

# Bibliography of carbohydrate polymers

(Five weeks journals. Search completed at 12th Jan 1995)

## 1 BOOKS, REVIEWS & SYMPOSIA

Takeda Y// Kagoshima Univ, Fac Agr, Dept Biochem Sci & Technol, Kagoshima 890, Japan  
*Nippon Nogeikagaku Kaishi* 1994 **68** (11) 1573  
 Fine structure of starch (Minireview) (Japanese, English Abstract)

## 2 CELLULOSE

Amin M, Darwish KA, Mounir M\*, Abu-Elez M// \*Cairo Univ, Fac Sci, Dept Phys, Giza, Egypt  
*J Appl Polym Sci* 1994 **54** (11) 1587  
 Thermally stimulated current and effect of annealing on the electrical properties of cellulose nitrate

Chen HL, Porter RS// Chang Gung Univ, Dept Chem Engn, Tasyuan, Taiwan  
*J Appl Polym Sci* 1994 **54** (11) 1781  
 Composite of polyethylene and kenaf, a natural cellulose fiber

Embascado ME, Marks JS, Bemiller JN// Purdue Univ, Dept Food Sci, West Lafayette, IN 47907, USA  
*Food Hydrocolloid* 1994 **8** (5) 407  
 Bacterial cellulose. I. Factors affecting the production of cellulose by *Acetobacter xylinum*

Embascado ME, Marks JS, Bemiller JN// Address as above.  
*Food Hydrocolloid* 1994 **8** (5) 419  
 Bacterial cellulose. II. Optimization production by *Acetobacter xylinum* through response surface methodology

Erdtmann M, Keller R, Baumann H\*// \*Rhein Westfal TH Aachen, Worringerweg 1, W-5100 Aachen, Germany  
*Biomaterials* 1994 **15** (13) 1043  
 Photochemical immobilization of heparin, dermatan sulphate, dextran sulphate and endothelial cell surface heparan sulphate onto cellulose membranes for the preparation of athrombogenic and antithrombogenic polymers

Ermiş D, Tarımcı N\*// \*Ankara Univ, Fac Pharm, Dept Pharmaceut Technol, Ankara 06100, Turkey  
*Int J Pharm* 1995, **113** (1) 65

Ketoprofen sustained-release suppositories containing hydroxypropylmethylcellulose phthalate in polyethylene glycol bases

Filho UPR, Gushikem Y\*, Fujiwara FY// \*Univ Estadual Campinas, Inst Quim, CP 6154, BR-13081 970 Campinas, SP, Brazil  
*Langmuir* 1994 **10** (11) 4357

Zirconium dioxide supported on  $\alpha$ -cellulose: Synthesis and characterization  
 Fischer H, Keller A, Odell JA// Univ Bristol, HH Wills Phys Lab, Tyndall Ave, Bristol BS8 1TL, England  
*J Appl Polym Sci* 1994 **54** (11) 1785

Quick way to prepare anisotropic solutions of hydroxypropylcellulose in water  
 Garcia-Ramirez M, Cavaille JY, Dupeyre D, Peguy A// CNRS, CERMAV, Ctr Rech Macromolec Vegetales, BP 53X, F-38041 Grenoble, France  
*J Macromol Sci Pure Appl Chem* 1994 **A31** (Suppl 6-7) 1143  
 Cellulose/polyamide blends

Gessler K, Krauss N, Steiner T, Betzel T, Sandmann C, Saenger W\*// \*Free Univ Berlin, Inst Kristallog, Takustr 6, D-14195 Berlin, Germany  
*Science* 1994 **266** (5187) 1027

Crystal structure of  $\beta$ -D-cellobiose hemihydrate with implications for the structure of cellulose II

Guittard F, Yamagishi T, Cambon A, Sixou P\*// \*Lab Phys Mat Condensee, CNRS, URA 190, Parc Valrose, F-06034 Nice, France  
*Macromolecules* 1994 **27** (23) 6988

Preparation and liquid crystalline properties of (hydroxypropyl)cellulose perfluorooctanoate

Guo JX, Gray DG\*// \*McGill Univ, Pulp & Paper Res Ctr, Dept Chem, 3420 Univ St, Montreal, Quebec, Canada H3A 2A7  
*J Polym Sci B-Polym Phys* 1994 **32** (15) 2529

Effect of degree of acetylation and solvent on the chiroptical properties of lyot-

ropic (acetyl) (ethyl) cellulose solutions

Hayashi S, Sasao S, Takasaki Y, Imada K// Miyazaki Univ, Fac Engr, Dept Mat Sci, 1-1 Gakuen Kibanadai Nishi, Miyazaki 88921, Japan  
*J Ind Microbiol* 1994 **13** (2) 103

Immobilization of  $\beta$ -fructofuranosidase from *Aureobasidium* on DEAE-cellulose

Kulkarni S, Krause S\*, Wignall GD, Hammouda B// \*Rensselaer Polytech Inst, Polymer Sci & Engr Program, Troy, NY 12180, USA  
*Macromolecules* 1994 **27** (23) 6777

Investigation of the pore structure and morphology of cellulose acetate membranes using small-angle neutron scattering. I. Cellulose acetate active layer membranes

Kulkarni S, Krause S\*, Wignall GD// \*Address as above.  
*Macromolecules* 1994 **27** (23) 6785

Investigation of the pore structure and morphology of cellulose acetate membranes using small-angle neutron scattering. II. Ultrafiltration and reverse-osmosis membranes

Narisawa S, Fukui E, Yoshino H, Hirakawa Y, Noda K// Tanabe Seiyaku Co Ltd, Pharmaceut Res Lab, Yodogawa ku, 16-89 Kashima 3 chome, Osaka 532, Japan  
*Chem Pharm Bull Tokyo* 1994 **42** (10) 2131

Porosity-controlled ethylcellulose film coating. V. Mechanism of drug release from beads coated with porous ethylcellulose film

Nesbitt RU, Mahjour M, Mills NL, Fawzi MB// Warner Lambert Parke Davis, Parke Davis Pharmaceut Res, 170 Tabor Rd, Morris Plains, NJ 07950, USA  
*J Control Release* 1994 **32** (1) 71

Effect of substrate on mass release from ethylcellulose-latex coated pellets

Oguchi T, Matsumoto K, Yonemochi E, Nakai Y, Yamamoto K\*// \*Chiba Univ, Fac Pharmaceut Sci, Inage ku, 1-33 Yayoi cho, Chiba 263, Japan  
*Int J Pharm* 1995, **113** (1) 97

Dissolution studies in organic solvents for evaluating hydrogen-bond matrix of cellulose in the ground mixture

Sakellariou P, Rowe RC// ICI Paints, Slough, Berks, England  
*J Macromol Sci Pure Appl Chem* 1994 **A31** (Suppl 6-7) 1201

Phase separation and polymer interactions in aqueous poly(vinyl alcohol) hydroxypropyl methylcellulose blends for tablet coating

Shiba K, Toda T, Iijima S, Inoue J, Yoshida T, Cho H, Kimura M// Tokyo Med & Dent Univ, Fac Med, Sch Allied Hlth Sci, Bunkyo ku, 1-5-45 Yushima, Tokyo 113, Japan  
*Biol Pharm Bull* 1994 **17** (10) 1317

Development of a thermoelectric cooling apparatus for high-voltage isoelectric focusing on a cellulose acetate membrane

Tasker S, Badyal JPS\*, Backson SCE, Richards RW// \*Univ Durham, Dept Chem, Sci Labs, Durham DH1 3LE, England  
*Polymer* 1994 **35** (22) 4717

Hydroxyl accessibility in celluloses

Tezuka Y// Nagaoka Univ Technol, Dept Mat Sci & Technol, Nagaoka, Niigata 94021, Japan  
*Biopolymers* 1994 **34** (11) 1477

<sup>1</sup>H- and <sup>13</sup>C-NMR structural study on cellulose and polysaccharide derivatives with acetyl group as a sensitive probe. IX. Nuclear Overhauser effect spectroscopy (NOESY) detection of the specific interaction between substituents in cellulose and amylose triacetates

Vazquez-Torres H, Cruz-Ramos CA// Univ Autonoma Metropolitana Iztapalapa, Dept Fis, Apartado Postal 55-534, Mexico City 09340, DF, Mexico  
*J Appl Polym Sci* 1994 **54** (8) 1141

Blends of cellulosic esters with poly(caprolactone): Characterization by DSC, DMA, and WAXS

Villanueva-Rodriguez S, Colas B, Sauvageot F\*// \*ENS - BANA, Physicochim & Propriétés Sorielles Lab, 1 Esplanade Erasme, Campus Univ, F-21000 Dijon, France  
*Sci Aliment* 1994 **14** (5) 591

Effect of carboxymethylcellulose on the perception of volatile compounds:

As a service to subscribers, each issue of the Journal contains a bibliography of newly published material in the field of carbohydrate polymers. The bibliography is divided into thirteen sections: 1 Books, Reviews & Symposia; 2 Cellulose; 3 Cellulose-degrading Enzymes; 4 Chitin/Chitosan; 5 Cyclodextrins; 6 Lignin; 7 Lipopolysaccharides; 8 Pectin; 9 Starch; 10 Starch-degrading Enzymes; 11 Polysaccharides - Microbial; 12 Polysaccharides - Plant; 13 Polysaccharides - Other. Within each section, articles are listed in alphabetical order with respect to author. When there are no publications to appear under one of these headings, that section will be omitted.

Study of some odour-texture interactions (French, English Abstract)

Yashima E, Noguchi J, Okamoto Y// Nagoya Univ, Sch Engr, Dept Appl Chem, Nagoya, Aichi 46401, Japan  
*J Appl Polym Sci* 1994 **54** (8) 1087  
 Enantiomer enrichment of oxprenolol through cellulose tris(3,5-dimethylphenyl-carbamate) membrane

### 3 CELLULOSE-DEGRADING ENZYMES

Chaudhuri BK, Sahai V// 39-12 Mellenseest, D-10319 Berlin, Germany  
*Enzyme Microb Technol* 1994 **16** (12) 1079  
 Comparison of growth and maintenance parameters for cellulase biosynthesis by *Trichoderma reesei* C5 with some published data

Din N, Damude HG, Gilkes NR, Miller RC, Warren RAJ, Kilburn DG\*\*  
 \*Univ British Columbia, Dept Microbiol & Immunol, 6174 Univ Blvd, Vancouver, Brit Columbia, Canada V6T 1Z3  
*Proc Nat Acad Sci USA* 1994 **91** (24) 11383  
 C<sub>1</sub>-C<sub>X</sub> revisited: Intramolecular synergism in a cellulase

Isaksson R, Pettersson C, Pettersson G, Jonsson S, Stalberg J, Hermansson J, Marle I// Univ Uppsala, Ctr Biomed, Dept Pharmaceut Chem Analyt Pharmaceut Chem, POB 574, S-75123 Uppsala, Sweden  
*Trend Anal Chem* 1994 **13** (10) 431  
 Cellulases as chiral selectors

Kim DW, Kim TS// Chungbuk Natl Univ, Coll Nat Sci, Dept Chem, Chungbuk 360763, South Korea  
*Bull Kor Chem Soc* 1994 **15** (9) 719  
 Purification of cellulase from *Trichoderma viride* and properties of its component enzymes

Matano Y, Park JS, Goldstein MA, Doi RH\*\*  
 \*Univ Calif Davis, Molec & Cellular Biol Sect, Davis, Ca 95616, USA  
*J Bacteriol* 1994 **176** (22) 6952  
 Cellulose promotes extracellular assembly of *Clostridium cellulovorans* cellulosomes

Nidetzky B, Steiner W, Claeysens M// Agr Univ Vienna, Inst Food Technol, Peter Jordan Str 82, A-1190 Vienna, Austria  
*Biochem J* 1994 **303** (3) 817

Cellulose hydrolysis by the cellulases from *Trichoderma reesei*: Adsorptions of two cellobiohydrolases, two endocellulases and their core proteins on filter paper and their relation to hydrolysis

Sarkar A, Upadhyay SN// Banaras Hindu Univ, Inst Technol, Sch Biochem Engr, Varanasi 221005, Uttar Pradesh, India  
*World J Microbiol Biotechnol* 1994 **10** (6) 709  
 Purification and properties of cellulase from *Micrococcus roseus*

### 4 CHITIN/CHITOSAN

Domard A, Demarger-Andre S// Univ Lyon 1, Etud Mat Plast & Biomat Lab, 43 Blvd 11 Novembre 1918, F-69622 Villeurbanne, France  
*J Macromol Sci Pure Appl Chem* 1994 **A31** (Suppl 6-7) 849  
 Chitosan behaviors in fatty acid dispersions

Jameela SR, Misra A, Jayakrishnan A\*\*  
 \*Sree Chitra Tirunal Inst Med Sci & Technol, Biomed Technol Wing, Div Polymer Chem, Trivandrum 695012, Kerala, India  
*J Biomater Sci-Polym Ed* 1994 **6** (7) 621

Cross-linked chitosan microspheres as carriers for prolonged delivery of macromolecular drugs

Morita Y, Sugahara Y, Takahashi A, Obonai M// Kogakuin Univ, Fac Engr, Dept Ind Chem, Hachioji, Tokyo 192, Japan  
*Eur Polym J* 1994 **30** (11) 1231

Preparation of chitin-*p*-toluenesulfonate and deoxy(thiocyanato) chitin

Muzzarelli RAA, Ilari P, Xia WS, Pinotti M, Tomasetti M// Univ Ancona, Fac Med, I-60100 Ancona, Italy  
*Carbohydr Polym* 1994 **24** (4) 295

Tyrosinase-mediated quinone tanning of chitinous materials

Muzzarelli RAA, Mattioli-Belmonte M, Tietz C, Biagini R, Ferioli G, Brunelli MA, Fini M, Giardino R, Ilari P, Biagini G// Address as above.  
*Biomaterials* 1994 **15** (13) 1075

Stimulatory effect on bone formation exerted by a modified chitosan

Taravel MN, Domard A// Univ Lyon 1, Etud Mat Plast & Biomat Lab, 43 Blvd 11 Novembre 1918, F-69622 Lyon, France  
*J Macromol Sci Pure Appl Chem* 1994 **A31** (Suppl 6-7) 1237

Competition between gel and polyanion-polycation complex formation in a collagen-chitosan binary system

Tokura S, Itoyama K, Nishi N, Nishimura SI, Saiki I, Azuma I// Hokkaido Univ, Grad Sch Environm Earth Sci, Sapporo, Hokkaido 060, Japan  
*J Macromol Sci Pure Appl Chem* 1994 **A31** (11) 1701

Selective sulfation of chitin derivatives for biomedical functions

Urbanczyk G, Lipp-Symonowicz B, Jeziorn A, Urbaniak-Domagala W, Wrzosek H// Tech Univ Lodz, Inst Fiber Phys & Text Finishing, PL-90924 Lodz, Poland

*J Appl Polym Sci* 1994 **54** (10) 1469

Studies upon the fine structure and selected physical and physicochemical properties of butyrylchitin membranes

Zhang M, Hisamori H, Yamada T, Hirano S\*\*  
 \*Tottori Univ, Dept Agr Biochem & Biotechnol, Tottori 680, Japan  
*Biosci Biotechnol Biochem* 1994 **58** (10) 1906

<sup>13</sup>C CP/MAS NMR spectral analysis of 6-*O*-tosyl, 6-deoxy-6-iodo, and 6-deoxy derivatives of *N*-acetylchitosan in a solid state

Zielinski BA, Aebischer P\*\*  
 \*Brown Univ, Sect Artificial Organs Biomat & Cellular Technol, Providence, RI 02912, USA

*Biomaterials* 1994 **15** (13) 1049  
 Chitosan as a matrix for mammalian cell encapsulation

### 5 CYCLODEXTRINS

Aaron JJ, Laassis B, Mahedro MC, De la Pena AM, Salinas F// Univ Paris 07, Inst Topol & Dynam Syst, CNRS, URA 34, 1 rue Guy Brosse, F-75005 Paris, France

*J Inclusion Phenom Mol Recogn* 1994 **18** (1) 69

Basic studies of the influence of  $\beta$ -cyclodextrin and 2-hydroxypropyl  $\beta$ -cyclodextrin on the photo-oxidation reaction of phenothiazine in inclusion complexes, using fluorescence detection

Celebi N, Tarimci N, Iscanoglu MI, Doganay T// Gazi Univ, Fac Pharm, Dept Pharmaceut Technol, Ankara 06330, Turkey

*Pharmazie* 1994 **49** (10) 748

Studies on direct compression of spironolactone tablets using cyclodextrin polymer

Drabowicz J, Dubzinski B, Mikolajczyk M, Sochacki M// Polish Acad Sci, Ctr Molecul & Macromolec Studies, H Sienkiewicza 112, PL-90363 Lodz, Poland  
*Polish J Chem* 1994 **68** (11) 2265

A study of  $\beta$ -cyclodextrin inclusion complexes with optically active alkyl *p*-tolyl sulfoxides by fast atom bombardment mass spectrometry

Fornasier R, Marcuzzi F, Tonellato U// Univ Padua, CNR, Ctr Meccanismi Reazioni Organ, Dipt Chim Organ, via Marzolo 1, I-35131 Padua, Italy  
*J Inclusion Phenom Mol Recogn* 1994 **18** (1) 81

Stereoselective reduction with sodium dithionite of conjugated enones in the presence of  $\beta$ -cyclodextrin and its heptakis(2,6-di-*O*-methyl) derivative as host compounds or phase transfer agents

Hirai H// Sci Univ Tokyo, Fac Engr, Dept Ind Chem, Shinjuku Ku, Kagurazaka 1-3, Tokyo 162, Japan

*J Macromol Sci Pure Appl Chem* 1994 **A31** (11) 1491

Syntheses of key monomers for advanced polymer materials using cyclodextrin as catalyst

Jobe DJ, Verrall RE, Junquera E, Aicart E\*\*  
 \*Univ Complutense Madrid, Fac Ciencias Quim, Dept Quim Fis, E-28040 Madrid, Spain

*J Phys Chem* 1994 **98** (42) 10814

Effects of  $\beta$ -cyclodextrin/surfactant complex formation on the surfactant monomer-micelle exchange rate in aqueous solutions of sodium perfluorooctanoate and  $\beta$ -cyclodextrin

Lee DH, Yoon KB// Kyungpook Natl Univ, Dept Polymer Sci, Taegu 702071, South Korea

*Macromol Rapid Commun* 1994 **15** (11) 841

Ethylene polymerization initiated with the Cp<sub>2</sub>ZrCl<sub>2</sub>-methylaluminoxane catalyst system supported on  $\alpha$ -cyclodextrin

Lepri L, Coas V, Desideri P// Univ Florence, Dept Publ Hlth Epidemiol & Environm Analyt Chem, via Capponi 9, I-50121 Florence, Italy

*J Planar Chromat-Mod TLC* 1994 **7** (4) 322

Planar chromatography of optical and structural isomers with eluents containing modified  $\beta$ -cyclodextrins

Li J, Harada A\*, Kamachi M// \*Osaka Univ, Fac Sci, Dept Macromolec Sci, Toyonaka, Osaka 560, Japan

*Bull Chem Soc Jpn* 1994 **67** (10) 2808

Formation of inclusion of oligoethylene and its derivatives with  $\alpha$ -cyclodextrin

Lurie IS, Klein RFX, Dal-Cason TA, Le Belle MJ, Brenneisen R, Weinberger RE// Drug Enforcement Adm, Special Testing & Res Lab, 7704 Old Springhouse Rd, McLean, Va 22102, USA

*Anal Chem* 1994 **66** (22) 4019

Chiral resolution of cationic drugs of forensic interest by capillary electrophoresis with mixtures of neutral and anionic cyclodextrins

Pettersson P, Reese SL, Yi G, Yun H, Malik A, Bradshaw JS, Rossiter BE, Lee ML, Markides KE\*\*  
 \*Univ Uppsala, Dept Analyt Chem, POB 531, S-75121 Uppsala, Sweden

*J Chromatogr A* 1994 **684** (2) 297

Evaluation of  $\beta$ -cyclodextrin-based chiral stationary phases for capillary column supercritical fluid chromatography

Raja KCM, Ramakrishna SV// CSIR, Reg Res Lab, Trivandrum 695019, India

*Starch* 1994 **46** (10) 402

Improved reaction conditions for preparation of  $\beta$ -cyclodextrin ( $\beta$ -CD) from cassava (*Manihot esculenta* Crantz) starch

Sanemasa I, Wu Y, Koide Y, Fujii T, Takahashi H, Deguchi T// Kumamoto Univ, Fac Sci, Dept Chem, Kurokami 2-39-1, Kumamoto 860, Japan  
*Bull Chem Soc Jpn* 1994 **67** (10) 2744

Stability on drying cyclodextrin precipitates of volatile nonelectrolytes

Suda K, Takamami T// Meiji Coll Pharm, Setagaya ku, 21-35-23 Nozawa, Tokyo 154, Japan

*Chem Lett* 1994 (10) 1915

A novel electrochemical oxidation reactions utilizing cyclodextrins. Anodic oxidation of indole-cyclodextrin-alcohol system

Tait RJ, Thompson DO, Stella VJ, Stobaugh JF\*// \*Univ Kansas, Ctr Drug Delivery Res, 3071 Malott Hall, Lawrence, Ks 66045, USA

*Anal Chem* 1994 **66** (22) 4013

Sulfobutyl ether  $\beta$ -cyclodextrin as a chiral discriminator for use with capillary electrophoresis

Venema F, Baselier CM, Feiters MC, Nolte RJM\*// \*Univ Nijmegen, NSR Ctr, Dept Organ Chem, Toernooiveld, 6525 ED Nijmegen, The Netherlands  
*Tetrahedron Lett* 1994 **35** (46) 8661

Synthesis and conformational behaviour of novel cyclodextrin hetero-dimers

## 6 LIGNIN

Frollini E, Piccolo RSJ, Cerne JL, De Groot RAMC// Univ Sao Paulo, Inst Fis & Quim Sao Carlos, Dept Quim Fis, CP 369, BR-13560 Sao Carlos, Brazil  
*J Macromol Sci Pure Appl Chem* 1994 **A31** (Suppl 6-7) 1215

Acetosolv sugar-cane-bagasse lignin in the synthesis of phenolic type resins

Hibino T, Shibata D, Ito T, Tsuchiya D, Higuchi T\*, Pollet B, Lapierre C// \*Coll Agr & Vet Med, Dept Forestry, Setagaya ku, 3-34-1 Shimouma, Tokyo 154, Japan

*Phytochemistry* 1994 **37** (2) 445

Chemical properties of lignin from *Aralis cordata*

Imamura T, Watanabe T, Kuwahara M, Koshijima T\*// \*Kinki Univ, Fac Agr, Nara 631, Japan

*Phytochemistry* 1994 **37** (4) 1165

Ester linkages between lignin and glucuronic acid in lignin-carbohydrate complexes from *Fagus crenata*

Mellon FA, Waldron KW, Selvendran RR, Galletti GC\*// \*CCF/CNR, via F.Re 8, I-40126 Bologna, Italy

*Org Mass Spectrom* 1994 **29** (10) 556

The potential of pyrolysis/gas chromatography/mass spectrometry for determining the progress of lignification: An investigation of maturing asparagus sclerenchyma tissue

## 7 LIPOPOLYSACCHARIDES

Haseley SR, Wilkinson SG\*// \*Univ Hull, Sch Chem, Hull HU6 7RX, England  
*Carbohydr Res* 1994 **264** (1) 73

Structure of the putative O10 antigen from *Acinetobacter baumannii*

Jann B, Shashkov AA, Kochanowski H, Jann K\*// \*Max Planck Inst Immunobiol, Stuebweg 51, D-79108 Freiburg, Germany  
*Carbohydr Res* 1994 **263** (2) 217

Structural comparison of the O6 specific polysaccharides from *E. coli* O6:K2:H1, O6:K13:H1, and O6:K54:H10

Jann B, Shashkov AS, Kochanowski H, Jann K\*// \*Max Planck Inst Immunobiol, Stuebweg 51, D-79108 Freiburg, Germany  
*Carbohydr Res* 1994 **264** (2) 305

Structure of the O16 polysaccharide from *Escherichia coli* O16:K1: An NMR investigation

Kocharova NA, Knirel YA\*, Shashkov AS, Kochetkov NK, Kholodkova EV, Stanislavsky ES// \*Russian Acad Sci, ND Zelinsky Organ Chem Inst, Leninsky prospekt 47, Moscow, Russia

*Carbohydr Res* 1994 **263** (2) 327

The structure of the *Citrobacter freundii* O8a,8b O-specific polysaccharide containing D-xylofuranose

Kocharova NA, Knirel YA, Shashkov AS, Kochetkov NK, Kholodkova EV, Stanislavsky ES// Address as above.

*Carbohydr Res* 1994 **264** (1) 123

The structure of the O-specific polysaccharide of *Citrobacter freundii* O32, a partially O-acetylated homopolymer of 3,6-dideoxy-3-(L-glyceroylamino)- $\alpha$ -D-galactopyranose

Konadu E, Robbins JB, Shiloach J, Bryla DA, Szu SC\*// \*NICHHD, Dev & Molec Immun Lab, Bethesda, Md 20892, USA

*Infect Immunity* 1994 **62** (11) 5048

Preparation, characterization, and immunological properties in mice of *Escherichia coli* O157 O-specific polysaccharide-protein conjugate vaccines

Paramonov NA, Shashkov AS, Knirel YA\*, Soldatkina MA, Zakharova IV//

\*Russian Acad Sci, ND Zelinsky Inst Organ Chem, Leninsky prospekt 47, Moscow, Russia

*Bioorg Khim* 1994 **20** (8-9) 984

Antigenic polysaccharide of bacteria. XXXIX. Structure of O-specific polysaccharides of *Pseudomonas cepacia* serogroups C, I, O1, and O4 (Russian, English Abstract)

Ratnayake S, Widmalm G\*, Weintraub A, Medina EC// \*Univ Stockholm, Arrhenius Lab, Dept Organ Chem, S-10691 Stockholm, Sweden

*Carbohydr Res* 1994 **263** (2) 209

Structural studies of the *Escherichia coli* O90 O-antigen polysaccharide

## 8 PECTIN

An JH, Zhang L, O'Neill MA, Albersheim P, Darvill AG\*// \*Univ Georgia, Complex Carbohydrate Res Ctr, 220 Riverbend Rd, Athens, Ga 30602, USA  
*Carbohydr Res* 1994 **264** (1) 83

Isolation and structural characterization of endo-rhamnogalacturonase-generated fragments of backbone of rhamnogalacturonan

Coffin DR, Fishman ML// USDA ARS, Eastern Reg Res Ctr, 600 East Mermaid Lane, Philadelphia, Pa 19118, USA

*J Appl Polym Sci* 1994 **54** (9) 1311

Physical and mechanical properties of highly plasticized pectin/starch films

Dunkel MPH, Amado R\*// \*ETH-Zentrum, Swiss Fed Inst Technol, Dept Food Sci, CH-8092 Zurich, Switzerland

*Carbohydr Polym* 1994 **24** (4) 247

Purification and physico-chemical properties of an endo-1,5- $\alpha$ -arabinanase (EC 3.2.1.99) isolated from an *Aspergillus niger* pectinase preparation

Hirano M, Kiyohara H, Yamada H\*// \*Kitasato Inst, Oriental Med Res Ctr, Minato ku, 5-9-1 Shirokane, Tokyo 108, Japan

*Planta Med* 1994 **60** (5) 450

Existence of a rhamnogalacturonan II-like region in bioactive pectins from medicinal herbs

Lopes da Silva JA, Goncalves MP// Univ Catolica Portuguesa, Escola Super Biotecnol, Rua Dr Antonio Bernardino de Almeida, P-4200 Oporto, Portugal

*Carbohydr Polym* 1994 **24** (4) 235

Rheological study into the ageing process of high methoxyl pectin/sucrose aqueous gels

Miyairi K, Matsue T, Kagawa O, Kutsuzawa T, Okuno T// Hirosaki Univ, Fac Agr, Dept Bioresource Sci, Hirosaki, Aomori 036, Japan

*Biosci Biotechnol Biochem* 1994 **58** (10) 1909

Purification and characterization of an endopolygalacturonase from *Physalospora piricola*

Rudan-Tasic D, Klofutar C// Univ Ljubljana, Fac Biotech, Dept Food Sci & Technol, Ljubljana 61000, Slovenia

*Thermochim Acta* 1994 **246** (1) 11

Representation of polygalacturonic acid by subunits in the analysis of its potentiometric titration curves

Rudan-Tasic D, Klofutar C// Address as above.

*Thermochim Acta* 1994 **246** (1) 25

Calorimetric studies of the neutralization of polygalacturonic acid

Szu SC, Bystricky S, Hinojosa-Ahumada M, Egan W, Robbins JB// NICHHD, Dev & Molec Immun Lab, Bethesda, Md 20892, USA

*Infect Immunity* 1994 **62** (12) 5545

Synthesis and some immunologic properties of an O-acetyl pectin [poly(1 $\rightarrow$ 4)- $\alpha$ -D-GalpA]-protein conjugate as a vaccine for typhoid fever

Thomas J, Mort AJ\*// \*Oklahoma State Univ, Oklahoma Agr Expt Stn, Dept Biochem & Molec Biol, Stillwater, Ok 74078, USA

*Anal Biochem* 1994 **223** (1) 99

Continuous postcolumn detection of underivatized polysaccharides in high-performance liquid chromatography by reaction with permanganate

Tieman DM, Handa AK\*// \*Purdue Univ, Dept Hort, 1165 Hort Bldg, West Lafayette, In 47907, USA

*Plant Physiol* 1994 **106** (2) 429

Reduction in pectin methylesterase activity modifies tissue integrity and cation levels in ripening tomato (*Lycopersicon esculantum* Mill) fruits

## 9 STARCH

Chrastil J// USDA ARS, Sthn Reg Res Ctr, POB 19687, New Orleans, La 70179, USA

*J Agr Food Chem* 1994 **42** (10) 2147

Stickiness of oryzenin and starch mixtures from preharvest and postharvest rice grains

Cruisen JMM, Van Boekel MAJS, Walstra P// Nutricia Res, POB 1, 2700 MA Zoetermeer, The Netherlands

*Neth Milk Dairy J* 1994 **48** (3) 177

Effect of malto-dextrins on the heat stability of caseinate emulsions

Cura JA, Tolmasky DS, Lepek VC, Lerner LR, Salerno JC, Krisman CR\*//

- \*Fdn Campomar, Inst Invest Bioquim Luis F Leloir, Avda Patricias Argentinas 435, RA-1405 Buenos Aires, DF, Argentina  
*Cell Mol Biol* 1994 **40** (7) 1007  
 Further studies on the "de novo" process of  $\alpha$ 1,4- $\alpha$ 1,6 glucopolysaccharides: Corn starch biogenesis
- Doane WM// USDA ARS, Natl Ctr Agr Utilizat Res, Peoria, IL 61604, USA  
*Cereal Food World* 1994 **39** (8) 556  
 Opportunities and challenges for new industrial uses of starch
- Fujimura T, Kugimiya M// Hiroshima Womens Univ, Dept Food & Nutr, 1-1-71 Ujina Higashi, Minami ku, Hiroshima 734, Japan  
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