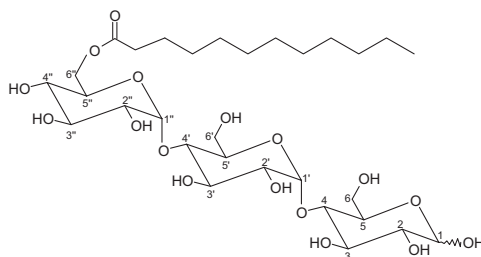


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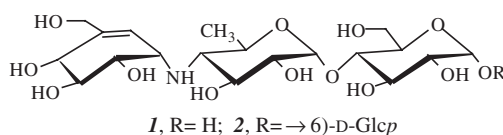
Effect of carbohydrate fatty acid esters on *Streptococcus sobrinus* and glucosyltransferase activity pp 1029–1034

Kumari S. Devulapalle, Aranzazu Gómez de Segura, Manuel Ferrer, Miguel Alcalde, Gregory Mooser^x and Francisco J. Plou^{*}



Two potent competitive inhibitors discriminating α -glucosidase family I from family II pp 1035–1040

Atsuo Kimura,^{*} Jin-Ha Lee, In-Su Lee, Hee-Seob Lee, Kwan-Hwa Park, Seiya Chiba and Doman Kim^{*}



The K_i ratio of acarviosine–glucose (**1**) and isoacarbose (**2**), (K_i for **2**)/(K_i for **1**), were 21–440 and 1.0–1.8 for α -glucosidase family I and family II enzymes, respectively.

Indiscriminate glycosylation of procarboxypeptidase Y expressed in *Pichia pastoris* pp 1041–1045

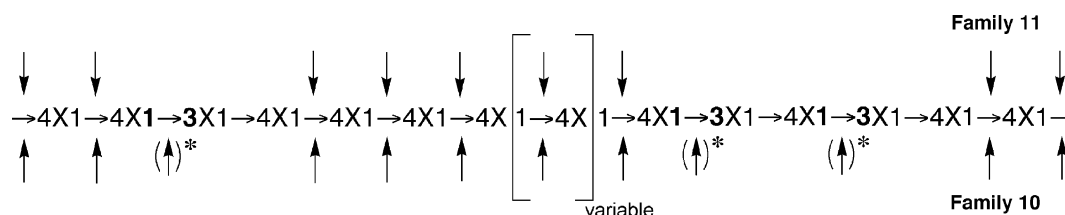
Haruko Maeda, Eri Chatani,^{*} Takahiro Koyama, Masatoshi Sugiura, Hirohisa Izumi and Rikimaru Hayashi

The *Pichia pastoris* expression system was constructed to gain the recombinant deglycosylated procarboxypeptidase Y. However, native-PAGE, MALDI-TOF mass spectrometry, dynamic light scattering, Con A chromatography, and chemical analysis by the phenol–sulfuric acid method revealed the secreted enzyme is a mixture of heterogeneously O-glycosylated proteins.

Hydrolysis of *Nothogenia erinacea* xylan by xylanases from families 10 and 11

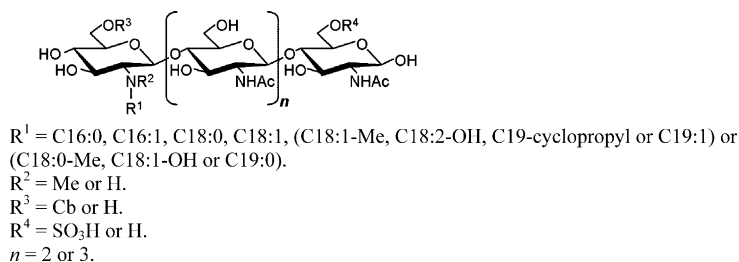
pp 1047–1060

Wim Nerinckx,* Anders Broberg, Jens Ø. Duus, Patricia Ntarima, Lesley A. S. Parolis, Haralambos Parolis and Marc Claeysens*

***Acacia senegal* and *Prosopis chilensis*-nodulating rhizobia *Sinorhizobium arboris* HAMBI 2361 and *S. kostiense* HAMBI 2362 produce tetra- and pentameric LCOs that are N-methylated, O-6-carbamoylated and partially sulfated**

pp 1061–1067

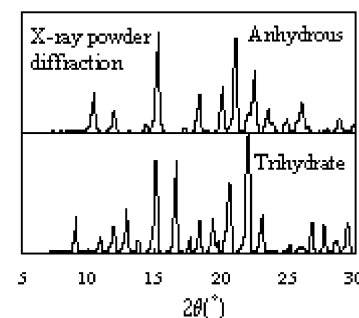
Petri Nowak,* Laura Soupas, Jane Thomas-Oates and Kristina Lindström

**Transformation of lactulose trihydrate into anhydrous lactulose by fluidized bed drying and its characterization**

pp 1069–1075

Teruhiko Mizota,* Nobuo Seki and Sadayuki Kokubo

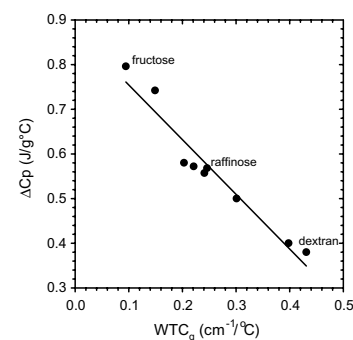
Stable anhydrous lactulose was produced. It was characterized by an opaque white appearance, a coarse surface structure with random cracks, and a high degree of crystallization. Transformation was observed by X-ray powder diffraction spectra, DTA, DTG, SEM, light stereomicroscope and others. It was enhanced when the temperature of the fluidized-bed was over 40 °C.

**A Fourier-transform infrared spectroscopy study of sugar glasses**

pp 1077–1085

Willem F. Wolkers,* Ann E. Oliver, Fern Tablin and John H. Crowe

FTIR was used to study the hydrogen-bonding interactions that take place in vitrified carbohydrates of different chain lengths. DSC was used to measure the change in heat capacity (ΔC_p) that is associated with the glass transition. We found that with increasing T_g , the wavenumber–temperature coefficient of ν_{OH} in the glassy state, WTC_g , increases, whereas ΔC_p decreases. WTC_g and ΔC_p showed a negative linear correlation, indicating that the change in heat capacity during the glass transition is associated with the strength of the hydrogen-bonding network in the glassy state.



Crystal structure of *N*-(benzyloxycarbonyl)aminoethyl-2,3,4,6-*tetra-O*-benzoyl- α -D-mannopyranoside: stabilization of the crystal lattice by a tandem network of N–H \cdots O, C–H \cdots O, and C–H $\cdots\pi$ interactions

pp 1087–1092

O. Srinivas, B. Muktha, S. Radhika, T. N. Guru Row* and N. Jayaraman*

The single crystal X-ray structure of *N*-(benzyloxycarbonyl)aminoethyl-2,3,4,6-*tetra-O*-benzoyl- α -D-mannopyranoside is determined. An analysis of the packing motif reveals that a tandem network of N–H \cdots O, C–H \cdots O, and C–H $\cdots\pi$ interactions emerges to stabilize the molecular packing in the solid state.

Effects of annealing on the polymorphic structure of starches from sweet potatoes (*Ayamurasaki* and *Sunnyred* cultivars) grown at various soil temperatures

pp 1093–1098

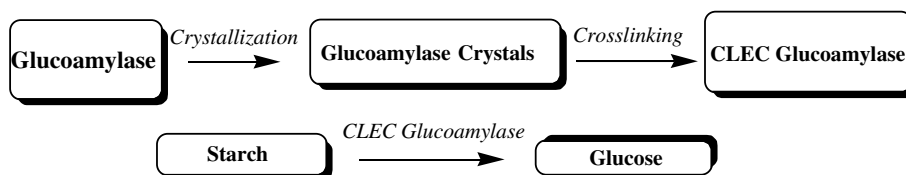
Natalia K. Genkina, Lyubov A. Wasserman, Takahiro Noda, Richard F. Tester and Vladimir P. Yuryev*

Starches extracted from sweet potato cultivars *Sunnyred* and *Ayamurasaki* grown at 15 or 33 °C (soil temperature) were annealed in excess water for different times. The structures of annealed starches, as well as their gelatinisation (melting) properties, were studied using high-sensitivity differential scanning calorimetry (HSDSC).

Crosslinked enzyme crystals of glucoamylase as a potent catalyst for biotransformations

pp 1099–1104

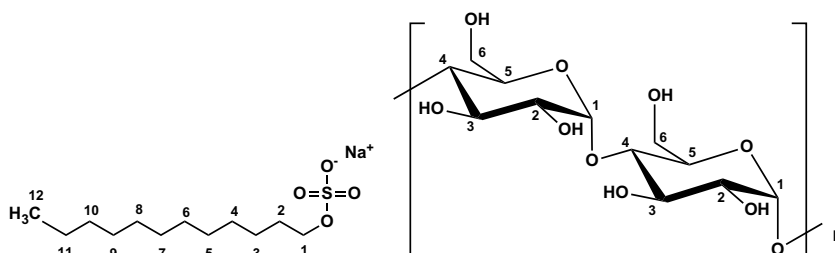
Tholath Emilia Abraham,* Jegan Roy Joseph, Laxmi Bai Vasanthakumari Bindhu and Kizakoottu Kunjunny Jayakumar



Two-dimensional rotating-frame Overhauser spectroscopy (ROESY) and ^{13}C NMR study of the interactions between maltodextrin and an anionic surfactant

pp 1105–1111

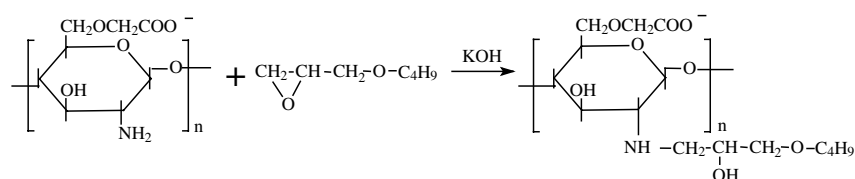
Apiradee Wangsakan, David J. McClements,* Pavinee Chinachoti and L. Charles Dickinson



Surface and aggregate properties of an amphiphilic derivative of carboxymethylchitosan

pp 1113–1118

Weiping Sui,* Sufen Wang, Guohua Chen and Guiying Xu

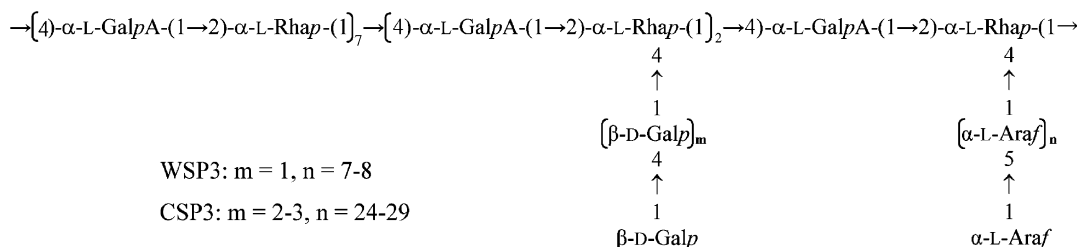


A group of (2-hydroxyl-3-butoxyl)propylcarboxymethylchitosans has been synthesized, and the surface and aggregate properties have been studied by means of surface tension, surface pressure and fluorescence measurements.

Structural features of pectic polysaccharides from the skin of *Opuntia ficus-indica* prickly pear fruits

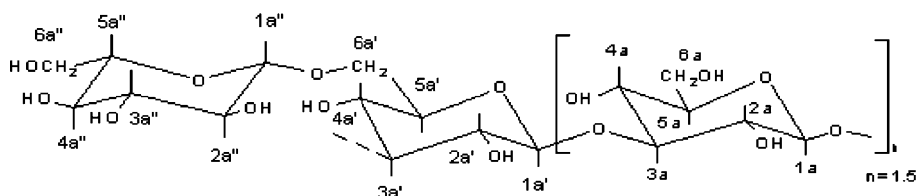
pp 1119–1127

Y. Habibi, A. Heyraud, M. Mahrouz and M. R. Vignon*

**NMR characterization of the polysaccharidic fraction from *Lentinula edodes* grown on olive mill waste waters**

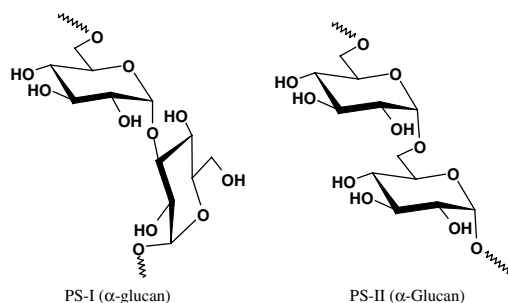
pp 1129–1134

Umberto Tomati, Monica Belardinelli, Emanuela Galli, Valentina Iori, Donatella Capitani, Luisa Mannina,* Stéphane Viel and Annalaura Segre

**Structural studies of water-soluble polysaccharides of an edible mushroom, *Termitomyces eurhizus*. A reinvestigation**

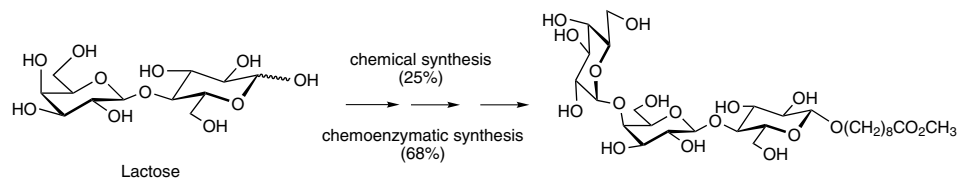
pp 1135–1140

Soumitra Mondal, Indranil Chakraborty, Malay Pramanik, Dilip Rout and Syed S. Islam*



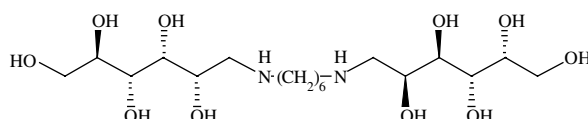
Large-scale chemical and chemo-enzymatic synthesis of a spacer-containing Pk-trisaccharide

pp 1141–1146

Vivekanand P. Kamath, Robert E. Yeske, Jonathan M. Gregson, R. Murray Ratcliffe,*
Ying R. Fang and Monica M. Palcic***A synthetic strategy for novel nonsymmetrical bola amphiphiles based on carbohydrates**

pp 1147–1153

Boelo Schuur, Anno Wagenaar, André Heeres and Erik H. J. Heeres*

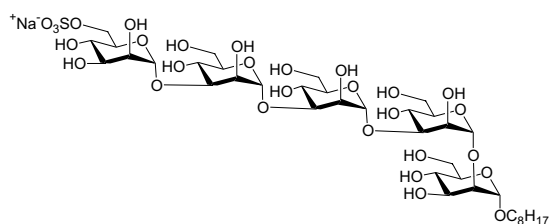
**4a:** D-glucose and D-galactose

A number of novel non-ionic bolaform amphiphiles with non-identical alditol head-groups e.g. 1-(1-deoxy-D-galactitol-1-ylamino)-6-(1-deoxy-D-glucitol-1-ylamino)hexane (**4a**), were synthesized by two successive reductive aminations involving 1,6-diaminohexane and the appropriate D-aldohexoses (D-glucose, D-mannose and D-galactose).

Synthesis of a 6^V-sulfated mannopentasaccharide analogue related to PI-88

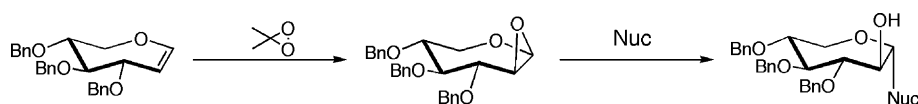
pp 1155–1162

Guofeng Gu, Guohua Wei and Yuguo Du*

**Synthesis, crystal structure, and reactivity of a D-xylose based oxepine**

pp 1163–1171

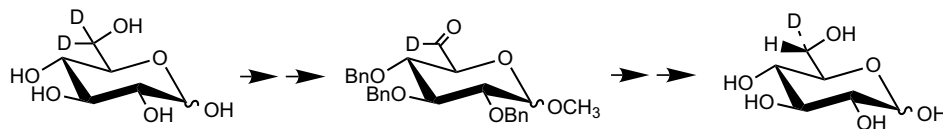
Mark W. Peczu,* Nicole L. Snyder and W. Sean Fyvie



Stereoselective synthesis of chirally deuterated (*S*)-D-(6-²H₁)glucose

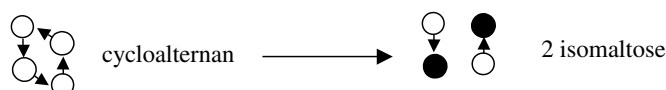
pp 1173–1178

Lin Xu and Neil P. J. Price*

**NOTES****Purification and characterization of an intracellular cycloalternan-degrading enzyme from *Bacillus* sp. NRRL B-21195**

pp 1179–1184

Yeon-Kye Kim, Motomitsu Kitaoka,* Kiyoshi Hayashi, Cheorl-Ho Kim and Gregory L. Côté

**Characterisation of a tetrasaccharide released on mild acid hydrolysis of LPS from two rough strains of *Shewanella* species representing different DNA homology groups**

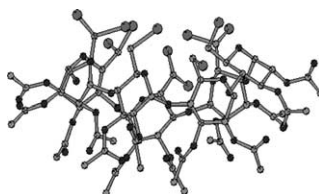
pp 1185–1188

Anne L. Moule, Lesley Galbraith, Andrew D. Cox and Stephen G. Wilkinson*

**X-ray crystallography and solution NMR spectroscopy characterization of heptakis(2,3-di-*O*-acetyl-6-bromo-6-deoxy)cyclomaltoheptaose**

pp 1189–1194

Petros Giastas, Kyriaki Eliadou, Zoi F. Plyta, Konstantina Yannakopoulou and Irene M. Mavridis*



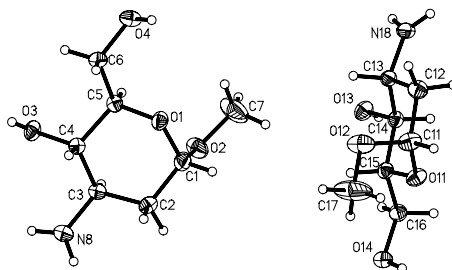
Structural characterization of heptakis(2,3-di-*O*-acetyl-6-bromo-6-deoxy)cyclomaltoheptaose, studied in solution by NMR spectroscopy and in the solid state as a methanol complex by X-ray crystallography. Unusual glucopyranose conformations in the crystal.



X-ray and conformational analysis of methyl 3-amino-2,3-dideoxy- α -D-arabino-hexopyranoside

pp 1195–1199

Aleksandra Dąbrowska, Artur Sikorski, Dagmara Jacewicz and Lech Chmurzyński*

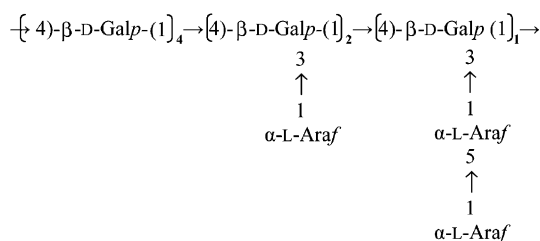


In the unit cell of this crystalline structure, eight molecules (with two molecules in the asymmetric unit) are present. Moreover, medium-strength N–H···O and O–H···O hydrogen bonds, which stabilize the 3-D structure of the title compound, can be observed.

An arabinogalactan from the skin of *Opuntia ficus-indica* prickly pear fruits

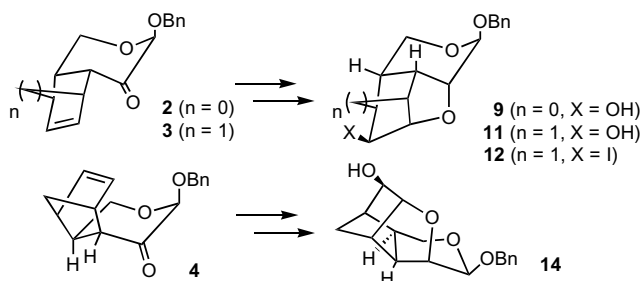
pp 1201–1205

Youssef Habibi, Mostafa Mahrouz, Marie-France Marais and Michel R. Vignon*

**Reactions of Diels–Alder adducts of a sugar-derived dihydropyranone leading to fused polycyclic compounds**

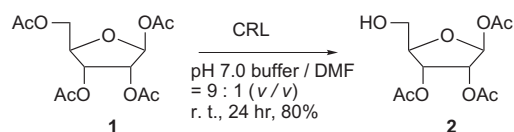
pp 1207–1213

Christian A. Iriarte Capaccio and Oscar Varela*

**A convenient preparation of 1,2,3-tri-*O*-acetyl- β -D-ribofuranose by enzymatic regioselective 5-*O*-deacetylation of the peracetylated ribofuranose**

pp 1215–1217

Tun-Cheng Chien and Ji-Wang Chern*

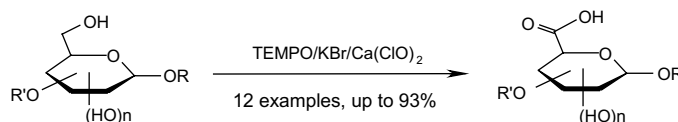


CRL = lipase from *Candida rugosa* (formerly *Candida cylindracea*) (type VII, Sigma L 1754)

A facile preparation of uronates via selective oxidation with TEMPO/KBr/Ca(OCl)₂ under aqueous conditions

pp 1219–1223

Feng Lin, Wenjie Peng, Wen Xu, Xiuwen Han and Biao Yu*

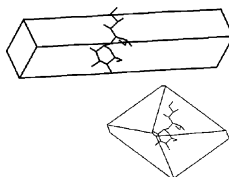


Addition of solid Ca(OCl)₂ as the terminal oxidant in the TEMPO-mediated selective oxidation has the benefit of easier operation. A variety of partially protected saccharide derivatives have been successfully converted into the corresponding uronate derivatives, including disaccharide building blocks for GAG fragments and precursors to saponins.

Orientated growth of crystalline anhydrous maltitol (4-O- α -D-glucopyranosyl-D-glucitol)

pp 1225–1231

F. Capet,* S. Comini, G. Odou, P. Looten and M. Descamps



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Conference announcement

pp 1233–1234

*Corresponding author

*Supplementary data available via ScienceDirect

COVER

Well-defined glycoforms of glycoproteins can easily be obtained by oxidative coupling of synthetic thioaldoses with proteins that have a cysteine moiety in lieu of an asparagine residue carrying natural N-linked oligosaccharides. In vitro glycosylation offers several advantages such as quantitative conjugation, incorporation of oligosaccharides that display high bioactivities and the possibility of using convenient bacterial or yeast protein expression systems. The figure is related to Geert-Jan Boons' *Carbohydrate Research Award* paper, *Carbohydr. Res.*, **2004**, 339, 181–193.



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ISSN 0008-6215