

Bibliography of carbohydrate polymers

(Five weeks journals. Search completed at 11th Oct 1995)

1 BOOKS, REVIEWS & SYMPOSIA

- Ahmad J// Aligarh Muslim Univ, Coll Engr & Technol, Dept Appl Chem, Senior Analyt Lab, Aligarh 202002, Uttar Pradesh, India
Separ Sci Technol 1995 30 (12) 2429
The use of impregnated silica gel layers and modified celluloses in thin-layer chromatographic analysis of inorganic mixtures (Review)
- Chiba S// Hokkaido Univ, Fac Agr, Sapporo, Hokkaido 060, Japan
Nippon Nogeikagaku Kaishi 1995 69 (8) 1050
 α -Glucosidase and glucoamylase (Mini-Review) (Japanese, English Abstract)
- Kobayashi S// Natl Food Res Inst, Minist Agr Forestry & Fisheries, Yatabe, Ibaraki, Japan
Nippon Nogeikagaku Kaishi 1995 69 (8) 1055
Properties of branched cyclodextrins and analyses of glucan related enzyme actions (Mini-Review) (Japanese, English Abstract)
- Kuriki T, Takata H, Imanaka T, Okada S// Ezaki Glico Co Ltd, Biochem Res Labs, Osaka, Japan
Nippon Nogeikagaku Kaishi 1995 69 (8) 1029
 α -Amylase family enzymes (Mini-Review) (Japanese, English Abstract)
- Matsui I// Address not available.
Nippon Nogeikagaku Kaishi 1995 69 (8) 1037
Active center of α -amylase (Mini-Review) (Japanese, English Abstract)
- Matsuura Y// Osaka Univ, Inst Prot Res, Osaka, Japan
Nippon Nogeikagaku Kaishi 1995 69 (8) 1033
Structure and function of α -amylase family enzymes (Mini-Review) (Japanese, English Abstract)
- Mikami B// Kyoto Univ, Food Sci Res Inst, Kyoto, Japan
Nippon Nogeikagaku Kaishi 1995 69 (8) 1046
Active site of α -amylase (Mini-Review) (Japanese, English Abstract)
- Sutherland IW// Univ Edinburgh, Div Biol, Inst Molec & Cell Biol, Edinburgh EH9 3JH, Scotland
FEMS Microbiol Res 1995 16 (4) 323
Polysaccharide lyases

2 CELLULOSE

- Arisz PW, Kauw HJJ, Boon JJJ// FOM, Inst Atom & Molec Phys, Kruislaan 407, 1098 SJ Amsterdam, The Netherlands
Carbohydr Res 1995 271 (1) 1
Substituent distribution along the cellulose backbone in *O*-methylcelluloses using GC and FAB-MS for monomer and oligomer analysis
- Elcin YM, Cokmus C, Sacilik SC// Ankara Univ, Fac Sci, Dept Chem, Ankara 06100, Turkey
J Econ Entomol 1995 88 (4) 830
Aluminium carboxymethylcellulose encapsulation of *Bacillus sphaericus* 2362 for control of *Culex* spp (Diptera; Culicidae) larvae
- Gainsford GJ, Furneaux RH, Mason JM, Miller IJ// Inst Ind Res & Dev, POB 31-310, Lower Hutt, New Zealand
Acta Crystallogr C-Cryst Str 1995 51 (7) 1369
Adducts from the pyrolysis of cellulose: (1 α ,2 β ,6 β ,7 α)-3,8-dioxatricyclo [5.3.1.1^{2,6}] dodeca-4,9-diene-11,12-dione and (1R)-(1 α ,2 β ,3 α ,6 α ,8 β ,9 α)-5,13,14-trioxatetracyclo[7.3.1.1^{3,6}.0^{2,7}]tetradec-10-ene-7,12-dione
- Galletti GC, Bocchini P// CNR, Ctr Studio Conservaz Foraggi, Via Filippo Re 8, I-40126 Bologna, Italy
Rapid Commun Mass Spectrom 1995 9 (9) 815
Pyrolysis/gas chromatography/mass spectrometry of lignocellulose
- Guo YQ, Ding EY, Gu LZ, Liang XH// *Chinese Acad Sci, Guangzhou Inst Chem, Cellulose & Lignocellulose Lab, POB 1122, Canton, Peoples Rep China
J Macromol Sci-Phys 1995 34 (3) 239
Phase change behavior of polyethylene glycol in blends with cellulose
- Hikichi K, Kakuta Y, Katoh T// Hokkaido Univ, Grad Sch Sci, Div Biol Sci, Struct Biomacromolec Sci Sect, Sapporo, Hokkaido 060, Japan

Polym J 1995 27 (7) 659

¹H NMR study on substituent distribution of cellulose diacetate

- Izzo M, Stahl C, Tuazon R// FMC Corp, Div Food Ingredients, Low Moisture Food Syst, 1735 Market St, Philadelphia, Pa 19103, USA
Food Technol 1995 49 (7) 45
Using cellulose gel and carrageenan to lower fat and calories in confections
- Katikaneni PR, Upadrashta SM*, Neau SH, Mitra AK// *Bristol Myers Squibb Co, Mail Code L-28, Evansville, In 47721, USA
Int J Pharm 1995 123 (1) 119
Ethylcellulose matrix controlled release tablets of a water-soluble drug
- Keely CM, Zhang XQ, McBrierty VJ// *Trinity Coll Dublin, Dept Phys, Dublin 2, Rep Ireland
J Mol Struct 1995 355 (1) 33
Hydration and plasticization effects in cellulose acetate: A solid-state NMR study
- Kokubo H, Nakamura S, Sunada H// Shin Etsu Chem Co Ltd, Specialty Chem Res Ctr, 28-1 Nishifukushima, Kubiki, Niigata 942, Japan
Chem Pharm Bull Tokyo 1995 43 (8) 1402
Effect of several cellulosic binders on particle size distribution in fluidized bed granulation
- Larez-V C, Crescenzi V*, Ciferri A// *Univ Roma La Sapienza, Dipt Chim, P A Moro 5, I-00185 Rome, Italy
Macromolecules 1995 28 (15) 5280
Phase separation of rigid polymers in poor solvents. I. (Hydroxypropyl)cellulose in water
- Liebert TF, Walt DR// *Tufts Univ, Dept Chem, Max Tishler Lab Organ Chem, Medford, Ma 02155, USA
J Control Release 1995 35 (2-3) 155
Synthesis of pH-sensitive modified cellulose ether halfesters and their use in pH detecting systems based on fiber optics
- McGuire RG, Hallman GJ// USDA ARS, Subtrop Hort Res Stn, 13601 Old Cutler Rd, Miami, FL 33158, USA
Hortscience 1995 30 (2) 294
Coating guavas with cellulose- or carnauba-based emulsions interferes with postharvest ripening
- Medvedeva VV, Myasnikova LI, Semchikov YD, Rogovina LZ// NI Lobachevskii State Univ, Chem Res Inst, pr Gagarina 25, Nizhni Novgorod 603600, Russia
Vysokomol Soedin 1995 37 (6) 1040
Factors affecting the diagram of state for the system hydroxyethyl cellulose-Cr³⁺ ions (Russian, English Abstract)
- Parajo JC, Santos V, Del Rio F// Univ Vigo, Dept Ingn Quim, Campus Orense, E-32004 Orense, Spain
Afinidad 1995 52 (457) 162
Hydrolysis of the hemicellulosic fraction of *Pinus pinaster* wood. I. Kinetics and products distribution at atmospheric pressure (Spanish, English Abstract)
- Patel K, Manley RS// *McGill Univ, Pulp & Paper Res Ctr, 3420 Univ St, Montreal, Quebec, Canada H3A 2A7
Macromolecules 1995 28 (17) 5793
Carbon dioxide sorption and transport in miscible cellulose/poly(vinyl alcohol) blends
- Skordoulis CD, Makropoulou MI, Serafetinides AA// Univ Ioannina, Dept Phys, Atom & Molec Phys Lab, POB 1186, GR-45110 Ioannina, Greece
Opt Laser Technol 1995 27 (3) 185
Ablative etching of nitrocellulose with infra-red and ultra-violet laser radiation
- Stoner JO// Arizona Carbon Foil Co Inc, ACF MET, 2239 East Kleindale Rd, Tucson, Az 85719, USA
Nucl Instrum Meth Phys Res A 1995 362 (1) 167
Casting thin films of cellulose nitrate, polycarbonate, and polypropylene
- Timofeeva GN, Fedusenko IV, Lashek NA, Shipovskaya AB// Saratov NG Chernyshevskii State Univ, Chem Res Inst, Astrakhanskaya ul 83, Saratov 410026, Russia
Vysokomol Soedin 1995 37 (6) 1093

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

Induced optical anisotropy in cellulose acetate films exposed to solvent vapors (Russian, English Abstract)

Turaev AS, Yanishevskaya EN// AS Sadykov Bioorgan Chem Inst, Tashkent, Uzbekistan

Khim Priir Soedin 1994 (4) 541

Hydrolytic fission of carboxymethylcellulose (Russian)

Turaev AS, Yanishevskaya EN// Address as above.

Khim Priir Soedin 1994 (4) 544

Nitration of carboxymethylcellulose (Russian)

Vazquez MJ, Gomez-Amoza JL, Martinez-Pacheco R, Souto C, Concheiro A// Univ Santiago de Compostela, Fac Farm, Dept Farmacol Farm & Technol Farmaceut, E-15706 Santiago de Compostela, Spain

Drug Develop Ind Pharm 1995 21 (16) 1859

Relationships between drug dissolution profile and gelling agent viscosity in tablets prepared with hydroxypropylmethylcellulose (HPMC) and sodium carboxymethylcellulose (NaCMC) mixtures

Vincken JP, De Keizer A, Beldman G, Voragen AGJ// *Agr Univ Wageningen, Dept Food Sci, POB 8129, 6700 EV Wageningen, The Netherlands

Plant Physiol 1995 108 (4) 1579

Fractionation of xyloglucan fragments and their interaction with cellulose

Wara NM, Francis LF*, Velamakanni BV// *Univ Minnesota, Dept Chem Engn & Mat Sci, Minneapolis, Mn 55455, USA

J Membrane Sci 1995 104 (1-2) 43

Addition of alumina to cellulose acetate membranes

Wurster SH, Bonet V, Mayberry A, Hoddinott M, Williams T, Chaudry IH// Michigan State Univ, Dept Surg, Shock & Trauma Res Labs, East Lansing, Mi 48824, USA

J Surg Res 1995 59 (1) 97

Intraperitoneal sodium carboxymethylcellulose administration prevents reformation of peritoneal adhesions following surgical lysis

Zheng YZ, Lin HM, Wen JQ, Cao NJ, Yu XZ, Tsao GT// Purdue Univ, Renewable Resources Engr Lab, 1295 Potter Engr Ctr, West Lafayette, In 47906, USA

Biotechnol Lett 1995 17 (8) 845

Supercritical carbon dioxide explosion as a pretreatment for cellulose hydrolysis

3 CELLULOSE-DEGRADING ENZYMES

Ali BRS, Romaniec MPM, Hazlewood GP, Freedman RB// Babraham Inst, Dept Cellular Physiol, Cambridge CB2 4AT, England

Enzyme Microb Technol 1995 17 (8) 705

Characterization of the subunits in an apparently homogeneous subpopulation of *Clostridium thermocellum* cellulosomes

Lymar ES, Li B, Renganathan V// *Oregon Grad Inst Sci & Technol, Dept Chem Biochem & Molec Biol, POB 91000, Portland, Or 97291, USA

Appl Environ Microbiol 1995 61 (8) 2976

Purification and characterization of a cellulose-binding β -glucosidase from cellulose-degrading cultures of *Phanerochaete chrysosporium*

Sineiro J, Dominguez H, Nunez MJ*, Lema JM// *Univ Santiago de Compostela, Dept Chem Engr, E-15706 Santiago de Compostela, Spain

Enzyme Microb Technol 1995 17 (9) 809

Hydrolysis of microcrystalline cellulose by cellulolytic complex of *Trichoderma reesei* in low-moisture media

Tomme P, Driver DP, Amandon EA, Miller RC, Antony R, Warren J, Kilburn DG// Univ British Columbia, Dept Microbiol & Immunol, 300-6174 Univ Blvd, Vancouver, Brit Columbia, Canada V6T 1Z3

J Bacteriol 1995 177 (15) 4356

Comparison of a fungal (family I) and bacterial (family II) cellulose-binding domain

Wood TM, Wilson CA// Rowett Res Inst, Bucksburn AB2 9SB, Aberdeen, Scotland

Appl Microbiol Biotechnol 1995 43 (3) 572

Studies on the capacity of the cellulase of the anaerobic rumen fungus *Piromonas communis* P to degrade hydrogen bond-ordered cellulose

4 CHITIN/CHITOSAN

Harsa S, Furusaki S// Izmir Inst Technol, Anafartalar Cad 904, Izmir 35220, Turkey

Separ Sci Technol 1995 30 (13) 2695

Bioaffinity adsorption behavior of several enzymes onto β -cyclodextrin-chitosan

Hsien TY, Romer GL// *Oregon State Univ, Dept Chem Engr, Corvallis, Or 97331, USA

Separ Sci Technol 1995 30 (12) 2455

Effects of acylation and crosslinking on the material properties and cadmium ion adsorption capacity of porous chitosan beads

Inoue K, Yamaguchi T, Iwasaki M, Ohto K, Yoshizuka K// Saga Univ, Dept Appl Chem, Saga 840, Japan

Separ Sci Technol 1995 30 (12) 2477

Adsorption of some platinum group metals on some complexane types of chemically modified chitosan

Kawai M, Matsumoto T, Masuda T// Kyoto Univ, Fac Engr, Div Mat Chem, Kyoto 606, Japan

Nippon Kagaku Kaishi 1995 (7) 540

Effect of trivalent metal cations on the gelation of carboxymethylchitin aqueous solution (Japanese, English Abstract)

Kim SS, Lee YM*, Cho CS// *Hanyang Univ, Coll Engr, Dept Ind Chem, Seoul 133791, South Korea

J Polym Sci A-Polym Chem 1995 33 (13) 2285

Semi-interpenetrating polymer networks composed of β -chitin and poly(ethylene glycol) macromer

Nakagawa Y, Ohta T, Nakatsuka M, Tanaka T, Hayashi Y, Matsumura Y, Mori T// Japan Food Res & Dev Inst Co, Higashiyama ku, 29 Ichinohashi

Miyauchi cho, Kyoto 605, Japan

J Jpn Soc Food Sci Technol 1995 42 (3) 147

Studies on physical properties of food gels modified by particle fillers. II. Effects of addition of powdered chitin on physical properties of whey protein gels (Japanese, English Abstract)

Ratto J, Hatakeyama T*, Blumstein RB// *Nat Inst Mat & Chem Res, Tsukuba, Ibaraki 305, Japan

Polymer 1995 36 (15) 2915

Differential scanning calorimetry investigation of phase transitions in water-chitosan systems

Serita H// Akita Univ, Coll Min, Dept Mat Engr & Appl Chem, 1-1 Gakuen cho, Akita 010, Japan

Kobunshi Ronbunshu 52 (7) 410

Flocculation of kaolin suspension with graft copolymers of chitosan (Japanese, English Abstract)

Tanaka H, Watanabe T// Niigata Univ, Fac Agr, Dept Appl Biol Chem, 8050 Ikarashi 2, Niigata 95021, Japan

J Ind Microbiol 1995 14 (6) 478

Glucanases and chitinases of *Bacillus circulans* WL-12

Taravel MN, Domard A// *Univ Lyon 1, Lab Etud Mat Plast & Biomat, CNRS, URA 507, 43 Blvd Novembre 1918, F-69622 Villeurbanne, France

Biomaterials 1995 16 (11) 865

Collagen and its interaction with chitosan. II. Influence of the physicochemical characteristics of collagen

Zhao WW, Yu L, Zhong XG, Zhang YF, Sun JZ// Chinese Acad Sci, Changchun Inst Appl Chem, Changchun 130022, Peoples Rep China

J Macromol Sci-Phys 1995 34 (3) 231

The compatibility and morphology of chitosan-poly(ethylene oxide) blends

5 CYCLODEXTRINS

Abe K, Irie T, Adachi H, Uekama K// *Kumamoto Univ, Fac Pharmaceut Sci, 5-1 Oe Honmachi, Kumamoto 862, Japan

Int J Pharm 1995 123 (1) 103

Combined use of 2-hydroxypropyl- β -cyclodextrin and a lipophilic absorption enhancer in nasal delivery of the LHRH agonist, buserelin acetate, in rats

Ammar HO, El-Nahhas SA// Natl Res Ctr, Dept Pharmaceut Sci, Cairo, Egypt

Pharmazie 1995 50 (6) 408

Improvement of some pharmaceutical properties of drugs by cyclodextrin complexation. III. Bromhexine hydrochloride

Buda WM, Jaques K, Venema A, Sandra P// *State Univ Ghent, Dept Organ Chem, Organ Synth Lab, Krijgslaan 281, B-9000 Ghent, Belgium

Fresenius J Anal Chem 1995 352 (7-8) 679

Retention on mixed cyclodextrin/polysiloxane stationary phases in capillary GC: Evidence for the interaction of cyclodextrin and polysiloxane

Cabrera K, Jung M, Kemper C, Schurig V// *E Merck AG, Lab Chrom 1, Frankfurter Str 250, D-64293 Darmstadt, Germany

Fresenius J Anal Chem 1995 352 (7-8) 676

Chiral capillary HPLC and HPLC-MS: New applications of chemically bonded β -cyclodextrin as stationary phase

Castronuovo G, Elia V, Fessas D, Giordano A, Velleca F// Univ Naples Federico II, Dept Chem, Via Mezzocannone 4, I-80134 Naples, Italy

Carbohydr Res 1995 272 (1) 31

Thermodynamics of the interaction of cyclodextrins with aromatic and α,ω -amino acids in aqueous solutions: A calorimetric study at 25°C

- Dai RJ, Fu RN*, Feng ZC, Zhou W// *Beijing Inst Technol, Dept Chem Engr, Beijing 100081, Peoples Rep China
J Anal Appl Pyro 1995 34 (2) 181
 Pyrolysis-gas chromatography investigation of peralkylated β -cyclodextrins used as a capillary GC stationary phase
- Hamaura T, Ohtani T, Yoda K, Karuyama H, Kusai A, Nishimura K// Sankyo Co Ltd, Prod Dev Labs, Shinagawa ku, 2-58 1 chome, Tokyo 140, Japan
STP Pharma Sciences 1995 5 (4) 339
 Inhibition of gel formation of cefpodoxime-proxetil by cyclodextrins
- Hanessian S, Benailil A, Laferriere C// Univ Montreal, Dept Chem, POB 6128, Stn Ctr Ville, Montreal, Quebec, Canada H3C 3J7
J Org Chem 1995 60 (15) 4786
 The synthesis of functionalized cyclodextrins as scaffolds and templates for molecular diversity, catalysis, and inclusion phenomena
- Ingelse BA, Everaerts FM, Desiderio C, Fanali S// *CNR, Ist Cromatog, Area Ric Roma, POB 10, I-00016 Rome, Italy
J Chromatogr A 1995 709 (1) 89
 Enantiomeric separation by capillary electrophoresis using a soluble neutral β -cyclodextrin polymer
- Jarvinen T, Jarvinen K, Urtti A, Thompson D, Stella VJ// *Univ Kansas, Dept Pharmaceut Chem, 4040 Malott Hall, Lawrence, Ks 66045, USA
J Occul Pharmacol Therapeut 1995 11 (2) 95
 Sulfobutyl ether β -cyclodextrin (SBE- β -CD) in eyedrops improves the tolerability of a topically applied pilocarpine prodrug in rabbits
- Jobe DJ, Reinsborough VC, Wetmore SD// Mt Allison Univ, Dept Chem, Sackville, New Brunswick, Canada E0A 3C0
Langmuir 1995 11 (7) 2476
 Sodium dodecyl sulfate micellar aggregation numbers in the presence of cyclodextrins
- Rajewski RA, Traiger G, Bresnahan J, Jaberaboansari P, Stella VJ, Thompson DO// Univ Kansas, Dept Pharmaceut Chem, Lawrence, Ks 66047, USA
J Pharm Sci 1995 84 (8) 927
 Preliminary safety evaluation of parenterally administered sulfoalkyl ether β -cyclodextrin derivatives
- Ramanathan R, Prokai L// *Univ Florida, Coll Pharm, Ctr Drug Discovery, POB 100497, Gainesville, FL 32610, USA
J Amer Soc Mass Spectrom 1995 6 (9) 866
 Electrospray ionization mass spectrometric study of encapsulation of amino acids by cyclodextrins
- Sano A, Watanabe K, Nakamura H// *Sci Univ Tokyo, Fac Pharmaceut Sci, Shinjuku ku, Tokyo 162, Japan
Anal Sci 1995 11 (4) 667
 Capillary zone electrophoresis with combined use of γ -cyclodextrin and a metal ion as a novel tool for chiral separation of dansylamino acids (Letter)
- Schipper NGM, Verhoef JC, Romeijn SG, Merkus FWHM// *Leiden Univ, Amsterdam Ctr Drug Res, POB 9502, 2300 RA Leiden, The Netherlands
Calcified Tissue Int 1995 56 (4) 280
 Methylated β -cyclodextrins are able to improve the nasal absorption of salmon calcitonin
- Selva A, Rodenti E, Zanol M, Ventura P, Casetta B// CNR-Ctr Studio Sostanze Organ Nat, Politecnico, Dipt Chim, Via Mancinelli 7, I-20131 Milan, Italy
Eur Mass Spectrom 1995 1 (1) 105
 Support for the proposed observation by ionspray mass spectrometry of piroxicam/ β -cyclodextrin and terfenadine/ β -cyclodextrin non-covalent inclusion complexes (Letter)
- Smith DM, Awad AC, Bennink MR, Gill JL// Michigan State Univ, Dept Food Sci & Human Nutr, East Lansing, MI 48824, USA
J Food Sci 1995 60 (4) 691
 Cholesterol reduction in liquid egg yolk using β -cyclodextrins
- Steiner T, Da Silva AM, Teixeira-Dias JJC, Muller J, Saenger W// *Free Univ Berlin, Inst Kristallog, Takustr 6, D-14195 Berlin, Germany
Angew Chem Int Ed 1995 34 (13-14) 1452
 Rapid water diffusion in a cage-type crystal lattice: β -Cyclodextrin dodecahydrate
- Trotta F, Moraglio G, Rapposelli A// Univ Turin, Dipt Chim Inorgan Chim Fis & Chim Mat, Via P Giuria 7, I-10125 Turin, Italy
J Inclusion Phenom Mol Recogn 1994 20 (4) 353
 The effect of cyclodextrins on the hydrolysis of carboxylic acid esters
- Vakily M, Pasutto FM, Daneshmandi M, Jamali F// *Univ Alberta, Dept Pharm & Pharmaceut Sci, Edmonton, Alberta, Canada T6G 2N8
J Pharm Sci 1995 84 (8) 1014
 Inclusion complexation of heptakis(2,6-di-O-ethyl)- β -cyclodextrin with tiaprofenic acid: Pharmacokinetic consequences of a pH-dependent release and stereoselective dissolution
- Vincieri FF, Mazzi G, Mulinacci N, Bambagiotti-Alberti M, Dall'Acqua F, Vedaldi D// Univ Florence, Dipt Sci Farmaceut, Via G Capponi 9, I-50121 Florence, Italy
Farmaco 1995 50 (7-8) 543
 Improvement of dissolution characteristics of psoralen by cyclodextrins complexation
- Zarzycki PK, Nowakowska J, Chmielewska A, Lamparczyk H// Med Acad Gdansk, Fac Pharm, Hallera 107, PL-80416 Gdansk, Poland
J Planar Chromat-Med TLC 1995 8 (3) 227
 Retention properties of cyclodextrins in reversed phase HPTLC

6 LIGNIN

- Feldman D, Banu D, Lacasse M, Wang J, Luchian C// Concordia Univ, Ctr Bldg Studies, Montreal, Quebec, Canada H3G 1M8
J Macromol Sci Pure Appl Chem 1995 A32 (8-9) 1613
 Lignin and its polyblends
- Kanitskaya LV, Medvedeva SA, Babkin VA, Kushnarev DF, Kalabin GA// Russian Acad Sci, Inst Organ Chem, Div Lignin Chem, Irkutsk, Russia
Khim Priir Soedin 1994 (4) 547
 Destruction of aspen tree lignin by *Phanerochaete sangidnea* fungus. Investigation of lignin biodegradation by ^1H and ^{13}C NMR by numerical spectroscopy method (Russian)
- Madzhidova VE, Pulatov BK// Uzbek Acad Sci, Inst Bot Chem, Tashkent, Uzbekistan
Khim Priir Soedin 1994 (4) 537
 Effect of demethylated lignin on alkali hydrolysis of cotton plants (Russian)
- Mukhamedova S, Smirnova LS, Pulatov BK, Abdurazimov KA// Uzbek Acad Sci, Inst Bot Chem, Tashkent, Uzbekistan
Khim Priir Soedin 1994 (3) 430
 Study of C-6524 cotton plant lignin (Russian)
- Ni Y, Hu Q// Univ New Brunswick, McKenzie Limerick Pulp & Paper Res & Educ, POB 4400, Fredericton, New Brunswick, Canada E3B 6C2
J Appl Polym Sci 1995 57 (12) 1441
 Alcell® lignin solubility in ethanol-water mixtures

7 LIPOPOLYSACCHARIDES

- Aspinall GO, Lynch CM, Pang H, Shaver RT, Moran AP// York Univ, Dept Chem, 4700 Keele St, Toronto, Ontario, Canada M3J 1P3
Eur J Biochem 1995 231 (3) 570
 Chemical structures of the core region of *Campylobacter jejuni* O:3 lipopolysaccharide and an associated polysaccharide
- Aucken HM, Merkouroglou M, Miller AW, Galbraith L, Wilkinson SG// Cent Publ Hlth Lab, Hosp Infect Lab, 61 Colindale Ave, London NW9 5HT, England
FEMS Microbiol Lett 1995 130 (2-3) 267
 Structural and serological studies of lipopolysaccharides from proposed new serotypes (O25 and O26) of *Serratia marcescens*
- Cox AD, Taylor CJ, Anderson AJ, Perry MB, Wilkinson SG// *Univ Hull, Sch Chem, Hull HU6 7RX, England
Eur J Biochem 1995 231 (3) 784
 Structures of the two polymers present in the lipopolysaccharide of *Burkholderia* (*Pseudomonas*) *cepacia* serogroup O4
- Evans DM, Williams KP, Parsons G, Jindal S// *PerSeptive Biosyst, 500 Old Connecticut Path, Framingham, MA 01701, USA
Anal Biochem 1995 229 (1) 42
 Tandem-column chromatographic method for studying the interaction between ligands and their targets: Lipopolysaccharide as a model
- Guard-Petier J, Lakshmi B, Carlson R, Ingram K// USDA ARS, SE Poultry Res Lab, 934 Coll Stn Rd, Athens, GA 30605, USA
Appl Environ Microbiol 1995 61 (8) 2845
 Characterization of lipopolysaccharide heterogeneity in *Salmonella enteritidis* by an improved gel electrophoresis method
- Gupta RK, Egan W, Bryla DA, Robbins JB, Szu SC// *NICHHD, Bethesda, MD 20892, USA
Infect Immunity 1995 63 (8) 2805
 Comparative immunogenicity of conjugates composed of *Escherichia coli* O111 O-specific polysaccharide, prepared by treatment with acetic acid or hydrazine, bound to tetanus toxoid by two synthetic schemes
- Iguchi T, Kondo S, Hisatsune K// *Josai Univ, Sch Pharmaceut Sci, Dept Microbiol, Sakado, Saitama 35002, Japan
FEMS Microbiol Lett 1995 130 (2-3) 287
Vibrio parahaemolyticus O serotypes from O1 to O13 all produce R-type lipopolysaccharide: SDS-PAGE and compositional sugar analysis
- Linnerborg M, Widmalm G*, Weintraub A, Albert MJ// *Univ Stockholm, Ar-

rhenius Lab, Dept Organ Chem, S-10691 Stockholm, Sweden

Eur J Biochem 1995 **231** (3) 839

Structural elucidation of the O-antigen lipopolysaccharide from two strains of *Plesiomonas shigelloides* that share a type-specific antigen with *Shigella flexneri* 6, and the common group 1 antigen with *S. flexneri* spp and *S. dysenteriae* 1

Nikolaev AV, Rutherford TJ, Ferguson MAJ, Brimacombe JS// Univ Dundee, Dept Chem, Dundee DD1 4HN, Scotland

J Chem Soc Perkin Trans 1 1995 (16) 1977

Parasite glycoconjugates. IV. Chemical synthesis of disaccharide and phosphorylated oligosaccharide fragments of *Leishmania donovani* antigenic lipophosphoglycan

Perry MB, MacLean LL, Schollaardt T, Bryan LE, Ho M// Natl Res Council Canada, Inst Biol Sci, 100 Sussex Dr, Ottawa, Ontario, Canada K1A 0R6

Infect Immun 1995 **63** (9) 3348

Structural characterization of the lipopolysaccharide O antigens of *Burkholderia pseudomallei*

Torgov VI, Shashkov AS, Jann B, Jann K*// *Max Planck Inst Immunbiol, Stubeweg 51, D-79108 Freiburg, Germany

Carbohydr Res 1995 **272** (1) 73

NMR reinvestigation of two N-acetylneuraminic acid-containing O-specific polysaccharides (O56 and O24) of *Escherichia coli*

8 PECTIN

Chem Ind-London 1995 (13) 491

Fruity, not fatty (Eur. Pat. Application 0656176 for pectin)

Blanchfield JR// Address not available.

Chem Ind-London 1995 (14) 534

Pectin complaints (Letter)

Chiba Y, Kobayashi M*// *Natl Food Res Inst, Tsukuba, Ibaraki 305, Japan

Biosci Biotechnol Biochem 1995 **59** (7) 1242

Substrate binding ability of chemically inactivated pectinase for the substrate pectic acid

Errington N// Address not available.

Chem Ind-London 1995 (14) 534

Pectin complaints (Letter)

Malikova MK// Uzbek Acad Sci, Inst Bot Chem, Tashkent, Uzbekistan

Khim Priir Soedin 1994 (3) 320

Polysaccharides of *Ungernia*. XV. Study of pectin substance of *U. tadshicorum* leaves

Sakamoto T, Sakai T// Univ Osaka Prefecture, Coll Agric, Dept Appl Biol Chem, 1-1 Gakuen cho, Sakai, Osaka 593, Japan

Phytochemistry 1995 **39** (4) 821

Analysis of structure and sugar-beet pectin by enzymatic methods

Schmidt O, Angermann H, Frommhold-Treu I, Hoppe K// Deutsch Inst Ernahrungsforsch, A Scheunert Allee 114-116, D-14558 Bergholz Rehbrücke, Germany

Appl Microbiol Biotechnol 1995 **43** (3) 424

Experimental and theoretical investigations of submerged fermentation and synthesis of pectinolytic enzymes by *Aspergillus niger*

Spagna G, Pifferi PG, Gillioli E// Univ Bologna, Fac Ind Chem, Sch Specializat Food Chem & Technol, Viale Risorgimento 4, I-40136 Bologna, Italy

Enzyme Microb Technol 1995 **17** (8) 729

Immobilization of a pectinylase from *Aspergillus niger* for application in food technology

Spagna G, Pifferi PG, Tramontini M// Address as above.

J Mol Catal A-Chem 1995 **101** (1) 99

Immobilization and stabilization of pectinylase on synthetic polymers for application in the beverage industry

Welsh R// Address not available.

Chem Ind-London 1995 (14) 534

Pectin complaints (Letter)

Whitcombe AJ, O'Neill MA, Steffan W, Albersheim P, Darvill AG*// *Univ Georgia, Complex Carbohydrate Res Ctr, 220 Riverbend Rd, Athens, Ga 30602, USA

Carbohydr Res 1995 **271** (1) 15

Structural characterization of the pectic polysaccharide, rhamnogalacturonan-II

Yuldasheva NP, Khodzhaeva MA, Turakhozaev MT, Nurmukhamedov Z// Uzbek Acad Sci, Inst Bot Chem, Tashkent, Uzbekistan

Khim Priir Soedin 1994 (4) 562

Pectin substances of sugar beet pulp (Russian)

9 STARCH

Adler J, Baldwin PM, Melia CD// Univ Nottingham, Dept Pharmaceut Sci, Univ Pk, Nottingham NG7 2RD, England

Starch 1995 **47** (7) 252

Starch damage. II. Types of damage in ball-milled potato starch, upon hydration observed by confocal microscopy

Baldwin PM, Davies MC, Melia CD*// *Univ Nottingham, Dept Pharmaceut Sci, Univ Pk, Nottingham NG7 2RD, England

Starch 1995 **47** (7) 247

Starch damage. I. Characterisation of granule damage in ball-milled potato starch study by SEM

Campbell MR, White PJ*, Pollak LM// *Iowa State Univ Sci & Technol, Dept Food Sci & Human Nutr, Ames, Ia 50011, USA

Cereal Chem 1995 **72** (4) 389

Properties of sugary-2 maize starch: Influence of exotic background

Carballo J, Barreto G, Colmenero FJ// Univ Complutense Madrid, CSIC, Inst Frio, E-28040 Madrid, Spain

J Food Sci 1995 **60** (4) 673

Starch and egg white influence on properties of Bologna sausage as related to fat content

Chung H, Arnold MA*// *Univ Iowa, Dept Chem, Iowa City, Ia 52242, USA

Appl Spectrosc 1995 **49** (8) 1097

Monitoring the acid-catalyzed hydrolysis of starch with near-infrared spectroscopy

Das K, Sarkar N, Das S, Bhattacharyya K*, Balasubramanian D// *Indian Assoc Cultivat Sci, Dept Phys Chem, Calcutta 700032, West Bengal, India

Langmuir 1995 **11** (7) 2410

Fluorescence monitoring of the hydrophobic surface of dextrin using *p*-toluidinonaphthalenesulfonate

Durrant DM, Howlin BJ, Webb GA*, Gidley MJ// *Univ Surrey, Dept Chem, Guildford GU2 5XH, Surrey, England

Carbohydr Res 1995 **271** (2) C1

Ab initio nuclear shielding calculations of a model $\alpha(1\rightarrow4)$ -glucan

Figuerola C, Davila AM, Pourquie J*// *Inst Natl Agron Paris Grignon, 16 rue Claude Bernard, F-75231 Paris, France

Lett Appl Microbiol 1995 **21** (2) 126

Lactic acid bacteria of the sour cassava starch fermentation

Fujimura T, Kugimiya M// Hiroshima Women's Univ, Dept Food & Nutr, Minami ku, 1-1-71 Ujina Higashi, Hiroshima 734, Japan

J Jpn Soc Food Sci Technol 1995 **42** (1) 14

Gelatinization of starches inside cotyledon tissues of adzuki bean (Japanese, English Abstract)

Fujimura T, Liu XY, Kugimiya M// Hiroshima Women's Univ, Dept Food Sci & Nutr, Minami ku, 1-1-71 Ujina Higashi, Hiroshima 734, Japan

J Jpn Soc Food Sci Technol 1995 **42** (3) 190

Gelatinization of starches inside cotyledon cells separated from faba beans

Gimmler N, Meuser F*// *Nabisco Brands Inc, Fair Lawn Tech Ctr, 2111 Rte 208, Fair Lawn, NJ 07410, USA

Starch 1995 **47** (7) 268

Influence of extrusion cooking conditions on the efficiency of the cationization and carboxymethylation of potato starch granules

Huang DP// Natl Starch & Chem Corp, Bridgewater, NJ, USA

Cereal Food World 1995 **40** (8) 528

New perspectives on starch and starch derivatives for snack applications

Killinger WE, Murray D, Hatfield GR*, Hassler T// *WR Grace & Co Conn, Washington Res Ctr, 7379 Rte 32, Columbia, Md 21044, USA

Starch 1995 **47** (8) 311

Determination of the degree of cationicity in cationic starches by solid-state ^{13}C NMR spectroscopy

Lil CY, Shao YY, Tseng KH// Natl Taiwan Univ, Grad Inst Food Sci & Technol, Taipei 10764, Taiwan

Cereal Chem 1995 **72** (4) 393

Gelation mechanism and rheological properties of rice starch

Morancay N, Brivet I, Chaveron H// Univ Technol Compiègne, Lab Biophysicochim & Technol Aliment, BP 649, F-60206 Compiègne, France

Sci Aliment 1995 **15** (4) 315

Methodology for the structural and physicochemical study of starch and water in short pastes (French, English Abstract)

Nigam P, Singh D// Univ Ulster, Dept Biol & Biomed Sci, Coleraine BT52 1SA, Northern Ireland

Enzyme Microb Technol 1995 **17** (9) 770

Enzyme and microbial systems involved in starch processing

- Noda T, Takahata Y, Sato T// Minist Agr Forestry & Fisheries, Kyushu Natl Agr Exptl Stn, 2421 Suya, Nishigoshi, Kumamoto 86111, Japan
J Jpn Soc Food Sci Technol 1995 42 (3) 200
Distributions of the amylopectin chain length of sweet potatoes differing in stages of development, tissue zone and variety
- Otobe K, Yoshii Y, Sugiyama J, Kikuchi Y// Minist Agr Forestry & Fisheries, Natl Food Res Inst, Tsukuba, Ibaraki 305, Japan
J Jpn Soc Food Sci Technol 1995 42 (2) 85
Varietal properties related to dynamic viscoelasticity on gelatinized rice starch (Japanese, English Abstract)
- Otto AH// Adlershofer Umweltschutztech & Forsch Gesell, Rudower Chaussee 5, D-12489 Berlin, Germany
Starch 1995 47 (7) 257
Critical situations at the determination of the degree of substitution for amylose compounds via their carbon content (German, English Abstract)
- Pranamuda H, Lee SW, Ozawa T, Tanaka H*// *Univ Tsukuba, Inst Appl Biochem, 1-1 Tennodai, Tsukuba, Ibaraki 305, Japan
Starch 1995 47 (7) 277
Ethanol production from raw sago starch under unsterile condition
- Rivard C, Moens L, Roberts K, Brigham J, Kelley S// Natl Renewable Energy Lab, Appl Biol Sci Branch, Golden, Co 80401, USA
Enzyme Microb Technol 1995 17 (9) 848
Starch esters as biodegradable plastics: Effects of ester group chain length and degree of substitution on anaerobic biodegradation
- Samain E, Lancelon-Pin C, Ferigo F, Moreau V, Chanzy H, Heyraud A, Driguez H*// *CNRS, Ctr Rech Macromolec Vegetales, BP 53X, F-38041 Grenoble, France
Carbohydr Res 1995 271 (2) 217
Phosphorylolytic synthesis of cellobextrins
- Singh N, Eckhoff SR// Univ Illinois, Dept Agr Engr, Urbana, IL 61801, USA
Cereal Chem 1995 72 (4) 344
Hydrocyclone procedure for starch-protein separation in laboratory wet milling
- Takamine K, Bhatnagar S, Hanna MA// Kagoshima Prefectural Inst Ind Technol, Kagoshima, Japan
Cereal Chem 1995 72 (4) 385
Effect of eggshell on properties of corn starch extrudates
- Tester RF, Morrison WR, Ellis RH, Piggott JR, Batts GR, Wheeler TR, Morrison JLL, Hadley P, Ledward DA// Glasgow Caledonian Univ, Dept Biol Sci, Southbrae Campus, Glasgow G13 1PP, Scotland
J Cereal Sci 1995 22 (1) 63
Effects of elevated growth temperature and carbon dioxide levels on some physicochemical properties of wheat starch
- Valetudie JC, Guadeloupe L, Colonna P, Bouchet B, Gallant DJ*// *INRA, BP 1627, Food Res Ctr, F-44316 Nantes 03, France
Starch 1995 47 (8) 298
Gelatinization of sweet potato, tania and yam tuber starches
- Vasanthan T, Bhaty RS// Univ Saskatchewan, Dept Appl Microbiol & Food Sci, Saskatoon, Saskatchewan, Canada
Cereal Chem 1995 72 (4) 379
Starch purification after pin milling and air classification of waxy, normal, and high amylose barleys
- Veelaert S, Polling M*, De Wit D// *ATO - DLO, Agrotechnol Res Inst, Bornsesteeg 59, POB 17, 6700 AA Wageningen, The Netherlands
Starch 1995 47 (7) 263
Structural and physicochemical changes of potato starch along periodate oxidation
- Ward C, Nolan AM, O'Hanlon K, McAree T, Barron N, McHale L, McHale AP*// *Univ Ulster, Sch Appl Biol & Chem Sci, Biotechnol Res Grp, Coleraine BT52 1SA, Northern Ireland
Appl Microbiol Biotechnol 1995 43 (3) 408
Production of ethanol at 45°C on starch containing media by mixed cultures of the thermotolerant, ethanol-producing yeast *Kluyveromyces marxianus* IMB3 and the thermophilic filamentous fungus *Talaromyces emersonii* CBS 814.70
- Wu HX, Yue SX, Sun HL, Corke H// Univ Hong Kong, Dept Bot, Pokfulam Rd, Hong Kong
Starch 1995 47 (8) 295
Physical properties of starch from two genotypes of *Amaranthus cruentus* of agricultural significance in China
- atic α -amylase and amylose fragments
- Diaz T, Stahl U, Batista-Viera F, Carlsson J// Fac Quim Montevideo, Catedra Bioquim, Gral Flores 2124, Casilla Correo 1157, Montevideo, Uruguay
Biotechnol Technique 1995 9 (7) 533
Reversible immobilization of chemically modified pullulanase
- Ensari NY, Otludil B, Aytekin MC// Dicle Univ, Fak Fen Edebiyat, Biyoloji Bolumu, Diyarbakir, Turkey
Starch 1995 47 (8) 315
Effect of starch induced bacterial growth and amylase production in *Bacillus subtilis*
- Ghosh AK, Naskar AK, Jana ML, Khowala S, Sengupta S*// *Indian Inst Chem Biol, 4 Raja SC Mullick Rd, Calcutta 700032, West Bengal, India
Biotechnol Progr 1995 11 (4) 452
Purification and characterization of an amyloglucosidase from *Termitomyces chypeatus* that liberates glucose from xylan
- Ishii Y, Nakahara H, Hattori S, Kawabata A, Nakamura M// Toyko Univ Agr & Technol, Dept Nutr, Setagaya ku, 1-1-1 Sakuragaoka, Tokyo 156, Japan
J Jpn Soc Food Sci Technol 1995 42 (1) 32
The changes induced by isoamylase in the molecular structure of amylopectins isolated from tropical starches (Japanese, English Abstract)
- Ishii Y, Nakahara H, Hattori S, Nakamura M// Address as above.
J Jpn Soc Food Sci Technol 1995 42 (7) 519
GPC patterns of tropical starch amylopectins hydrolyzed by isoamylase reaction (Japanese, English Abstract)
- Ju YH, Chen WJ, Lee CK*// *Natl Taiwan Inst Technol, Dept Chem Engr, Taipei 10672, Taiwan
Enzyme Microb Technol 1995 17 (8) 685
Starch slurry hydrolysis using α -amylase immobilized on a hollow-fiber reactor
- Kim TU, Gu BG, Jeong JY, Byun SM, Shin YC*// *Gyeongsang Natl Univ, Dept Microbiol, Shinju 660701, South Korea
Appl Environ Microbiol 1995 61 (8) 3105
Purification and characterization of a maltotetraose-forming alkaline α -amylase from an alkalophilic *Bacillus* strain, GM8901
- Kondo A, Urabe T// Kobe Univ, Dept Sci & Chem Engr, Nada ku, 1-1 Rokko-daicho, Kobe 657, Japan
J Colloid Interface Sci 1995 174 (1) 191
Temperature dependence of activity and conformational changes in α -amylases with different thermostability upon adsorption on ultrafine silica particles
- Minas W, Bailey JE*// *ETH Zurich Inst Biotechnol, CH-8093 Zurich, Switzerland
Biotechnol Progr 1995 11 (4) 403
Co-overexpression of *prfI* increases cell viability and enzyme yields in recombinant *Escherichia coli* expressing *Bacillus stearothermophilus* α -amylase
- Nishimura T, Kometani T, Takii H, Terada Y, Okada S// Ezaki Glico Co Ltd, Biochem Res Lab, Nishiyodogawa ku, 4-6-5 Utajima, Osaka 555, Japan
J Ferment Bioeng 1995 80 (1) 18
Glucosylation of caffeic acid with *Bacillus subtilis* X-23 α -amylase and a description of the glucosides
- Planchot V, Colonna P// INRA, BP 527, F-44026 Nantes 03, France
Carbohydr Res 1995 272 (1) 97
Purification and characterization of extracellular α -amylase from *Aspergillus fumigatus*
- Ray RR, Jana SC, Nanda G*// *Bose Inst, Dept Microbiol, P-1-12, CIT Scheme VII-M, Calcutta 700054, West Bengal, India
J Appl Bacteriol 1995 79 (2) 157
Immobilization of β -amylase from *Bacillus megaterium* B-6 into gelatin film by cross-linking
- Ritz CW, Hulet RM*, Self BB, Denbow DM// *Penn State Univ, Dept Poultry Sci, University Pk, Pa 16802, USA
Poultry Sci 1995 74 (8) 1329
Growth and intestinal morphology of male turkeys as influenced by dietary supplementation of amylase and xylanase
- Schwimmer S// USDA ARS, Western Reg Res Ctr, 800 Buchanan St, Albany, Ca 94710, USA
FASEB J 1995 9 (11) 1118
Depolymerase amylo-chain reaction: Untying the Gordian knot of raw starch digestion
- Shaw JF, Lin FP, Chen SC, Chen HC// Natl Taiwan Ocean Univ, Inst Marine Biotechnol, Chilung 202, Taiwan
Bot Bull Acad Sinica 1995 36 (3) 195
Purification and properties of an extracellular α -amylase from *Thermus* sp
- Sissons M, Taylor M, Proudlove M// BRF Int, Lyttel Hall, Coopers Hill Rd, Nutfield RH1 4HY, Surrey, England
J Amer Soc Brew Chemist 1995 53 (3) 104
Barley malt limit dextrinase: Its extraction, heat stability, and activity during

10 STARCH-DEGRADING ENZYMES

- Casset F, Imberty A, Haser R, Payan F, Perez S*// *INRA, BP 1627, F-44316 Nantes 03, France
Eur J Biochem 1995 232 (1) 284
Molecular modelling of the interaction between the catalytic site of pig pancre-

malting and mashing

Tanaka A, Takeda S// Mie Univ, Fac Educ, Dept Chem, Tsu, Mie 514, Japan
Biosci Biotechnol Biochem 1995 59 (7) 1372
 Random attack as the hydrolytic reaction mode of oligosaccharides by *Rhizopus glucoamylase*

11 POLYSACCHARIDES - MICROBIAL

Armstrong DC, Johns MR// Univ Queenslnd, Dept Chem Engr, Brisbane, Qld 4072, Australia
Biotechnol Technique 1995 9 (7) 491
 Improved molecular weight analysis of streptococcal hyaluronic acid by size exclusion chromatography

Ashtaputre AA, Shah AK// *Maharaja Sayajirao Univ Baroda, Fac Sci, Dept Microbiol, Baroda 390002, Gujarat, India
Curr Microbiol 1995 31 (4) 234
 Studies on the exopolysaccharide from *Sphingomonas paucimobilis*-GS1: Nutritional requirements and precursor-forming enzymes

Belancic A, Scarpa J, Pierano A, Diaz R, Steiner J, Eyzaguirre J// *Pontificia Univ Catolica Chile, Bioquim Lab, Casilla 114-D, Santiago, Chile
J Biotechnol 1995 41 (1) 71
Penicillium purpurogenum produces several xylanases: Purification and properties of two of the enzymes

Coviello T, Burchard W*, Dentini M, Crescenzi V, Morris VJ// *Univ Freiburg, Inst Macromolec Chem, D-79104 Freiburg, Germany
J Polym Sci B-Polym Phys 1995 33 (12) 1833
 Solution properties of exocellular polysaccharides of *Rhizobium leguminosarum*. Static and dynamic light-scattering: Characterization in dilute solution
 Das SK, Roy N// *Indian Assoc Cultivat Sci, Dept Biol Chem, Calcutta 700032, West Bengal, India
Carbohydr Res 1995 271 (2) 177
 Synthesis of the tetrasaccharide repeating unit of the antigen from *Klebsiella* type 20

Devi SJN, Hayat U, Frasch CE, Kreger AS, Morris JG// *Vet Affairs Med Ctr, Infect Dis Sect, 10 Nth Greene St, Rm 5D139, Baltimore, Md 21201, USA
Infect Immun 1995 63 (8) 2906
 Capsular polysaccharide-protein conjugate vaccines of carbotype 1 *Vibrio vulnificus*: Construction immunogenicity, and protective efficacy in a murine model
 Esgalhado ME, Roseiro JC*, Amaral-Collaco MT// *Inst Nacl Engenharia e Tecnol Ind, IBQTA-Dept Biotecnol, Azinhaga Lameiros, Estrada Paco Luminar, P-1699 Lisbon, Portugal
Process Biochem 1995 30 (7) 667
 Interactive effects of pH and temperature on cell growth and polymer production by *Xanthomonas campestris*

Fournier C, Leonard M*, Le Coq-Leonard I, Dellacherie E// *Ecole Natl Super Ind Chim, LCPM, CNRS, URA494, BP 451, F-54001 Nancy, France
Langmuir 1995 11 (7) 2344
 Coating polystyrene particles by adsorption of hydrophobically modified dextran

Garrozzo D, Impallomeni G, Spina E, Sturiale L, Zanetti F// CNR, Ist Chim & Tecnol Mat Polimerici, Viale A Doria 6, I-95125 Catania, Italy
Rapid Commun Mass Spectrom 1995 9 (10) 937
 Matrix-assisted laser desorption/ionization mass spectrometry of polysaccharides

Inzana TJ// Virginia Polytech Inst & State Univ, Virginia Maryland Reg Coll Vet Med, Blacksburg, Va 24061, USA
J Clin Microbiol 1995 33 (9) 2297
 Simplified procedure for preparation of sensitized latex particles to detect capsular polysaccharides: Application to typing and diagnosis of *Actinobacillus pleuropneumoniae*

Jain A// Avadh Univ, Dept Microbiol, Faizabad 224001, Uttar Pradesh, India
Process Biochem 1995 30 (8) 705
 Production of xylanase by thermophilic *Melanocarpus albomyces* IIS-68

Jimenez-Barbero J, Prieto A, Gomez-Miranda B, Leal JA, Bernabe M// *CSIC, Inst Quim Organ, Carbohidratos Grp, Juan Cierva 3, E-28006 Madrid, Spain
Carbohydr Res 1995 272 (1) 121

Chemical structure of fungal cell-wall polysaccharides isolated from *Microsporium gypseum* and related species of *Microsporium* and *Trypophyton*

Kanke M, Katayama H, Nakamura M// Fukuyama Univ, Fac Pharm & Pharmacol Sci, 985 Higashimura cho, Fukuyama, Hiroshima 72902, Japan
Biol Pharm Bull 1995 18 (8) 1104
 Application of curdlan to controlled drug delivery. II. *In vitro* and *in vivo* drug release studies of theophylline-containing curdlan tablets

Kanke M, Tanabe E, Katayama H, Koda Y, Yoshitomi H// Address as above.

Biol Pharm Bull 1995 18 (8) 1154

Application of curdlan to controlled drug delivery. III. Drug release from sustained release suppositories *in vitro*

Long ZQ, Ohta T, Nakamura H// *Sci Univ Tokyo, Fac Pharmaceut Sci, Shinjuku ku, 12 Ichigaya Funagawara machi, Tokyo 162, Japan
Anal Sci 1995 11 (4) 663

Chiral separation by curdlan gel electrophoresis (Letter)

Murakami T, Kuwahara T, Sasaki T, Taniguchi H// Yamazaki Baking Co Ltd, Sumida ku, 3-15-6 Chitose, Tokyo 130, Japan
J Jpn Soc Food Sci Technol 1995 42 (7) 531
 Purification and characterization of a xylanase from *Robillarda* sp. Y-20 grown on xylan

Nakano M, Hosokawa K, Oomiya T, Yamamura S// *Iwate Biotechnol Res Ctr, 22-174-4 Narita, Kitakami, Iwate 024, Japan
Plant Cell Tissue Organ Cult 1995 41 (3) 221
 Plant regeneration from protoplasts of *Gentiana* by embedding protoplasts in gellan gum

Quintela JC, Pittenauer E, Allmaier G, Aran V, De Pedro MA// *Univ Autonoma Madrid, Fac Ciencias, CSIC, Ctr Biol Molec Severo Ochoa, Campus Cantoblanco, E-28049 Madrid, Spain
J Bacteriol 1995 177 (17) 4947
 Structure of peptidoglycan from *Thermus thermophilus* HB8

Razi N, Feyzi E, Bjork I, Naggi A, Casu B, Lindahl U// *Univ Uppsala, Ctr Biomed, Dept Med & Physiol Chem, Box 575, S-75123 Uppsala, Sweden
Biochem J 1995 309 (2) 465
 Structural and functional properties of heparin analogues obtained by chemical sulphation of *Escherichia coli* K5 capsular polysaccharide

Rizk S, Duru C*, Sabatier R, Jacob M, Puech A// *Univ Montpellier 1, Fac Pharm, Lab Pharm Galen, 15 Ave Charles Flahault, F-34060 Montpellier, France
Pharmazie 1995 50 (7) 468
 Granulation process contribution to scleroglucan hydrophilic matrix formulation

Singh S, Fett WF// Penn State Univ, Dept Chem, Hazleton Campus, Hazleton, Pa 18201, USA
FEMS Microbiol Lett 1995 130 (2-3) 301
 Stimulation of exopolysaccharide production by fluorescent pseudomonads in sucrose media due to dehydration and increased osmolarity

Tang JM, Tung MA, Zeng YY// Sth Dakota State Univ, Dept Agr Engr, Brookings, SD 57007, USA
J Food Sci 1995 60 (4) 748
 Mechanical properties of gellan gels in relation to divalent cations

Van den Berg DJC, Robijn GW, Janssen AC, Giuseppin MLF, Vreeker R, Kamerling JP, Vliegthart JFG, Ledeboer AM*, Verrips CT// *Unilever Res Labs Vlaardingen, POB 114, 3130 AC Vlaardingen, The Netherlands
Appl Environ Microbiol 1995 61 (8) 2840
 Production of a novel extracellular polysaccharide by *Lactobacillus sake* O-1 and characterization of the polysaccharide

Varani J, Fligiel SEG, Inman DR, Beals TF, Hillegas WJ// Univ Michigan, Dept Pathol, Ann Arbor, Mi 48109, USA
J Biomed Mater Res 1995 29 (8) 993
 Modulation of adhesive properties of DEAE-dextran with laminin

Wynter CVA, Galea CF, Cox LM, Dawson MW, Patel BK, Hamilton S*, De Jersey J, Inkerman PA// *Univ Queensland, Dept Biochem, St Lucia, Qld 4072, Australia
J Appl Bacteriol 1995 79 (2) 203
 Thermostable dextranases: Screening, detection and preliminary characterization

12 POLYSACCHARIDES - PLANT

Cleemput G, Van Oort M, Hessing M, Bergmans MEF, Gruppen H, Grobet PJ, Delcour JA// TNO, Nutr & Food Res Inst, Div Biochem & Gene Technol, POB 360, 3700 AJ Zeist, The Netherlands
J Cereal Sci 1995 22 (1) 73
 Variation in the degree of D-xylose substitution in arabinoxylans extracted from a European wheat flour

Corsaro MM, Giudicianni I, Lanzetta R, Marciano CE, Monaco P, Parrilli M// Univ Naples Federico II, Dipt Chim Organ & Biol, Via Mezzocannone 16, I-80134 Naples, Italy
Phytochemistry 1995 39 (6) 1377
 Polysaccharides from seeds of *Strychnos* species

Davis AL, Hoffmann RA*, Russell AL, Debet M// *Unilever Res, Colworth House, Sharnbrook MK44 1LQ, Beds, England
Carbohydr Res 1995 271 (1) 43

¹H and ¹³C-NMR characterization of the digalactosylmannopentaose liberated from legume seed galactomannan by β -mannanase action

Doublier JL, Wood PJ// INRA, LPCM, BP1627, F-44316 Nantes 03, France
Cereal Chem 1995 72 (4) 335

Rheological properties of aqueous solutions of (1 $\rightarrow$ 3)(1 $\rightarrow$ 4)- β -D-glucan from oats (*Avena sativa* L.)

Faurot AL, Saulnier L*, Berot S, Popineau Y, Petit MD, Rouau X, Thibault JF// *INRA, BP 1627, Ctr Rech Agroalimentaires, F-44316 Nantes 03, France
Food Sci Technol-Lebensm Wiss 1995 28 (4) 436

Large scale isolation of water-soluble and water-insoluble pentosans from wheat flour

Freile-Pelegrin Y, Robledo DR, Garcia-Reina G// CINVESTAV - IPN, Unidad Merida, Apdo 73, Cordemex 97310, Merida, Yucatan, Mexico
J Appl Physiol 1995 7 (2) 141

Seasonal agar yield and quality in *Gelidium canariensis* (Grunow) Seoane-Camba (Gelidiales, Rhodophyta) from Gran Canaria, Spain

Mukhopadhyay S, Majumdar SK// *Jadavpur Univ, Dept Food Technol & Biochem Engr, Calcutta 700032, West Bengal, India
Biotechnol Lett 1995 17 (8) 867

Preparation and properties of glucose isomerase of *Streptomyces kanamyceticus* cells entrapped in calcium alginate

Murano E// POLY-Bios, Res Ctr, Padriciano 99, I-34012 Trieste, Italy
J Appl Physiol 1995 7 (3) 245

Chemical structure and quality of agars from *Gracilaria*

Oyaas J, Storro I, Svendsen H, Levine DW// *Norwegian Inst Technol, Dept Biotechnol, N-7034 Trondheim, Norway
Biotechnol Bioeng 1995 47 (4) 492

The effective diffusion coefficient and the distribution constant for small molecules in calcium-alginate gel beads

Oyaas J, Storro I, Lysberg M, Svendsen H, Levine DW// *Address as above.
Biotechnol Bioeng 1995 47 (4) 501

Determination of effective diffusion coefficients and distribution constants in polysaccharide gels with non-steady-state measurements

Parker A, Lelimosin D, Miniou C, Boulenguer P// SBI, Div Food Addit, Res & Dev, F-50500 Carentan, France
Carbohydr Res 1995 272 (1) 91

Binding of galactomannans to κ -carrageenan after cold mixing

Rakhimov DA, Shadmanova NA// Uzbek Acad Sci, Inst Bot Chem, Tashkent, Uzbekistan
Khim Priir Soedin 1994 (3) 440

Polysaccharides of plant fibers. I. Polysaccharides of callus culture of *Ajuga turkestanica* (Russian)

Rakhmanberdiyeva RK, Rakhimov DA, Niematullaev A// Uzbek Acad Sci, Inst Bot Chem, Tashkent, Uzbekistan
Khim Priir Soedin 1994 (5) 597

Polysaccharides from wastes of vegetable (curcubit) cultures (Russian)

Roberts DB, Travis EL// *Univ Texas, MD Anderson Cancer Ctr, Dept Exptl Radiotherapy, 1515 Holcombe Blvd, Box 66, Houston, Tx 77030, USA
Int J Radiat Oncol Biol Phys 1995 32 (4) 1047

Acemannan-containing wound dressing gel reduces radiation-induced skin reactions in C3H mice

Svyatchenko VV, Logunova AV, Varslovan ES, Bilyukevich AV// Byelarusian Acad Sci, Inst Phys Organ Chem, Minsk, Byelarus
Russ J Appl Chem-Eng Tr 1994 67 (8) 1160

Ultrafiltration of agaroid solutions

Teleman A, Harjunpää V, Tenkanen M, Buchert J, Hausalo T, Drakenberg T, Vuorinen T// Tech Res Ctr Finland, POB 1401, SF-02044 Espoo, Finland
Carbohydr Res 1995 272 (1) 55

Characterisation of 4-deoxy- β -L-threo-hex-4-enopyranosyluronic acid attached to xylan in pine Kraft pulp and pulping liquor by ¹H and ¹³C NMR spectroscopy

Torres M, Niell FX, Figueroa FL// *Univ Malaga, Fac Ciencias, Dept Ecol, Campus Univ Teatinos s/n, E-29071 Malaga, Spain
J Appl Physiol 1995 7 (2) 167

Photosynthetic metabolism and cell-wall polysaccharide accumulation in *Gelidium sesquipedale* (Clem) Born et Thur under different light qualities

Verraest DL, Peters JA, Batelaan JG, Van Bekkum H// Delft Univ Technol, Organ Chem & Catal Lab, Julianalaan 136, 2628 BL Delft, The Netherlands
Carbohydr Res 1995 271 (1) 101

Carboxymethylation of inulin

Vinckx CJA, Stevens I, Gruppen H, Grobet PJ, Delcour JA// Univ Leuven, Res Unit Food Chem, Kardinaal Mercierlaan 92, B-3001 Heverlee, Belgium
Cereal Chem 1995 72 (4) 411

Physicochemical and functional properties of rye nonstarch polysaccharides. VI. Variability in the structure of water-unextractable arabinoxylans

13 POLYSACCHARIDES - OTHER

Adachi S, Mizuno T, Matsuno R// Kyoto Univ, Fac Agr, Dept Food Sci & Technol, Sakyo ku, Kyoto 60601, Japan

J Chromatogr A 1995 708 (2) 177
Concentration dependence of the distribution coefficient of maltooligosaccharides on a cation-exchange resin

Al-Assaf S, Phillips GO*, Deeble DJ, Parsons B, Starnes H, Von Sonntag C// *NE Wales Inst, Ctr Newtech Innovat, Croesnewydd Hall, Wrexham Technol Pk, Wrexham LL13 7YP, Clwyd, Wales
Radiat Phys Chem 1995 46 (2) 207

The enhanced stability of the cross-linked hylan structure to hydroxyl (OH) radicals compared with the uncross-linked hyaluronan

Alzeer J, Vasella A// *ETH Zentrum, Organ Chem Lab, Univ Str 16, CH-8092 Zurich, Switzerland
Helv Chim Acta 1995 78 (5) 1219

Oligosaccharide analogues of polysaccharides. IV. Synthesis of a monosaccharide-derived octamer

Carlsson AE, Janne KLR// *Pharmacia AB, Analyt Chem, S-75182 Uppsala, Sweden
Appl Spectrosc 1995 49 (7) 1037

Near infrared spectroscopy as an alternative to biological testing for quality control of hyaluronan. Comparison of data preprocessing methods for classification

Dan A, Ito Y*, Ogawa T// *RIKEN, Inst Phys & Chem Res, 2-1 Hirosawa, Wako, Saitama 35101, Japan
J Org Chem 1995 60 (15) 4680

A convergent and stereocontrolled synthetic route to the core pentasaccharide structure of asparagine-linked glycoproteins

Heaton D, Pearce N// Canterbury Hlth Labs, POB 151, Christchurch, New Zealand
Pharmacoeconomics 1995 8 (2) 91

Low molecular weight versus unfractionated heparin: A clinical and economic appraisal

Ii T, Kubota M, Okuda S, Hirano T, Ohashi M// *Univ Electro-Commun, Dept Appl Phys & Chem, Chofu, Tokyo 182, Japan
Eur Mass Spectrom 1995 1 (1) 11

Positive-ion fast atom bombardment tandem mass spectrometry for characterization of sulfated unsaturated disaccharides from heparin and heparan sulfate

Lusk LT, Goldstein H, Ryder D// Miller Brewing Co, 3939 West Highland Blvd, Milwaukee, WI 53208, USA
J Amer Soc Brew Chemist 1995 53 (3) 93

Independent role of beer proteins, melanoidins and polysaccharides in foam formation

Murata K, Murata A, Yoshida K// Tokyo Natl Univ Arts & Mus, Med Ctr, Taito ku, Ueno Pk, Tokyo 110, Japan
J Chromatogr B-Biomed Appl 1995 670 (1) 3

High-performance liquid chromatographic identification of eight constitutional disaccharides from heparan sulfate isomers digested with heparitinases

Okazaki J, Kamada A, Matsukawa F, Sakaki T, Gonda Y// Osaka Dent Univ, Dept Prosthodont 1, Chuo ku, 5-31 Otemae 1 chome, Osaka 540, Japan
Arch Oral Biol 1995 40 (8) 777

Disaccharide analysis of chondroitin sulphate in human gingival crevicular fluid using high-performance liquid chromatography

Orlando P, Binaglia L, De Feo A, Orlando M, Trenta R, Trevisi R// Univ Cattolica Sacro Cuore, Ctr Radioisotopi, Largo F Vito 1, I-00168 Rome, Italy
J Label Compound Radiopharm 1995 36 (9) 855

An improved method for hyaluronic acid radioiodination

Tokita Y, Okamoto A// Denki Kagaku Kogyo Co Ltd, Res Ctr, 3-5-1 Asahimachi, Machida, Tokyo 194, Japan
Polym Degrad Stabil 1995 48 (2) 269

Hydrolytic degradation of hyaluronic acid

Toufik J, Labarre D// *Univ Paris Sud, CNRS, URA 1218, Lab Physicochim, F-92290 Chateaufort Malabry, France
Biomaterials 1995 16 (14) 1081

Relationship between reduction of complement activation by polysaccharide surfaces bearing diethylaminoethyl groups and their degree of substitution

Westman J, Nilsson M// Pharmacia AB, S-11287 Stockholm, Sweden
J Carbohydr Chem 1995 14 (7) 949

Synthesis of non-glucosamino glucan oligosaccharides related to heparin and heparan sulphate

Yamatoya K// Address not available.
J Jpn Soc Food Sci Technol 1995 42 (6) 470

Fat replacer and polysaccharides (Japanese)