

Contents

iii Graphical Abstracts

G. Vernin, S. Chakib (Marseille, France), S.M. Rogacheva, T.D. Obretenov (Plovdiv, Bulgaria) and C. Párkányi (Boca Raton, USA)

M. Bouchra and J. Gelas (Aubière, France)

A.R. Vaino, W.T. Depew and W.A. Szarek (Kingston, Ont. Canada)

J.G. Fernández-Bolaños, E. Zafra, S. García, J. Fernández-Bolaños and J. Fuentes (Sevilla, Spain)

J. Tamura, K.W. Neumann, S. Kurono (Hirosawa, Japan) and T. Ogawa (Hirosawa, Tokyo, Japan)

S. Sheng and R. Cherniak (Atlanta, GA, USA)

S. Yu, C.E. Olsen and J. Marcussen (Copenhagen, Denmark)

E.V. Eneyskaya, A.M. Golubev, A.M. Kachurin, A.N. Savel'ev and K.N. Neustroev (St. Petersburg, Russia)

G. Batta, A. Lipták (Debrecen, Hungary), R. Schneerson and V. Pozsgay (Bethesda, MD, USA)

C. Ojinnaka (Bedford, UK), G. Brownsey (Norwich, UK), E. Morris (Bedford, UK) and V. Morris (Norwich, UK)

N. Hayashi (Ibaraki, Japan), J. Sugiyama (Kyoto, Japan), T. Okano (Tokyo, Japan) and M. Ishihara (Ibaraki, Japan)

K. Tajima, N. Uenishi, M. Fujiwara, T. Erata, M. Munekata and M. Takai (Sapporo, Japan)

A. Harada, J. Li, M. Kamachi, Y. Kitagawa and Y. Katsube (Osaka, Japan)

C.H. Du Penhoat (Paris, France), S.B. Engelsen (Frederiksberg, Denmark), D. Plusquellec (Rennes, France) and S. Pérez (Grenoble, France)

P. Köll, R. Bruns (Oldenburg, Germany) and J. Kopf (Hamburg, Germany)

Y. Tezuka (Tokyo, Japan)

- 1 Thermal decomposition of ascorbic acid
- 17 Further examples of orthoesterification under kinetically controlled conditions. Application to the selective acylation of sucrose, maltose and α , α -trehalose
- 27 Synthesis of 1,2,3-tri-*O*- β -lactosyl-D-threitol and 1-*O*-benzyl-2,3,4-tri-*O*- β -lactosyl-D-threitol
- 33 4-Thiopyranoside and 4-thiofuranoside derivatives of D-galactosamine
- 43 Synthetic approach towards sulfated chondroitin di-, tri- and tetrasaccharides corresponding to the repeating unit
- 65 Structure of the capsular polysaccharide of *Clostridium perfringens* Hobbs 10 determined by NMR spectroscopy
- 73 Methods for the assay of 1,5-anhydro-D-fructose and α -1,4-glucan lyase
- 83 Transglycosylation activity of α -D-galactosidase from *Trichoderma reesei*. An investigation of the active site
- 93 Conformational stabilization of the altruronic acid residue in the O-specific polysaccharide of *Shigella sonnei*/*Plesiomonas shigelloides*
- 101 Effect of deacetylation on the synergistic interaction of acetan with locust bean gum or konjac mannan
- 109 Selective degradation of the cellulose I_α component in *Cladophora* cellulose with *Trichoderma viride* cellulase
- 117 The production of a new water-soluble polysaccharide by *Acetobacter xylinum* NCI 1005 and its structural analysis by NMR spectroscopy
- 123 Book reviews
- iii Graphical Abstracts
- 127 Structures of polyrotaxane models
- 131 A structural study of 2-*O*-lauroylsucrose with molecular modeling and NMR methods
- 147 Crystal and molecular structures of the pentaacetates of D-gluconic acid and derived *tert*-butyl- and *tert*-butylperoxyesters and the tetra-*O*-acetyl-1,2-*O*-*tert*-butyl-peroxyorthoacetyl derivative
- 155 Pullulan nonaacetate: Assignment of chemical shifts of the acetyl protons and acetyl carbonyl carbons by 2D-NMR spectroscopy

C. Gallo-Rodriguez, O. Varela and R.M. de Lederkremer (Buenos Aires, Argentina)	163	One-pot synthesis of β -D-Galp(1 $\rightarrow$ 4)[β -D-Galp(1 $\rightarrow$ 6)]-D-GlcNAc, a 'core' trisaccharide linked <i>O</i> -glycosidically in glycoproteins of <i>Trypanosoma cruzi</i>
L.W. Leung and R. Bittman (Flushing, NY, USA)	171	A convenient synthesis of D- <i>myo</i> -inositol 1,4,5-trisphosphate (Ins(1,4,5)P ₃) and L- <i>myo</i> -inositol 1,4,5-trisphosphate (Ins(3,5,6)P ₃)
L. Rochepeau-Jobron and J.-C. Jacquinet (Orléans, France)	181	Synthesis of <i>O</i> -(2- <i>O</i> -sulfo- α -L-idopyranosyluronic acid)-(1 $\rightarrow$ 3)-2-acetamido-2-deoxy-4- <i>O</i> -sulfo-D- galactopyranose trisodium salt, a disaccharide fragment of dermatan sulfate
H. Jacobs, R.C. Eerlingen, H. Spaepen, P.J. Grobet and J.A. Delcour (Heverlee, Belgium)	193	Impact of annealing on the susceptibility of wheat, potato and pea starches to hydrolysis with pancreatin
M. Hrmova and G.B. Fincher (Glen Osmond, S.A., Australia)	209	Barley β -D-glucan exohydrolases. Substrate specificity and kinetic properties
J.E.N. Shin, S. Ackloo, A.S. Mainkar, M.A. Monteiro, H. Pang, J.L. Penner and G.O. Aspinall (Toronto, Canada)	223	Lipo-oligosaccharides of <i>Campylobacter jejuni</i> serotype O:10. Structures of core oligosaccharide regions from a bacterial isolate from a patient with the Miller–Fisher syndrome and from the serotype reference strain
B.A. Spronk, G.J. Rademaker, J. Haverkamp, J.E. Thomas-Oates (Utrecht, Netherlands), J.-P. Vincken, A.G.J. Voragen (Wageningen, Netherlands), J.P. Kamerling and J.F.G. Vliegenthart (Utrecht, Netherlands)	233	Dimers of a GFG hexasaccharide occur in apple fruit xyloglucan
A. Chiovitti, A. Bacic (Parkville, Australia), D.J. Craik (St Lucia, Australia), S.L.A. Munro, G.T. Kraft and M.-L. Liao (Parkville, Australia)	243	Carrageenans with complex substitution patterns from red algae of the genus <i>Erythroclonium</i>
K. Yamazaki, K. Inukai, M. Suzuki, H. Kuga and H. Korenaga (Tokyo, Japan)	253	Structural studies on a sulfated polysaccharide from an <i>Arthrobacter</i> sp. by NMR spectroscopy and methylation analysis
N. Hayashi (Ibaraki, Japan), J. Sugiyama (Kyoto, Japan), T. Okano (Tokyo, Japan) and M. Ishihara (Ibaraki, Japan)	261	The enzymatic susceptibility of cellulose microfibrils of the algal–bacterial type and the cotton–ramie type
C.M.G.C. Renard, M. Lahaye (Nantes, France), M. Mutter, F.G.J. Voragen (Wageningen, Netherlands) and J.-F. Thibault (Nantes, France)	271	Isolation and structural characterisation of rhamnogalacturonan oligomers generated by controlled acid hydrolysis of sugar-beet pulp
M. Samejima (Tokyo, Japan), J. Sugiyama (Kyoto, Japan), K. Igarashi (Tokyo, Japan) and K.-E.L. Eriksson (Athens, GA, USA)	281	Enzymatic hydrolysis of bacterial cellulose
B.D. Johnston and B.M. Pinto (Burnaby, Canada)	289	Use of a phenyl 1-selenogalactofuranoside as a glycosyl donor for the synthesis of galactofuranosyl-containing disaccharides
F.W. Lichtenthaler, U. Kläres (Darmstadt, Germany), Z. Szurmai (Debrecen, Hungary) and B. Werner (Darmstadt, Germany)	293	4,6-Di- <i>O</i> -benzoyl-3- <i>O</i> -benzyl- α -D- <i>arabino</i> -hexo-pyranos-2-ulosyl bromide: A conveniently accessible glycosyl donor for the expedient construction of diantennary β -D-mannosides branched at O-3 and O-6
	305	Announcements
	iv	Graphical Abstracts
C. Augé (Orsay, France) and D.H.G. Crout (Coven-try, UK)	307	Foreword to the Special Issue on Chemoenzymatic synthesis of carbohydrates
H.-L. Arth and W.-D. Fessner (Aachen, Germany)	313	Practical synthesis of 4-hydroxy-3-oxobutylphosphonic acid and its evaluation as a bio-isosteric substrate of DHAP aldolases
D.C.M. Kong and M. Von Itzstein (Parkville, Vic., Australia)	323	The chemoenzymatic synthesis of 9-substituted 3,9-dideoxy-D- <i>glycero</i> -D- <i>galacto</i> -2-non-ulosonic acids
M. Ebner and A.E. Stütz (Graz, Austria)	331	Glucose isomerase catalysed isomerisation reactions of (2 <i>R</i> ,3 <i>R</i>)-configured aldofuranoses into the corresponding open-chain 2-ketoses
A. Huwig, S. Emmel, G. Jäkel and F. Giffhorn (Saarbrücken, Germany)	337	Enzymatic synthesis of L-tagatose from galactitol with galactitol dehydrogenase from <i>Rhodobacter sphaeroides</i> D

T. Kappes and H. Waldmann (Karlsruhe, Germany)	341	The tetrabenzylglucosyloxycarbonyl(BGloc)-group—A carbohydrate-derived enzyme-labile urethane protecting group
U. Grabowska (Bristol, UK), D.A. MacManus (Reading, UK), K. Biggadike, M.I. Bird (Stevenage, UK), S. Davies (Reading, UK), T. Gallagher, L.D. Hall (Bristol, UK) and E.N. Vulfson (Reading, UK)	351	Diastereoselective resolution of 6-substituted glycosides via enzymatic hydrolysis
S. Singh, M. Scigelova, P. Critchley and D.H.G. Crout (Coventry, UK)	363	Trisaccharide synthesis by glycosyl transfer from <i>p</i> -nitrophenyl β -D- <i>N</i> -acetylglactosaminide on to disaccharide acceptors catalysed by the β - <i>N</i> -acetylhexosaminidase from <i>Aspergillus oryzae</i>
H. Prade, L.F. Mackenzie and S.G. Withers (Vancouver, Canada)	371	Enzymatic synthesis of disaccharides using <i>Agrobacterium</i> sp. β -glucosidase
E. Montero, J. Alonso, F.J. Cañada, A. Fernández-Mayoralas (Madrid, Spain) and M. Martín-Lomas (Sevilla, Spain)	383	Regioselectivity of the enzymatic transgalactosidation of D- and L-xylose catalysed by β -galactosidases
K. Koizumi, T. Tanimoto, Y. Kubota (Nishinomiya, Japan) and S. Kitahata (Osaka, Japan)	393	Enzymatic synthesis, isolation, and analysis of novel α - and β -galactosyl-cycloisomalto-octaoses
I. Matsuo, M. Isomura (Odawara, Japan), T. Miyazaki, T. Sakakibara (Yokohama, Japan) and K. Ajisaka (Odawara, Japan)	401	Chemoenzymatic synthesis of the branched oligosaccharides which correspond to the core structures of N-linked sugar chains
K. Yamamoto, K. Fujimori (Kyoto, Japan), K. Haneda, M. Mizuno, T. Inazu (Tokyo, Japan) and H. Kumagai (Kyoto, Japan)	415	Chemoenzymatic synthesis of a novel glycopeptide using a microbial endoglycosidase
C. Unverzagt (Garching, Germany)	423	Chemoenzymatic synthesis of a sialylated diantennary N-glycan linked to asparagine
M.M. Palcic, H. Li (Edmonton, Canada), D. Zanini (Ottawa, Canada), R.S. Bhella (Edmonton, Canada) and R. Roy (Ottawa, Canada)	433	Chemoenzymatic synthesis of dendritic sialyl Lewis ^x
K. Yamada, E. Fujita and S.-I. Nishimura (Sapporo, Japan)	443	High performance polymer supports for enzyme-assisted synthesis of glycoconjugates
C.H. Hokke and D.H. van den Eijnden (Amsterdam, The Netherlands)	463	Enzyme-assisted synthesis of Asn-linked diantennary oligosaccharides occurring on glycodelin A
T. Bülter, C. Wandrey and L. Elling (Jülich, Germany)	469	Chemoenzymatic synthesis of UDP- <i>N</i> -acetyl- α -D-galactosamine
S. Fey, L. Elling and U. Kragl (Jülich, Germany)	475	The cofactor Mg ²⁺ — a key switch for effective continuous enzymatic production of GDP-mannose using recombinant GDP-mannose pyrophosphorylase
K. Sujino (Edmonton, Canada; Tokyo, Japan), C. Malet, O. Hindsgaul and M.M. Palcic (Edmonton, Canada)	483	Acceptor hydroxyl group mapping for calf thymus α -(1 $\rightarrow$ 3)-galactosyltransferase and enzymatic synthesis of α -D-Gal <i>p</i> -(1 $\rightarrow$ 3)- β -D-Gal <i>p</i> -(1 $\rightarrow$ 4)- β -D-Glc <i>p</i> NAc analogs
J. Rabinä, J. Natunen, R. Niemelä, H. Salminen, K. Ilves, O. Aitio, H. Maaheimo, J. Helin and O. Renkonen (Helsinki, Finland)	491	Enzymatic synthesis of site-specifically (α 1-3)-fucosylated polylactosamines containing either a sialyl Lewis x, a VIM-2, or a sialylated and internally difucosylated sequence
A. Lubineau, C. Augé, N. Le Goff and C. Le Narvor (Orsay, France)	501	Chemoenzymatic synthesis of a 3 ^{IV} , 6 ^{III} -disulfated Lewis ^x pentasaccharide, a candidate ligand for human L-selectin
K. Stangier (Edmonton, Canada; Hamburg, Germany), M.M. Palcic, D.R. Bundle, O. Hindsgaul (Edmonton, Canada) and J. Thiem (Hamburg, Germany)	511	Fucosyltransferase-catalyzed formation of L-galactosylated Lewis structures
V. Křen, J. Dvořáková (Prague, Czech Republic), U. Gambert (Hamburg, Germany), P. Sedmera, V. Havlíček (Prague, Czech Republic), J. Thiem (Hamburg, Germany) and K. Bezouška (Prague, Czech Republic)	517	β -Glucosylation of chitoooligomers by galactosyltransferase

S. Riva, B. Sennino, F. Zambianchi, B. Danieli and L. Panza (Milano, Italy)	525	Effect of organic cosolvents on the stability and activity of the β -1,4-galactosyltransferase from bovine colostrum
G.M. Watt, L. Revers, M.C. Webberley, I.B.H. Wilson and S.L. Flitsch (Edinburgh, UK)	533	The chemoenzymatic synthesis of the core trisaccharide of N-linked oligosaccharides using a recombinant β -mannosyltransferase
A. Percy, H. Ono, D. Watt and K. Hayashi (Tsukuba, Japan)	543	Synthesis of β -D-glucopyranosyl-(1 $\rightarrow$ 4)-D-arabinose, β -D-glucopyranosyl-(1 $\rightarrow$ 4)-L-fucose and β -D-glucopyranosyl-(1 $\rightarrow$ 4)-D-altrose catalysed by cellobiose phosphorylase from <i>Cellvibrio gilvus</i>
M. Dols, M. Remaud Simeon, R.-M. Willemot (Toulouse, France), M.R. Vignon (Grenoble, France) and P.F. Monsan (Toulouse, France)	549	Structural characterization of the maltose acceptor-products synthesized by <i>Leuconostoc mesenteroides</i> NRRL B-1299 dextranucrase
L. Bornaghi, J.-P. Utile (Grenoble, France), E.D. Rekaï, J.-M. Mallet, P. Sinay (Paris, France) and H. Driguez (Grenoble, France)	561	Transfer reactions catalyzed by cyclodextrin glucosyltransferase using 4-thiomaltosyl and C-maltosyl fluorides as artificial donors

I Contents of Volume

V Cumulative Author Index

XX GA Template

XXI Information for Authors