres of sangivamycin, tubercidin, and toyocamycin 77

Pyruvated sugars

Pyruvated galactose and oligosaccharides from *Erwinia chrysanthemi* Ech6 extracellular polysaccharide 59

Red seaweed

DL-Galactan hybrids and agarans from gametophytes of the red seaweed *Gymnogongrus torulosus* 27

Regioselective

An improved synthesis of the saponin, polyphyllin D 1

Regioselective reactions

Concepts for improved regioselective placement of *O*-sulfo, *N*-sulfo, *N*-acetyl, and *N*-carboxymethyl groups in chitosan derivatives 43

Repeating unit

Structural characterization of the glycan part of glycoconjugate LbGp2 from *Lycium barbarum* L. 95

Rheometry

On the structure of κ/ι -hybrid carrageenans 271

Ribitol phosphate

Structure of the *O*-specific polysaccharide of *Proteus mirabilis* O16 containing ethanolamine phosphate and ribitol phosphate 213

Ribonucleosides

Synthesis of isotopically labeled D-[1'-¹³C]ribonucleoside phosphoramidites 83

S-657

Location of *O*-acetyl groups in S-657 using the reductive-cleavage method 265

Salt-assisted

Salt-assisted acid hydrolysis of starch to D-glucose under microwave irradiation 9

Seed

Purification and molecular structure of two digalactosyl D-*chiro*-inositols and two trigalactosyl D-*chiro*-inositols from buckwheat seeds 19

Selective cleavage

Structure of the *O*-specific polysaccharide of *Proteus vulgaris* O4 containing a new component of bacterial polysaccharides, 4,6-dideoxy-4- $\{N-[(R)-3\text{-hydroxybutyryl}]-L\text{-alanyl}\}$ amino-D-glucose 195

Sialic acid

A new fluorescent assay for sialyltransferase 455

Sialic acid phosphites

A study of the donor properties of sialyl phosphites having an auxiliary 3-(*S*)-phenylseleno group 255

Sialyltransferase assay

A new fluorescent assay for sialyltransferase 455

Simulated annealing

Boat conformations: Synthesis, NMR spectroscopy, and molecular dynamics of methyl 4,6-*O*-benzylidene-3-deoxy-3-phthalimido- α -D-altropyranoside derivatives 461

Size-exclusion chromatography

A rapid method for the separation and analysis of carrageenan oligosaccharides released by *iota*- and *kappa*-carrageenase 101

Skew boat conformations

Boat conformations: Synthesis, NMR spectroscopy, and molecular dynamics of methyl 4,6-*O*-benzylidene-3-deoxy-3-phthalimido- α -D-altropyranoside derivatives 461

Sol-gel process

Further evidence for the gelation ability-structure correlation in sugar-based gelators 307

Stannylenes

The anomalous reactivity of the bis(dibutylstannylene) acetal of pentaerythritol: a case of triple activation 327

Statistical distributed repeating units

Concepts for improved regioselective placement of *O*-sulfo, *N*-sulfo, *N*-acetyl, and *N*-carboxymethyl groups in chitosan derivatives 43

Staudinger reaction

Syntheses of neoglycolipids with hexitol spacers between the saccharidic and the lipidic parts 107

Streptococcus thermophilus

Structural characterisation of the exopolysaccharide produced by *Streptococcus thermophilus* EU20 413

Structure of the exopolysaccharide produced by *Streptococcus thermophilus* S3 173

Streptomyces luteogriseus

Structural revision of isovalertatins M03, M13, and M23 isolated from the culture of *Streptomyces luteogriseus* 69

Structural analysis

Location of *O*-acetyl groups in S-657 using the reductive-cleavage method 265

Structure of the exopolysaccharide produced by *Streptococcus thermophilus* S3 173

Structure of the extracellular polysaccharide produced by *Lactobacillus delbrueckii* subsp. *bulgaricus* 291 183

Structural characterization

Structural characterization of the glycan part of glycoconjugate LbGp2 from *Lycium barbarum* L. 95

Structural revision

Structural revision of isovalertatins M03, M13, and M23 isolated from the culture of *Streptomyces luteogriseus* 69

Structure

Pyruvated galactose and oligosaccharides from *Erwinia chrysanthemi* Ech6 extracellular polysaccharide 59

Structural characterization of the glycan part of glycoconjugate LbGp2 from *Lycium barbarum* L. 95

Structural studies of S-7, another exocellular polysaccharide containing 2-deoxy-*arabino*-hexuronic acid 285

Structure of the *O*-specific polysaccharide isolated from the lipopolysaccharide of *Citrobacter gillenii* serotype O12a,12b strain PCM 1544 331

Structure analysis

On the structure of κ/ι -hybrid carrageenans 271

Sucrose 6-phosphate

Phosphorylation and metabolism of sucrose and its five linkage-isomeric α -D-glucosyl-D-fructoses by *Klebsiella pneumoniae* 149

Sucrose 6-phosphate hydrolase

Phosphorylation and metabolism of sucrose and its five linkage-isomeric α -D-glucosyl-D-fructoses by *Klebsiella pneumoniae* 149

Sulfanilamide derivatives

Molecular and crystal structures of *N*-arylglycopyranosylamines formed by reaction between sulfanilamide and D-ribose, D-arabinose and D-mannose 319

Sulfated polysaccharides

DL-Galactan hybrids and agarans from gametophytes of the red seaweed *Gymnogongrus torulosus* 27

Sulfation

Concepts for improved regioselective placement of *O*-sulfo, *N*-sulfo, *N*-acetyl, and *N*-carboxymethyl groups in chitosan derivatives 43

Sulfonamides

Molecular and crystal structures of *N*-arylglucopyranosylamines formed by reaction between sulfanilamide and D-ribose, D-arabinose and D-mannose 319

Sulphated neocarrabiose oligosaccharides

A rapid method for the separation and analysis of carrageenan oligosaccharides released by *iota*- and *kappa*-carrageenase 101

Supramolecular chemistry

Further evidence for the gelation ability–structure correlation in sugar-based gelators 307

Synthesis

An improved synthesis of the saponin, polyphyllin D 1

A short and practical route to 3-*O*-benzoyl azidosphingosine 91

Facile synthesis of a comb-like mannohexaose: a trimer of the disaccharide repeating unit of the cell-wall mannans of *Aphanoascus mephitatus* and related species 431

Synthesis and identification in bacterial lipopolysaccharides of 5,7-diacetamido-3,5,7,9-tetradeoxy-D-glycero-D-galacto- and -D-glycero-D-talo-non-2-ulosonic acids 233

Synthesis of pyrrolo[2,1-*f*][1,2,4]triazine *C*-nucleosides. Isosteres of sangivamycin, tubercidin, and toyocamycin 77

Tin(II) chloride

New evidence for the mechanism of the tin(II) chloride catalyzed reactions of vicinal diols with diazodiphenylmethane in 1,2-dimethoxyethane 239

Trialkylammonium salt

Preparation, single-crystal X-ray diffraction and high-resolution

NMR spectroscopic analyses of *N*-(2,3,4,6-tetra-*O*-acetyl-β-D-glucopyranosyl)trimethylammonium bromide 343

Trichloroacetimidate in α-glycoside formation

Synthesis of methyl α-D-glucopyranosyl-(1 → 4)-α-D-galactopyranoside and methyl α-D-xylo-hex-4-ulopyranosyl-(1 → 4)-α-D-galactopyranoside 247

Triflic acid solvolysis

Structure of the O-specific polysaccharide of *Proteus vulgaris* O4 containing a new component of bacterial polysaccharides, 4,6-dideoxy-4-*N*-[(*R*)-3-hydroxybutyryl]-L-alanyl}amino-D-glucose 195

Triple activation

The anomalous reactivity of the bis(dibutylstannylene) acetal of pentaerythritol: a case of triple activation 327

Vicinal coupling constants

Boat conformations: Synthesis, NMR spectroscopy, and molecular dynamics of methyl 4,6-*O*-benzylidene-3-deoxy-3-phthalimido-α-D-altropyranoside derivatives 461

Viscosity

Investigating the nature of branching in pectin by atomic force microscopy and carbohydrate analysis 337

X-ray crystal structure

Molecular and crystal structures of *N*-arylglucopyranosylamines formed by reaction between sulfanilamide and D-ribose, D-arabinose and D-mannose 319