

BIBLIOGRAPHY ON CARBOHYDRATE POLYMERS

1 Books, Reviews and Symposia

Wood WA, Kellogg ST (Eds)

Biomass, Part A. Cellulose and Hemicellulose.
Methods in Enzymology, Vol 160

Academic Press Inc (San Diego) 1988, 774pp,
\$89.00, Hardbound, ISBN: 0-12-182061-0

Wood WA, Kellogg ST (Eds)

Biomass, Part B. Lignin, Pectin, and Chitin.
Methods in Enzymology, Vol 161

Academic Press Inc (San Diego) 1988, 574pp,
\$69.50, Hardbound, ISBN: 0-12-182062-9

Rajaratnam S, Bano Z//Cent Food Technol
Res Inst, Discipline Fruits Vegetables & Plantat
Crops, Mysore 570013, Karnataka, India

CRIT REV FOOD SCI NUTR 1989, 28 (1) 31

Pleurotus mushrooms. Part III. Biotransforma-
tions of natural lignocellulosic wastes: Commer-
cial applications and implications (Review)

STARCH 1989, 41 (2) 39

40th Starch Convention 1989. Preliminary Lec-
tures Program

Vogel WF//Kerklaan 31, 9751 NK Haren, The
Netherlands

STARCH 1989, 41 (2) 42

Intestinal absorption of carbohydrates and cal-
cium: A review

2 Cellulose

Pajni S, Dhillon N, Vadehra DV, Sharma
P//Inst Microbial Technol, 177 G Ind Area,
Chandigarh 160002, India

INT BIODETERIOR 1989, 25 (1-3) 1

Carboxymethyl cellulase, beta-glucosidase and
xylanase production by *Bacillus* isolates from soil

Hakert H, Eckert T*, Muller T//*Univ Munster,
Inst Pharmaceut Technol, Corrensstr 1, D-4400
Munster, Fed Rep Ger

COLLOID POLYM SCI 1989, 267 (3) 226

Rheological and electron microscopic charac-
terization of aqueous carboxymethyl cellulose
gels. Part I: Rheological aging of aqueous gels
of carboxymethyl cellulose in the free acid form
(HCMC)

Muller T, Hakert H, Eckert T//Balzers Union
AG, FL-9496 Balzers, Liechtenstein

COLLOID POLYM SCI 1989, 267 (3) 230

Rheological and electron microscopic charac-
terization of aqueous carboxymethyl cellulose
gels. Part II: Visualization of the gel structure
by freeze-fracturing

Musaev KN, Kadyrova DM, Kozin GM,
Nikonovich GV//Address not available

J APPL CHEM-ENGL TR 1988, 61 (6) PT2,
1297

Rheological properties of concentrated solution
of sodium carboxymethylcellulose

Pospisilik K//Res Inst Pure Chem, CS-62133
Brno, Czechoslovakia

ELECTROPHORESIS 1989, 10 (1) 20

Determination of carboxymethyl-D-glucose in
the product of hydrolytic depolymerization of
carboxymethylcellulose by isotachopheresis

Gonzalez G, Caminal G, Demas C, Lopez-santin
J//Univ Autonoma Barcelona, Fac Ciencias,
Unitat Enginyeria Quim, E-08193 Bellaterra,
Spain

J CHEM TECHNOL BIOTECHNOL 1989, 44
(4) 275

A kinetic model for pretreated wheat straw sac-
charification by cellulase

Ilyai CB, Bruchmann E-E, Kubicek CP//*Vien-
na Tech Univ, Inst Biochem Technol & Mik-
robiol, Mikrobielle Biochem Abt, A-1060 Vien-
na, Austria

ARCH MICROBIOL 1989, 151 (4) 326

Induction of cellulase formation in *Trichoderma*
reesei by cellobiono-1,5-lacton

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 six sections: 1. Books, Reviews and Symposia; 2. Cellulose; 3. Lignin; 4. Polysaccharides; 5. Starch; 6. Others. Within each section, articles are listed in alphabetical order with respect to the subject. When there are no publications to appear under one of these headings, that section will be omitted.

Schulz G, Hirte WF//Aussenstelle Kleinmachnow Humboldt Univ, Wissensch Bereich Bioprozesstech, Max Reimann Str 16, DDR-1532 Kleinmachnow, Ger Dem Rep
ZBL MIKROBIOL 1989, 144 (2) 81

Special submers screening of cellulolytic fungi and selection of *Penicillium* wild strains for cellulase production with high substrate concentration

Singh A, Goel R, Johri BN//Govind Ballabh Pant Univ Agr & Technol, Dept Microbiol, Pantnagar 263145, Uttar Pradesh, India
CURR SCI 1989, 58 (4) 207

Immobilized *Sporotrichum thermophile* produces cellulase

Spasov SD, Stefanova ME, Kolev DN**//Univ Sofia, Fac Biol, BU-1421 Sofia, Bulgaria
MONATSH CHEM 1989, 120 (2) 177

A spectrophotometric method for determination of the solubilizing activity of cellulase complexes

Szczodrak J//Marie Curie Skłodowska Univ, Dept Appl Microbiol, Akad 19, PL-20033 Lublin, Poland
BIOTECHNOL BIOENG 1989, 33 (9) 1112

The use of cellulases from a beta-glucosidase-hyperproducing mutant of *Trichoderma reesei* in simultaneous saccharification and fermentation of wheat straw

Cha GS, Meyerhoff ME//Yeungnam Univ, Dept Chem, Gyongsan 713749, South Korea
TALANTA 1989, 36 (1-2) 271

Potentiometric ion- and bio-selective electrodes based on asymmetric cellulose acetate membranes

Christakopoulos P, Macris BJ*, Kekos D// *NRC Democritos, Inst Biol, GR-15310 Aghia Paraskevi, Greece
ENZYME MICROB TECHNOL 1989, 11 (4) 236

Direct fermentation of cellulose to ethanol by *Fusarium oxysporum*

Di Lello F, Mullen DC*, Flemma RJ// *Cardiovasc Surg Assoc, 290 W Kinnickinnic River Pkwy, Suite 310, Milwaukee, WI 53215, USA
ANN THORAC SURG 1989, 47 (3) 473

Sutureless fixation of long aortocoronary saphenous vein grafts with oxidized regenerated

cellulose

Duchesne LC, Larson DW//Univ Toronto, Dept Bot, Erindale Campus, Mississauga, Ontario, Canada L5L 1C6

BIOSCIENCE 1989, 39 (4) 238

Cellulose and the evolution of plant life. The physical and biological properties of cellulose have made it the most abundant molecule in the biosphere

Dudkina MM, Kotelnikova NE, Gankina ES, Malakhova II, Petropavlovskii GA//Acad Sci USSR, Inst Macromolec Cpds, Leningrad, USSR
KHIM PRIR SOEDIN SSSR 1988, (6) 869

Use of thin-layer chromatography for sugar determination of microcrystalline cellulose (Russian)

Evans R, Luner P//CSIRO, Div Forestry & Forestry Prod, Melbourne, Vic 3168, Australia
J COLLOID INTERFACE SCI 1989, 128 (2) 464

Coagulation of microcrystalline cellulose dispersions

Evans R, Wallis AFA//CSIRO, Div Forestry & Forest Prod, Private Bag 10, Clayton, Vic 3168, Australia

J APPL POLYM SCI 1989, 37 (8) 2331

Cellulose molecular weights determined by viscometry

Golub NV, Yurkshtovich TL, Kaputskii FN//VI Lenin State Univ, Minsk, Belorussia, USSR

J APPL CHEM-ENGL TR 1988, 61 (6) PT2, 1223

Acid-base properties of polyampholytes based on cellulose

Graczyk T, Hornof V//Univ Ottawa, Dept Chem Engr, Ottawa, Ontario, Canada K1N 6N5

J MACROMOL SCI-CHEM 1988, A25 (12) 1633

Grafting of methyl acrylate onto cellulose by ceric ion

Grinshpan DD, Savitskaya TA, Kaputskii FN, Kumachev AI, Kozlovskii AM//VI Lenin State Univ, Minsk, Belorussia, USSR

J APPL CHEM-ENGL TR 1988, 61 (6) PT2, 1227

Properties of composite membranes and solutions of cellulose-polyacrylonitrile composition

Iovleva MM//Khimvolokno Sci Ind Assoc, Kursk, USSR

VYSOKOMOL SOEDIN SER A SSSR 1989, 31 (4) 808

Schematic phase diagram of the cellulose - N-methylmorpholine-N-oxide monohydrate system (Russian, English Abstract)

Konkina LN, Yermakova VD, Taganov NG, Osipov SA, Morozov VA, Entelis SG//Acad Sci USSR, Inst Chem Phys, Moscow V-71, USSR

VYSOKOMOL SOEDIN SER B SSSR 1989, 31 (3) 182

Interpretation of gel permeation chromatography data for cellulose nitrates of various degree of substitution (Russian)

Krestov GA, Timofeeva GI, Miasoedova VV, Alexeeva OV, Osipov SA, Ermakova VD, Fronchek EV//Acad Sci USSR, Inst Non-aqueous Solut Chem, Ivanovo, USSR

DOKL AKAD NAUK SSSR 1989, 305 (1) 131

Hydrodynamic and conformation parameters of cellulose in the system trifluoroacetic acid dichloroethane (Russian)

Maekawa M, Uda M, Sasaki M, Tujii Y, Yoshida H, Kataoka T, Nango M//Nara Womens Univ, Dept Clothing Sci, Nara 630, Japan

J APPL POLYM SCI 1989, 37 (8) 2141

Diffusion mechanism of direct dyes into a cellulose membrane: The structural effect of direct dyes on the adsorption rate

Muralidharan S, Freiser H//Univ Arizona, Dept Chem, Strateg Met Recovery Res Facil, Tucson, Az 85721, USA

J MOL CATAL 1989, 50 (2) 181

Catalytic properties of polymeric copper-amine-cellulose complexes

Petrus L, Antal M//Slovak Acad Sci, Ctr Chem Res, Inst Chem, CS-84238 Bratislava, Czechoslovakia

ACTA POLYM 1989, 40 (1) 71

Thermolysis of N-oxides of some O-dimethyl-aminoalkyl derivatives of cellulose

Pienaar FRP, Eaton NJ, Pizzi A//CSIR, Natl Timber Res Inst, POB 395, Pretoria, South Africa

J MACROMOL SCI-PHYS 1989, B28 (1) 115

Elastic moduli of amorphous cellulose - A con-

formational analysis approach

Pouwels AD, Eijkel GB, Boon JJ//FOM, Inst Atom & Molec Phys, Mass Spectrometry Macromolec Syst, Kruislaan 407, 1098 SJ Amsterdam, The Netherlands

J ANAL APPL PYROL 1989, 14 (4) 237

Curie-point pyrolysis-capillary gas chromatography-high-resolution mass spectrometry of microcrystalline cellulose

Raschle P//Swiss Fed Labs Mat Testing & Res, Biol Sect, Unterstr 11, CH-9001 St Gallen, Switzerland

INT BIODETERIOR 1989, 25 (1-3) 237

Microbial influence on cellulosic textiles and microbiological testing

Rogovina SZ, Sakhonenko LS, Zhorin VA, Trunova MA, Yenikolopyan NS//Acad Sci USSR, Inst Chem Phys, Moscow V-71, USSR

VYSOKOMOL SOEDIN SER B SSSR 1989, 31 (2) 127

Cellulose acetylation in conditions of plastic flow under high pressure (Russian)

Rowland SP, Howley PS**//So Reg Res Ctr, POB 19687, New Orleans, La 70179, USA

J APPL POLYM SCI 1989, 37 (8) 2371

Simplified hydrolysis of cellulose and substituted cellulose: Observations of trifluoroacetic acid hydrolyses

Schaefer RM, Huber L, Gilge U, Bausewein K, Vienken J, Heidland A//Univ Wurzburg, Med Klin, Dept Med, Div Nephrol, Josef Schneiderstr 2, D-8700 Wurzburg, Fed Rep Ger

INT J ARTIF ORGANS 1989, 12 (2) 85

Clinical evaluation of a new high-flux cellulose acetate membrane

Shishlyannikova NY, Goryachenkova OL, Likhacheva NP, Solovskii MV, Panarin EF, Virnik AD//Address not available

J APPL CHEM-ENGL TR 1988, 61 (6) PT2, 1299

Synthesis and properties of the graft copolymer of cellulose with poly-p-methacryloylamino-phenoxymethylpenicillin

Siekmeyer M, Steinmeier H, Zugenmaier P//Techn Univ Clausthal, Inst Phys Chem, D-3392 Clausthal Zellerfe, Fed Rep Ger

ANGEW MAKROMOL CHEM 1989, 166 (FEB) 131

Supramolecular liquid crystalline structures of highly concentrated solutions of cellulose derivatives (German, English Abstract)

Tishchenko GA, Shataeva LK, Blega M, Vacik I, Papukova KP, Samsonov GV, Kalal J//Acad Sci USSR, Inst Macromolec Cpds, Leningrad, USSR

VYSOKOMOL SOEDIN SER A SSSR 1989, 31 (3) 469

Structure and permeability of compositional carboxylic membranes on the basis of cellulose hydrate (Russian, English Abstract)

Vasiliuoprea C, Constantinescu AC, Dumitriu S//Polytech Inst Jassy, Dept Polymer Chem, Calea 23 August 11, R-6600 Jassy, Romania

REV ROUM CHIM 1989, 34 (3) 883

Study of thermal complexing of microcrystalline celluloses with transition metals

Vatsala TM, Seshadri CV//Shri Amm Murugappa Chettiar Res Ctr, Madras 600113, India

CURR SCI 1989, 58 (3) 173

Phototrophic breakdown of solid cellulose from silk cotton to hydrogen and volatile fatty acids by *Rhodospirillum rubrum*

Yong H//Acad Sinica, Guangzhou Inst Chem, Guangzhou, Peoples R China

J MACROMOL SCI-PHYS 1989, B28 (1) 131

Textures of ethyl-cyanoethyl cellulose mesophase

Fracheboud D, Canevascini G*//Univ Fribourg, Inst Biol Vegetale & Phytochim, Rue Albert Gockel 3, CH-1700 Fribourg, Switzerland

ENZYME MICROB TECHNOL 1989, 11 (4) 220

Isolation, purification, and properties of the exocellulase from *Sporotrichum* (*Chrysosporium*) thermophile

Ernst B, Navard P*//Ecole Natl Super Mines Paris, Ctr Mise Forme Mat, CNRS, UA 852, Sophia Antipolis, F-06565 Valbonne, France

MACROMOLECULES 1989, 22 (3) 1419

Band textures in mesomorphic (hydroxypropyl)-cellulose solutions

Alsalloum I, Laget JP, Galen ML, Passet J, Delonca H*//Univ Montpellier 1, Fac Pharm, 15 Ave Charles Flahault, F-34060 Montpellier, France

J PHARM BELG 1989, 44 (1) 17

Study of hydroxypropylmethylcellulose phthalate films (HP 55). 1. Free films (French, English Abstract)

Fox DJ, Gray PP, Dunn NW, Marsden WL//Univ New S Wales, Dept Biotechnol, Kensington, NSW 2033, Australia

J CHEM TECHNOL BIOTECHNOL 1989, 44 (2) 135

Comparison of alkali and steam (acid) pretreatments of lignocellulosic materials to increase enzymic susceptibility: evaluation under optimised pretreatment conditions

Fox DJ, Gray PP, Dunn NW, Marsden WL//Univ New S Wales, Dept Biotechnol, Kensington, NSW 2033, Australia

J CHEM TECHNOL BIOTECHNOL 1989, 44 (2) 147

Comparison of alkali and steam (acid) pretreatments of lignocellulosic materials to increase enzymic susceptibility: evaluation under optimised pretreatment conditions

Galletti GC, Piccaglia R, Chiavari G, Concialini V, Buta JG//Univ Bologna, Ist Agron Gen & Coltivaz Erbacee, CNR, I-40126 Bologna, Italy

CHROMATOGRAPHIA 1988, 26 191

HPLC characterization of phenolics in lignocellulosic materials

Hill SE, Prusa KJ*//Iowa State Univ Sci & Technol, Dept Food & Nutr, Room 107, Mackay Hall, Ames, Ia 50011, USA

J FOOD QUAL 1989, 11 (4) 331

Physical and sensory properties of lean ground beef patties containing methylcellulose and hydroxypropylmethylcellulose

Skirda LA, Maklakova LN, Krasnov IN, Petrov AI, Kostochko AV//SM Kirov Chem Technol Inst, Kazan, USSR

VYSOKOMOL SOEDIN SER A SSSR 1989, 31 (3) 623

Molecular mobility and conformational transitions in oxyethylated cellulose nitrates (Russian, English Abstract)

3 Lignin

Bredenberg JB, Masuku CP, Vuori A//Helsinki Univ Technol, Dept Chem Engrn, SF-02150 Espoo, Finland

HOLZFORSCHUNG 1989, 43 (2) 115

Thermal reactions of the bonds in lignin. II.

Thermolysis of dihydrodehydrodiisoeugenol

Ede RM, Brunow G//Univ Helsinki, Dept Chem, Vuorikatu 20, SF-00100 Helsinki 10, Finland

HOLZFORSCHUNG 1989, 43 (2) 127

Formic acid/peroxyformic acid pulping. II. Synthesis of 3-aryl-2,3-dihydro-7-methoxy-2-benzofuranmethanols - model compounds for lignin acidolysis products

Hammel KE, Tardone PJ, Moen MA, Price LA//SUNY Coll Environm Sci & Forestry, Dept Chem, Syracuse, NY 13210, USA

ARCH BIOCHEM BIOPHYS 1989, 270 (1) 404

Biomimetic oxidation of nonphenolic lignin models by Mn(III): new observations on the oxidizability of guaiacyl and syringyl substructures

Kirkpatrick N, Palmer JM//Imperial Coll Sci & Technol, Dept Pure & Appl Biol, Prince Consort Rd, London SW7 2BB, England

APPL MICROBIOL BIOTECHNOL 1989, 30 (3) 305

A natural inhibitor of lignin peroxidase activity from *Phanerochaete chrysosporium*, active at low pH and inactivated by divalent metal ions

Larsson P, Samuelson O, Ojteg U//Chalmers Univ Technol, Dept Engn Chem 1, S-41296 Gothenburg, Sweden

HOLZFORSCHUNG 1989, 43 (2) 121

Treatment of kraft lignin with nitrogen (IV)oxides

Morohoshi N, Nakamura M, Katayama Y, Haraguchi T, Fujii T, Hiro T//Tokyo Univ Agr & Technol, Fac Agr, Dept Forest Prod, 3-5-8 Saiwai cho, Fuchu, Tokyo 183, Japan

INT BIODETERIOR 1989, 25 (1-3) 7

Degradation of protolignin by laccase III

Rials TG, Glasser WG*//Virginia Polytech Inst & State Univ, Dept Forest Prod, Blacksburg, Va 24061, USA

J APPL POLYM SCI 1989, 37 (8) 2399

Multiphase materials with lignin. IV. Blends of hydroxypropyl cellulose with lignin

Yoshiyama A, Chen CS, Tien LL, Nonaka T, Chou TC//Tokyo Inst Technol, Dept Electr Chem, 4259 Nagatsuta, Midori ku, Yokohama, Kanagawa 227, Japan

DENKI KAGAKU 1989, 57 (2) 162

Anodic degradation of lignins. 4. Statistical analysis of influences of electrolytic conditions and kind of lignins

Graf H, Seethaler D, Wittershausen H//Univ Hohenheim, Tech Biochem Lab, Garbenstr 25, D-7000 Stuttgart 70, Fed Rep Ger

CHEM ZTG 1989, 113 (3) 124

New fermentation-technologies for increased ligninase-production of *Phanerochaete chrysosporium* Burds (German, English Abstract)

Hachey J-M, Maltais D, Milani P, Bui VT//Univ Quebec, Dept Sci Fondamentales, Chicoutimi, Quebec, Canada G7H 2B1

POLYM J 1989, 21 (1) 85

Conductance of aqueous solutions of lignosulfonate and poly(styrene sulfonate)

4 Polysaccharides

Domenico P, Diedrich DL, Cunha BA*//Winthrop Univ Hosp, Div Infect Dis, Mineola, NY 11501, USA

J MICROBIOL METH 1989, 9 (3) 211

Quantitative extraction and purification of exopolysaccharides from *Klebsiella pneumoniae*

Lawford H, Rousseau J//Univ Toronto, Dept Biochem, Toronto, Ontario, Canada M5S 1A8

BIOTECHNOL LETT 1989, 11 (2) 125

Effect of oxygen on the rate of beta-1,3-glucan microbial exopolysaccharide production

Osman SF, Fett WF//USDA ARS, Eastern Res Res Ctr, Dept Plant Sci, 600 E Mermaid Lane, Philadelphia, Pa 19118, USA

J BACTERIOL 1989, 171 (3) 1760

Structure of an acidic exopolysaccharide of *Pseudomonas marginalis* HT041B

Di Fabio JL, Brisson J-R, Perry MB//Natl Res Council Canada, Div Biol Sci, Ottawa, Ontario, Canada K1A 0R6

BIOCHEM CELL BIOL 1989, 67 (2-3) 78

Structural analysis of the three lipopolysaccharides produced by *Salmonella madelia* (1,6,14,25)

Panasenko SM, Jann B, Jann K//Pomona Coll, Dept Chem, Claremont, Ca 91711, USA

J BACTERIOL 1989, 171 (4) 1835

Novel change in the carbohydrate portion of *Myxococcus xanthus* lipopolysaccharide during

development

Phillips M, Pugh GW, Deyoe BL//USDA ARS, Natl Anim Dis Ctr, Ames, Ia 50010, USA

AMER J VET RES 1989, 50 (3) 311

Chemical and protective properties of Brucella lipopolysaccharide obtained by butanol extraction

Phillips M, Pugh GW, Deyoe BL//USDA ARS, Natl Anim Dis Ctr, Ames, Ia 50010, USA

AMER J VET RES 1989, 50 (3) 318

Duration of strain 2308 infection and immunogenicity of Brucella abortus lipopolysaccharide in five strains of mice

Richards JC, Leitch RA//Natl Res Council Canada, Div Biol Sci, Ottawa, Ontario, Canada K1A 0R6

CARBOHYD RES 1989, 186 (2) 275

Elucidation of the structure of the Pasteurella haemolytica serotype T10 lipopolysaccharide O-antigen by n.m.r. spectroscopy

Sonesson A, Bryn K, Jantzen E, Larsson L//Lund Univ, Ctr Chem, Dept Tech Analyt Chem, POB 124, S-22100 Lund, Sweden

J CHROMATOGR-BIOMED APPL 1989, 487 (1) 1

Gas chromatographic determination of (phosphorylated) 2-keto-3-deoxyoctonic acid, heptoses and glucosamine in bacterial lipopolysaccharides after treatment with hydrofluoric acid, methanolysis and trifluoroacetylation

Carlsson A, Sato T, Sunamoto J*//Kyoto Univ, Fac Engn, Dept Polymer Chem, Mat Sci Polymers & Artificial Cell Technol Lab, Sakyo ku, Kyoto 606, Japan

BULL CHEM SOC JPN 1989, 62 (3) 791

Physicochemical stabilization of lipid microspheres by coating with polysaccharide derivatives

Cesaro A, Esposito P, Bertocchi C, Crescenzi V//Univ Trieste, Dipartimento Biochim Biofis & Chim, Macromolec, I-34127 Trieste, Italy

CARBOHYD RES 1989, 186 (1) 141

The influence of side-chain modifications on the solution behavior of the capsular polysaccharide from Rhizobium trifolii strain TA-1

Cesaro A, Paoletti S, Urbani R, Benegas J//Univ Trieste, Dipartimento BBCM, I-34127 Trieste, Italy

INT J BIOL MACROMOLEC 1989, 11 (2) 66

Polyelectrolytic effects in semi-flexible carboxylate polysaccharides. Part 2

Copikova J, Novotny D, Kvasnicka F, Kadlec P//Vsch Katedra Chem & Technol Sacharidu, Praha, Czechoslovakia

LISTY CUKROV 1989, 105 (2) 44

Study of sugar factory polysaccharides (Czech, English Abstract)

Figueroa LA, Silverstein JA//Univ Colorado, Boulder, Co 80309, USA

BIOTECHNOL BIOENG 1989, 33 (8) 941

Ruthenium red adsorption method for measurement of extracellular polysaccharides in sludge flocs

Goldberg R, Morvan C, Herve du Penhoat C, Michon V//Ecole Normale Super, Biomembranes & Surfaces Cellulaires Vegetales Lab, UA 04311, F-75231 Paris 05, France

PLANT CELL PHYSIOL 1989, 30 (2) 163

Structure and properties of acidic polysaccharides from mung bean hypocotyls

Hoebler C, Barry JL, David A, Delort-Laval J//INRA, Technol Appl Nutr Lab, Rue Geraudiere, BP 527, F-44026 Nantes 03, France

J AGR FOOD CHEM 1989, 37 (2) 360

Rapid acid hydrolysis of plant cell wall polysaccharides and simplified quantitative determination of their neutral monosaccharides by gas-liquid chromatography

Knirel YA, Soldatkina MA, Shashkov AS, Tanatar NV, Paramonov NA, Zakharova IY//ND Zelinskii Organ Chem Inst, Moscow, USSR

BIOORG KHM 1988, 14 (12) 1678

Antigenic polysaccharides of bacteria. 34. Structure of O-specific polysaccharide chains of lipopolysaccharides from Pseudomonas cepacia strains IMV-4207 (serotype-A) and IMV 598/2

Knirel YA, Tanatar NV, Soldatkina MA, Zakharova IY//ND Zelinskii Organ Chem Inst, Moscow, USSR

BIOORG KHM 1988, 14 (12) 1684

Antigenic polysaccharides of bacteria. 35. Structural determination of polysaccharide chains of the Pseudomonas cepacia IMV 4176 and IMV 4202 (serotype-3) lipopolysaccharides

Koizumi K, Kubota Y, Tanimoto T, Okada Y//Mukogawa Womens Univ, Fac Pharmaceut

Sci, 11-68 Koshien Kyuban cho, Nishinomiya, Hyogo 663, Japan

J CHROMATOGR 1989, 464 (2) 365

High-performance anion-exchange chromatography of homogeneous D-gluco-oligosaccharides and -polysaccharides (polymerization degree ≥ 50) with pulsed amperometric detection

Lichodzievskaja IB, Braudo EE, Chimirov JI, Muchin MA, Tolstoguzov VB, Muschiolik G, Webers V//AN Nesmejanov Elementorgan Verbindungen Inst, V-312, Vaulova 28, Moskau 117813, USSR

NAHRUNG 1989, 33 (2) 191

Production of pasta from baking flour with addition of polysaccharides (German, English Abstract)

Makari JG//Makari Res Labs Inc, 223 S Dean St, Englewood, NJ 07631, USA

CANCER DETECTION PREV 1988, 13 (3-4) 225

Antitumor activity of tritiated tumor polysaccharide substance (H^3 -TPS) in sarcoma 180 of mice

Mamontova NS, Tikhonov AI, Soboleva VA//Kharkov Pharmaceut Inst, Kharkov, Ukraine, USSR

KHIM PRIR SOEDIN SSSR 1988, (6) 877

Chemical composition of phenol-polysaccharide propolis preparation (Russian)

McNeil M, Kristiansen B, Seviour RJ//Univ Strathclyde, Div Appl Microbiol, Dept Biosci & Biotechnol, Glasgow G1 1XW, Scotland

BIOTECHNOL BIOENG 1989, 33 (9) 1210

Polysaccharide production and morphology of *Aureobasidium pullulans* in continuous culture

Middendorf HD, Cavatorta F, Deriu A, Steigenberger U//Univ Edinburgh, Sch Med, Dept Biochem, Edinburgh EH8 9YL, Midlothian, Scotland

PHYSICA B 1989 156 (JAN) 456

Quasi-elastic neutron scattering from polysaccharide gels

Moule AL, Kuhl PMD, Galbraith L, Wilkinson SG*//Univ Hull, Sch Chem, Hull HU6 7RX, N Humberside, England

CARBOHYD RES 1989, 186 (2) 287

Structure of the O-specific polysaccharide from *Enterobacter cloacae* strain N.C.T.C. 11579 (serogroup O10)

Nishino T, Yokoyama G, Dobashi K, Fujihara M, Nagumo T//Kitasato Univ, Sch Hyg Sci, Dept Biophys, 1-15-1 Kitasato, Sagami-hara, Kanagawa 228, Japan

CARBOHYD RES 1989, 186 (1) 119

Isolation, purification, and characterization of fucose-containing sulfated polysaccharides from the brown seaweed *Ecklonia kurome* and their blood-anticoagulant activities

Pausen H, Helpap B//Univ Hamburg, Inst Organ Chem, Martin Luther King Pl 6, D-2000 Hamburg 13, Fed Rep Ger

CARBOHYD RES 1989, 186 (2) 189

Synthese einer Tetrasaccharideinheit des Kapselpolysaccharides von *Streptococcus pneumoniae* Typ 9V

Ravindran G, Palmer JK, Gajameragedara SM//Univ Peradeniya, Dept Food Sci & Technol, Peradeniya, Sri Lanka

J AGR FOOD CHEM 1989, 37 (2) 327

Seed polysaccharides of some winged bean varieties

Sinay P//Ecole Normale Super, Chim Lab, UA 1110, 24 Rue Lhomond, F-75231 Paris 05, France

PURE APPL CHEM 1989, 61 (3) 481

Active fragments of natural polysaccharides

van Ryn-McKenna J, Gray E, Weber E, Ofosu FA, Buchanan MR*//McMaster Univ Med Ctr, Dept Pathol, Room 3N10, 1200 Main St W, Hamilton, Ontario, Canada L8N 3Z5

THROMB HAEMOST 1989, 61 (1) 7

Effects of sulfated polysaccharides on inhibition of thrombus formation initiated by different stimuli

Vinogradov EV, Kaca W*, Knirel YA, Rozalski A, Kochetkov K//Polish Acad Sci, Centrum Microbiol & Virol, Inst Mikrobiol Uniwersytetu, UL Banacha 12-16, PL-90237 Lodz, Poland

EUR J BIOCHEM 1989, 180 (1) 95

Structural studies on the fucosamine-containing O-specific polysaccharide of *Proteus vulgaris* O19

Wessels MR, Benedi V-J, Jennings HJ, Michon F, DiFabio JL, Kasper DL//Harvard Univ, Brigham & Womens Hosp, Sch Med, Dept Med, Channing Lab, Boston, Ma 02115, USA

INFECTION IMMUNITY 1989, 57 (4) 1089

Isolation and characterization of type IV group B *Streptococcus capsular polysaccharide*

Yokoyama A, Srinivasan KR, Fogler HS*//
*Univ Michigan, Dept Sleep Disorders, Ann Arbor, Mi 48109, USA

LANGMUIR 1989, 5 (2) 534

Stabilization mechanism by acidic polysaccharides. Effects of electrostatic interactions on stability and peptization

Adney WS, Rivard CJ, Grohmann K, Himmel ME//Solar Energy Res Inst, Div Solar Fuels Res, Biotechnol Res Branch, Appl Biol Sci Sect, Golden, Co 80401, USA

ARCH MICROBIOL 1989, 151 (4) 207

Characterization of polysaccharidase activity optima in the anaerobic digestion of municipal solid waste

5 Starch

Abdul-Hussain S, Paulsen GM*//**Kansas State Univ Agr & Appl Sci, Dept Agron, Manhattan, Ks 66506, USA

J AGR FOOD CHEM 1989, 37 (2) 295

Role of proteinaceous alpha-amylase enzyme inhibitors in preharvest sprouting of wheat grain

Avendano MC, Cornejo I//CSIC, Inst Fermentac Ind, Juan Cierva 3, E-28006 Madrid, Spain

REV AGROQUIM TECHNOL ALIMENT 1988, 28 (4) 449

Classification, characteristics and applications of amylolytic enzymes of microbial origin (Spanish, English Abstract)

Glassner DA, Grulke EA, Oriel PJ//Michigan State Univ, Dept Chem Engn, E Lansing, Mi 48824, USA

BIOTECHNOL PROGR 1989, 5 (1) 31

Characterization of an immobilized biocatalyst system for production of thermostable amylase

Madi E, Antranikian G*//**Univ Gottingen, Inst Mikrobiol, Grisebachstr 8, D-3400 Gottingen, Fed Rep Ger

APPL MICROBIOL BIOTECHNOL 1989, 30 (4) 422

Identification of a starch degrading anaerobic thermophile producing thermostable alpha-amylase and pullulanase

McCleary BV, Codd R//Dept Agr & Fisheries,

Biol & Chem Res Inst, PMB 10, Rydalmere 2116, Australia

J CEREAL SCI 1989, 9 (1) 17

Measurement of beta-amylase in cereal flours and commercial enzyme preparations

Takasaka Y//Minist Int Trade & Ind, Agcy Ind Sci & Technol, Fermentat Res Inst, 1-1-3 Azuma, Tukuba, Ibaraki 305, Japan

AGR BIOL CHEM TOKYO 1989, 53 (2) 341

Novel maltose-producing amylase from *Bacillus megaterium* G-2

Teramoto Y, Kira I, Hayashida S//Kyushu Univ, Dept Agr Chem, Fukuoka 812, Japan

AGR BIOL CHEM TOKYO 1989, 53 (3) 601

Multiplicity and preferential inactivation by proteolysis as to raw starch-digestibility of bacterial alpha-amylases

Wei D, Parulekar SJ*, Stark BC, Weigand WA//*IIT, Dept Chem Engn, Chicago, Il 60616, USA

BIOTECHNOL BIOENG 1989, 33 (8) 1010

Plasmid stability and alpha-amylase production in batch and continuous cultures of *Bacillus subtilis* TN106[pATS]

Orford PD, Parker R, Ring SG*, Smith AC//*Inst Food Res, Norwich Lab, Colney Lane, Norwich NR4 7UA, England

INT J BIOL MACROMOLEC 1989, 11 (2) 91

Effect of water as a diluent on the glass transition behaviour of malto-oligosaccharides, amylose and amylopectin

Takeda Y, Hizukuri S, Juliano BO//Kagoshima Univ, Fac Agr, Dept Agr Chem, Korimoto 1, Kagoshima 890, Japan

CARBOHYD RES 1989, 186 (1) 163

Structures and amounts of branched molecules in rice amyloses

Saha BC, Zeikus JG//Michigan Biotechnol Inst, POB 27609, Lansing, Mi 48909, USA

STARCH 1989, 41 (2) 57

Microbial glucoamylases: Biochemical and biotechnological features

Butcher GJ//Tenstar Prod, Tufton Rd, Ashford TN24 8BH, Kent, England

INT BIODETERIOR 1989, 25 (1-3) 71

Experiences with anaerobic digestion of wheat starch processing waste

Cai W, Athanassoulis C, Dioasady LL**/Univ Toronto, Dept Chem Engn, Toronto, Ontario, Canada M5S 1A4

ACTA ALIMENT 1988, 17 (4) 319

A high performance size exclusion chromatographic method for the analysis of the molecular weight distribution of starch

Chavan SM, Kumar A, Jadhav SJ//Deccan Sugar Inst, Dept Sugar Chem, Manjari BK, Pune 412307, India

INT SUGAR J 1989, 91 (1083) 45

A simple direct colorimetric method for assay of starch in plantation white sugar

Elizalde G, Sclafani A**/CUNY Brooklyn Coll, Dept Psychol, Brooklyn, NY 11210, USA

APPETITE 1988, 11 (3) 179

Starch-based conditioned flavor preferences in rats: influence of taste, calories and CS-US delay

Gadalla MAF, El-Hameed MHA, Ismail AA//Univ Alexandria, Coll Pharm, Dept Pharmaceut, Alexandria, Egypt

DRUG DEVELOP IND PHARM 1989, 15 (3) 427

A comparative evaluation of some starches as disintegrants for double compressed tablets

Garg SK, Doelle HW//Sukhadia Univ, Coll Dairy Sci, Dept Dairy Microbiol, Udaipur 313001, India

BIOTECHNOL BIOENG 1989, 33 (8) 948

Optimization of physiological factors for direct saccharification of cassava starch to glucose by *Rhizopus oligosporus* 145F

Ghildyal NP, Ramakrishna M, Lonsane BK//Cent Food Technol Res Inst, Fermentat Technol & Bioengn, Mysore 570013 Karnataka, India

STARCH 1989, 41 (2) 64

Comparative economics of the production of high fructose syrup from cassava chips and cassava starch

Haase NU, Kempf W//Bundesforsch Anstalt Getreide & Kartoffelverarbeitung, Inst Starke & Kartoffeltechnol, D-4930 Detmold, Fed Rep Ger

STARCH 1989, 41 (2) 49

Several notes upon the quality of pea starch

Howling D//CPC UK Ltd, Trafford Pk, Manch-

ester M17 1PA, England

INT BIODETERIOR 1989, 25 (1-3) 15

Mechanisms of starch enzymolysis

Hrdlicka J//Ustredni Kontrolni Zkusebni Ustav Zemedelsky, Vysehradská 27, CS-128000 Praha 2, Czechoslovakia

BIOL CHEM ZIVOCISNE VYROBY 1989, 25 (1) 87

Evidence of the applicability of wheat starch and feed limestone as a vehicle for the production of factors of biological-agents (Czech)

Jamuna R, Ramakrishna SV**/Reg Res Lab, Fermentat Sect, Trivandrum 695019, Kerala, India

J FERMENT BIOENG 1989, 67 (2) 126

SCP production and removal of organic load from cassava starch industry waste by yeasts

Kamath ND, Bhide SV, Kale NR//Univ Poona, Dept Chem, Div Biochem, Poona 411007, Maharashtra, India

CARBOHYD RES 1989, 186 (1) 131

Separation of the components of starch based on the adsorption of the 1-butanol-amylose complex during column chromatography on cellulose

Kennedy JF, Stevenson DL, White CA//Univ Birmingham, Dept Chem, Chem Bioact Carbohydrates & Proteins Res Lab, POB 363, Birmingham B15 2TT, W Midlands, England

STARCH 1989, 41 (2) 72

Gel permeation chromatography and identification of starch-related oligosaccharides containing more than one type of glycosidic linkage

Lang V, Wildbrett G**/Tech Univ Munich, Inst Ernährungswissenschaft, Fachgebiet Reinigungstechnol, D-8050 Freising, Fed Rep Ger

Z LEBENSMITTEL-UNTERSUCH FORS 1989, 188 (3) 243

A method for the determination of native and modified starches on dishes cleaned by dishwashers (German, English Abstract)

Lehtonen P//Alko Ltd, Res Labs, POB 350, SF-00101 Helsinki, Finland

CHROMATOGRAPHIA 1988, 26 157

Effect of method of solution of observed molecular weight distribution of barley starch and starch derivatives in size exclusion chromatography

Murugesan G, Bhattacharya KR//Discipline Grain Sci & Technol, Cent Food Technol Res Inst, Mysore 570013, India

CARBOHYD POLYM 1989, 10 (3) 215

The nature of starch in popped rice

Osunsami AT, Akingbala JO, Oguntimein GB//Univ Ibadan, Fac Technol, Dept Food Technol, Ibadan, Nigeria

STARCH 1989, 41 (2) 54

Effect of storage on starch content and modification of cassava starch

Rapaille A, Vanhemelrijck J//Ceresar, Euro Ctr Food, Havenstr 84, B-1800 Vilvoorde, Belgium

ZUCKERINDUSTRIE 1989, 114 (3) 212

Starch applications in the food industry

Russell PL, Berry CS, Greenwell P//Flour Milling & Baking Res Assoc, Rickmansworth WD3 5SH, Herts, England

J CEREAL SCI 1989, 9 (1) 1

Characterisation of resistant starch from wheat and maize

Socorro M, Levy-Benshimol A, Tovar J*//Univ Lund, Box 124, S-22100 Lund, Sweden

STARCH 1989, 41 (2) 69

In vitro digestibility of cereal and legume (*Phaseolus vulgaris*) starches by bovine, porcine and human pancreatic alpha-amylases. Effect of dietary fiber

Taira H, Tanaka H, Saito M//Natl Food Res Inst, Tsukuba, Ibaraki 305, Japan

JPN J CROP SCI 1989, 58 (1) 24

Quality of Japanese wheat grains. III. Relation of flour and starch qualities to cultivar, producing prefecture, and grade

Thielemans I, Traisnel M, Huvenne J-P//Ctr Univ Mesure & Analyse, Fac Pharm, F-59045 Lille, France

PHARM ACTA HELV 1989, 64 (2) 55

Etude du remplacement de l'amidon de ble par l'amidon de manioc: application aux comprimés de dapsoné

Yamade K, Fukushima S//Kansai Univ, Fac Engr, Dept Chem Engr, 3-3-35 Yamate cho, Suita, Osaka 564, Japan

J FERMENT BIOENG 1989, 67 (2) 97

Continuous alcohol production from starchy

materials with a novel immobilized cell enzyme bioreactor

6 Others

Nisizawa M//DEF Acad, Yososuka, Japan

J POLYM SCI C-POLYM LETT 1989, 27 (4) 123

Studies on irradiation of agar-agar in the solid state: on the changes of textural property of agar-agar hydrogel produced by irradiation

Rochas C, Lahaye M//CERMAV-CNRS, BP 53 X, 38041 Grenoble Cedex, France

CARBOHYD POLYM 1989, 10 (3) 189

Solid state ¹³C-NMR spectroscopy of red seaweeds, agars and carrageenans

van Devanter DR, Trammell HM, von Hoff DD*//Univ Texas, Hlth Sci Ctr, Div Med Oncol, San Antonio, Tx 78284, USA

BIOTECHNIQUES 1989, 7 (2) 143

Simple construction of rubber-based agarose block molds for pulsed field electrophoresis

Watase M, Nishinari K*, Clark AH, Ross-Murphy SB//Natl Food Res Inst, Tsukuba, Ibaraki 305, Japan

MACROMOLECULES 1989, 22 (3) 1196

Differential scanning calorimetry, rheology, X-ray, and NMR of very concentrated agarose gels

McAvoy MJ, Newton V, Paull A, Morgan J, Gacesa P, Russell NJ//Univ Wales Coll Cardiff, Dept Biochem, POB 903, Cardiff CF1 1ST, Wales

J MED MICROBIOL 1989, 28 (3) 183

Isolation of mucoid strains of *Pseudomonas aeruginosa* from non-cystic-fibrosis patients and characterisation of the structure of their secreted alginate

Ogbonna JC, Amano Y*, Nakamura K//Yamanashi Univ, Fac Engr, Dept Fermentat Technol, 4-3-11, Kofu, Yamanashi 400, Japan

J FERMENT BIOENG 1989, 67 (2) 92

Elucidation of optimum conditions for immobilization of viable cells by using calcium alginate

Arakawa S, Nishio O, Uno K, Isomura S, Ishihara H, Tejima S//Aichi Prefectural Sch Lunch Associat, Ano cho, Toyoake 47011, Japan
EISEI KAGAKU-JAPAN J TOX ENVI 1989, 35 (1) 68

Determination of carrageenan by sandwich enzyme-immunoassay

Hermansson A-M//SIK, Swedish Inst Food Res, PO Box 5401, S-40229 Goteborg, Sweden

CARBOHYD POLYM 1989, 10 (3) 163

Rheological and microstructural evidence for transient states during gelation of kappa-carrageenan in the presence of potassium

Tokita M, Ikura M, Hikichi K//Hokkaido Univ, Fac Sci, Dept Polymer Sci, Sapporo, Hokkaido 060, Japan

POLYMER 1989, 30 (4) 693

Multinuclear n.m.r. studies on sol-gel transition of kappa-carrageenan. Selective interaction of group I cations

Kanke M, Katayama H, Tsuzuki S, Kuramoto H//Fukuyama Univ, Fac Pharm & Pharmaceut Sci, 985 Higashimura cho, Fukuyama, Hiroshima 72902, Japan

CHEM PHARM BULL TOKYO 1989, 37 (2) 523

Application of chitin and chitosan to pharmaceutical preparations. I. Film preparation and in vitro evaluation

Hara S, Yamamura Y, Fujii Y, Mega T, Ikenaka T//Osaka Univ, Coll Sci, Dept Chem, Toyonaka, Osaka 560, Japan

J BIOCHEM TOKYO 1989, 105 (3) 484

Purification and characterization of chitinase produced by *Streptomyces erythraeus*

Catena GC, Bright FV**//SUNY Buffalo, Dept Chem, Buffalo, NY 14260, USA

ANAL CHEM 1989, 61 (8) 905

Thermodynamic study on the effects of beta-cyclodextrin inclusion with anilino-naphthalenesulfonates

Ekberg B, Sellergren B, Olsson L, Mosbach K//Dept Pure & Appl Biochem, Lund Inst Technol, Univ Lund, PO Box 124, S-22100 Lund, Sweden

CARBOHYD POLYM 1989, 10 (3) 183

The synthesis of water-soluble polymers of beta-cyclodextrin and their use in aqueous two-phase systems

Eshima K, Matsushita Y, Hasegawa E, Nishide H, Tsuchida E**//Waseda Univ, Dept Polymer Chem, Tokyo 160, Japan

CHEM LETT 1989, (3) 381

Cyclodextrin-coupled protoporphyrinatoiron complex and its semi-stable oxygen adduct formation in an aqueous medium

Fujita K, Egashira Y, Imoto T, Fujioka T, Mihashi K, Tahara T, Koga T//Fukuyama Univ, Fac Pharmaceut Sci, Higashimura cho, Fukuyama 72902, Japan

CHEM LETT 1989, (3) 429

Regiospecifically bifunctional cyclodextrins having 2 amino groups on secondary hydroxyl side

Fujita K, Egashira Y, Tahara T, Imoto T, Koga T//Fukuyama Univ, Fac Pharmaceut Sci, Higashimura cho, Fukuyama 72902, Japan

TETRAHEDRON LETT 1989, 30 (10) 1285

Synthesis and structure determination of 3^A,6^X-di-O-arenesulfonyl-alpha-cyclodextrins

Hamai S//Miyazaki Med Coll, Dept Phys, Miyazaki 88916, Japan

J PHYS CHEM 1989, 93 (5) 2074

Inclusion compounds in the systems of beta-cyclodextrin-alcohol-pyrene in aqueous solution

Harada A, Saeki K, Takahashi S//Osaka Univ, Inst Sci & Ind Res, Ibaraki, Osaka 567, Japan

ORGANOMETALLICS 1989, 8 (3) 730

Preparation and properties of inclusion compounds of (n⁶-arene)tricarbonylchromium(0) complexes with cyclodextrins

Hoshino T, Irie T, Hirayama F, Uekama K*, Yamasaki M//Kumamoto Univ, Fac Pharmaceut Sci, 5-1 OE Honmachi, Kumamoto 862, Japan

YAKUGAKU ZASSHI-J PHARM SOC J 1989, 109 (2) 107

Alternation in photochemical reaction of clomipramine by inclusion complexations of beta- and dimethyl-beta-cyclodextrins

Hoshino T, Ishida K, Irie T, Uekama K*, Ono T//Kumamoto Univ, Fac Pharmaceut Sci, 5-1 Oehonmachi, Kumamoto 862, Japan

ARCH DERMATOL RES 1989, 281 (1) 60

An attempt to reduce the photosensitizing potential of chlorpromazine with the simultaneous use of beta- and dimethyl-beta-cyclodextrins in guinea pigs

Jelinek I, Dohnal J, Snopek J*, Smolkova-Keulemansova E//Charles Univ, Inst Biotechnol, Bioseparat & Bioanalyt Methods Lab, Al-

- bertov 2030, CS-12943 Prague 2, Czechoslovakia
J CHROMATOGR 1989, 464 (1) 139
Use of cyclodextrins in isotachophoresis. VII. Resolution of structurally related and chiral phenothiazines
- Jin HL, Stalcup AM, Armstrong DW//Univ Missouri, Dept Chem, Rolla, Mo 65401, USA
J LIQ CHROMATOGR 1988, 11 (16) 3295
Separation of cyclodextrins using cyclodextrin bonded phases
- Konig WA, Lutz S, Hagen M, Krebber R, Wenz G, Baldenius K, Ehlers J, Dieck HT//Univ Hamburg, Inst Organ Chem, D-2000 Hamburg 13, Fed Rep Ger
J HIGH RES CHROMATOGR 1989, 12 (1) 35
Cyclodextrins as chiral stationary phases in capillary gas chromatography. 4. Heptakis(2,3,6-tri-O-pentyl)-beta-cyclodextrin
- Kotake Y, Janzen EG//Univ Guelph, Dept Chem & Biochem, Guelph, Ontario, Canada N1G 2W1
J AMER CHEM SOC 1989, 111 (6) 2066
Bimodal inclusion of nitroxide radicals by beta-cyclodextrin in water as studied by electron spin resonance and electron nuclear double resonance
- Lacelle S, Gerstein BC//Univ Sherbrooke, Fac Sci, Dept Chim, Sherbrooke, Quebec, Canada J1K 2R1
CARBOHYD RES 1989, 186 (1) 29
Dynamics of cyclohexaamylose (alpha cyclodextrin).6H₂O by ¹H solid n.m.r. spectroscopy
- Makela M, Mattsson P, Korpela T//Univ Turku, Dept Biochem, SF-20500 Turku 50, Finland
BIOTECHNOL APPL BIOCHEM 1989, 11 (2) 193
Specific adsorbents in isolation and purification of cyclodextrins
- Mori M, Ito Y, Ogawa T*//Rijen, Inst Phys & Chem Res, Wako, Saitama 35101, Japan
TETRAHEDRON LETT 1989, 30 (10) 1273
A highly efficient and stereoselective cycloglycosylation. Synthesis of cyclo{4}-[alpha-Man-(1-4)]5-alpha-Man-(1-}, a manno isomer of alpha-cyclodextrin
- Nelson G, Patonay G, Warner IM//Emory Univ, Dept Chem, Atlanta, Ga 30322, USA
TALANTA 1989, 36 (1-2) 199
The utility of time-resolved emission spectroscopy in the study of cyclodextrin-pyrene inclusion complexes
- Rao KR, Sattur PB//Reg Res Lab, Hyderabad 500007, India
J CHEM SOC CHEM COMMUN 1989, (6) 342
Asymmetric synthesis of alpha, alpha-dichlorosulphoxides from substituted thioacetates and sodium hypochlorite in beta-cyclodextrin complexes
- Saint-Aman E, Serve D//Univ Joseph Fourier, UFR Chim, Photochim Lab, BP 53X, F-38041 Grenoble, France
NEW J CHEM 1989, 13 (2) 121
Electrochemical and spectroscopic studies of inclusion complexes of some nitroxide radicals in aqueous cyclodextrin solutions
- Steiner T, Saenger W, Kearley G, Lechner RE//Free Univ Berlin, Inst Kristallog, D-1000 Berlin 33, Fed Rep Ger
PHYSICA B 1989, 156 (JAN) 336
Dynamics of hydrogen bonding disorder in beta-cyclodextrin undecahydrate
- Takasaki BK, Tee OS*//Concordia Univ, Dept Chem, Sir George Williams Campus, Montreal, Quebec, Canada H3G 1M8
CAN J CHEM 1989, 67 (2) 193
Cocatalysis by an internal carboxyl group and by alpha-cyclodextrin. The debromination of 4-bromo-4-methyl-2,5-cyclohexadienone-2-carboxylic acid
- Tonellato U//Univ Padua, Dipartimento Chim Organ, CNR, Ctr Meccanismi Reaz Organ, Via Marzolo 1, I-35131 Padua, Italy
J CHIM PHYS PHYS-CHIM BIOL 1988, 85 (11-12) 1047
Reactivity in micellar or vesicular assemblies and in cyclodextrin complexes
- Venema A, Tolsma PJA//Akzo Corp Res, POB 60, 6800 AB Arnhem, The Netherlands
J HIGH RES CHROMATOGR 1989, 12 (1) 32
Enantiomer separation with capillary gas chromatography columns coated with cyclodextrins. 1. Separation of enantiomeric 2-substituted propionic acid esters and some lower alcohols with permethylated beta-cyclodextrin

Yamamoto Y, Inoue Y*//Tokyo Inst Technol,
Dept Biomolec Engr, Okayama 2-chome,
Meguro ku, Tokyo 152, Japan

J CARBOHYD CHEM 1989, 8 (1) 29

NMR studies of cyclodextrin inclusion complex

Carrasco F, Chornet E, Overend RP, Costa J//Univ Sherbrooke, Dept Gen Chim,
Sherbrooke, Quebec, Canada J1K 2R1

J APPL POLYM SCI 1989, 37 (8) 2087

A generalized correlation for the viscosity of dextran in aqueous solutions as a function of temperature, concentration, and molecular weight at low shear rates

Jeremic K, Ilic L, Jovanovic S, Lechner MD//
Fac Technol & Met, Belgrade, Yugoslavia
EUR POLYM J 1989, 25 (3) 281

Behaviour of dextran in dilute aqueous solution under high pressure and different temperatures. Investigation by dynamic light scattering

Prouchayret F, Sacco D, Dellacherie E*//Ecole Natl Super Ind Chim, Chim Phys Macromolec Lab, CNRS, UA 494, 1 Rue Grandville, BP 451, F-54001 Nancy, France

POLYM BULL 1989, 21 (3) 309

On the use of watersoluble carbodiimides for binding carboxylic compounds to aminated dextrans

Sjoberg A, Karlstrom G//Chem Ctr, Dept Phys Chem, POB 124, S-22100 Lund, Sweden
MACROMOLECULES 1989, 22 (3) 1325

Temperature dependence of the phase equilibria for the system poly(ethylene glycol)/dextran/water. A theoretical and experimental study

Takakura Y, Fujita T, Hashida M, Maeda H, Sezaki H*//Kyoto Univ, Fac Pharmaceut Sci, Dept Basic Pharmaceut, Kyoto 606, Japan

J PHARM SCI 1989, 78 (3) 219

Control of pharmaceutical properties of soybean trypsin inhibitor by conjugation with dextran II: biopharmaceutical and pharmacological properties

Ujeno Y, Akaboshi M, Maki H, Kawai K, Kanda K, Kobayashi T, Ono K, Kitaoka Y, Abraham R, Gabel D//Kyoto Univ, Inst Res Reactor, Osaka 59004, Japan

STRAHLENTHER ONKOL 1989, 165 (2-3) 201

The enhancement of thermal-neutron induced cell death by 10-boron dextran

Praznik W, Beck RHF, Spies T, Huber A//Agr Univ Vienna, Inst Chem, Gregor Mendelstr 33, A-1180 Vienna, Austria

CHROMATOGRAPHIA 1988, 26 359

Detection of enzymatically formed ¹⁴C-labelled fructan oligomers by means of size exclusion chromatography with an on-line liquid scintillation counter

Oxley D, Wilkinson SG//Univ Hull, Sch Chem, Hull HU6 7RX, N Humberside, England

CARBOHYD RES 1989, 186 (2) 295

Structure studies of an acidic galactoglucomanan from the O15 reference strain (C.D.C. 4523-60) of *Serratia marcescens*

Hatakeyama T, Ohba H, Yamasaki N*, Funatsu G//Kyushu Univ, Fac Agr, Biochem Lab, Higashi ku, Fukuoka 812, Japan

AGR BIOL CHEM TOKYO 1989, 53 (3) 853

The interaction of castor bean lectins with galactomannan

Tako M, Sakae A, Nakamura S//Univ Ryukyus, Coll Agr, Chem Sugar Technol Lab, Okinawa 90301, Japan

AGR BIOL CHEM TOKYO 1989, 53 (3) 771

Rheological properties of gellan gum in aqueous media

Birberg W, Fugedi P*, Garegg PJ, Pilotti A//Lajos Kossuth Univ, Inst Biochem, POB 55, H-4010 Debrecen, Hungary

J CARBOHYD CHEM 1989, 8 (1) 47

Syntheses of a heptasaccharide beta-linked to an 8-methoxy-carbonyl-oct-1-yl linking arm and of a decasaccharide with structures corresponding to the phytoelictor active glucan of *Phytophthora megasperma* f. sp. *glycinea*

Munck L, Jorgensen KG, Ruud-Hansen J, Hansen KT//Carlsberg Res Ctr, Gamle Carlsberg Vej 10, DK-2500 Copenhagen, Denmark

J INST BREW 1989, 95 (2) 79

The EBC methods for determination of high molecular weight beta-glucan in barley, malt, wort and beer

Saito H, Yokoi M//Natl Canc Ctr, Res Inst, Div Biophys, Tsukji 5 chome, Chuo ku, Tokyo 104, Japan

BULL CHEM SOC JPN 1989, 62 (2) 392

High-resolution C-13 NMR study of (1-3)-beta-D-glucans in the solid state - DMSO-induced conformation change and conformational

characterization by spin-relaxation measurements

Suzuki I, Hashimoto K, Oikawa S, Sato K, Osawa M, Yadomae T/**Tokyo Coll Pharm, Hachioji, Tokyo 19203, Japan
CHEM PHARM BULL TOKYO 1989, 37 (2) 410

Antitumor and immunomodulating activities of a beta-glucan obtained from liquid-cultured *Grifola frondosa*

Welch RW, Lloyd JD//Univ Ulster, Dept Biol & Biomed Sci, Shore Rd, Newtownabbey BT37 0QB, Antrim, Northern Ireland
J CEREAL SCI 1989, 9 (1) 35
Kernel (1-3)(1-4)-beta-D-glucan content of oat genotypes

Collings A, Davis B, Mills J//Univ Otago, Sch Dent, Exptl Oral Biol Unit, Dunedin, New Zealand
MICROBIOS 1988, 56 (228-29) 131
Endo-beta-1,4-glucanase, exo-beta-1,4-glucanase, beta-glucosidase and related enzyme activity in culture filtrates of thermophilic, thermotolerant and mesophilic filamentous fungi

Galic KG, Markovic I, Markovic-Devic B, Cikovic N//Univ Zagreb, Fac Food Technol & Biotechnol, Pierottijeva 6, YU-41000 Zagreb, Yugoslavia
MONATSSCHR BRAUWISSEN 1989, 42 (3) 113

Physico-biochemical changes of enzyme complex beta-glucanase during storage (German, English Abstract)

Halliwell N, Halliwell G//Univ Wales Univ Coll Swansea, Sch Biol Sci, Swansea SA2 8PP, W Glam, Wales
BIOTECHNOL APPL BIOCHEM 1989, 11 (2) 201

Extracellular beta-1,4-glucan glucanohydrolase activities of the anaerobic thermophile *Clostridium thermocellum*

Yin XS, MacGregor AW/**Canadian Grain Commiss, Grain Res Lab, 1404-303 Main St, Winnipeg, Manitoba, Canada R3C 3G8
J INST BREW 1989, 95 (2) 105
Substrate specificity and nature of action of barley beta-glucan solubilase

Tanriseven A, Robyt JF/**Iowa State Univ Sci

& Technol, Dept Biochem & Biophys, Ames, Ia 50011, USA

CARBOHYD RES 1989, 186 (1) 87

Synthesis of 4,6-dideoxysucrose, and inhibition studies of *Leuconostoc* and *Streptococcus* D-glucanases with deoxy and chloro derivatives of sucrose modified at carbon atoms 3, 4, and 6

Kraaijeveld NA, van Boeckel CAA//Organon Inst BV, Sci Dev Grp, POB 20, 5340 BH Oss, The Netherlands

REC TRAV CHIM-J ROY NETH CHEM 1989, 108 (2) 39

Synthesis of several sulphated and non-sulphated pentasaccharides, corresponding to the *E. coli* K5 glycosaminoglycan

Bradley TD, Ball A, Harding SE, Mitchell JR//Dept Appl Biochem & Food Sci, Univ Nottingham, Sutton Bonington, Loughborough LE12 5RD, England

CARBOHYD POLYM 1989, 10 (3) 205

Thermal degradation of guar gum

Tuomilehto J, Silvasti M, Manninen V, Uusitupa M, Aro A//Natl Publ Hlth Inst, Dept Epidemiol, Mannerheimintie 166, SF-00300 Helsinki, Finland

ATHEROSCLEROSIS 1989, 76 (1) 71

Guar gum and gemfibrozil - an effective combination in the treatment of hypercholesterolaemia

Agarwal A, Soni PL/**Forest Res Inst & Coll, Chem Forest Prod Branch, PO New Forest, Dehra Dun 248006, India

INDIAN J CHEM SECT B 1988, 27 (12) 1093

Structural investigations on *Acacia catechu* (Khair) gum polysaccharide

Anderson DMW//Univ Edinburgh, Dept Chem, Edinburgh EH9 3JJ, Midlothian, Scotland

FOOD ADDIT CONTAM 1989, 6 (2) 189

Evidence for the safety of gum karaya (*Sterculia* spp.) as a food additive

Beguin S, Lindhout T, Hemker HC/**State Univ Limburg, Dept Biochem, POB 616, 6200 MD Maastricht, The Netherlands

THROMB HAEMOST 1989, 61 (1) 30

The mode of action of low molecular weight heparin preparation (PK 10169) and two of its major components on thrombin generation in plasma

de Boer K, Heyboer H, ten Cate JW, Borm JJJ, van Ginkel CJW//Univ Amsterdam, Acad Med Ctr, Dept Dermatol, Div Haemostasis & Thrombosis, Meibergdreef 9, 1105 AZ Amsterdam, The Netherlands

THROMB HAEMOST 1989, 61 (1) 148

Low molecular weight heparin treatment in a pregnant woman with allergy to standard heparins and heparinoid (Letter)

Francis CW et al//Univ Rochester, Sch Med & Dent, 601 Elmwood Ave, Box 610, Rochester, NY 14642, USA

J BONE JOINT SURG-AMER VOL 1989, 71A (3) 327

Prevention of venous thrombosis after total hip arthroplasty - antithrombin-III and low-dose heparin compared with dextran 40

Goldstein MR et al//Crozer Chester Med Ctr, Upland, Pa 19013, USA

N ENGL J MED 1989, 320 (13) 866

More on heparin for prevention of atherosclerosis (Letter)

Hara M, Nakajima A//Rutgers State Univ, Dept Mech & Mat Sci, Piscataway, NJ 08855, USA

J POLYM SCI B-POLYM PHYS 1989, 27 (5) 1043

Light-scattering study of polyelectrolyte complexes: heparin with partially aminoacetalized poly(vinyl alcohol) in aqueous solution

Holme KR, Perlin AS//McGill Univ, Dept Chem, Montreal, Quebec, Canada H3A 2A7

CARBOHYD RES 1989, 186 (2) 301

Nuclear magnetic resonance spectra of heparin in admixture with dermatan sulfate and other glycosaminoglycans. 2-D spectra of the chondroitin sulfates

Homans SW, Edge CJ, Ferguson MAJ, Dwek RA*, Rademacher TW//Univ Oxford, Dept Biochem, Oxford Glycobiol Unit, S Parks Rd, Oxford OX1 3QU, England

BIOCHEMISTRY-USA 1989, 28 (7) 2888

Nonrandom structural features in the heparin polymer

Omri A, Delaloye JF, Andersen H, Bachmann F//Chu Vaudois, Dept Med, Div Haematol, BH 18, CH-1011 Lausanne, Switzerland

THROMB HAEMOST 1989, 61 (1) 55

Low molecular weight heparin novo (LHN-1) does not cross the placenta during the second

trimester of pregnancy

Porta R, Pescador R, Niada R, Diamantini G, Fedeli GF, Mantovani M, Prino G//Crinos Biol & Chem Res Labs, Piazza XX Settembre 2, I-22079 Villa Guardia, Italy

THROMB RES 1989, 53 (5) 435

Profibrinolytic activities of chemically modified heparins with very low anticoagulant activities

Racey TJ, Rochon P, Mori F, Neville GA**//Hlth & Welf Canada, Hlth Protect Branch, Bur Drug Res, Ottawa, Ontario, Canada K1A 0L2

J PHARM SCI 1989, 78 (3) 214

Examination of a possible role for dermatan sulfate in the aggregation of commercial heparin samples

Schmidt B, Ofosu FA, Mitchell L, Brooker LA, Andrew M//McMaster Univ, Hlth Sci Ctr, Dept Pediat, Room 3N27, 1200 Main St, Hamilton, Ontario, Canada L8N 3Z5

PEDIAT RES 1989, 25 (4) 405

Anticoagulant effects of heparin in neonatal plasma

Somasundaram ST, Dey A, Manavalan R, Subramanian A//Annammalai Univ, Ctr Adv Study Marine Biol, Parangipettai 608502, India

CURR SCI 1989, 58 (5) 264

Heparin from some bivalve molluscs

Phillips MW//Address not available

J EQUINE VET SCI 1989, 9 (1) 39

Clinical trial comparison of intra-articular sodium hyaluronate products in the horse

Kim CH, Rhee SK**//Korea Adv Inst Sci & Technol, Ctr Genet Engrn, Biochem Proc Lab, POB 131, Seoul 131, South Korea

BIOTECHNOL LETT 1989, 11 (3) 201

Fructose production from Jerusalem artichoke by inulase immobilized on chitin

Aizawa K, Matsumoto T, Tsukada K, Ito A, Sato H, Suzuki S, Suzuki M//Tohoku Coll Pharm, Dept Microbiol, Komatsushima 4-4-1, Sendai, Miyagi 983, Japan

INT J IMMUNOPHARMACOL 1989, 11 (2) 191

Antitumor effect of a baker's yeast mannan-mitomycin C conjugate against mouse hepatoma, MH134, in vivo and in vitro

Iijima H, Ogawa T*//Inst Phys & Chem Res, Wako, Saitama 35202, Japan

CARBOHYD RES 1989, 186 (1) 95

Synthesis of a mucin-type O-glycosylated amino acid, beta-Gal-(1-3)-[alpha-Neu5Ac-(2-6)]-alpha-Gal-NAc-(1-3)-Ser

Varma BK, Demers A, Jamieson AM, Blackwell J, Jentoft N//Case Western Reserve Univ, Dept Macromolec Sci, Cleveland, Oh 44106, USA

BIOPOLYMERS 1989, 28 (4) 785

Dynamics light scattering studies of porcine sub-maxillary mucin fractions in dilute solution at intermediate scattering vectors

Kato Y, Nevins DJ*//Univ Calif Davis, Dept Vegetable Crops, Davis, Ca 95616, USA

PLANT PHYSIOL 1989, 89 (3) 792

Structure of a pectic polysaccharide fraction from zea shoots

Marini C, Grazia Fortina M, Manachini PL//Address not available

J APPL BACTERIOL 1988, 65 (6) 477

Properties of two pectin lyases produced by *Aureobasidium pullulans* LV 10

Tuszynski T//Acad Agr Krakow, Dept Biotechnol, AL Mickiewicza 21, PL-31120 Krakow, Poland

NAHRUNG 1989, 33 (2) 183

Changes in the degree of pectin demethylation during fermentation of fruit musts

Kantoci D, Keglevic D*, Derome AE//Rudjer Boskovic Inst, Dept Organ Chem & Biochem. Tracer Lab, YU-41001 Zagreb, Yugoslavia

CARBOHYD RES 1989, 186 (1) 77

Convenient synthesis of O-(2-acetamido-2-deoxy-beta-D-glucopyranosyl)-(1-6 and 4)-N-acetylmuramoyl-L-anlanyl-D-isoglutamine

Keglevic D, Derome AE//Rudjer Boskovic Inst, Dept Organ Chem & Biochem. Tracer Lab, YU-41001 Zagreb, Yugoslavia

CARBOHYD RES 1989, 186 (1) 63

Synthesis and reactions of O-acetylated benzyl alpha-glycosides of 6-O-(2-acetamido-2-deoxy-beta-D-glucopyranosyl)-N-acetylmuramoyl-L-anlanyl-D-isoglutamine esters: the base-catalysed isoglutamine - glutamine rearrangement in peptidoglycan-related structures

NUTR REV 1989, 47 (4) 124

Caloric value of polydextrose

Akoh CC, Swanson BG//Mississippi State Univ, Dept Food Sci & Human Nutr, PO Drawer NH, Mississippi State, Ms 39762, USA

NUTR REP INT 1989, 39 (4) 659

Preliminary raffinose polyester and methyl glucoside polyester feeding trials with mice

Attwood D, Tistis G, McCormick Y, Story MJ//Univ Manchester, Dept Pharm, Manchester M13 9PL, Lancs, England

J PHARM PHARMACOL 1989, 41 (2) 83

Solubilization of indomethacin by polysorbate 80 in mixed water-sorbitol solvents

Ebina T, Kohya H, Ishikawa K//Tohoku Univ, Sch Med, Dept Bacteriol, 2-1 Seiryomachi, Sendai, Miyagi 980, Japan

JPN J CANCER RES 1989, 80 (20) 158

Antitumor effect of PSK: role of regional lymph nodes and enhancement of concomitant and sinecomitant immunity in the mouse

Go P, Chung C-H//Machay Mem Hosp, Dept Radiat Oncol, 92 Chung Shan N Rd, Sect 2, Taipei, Taiwan

J INT MED RES 1989, 17 (2) 141

Adjuvant PSK immunotherapy in patients with carcinoma of the nasopharynx

Harada H, Sakagami H*, Konno K, Sato T, Osawa N, Fujimaki M, Komatsu N//Showa Univ, Sch Med, Dept Biochem 1, 1-5-8 Hatanodai, Shinagawa-ku, Tokyo 142, Japan

INFECTION 1989, 17 (1) 38

Antimicrobial activity induction by PSK subfractions: dependence on molecular weight (Letter)

Galindo E, Torrestiana B, Garcia-Rejon A//Univ Nacl Autonoma Mexico, Ctr Investigac Ingn Genet & Biotecnol, Dept Bioingn, Apdo Postal 510-3, Morelos 62271, Mexico

BIOPROCESSS ENG 1989, 4 (3) 113

Rheological characterization of xanthan fermentation broths and their reconstituted solutions

Haaheim LR, Kleppe G, Sutherland IW//Statoil Biotechnol, POB 300, N-4001 Stavanger, Norway

J GEN MICROBIOL 1989, 135 (MAR) PT3, 605

Monoclonal antibodies reacting with the exopolysaccharide xanthan from *Xanthomonas campestris*

Cavazzoni V, Manzoni M, Parini C, Bonferoni MC//Univ Milan, Dipartimento Sci & Tecnol Alimentari & Microbiol, I-20133 Milan, Italy
APPL MICROBIOL BIOTECHNOL 1989, 30 (3) 247

D-xylanase produced by *Schizophyllum radiatum*

Krishnamurthy S, Vithayathil PJ//Indian Inst Sci, Dept Biochem, Bangalore 560012, Karnataka, India

J FERMENT BIOENG 1989, 67 (2) 77

Purification and characterization of endo-1,4-beta-xylanase from *Paecilomyces varioti* Bainier

Murthy MVS, Chandra TS*//Indian Inst Technol, Dept Chem, Div Biochem, Madras 600036, Tamil Nadu, India

ANTON LEEUWENHOEK J MICROBIOL 1989, 55 (2) 153

Isolation and characterization of xylose- and xylan-utilizing anaerobic bacteria