

BIBLIOGRAPHY ON CARBOHYDRATE POLYMERS

1 Books, Reviews and Symposia

Manners DJ//165 Mayfield Rd, Edinburgh EH9 3AY, Scotland

CARBOHYD POLYM 1989, 11 (2) 87

Recent developments in our understanding of amylopectin structure (Review Paper)

Dubinskaya AM, Dobrotvorsky AE//All Union Biotechnol Res Inst, Moscow, USSR

KHIM-FARM ZH SSSR 1989, 23 (5) 623

Application of chitin and its derivatives (Review) (Russian)

Veljkovic VB, Lazic ML, Cakic MD//Univ Nis, Fac Technol, Durmitorska 19, YU-16000 Leskovac, Yugoslavia

PHARMAZIE 1989, 44 (5) 305

Stability of bottled dextran solutions with respect to insoluble particle formation (Review)

Rahman AU (Ed)

Studies in Natural Products Chemistry, Vol 2 Part A - Structure Elucidation

Elsevier Science Publ BV (Amsterdam), 469 pp \$155.25/Fls 295.00 Hardbound ISBN: 0-444-43038-5

Includes chapters on:- Polysaccharides and glyco-complexes of protozoa (Gorin PAJ, Travassos LR); Chemical structure, reaction mechanisms and applications of glucoamylases (Pazur JH)

2 Cellulose

Guo J-X, Gray DG**//Pulp & Paper Res Inst Canada, Montreal, Quebec, Canada H3A 2A7

MACROMOLECULES 1989, 22 (5) 2082

Preparation and liquid crystalline properties of (acetyl)(ethyl)cellulose

Guo J-X, Gray DG**//Pulp & Paper Res Inst Canada, Montreal, Quebec, Canada H3A 2A7

MACROMOLECULES 1989, 22 (5) 2086

Chiroptical behavior of (acetyl)(ethyl)cellulose

liquid crystalline solutions in chloroform

Dumitriu S, Popa M, Artenie V, Dan F//Polytech Inst Jassy, Dept Organ & Macromolec Chem & Technol, 23 August St, No 11 A, R-6600 Jassy, Romania

BIOTECHNOL BIOENG 1989, 34 (3) 283

Bioactive polymers. 56: Urease immobilization on carboxymethylcellulose

Heinze T, Klemm D*, Winkelmann H, Linn W//Friedrich Schiller Univ, Sect Chem, DDR-6900 Jena, Ger Dem Rep

ANGEW MAKROMOL CHEM 1989, 169 (MAY) 69

Spherical ionotropic gels of carboxy-groups containing cellulose derivatives as carrier materials for biological ingredients. I. Investigations of structure and swelling on xerogels formed by carboxymethyl cellulose and aluminium ions

Jayabalan M//Sree Chitra Tirunal Inst Med Sci & Technol, Div Tech Evaluat Biomat, BMT Wing, Trivandrum 695012, India

BRIT POLYM J 1989, 21 (3) 233

Newtonian behaviour of sheared aqueous carboxymethylcellulose solution on aging

Kalman F, Borsa J*, Madarasz R, Rusznak I//Tech Univ Budapest, Dept Organ Chem Technol, Lagmanyosi 16-V-3, H-1111 Budapest, Hungary

COLLOID POLYM SCI 1989, 267 (4) 349

Iodine sorption, porosity, and wettability of carboxymethylcellulose of low degree of substitution

Klemm D, Geschwend G//Friedrich Schiller Univ, Sect Chem, DDR-6900 Jena, Ger Dem Rep

ANGEW MAKROMOL CHEM 1989, 169 (MAY) 175

Crosslinking of carboxymethyl cellulose via enzymatically cleavable esters

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.

Bagga PS, Sandhu DK, Sharma S//Guru Nanak Dev Univ, Sch Life Sci, Microbiol Unit, Amritsar 143005, Punjab, India

PROCESS BIOCHEM 1989, 24 (2) 41

Catabolite repression of cellulase production in *Aspergillus nidulans*

Bes RS, Gas G, Molinier J, Vidal P, Mathieu J, Mora JC//Inst Natl Polytech Toulouse, Tetra Grp, Toulouse, France

OZONE-SCI ENG 1989, 11 (2) 217

Enhancement of popular cellulose susceptibility to cellulase enzyme hydrolysis by ozonation

Chernoglazov VM, Jafarova AN, Klyosov AA//Moscow State Univ, Dept Chem, Div Chem Enzymol, Moscow 119899, USSR

ANAL BIOCHEM 1989, 179 (1) 186

Continuous photometric determination of endo-1,4,-beta-D-glucanase (cellulase) activity using 4-methylumbelliferyl-beta-D-cellobioside as a substrate

Clarke AJ, Strating H//Univ Guelph, Guelph Waterloo Ctr Grad Work Chem, Dept Microbiol, Guelph Campus, Guelph, Ontario, Canada N1G 2W1

CARBOHYD RES 1989, 188 (JUN) 245

Affinity labelling of *Schizophyllum commune* cellulase with [1-³H]-4,5-epoxypentyl-beta-cellobioside: synthesis of inhibitor and stoichiometry of interaction

Guo-Suiye, Fields ML//Address not available

J FOOD PROTECT 1989, 52 (4) 248

Cellulolytic enzyme production by three fungi grown in a ground corn cob medium

Ito S, Shikata S, Ozaki K, Kawai S, Okamoto K, Inoue S, Takei A, Ohta Y, Satoh T//Kao Corp, Tochigi Res Labs, 2606 Akabane, Haga, Tochigi 32134, Japan

AGR BIOL CHEM TOKYO 1989, 53 (5) 1275

Alkaline cellulase for laundry detergents: production by *Bacillus* sp. KSM-635 and enzymatic properties

Kadam SK, Demain AL//MIT, Dept Biol, Cambridge, Ma 02139, USA

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Addition of cloned beta-glucosidase enhances the degradation of crystalline cellulose by the *Clostridium thermocellum* cellulase complex

Nakashima Y, Orskov ER//Iwate Univ, Fac Agr, Morioka, Iwate 020, Japan

ANIM PROD 1989, 48 (JUN) PT3, 543

Rumen degradation of straw. 7. Effects of chemical pre-treatment and addition of propionic acid on degradation characteristics of botanical fractions of barley straw treated with a cellulase preparation

Otter DE, Munro PA, Scott GK, Geddes R//DSIR, Ctr Biochem Proc, Div Biotechnol, Palmerston North, New Zealand

BIOTECHNOL BIOENG 1989, 34 (3) 291

Desorption of *Trichoderma reesei* cellulase by a range of desorbents

Sakamoto R, Arai M, Murao S//Japan Pulp & Paper Res Inst, Tsukuba, Ibaraki 30026, Japan

AGR BIOL CHEM TOKYO 1989, 53 (5) 1407

Reduced cellulose as a substrate of cellulases

Tischler M, Peglow K, Schulz G, Hirte W//Veb Kombinat Spirituosen, Vienna, Austria

LEBENSMITTELINDUSTRIE 1989, 36 (1) 27

Manufacture and application of cellulases for the distillery industry (German, English Abstract)

Wood TM, McCrae SI, Bhat KM//Rowett Res Inst, Bucksburn AB2 9SB, Aberdeen, Scotland

BIOCHEM J 1989, 260 (1) 37

The mechanism of fungal cellulase action. Synergism between enzyme components of *Penicillium pinophilum* cellulase in solubilizing hydrogen bond-ordered cellulose

Berger W, Keck M, Kabrelian V, Song M, Philipp B, Zenke I//Tech Univ Dresden, Sekt Chem, DDR-8027 Dresden, Ger Dem Rep

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Investigation of the solution of cellulose in binary aprotic system. 2. Influence of the physical structure of the cellulose on the dissolution process (German, English Abstract)

Bianchi E, Ciferri A, Conio G, Tealdi A//Univ Genoa, Ist Chim Ind, CNR, Ctr Macromolec, I-16132 Genoa, Italy

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Fiber formation from liquid-crystalline precursors. II. Cellulose in N,N-dimethylacetamide-lithium chloride

Calahorra ME, Cortazar M, Eguiazabal JI, Guzman GM//Univ Paris Vasco, Fac Ciencias Quim, Apartado 1072, San Sebastian, Spain

J APPL POLYM SCI 1989, 37 (12) 3305

Thermogravimetric analysis of cellulose: effect of the molecular weight on thermal decomposition

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

J APPL POLYM SCI 1989, 37 (12) 3291

Molecular weight distribution of cellulose as its tricarbonyl by high performance size exclusion chromatography

Flink P, Stenberg B//Royal Inst Technol, Dept Polymer Technol, S-10044 Stockholm 70, Sweden
BRIT POLYM J 1989, 21 (3) 259

Characterization of rubber-cellulose-fibre composites by mechanical measurements and electron microscopy

Gaonkar SM, Kulkarni PR//Univ Bombay, Food & Fermentat Technol Sect, Bombay 400019, India

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Microcrystalline cellulose from coconut shells

Golub NV, Yurkshtovich TL, Kaputskii FN//VI Lenin State Univ, Phys Chem Problem Res Inst, Minsk, Belorussia, USSR

ZH FIZ KHIM SSSR 1989, 63 (4) 941

Effect of aqueous-alcohol solvents on acid-base properties of cellulose polyampholyte (Russian)

Gorbatova KA, Belyatskaya ON, Bulatnikova LI//Moscow Meat & Dairy Ind Technol Inst, Chair Macromolec Cpd Technol & Biochem, Moscow, USSR

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Study of the structure and properties of polyvinyl alcohol modified by cellulose derivatives (Russian)

Higazy A, Bayazeed A, Hebeish A//Natl Res Ctr, Div Text Res, Cairo, Egypt

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Grafting of N-methylolacrylamide onto flax/polyester fabric using ferrous cellulose thiocarbonate/H₂O₂ redox system

Johansson A//Royal Inst Technol, Dept Inorgan Chem, S-10044 Stockholm 70, Sweden

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A note on the theoretical consideration of the crystalline and amorphous regions in a cellulose fiber

Mansour OY, Nagieb ZA, Basta AH//Natl Res Ctr, Cellulose & Paper Lab, Cairo, Egypt

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Aspects of the xanthate method of grafting of cellulose .3.

Mochizuki A, Sato Y, Ogawara H, Yamashita S//Kuraray Co Ltd, Tskuba Res Lab, Miyukigaoka 41, Tskuba 305, Japan

J APPL POLYM SCI 1989, 37 (12) 3357

Pervaporation separation of water/ethanol mixtures through polysaccharide membranes. I. The effects of salts on the permselectivity of cellulose membrane in pervaporation

Nishio Y, Haratani T, Takahashi T, Manley RSJ//Fukui Univ, Fac Engn, Bunkyo 3-9-1, Fukui 910, Japan

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Cellulose/poly(vinyl alcohol) blends: An estimation of thermodynamic polymer-polymer interaction by melting point depression analysis

Okamoto Y, Hatano K, Aburatani R, Hatada K//Osaka Univ, Fac Engn Sci, Dept Chem, Toyonaka, Osaka 560, Japan

CHEM LETT 1989, (5) 715

Tris (4-tert-butylphenylcarbamate)s of cellulose and amylose as useful chiral stationary phases for chromatographic optical resolution

Okatova OV, Lavrenko PN, Cvetkov VN, Dautzenberg H, Philipp B//Acad Sci USSR, Inst Macromolec Cpd, Leningrad, USSR

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Viscometric and diffusion investigations in the cellulose cadoxen water system

Padmadisastra Y, Gonda I//Univ Sydney, Dept Pharm, Sydney, NSW 2006, Australia

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Preliminary studies of the development of a direct compression cellulose excipient from bagasse

Petkov VI, Zarudaeva SS, Rabinovich IB//NI Lobachevskii State Univ, Gorki, USSR

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Phase composition and relaxation transitions in mixtures of cellulose acetate with dimethyl phthalate and triphenyl phosphate

Roberts RJ, Rowe RC*//ICI PLC, Div Pharmaceut, Macclesfield SK120 2TG, Cheshire, England

INT J PHARM 1989, 52 (3) 213

Determination of the critical stress intensity factor (K-IC) of microcrystalline cellulose using radially edge-cracked tablets

Shukla AJ, Price JC*//Univ Georgia, Coll Pharm, Athens, Ga 30602, USA

PHARMACEUT RES 1989, 6 (5) 418

Effect of drug (core) particle size on the dissolution of theophylline from microspheres made from low molecular weight cellulose acetate propionate

Siekmeier M, Steinmeier H, Zugenmaier P*//Tech Univ Clausthal, Inst Phys Chem. D-3392 Clausthal Zellerfe, Fed Rep Ger

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Structural investigations and phase behaviour of a ternary lyotropic liquid-crystalline cellulosic system: cellulose tricarbanilate/3-chlorophenylurethane of cellulose/triethylene glycol monomethyl ether

Spindler DD, Wyman CE, Grohmann K//Solar Energy Res Inst, Golden, Co 80401, USA

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Evaluation of thermotolerant yeasts in controlled simultaneous saccharifications and fermentations of cellulose to ethanol

Yagodin AY, Boldyrev VV//Acad Sci USSR, Inst Solid State Chem & Mineral Ores Proc, Novosibirsk, USSR

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Synthesis and solvation of the complex acetyl-salicylic acid cellulose (Russian, English Abstract)

Yagodin AY, Boldyrev VV//Acad Sci USSR, Inst Solid State Chem & Mineral Ores Proc, Novosibirsk, USSR

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Mechanical activation of clonidine cellulose mix-

ture (Russian, English Abstract)

Buchert J, Puls J, Poutanen K//VTT Biotech Lab, Tietotie 2, SF-02150 Espoo, Finland

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The use of steamed hemicellulose as substrate in microbial conversions

Johnson KG, Silva MC, Mackenzie CR, Schneider H, Fontana JD//Natl Res Council Canada, Div Biol Sci, Ottawa, Ontario, Canada K1A 0R6

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Tillman LM, Abaseed AE, Lee YY*, Torget R//Auburn Univ, Dept Chem Engr, Auburn, Al 36849, USA

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Effect of transient variation of temperature on acid hydrolysis of aspen hemicellulose

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 (2) 101

Study of hydroxypropylmethylcellulose phtalate films (HP55). 2. Applied films (French, English Abstract)

Fortin S, Charlet G*//Univ Laval, Ctr Rech Sci & Ingn Macromolecules, Quebec City, Quebec, Canada G1K 7P4

MACROMOLECULES 1989, 22 (5) 2286

Phase diagram of aqueous solutions of (hydroxypropyl)cellulose

Satoh K, Takayama K*, Machida Y, Suzuki Y, Nakagai M, Nagai T//Hoshi Univ, Fac Pharmaceut Sci, Ebara 2-4-41, Shinagawa ku, Tokyo 142, Japan

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Factors affecting the bioadhesive property of tablets consisting of hydroxypropyl cellulose and carboxyvinyl polymer

Bilbao R, Millera A, Arauzo J//Univ Zaragoza, Fac Sci, Dept Chem Engr, E-50009 Zaragoza, Spain

THERMOCHIM ACTA 1989, 143 (MAY) 149
Thermal decomposition of lignocellulosic materials: influence of the chemical composition

Burns DS, Ooshima H, Converse AO*//
*Dartmouth Coll, Thayer Sch Engr, Hanover,
NH 03755, USA

APPL BIOCHEM BIOTECH 1989, 20-1 (JAN)
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Surface area of pretreated lignocellulosics as a function of the extent of enzymatic hydrolysis

Converse AO, Kwarteng IK, Grethlein HE*,
Ooshima H//*Michigan Biotechnol Inst, Lansing,
Mi 48909, USA

APPL BIOCHEM BIOTECH 1989, 20-1 (JAN)
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Kinetics of thermochemical pretreatment of lignocellulosic materials

Gould JM, Jasberg BK, Bectel LB, Hsu JT,
Lewis SM, Fahey GC//USDA ARS, No Reg Res
Ctr, Peoria, Il 61604, USA

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High-fiber, noncaloric flour substitute for baked foods. Properties of alkaline peroxide-treated lignocellulose

Gould JM, Jasberg BK, Cote GL//USDA ARS,
No Reg Res Ctr, Peoria, Il 61604, USA

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Structure-function relationships of alkaline peroxide-treated lignocellulose from wheat straw

Jasberg BK, Gould JM, Warner K, Navickis LL//USDA ARS, No Reg Res Ctr, Peoria, Il 61604, USA

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High-fiber, noncaloric flour substitute for baked foods. Effects of alkaline peroxide-treated lignocellulose on dough properties

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High-fiber, noncaloric flour substitute for baked foods. Alkaline peroxide-treated lignocellulose in chocolate cake

Louden JD, Kelly J, Phillipson J//ICI Chem & Polymers Grp Ltd, Dept Res & Technol, Characterisat & Measurement Grp, Runcorn WA7 4QD, Cheshire, England

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Methylcentralite concentration profiles in monoperforated extruded nitrocellulose and nitrocellulose/nitroglycerine propellant grains by Raman microspectroscopy

Shepherd-Fenni M//Micron Separat Inc MSI, Westborough, Ma 01581, USA

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Reducing background potential on nitrocellulose, supported nitrocellulose, and nylon membranes

3 Lignin

Ball AS, Betts WB, McCarthy AJ//Univ Liverpool, Dept Genet & Microbiol, POB 147, Liverpool L69 3BX, England

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Degradation of lignin-related compounds by actinomycetes

Castellan A, Colombo N, Cucuphat C, Fournier de Violet P//Univ Bordeaux 1, CNRS, Unite 348, Photochim Organ Lab, F-33405 Talence, France

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Photodegradation of lignin: A photochemical study of a phenolic alpha-carbonyl beta-O-4 lignin model dimer 4-hydroxy-3-methoxy-alpha-(2'-methoxyphenoxy)-acetophenone

Cheradame H, Detoisien M, Gandini A, Pla F, Roux G//Ecole Francaise Papeterie, Chim Macromolec & Papeterie Lab, BP 65, F-38402 St Martin Heres, France

BRIT POLYM J 1989, 21 (3) 269

Polyurethane from Kraft lignin

de Oliveira W, Glasser WG*//*Virginia Polytech Inst & State Univ, Dept Forest Prod, Blacksburg, Va 24061, USA

J APPL POLYM SCI 1989, 37 (11) 3105

Engineering plastics from lignin. XVI. Star-like macromers with propylene oxide

Deobald LA, Crawford DL*//*Univ Idaho, Dept Bacteriol & Biochem, Moscow, Id 83843, USA

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Lignin biotransformations by an aromatic aldehyde oxidase produced by Streptomyces viridosporus T7A

Farrell RL, Murtagh KE, Tien M, Mozuch MD, Kirk TK//Repligen Sandoz Res Corp, 128 Spring St, Lexington, Ma 02173, USA

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Physical and enzymatic properties of lignin peroxidase isoenzymes from *Phanerochaete chrysosporium*

Nordkvist E, Graham H, Aman P//Nat'l Lab Agr Chem, Box 7004, S-75007 Uppsala, Sweden
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Paszner L, Behera NC//Univ British Columbia, Fac Forestry, Dept Harvesting & Wood Sci, Vancouver, BC, Canada V6T 1W5

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Topochemistry of softwood delignification by alkali earth metal salt catalysed organosolv pulping

Pellinen J, Abuhasan J, Joyce TW, Chang H-M//STFI, Box 5604, S-11486 Stockholm, Sweden
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Biological delignification of pulp by *Phanerochaete chrysosporium*

Stomberg R, Lundquist K//Chalmers Univ Technol, Dept Inorgan Chem, S-41296 Gothenburg, Sweden

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On the stereochemistry of lignin model compounds of the arylglycerol-beta-aryl ether type: Crystal structure of erythro-1-(4-hydroxy-3,5-dimethoxyphenyl)-2-(4-hydroxy-methyl-2,6-dimethoxyphenoxy)-1,3-propanediol, C₂₀H₂₆O₉

Taneda H, Habu N, Nakano J//Univ Tokyo, Fac Agr, Dept Forest Prod, Bunkyo ku, Tokyo 113, Japan

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Thring RW, Chornet E*, Overend RP//Univ Sherbrooke, Dept Chem Engr, Sherbrooke, Quebec, Canada J1K 2R1

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Analysis of phenols from lignin depolymerization by capillary gas chromatography

Wondrack L, Szanto M, Wood MA*//Salk Inst Biotechnol Ind Associates Inc, POB 85200, San Diego, Ca 92138, USA

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Depolymerization of water soluble coal polymer from subbituminous coal and lignite by lignin peroxidase

Yu W, Woerner D, Lin J, McCarthy JL*//Univ Washington, Dept Chem Engr, Seattle, Wa 98195, USA

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Preparation of Kraft lignins of differing molecular weights by ultrafiltration with a single membrane using gel layer control

4 Polysaccharides

Adeyeye A, Ogunlesi M*, Eze EN//Univ Lagos, Dept Chem, Lagos, Nigeria

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Adeyeye A, Ogunlesi M*, Odugbemi T//Univ Lagos, Dept Chem, Lagos, Nigeria

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Delvig AA, Krasnoproschina LI, Bobyleva GV, Kuvakina VI//II Mechnikov Vaccine & Serum Inst, Moscow, USSR

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Protective activity of detoxified lipopolysaccharide of *Neisseria meningitidis*, serogroup-A, in animal experiments (Russian, English Abstract)

Hollingsworth RI, Carlson RW, Garcia F, Gage DA//Michigan State Univ, Dept Biochem, Biochem Bldg, E Lansing, Mi 48824, USA

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Holst O, Rohrscheidt-Andrzejewski E, Cordes H-P, Brade H*//Forschungsinstitut Borstel, Inst Exptl Biol & Med, Parkallee 22, D-2061 Borstel, Fed Rep Ger

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Isolation and identification of 3-deoxy-7-O-alpha-D-galactopyranosyl-D-manno-2-octulopyranosonate from the inner core region of the lipopolysaccharide of *Escherichia coli* EH100

Jost BH, Adler B, Faine S//Monash Univ, Dept Microbiol, Clayton, Vic 3168, Australia
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Kondo S, Zahringer U*, Rietschel ET, Hisatsune K//Forschungsinstitut Borstel, D-2061 Borstel, Fed Rep Ger

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Isolation and identification of 3-deoxy-D-threo-hexulosonic acid as a constituent of the lipopolysaccharide of *Vibrio parahaemolyticus* serotypes 07 and 012

Martin C, Codd GA, Siegelman HW, Weckesser J*//Albert Ludwigs Univ, Inst Biol 2, Schanzlestr 1, D-7800 Freiburg 1, Fed Rep Ger
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Lipopolysaccharides and polysaccharides of the cell envelope of toxic *Microcystis aeruginosa* strains

Zych K, Sidorczyk Z*//Univ Lodz, Inst Microbiol, Banacha 12-16, PL-90237 Lodz, Poland
CARBOHYD RES 1989, 188 (JUN) 105

Lipopolysaccharides of *Proteus penneri* species novum

Anderson AN, Parolis H*//Rhodes Univ, Sch Pharmaceut Sci, Grahamstown 6140, South Africa

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Investigation of the structure of the capsular polysaccharide of *Escherichia coli* K55 using *Klebsiella bacteriophage phi5*

Austrian R//Univ Penn, Sch Med, Dept Res Med, Philadelphia, Pa 19104, USA
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Cirelli AF, Oliva EM, de Lederkremer RM//Univ Buenos Aires, Fac Ciencias Exactas & Nat, Dept Quim Organ, Pabellon 2 Ciudad Univ, RA-1428 Buenos Aires, Argentina

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Di Fabio JL, Michon F, Brisson J-R, Jennings HJ*, Wessels MR, Benedi V-J, Kasper DL//Natl Res Council Canada, Div Biol Sci, Ottawa, Canada K1A 0R6

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Elinov NP//Leningrad Pharmaceut Chem Res Inst, Leningrad, USSR

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Englyst H//MRC, Dunn Clin Nutr Ctr, 100 Tennis Court Rd, Cambridge CB2 1QL, England
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Granoff DM, Chacko A, Lottenbach KR, Sheetz KE//St Louis Childrens Hosp, Div Infect Dis, 400 S Kingshighway Blvd, St Louis, Mo 63110, USA

J PEDIAT 1989, 114 (6) 925

Immunogenicity of *Haemophilus influenzae* type-B polysaccharide outer membrane protein conjugate vaccine in patients who acquired *Haemophilus* disease despite previous vaccination with type B polysaccharide vaccine

Grohmann K, Mitchell DJ, Himmel ME, Dale BE, Schroeder HA//Solar Energy Res Inst, Div Solar Fuels Res, Biotechnol Branch, Golden, Co 80401, USA

APPL BIOCHEM BIOTECH 1989, 20-1 (JAN) 45

The role of ester groups in resistance of plant cell wall polysaccharides to enzymatic hydrolysis

Jansson P-E, Kenne L, Widmalm G//Univ Stockholm, Arrhenius Lab, Dept Organ Chem, S-10691 Stockholm, Sweden

CARBOHYD RES 1989, 188 (JUN) 169

Computer-assisted structural analysis of polysaccharides with an extended version of CASPER using ¹H- and ¹³C-n.m.r. data

Kaluarachchi K, Bush CA//IIT, Dept Chem, Chicago, Il 60616, USA

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Knirel YA, Kocharova NA, Shashkov AS, Kochetkov NK, Mamontova VA, Soloveva TF//ND Zelinskii Organ Chem Inst, Moscow, USSR CARBOHYD RES 1989, 188 (JUN) 145

Structure of the capsular polysaccharide of *Klebsiella ozaenae* serotype K4 containing 3-deoxy-D-glycero-D-galacto-nonulosonic acid

Korenaga H, Inoue K, Kadoya S//Daiichi Seiyaku Co Ltd, Res Inst, Edogawa ku, Tokyo 134, Japan

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Kuhn MC, Grosch W//Deutsch Forschungsanstalt Lebensmittelchem, D-8046 Garching, Fed Rep Ger

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Baking functionality of reconstituted rye flours having different nonstarchy polysaccharide and starch contents

Mehl M, Starke R, Kissig B, Grunow R, Jahn S, Schmidt G, von Baehr R//Humboldt Univ, Bereich Med Charite, Inst Med Mikrobiol, Postfach 140, DDR-1040 Berlin, Ger Dem Rep J BASIC MICROB 1989, 29 (4) 221

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Muravyeva DA, Popova OI//Pyatigorsk Pharmaceut Inst, Pyatigorsk, USSR

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Nilsson S, Piculell L*, Jonsson B//Univ Lund, Ctr Chem, Box 124, S-22100 Lund, Sweden

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APPL BIOCHEM BIOTECH 1989, 20-1 (JAN) 845

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Piculell L, Rymden R//Univ Lund, Ctr Chem, Box 124, S-22100 Lund, Sweden

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Richards JC, Perry MB*, Kniskern PJ//Nat'l Res Counil Canada, Div Biol Sci, Ottawa, Ontario, Canada K1A 0R6

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Sjoberg A, Hahn-Hagerdal B//Lund Univ, Ctr Appl Microbiol Chem, POB 124, S-22100 Lund, Sweden

APPL ENVIRON MICROBIOL 1989, 55 (6) 1549

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5 Starch

Antranikian G//Univ Gottingen, Inst Mikrobiol, Grisebachstr 8, D-3400 Gottingen, Fed Rep Ger APPL BIOCHEM BIOTECH 1989, 20-1 (JAN) 267

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Bunni L, McHale L, McHale AP//Univ Dublin, Trinity Coll, Dept Microbiol, Dublin 2, Ireland

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Kim J, Nanmori T, Shinke R//Kobe Univ, Grad Sch Sci & Technol, Dept Utilizat Biol Resources, Div Sci Biol Resources, Nada ku, Kobe 657, Japan

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Lirova SA, Ermakova LM, Rabotnova IL, Khovrychev MP//Acad Sci USSR, Inst Phys & Astrophys, Moscow V-71, USSR
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Matsui T, Kitagawa H, Doi S//Kagawa Univ, Fac Agr, Dept Agroind Sci, Miki, Kagawa 76107, Japan

J JPN SOC FOOD SCI TECHNOL 1989, 36 (4) 334

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Park JT, Rollings JE**//Worcester Polytech Inst, Dept Mech Engn, Worcester, Ma 01609, USA

ENZYME MICROB TECHNOL 1989, 11 (6) 334

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BIOCHIM BIOPHYS ACTA 1989, 991 (3) 388

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Tatsumoto K, Oh KK, Baker JO, Himmel ME**//Solar Energy Res Inst, Div Solar Fuels, Biotechnol Res Branch, Fermentat Sect, Gol-

den, Co 80401 USA

APPL BIOCHEM BIOTECH 1989, 20-1 (JAN) 293

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Heilmann L//Stradtkrankenhauses, Gynakol Geburtsh Abt, D-6090 Russelsheim, Fed Rep Ger

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Houng JY, Chen KC*, Hsu WH**//Nat'l Tsing Hua Univ, Dept Chem Engn, Hsinchu 30043, Taiwan

APPL MICROBIOL BIOTECHNOL 1989, 31 (1) 61

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Antrim RL, Lloyd NE, Auterinen AL//Nabisco Brands Inc, RMS Technol Ctr, 200 Deforest Ave, E Hanover, NJ 07936, USA

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Bayazeed A, Higazy A, Hebeish A//Nat'l Res Ctr, Div Text Res, Cairo, Egypt

STARCH 1989, 41 (5) 187

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Bjorck I, Gunnarsson A, Ostergard K//Univ Lund, Ctr Chem, Dept Food Chem, POB 124, S-22100 Lund, Sweden

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Carr ME, Cunningham RL//USDA ARS, No Reg Res Ctr, 1815 N Univ St, Peoria, IL 61604, USA

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Chinachoti P, Steinberg MP//Univ Massachusetts, Dept Food Sci & Nutr, Amherst, Ma 01003, USA

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Craig SAS, Maningat CC, Seib PA, Hosney RC//Nabisco Brands Inc, E Hanover, NJ 07936, USA

CEREAL CHEM 1989, 66 (3) 173

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Hu T//Feng Chia Univ, Dept Environm Sci, 100 Wehwa Rd, Taichung, Taiwan

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Jackson DS, Waniska RD, Rooney LW//Univ Nebraska, Dept Food Sci & Technol, 134 HC Filley Hall, E Campus, Lincoln, Ne 68583, USA

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Johnson JM, Harris CH, Barbeau WE//Virginia Polytech Inst & State Univ, Dept Human Nutr & Foods, Blacksburg, Va 24601, USA

CEREAL CHEM 1989, 66 (3) 155

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Mahanta CL, Ali SZ, Bhattacharya KR, Mukherjee PS//Cent Food Technol Res Inst, Discipline Grain Sci & Technol, Mysore 570013, Karnataka, India

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Nelson JM, Scheerens JC, Bucks DA, Berry JW//Univ Arizona, Maricopa Agr Ctr, Dept Plant Sci, Rte 3, Box 751F, 37860 W Smith Enki Rd, Maricopa, Az 85239, USA

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O'Hair SK//Univ Florida, Inst Food & Agr Sci, Ctr Trop Res & Educ, 18905 SW 280 St, Homestead, Fl 33031, USA

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CEREAL CHEM 1989, 66 (3) 244

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STARCH 1989, 41 (4) 151

Effect of ethanol on formation of cyclodextrin from soluble starch by *Bacillus macerans* cyclodextrin glucanotransferase

Siljestrom M, Eliasson AC, Bjorck I//Univ Lund, Ctr Chem, Dept Food Chem, POB 124, S-22100 Lund, Sweden

STARCH 1989, 41 (4) 147

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Skrede G//Norwegian Food Res Inst, Oslovn 1, N-1430 Aas, Norway

MEAT SCI 1989, 25 (1) 21

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Slominska L//Cent Lab Ind Potatoes, UL Zwierzyniecka 18, PL-60814 Poznan, Poland

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Sosulski F, Waczkowski W, Hoover R//Univ Saskatchewan, Dept Crop Sci & Plant Ecol, Saskatoon, Saskatchewan, Canada S7N 0W0

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Srikanta S, Jaleel SA, Kunhi AAM, Rehana F, Ghildyal NP, Lonsane BK, Karanth NG//Cent Food Technol Res Inst, Fermentat Technol & Bioengn Discipline, Mysore 570013 Karnataka, India

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SG//Marathwada Agr Univ, Carbohydrate Res Lab, Parbhani 431402, Maharashtra, India

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White PJ, Abbas IR, Johnson LA//Iowa State Univ Sci & Technol, Dept Food & Nutr, 111 Mackay Hall, Ames, Ia 50011, USA

STARCH 1989, 41 (5) 176

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Seguchi M, Yamada Y//Seibo Jogakuin Junior Coll, Tayamachi-1, Fushimi ku, Kyoto, Japan

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Lignell A, Pedersen M//Univ Uppsala, Dept Physiol Bot, Box 540, S-75121 Uppsala, Sweden

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Schwendig P, Camps G, Thier H-P//Univ Munster, Inst Lebensmittelchem, Piusallee 7, D-4400 Munster, W Germany

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Draget KI, Ostgaard K, Smidsrod O//Univ Trondheim, Dept Bot, N-7055 Dragvoll, Norway

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- Ensor SA, Ernst EA, Sofos JN, Schmidt GR//Colorado State Univ, Dept Anim Sci, Ft Collins, Co 80523, USA
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- Su HT, Bajpai R*, Preckshot GW//*Univ Missouri, Dept Chem Engr, 1030 Engr Bldg, Columbia, Mo 65211, USA
APPL BIOCHEM BIOTECH 1989, 20-1 (JAN) 561
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- Karimi S, Ward OP//*Univ Waterloo, Dept Biol, Waterloo, Ontario, Canada N2L 3G1
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No HK, Meyers SP//Inst Aquaculture Res Akvaforsk, N-6600 Sunndalsora, Norway

J AGR FOOD CHEM 1989, 37 (3) 580

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Roberts GAF, Taylor KE//Trent Polytech, Dept Phys Sci, Burton St, Nottingham NG1 4BU, England

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Senstad C, Mattiasson B**/Univ Lund, Ctr Chem, Dept Biotechnol, POB 124, S-22100 Lund, Sweden

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Ahmed AEHN, El-Gizawy SM//Univ Assiut, Dept Pharmaceut Chem, Coll Pharm, Assiut, Egypt

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Arnold EN, Lillie TS, Beesley TE//Lafayette Coll, Dept Chem, Easton, Pa 18042, USA

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Bar R//Hebrew Univ Jerusalem, Dept Appl Microbiol, Biochem Engn Lab, POB 1172, IL-91010 Jerusalem, Israel

APPL MICROBIOL BIOTECHNOL 1989, 31 (1) 25

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Bekers O, Beijnen JH, Bramel EHG, Otagiri M, Bult A, Underberg WJM**/State Univ Utrecht, Fac Pharm, Dept Pharmaceut Anal, Catharijnesingel 60, 3511 GH Utrecht, The

Netherlands

INT J PHARM 1989, 52 (3) 239

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Buvari A, Barcza L**/L Eotvos Univ, Inst Inorgan & Analyt Chem, Muzeum Krt 4-B, H-1088 Budapest, Hungary

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J INCLUSION PHENOM 1989, 7 (3) 379

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Chahine JMEH, Bertigny J-P Schwaller MA//Univ Paris 07, Inst Topol & Dynam Syst, CNRS, UA 34, 1 Rue Guy Brosse, F-75221 Paris 05, France

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Fujii I, Kiyama R, Kanematsu K//Kyushu Univ, Fac Pharmaceut Sci, Inst Synthet Organ Chem, 62 Maidashi, Higashi ku, Fukuoka 812, Japan

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Fujita K, Tahara T, Koga T//Fukuyama Univ, Fac Pharmaceut Sci, Higashimura, Fukuyama 72902, Japan

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Haginaka J, Nishimura Y, Wakai J, Yasuda H, Koizumi K, Nomura T//Mukogawa Womens

Univ, Fac Pharmaceut Sci, 11-68 Koshien Kyuban cho, Nishinomiya, Hyogo 663, Japan
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Hamai S//Miyazaki Med Coll, Dept Phys, Miyazaki 88916, Japan

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Hesselink PGM, van Vliet S, de Vries H, Witholt B//TNO, Inst Appl Chem, POB 108, 3700 AC Zeist, The Netherlands

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Hosangadi B, Palekar S//Univ Bombay, Dept Chem, Bombay 400098, India

J INCLUSION PHENOM 1989, 7 (3) 321

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Kata M, Aigner Z, Revesz P, Selmecei B//Albert Szent Gyorgyi Med Univ, Div Pharmaceut Technol, POB 121, H-6701 Szeged, Hungary

J INCLUSION PHENOM 1989, 7 (3) 289

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AGR BIOL CHEM TOKYO 1989, 53 (5) 1357

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Kodaka M, Fukaya T//Nat'l Chem Lab Ind, Higashi, Tsukuba 305, Japan

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Komiyama M, Matsumoto Y//Univ Tsukuba, Inst Mat Sci, Sakura, Ibaraki 305, Japan

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Luu S-N, Bobier-Rival C, Sejalon C, Trottier D, Pourrat A//RL CERM, F-63203 Riom, France

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Nakai Y, Yamamoto K, Terada K, Oguchi T, Saito H, Watanabe D//Chiba Univ, Fac Pharmaceut Sci, 1-33 Yayoicho, Chiba 260, Japan

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Orienti I, Cavallari C, Zecchi V, Fini A//Dipartimento Sci Farmaceut, Via Belmeloro 6, I-40126 Bologna, Italy

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Sugiura I, Komiyama M, Toshima N*, Hirai H//Univ Tokyo, Fac Engr, Dept Ind Chem, Bunkyo ku, Tokyo 113, Japan

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Taraszevska J//Polish Acad Sci, Inst Phys Chem, PL-01224 Warsaw, Poland

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Usemasu I, Nakayama T//Address not available

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Yoshida A, Yamamoto M, Irie T, Hirayama F, Uekama K//Kumamoto Univ, Fac Pharmaceut Sci, 5-1 Oehonmachi, Kumamoto 862, Japan

CHEM PHARM BULL TOKYO 1989, 37 (4) 1059

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Barrios-Alarcon J, Aldrete JA*, Paragas-Tapia D//Cook Cty Hosp, Dept Anesthesiol & Crit Care, 1835 W Harrison St, Chicago, IL 60612, USA

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Relief of post-lumbar puncture headache with epidural dextran 40: a preliminary report

Larsen C//Royal Danish Sch Pharm, Dept Pharmaceut, 2 Univ Pk, DK-2100 Copenhagen, Denmark

INT J PHARM 1989, 52 (1) 55

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Roberts TS, Nelson CL*, Barnes CL, Boone DW, Ferris EJ, Holder JL//Univ Arkansas Med Sci, Dept Orthoped, Little Rock, Ar 72205, USA

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Liu Q, Laskowski JS*//Univ British Columbia, Dept Min & Mineral Proc Engr, Vancouver, BC, Canada V6T 1W5

J COLLOID INTERFACE SCI 1989, 130 (1) 101

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Poulsen OM, Petersen LW//Univ Copenhagen, Inst Plant Pathol, Oster Farmimagsgade 2A, DK-1353 Copenhagen K, Denmark

BIOTECHNOL BIOENG 1989, 34 (1) 59

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Poulsen OM, Petersen LW//Univ Copenhagen, Inst Plant Pathol, Oster Farmimagsgade 2A, DK-1353 Copenhagen K, Denmark

BIOTECHNOL BIOENG 1989, 34 (1) 65

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