

BIBLIOGRAPHY ON CARBOHYDRATE POLYMERS

1 Books, Reviews and Symposia

Hoiby N, Pedersen SS, Shand GH, Doring G, Holder IA (Eds)

S Karger (Basel) 1989 308pp \$160.00/SFR-240.00/DM287.00 Hardbound ISBN: 3-8055-5002-2

Pseudomonas aeruginosa Infection

Antibiotics and Chemotherapy, Vol 42

Includes chapters on:- Bacterial exopolysaccharides - their nature and production (Sutherland IW); Physicochemical properties of alginate from mucoid strains of *Pseudomonas aeruginosa* isolated from cystic fibrosis patients (Russell NJ, Gacesa P); Safety and immunogenicity of a polyvalent *Pseudomonas aeruginosa* O-polysaccharide-toxin-A vaccine in humans (Cryz SJ, Sadoff JC, Cross AS, Furer E)

Krstulovic (Ed)

Chiral Separation by HPLC

Applications to Pharmaceutical Compounds

Ellis Horwood Series in Medical Chemistry

Ellis Horwood Ltd (Chester) ISBN: 0-7458-0331-8; Halsted Press (New York) ISBN: 0-470-21299-3 1989 548pp \$119.00 Hardbound 1989

Includes chapters: Cyclodextrin additives (Sybilka D, Zukowski J); HPLC separation of enantiomers and other isomers with cyclodextrin-bonded phases - rules for chiral recognition (Han SM, Armstrong DW); Polysaccharide phases (Shibata T, Mori K, Okamoto Y)

Guzman JF, Moreno AH, Bejarano RG//CSIC, Inst Grasa & Derivados, Apartado 1078, Seville, Spain

GRASAS ACEITES 1989, 40 (2) 146

Inhibitors of cellulolytic enzymes (Review) (Spanish)

von Schempp W//Address not available

HOLZFORSCHUNG 1989, 43 (5) 343

31. Rundgesprach der cellulosechemiker, Baden-Baden (German)

Newman RK, Newman CW, Graham H//Montana State Univ, Dept Plant & Soil Sci, Bozeman, Mt 59717, USA

CEREAL FOOD WORLD 1989, 34 (10) 883

The hypocholesterolemic function of barley beta-glucans (Review)

Wood PJ, Anderson JW, Braaten JT, Cave NA, Scott FW, Vachon C//Agr Canada, Ctr Food Res, Ottawa, Ontario, Canada K1A 0C6

CEREAL FOOD WORLD 1989, 34 (10) 878

Physiological effects of beta-D-glucan rich fractions from oats (Review)

Fareed J, Walenga JM, Breddin HK, Caen J//Loyola Univ, Med Ctr, Dept Pathol, Maywood, Il 60153, USA

SEMIN THROMB HEMOSTASIS 1989, 15 (4) 365

Special Issue - Newer strategies in the management of thrombotic disorders: III (Heparin/Low molecular weight heparin)

Reid ID//Natl Res Council Canada, Biotechnol Res Inst, 6100 Ave Royalmt, Montreal, Quebec, Canada H4P 2R2

ENZYME MICROB TECHNOL 1989, 11 (12) 786

Solid-state fermentations for biological delignification (Review)

Guisseley KB//FMC Bioprod, 5 Maple St, Rockland, Me 04841, USA

ENZYME MICROB TECHNOL 1989, 11 (11) 706

Chemical and physical properties of algal polysaccharides used for cell immobilization (Review)

Srivastava R, Kulshreshtha DK//Cent Drug Res Inst, Div Med Chem, Lucknow 226001 Uttar Pradesh, India

PHYTOCHEMISTRY 1989, 28 (11) 2877

Bioactive polysaccharides from plants (Review)

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.

Richter G//Address not available

STARCH 1989, 41 (9) 359

Report on the engine and apparatus exhibition during the Starch Convention 1989 in Detmold (German, English Abstract)

2 Cellulose

Ermolenko IN, Shpilevskaya LE//Acad Sci Bel SSR, Inst Gen & Inorgan Chem, Minsk, Belorussia, USSR

DOKL AKAD NAUK SSSR 1989, 33 (9) 815

The temperature effect on the formation and regression of free radicals in UV-irradiated carboxymethylcellulose (Russian, English Abstract)

Wan LSC, Prasad KPP//Natl Univ Singapore, Dept Pharm, 10 Kent Ridge Crescent, Singapore 0511, Singapore

INT J PHARM 1989, 55 (2-3) 115

Uptake of water into tablets with low-substituted carboxymethyl cellulose sodium as disintegrant

Abeles FB, Takeda F//USDA ARS, Appalachian Fruit Res Stn, 45 Wiltshire Rd, Kearneysville, WV 25430, USA

HORTSCIENCE 1989, 24 (5) 851

Increased cellulase activity during blackberry fruit ripening

Chernoglazov VM, Ermolova OV, Vozny YV, Klyosov AA//MV Lomonosov State Univ, Dept Med, Div Chem Enzymol, Moscow 119899, USSR

ANAL BIOCHEM 1989, 182 (2) 250

A method for detection of cellulases in polyacrylamide gels using 5-bromindoxyl-beta-D-cellobioside: high sensitivity and resolution

Gilkes NR, Kilburn DG, Miller RC, Warren RAJ//Univ British Columbia, Dept Microbiol, Vancouver, BC, Canada V6T 1W5

J BIOL CHEM 1989, 264 (30) 17802

Structural and functional analysis of a bacterial cellulase by proteolysis

Kumakura M, Kanno S, Nisizawa K//Japan Atom Energy Res Inst, Takasaki Radiat Chem Res Estab, Takasaki, Gunma 37012, Japan

CAN J MICROBIOL 1989, 35 (10) 968

Cellulase production in *Trichoderma reesei* immobilized with polymeric fibrous carriers

Schell DJ, Hinman ND, Grohmann K, Mohag-

heghi A//Solar Energy Res Inst, 1617 Cole Blvd, Golden, Co 80401, USA

BIOTECHNOL LETT 1989, 11 (10) 745

Changes in physical and chemical properties of pretreated wheat straw during hydrolysis with cellulase

Shieh W-J, Tsai GJ, Ladisch MR, Tsao GT//Purdue Univ, Renewable Resources Engr Lab, W Lafayette, In 47907, USA

APPL BIOCHEM BIOTECH 1989, 22 (1) 13

Ultraviolet difference spectroscopic study on the interactions of cellulase from *Trichoderma reesei* with celloextrins

Sota H, Honda H, Taya M, Iijima S, Kobayashi T*//Nagoya Univ, Fac Sci, Dept Engr, Chijusa ku, Nagoya, Aichi 464, Japan

J FERMENT BIOENG 1989, 68 (3) 183

Diversity of cellulases produced by a thermophilic anaerobe strain NA10

Taniguchi M, Kobayashi M, Fujii M//Niigata Univ, Fac Engr, Dept Chem Engr, Ikarashi 2, Niigata 95021, Japan

BIOTECHNOL BIOENG 1989, 34 (8) 1092

Properties of a reversible soluble-insoluble cellulase and its application to repeated hydrolysis of crystalline cellulose

van Tilbeurgh H, Loontjens FG, Engelborgs Y, Claeysens M//State Univ Ghent, Biochem Lab, KL Ledeganckstr 35, B-9000 Ghent, Belgium

EUR J BIOCHEM 1989, 184 (3) 553

Studies of the cellulolytic system of *Trichoderma reesei* QM 9414 - binding of small ligands to the 1,4-beta-glucan cellobiohydrolase II and influence of glucose on their affinity

Afanasev VA, Sarybaeva PI, Sultankulova AS, Vasikova TV//Acad Sci KiSSR, Inst Organ Chem, Frunze, Kirghizia, USSR

PURE APPL CHEM 1989, 61 (11) 1993

Cellulose sorbents obtained by the action of Lewis acids

Axenrod T, Liang B, Bulusu S*//USA, Armaments Res Dev & Engr Ctr, Picatinny Arsenal, NJ 07806, USA

MAGN RESON CHEM 1989, 27 (10) 925

Assignment of the ^1H , ^{13}C and ^{15}N NMR spectra of methyl beta-D-glucopyranoside tetranitrate, beta-cellobiose octanitrate and cellulose trinitrate by two-dimensional homonuclear and hetero-nuclear ^{13}C - ^1H and ^{15}N -O-C- ^1H shift correla-

tion spectroscopy

Below SY, Myasoedova VV, Krestov GA//Address not available

J APPL CHEM-ENGL TR 1989, 62 (1) PT2, 123

Rheological properties of the system cellulose triacetate-trifluoroacetic acid-methylene chloride with LC ordering

Beluza YM, Zhorin VA, Bykov VA, Epshtein YV, Yenikolopyan NS//All Union Prot Subst Biosynth Res Inst, Moscow, USSR

VYSOKOMOL SOEDIN SER B SSSR 1989, 31 (9) 671

Influence of irradiation on cellulose affected by shear strains under pressure (Russian)

Bouchard J, Abatzoglou N, Chornet E, Overend RP//Nat'l Res Council Canada, Div Biol Sci, Ottawa, Ontario, Canada K1A 0R6

WOOD SCI TECHNOL 1989, 23 (4) 343

Characterization of depolymerized cellulosic residues. Part 1: Residues obtained by acid hydrolysis processes

Chirkova YA, Kreitus AE//Acad Sci LaSSR, Inst Wood Chem, Riga 226006, Latvia, USSR

VYSOKOMOL SOEDIN SER A SSSR 1989, 31 (10) 2079

Sorption of a solvent by cellulose and cellulose materials from the liquid phase (Russian, English Abstract)

Herman J, Visavarungroj N, Remon JP//State Univ Ghent, Pharmaceut Technol Lab, B-9000 Ghent, Belgium

INT J PHARM 1989, 55 (2-3) 143

Instability of drug release from anhydrous theophylline microcrystalline cellulose formulations

Jayaprakasam R, Sivakumar R//Pondicherry Univ, Dept Chem, Jipmer Campus, Pondicherry 605006, India

CURR SCI 1989, 58 (17) 980

Thin-layer chromatography on cellulose

Johnson RJ//Baxter Healthcare Corp, RLT-02, Baxter Technol Pk, Round Lake, IL 60073, USA

MED PROGR TECHNOL 1989, 15 (1-2) 77

The design of cellulosic based membranes that do not activate complement

Kaputskii FN, Bil'dyukevich AV, Torgashov VI,

Gert EV//VI Lenin State Univ, Minsk, Belorussia, USSR

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New method for production of cellulose membranes

Karimova UG, Usmanov TI, Suleimanova RT, Zhibankov RG, Teeyar RE, Tashpulatov YT//Tashkent Cotton Cellulose Chem & Technol Res Inst, Tashkent, Yzbekistan, USSR

VYSOKOMOL SOEDIN SER A SSSR 1989, 31 (10) 2056

Study of cellulose acetates and their model compounds by C-13 NMR spectroscopy in solid phase (Russian, English Abstract)

Koerner K//DRK Blutspendezent Ulm, Oberer Eselsberg 10, D-7900 Ulm, Fed Rep Ger

HAEMATOLOGIA 1989, 22 (3) 181

Preparation of leukocyte-poor platelet concentrates for transfusion by filtration through a new cellulose acetate filter

Laatikainen M//Lappeenranta Univ Technol, Dept Chem Technol, POB 20, SF-53851 Lappeenranta, Finland

J COLLOID INTERFACE SCI 1989, 132 (2) 451

Adsorption of cationic compounds on groundwood and on cellulose and lignin surfaces

Lenfeld J, Stanberg J//Czechoslovak Acad Sci, Inst Macromolec Chem, CS-16206 Prague 6, Czechoslovakia

REACT POLYM 1989, 11 (2) 93

Spherical composite sorbent consisting of cellulose and mercured Novolac

Levi MI, Yagovkina VV, Bukhareva EY//Moscow Cent Disinfect St, Cent Res Lab, Moscow, USSR

LAB DELO 1989, (6) 67

Filament and cellulose acetate columns for affinity chromatography (Russian, English Abstract)

Lucchi L, Bonucchi D*, Acerbi MA, Cappelli G, Spattini A, Innocenti M, Castellani A, Lusvarghi E//Univ Hosp Modena, Dept Nephrol & Dialysis, via del Pozzo 71, I-41100 Modena, Italy

ARTIF ORGANS 1989, 13 (5) 417

Improved biocompatibility by modified cellulosic membranes: The case of Hemophan

Magdalev YT, Belova YM, Kovalchuk SV, Sopin VF//Address not available

VYSOKOMOL SOEDIN SER B SSSR 1989, 31 (9) 655

X-ray study of the phase state of cellulose nitrates in nitration reactions (Russian)

Mahamat AY, Gourdon R*, Leger P, Vermande P//Inst Natl Sci Appl, Chim Phys Appl Environm Lab, Batiment 404, 20 Ave Albert Einstein, F-69621 Villeurbanne, France

BIOL WASTES 1989, 30 (3) 181

Methane recovery by anaerobic digestion of cellulosic materials available in Sahel

Mazur NA, Vaisburd AA, Parshikova VN//Siberian Technol Inst, Chair Paper & Pulp Ind, Krasnoyarsk, USSR

IZV VYSSH UCH ZAV KHIM KHIM T 1989, 32 (5) 120

Interaction of cellulose xanthate with amines (Russian)

Nango M, Ohta S, Kuroki N, Maekawa M, Tsujii Y, Yoshida H, Kataoka T//Univ Osaka Prefectur, Dept Appl Chem, Sakai, Osaka 591, Japan
J COLLOID INTERFACE SCI 1989, 132 (2) 329

The effect of polyanion on the diffusion of sulfonated chromophore into cellulose membranes

Phillips GO//NE Wales Inst Higher Educ, Dee-side CH5 4BR, Clwyd, Wales

CHEM BRIT 1989, 25 (10) 1006

Rediscovering cellulose. Wood we be wise to exploit this natural commodity?

Prokhorenko NI, Korbutyak MA, Kucheruk DD, Ponomarev MI, Pilipenko AT//Acad Sci UkSSR, Inst Colloid Chem & Water Chem, Kiev, UkSSR, USSR

DOPOV AKAD NAUK UKR RSR B-GEO 1989, (9) 47

Diffusion of potassium chloride solutions through cellulose acetate membrane MHA-100 (Ukrainian, English Abstract)

Rizzi AM//Vienna Univ, Inst Analyt Chem, Währingerstr 38, A-1090 Vienna, Austria

J CHROMATOGR 1989, 478 (1) 71

Band broadening in high-performance liquid chromatographic separations of enantiomers with swollen microcrystalline cellulose triacetate packings. I. Influence of capacity factor, analyte structure, flow velocity and column loading

Rizzi AM//Vienna Univ, Inst Analyt Chem, Währingerstr 38, A-1090 Vienna, Austria

J CHROMATOGR 1989, 478 (1) 87

Band broadening in high-performance liquid chromatographic separations of enantiomers with swollen microcrystalline cellulose triacetate packings. II. Influence of eluent composition, temperature and pressure

Rizzi AM//Vienna Univ, Inst Analyt Chem, Währingerstr 38, A-1090 Vienna, Austria

J CHROMATOGR 1989, 478 (1) 101

Evaluation of the optimization potential in high-performance liquid chromatographic separations of optical isomers with swollen microcrystalline cellulose triacetate

Yamamoto H, Horii F*, Odani H//Kyoto Univ, Inst Chem Res, Uji, Kyoto 611, Japan

MACROMOLECULES 1989, 22 (10) 4130

Structural changes of native cellulose crystals induced by annealing in aqueous alkaline and acidic solutions at high temperatures

Yaroshenko NA, Tsapyuk EA, Klimenko NA, Bryk MT//Acad Sci UkSSR, Inst Colloid Chem & Water Chem, Kiev, Ukraine, USSR

COLLOID J USSR-ENGL TR 1989, 51 (2) 285

Ultrafiltration separation of aqueous and water-salt solutions of alkylpyridinium chlorides on cellulose acetate membranes

Roy S, Das SK, Pal M, Gupta BK//Jadavpur Univ, Dept Pharm, Div Pharmaceut, Calcutta 700032, W Bengal, India

PHARM RES 1989, 6 (11) 945

Design and in vitro evaluation of Dapsone-loaded micropellets of ethyl cellulose

Huang Y, He J//Acad Sinca, Guangzhou Inst Chem, Guangzhou, Peoples R China

MOL CRYST LIQUID CRYST 1989, 174 (1989) 11

Molecular interactions in the ethyl-cyanoethyl cellulose/dichloroacetic acid solution

Bartoshevich SF, Bykova YN, Molotkov VA, Klenin SI//Acad Sci USSR, Inst Macromolec Cpds, Leningrad, USSR

VYSOKOMOL SOEDIN SER B SSSR 1989, 31 (10) 747

Effect of molecular mass of hydroxyethylcellulose on the structure of graft copolymers of hydroxyethylcellulose and polyacrylamide (Russian)

Suto S, Tashiro H//Yamagata Univ, Fac Engrn, Dept Polymer Chem, Jonan 4-3-16, Yonezawa, Yamagata 992, Japan

POLYMER 1989, 30 (11) 2063

Evidence for retaining crosslinked liquid-crystalline order in hydroxypropyl cellulose solid films by polarized microscopy

Winnik FM//Xerox Res Ctr Canada Ltd, 2660 Speakman Dr, Mississauga, Ontario, Canada L5L 1J9

J PHYS CHEM 1989, 93 (21) 7452

Association of hydrophobic polymers in H₂O and D₂O: fluorescence studies with (hydroxypropyl)cellulose

Cadoche L, Lopez GD//INGAR, Avellaneda 3657, RA-3000 Santa Fe, Argentina

BIOL WASTE 1989, 30 (2) 153

Assessment of size reduction as a preliminary step in the production of ethanol from lignocellulosic wastes

Simkovic I, Antal M, Csomorova K, Micko MM//Slovak Acad Sci, Inst Chem, CS-84238 Bratislava, Czechoslovakia

J APPL POLYM SCI 1989, 38 (10) 1913

New aspects in cationization of lignocellulose materials. X. Thermooxidation of TMAHP-sawdust

Puodzhynene GI, Nikushlina NI, Puodzhynas AS//Sanitas Exptl Ind Plant, Kaunas, Lithuania, USSR

KHIM-FARM ZH SSSR 1989, 23 (10) 1256

Examination of rheological properties and release of drugs from methyl cellulose gel bases

Snappe WJ//Univ Calif Los Angeles, Med Ctr, Dept Med, Torrance, Ca 90509, USA

CLIN THER 1989, 11 (5) 572

The effect of methylcellulose on symptoms of constipation

3 Lignin

Barrelle M, Beguin CG, Tetaz F//Univ Joseph Fourier, CNRS, SDI 5196, Cinet Dynam Molec Lab, PB 53X, F-38041 Grenoble, France

HOLZFORSCHUNG 1989, 43 (5) 339

NMR conformational investigation stereocontrolled reduction of lignin-model compounds

Iiyama K, Wallis AFA//Univ Tokyo, Fac Agr,

Bunkyo ku, Tokyo 113, Japan

HOLZFORSCHUNG 1989, 43 (5) 309

Effect of acetyl bromide treatment on the ultraviolet spectra of lignin model compounds

Isogai A, Ishizu A, Nakano J//Univ Tokyo, Fac Agr, Dept Forest Prod, Bunkyo ku, Tokyo 113, Japan

HOLZFORSCHUNG 1989, 43 (5) 333

Residual lignin and hemicellulose in wood cellulose. Analysis using new permethylation method

Kamoda S, Habu N, Samejima M, Yoshimoto T//Univ Tokyo, Fac Agr, Dept Forest Prod, Yayoi 1-1-1, Bunkyo ku, Tokyo 113, Japan

AGR BIOL CHEM TOKYO 1989, 53 (10) 2757

Purification of some properties of lignostilbene- α,β -dioxygenase responsible for the Calpha-Cbeta cleavage of a diarylpropane type lignin model compound from *Pseudomonas* sp. TMY1009

Labat G, Meunier B**//CNRS, Chim Coordinat Lab, 205 Route Narbonne, F-31077 Toulouse, France

J ORG CHEM 1989, 54 (21) 5008

Factors controlling the reactivity of a ligninase model based on the association of potassium monopersulfate to manganese and iron porphyrin complexes

Larrea L, Forster CF, Mele D//Ctr Estudios & Invest Tecn, Dept Environm Studies, Apdo 1555, E-20080 San Sebastian, Spain

WATER RES 1989, 23 (9) 1073

Changes in lignin during diffused air activated sludge treatment of Kraft effluents

Muzilla M, Unklesbay N*, Helsel Z, Unklesbay K, Ellersieck M//Univ Missouri, 122 Eckles Hall, Columbia, Mo 65211, USA

J FOOD QUAL 1989, 12 (4) 318

Water and lipid absorption properties of lignin-reduced soy hulls

Nieminen MOJ, Pulkkinen E, Rahkamaa E//A Ahlstrom Corp, POB 100, SF-27501 Kauttua, Finland

HOLZFORSCHUNG 1989, 43 (5) 303

Determination of hydroxyl groups in Kraft pine lignin by silicon-29 NMR spectroscopy

Reid ID//Natl Res Council Canada, Biotechnol Res Inst, 6100 Ave Royalmt, Montreal, Quebec,

Canada H4P 2R2

ENZYME MICROB TECHNOL 1989, 11 (12) 804

Optimization of solid-state fermentation for selective delignification of aspen wood with *Phlebia tremellosa*

Robert D, Chen C-L//CEN, Dept Rech Fondamentale, Chim Lab, F-38041 Grenoble, France
HOLZFORSCHUNG 1989, 43 (5) 323

Biodegradation of lignin in spruce wood by *Phanerochaete chrysosporium*: Quantitative analysis of biodegraded spruce lignins by ^{13}C NMR spectroscopy

4 Polysaccharides

Chokri M, Freudenberg M, Galanos C, Poindron P, Bartholeyns J*//Univ Louis Pasteur, UER Pharm, Dept Immunol & Immunopharmacol, BP 24, F-67401 Illkirch Graffens, France
ANTICANCER RES 1989, 9 (4) 1185

Antitumoral effects of lipopolysaccharides, tumor necrosis factor, interferon and activated macrophages: Synergism and tissue distribution

Glowacka M, Urbanik T, Derylo M//Marie Curie Skłodowska Univ, Inst Microbiol, PL-20033 Lublin, Poland

ARCH MICROBIOL 1989, 152 (6) 539

Rhizobium trifolii mutant defective in the structure of lipopolysaccharide

Julicher B, Schutz M, Wiesner HU//Tierarztl Hsch Hanover Inst Hyg & Technol, D-3000 Hanover 1, Fed Rep Ger

MILCHWISSENSCHAFT 1989, 44 (9) 564

The effect of a bacteria removing separator on the content of lipopolysaccharides and bacterial spores in milk (German, English Abstract)

Urbanik-Sypniewska T, Seydel U, Greck M, Weckesser J, Mayer H*//Max Planck Inst Immunbiol, Stubeweg 51, D-7800 Freiburg, Fed Rep Ger

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Chemical studies on the lipopolysaccharides of *Rhizobium meliloti* 10406 and its lipid A region

Chakrabarti A, Nath RK, Chakraborty AK//Tata Inst Fundamental Res, Bombay 400005, India
SPECTROCHIM ACTA PT A-MOL SPE 1989, 45 (9) 981

Induction of metachromasy in cationic dye by bacterial cell surface polysaccharide from *Klebsiella*

siella K10

Feuillat M, Freyssinet M, Charpentier C//Univ Bourgogne, Fac Sci Mirande, Oenol Lab, BP 138, F-21004 Dijon, France

VITIS 1989, 28 (3) 161

White-burgundy production over lees. 2. Macromolecule development - polysaccharides and proteins (French, English Abstract)

Heine H//Univ Witten, Inst Anat & Klin Morphol, Dortmunder Landstr 30, D-58045 Herdecke, Fed Rep Ger

ONKOLOGIE 1989, 12 (3) 5

Immunomodulation by leucocytolysis. Significance of lectin-polysaccharide complexes (German)

Henry RJ, Martin DJ, Stewart BG//Queensland Wheat Res Inst, POB 5282, Toowoomba, Qld 4350, Australia

FOOD CHEM 1989, 34 (4) 309

Cell-wall polysaccharides of rye-derived wheats: investigations of the biochemical causes of dough stickiness

Hirabayashi K, Iwata S, Ito M, Shigeta S, Narui T, Mori T, Shibata S*//Minophagen Pharmaceut Co, Shibata Lab Nat Med Mat, Yotsuya 3-2-7, Shinjuku ku, Tokyo 160, Japan

CHEM PHARM BULL TOKYO 1989, 37 (9) 2410

Inhibitory effect of a lichen polysaccharide sulfate, GE-3-S, on the replication of human immunodeficiency virus (HIV) in vitro

Iguchi T, Kondo S, Hisatsune K*//Josai Univ, Sch Pharmaceut Sci, Dept Microbiol, Sakado, Saitama 35002, Japan

MICROBIOL IMMUNOL 1989, 33 (10) 833

Sugar composition of the polysaccharide portion of lipopolysaccharides of *Vibrio fluvialis*, *Vibrio vulnificus*, and *Vibrio mimicus*

Jayakumar S, Lim H*C//Univ Calif Irvine, Biochem Engr Program, Irvine, Ca 92717, USA
J BIOTECHNOL 1989, 12 (1) 21

Multiple steady states of *Methylobacterium mucosa* for continuous production of polysaccharides

Levy MC, Andry MC//Fac Pharm Reims, Pharmaceut Lab, CNRS, UA 492, 51 rue Cognacq Jay, F-51096 Reims, France

THERAPIE 1989, 44 (5) 365

Microcapsules with modulable properties made of cross-linked proteins and polysaccharides

Ohtani K, Hatono S, Mizutani K, Kasai R, Tanaka O*//Hiroshima Univ, Sch Med, Inst Pharmaceut Sci, Minami ku, Hiroshima 734, Japan

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Reticuloendothelial system-activating polysaccharides from rhizomes of *Panax japonicus*. I. Tochibanan-A and -B

Pidoux M//Ecole Natl Ingenieurs Tech Ind Agro Alimentaires, Grp Rech Bacteries Lact Levures, F-44072 Nantes, France

MIRCEN J APPL MICROBIOL 1989, 5 (2) 223

The microbial flora of sugary kefir grain (the gingerbeer plant): biosynthesis of the grain from *Lactobacillus hilgardii* producing a polysaccharide gel

Tietz D, Chrambach A//NICHHD, Macromolec Anal Sect, Theoret & Phys Biol Lab, Bldg 10, Rm 6 C-101, Bethesda, Ma 20892, USA

ELECTROPHORESIS 1989, 10 (10) 667

Computer-assisted evaluation of polydisperse two-dimensional gel patterns of polysaccharide-protein conjugate preparations with regard to size and net charge

Tsai JS, Yamada K, Murakami H, Omura H//Kyushu Univ, Fac Agr, Dept Food Sci & Technol, 6-10-1 Hakozaki, Higashi ku, Fukuoka 812, Japan

J JPN SOC FOOD SCI TECHNOL 1989, 36 (9) 765

Effect of polysaccharides on textural characteristics of soy protein isolate emulsion (Japanese, English Abstract)

Wang J, Ito H, Shimura K//Mie Univ, Sch Med, Dept Pharmacol, Tsu, Mie 514, Japan

JPN J PHARMACOL 1989, 51 (3) 432

Enhancing effect of antitumor polysaccharide from *Astragalus* or *Radix hedysarum* on C3 cleavage production of macrophages in mice

Westerlund E, Theander O, Andersson R, Aman P//Swedish Univ Agr Sci, Dept Chem, POB 7015, S-75007 Uppsala, Sweden

J CEREAL SCI 1989, 10 (2) 149

Effects of baking on polysaccharides in white bread fractions

5 Starch

Ariga O, Watari T, Andoh Y, Fujishita Y, Sato Y//Shinshu Univ, Fac Text Sci & Technol, Dept Fine Mat Engr, Ueda. Nagano 386, Japan

J FERMENT BIOENG 1989, 68 (4) 243

Release of thermophilic alpha-amylase from transformed *Escherichia coli* by addition of glycine

Diaz T, Fraguas LF, Luna B, Brena B, Batistaviera F//Fac Quim Montevideo, Catedra Bioquim, Gral Flores 2124, Casila Correo 1157, Montevideo, Uruguay

HRC-J HIGH RES CHROMATOGR 1989, 12 (8) 570

Hydrophobic interaction chromatography of amylases

Fiedurek J, Ilczuk Z, Lobarzewski J//Marie Curie Sklodowska Univ, Dept Appl Microbiol, 19 Akad St, PL-20033 Lublin, Poland

ACTA BIOTECHNOL 1989, 9 (4) 355

Influence of the mycelium growth conditions on the production of amylolytic, proteolytic and pectinolytic enzymes by *Aspergillus niger* C

Hayashi R, Hayashida A//Kyoto Univ, Food Res Inst, Uji, Kyoto 611, Japan

AGR BIOL CHEM TOKYO 1989, 53 (9) 2543

Increased amylase digestibility of pressure-treated starch

Itkor P, Tsukagoshi N, Udaoka S*//Nagoya Univ, Fac Agr, Dept Food Sci & Technol, Chikusa ku, Nagoya, Aichi 464, Japan

J FERMENT BIOENG 1989, 68 (4) 247

Purification and properties of divalent cation-dependent raw-starch-digesting alpha-amylase from *Bacillus* sp B1018

Kitahata S, Murakami H, Okada S//Osaka Municipal Tech Res Inst, 6-50 Morinomiya 1-chome, Jyoto ku, Osaka 536, Japan

AGR BIOL CHEM TOKYO 1989, 53 (10) 2653

Purification and some properties of amylomaltase from *Escherichia coli* IFO 3806

Kitahata S, Murakami H, Sone Y, Misaki A//Osaka Municipal Tech Res Inst, 6-50 Morinomiya 1-chome, Jyoto ku, Osaka 536, Japan

AGR BIOL CHEM TOKYO 1989, 53 (10) 2661

The acceptor specificity of amylomaltase from *Escherichia coli* IFO 3806

Nipkow A, Zeikus JG, Gerhardt P//Michigan Biotechnol Inst, POB 27609, Lansing, Mi 48909, USA

BIOTECHNOL BIOENG 1989, 34 (8) 1075

Microfiltration cell-recycle pilot system for continuous thermoanaerobic production of exo-beta-amylase

Ramesh MV, Lonsane BK//Cent Food Technol Res Inst, Fermentat Technol & Bioeng Discipline, Mysore 570013, Karnataka, India

PROCESS BIOCHEM 1989, 24 (5) 176

Purification of thermostable alpha-amylase produced by *Bacillus licheniformis* M27 under solid-state fermentation

Salomonsson L, Heneen W, Larsson-Raznikiewicz M, Carlsson M, Karlsson R//Swedish Univ Agr Sci, Dept Chem, Box 7015, S-75007 Uppsala, Sweden

STARCH 1989, 41 (9) 340

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Subbaramiah K, Sharma R//Univ Hyderabad, Sch Life Sci, Hyderabad 500134, Andhra Pradesh, India

STARCH 1989, 41 (9) 357

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Zanin GM, Demoraes FF//Univ Estadual Maringa, Dept Engenharia Quim, Caixa Postal 331, BR-87001 Maringa, Brazil

REV MICROBIOL 1989, 20 (3) 367

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Schurig V, Nowotny HP, Schleimer M, Schmalzing D//Univ Tübingen, Inst Organ Chem, Auf Morgenstelle 18, D-7400 Tübingen 1, Fed Rep Ger

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Das A, Ghosh A//Bose Inst, Dept Microbiol, 93-1 Apc Rd, Calcutta 700009, W Bengal, India

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Heilmann L//Stradtkrankenhaus Russelsheim, Gynakol & Geburtshilfe Abt, August Bebel Str 59, D-6090 Russelsheim, Fed Rep Ger

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Linko K, Makelainen A//Univ Helsinki, Cent Hosp, Dept Anesthesiol, Haartmaninkatu 4, SF-00290 Helsinki 29, Finland

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Floor M, Kieboom APG, van Bekkum H//Delft Univ Technol, Fac Chem Technol & Mat Sci, POB 5045, 2600 GA Delft, The Netherlands

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Britten A, Flowerdew A, Hunt T, Taylor I, Ackery D, Fleming J//St George Hosp, Dept Med Phys & Bioengn, Blackshaw Rd, London SW17 0QT, England

EUR J NUCL MED 1989, 15 (10) 649

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Brumm PJ, Hebeda RE, Teague WM//Enzyme Biosyst Ltd, 3350 Salt Creek Lane, Arlington Hts, IL 60005, USA

STARCH 1989, 41 (9) 343

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positive material formed during saccharification of corn starch

Carabez-Trejo A, Paredes-Lopez O*, Reyes-Moreno C//*Inst Politecn Nal, CIEA, Unidad Irapuato, Apdo Postal 629, Irapuato 365001, Mexico*

STARCH 1989, 41 (9) 335

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Giordano RDC, Schmidell W//*Univ Fed Sao Carlos, Dept Engr Quim, BR-13560 Sao Carlos, SP, Brazil*

REV MICROBIOL 1989, 20 (3) 376

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Gorton L, Appelqvist R, Johansson G, Scheller F, Kirstein D//*Univ Lund, Dept Anal Chem, S-22100 Lund, Sweden*

J CHEM TECHNOL BIOTECHNOL 1989, 46 (4) 327

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Herman J, Remon JP*, Devilder J//*State Univ Ghent, Pharmaceut Technol Lab, B-9000 Ghent, Belgium*

INT J PHARM 1989, 56 (1) 51

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Herman J, Remon JP**//*State Univ Ghent, Pharmaceut Technol Lab, B-9000 Ghent, Belgium*

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Lamberg I, Olsson H//*Univ Lund, Div Food Engr, POB 124, S-22100 Lund, Sweden*

INT J FOOD SCI TECHNOL 1989, 24 (5) 487

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EUR J SURG ONCOL 1989, 15 (5) 453

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Mank R, Kala H, Lorenz A//*Humboldt Univ, Wissensch Bereich Pharm, Sekt Chem, Goethestr 54, DDR-112 Berlin, Ger Dem Rep*

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J CHEM TECHNOL BIOTECHNOL 1989, 46 (4) 313

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Monma M, Kagei N, Kainuma K//*Minist Agr Forestry & Fisheries, Natl Food Res Inst, 2-1-2 Kannodai, Ibaraki 305, Japan*

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Oostergetel GT, van Bruggen EFJ//*State Univ Groningen, Biochem Lab, Nijenborgh 16, 9747 AG Groningen, The Netherlands*

STARCH 1989, 41 (9) 331

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Russell PL, Oliver G//*Flour Milling & Baking Res Assoc, Rickmansworth ED3 5SH, Herts, England*

J CEREAL SCI 1989, 10 (2) 123

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Tihlarik K, Kery V, Pasteka M//*Slovak Acad Sci, Ctr Chem Res, Inst Chem, CS-84238 Bratislava, Czechoslovakia*

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Wosiacki G, Cereda MP//Univ Estadual Ponta Grossa, Dept Agron, Caixa Postal 992-993, BR-84010 Ponta Grossa, Brazil
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Lewinstein I, Craig RG//Hebrew Univ Jerusalem, Hadassah Sch Dent Med, POB 12000, IL-91120 Jerusalem, Israel
J PROSTHET DENT 1989, 62 (4) 412

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Yajima H, Miyamoto T, Endo R, Furuya S//Sci Univ Tokyo, Fac Sci, Dept Appl Chem, 1-3 Kagurazaka, Shinjuku ku, Tokyo 162, Japan
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Kvam BJ, Grasdalen H*//Univ Trondheim, Div Biotechnol, N-7034 Trondheim, Norway
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Gimenez MG, Martinez JP*//Univ Valencia, Fac Farm, Dept Microbiol, E-46010 Valencia, Spain
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J APPL POLYM SCI 1989, 38 (10) 1799

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Grant S, Blair HS, MacKay G*//Queens Univ Belfast, Dept Mech MFG Aeronaut & Chem Engn, Div Chem Engn, Div Chem Engn, David Keir Bldg, Belfast BT9 5AG, Northern Ireland

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Taylor MJ, Hunt CJ, Madden PW//Univ Cambridge, Dept Surg. MRC Med Cryobiol Grp, Douglas House, Trumpington Rd, Cambridge CB2 2AH, England

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

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Krechli J, Castulik P//Prague Inst Chem Technol, Dept Organ Chem, CS-16628 Prague 6, Czechoslovakia

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Pathmanathan K, Johari GP*, Ripmeester JA//*McMaster Univ, Dept Mat Sci & Engr, Hamilton, Ontario, Canada L8S 4L7

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Sanemasa I, Takuma T, Deguchi T//Kumamoto Univ, Fac Sci, Dept Chem, Kurokami 2-39-1, Kumamoto 860, Japan

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Tee OS, Hoeven JJ//Concordia Univ, Dept Chem, Sir George Williams Campus, Montreal, Quebec, Canada H3G 1M8

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Yang C-P, Su C-S//Tatung Inst Technol, Dept Chem Engr, Taipei, Taiwan

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Holter W, Fordis CM, Howard BH//Inst Immunol, Borschkeg 8A, A-1090 Vienna, Austria

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J INST BREW 1989, 95 (6) 431

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Todo V, Carbonell JV, Sendra JM//Asoc Invest Cerveza & Malta, Jaime Roig 11, E-46010 Valencia, Spain

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Ueno N, Chakrabarti B*//Eye Res Inst, 20 Staniford St, Boston, Ma, USA

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Larsson R, Selen G, Bjorklund H, Fagerholm P//Pharm Leo Therapeut AB, Dept Biomed Res, S-75182 Uppsala, Sweden

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Prandoni P//Univ Padua, Med 2 Clin, via Giustini 2, I-35100 Padua, Italy

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Stuttgen G, Panse P, Bauer E//Free Univ Berlin, Klinikum Rudolf Virchow, Hautklinik & Poliklinik, Augustenburger Pl 1, D-1000 Berlin 65, Fed Rep Ger

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