Carbohydrate Polymers **11** (1989) 70–81

BIBLIOGRAPHY ON CARBOHYDRATE POLYMERS

1 Books, Reviews and Symposia

Tipson RS, Horton D (Eds)
Advances in Carbohydrate Chemistry and Biochemistry, Vol 46
Academic Press Inc (San Diego), 1988, 391pp, $75.00 Hardbound, ISBN: 0-12-007246-7
Contains chapters on: Inclusion complexes of the cyclomalto-oligosaccharides (cyclodextrins)-(Clarke RJ, Coates JH, Lincoln SF); Hydrolysis and other cleavages of glycosidic linkages in polysaccharides (Biermann CJ)

Jeon KW, Friedlander M (Eds)
International Review of Cytology, Vol 113. A Survey of Cell Biology
Academic Press Inc (San Diego), 1988, 338 pp, $59.00, ISBN: 0-12-364513-1
Contains chapter on: Bacterial surface polysaccharides - structure and function (Sutherland IW)

2 Cellulose

Jin FX, Toda K*//*Univ Tokyo, Inst Appl Microbiol, Bunkyo ku, Tokyo 113, Japan
J FERMENT BIOENG 1989, 67 (1) 8
Purification and characterization of cellulases from Clostridium thermocopriae sp nov JT3-3

Johansson G, Stahlberg J, Lindeberg G, Engstrom A, Pettersson G//Univ Uppsala, Dept Biochem, Box 576 BMC, S-75123 Uppsala, Sweden
FEBS LETT 1989, 243 (2) 389
Isolated fungal cellulase terminal domains and a synthetic minimum analogue bind to cellulose

Patchett ML, Neal TL, Schofield LR, Strange RC, Daniel RM, Morgan HW//Univ Waikato, Sch Sci, Dept Biol Sci, Hamilton, New Zealand
ENZYME MICROB TECHNOL 1989, 11 (2) 113
Heat treatment purification of thermostable cellulase and hemicellulase enzymes expressed in E. coli

Stamm WW, Pommerening G, Wandrey C, Kula M-R//Univ Dusseldorf, Inst Enzyme Technol, POB 2050, D-5170 Julich, Fed Rep Ger
ENZYME MICROB TECHNOL 1989, 11 (2) 96
On-line measurement of extracellular proteins in the continuous cellulase production by flow injection analysis (FIA)

Alkorta I, Elguero J, Goya P*, Roussel C//*CSIC, Inst Quim Med, Juan Cierva 3, E-28006 Madrid, Spain
CHROMATOGRAPHIA 1989, 26 (1-2) 77
Energy calculations and computer modeling of chromatographic separations on microcrystalline cellulose triacetate

Fengel D, Stoll M//Univ Munich, Inst Holzforsch, Winzererstr 45, D-8000 Munich 40, Fed Rep Ger
WOOD SCI TECHNOL 1989, 23 (1) 85
Crystals of cellulose grown from TFA solution

Greenwood JM, Gilkes NR, Kilburn DG*, Miller RC, Warren RAJ//*Univ British Columbia, Dept Microbiol, 300-6174 Univ Blvd, Vancouver, BC, Canada V6T 1W5
FEBS LETT 1989, 244 (1) 127
Fusion to an endoglucanase allows alkaline phosphatase to bind to cellulose

Helm RF, Young RA, Conner AH//Oregon State Univ, Dept Forest Prod, Corvallis, Or 97331, USA
CARBOHYD RES 1989, 185 (2) 249
The reversion reactions of D-glucose during the hydrolysis of cellulose with dilute sulfuric acid

Kabrelian V, Berger W, Keck M, Philipp B//Tech Univ Dresden, Sekt Chem, DDR-8027 Dresden, Ger Dem Rep
ACTA POLYM 1988, 39 (12) 710
Investigation of the solution of cellulose in binary aprotic systems. 1. Comm - solubility and

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.

decrease in DP of a textile pulp in binary systems with NMMNO.H20 as the one component (German, English Abstract)

Kamel BS, Rasoper VF//Atkemix Inc, POB 1085, Brantford, Ontario, Canada N3T 5T2
J TEXTURE STUD 1988, 19 (13) 307
Effects of emulsifiers, sorbitol, polydextrose, and crystalline cellulose on the texture of reduced-calorie cakes

Khadyrova SA, Tretinnik VY, Parkhomenko VV//Acad Sci UkSSR, Inst Colloid Chem & Water Chem, Kiev, Ukraine, USSR
UKR KHIM ZH SSSR 1989, 55 (1) 25
Cellulose esters on the formation of thixotropic structures in aqueous dispersions of Na- and Ca-montmorillonite (Russian)

Kuhn LS, Weber SG*, Ismail KZ//*Univ Pittsburgh, Dept Chem, Pittsburgh, Pa 15260, USA
ANAL CHEM 1989, 61 (4) 303
Control of molecular weight selectivity in electrode modifications based on phase-inversion cellulose acetate membranes

Luneva NK, Komar VV, Oputina AG, Ermolenko IN//Address not available
J APPL CHEM-ENGL TR 1988, 61 (5) PT5, 1096
Direct-blackening photographic material based on cellulose esters and phosphomolybdic acid

Nikolaev AF, Shcherbakova OA, Shulgina ES, Goncharov VF, Maltsev AI//Address not available
J APPL CHEM-ENGL TR 1988, 61 (5) PT2, 1015
Effect of surfactants on the properties of transparent cellulose acetate butyrate films

Ovchinnikov YK, Vinokurova TD, Trofimov NA, Kryazhev YG//AN Kosygin Text Inst, Moscow, USSR
VYSOKOMOL SOEDIN SER B SSSR 1989, 31 (1) 76
Structure of graft copolymers of cellulose and poly-1,2-dimethyl-5-vinylpyridinium methylsulfate (Russian)

Peshekhonova AL, Suvorova AI, Andreeva VM, Sdobnikova OA//Moscow Meat & Dairy Ind Technol Inst, Dept Biochem & Macromolec Cpds Technol, Moscow, USSR
IZV VYSSH UCH ZAV KHIM KHIM T 1988, 31 (11) 92
Effect of the component compatibility on operating properties of plasticized diacetate of cellulose (Russian)

Pesonen T, Paronen P, Puurunen T//Univ Kuopio, Dept Pharmaceut Technol, POB 6, SF-70211 Kuopio, Finland
PHARMACEUT WEEKBL-SCI ED 1989 11 (1) 13
Evaluation of a novel cellulose powder as a filler-binder for direct compression of tablets

Rogov YN, Smirnov LP, Leksina LN, Ushakova VS//Acad Sci USSR, Inst Chem Phys, Moscow V-71, USSR
VYSOKOMOL SOEDIN SER A SSSR 1989, 31 (2) 352
Change of molecular characteristics in the course of thermal decomposition of cellulose nitrate (Russian, English Abstract)

Stoll M, Fengel D//Univ Munich, Inst Holzforsch, Winzererstr 45, D-8000 Munich 40, Fed Rep Ger
HOLZFORSCHUNG 1989, 43 (1) 7
Electron microscopic visualization of individual cellulose molecules

Winnik FM//Xerox Res Ctr Canada Ltd, 2660 Speakman Dr, Mississauga, Ontario, Canada L5K 2L1
MACROMOLECULES 1989, 22 (2) 734
Association of hydrophobic polymers in water: fluorescence studies with labeled (hydroxypropyl)celluloses

3 Lignin

Brunow G, Sipila J, Makela T//Univ Helsinki, Dept Chem, Vuorikatu 20, SF-00100 Helsinki 10, Finland
HOLZFORSCHUNG 1989, 43 (1) 55
On the mechanism of formation of non-cyclic benzyl ethers during lignin biosynthesis. Part 1. The reactivity of beta-O-4 quinone methides with phenols and alcohols

Demaret V, Glasser WG*//*Virginia Polytech Inst & State Univ, Dept Forest Prod, Blacksburg, Va 24061, USA
POLYMER 1989, 30 (3) 570
Multiphase materials with lignin: 7 block copolymers from hydroxypropyl lignin and cellulose triacetate

Evliya H//Cukurova Univ, Fak Fen Edebiyat, Dept Chem, Adana 01330, Turkey
HOLZFORSCHUNG 1989, 43 (1) 61
C-13 NMR studies of a dehydropolymer (DHP) from isoeugenol; comparison with spruce lignin

Gellerstedt G, Northey RA//Swedish Pulp & Paper Res Inst, STFI, Box 5604, S-11486 Stockholm, Sweden
WOOD SCI TECHNOL 1989, 23 (1) 75
Analysis of birch wood lignin by oxidative degradation

Jung HG//Univ Minnesota, USDA ARS, US Dairy Forage Res Ctr, 1364 Eckles Ave, St Paul, Mn 55108, USA
AGRON J 1989, 81 (1) 33
Forage lignins and their effects on fiber digestibility

Tyagi RD, Tran FT, Polprasert C//Univ Quebec, Inst Natl Resch Sci, EAU, 2700 Rue Einstein, St Foy, Quebec, Canada G1V 4C7
J MICROBIAL BIOTECHNOL 1988, 3 (2) 90
Bioconversion of lignosulphonate into lignin and H_2S by mutualistic bacterial system

Krutko NP, Shulyakovskaya OV, Mozheiko FF, Kochergina GG//Acad Sci BeSSR, Inst Gen & Inorgan Chem, Minsk, Belorussia, USSR
DOKL AKAD NAUK BSSR 1989, 33 (2) 140
The effect of nitrogen-containing compounds on the functional composition and molecular-mass distribution of lignosulphonates (Russian, English Abstract)

4 Polysaccharides

Fujiki T, Kutsukake H, Imai K, Tanaka A//Shimane Med Univ, Dept Biochem, Izumo, Shimane 693, Japan
MICROBIOL IMMUNOL 1988, 32 (12) 1253
Protection of mice against bacterial infection by oral administration of bacterial lipopolysaccharide

Andersson M, Carlin N, Leontein K, Lingquist U, Slettengren K//Natl Bacteriol Lab, Dept Vaccine Dev & Prod, S-10521 Stockholm, Sweden
CARBOHYD RES 1989, 185 (2) 211
Structural studies of the O-antigenic polysaccharide of Escherichia coli 086, which possesses blood-group B activity

Coles FB, Stacy AR, Morse DL//Ctr Dis Control, Atlanta, Ga 30333, USA
JAMA-J AM MED ASSN 1989, 261 (8) 1152
Haemophilus b polysaccharide vaccine (Letter)

Druzhinina TN, Kalinchuk NA, Shibaev VN, Kochetkov NK//ND Zelinskii Organ Chem Inst, Moscow, USSR
BIOORG KHIM 1988, 14 (11) 1586
Chemical-enzymatic synthesis of the Salmonella anatum O-specific polysaccharide and its analogues with a partially purified preparation of polymerase (Russian, English Abstract)

Druzhinina TN, Sizova OV, Shibaev VN, Rozhnova SS//ND Zelinskii Organ Chem Inst, Moscow, USSR
BIOORG KHIM 1988, 14 (10) 1419
The incorporation of abequose residues into Salmonella serogroup-C3 O-specific polysaccharides (Russian, English Abstract)

Gao Q-P, Kiyohara H, Cyong J-C, Yamada H*//*Kitasato Inst, Oriental Med Res Ctr, 5-9-1 Shirokane, Minato ku, Tokyo 108, Japan
PLANTA MED 1989, (1) 9
Chemical properties and anti-complementary activities of polysaccharide fractions from roots and leaves of Panax ginseng

Harrison LH, Broome CV//Emory Univ, Sch Med, Atlanta, Ga 30322, USA
JAMA-J AM MED ASSN 1989, 261 (8) 1153
Haemophilus b polysaccharide vaccine (Letter)

Hatfield RD//Univ Wisconsin, USDA ARS, US Dairy Forage Res Ctr, Madison, Wi 53706, USA
AGRON J 1989, 81 (1) 39
Structural polysaccharides in forages and their degradability

Jones DNM, Sanders KM*//*Univ Cambridge, Chem Lab, Lensfield Rd, Cambridge CB2 1EW, England
J CHEM SOC CHEM COMMUN 1989, (3) 167
Assignment of the ^{13}C NMR spectrum of the Klebsiella K3 serotype polysaccharide by COSY spectroscopy

Junelles AM, El Kanouni A, Petitdemange H, Gay R//Univ Nancy 1, Chim Biol Lab 1, BP 239, F-54506 Vandoeuvre Nancy, France
J IND MICROBIOL 1989, 4 (2) 121
Influence of acetic and butyric acid addition on

polysaccharide formation by Clostridium acetobutylicum

Knirel YA, Mamontova VA, Kocharova NA, Shashkov AS, Soloveva TF, Kochetkov NK//Acad Sci USSR, Inst Organ Chem, Moscow V-71, USSR
BIOORG KHIM 1988, 14 (11) 1582
Structure of the capsular polysaccharide of Klebsiella ozaenae K4 containing a 3-deoxynonulosonic acid (Russian, English Abstract)

Knirel YA, Shashkov AS, Soldatkina MA, Zakharova IY//ND Zelinskii Organ Chem Inst, Moscow, USSR
BIOORG KHIM 1988, 14 (10) 1413
Antigenic polysaccharides of bacteria. 33. Structure of the O-specific polysaccharide chain of lipopolysaccharide from Pseudomonas cepacia serotype-6 (Russian, English Abstract)

Kobayashi K, Sumitomo H, Shiozawa H// Nagoya Univ, Fac Agr, Chikusa ku, Nagoya, Aichi 464, Japan
POLYM J 1989, 21 (2) 137
Regioselectively modified stereoregular polysaccharides XIII. Polymerization of 3-deoxygenated 1,6-anhydroglucopyranose derivative

Parolis H, Parolis LAS, Venter RD//Rhodes Univ, Sch Pharmaceut Sci, Grahamstown 6140, South Africa
CARBOHYD RES 1989, 185 (2) 225
Escherichia coli serotype-39 capsular polysaccharide: primary structure and depolymerisation by a bacteriophage-associated glycanase

Ray B, Ghosal PK, Thakur S, Majumdar SG*//*Univ Burdwan, Dept Chem, Nat Prod Lab, Burdwan 713104, W Bengal, India
CARBOHYD RES 1989, 185 (1) 105
Structural studies of an acidic polysaccharide from the seeds of Acacia auriculaeformis A. Cunn.

Susheelamma NS//Cent Food Technol Res Inst, Dept Food Chem, Biochem Sect, Mysore 570013, Karnataka, India
J FOOD SCI TECHNOL-MYSORE 1989, 26 (1) 16
Functional role of linseed (Linum usitatissimum L) polysaccharide in steamed pudding (idli)

Tsvetkov YE, Bukharov AV, Backinowsky LV, Kochetkov NK//Acad Sci USSR, Inst Organ Chem, Moscow V-71, USSR
BIOORG KHIM 1988, 14 (10) 1428
Synthesis of 6-aminohexyl glycosides of the group-A-variant streptococcal polysaccharide and of its fragments (Russian, English Abstract)

5 Starch

Alemohammad SJ, Pembroke JT*//*Natl Inst Higher Educ, Dept Ind Chem, Biochem Lab, Limerick, Ireland
BIOTECHNOL LETT 1989, 11 (1) 75
Mutants of Cellulomonas flavigena with altered cell associated amylase activity

Cheng CY, Yabe I, Toda K//Univ Tokyo, Inst Appl Microbiol, Yayoi 1-1-1, Bunkyo ku, Tokyo 113, Japan
APPL MICROBIOL BIOTECHNOL 1989, 30 (2) 125
Selective growth of a mutant in continuous culture of Bacillus caldolyticus for production of alpha-amylase

Griffin VK, Brooks JR//Univ Arkansas, Dept Food Sci, Route 11, Fayetteville, Ar 72703, USA
J FOOD SCI 1989, 54 (1) 190
Production and size distribution of rice maltodextrins hydrolyzed from milled rice flour using heat-stable alpha-amylase

Kimura T, Ogata M, Yoshida M, Nakakuki T//Chiyoda Corp, Div Engn & Dev, 3-13 Moriya cho, Kanagawa ku, Yokohama 213, Japan
BIOTECHNOL BIOENG 1989, 33 (7) 845
Stability of immobilized maltotetraose-forming amylase from Pseudomonas stutzeri

Nipkow A, Shen GJ, Zeikus JG*//*Michigan Biotechnol Inst, 3900 Collins Rd, Lansing, Mi 48909, USA
APPL ENVIRON MICROBIOL 1989, 55 (3) 689
Continuous production of thermostable beta-amylase with Clostridium thermosulfurogenes: Effect of culture conditions and metabolite levels on enzyme synthesis and activity

Ramesh MV, Lonsane BK*//*Cent Food Technol Res Inst, Fermentat Technol & Bioengn Discipline, Mysore 570013 Karnataka, India
BIOTECHNOL LETT 1989, 11 (1) 49
Solid state fermentation for production of higher titres of thermostable alpha-amylase with 2 peaks of pH optima by Bacillus licheniformis

M27

Rupp PLC, Schwartz SJ*//*N Carolina State Univ, Dept Food Sci, Box 7624, Raleigh, NC 27695, USA
J FOOD BIOCHEM 1988, 12 (3) 191
Characterization of the action of Bacillus subtilus alpha-amylase on sweet potato starch, amylose and amylopectin

Warchalewski JR, Klockiewiczkaminska E//Acad Agr Poznan, Inst Microbiol Biochem & Food Anal, 48 Mazowiecka St, PL-60623 Poznan, Poland
NAHRUNG 1989, 33 (1) 57
The influence of alpha-amylase supplementation, gamma-irradiation (Co-60) as well as long time of storage of wheat grain on flour technological properties

Yoon MY, Yoo YJ*, Cadman TW//*Seoul Natl Univ, Dept Chem Engn, Seoul 151, South Korea
BIOTECHNOL LETT 1989, 11 (1) 57
Phosphate effects in the fermentation of alpha-amylase by Bacillus amyloliquefaciens

Behall KM Scholfield DJ, Yuhaniak I, Canary J//USDA ARS, Beltsville Human Nutr Res Ctr, Carbohydrate Nutr Lab, Room 304, Beltsville, Md 20705, USA
AMER J CLIN NUTR 1989, 49 (2) 337
Diets containing high amylose vs amylopectin starch: effects on metabolic variables in human subjects

Morrison WR, Coventry AM//Univ Arizona, Dept Nutr & Food Sci, Tucson, Az 85721, USA
STARCH 1989, 41 (1) 21
Solvent extraction of fatty acids from amylose inclusion complexes

Takeda C, Takeda Y, Hizukuri S//Kagoshima Junshin Womens Coll, Kamoike, Kagoshima 890, Japan
CEREAL CHEM 1989, 66 (1) 22
Structure of amylomaize amylose

Sukara E, Doelle HW*//*Univ Queensland, Dept Microbiol, Mircen Biotechnol, St Lucia, Qld 4067, Australia
APPL MICROBIOL BIOTECHNOL 1989, 30 (2) 135
A one-step process for the production of single-cell protein and amyloglucosidase

Mischnick-Lubbecke P, Konig WA//Kyowa Hakko Kogyo Co Ltd, Tokyo Res Labs, 3-6-6 Asahi machi, Machida, Tokyo 194, Japan
CARBOHYD RES 1989, 185 (1) 113
Determination of the substitution pattern on modified polysaccharides: Part 1, benzyl starches

Hayashida S, Nakahara K, Kanlayakrit W, Hara T, Teramoto Y//Kyushu Univ, Dept Agr Chem, Appl Microbiol Lab, Fukuoka 812, Japan
AGR BIOL CHEM TOKYO 1989, 53 (1) 143
Characteristics and function of raw-starch-affinity site on Aspergillus awamori var. kawachi glucoamylase I molecule

Hayashida S, Nakahara K, Kuroda K, Miyata T, Iwanaga S//Kyushu Univ, Dept Agr Chem, Appl Microbiol Lab, Fukuoka 812, Japan
AGR BIOL CHEM TOKYO 1989, 53 (1) 135
Structure of the raw-starch-affinity site on the Aspergillus awamori var. kawachi glucoamylase I molecule

Kvachadze LL, Kutateladze LY, Kvesitadze GI//Acad Sci GeSSR, Inst Plant Biochem, Tbilisi, Georgia, USSR
MICROBIOLOGY-ENGL TR 1988, 57 (3) 335
Selection of microscopic fungi that produce glucoamylase

Nandi R, Mukherjee SK//Jadavpur Univ, Dept Food Technol & Biochem Engn, Calcutta 700032, W Bengal, India
J MICROBIAL BIOTECHNOL 1988, 3 (2) 15
Medium optimisation for the fermentative production of glucoamylase by an isolated strain Penicillium italicum

Okada G, Unno T//Shizuoka Univ, Fac Educ, Dept Biol, Shizuoka 422, Japan
AGR BIOL CHEM TOKYO 1989, 53 (1) 223
A glucodextranase accompanied by glucoamylase activity from Arthrobacter globiformis I42

Yasuda M, Kuwae M, Matsushita H//Univ Ryukyus, Dept Agr Chem, Nishihara, Okinawa 90301, Japan
AGR BIOL CHEM TOKYO 1989, 53 (1) 247
Purification and properties of two forms of glucoamylase from Monascus sp. No. 3403

Hankeln K, Radel C, Beez M, Laniewski P, Bohmert F//Zent Krankenhaus Bremen Nord, Dept

Anesthesia & Intens Care, Hammersbecken Str 228, D-2820 Bremen 70, Fed Rep Ger
CRIT CARE MED 1989, 17 (2) 133
Comparison of hydroxyethyl starch and lactated Ringers solution on hemodynamics and oxygen transport of critically ill patients in prospective crossover studies

Darnoko D, Cheryan M*, Artz WE//*Univ Illinois, 3820 Aes Bldg, 1304 W Pennsylvania Ave, Urbana, Il 61801, USA
ENZYME MICROB TECHNOL 1989, 11 (3) 154
Saccharification of cassava starch in an ultrafiltration reactor

Fernandez ML, Berry JW//Univ Arizona, Dept Nutr & Food Sci, Tucson, Az 85721, USA
STARCH 1989, 41 (1) 17
The effect of germination on chickpea starch (German, English Abstract)

Gudmundsson M, Eliasson AC//Univ Lund, Dept Food Technol, Box 124, S-22100 Lund, Sweden
ACTA AGR SCAND 1989, 39 (1) 101
Some physico-chemical properties of oat starches extracted from varieties with different oil content

Han IY, Steinberg MP//Univ Illinois. Dept Food Sci & Agr Engn, Urbana, Il 61801, USA
BIOTECHNOL BIOENG 1989, 33 (7) 906
Simultaneous hydrolysis and fermentation of raw dent and high lysine corn and their starches

Itkor P, Shida O*, Tsukagoshi N, Udaka S//*Higeta Shoyu Co, Res Lab, Chiba 288, Japan
AGR BIOL CHEM TOKYO 1989, 53 (1) 53
Screening of raw starch digesting bacteria

Matsumata T, Kanematsu T, Takemaka K, Sugimachi K//Kyushu Univ, Fac Med, Dept Surg 2, 3-1-1 Maidashi, Higashi ku, Fukuoka 812, Japan
SURGERY 1989, 104 (2) PT1, 188
Lack of intrahepatic recurrence of hepatocellular carcinoma by temporary portal venouse embolization with starch microspheres

Nachtergaele W//Burchstr 10, B-9300 Aalst, Belgium
STARCH 1989, 41 (1) 27
The benefits of cationic starches for the paper industry

Neszmelyi A, Hollo J//Hungarian Acad Sci, Chem Cent Res Inst, Pusztaszgri Ut 59-67, POB 17, H-1025 Budapest, Hungary
STARCH 1989, 41 (1) 1
Some aspects of the structure of starch - A 3-D molecular modelling approach

Steffe JF, Castell-Perez ME, Rose KJ, Zabik ME//Michigan State Univ, Dept Agr Engn, E Lansing, Mi 48824, USA
CEREAL CHEM 1989, 66 (1) 65
Rapid testing method for characterizing the rheological behavior of gelatinizing corn starch slurries

Takeda Y, Takeda C, Suzuki A, Hizukuri S// Kagoshima Univ, Dept Agr Chem, Kagoshima 890, Japan
J FOOD SCI 1989, 54 (1) 177
Structures and properties of sago starches with low and high viscosities on amylography

Thiem J, Haring T, Strietholt WA//Univ Munster, Inst Organ Chem, D-4400 Munster, Fed Rep Ger
STARCH 1989, 41 (1) 10
Studies on the synthesis of polyethers from anhydropolyols (German, English Abstract)

Thier E//Address not available
ZUCKERINDUSTRIE 1989, 114 (1) 58
Sugar, starch and bioethanol on the conference of the EC council on renewable raw materials

Umesh-Kumar S, Rehana F, Nand K//Cent Food Technol Res Inst, Mysore 570013, Karnataka, India
LETT APPL MICROBIOL 1989, 8 (1) 33
A baiting technique for the isolation of bacteria producing starch-hydrolysing enzymes

van Warners A, Stamhuis EJ, Beenackers AACM//Starch Univ Groningen, Dept Chem Engn, Nijenborgh 16, 9747 AG Groningen, The Netherlands
STARCH 1989, 41 (1) 24
Kinetics of the hydroxyethylation of starch in aqueous slurries

Yamamoto Y, Misawa Y, Higashi K, Yoshii H//Tokyo Univ Agr, Dept Brewing & Fermentat, 1-1-1 Sakuragaoka, Setagaya ku, Tokyo 156,

Japan
J JPN SOC FOOD SCI TECHNOL 1989, 36 (1) 62
Preservation of starchy foods by adipic acid (Japanese, English Abstract)

Yurin OA, Chlenov MA, Andrianova YI, Maloletneva OY, Dombrovsky VA//All Union Blood Substitutes & Hormone Preparat Res Inst, Moscow, USSR
KHIM-FARM ZH SSSR 1989, 23 (1) 97
Analysis of oxyethylated starch by using high performance liquid chromatography (Russian)

6 Others

Daugherty BK, Bird KT*//*Harbor Branch Oceanog Inst, 5600 Old Dixie Hwy, Ft Piercve, Fl 34946, USA
AQUACULTURE 1988, 75 (1-2) 105
Salinity and temperature effects on agar production from Gracilaria verrucosa strain G-16

Deacon JW, MacDonald RKW, Fox FM, Lascaris D//Sch Agr, Dept Microbiol, W Mains Rd, Edinburgh EH9 3JG, England
PLANT PATHOL 1988, 37 (4) 522
Application of alginate gel for protection of wounds against crown gall (Agrobacterium tumefaciens)

Skjak-Braek G, Paoletti S, Gianferrara T//Norwegian Inst Technol, Div Biotechnol, Marine Biochem Lab, N-7034 Trondheim, Norway
CARBOHYD RES 1989, 185 (1) 119
Selective acetylation of mannuronic acid residues in calcium alginate gels

Skjak-Braek G, Zanetti F, Paoletti S//Norwegian Inst Technol, Div Biotechnol, Marine Biochem Lab, N-7034 Trondheim, Norway
CARBOHYD RES 1989, 185 (1) 131
Effect of acetylation on some solution and gelling properties of alginates

Watase M, Nishinari K//Shizuoka Univ, Fac Liberal Arts, Chem Res Lab, Ohya, Shizuoka 422, Japan
J TEXTURE STUD 1988, 19 (3) 259
The effect of monovalent cations and anions on the rheological properties of kappa-carrageenan gels

Takiguchi Y, Shimahara K//Seikei Univ, Fac Engn, Dept Ind Chem, Musashino, Tokyo 180, Japan
NIPPON NOGEIKAGAKU KAISHI 1989, 63 (2) 167
Culture conditions of Vibrio anguillarum E-383a for N,N'-diacetylchitobiose production from chitin (Japanese, English Abstract)

Maroudas A, Weinberg PD, Parker KH, Winlove CP//Technion Israel Inst Technol, Dept Biomed Engn, Haifa, Israel
BIOPHYS CHEM 1989, 32 (2-3) 257
The distributions and diffusivities of small ions in chondroitin sulphate, hyaluronate and some proteoglycan solutions

Parker KH, Winlove CP, Maroudas A//Univ London Imperial Coll Sci & Technol, Physiol Flow Studies Unit, London SW7 2AZ, England
BIOPHYS CHEM 1989, 32 (2-3) 271
The theoretical distributions and diffusivities of small ions in chondroitin sulphate and hyaluronate

Shinomiya K, Hoshi Y, Imanari T*//*Chiba Univ, Fac Pharmaceut Sci, 1-33 Yayoi cho, Chiba 260, Japan
J CHROMATOGR 1989, 462 (JAN) 471
Sensitive detection of unsaturated disaccharides from chondroitin sulphates by thin-layer chromatography as their dansylhydrazine derivatives

Aboutaleb AE, Abdel Rahman AA*, Samy EM//*Nagoya Univ, Fac Agr, Dept Food Sci & Technol, Chikusa ku, Nagoya, Aichi 464, Japan
J PHARM BELG 1988, 43 (6) 437
Studies of cyclodextrin inclusion complexes: II. Inclusion complexes between alpha-cyclodextrin and N-desmethyldiazepam and chlordiazepoxide

Frijlink HW, Schoonen AJM, Lerk CF//Univ Groningen, Dept Pharmaceut Technol & Dispensing, Ant Deusinglaan 2, 9713 AW Groningen, The Netherlands
INT J PHARM 1989, 49 (2) 91
The effects of cyclodextrins on drug absorption. 1. In vitro observations

Hoshino T, Hirayama F, Uekama K*, Yamasaki M//*Kumamoto Univ, Fac Pharmaceut Sci, 5-1 Oehonmachi, Kumamoto 862, Japan
INT J PHARM 1989, 50 (1) 45
Reduction of protriptyline-photosensitized hemolysis by beta-cyclodextrin complexations

Kuroda Y, Hiroshige T, Sera T, Shiroiwa Y, Tanaka H, Ogoshi H//Kyoto Univ, Dept Synthet Chem, Sakyo ku, Kyoto 606, Japan
J AMER CHEM SOC 1989, 111 (5) 1912
Cyclodextrin-sandwiched porphyrin

Nozawa Y, Yamamoto A//Shizuoka Coll Pharm, 2-2-1 Oshika, Shizuoka 422, Japan
PHARM ACTA HELV 1988, 64 (1) 24
Effects of roll mixing with beta-cyclodextrin on enhancing solubilities of water insoluble drugs

Szafranek A//Univ Gdansk, Inst Phys, UL Wita Stwosza 57, PL-80952 Gdansk, Poland
J THERM ANAL 1988, 34 (4) 917
Kinetic parameters of thermal decomposition of complex of beta-cyclodextrin with water

Willner I, Lapidot N, Riklin A//Hebrew Univ Jerusalem, Dept Organ Chem, IL-91904 Jerusalem, Israel
J AMER CHEM SOC 1989, 111 (5) 1884
Tailored semiconductor-receptor colloids: Improved photosensitized H2 evolution from water with TiO_2-beta-cyclodextrin colloids

Willner I, Mandler D//Hebrew Univ Jerusalem, Dept Organ Chem, IL-91904 Jerusalem, Israel
J AMER CHEM SOC 1989, 111 (4) 1330
Characterization of Pd-beta-cyclodextrin colloids as catalysts in the photosensitized reduction of bicarbonate to formate

Yamamoto M, Yoshida A, Hirayama F, Uekama K*//*Kumamoto Univ, Fac Pharmaceut Sci, 5-1 Oehonmachi, Kumamoto 862, Japan
INT J PHARM 1989, 49 (2) 163
Some physicochemical properties of branched beta-cyclodextrins and their inclusion characteristics

Yonemura H, Nakamura H, Matsuo T*//*Kyushu Univ, Fac Engn, Dept Organ Synth, Fukuoka 812, Japan
CHEM PHYS LETT 1989, 155 (2) 157
External magnetic field effects on photoinduced electron transfer reactions in phenothiazine-viologen-linked systems complexed with cyclodextrins

Hizuki S, Abe J-I, Koizumi K, Okada Y, Kubota Y, Sakai S, Mandai T//Kagoshima Univ, Fac Agr, 21-24 Korimoto-1, Kagoshima 890, Japan
CARBOHYD RES 1989, 185 (2) 191
Hydrolysis and synthesis of branched cyclomaltohexaoses with Pseudomonas isoamylase

Aubert I, Bombail D, Erlich D, Goyloeper J, Chanu B, Bussel A, Rouffy J*//*Hop St Louis, Serv Med Interne & Patholo Vasc, 1 Ave Claude Vellefaux, F-75475 Paris 10, France
ANN MED INTERN 1988, 139 SUPPL 1, 72
Low density lipoprotein epuration using dextran sulfate in two patients with familial hyperlipoproteinemia

de Balmann H, Nobrega R//Lab Chim Phys & Electrochim, CNRS, VA 192, LGC, 118 Route Narbonne, F-31062 Toulouse, France
J MEMBRANE SCI 1989, 40 (3) 311
The deformation of dextran molecules. Causes and consequences in ultrafiltration

Holcroft JW, Vassar MJ, Perry CA, Gannaway WL, Kramer GC//Univ Calif Davis, Med Ctr, Dept Surg, 4301 X St, Room 2310, Davis, Ca 95616, USA
BRAZ J MED BIOL RES 1989, 22 (2) 291
Perspectives on clinical trials for hypertonic saline/dextran solutions for the treatment of traumatic shock

Kramer GC, Walsh JC, Hands RD, Perron PR, Gunther RA, Mertens S, Holcroft JW, Blaisdell FW//Univ Calif Davis, Sch Med, Dept Human Physiol, Davis. Ca 95616, USA
BRAZ J MED BIOL RES 1989, 22 (2) 283
Resuscitation of hemorrhage with intraosseous infusion of hypertonic saline/dextran

Kramer GC, Walsh JC, Perron PR, Gunther RA, Holcroft JW//Univ Calif Davis, Sch Med, Dept Human Physiol, Davis. Ca 95616, USA
BRAZ J MED BIOL RES 1989, 22 (2) 279
Comparison of hypertonic saline/dextran versus hypertonic saline/hetastarch for resuscitation of hypovolemia

Richter M, Walsmann P, Markwardt F//Med Acad Erfurt, Inst Pharmacol & Toxicol, Nordhauser Str 74, DDR-5010 Erfurt, Ger Dem Rep
PHARMAZIE 1989, 44 (1) 73
Plasma level of dextran-r-hirudin

Siritongtaworn P, Moore EE*, Marx JA, van Lighten P, Ammons LA, Bar-Or D//*Denver Gen Hosp, Dept Surg, Denver, Co 80204, USA

BRAZ J MED BIOL RES 1989, 22 (2) 275
The benefits of 75% NaCl/6% dextran 70 (HSD) for prehospital resuscitation of hemorrhagic shock: improved oxygen transport

Takakura Y, Kaneko 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 (2) 117
Control of pharmaceutical properties of soybean trypsin inhibitor by conjugation with dextran. I: Synthesis and characterization

Walsmann P, Maksimenko AV, Abramova V//Med Acad Erfurt, Inst Pharmacol & Toxicol, Nordhauser Str 74, DDR-5010 Erfurt, Ger Dem Rep
PHARMAZIE 1989, 44 (1) 72
Hirudin binding to soluble dextran

Kumlien J, Gromberg G, Nilsson B, Mansson O, Zopf D, Lundblad A*//*Univ Lund Hosp, Dept Clin Chem, S-22185 Lund, Sweden
ARCH BIOCHEM BIOPHYS 1989, 269 (2) 678
Structural and immunochemical analysis of three alpha-limit dextrin oligosaccharides

Hamada S, Horikoshi T, Minami T, Okahashi N, Koga T//Osaka Univ, Fac Dent, Dept Oral Microbiol, Suita, Osaka 565, Japan
J GEN MICROBIOL 1989, 135 (FEB) PT2, 335
Purification and characterization of cell-associated glucosyltransferase synthesizing water-insoluble glucan from serotype c Streptococcus mutans

Molina M, Cenamor R, Sanchez M, Nombela C*//*Univ Complutense Madrid, Fac Farm, Dept Microbiol, E-28040 Madrid, Spain
J GEN MICROBIOL 1989, 135 (FEB) PT2, 305
Purification and some properties of Candida albicans exo-1,3-beta-glucanase

Sekharam KM, Ventkataraman LV*, Salimath PV//*Cent Food Technol Res Inst, Mysore 570013, Karnataka, India
FOOD CHEM 1989, 31 (2) 85
Structural studies of a glucan isolated from blue-green alga Spirulina platensis

Shimamura A//Natl Def Med Coll, Dept Chem, Tokorozawa, Saitama 359, Japan
CARBOHYD RES 1989, 185 (2) 239
Use of ^{13}C-n.m.r. spectroscopy for the quantitative estimation of 3-O- and 3,6-di-O-substituted D-glycopyranosyl residues in alpha-D-glucans formed by the D-glucosyltransferases of Streptococcus sobrinus

Tsumori H, Kumada H, Umemoto T, Shimamura A, Mukasa H*//*Natl Def Med Coll, Dept Chem, 2 Namiki 3-chome, Tokorozawa, Saitama 359, Japan
J GEN MICROBIOL 1989, 135 (FEB) PT2, 325
Purification and characterization of extracellular glucosyltransferase synthesizing water-insoluble glucan from Streptococcus rattus

Yague E, Estevez MP//Inst Pasteur, Dept Biotechnol, Unite Physiol Cellulaire, F-75724 Paris 15, France
BIOCHEM INT 1989, 18 (1) 141
Purification and characterization of beta-1, 4-glucanase from Evernia prunastri

Vanrynmckenna J, Ofosu FA, Hirsh J, Buchanan MR*//*McMaster Univ, Med Ctr, Dept Pathol, Room 3N10, 1200 Main St W, Hamilton, Ontario, Canada L8N 3Z5
BRIT J HAEMATOL 1989, 71 (2) 265
Antithrombotic and bleeding effects of glycosaminoglucans with different degrees of sulphation

Uusitupa M, Siitonen O, Savolainen K, Silvasti M, Penttila I, Parviainen M//Univ Kuopio, Dept Nutr, POB 6, SF-70211 Kuopio, Finland
AMER J CLIN NUTR 1989, 49 (2) 345
Metabolic and nutritional effects of long-term use of guar gum in the treatment of noninsulin-dependent diabetes of poor metabolic control

Biller J et al//Univ Iowa, Dept Neurol, Div Cerebrovasc Dis, Iowa City, Ia 52242, USA
NEUROLOGY 1989, 39 (2) PT1, 262
A dose escalation study of ORG-10172 (low molecular weight heparinoid) in stroke

Cardin AD, Jackson RL*, Elledge B, Feldhake D//*Merrell Dow Pharmaceut Inc, Res Inst, 2110 E Galbraith Rd, Cincinnati, Oh 45215, USA
INT J BIOL MACROMOL 11 (1) 59
Dependence on heparin chain-length of the interaction of heparin with human plasma low density lipoproteins

Dechavanne M, Ville D, Berruyer M, Trepo F,

Dalery F, Clarmont N, Lerat JL, Moyen B, Fischer LP, Kher A, Barbier P//Hop E Herriot, Hemostase Lab, F-69374 Lyon, France
HAEMOSTASIS 1989, 19 (1) 5
Randomized trial of a low-molecular-weight heparin (Kabi 2165) versus adjusted-dose subcutaneous standard heparin in the prophylaxis of deep-vein thrombosis after elective hip surgery

Fareed J, Walenga JM, Coyne E, Hoppensteadt D, Racanelli A, Messmore HL, Huan XQ//Address not available
HAEMOSTASIS 1989, 19 (1) 53
Validation of the low-molecular-weight heparin standard (Reply to Dr Johnson's Letter to the Editor)

Gettins P, Choay J//Vanderbilt Univ, Med Ctr, Sch Med, Dept Biochem, Nashville, Tn 37232, USA
CARBOHYD RES 1989, 185 (1) 69
Examination, by ^{1}H-n.m.r. spectroscopy, of the binding of a synthetic, high-affinity heparin pentasaccharide to human antithrombin III

Harenberg J, Giese C, Knodler A, Zimmermann R//Univ Heidelberg, Klinikum Mannheim, Dept Med 1, Theodor Kutzer Ufer, D-6800 Mannheim 1, Fed Rep Ger
HAEMOSTASIS 1989, 19 (1) 13
Comparative study on a new one-stage clotting assay for heparin and its low molecular weight derivatives

Hemker HC//Address not available
HAEMOSTASIS 1989, 19 (1) 1
A standard for low molecular weight heparin? (Editorial)

Neville GA, Mori F, Holme KR, Perlin AS//Hlth & Welf Canada, Bur Drug Res, Hlth Protect Brach, Tunneys Pasture, Ottawa, Ontario, Canada K1A 0L2
J PHARM SCI 1989, 78 (2) 101
Monitoring the purity of pharmaceutical heparin preparations by high-field ^{1}H-nuclear magnetic resonance spectroscopy

Vitovskaya GA, Samarkina GM, Ananjeva EP, Shashkov AS. Goncharov AU//Leningrad Pharmaceut Chem Res Inst, Leningrad, USSR
BIOORG KHIM 1988, 14 (10) 1405
Structure of extracellular heteroglycans of some Cryptococcus species (Russian, English Abstract)

Stenfors L-E//Univ Tromso, N-9012 Tromso, Norway
J LARYNGOL OTOL 1989, 103 (1) 39
Repair of tympanic membrane perforations using hyaluronic acid: an alternative to myringoplasty

Thalberg K, Lindman B//Univ Lund, Ctr Chem, POB 124, S-22100 Lund, Sweden
J PHYS CHEM 1989, 93 (4) 1478
Interaction between hyaluronan and cationic surfactants

Labischinski H, Naumann D, Schultz C, Kusumoto S, Shiba T, Rietschel ET, Giesbrecht P//Bundesgesundheitsamtes, Robert Koch Inst, Nordufer 20, D-1000 Berlin 65, Fed Rep Ger
EUR J BIOCHEM 1989, 179 (3) 659
Comparative X-ray and Fourier-transform-infrared investigations of conformational properties of bacterial and synthetic lipid A of Escherchia coli and Salmonella minnesota as well as partial structures and analogues thereof

Tran V, Buleon A, Imberty A, Perez S//INRA, Physicochim Macromolec, BP 527, F-44026 Nantes, France
BIOPOLYMERS 1989, 28 (2) 679
Relaxed potential energy surfaces of maltose

Strecker G, Wieruszeski J-M, Martel C, Montreuil J//Univ Sci & Tech Lille Flandres Artois, Chim Biol Lab, F-59655 Villeneuve Dasco, France
CARBOHYD RES 1989, 185 (1) 1
Complete ^{1}H- and ^{13}C-n.m.r. assignments for two sulphated oligosaccharide alditols of hen ovomucin

Miranda C, Dsouza SF*//*Bhabha Atom Res Ctr, Div Food Technol & Enzyme Engn, Bombay 400085, India
J MICROBIAL BIOTECHNOL 1988, 3 (2) 60
Clarification of pectin using pectinolytic fungi immobilized in open pore gelatin block

Dongowski G, Bock W//Akad Wissensch DDR, Zent Inst Ernahrung, Arthur Scheunert Allee 114-116, DDR-1505 Bergholz, Ger Dem Rep
NAHRUNG 1989, 33 (1) 37
Mechanolysis of amide, ethyl and acetyl pectins

Mkrtchyan CA, Snapyan GG, Arutyunyan AT//Armenian Viticulture Winemaking & Fruitgrowing Res Inst, Mertsavan 378312, Armenia, USSR

FIZIOL BIOKIM KULT RAST 1989, 21 (1) 80

Effect of the preharvest calcium chloride treatment on apple fruit pectolytic enzymes and pectic substances (Russian, English Abstract)

Ryden P, Colquhoun IJ, Selvendran RR*// *AFRC, Inst Food Res, Norwich Lab, Colney Lane, Norwich NR4 7UA, Norfolk, England

CARBOHYD RES 1989, 185 (2) 233

Investigation of structural features of the pectic polysaccharides of onion by ^{13}C-n.m.r. spectroscopy

Saini HS, Henry RJ//New S Wales Dept Agr, N Coast Agr Inst, Wollongbar, NSW 2480, Australia

CEREAL CHEM 1989, 66 (1) 11

Fractionation and evaluation of triticale pentosans: comparison with wheat and rye

Aono R//Tokyo Inst Technol, Dept Bioengn, Ohokayama 2-12-1, Meguro ku, Tokyo 152, Japan

J GEN MICROBIOL 1989, 135 (FEB) PT2, 265

Characterization of cell wall components of the alkalophilic Bacillus strain C-125: identification of a polymer composed of polyglutamate and polyglucuronate

Kato H, Nagai Y, Yamamoto K, Sakabe Y//Nagoya City Hlth Res Inst, 1-11 Hagiyama cho, Mizuho ku, Nagoya 467, Japan

J ASSN OFFIC ANAL CHEM 1989, 72 (1) 27

Determination of polysorbates in foods by colorimetry with confirmation by infrared spectrophotometry, thin-layer chromatography, and gas chromatography

Sakai T, Sawada M, Katsuragi T, Tonomura K//Univ Osaka Prefecture, Coll Agr, Dept Agr Chem, Sakai, Osaka 591, Japan

AGR BIOL CHEM TOKYO 1989, 53 (1) 9

Possible role of cell wall mannan in the secretion of the protopectin-solubilizing enzyme of Trichosporon penicillatum SNO-3

Sakairi N, Hayashida M, Kuzuhara H*//*Inst Phys & Chem Res, Wako, Saitama 35101, Japan

CARBOHYD RES 1989, 185 (1) 91

1,6-anhydro-beta-maltotriose: preparation from pullulan, and regioselective partial-protection reactions

Ishii T, Thomas J, Darvill A, Albersheim P*//*Univ Georgia, USDA, Russell Res Ctr, Complex Carbohydrate Res Ctr, POB 5677, Athens, Ga 30623, USA

PLANT PHYSIOL 1989, 89 (2) 421

Structure of plant cell walls. 26. The walls of suspension-cultured sycamore cells contain a family of rhamnogalacturonan-I-like pectic polysaccharides

Thomas JR, Darvill AG. Albersheim P*//*Univ Georgia, USDA, Russell Res Ctr, Sch Chem Sci, Complex Carbohydrate Res Ctr, POB 5677, Athens, Ga 30613, USA

CARBOHYD RES 1989, 185 (2) 261

Isolation and structural characterization of the pectic polysaccharide rhamnogalacturonan II from walls of suspension-cultured rice cells

Thomas JR, Darvill AG. Albersheim P*//*Univ Georgia, USDA, Russell Res Ctr, Sch Chem Sci, Complex Carbohydrate Res Ctr, POB 5677, Athens, Ga 30613, USA

CARBOHYD RES 1989, 185 (2) 279

Rhamnogalacturonan I, a pectic polysaccharide that is a component of monocot cell-walls

Kitamura S, Kuge T//Kyoto Prefectural Univ, Dept Agr Chem, Kyoto 606, Japan

BIOPOLYMERS 1989, 28 (2) 639

A differential scanning calorimetric study of the conformational transitions of schizophyllan in mixtures of water and dimethylsulfoxide

Dentini M, Crescenzi V*, Fidanza M, Coviello T//*Univ Rome La Sapienza, Dept Chem, P Le A Moro, I-00185 Rome, Italy

MACROMOLECULES 1989, 22 (2) 954

On the aggregation and conformational states in aqueous solution of a succinoglycan polysaccharide

Cadmus MC, Slodki ME, Nicholson JJ//USDA ARS No Reg Res Vtr, 1815 N Univ St, Peoria, Il 61604, USA

J IND MICROBIOL 1989, 4 (2) 127

High-temperature, salt-tolerant xanthanase

Stokke BT, Smidsrod O, Elgsaeter A//Univ Trondheim, Dept Biophys, Norwegian Biopolymer Lab, N-7034 Trondheim, Norway

BIOPOLYMERS 1989, 28 (2) 617

Electron microscopy of native xanthan and xanthan exposed to low ionic strength

Green F, Clausen CA, Micales JA, Highley TL, Wolter KE//US Forest Serv, Forest Prod Lab, Madison, Wi 53705, USA

HOLZFORSCHUNG 1989, 43 (1) 25

Carbohydrate-degrading complex of the brown-rot fungus Postia placenta: purification of beta-1,4-xylanase

Karacsonyi S, Kovacik V//Slovak Acad Sci, Inst Chem, CS-84238 Bratislava, Czechoslovakia

CARBOHYD RES 1989, 185 (2) 199

Studies of the polysaccharides of Populus alba L.: isolation and characterisation of xyloglucans