

BIBLIOGRAPHY ON CARBOHYDRATE POLYMERS

1. Books, Reviews and Symposia

Mosbach K (Ed)

Immobilized Enzymes and Cells, Pt B

Methods in Enzymology, vol 135

Academic Press Inc (San Diego) 1987 675pp

\$65.00 Hardbound ISBN:0-12-182035-1

Contains the contributions: Cell immobilization in calcium alginate (Bucke C); Immobilization of cells in carrageenan (Chibata I, Tosa T, Sato T, Takata I); Entrapment of microbial cells in chitosan (Vorlop KD, Klein J); Entrapment of microbial cells in cellulose gel (Linko YY, Linko P); Microbial cells entrapped in cellulose acetate beads (Giovenco S, Marconi W, Pansolli P)

Chand N, Tiwary RK, Rohatgi PK//Reg Res Lab, Hoshangabad Rd, Bhopal 462026, India

J MATER SCI 198823 (2) 381

Resource structure of natural cellulosic fibres - an annotated bibliography

Zief M, Crane LJ (Eds.)

Chromatographic Chiral Separations

Chromatographic Science: A Series of Monographs, vol. 40

Marcel Dekker (New York) 1988 410 pp. \$99.75 Hardbound ISBN 0-8247-7786-7

Contains the chapters: Cyclodextrin-stationary phases (Ward TJ, Armstrong DW); Cellulose derivatives as stationary phases (Ichida A, Shibata T)

Billington RS//Anotec Separat, Beaumont Business Ctr, Beaumont Close, Banbury, Oxon, England

J AGR ENG RES 1988 39 (2) 71

A review of the kinetics of the methanogenic fermentation of lignocellulosic wastes

Graber M, Morin A*, Duchiron F, Monsan PF//Agr Canada, Ctr Rech Alimentaires S7 Hyacinthe, 3600 Blvd Casavant Ouest, St Hyacinthe, the, Quebec, Canada J2S 8E3

ENZYME MICROB TECHNOL 1988 10 (4) 198

Microbial polysaccharides containing 6-deoxysugars (Review)

Wurzburg OB (Ed)

Modified Starches: Properties and Uses

CRC Press (Boca Raton) 1986 277pp \$135.00 Hardbound (Outside USA \$155.00) ISBN:0-8493-5964-3

Zobel HF//CPC Int Inc, Box 345, Argo, IL 60501, USA

STARCH 1988 40 (2) 44

Molecules to granules: a comprehensive starch review

2. Cellulose

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

J APPL POLYM SCI 1988 35 (4) 885

Preparation of aldehydocellulose from completely allylated methylcellulose, allylated ethylcellulose, and tri-O-allylcellulose by ozonization

Nefzi A, Kirsch JM, Baux S//Hop Rothschild, Serv Chirurg Plast, 33 bd Picpus, F-75571 Paris 12, France

ANN CHIR PLAST ESTHET 1988 33 (1) 102

Treatment of graft donor sites with a sodium carboxymethylcellulose dressing

Savastenko GN, Ermolenko IN//Acad Sci BeSSR, Inst Genet & Inorgan Chem, Minsk, Belorussia, USSR

DOKL AKAD NAUK BSSR 1988 32 (2) 145

Light sensitivity of metal complex cation-containing carboxymethyl cellulose (Russian, English Abstract)

Martin RS, Aguilera JM, Hohlberg AI//Dept Chem Engr, Catholic Univ Chile, POB 6177,

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.

Santiago, Chile

CARBOHYD POLYM 1988 8 (6) 33

Effect of cellulase pretreatments on red algae agar extractability

Abdullaev KM, Karimov SN, Mirzoeva VA, Tashpulatov M//Tajik VI Lenin State Univ, Fac Phys, Dushanbe 734016, Tadzhikistan, USSR
POLYMER 1988 29 (3) 513

Statistical regularities in cellulose triacetate fracture under thermal degradation conditions

Alak AM, Vodinh T*//Oak Ridge Natl Lab, Div Hlth & Safety Res, Adv Monitoring Dev Grp, Oak Ridge, Tn 37831, USA
ANAL CHEM 1988 60 (6) 596

Selective enhancement of room temperature phosphorescence using cyclodextrin-treated cellulose substrate

Alkatrib F, Chambat G, Joseleau JP*//Univ Sci Technol & Med Grenoble, Ctr Rech Macromolec Vegetales, CNRS Lab, F-38402 St Martin d'Heres, France

HOLZFORSCHUNG 1988 42 (1) 21

Solubilization of wheat straw in the cellulose organic solvent, the N-methyl morpholine N-oxide

Bhadani SN, Ansari Q//Ranchi Univ, Dept Chem, Ranchi 834008, Bihar, India
MAKROMOL CHEM-RAP COMM 1988 9 (3) 171

Electroinitiated graft copolymerization of cellulose with acrylonitrile

Bochek AM, Petropavlovskii GA, Shek VM//Acad Sci USSR, Inst Macromolec Cpds, Moscow V-71, USSR

J APPL CHEM-ENGL TR 1987 60 (3) PT2 634

Rheology of cellulose solutions in amine oxide solvents

Bruchmann EE, Seethaler D, Schroth T, Graf H//Univ Hohenheim, Tech Biochem Lab, Garbenstr 25, D-7000 Stuttgart 70, Fed Rep Ger
CHEM ZTG 1988 112 (1) 7

Preparation of highly-active cellulose and optimization of enzymatic cellulose hydrolysis. 3. (German, English)

Chen H, Rubenthaler GL, Schanus EG//Washington State Univ, Dept Food Sci & Human Nutr, Pullman, Wa 99164, USA
J FOOD SCI 1988 53 (1) 304

Effect of apple fiber and cellulose on the physical properties of wheat flour

Choudhury JP, Ghosh P, Guha BK//Indian Inst Technol, Biochem Egn Res Ctr, Hauz Khas, New Delhi 110016, India

J MEMBRANE SCI 1988 35 (3) 301

Styrene-grafted cellulose acetate reverse osmosis membrane for ethanol separation

de Coninck-Chosson J//INRA, Technol Alimentaire Stn, BP 39, F-59651 Villeneuve Dascq, France

BIOTECHNOL BIOENG 1988 31 (5) 495

Aerobic degradation of cellulose and adsorption properties of cellulases in *Cellulomonas uda* JC3: effects of crystallinity of substrate

Donaldson LA//New Zealand Forest Serv, Forest Res Inst, Rotorua, New Zealand
WOOD SCI TECHNOL 1988 22 (1) 33

Ultrastructure of wood cellulose substrates during enzymatic hydrolysis

Duran N, Rodriguez J, Gomez E, Campos V, Baeza J//Univ Estadual Campinas, Inst Quim, Biol Chem Lab, CP 6134, BR-13100 Campinas, SP, Brazil

BIOTECHNOL BIOENG 1988 31 (3) 215

Biomass photochemistry: XI. Photochemical pretreatment of cellulose and its fungal degradation

Funazukuri T, Hudgins RR, Silveston PL//Yokohama Natl Univ, Dept Chem Engr, Yokohama, Kanagawa 240, Japan

J ANAL APPL PYROL 1988 13 (1-2) 103

Product yield correlations for cellulose flash pyrolysis

Gachok VP, Zhokhin AS//Acad Sci UkSSR, Inst Theoret Phys, Metrologi-Cheskaya St 14B, 252130 Kiev 130, Ukraine, USSR

STUD BIOPHYS 1988 123 (1) 59

Transition to chaos in the kinetic model of cellulose hydrolysis under enzyme biosynthesis control

Gaponova IS, Pariiskii GB, Toptygin DY//Acad Sci USSR, Inst Chem Phys, Moscow V-71, USSR
VYSOKOMOL SOEDIN SER A SSSR 1988 30 (2) 262

ESR-study of nitrogen-containing radicals formed during photolysis and radiolysis of solid

polymethyl methacrylate and cellulose triacetate in the nitrogen oxide medium (Russian, English Abstract)

Gijzen HJ, Zwart KB, Verhagen FJM, Vogels GD//Catholic Univ Nijmegen, Fac Sci, Dept Microbiol, 6525 ED Nijmegen, The Netherlands
BIOTECHNOL BIOENG 1988 31 (5) 418

High-rate two-phase process for the anaerobic degradation of cellulose, employing rumen microorganisms for an efficient acidogenesis

Herman J, Remon JP*, Visavarungroj N, Schwartz JB, Klinger GH//State Univ Ghent, Pharmaceut Technol Lab, B-9000 Ghent, Belgium

INT J PHARM 1988 42 (1-3) 15

Formation of theophylline monohydrate during the pelletisation of microcrystalline cellulose anhydrous theophylline blends

Hosoi F, Saito K, Makuuchi K, Koishi M//Japan Atom Energy Res Inst, Takasaki Radiat Chem Res Estab, 1233 Watanukimachi, Takasaki, Gunma 37012, Japan

KOBUNSHI RONBUNSHU 1987 44 (12) 885

A sustained release system using porous cellulose spheres modified by grafting as matrices (Japanese, English Abstract)

Irklei VM, Goikhman AS//All Union Synthet Fiber Res & Design Inst, Kiev, Ukraine, USSR

VYSOKOMOL SOEDIN SER A SSSR 1987 29 (12) 2467

Crystallochemical features and stoichiometry of hydrated cellulose xanthates (Russian, English Abstract)

Kalyanaraman AR//S India Text Res Assoc, Coimbatore 641014, India

INDIAN J PURE APPL PHYS 1987 25 (12) 497

Cellulose degradation & its measurement

Kamide K, Okajima K, Kowsaka K, Matsui T//Asahi Chem Ind Co Ltd, Fundamental Res Lab Fiber & Fiber Forming Polymers, 11-7 Hachonawate, Takatsuki, Osaka 569, Japan

POLYM J 1987 19 (12) 1405

Solubility of cellulose acetate prepared by different methods and its relationships with average acetyl group distribution on glucopyranose units

Kamide K, Saito M, Kowsaka K, Okajima K//Asahi Chem Ind Co Ltd, Fundamental Res

Lab Fiber & Fiber Forming Polymers, 11-7 Hachonawate, Takatsuki, Osaka 569, Japan

POLYM J 1987 19 (12) 1377

A further study on solvation in cellulose triacetate solutions by pulse-Fourier ^1H and ^{13}C NMR method

Kolomiets IP, Pogodina NV, Lezov AV, Yevlampieva NP, Stepchenkova TA, Shipina OT, Marchenko GN, Tsvetkov VN//AA Zhdanov State Univ, Phys Res Inst, Leningrad B-164, USSR

VYSOKOMOL SOEDIN SER A SSSR 1987 29 (12) 2494

Dynamic and electrical birefringence in solutions of flax cellulose nitrates (Russian, English Abstract)

Mandenius CF, Nilsson B, Persson I, Tjerneld F//Univ Lund, Box 124, S-22100 Lund, Sweden

BIOTECHNOL BIOENG 1988 31 (3) 203

Kinetic models for enzymatic cellulose degradation in aqueous two-phase systems

Michell AJ//CSIRO, Div Chem & Wood Technol, Private Bag 10, Clayton, Vic 3168, Australia

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Second derivative F.t.-i.r. spectra of celluloses I and II and related mono- and oligo-saccharides

Morooka T, Norimoto M, Yamada T, Takuma T, Takuma S, Okamura K//Kyoto Univ, Wood Res Inst, Uji, Kyoto 611, Japan

J APPL POLYM SCI 1988 35 (3) 717

Viscoelastic properties of (cellulose oligo-oxyethylene ether)acylates with bulky side chain

Mugnoli AMJ, Macchi EM, Marx-Figini M//No address available

POLYM BULL 1988 19 (2) 187

Dilute acid-hydrolyzed cotton cellulose. An electron diffraction study

Nishioka N, Fujimoto O, Tachibana M, Uno M, Kosai K//Osaka Electrocommun Univ, Fac Engn, Neyagawa, Osaka 572, Japan

POLYM J 1987 19 (12) 1341

Permeability through cellulose membranes grafted with vinyl monomers in a homogeneous system IV. Methyl methacrylate grafted cellulose membranes

Okieimen FE, Idehen KI//Univ Benin, Dept Chem, Benin City, Nigeria

J MACROMOL SCI-CHEM 1987 A24 (11) 1381
Graft copolymerization of methyl methacrylate on thiolated holocellulose

Pimenov GG, Nuriev NK, Filippova NM, Chichirov AA, Kargin YM//VI Lenin State Univ, Kazan, USSR

VYSOKOMOL SOEDIN SER A SSSR 1987 29 (12) 2549

Phase heterogeneity of acetone solutions of cellulose nitrate (Russian, English Abstract)

Prokhorenko NI, Korbutyat MA, Kucheruk DD, Pilipenko AT//Acad Sci UkSSR, Inst Colloid Chem & Water Chem, Kiev, Ukraine, USSR

DOPOV AKAD NAUK UKR RSR B-GEO 1988 (1) 49

Dependence of characteristics of cellulose acetate membranes in the process of reverse osmosis on electrolyte temperature and nature (Ukrainian, English Abstract)

Ritcey AM, Gray DG//Pulp & Paper Res Inst Canada, 3420 Univ St, Montreal, Quebec, Canada H3A 2A7

BIOPOLYMERS 1988 27 (3) 479

Induced CD provides evidence for helical solution conformation in cellulosic chains

Rowe RC//ICI PLC, Div Pharmaceut, Alderley Pk, Macclesfield SK10 4TG, Cheshire, England
INT J PHARM 1988 41 (3) 223

Interaction of lubricants with microcrystalline cellulose and anhydrous lactose - A solubility parameter approach

Sadaoka Y, Matsuguchi M, Sakai Y, Takahashi K//Ehime Univ, Fac Engn, Dept Ind Chem, Matsuyama, Ehime 790, Japan

J MATER SCI LETT 1988 7 (2) 121

Effects of sorbed water on the dielectric constant of some cellulose thin films

Schleicher H, Kunze J//Akad Wissensch DDR, Inst Polymerenchem Erich Correns, DDR-1530 Teltow Seehof, Ger Dem Rep

ACTA POLYM 1988 39 (1-2) 43

Influence of some activating treatments on the structure and processing properties of cellulose

Shibata T, Sei T, Nishimura H, Deguchi K//Daicel Chem Ind Ltd, Res Ctr, 1239 Shin-zaike, Himeji 67112, Japan

CHROMATOGRAPHIA 1987 24 552

Hysteretic effect of the coating solvent on chiral recognition by cellulose derivative

Smith Sorensen T, Birger Jensen J, Malmgren-Hansen B//Tech Univ Denmark, Inst Phys Chem, DTH 206, DK-2800 Lyngby, Denmark

J NON-EQUIL THERMODYN 1988 13 (1) 57

Electrochemical characterization of cellulose acetate membranes. 1. Influence of hydrogen and calcium on the EMF of LiCl concentration cells with a CA-membrane as separator

Staniforth JN, Baichwal AR, Hart JP, Heng PWS//Univ Bath, Sch Pharm & Pharmacol, Particle Engn Res Grp, Bath BA2 7AY, Avon, England

INT J PHARM 1988 41 (3) 231

Effect of addition of water on the rheological and mechanical properties of microcrystalline celluloses

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

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Formation of liquid-crystalline phases by two phenylalkanoyl esters of O-(hydroxypropyl)cellulose and the (3-chlorophenyl)urethane of cellulose

Szczodrak J, Targonski Z//Marie Curie Skłodowska Univ, Dept Appl Microbiol, Akad 19, PL-20033 Lublin, Poland

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Selection of thermotolerant yeast strains for simultaneous saccharification and fermentation of cellulose

Wong KKY, Deverell KF, Mackie KL*, Clark TA, Donaldson LA//Forest Res Inst, Rotorua, New Zealand

BIOTECHNOL BIOENG 1988 31 (5) 447

The relationship between fiber porosity and cellulose digestibility in steam-exploded *Pinus radiata*

Woodward J, Hayes MK, Lee NE//Oak Ridge Natl Lab, Div Chem Technol, PCB X, Oak Ridge, Tn 37831, USA

BIO/TECHNOLOGY 1988 6 (3) 301

Hydrolysis of cellulose by saturating and non-saturating concentrations of cellulase - Implications for synergism

Wu JHD, Orme-Johnson WH, Demain

AL*/MIT, Dept Appl Biol Sci, Fermentat Microbiol Lab, Cambridge, Ma 02139, USA
BIOCHEMISTRY-USA 1988 27 (5) 1703

Two components of an extracellular protein aggregate of *Clostridium thermocellum* together degrade crystalline cellulose

Yano S, Hatakeyama H//Ind Prod Res Inst, 1-1-4 Yatabe machi, Higashi, Ibaraki 305, Japan
POLYMER 1988 29 (3) 566

Dynamic viscoelasticity and structural changes of regenerated cellulose during water sorption

Malmgren-Hansen B, Smith Sorensen T, Birger Jansen JB//Tech Univ Denmark, Inst Phys Chem, DTH 206, DK-2800 Lyngby, Denmark
J NON-EQUIL THERMODYN 1988 13 (2) 193

Electrochemical characterization of cellulose acetate membranes. 2. Influence of casting conditions and of thermal curing of CA-membranes on the EMF of concentration cells with HCl, LiCl, NaCl and KCl solutions

Mengual JJ, Garcia-Lopez F, Fernandez-Pineda C//Univ Complutense Madrid, Fac Fis, Dept Termol, E-28040 Madrid, Spain
J NON-EQUIL THERMODYN 1988 13 (2) 177

Osmosis and thermo-osmosis through cellulose acetate membranes

Sinha VK, Patel KH, Trivedi HC*/Sardar Patel Univ, Dept Chem, Vallabh Vidyanagar 388120, Gujarat, India
ANGEW MAKROMOL CHEM 1988 157 (FEB) 31

Zero-shear viscosity of dilute to moderately concentrated solutions of cellulose acetate phthalate

Hebeish A, El-Sisi F, Hafiz AAA//Natl Res Ctr, Div Text Res, Cairo, Egypt
ANGEW MAKROMOL CHEM 1988 157 (FEB) 153

A novel method for vinyl grafting onto cotton fabric using ceric-cellulose thiocarbonate redox system

Suto S, Ohshiro M, Nishibori W, Tomita H, Karasawa M//Yamagata Univ, Fac Engn, Dept Polymer Chem, Jonan 4-3-16, Yonezawa, Yamagata 992, USA
J APPL POLYM SCI 1988 35 (2) 407

Rheological properties of liquid crystalline solutions of ethyl celluloses with different molecular

weight in m-cresol

Cai ZS, Faszner L//Design Inst Forest Prod Ind, Dept Wood Chem, Beijing, Peoples R China
HOLZFORSCHUNG 1988 42 (1) 11
Salt catalyzed wood bonding with hemicellulose

Jeffries TW, Sreenath HK//USDA, Forest Prod Lab, Madison, Wi 53711, USA
BIOTECHNOL BIOENG 1988 31 (5) 502
Fermentation of hemicellulosic sugars and sugar mixtures by *Candida shehatae*

Curtis R, Fincher JR*/Dupont Co, Cent Res E356 139, Wilmington, De 19898, USA
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Light diffraction studies of the banded texture in hydroxypropyl cellulose

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

J POLYM SCI B-POLYM PHYS 1988 26 (1) 211
Dynamic rheological measurements on hydroxypropylcellulose solutions

Laivins GV, Sixou P//Natl Res Council Canada, Div Chem, Ottawa, Ontario, Canada K1A 0R9
J POLYM SCI B-POLYM PHYS 1988 26 (1) 113

Formation of ordered phases of (hydroxypropyl)cellulose in miscible and immiscible isobutyric acid/water mixtures

Opota O, Maillols H, Acquier R, Delonca H, Fortune R//Inst Europeen Sci Pharmaceut Ind, 15 ave Charles Flahault, F-34060 Montpellier, France

PHARM ACTA HELV 1988 63 (1) 26
Comportement rheologique des solutions aqueuses d'hydroxypropylcellulose. Influence de la concentration et de la masse moleculaire (English Abstract)

Russo PS, Mustafa M, Cao T, Stephens LK//Louisiana State Univ, Dept Chem, Macromolec Studies Grp, Baton Rouge, La 70803, USA

J COLLOID INTERFACE SCI 1988 122 (1) 120
Interactions between polystyrene latex spheres and a semiflexible polymer, hydroxypropylcellulose

Heitz M, Carrasco F, Rubio M, Brown A, Chor-net E, Overend RP//Univ Sherbrooke, Dept Genie Chim, Sherbrooke, Quebec, Canada J1K 2R1

BIOMASS 1987 13 (4) 255

Physico-chemical characterization of lignocel-lulosic substrates pretreated via autohydrolysis: an application to tropical woods

Morrison IM//Hannah Res Inst, Ayr KA6 5HL, Scotland

J SCI FOOD AGR 1988 42 (4) 295

Influence of chemical and biological pretreat-ments on the degradation of lignocellulosic material by biological systems

Topping DL, Oakenfull D, Trimble RP, Illman RJ//CSIRO, Div Human Nutr, Glenthorne Lab, O'Halloran Hill, SA 5158, Australia

BRIT J NUTR 1988 59 (1) 21

A viscous fibre (methylcellulose) lowers blood glucose and plasma triacylglycerols and in-creases liver glycogen independently of volatile fatty acid production in the rat

Larsson A, Nilsson BO//Biomed Ctr, Dept Med & Physiol Chem, Box 575, S-75123 Uppsala, Sweden

SCAND J IMMUNOL 1988 27 (3) 305

Immunization with nanogram quantities of nitrocellulose-bound antigen, electroblotted from sodium dodecyl sulphate-polyacrylamide gels

Takahashi A, Sugahara Y//Kogakuin Univ, Fac Engr, Dept Ind Chem, Shinjuku ku, Tokyo 160, Japan

J POLYM SCI A-POLYM CHEM 1988 26 (1) 19

Studies on graft copolymerization onto cellulose derivatives. XXVII. Photo-induced graft copoly-merization onto nitrocellulose

Tarasishin LA//Dk Zabolotnii Microbiol & Virol Inst, Kiev, Ukraine, USSR

LAB DELO 1987 (11) 854

Consecutive determination of antigenically ac-tive proteins and glycoproteins after their trans-fer onto a nitrocellulose filter (Russian, English Abstract)

Shibaev VP, Yekiseva IV//MV Lomonosov State Univ, Moscow 117234, USSR

VYSOKOMOL SOEDIN SER A SSSR 1987 29 (12) 2647

Liquid crystalline state of oxypropylcellulose and its normal-aliphatic derivatives (Russian, English Abstract)

3. Lignin

Correa JBC, Romanowski SMD, Sterakowski MR, Fontana JD, Gorin PAJ, Reicher F//Univ Fed Parana, Dept Chem, BR-81504 Curitiba, Parana, Brazil

AN ACAD BRASIL CIENC 1987 59 (3) 179

Ester-type lignin-xylan linkages in the cell wall of stems of *Mimosa scabrella*

Dalimova GN, Khushbaktova ZA, Syrov VN, Abduazimov KA//Acad Sci UzSSR, Inst Bot Chem, Tashkent, Uzbekistan, USSR

KHIM PRIR SOEDIN SSSR 1987 (5) 738

Sodium cleavage of Kenaf lignins in liquid am-monia and biological activity of cleavage products (Russian)

Glasser WG, Strickland RC//Virginia Polytech Inst & State Univ, Dept Forest Prod, Black-sburg, Va 24061, USA

BIOMASS 1987 13 (4) 235

Preliminary evaluation of an H₂SO₄-wood sac-charification lignin for use in phenolic resins

Lapierre C, Rolando C//INRA, Biochim Lab, INA Paris Grignon, F-78850 Thiverval Grignon, France

HOLZFORSCHUNG 1988 42 (1) 1

Thioacidolyses of pre-methylated lignin samples from pine compression and poplar woods

Lindberg JJ, Levon K, Kuusela T//Univ Hel-sinki, Dept Wood & Polymer Chem, SF-00170 Helsinki 17, Finland

ACTA POLYM 1988 39 (1-2) 47

Modification of lignin

Nazareth S, Mavinkurve S//Goa Univ, Dept Microbiol, Goa, India

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Isolation of potential ligninolytic organisms

Nikiforov AF, Astafeva OV, Lobukhina TV//SM Kirov Polytech Inst, Tomsk, USSR

J APPL CHEM-ENGL TR 1987 60 (6) PT2 1344

Extraction of quarternary ammonium salts from aqueous solutions by sorption with hydrolysed lignin

Nonni AJ, Dence CW**SUNY Coll Environm Sci & Forestry, Empire State Paper Res Inst, Syracuse, NY 13210, USA

HOLZFORSCHUNG 1988 42 (1) 37

The reactions of alkaline hydrogen peroxide with lignin model dimers. 3. 1,2-diaryl-1,3-propanediols

Reeves JB//USDA ARS, Beltsville Agr Res Ctr, Inst Anim Sci, Ruminant Nutr Lab, Beltsville, Md 20705, USA

J DAIRY SCI 1988 71 (2) 388

Near infrared spectroscopic analysis of lignin components in sodium chlorite-treated and untreated forages and forage by-products

Reeves JB//USDA ARS, Beltsville Agr Res Ctr, Inst Anim Sci, Ruminant Nutr Lab, Beltsville, Md 20705, USA

J DAIRY SCI 1987 70 (12) 2534

Sodium chlorite treatment of plant materials: Fiber and lignin composition, digestibility, and their interrelationships

Schwartz PB, Kuerth WH, Youngs VL//N Dakota State Univ, USDA ARS, Hard Red Spring & Durum Wheat Qual Lab, Harris Hall, Fargo, ND 58105, USA

CEREAL CHEM 1988 65 (1) 59

The distribution of lignin and other fiber components within hard red spring wheat bran

Smith JL, Stanley DW, Baker KW//Univ Guelph, Dept Food Sci, Guelph, Ontario, Canada N1G 2W1

J TEXTURE STUD 1988 18 (4) 339

Nonenzymatic lignification of asparagus

Vanderklashorst GH//CSIR, Natl Timber Res Inst, POB 395, Pretoria 0001, South Africa

HOLZFORSCHUNG 1988 42 (1) 65

Low molecular mass lignin fragments present in industrial Kraft pine spent liquor

Kaplunova TS, Saipov ZK, Abduazimov KA//Acad Sci UzSSR, Inst Bot Chem, Tashkent, Uzbekistan, USSR

KHIM PRIR SOEDIN SSSR 1987 (5) 734

Hydrogenolysis of rice husk protolignin (Russian)

4. Polysaccharides

Erler W, Feist H, Schade W//Acad Agr Sci

GDR, Inst Bakterielle Tierseuchenforsch Jena, Naumburger Str 96A, DDR-6900 Jena, Ger Dem Rep

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Structure of lipopolysaccharides of *Pasteurella multocida*

Jennings HJ, Beurret M, Gamian A, Michon F//Natl Res Council Canada, Div Biol Sci, Ottawa, Ontario, Canada K1A 0R6

ANTON LEEUWENHOEK J MICROBIOL 1987 53 (6) 519

Structure and immunochemistry of meningococcal lipopolysaccharides

Kato N, Ohta M, Kido N, Ito H, Naito S//Nagoya Univ, Sch Med, Dept Bacteriol, Showa ku, Nagoya, Aichi 466, Japan

MICROBIOL IMMUNOL 1988 32 (2) 151

In vitro hexagonal assembly of R-form lipopolysaccharides: effect of pH on the Mg^{2+} -mediated hexagonal assembly

Mikheeva MN, Brutko LI//All Union Pharm Res Inst, Moscow, USSR

KHIM PRIR SOEDIN SSSR 1987 (6) 790

Application of carbocyanine dyes in the analysis of bacterial lipopolysaccharides (endotoxins) (Russian)

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

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Studies of lipopolysaccharides from two strains (C.D.C. 3607-60 and IP 421) of *Serratia marcescens* O13: structure of the putative O13 antigen

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

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Structure of a neutral polymer isolated from the lipopolysaccharide of *Serratia marcescens* O5 (C.D.C. 867-57)

Shchedrina LE, Brutko LI//All Union Pharmacol Res Inst, Moscow, USSR

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Detection of bacterial lipopolysaccharides on the gel-formation reaction (Russian)

Vuopio-Varkila J, Nurminen M, Pyhala L, Makela PH//Natl Publ Hlth Inst, Mannerheimintie 166, SF-00280 Helsinki, Finland

J MED MICROBIOL 1988 25 (3) 197

Lipopolysaccharide-induced non-specific resistance to systemic *Escherichia coli* infection in mice

Shi Ym et al//Second Mil Med Coll, Affiliated Hosp 1, Shanghai, Peoples R China
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Animal experiments on mucopolysaccharide pharmacological action on impaired cerebral microcirculation

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

INDIAN J CHEM SECT B 1988 27 (1) 55
Structure of the oligosaccharides isolated from *Acacia catechu* (Khair) gum polysaccharide

Antonov YA, Pletenko MG, Tolstoguzov VB//AN Nesmeyanov Organoelement Cpd Inst, Moscow, USSR

VYSOKOMOL SOEDIN SER A SSSR 1987 29 (12) 2477

Phase state of water polysaccharide-I polysaccharide-II systems (Russian, English Abstract)

Antonov YA, Pletenko MG, Tolstoguzov VB//AN Nesmeyanov Organoelement Cpd Inst, Moscow, USSR

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Thermodynamic compatibility of polysaccharides in aqueous media (Russian, English Abstract)

Bacic A, Moody SF, McComb JA, Hinch JM, Clarke AE//Univ Melbourne, Sch Bot, Plant Cell Biol Res Ctr, Parkville, Vic 3052, Australia
AUST J PLANT PHYSIOL 1987 14 (6) 633

Extracellular polysaccharides from shaken liquid cultures of *Zea mays*

Bax A, Summers MF, Egan W*, Guirgis N, Schneerson R, Robbins JB, Vann WF, Orskov F, Orskov I//Off Biol Res & Review, Biophys Lab, 8800 Rockville Pike, Bethesda, Md 20892, USA

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Structural studies of the *Escherichia coli* K93 and K53 capsular polysaccharides

Black SR, Shinefeld HR, Hiatt RA, Fireman BH, and The Kaiser Permanente Pediatric Vaccine Study Group//Kaiser Hosp, 280 W MacArthur Blvd, Oakland, Ca 94611, USA

PEDIAT INF DIS J 1988 7 (3) 149

Efficacy of *Haemophilus influenzae* type b capsular polysaccharide vaccine

Brinson K, Dey PM, John MA, Pridham JB//Royal Holloway & Bedford New Coll, Dept Biochem, Egham TW20 0EX, Surrey, England

PHYTOCHEMISTRY 1988 27 (3) 719

Post-harvest changes in *Mangifera indica* mesocarp cell walls and cytoplasmic polysaccharides

Chilvers, GR, Gunning AP, Morris VJ//AFRC Inst Food Res, Norwich Lab, Colney Lane, Norwich NR4 7UA, Norfolk, England

CARBOHYD POLYM 1988 8 (6) 55

Coacervation of gelatin-XM6 mixtures and their use in microencapsulation

Considine PJ, O'Rourke A, Hackett TJ, Coughlan MP**//Natl Univ Ireland Univ Coll Galway, Dept Biochem, Galway, Ireland

BIOTECHNOL BIOENG 1988 31 (5) 433

Hydrolysis of beet pulp polysaccharides by extracts of solid-state cultures of *Penicillium capsulatum*

Dmitriev BA, Kulshin VA, Antsiferova NG, Vovk VA//NF Gamaleya Epidemiol & Microbiol Inst, Moscow, USSR

DOKL AKAD NAUK SSSR 1988 298 (5) 1277

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Hackland PL, Parolis H, Parolis LAS//Rhodes Univ, Sch Pharmaceut Sci, Grahamstown 6140, South Africa

CARBOHYD RES 1988 172 (2) 209

A structural investigation of the capsular polysaccharide of *Klebsiella* K69

Hill SP, Winterbottom JM**//Univ Birmingham, Dept Chem Engr, POB 363, Birmingham B15 2TT, W Midlands, England

J CHEM TECHNOL BIOTECHNOL 1988 41 (2) 121

The conversion of polysaccharides to hydrogen gas. Part I. The palladium catalysed decomposition of formic acid/sodium formate solutions

Hill SP, Winterbottom JM**//Univ Birmingham, Dept Chem Engr, POB 363, Birmingham B15 2TT, W Midlands, England

J CHEM TECHNOL BIOTECHNOL 1988 41 (2) 135

The conversion of polysaccharides to hydrogen gas. Part II. The decomposition of formaldehyde in the aqueous phase

Jansson PE, Kumar NS, Lindberg B, Widmalm G, Henrichsen J//Univ Stockholm, Arrhenius Lab, Dept Organ Chem, S-10691 Stockholm, Sweden

CARBOHYD RES 1988 173 (2) 227

Structural studies of the capsular polysaccharide from *Streptococcus pneumoniae* type 18A

Jansson PE, Lindberg B, Lindberg J, Henrichsen J//Univ Stockholm, Arrhenius Lab, Dept Organ Chem, S-10691 Stockholm, Sweden

CARBOHYD RES 1988 173 (2) 217

Structural studies of the capsular polysaccharide from *Streptococcus pneumoniae* type 18F

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

BIOORG KHM 1988 14 (1) 77

Antigenic polysaccharides of bacteria. 25. Structure of the O-specific polysaccharide chain of the *Pseudomonas cepacia* IMV 673/2 lipopolysaccharide, containing L-glycero-D-manno-heptose (Russian, English Abstract)

Knirel YA, Zdorovenko GM, Shashkov AS, Gubanov NY, Yakovleva LM, Gvozdyak RI//ND Zelinskii Organ Chem Inst, Moscow, USSR

BIOORG KHM 1988 14 (1) 92

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Knirel YA, Zdorovenko GM, Shashkov AS, Mamyan SS, Yakovleva LM, Solyanik LP, Zakharova IY//ND Zelinskii Organ Chem Inst, Moscow, USSR

BIOORG KHM 1988 14 (1) 82

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Kozel TR, Hermerath CA//Univ Nevada, Sch Med, Dept Microbiol, Reno, Nv 89557, USA

J IMMUNOL METHOD 1988 107 (1) 53

Benzoquinone activation of *Cryptococcus neoformans* capsular polysaccharide for construction of an immunoaffinity column

Lee JC, Perez NE, Hopkins CA, Pier GB//Brigham & Womens Hosp, Channing Lab, 180 Longwood Ave, Boston, Ma 02115, USA

J INFEC DIS 1988 157 (4) 723

Purified capsular polysaccharide-induced immunity to *Staphylococcus aureus* infection

Lindberg B, Leontein K, Lindquist U, Svenson SB, Wrangsell G, Dell A, Rogers M//Univ Stockholm, Arrhenius Lab, Dept Organ Chem, S-10691 Stockholm, Sweden

CARBOHYD RES 1988 174 (MAR) 313

Structural studies of the O-antigen polysaccharide of *Salmonella thompson*, serogroup C1 (6,7)

Maddali UB, Roy N*//Indian Assoc Cultivat Sci, Dept Biol Chem, Calcutta 700032, W Bengal, India

INDIAN J CHEM SECT B 1988 27 (1) 51

Structural studies on polysaccharide from *Pseudomonas aeruginosa* Habs type 1

Misaki A, Kaku H, Sone Y, Shibata S//Osaka City Univ, Fac Sci Living, Dept Food & Nutr, Sumiyoshi ku, Osaka 558, Japan

CARBOHYD RES 1988 173 (1) 133

Anti- α -L-arabinofuranose antibodies: purification, immunochemical characterization, and use in histochemical studies of plant cell-wall polysaccharides

Okada M, Sumitomo H, Ito T//Nagoya Univ, Fac Agr, Chikusa ku, Nagoya, Aichi 464, Japan

MAKROMOL CHEM-MACRO CHEM PHYS 1988 189 (2) 263

Polymerization of bicyclic acetals. 14. Synthesis of an amphiphilic block copolymer via ring-opening polymerization of 6,8-dioxabicyclo [3.2.1] octane with a polysaccharide macroinitiator

Parekh RG, Doshi YA, Rao AV, Chauhan VD//Cent Salt & Marine Chem Res Inst, Bhavnagar 364002, Gujarat, India

PHYTOCHEMISTRY 1988 27 (3) 933

Polysaccharide from *Sarconema filiforme*, an Indian marine alga

- Pritchard DG, Renner BP, Furner RL, Huang DH, Krishna NR//Univ Alabama, Dept Microbiol, Birmingham, Al 35294, USA
CARBOHYD RES 1988 173 (2) 255
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- Sakagami H, Ikeda M, Unten S, Takeda K, Murayama JI, Hamada A, Kimura K, Komatsu N, Konno K//Showa Univ, Sch Med, Dept Biochem 1, 1-5-8 Hatanodai, Shinagawa ku, Tokyo 142, Japan
ANTICANCER RES 1987 7 (6) 1153
Antitumor activity of polysaccharide fractions from pine cone extract of *Pinus parviflora* Sieb. et Zucc.
- Siljestrom M, Bjork I, Eliasson AC, Lonner C, Nyman M, Asp NG//Univ Lund, Ctr Chem, Dept Food Chem, POB 124, S-22100 Lund, Sweden
CEREAL CHEM 1988 65 (1) 1
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- Sinilova NG, Duplisheva AP, Romashevskaya EI, Mysyakin EB, Tumanyan MA//Acad Sci USSR, Inst Epidemiol & Microbiol, Moscow V-71, USSR
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- Stern KK, Foegeding EA, Hansen AP//NC Carolina State Univ, Dept Food Sci, Box 1624, Raleigh, NC 27695, USA
J DAIRY SCI 1988 71 (1) 41
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- Stone AL, Szu SC//NICHHD, Dev & Molec Immun, Bethesda, Md 20892, USA
J CLIN MICROBIOL 1988 26 (4) 719
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- Sugawara T, Igarashi K//Shionogi & Co Ltd, Shionogi Res Lab, Fukushima ku, Osaka 553, Japan
CARBOHYD RES 1988 172 (2) 195
Synthesis of a trisaccharide component of the capsular polysaccharide of *Streptococcus pneumoniae* type 19F
- Ternrud IE, Lindberg JE, Magnusson AT, Theander O*//Swedish Univ Agr Sci, Dept Chem & Molec Biol, POB 7015 Uppsala, Sweden
J SCI FOOD AGR 1988 42 (1) 9
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- Tojo M, Yamashita N, Goldmann DA, Pier GB*//Brigham & Womens Hosp, Dept Med, Channing Lab, 180 Longwood Ave, Boston, Ma 02115, USA
J INFEC DIS 1988 157 (4) 713
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- Tsui FP, Egan W*, Summers MF, Byrd RA, Schneerson R, Robbins JB//Off Biol Res & Review, Biophys Lab, 8800 Rockville Pike, Bethesda, Md 20892, USA
CARBOHYD RES 1988 173 (1) 65
Determination of the structure of the *Escherichia coli* K100 capsular polysaccharide, cross-reactive with the capsule from type B *Haemophilus influenzae*
- Vodonik SA, Gray GR*//Univ Minnesota, Dept Chem, 207 Pleasant St SE, Minneapolis, Mn 55455, USA
CARBOHYD RES 1988 172 (2) 255
Analysis of linkage positions in a polysaccharide containing nonreducing, terminal alpha-D-glucopyranosyluronic groups by the reductive cleavage method
- Walton DJ, Jordan DD//Queens Univ, Dept Biochem, Kingston, Ontario, Canada K7L 3N6
CARBOHYD RES 1988 172 (2) 267
Order of enzymic incorporation of O-methyl groups into the O-methyl-D-glucose-containing polysaccharide of *Mycobacterium smegmatis*. A tritium-labelling study
- Yu LP, Rollings JE//Worcester Polytech Inst, Dept Chem Engr, 100 Inst Rd, Worcester, Ma 01609, USA
J APPL POLYM SCI 1988 35 (4) 1085
Quantitative branching of linear and branched polysaccharide mixtures by size exclusion chromatography and on-line low-angle laser light scattering detection
- Zubkov VA, Gorshkova RP, Ovodov YS//Acad

Sci USSR, Ctr Far E Sci, Pacific Inst Bioorgan Chem, Vladivostok 690022, USSR
BIOORG KHIM 1988 14 (1) 65

Structural studies of the O-specific polysaccharide chain of the *Yersinia intermedia* O-4,33 lipopolysaccharide (Russian, English Abstract)

5. Starch

Hebeda RE, Styrilund CR, Teague WM//Enzyme Biosyst Ltd, 6500 Archer Rd, Bedford Pk, IL 60501, USA

STARCH 1988 40 (1) 33

Benefits of *Bacillus megaterium* amylase in dextrose production

Tomazic SJ, Klivanov AM//MIT, Dept Appl Biol Sci, Cambridge, Ma 02139, USA
J BIOL CHEM 1988 263 (7) 3092

Why is one *Bacillus* alpha-amylase more resistant against irreversible thermoinactivation than another?

Hui Y, Gai Y//Chinese Acad Sci, Shanghai Inst Organ Chem, 345 Lingling Lu, Shanghai, Peoples R China

MAKROMOL CHEM-MACRO CHEM PHYS 1988 189 (3) 683

Reactivity mediated by the conformation of polysaccharide hosts: hydrolysis of 2-chloro-N-dodecylpyridinium iodide in the presence of amylose derivatives

I'Anson KJ, Miles MJ, Morris VJ, Ring SG, Nave C//AFRC Inst Food Res, Norwich Lab, Colney Lane, Norwich NR4 7UA, Norfolk, England

CARBOHYD POLYM 1988 8 (6) 45

A study of amylose gelation using a synchrotron X-ray source

Puller S, Kroll J//Bezirkshyg Inspekt & Inst, Berlin, Ger Dem Rep

LEBENSMITTEL-INDUSTRIE 1987 34 (5) 196

Model tests about interactions between amylose and emulsifiers (German, English Abstract)

Kobayashi S, Ashraf HRL, Braun P, French D//Minist Agr Forestry & Fisheries, Natl Food Res Inst, 2-1-2 Kannondai, Tsukuba, Ibaraki 305, Japan

CARBOHYD RES 1988 173 (2) 324

The branched malto-oligosaccharides resulting from the action of *Bacillus macerans* cycloamylose glucanotransferase on 6-O-alpha-

D-glucopyranosylcyclomaltohexaose plus D-glucose

Hankeln K, Lenz I, Hauser B//Zent Krankenhaus Bremen Nord, Anaesthesiol & Intens Med Abt, Hammersbecker Str 228, D-2820 Bremen 70, Fed Rep Ger

ANAESTHESIST 1988 37 (3) 167

Hemodynamic effects of 6-percent hydroxyethyl starch (6-percent HES 200,000/0.62) (German, English Abstract)

Lyden PD, Alving LI, Zivin JA, Rothrock JF//Vet Adm Med Ctr, Dept Neurol 127, 3350 La Jolla Village Dr, San Diego, Ca 92161, USA
STROKE 1988 19 (2) 223

Hemodilution with low-molecular-weight hydroxyethyl starch after experimental focal cerebral ischemia in rabbits

Cerny M, Trnka T, Redlich H//Charles Univ, Inst Organ Chem, CS-12840 Prague 2, Czechoslovakia

CARBOHYD RES 1988 174 (MAR) 349

Praktische Darstellung von 1,6-Anhydro-beta-D-glucopyranose durch Vakuumpyrolyse von Stärke. Kriterien für den Bau eines Stahlreaktors

Chinnaswamy R, Hanna MA//Univ Nebraska, Dept Agr Engr, Lincoln, Ne 68583, USA

CEREAL CHEM 1988 65 (2) 138

Relationship between amylose content and extrusion-expansion properties of corn starches

Darbon P//No address available

BIOFUTUR 1988 (64) 23

The role of starch in today's diet (French)

Dunkle RL, Shasha BS//USDA ARS, US Mkt Res Lab, Manhattan, Ks 66052, USA

ENVIRON ENTOMOL 1988 17 (1) 120

Starch-encapsulated *Bacillus thuringiensis*: a potential new method for increasing environmental stability of entomopathogens

Epenetos AA, Courtenayluck N, Dhokia B, Snook D, Hooker G, Lavender JP, Hemmingway A, Carr D, Paraharalambous M, Bosslet K//Hammersmith Hosp, Royal Postgrad Med Sch, Dept Clin Oncol, Du Cane Rd, London W12 0HS, England

NUC MED COMMUN 1987 8 (12) 1047

Antibody-guided irradiation of hepatic metas-

tases using intrahepatically administered radiolabelled anti-CEA antibodies with simultaneous and reversible hepatic blood flow stasis using biodegradable starch microspheres

Filer LJ//Univ Iowa Hosp & Clin, Dept Pediat, Iowa City, Ia 52242, USA

J AMER DIET ASSN 1988 88 (3) 342

Modified food starch - an update

Franco CML, Ciacco CF, Tavares DQ//Univ Nacl Estadual Sao Paulo, Inst Biociencias, Letras & Ciencias Exactas, Caixa Postal 136, BR-15055 Sao Jose Preto, SP, Brazil

STARCH 1988 40 (1) 29

Studies on the susceptibility of granular cassava and corn starches to enzymatic attack. Part 2: study of the granular structure of starch

Haase NU, Kempf W//Bundesforsch Getreide & Kartoffelverarbeitung, Inst Starke & Kartoffeltechnik, Schutzenberg 12, D-4930 Detmold, Fed Rep Ger

STARCH 1988 40 (1) 15

Effect of wet conservation technique of corn on starch quality (German, English Abstract)

Jaleel SS, Srikantha S, Ghildyal NP, Lonsane BK//Cent Food Technol Res Inst, Fermentat Technol & Bioengn Discipline, Mysore 570013, Karnataka, India

STARCH 1988 40 (2) 55

Simultaneous solid phase fermentation and saccharification of cassava fibrous residue for production of ethanol

Lazarev VD, Starov VM//Moscow Food Ind Technol Inst, Moscow, USSR

J APPL CHEM-ENGL TR 1987 60 (3) PT2 610

Model of the kinetics of starch hydrolysis

Marihart J//Osterreich Agr Ind GesmbH, Werk Gmund, Conrathstr 7, A-3953 Gmund 2, Austria

STARCH 1988 40 (2) 70

Starch derivatives for remoistenable gummed tapes (German, English Abstract)

Mavor AID, Parkin A, Riley A, Smye S, O'Brien T, Robinson PJ, Giles GR//St James Univ Hosp, Dept Med Phys, Leeds LS9 7TF, W Yorkshire, England

NUC MED COMMUN 1987 8 (12) 1011

Initial clinical experience with degradable starch microspheres

Nedelcheva M, Sotirova J//Higher Chemicotechnol Inst, Dept Pulp & Paper Chem, 8 Kliment Ohridski Str, BU-1756 Sofia, Bulgaria

STARCH 1988 40 (1) 25

Thermodynamics of the process of adsorption of phosphate starch on cellulose

Nott DM, Yates J, Grime JS, Maltby P, O'Driscoll PM, Baxter JN, Jenkins SA, Cooke TG//Univ Liverpool, Royal Liverpool Hosp, Dept Surg, Liverpool L69 3BX, England

NUC MED COMMUN 1987 8 (12) 1019

Induced arterial hepatic blockade by degradable starch microspheres in the rat

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

STARCH 1988 40 (2) 58

A study of native and chemically modified potato starch. Part I: Analysis and enzymic availability in vitro

Paredes-Lopez O, Maza-Calvino EC, Gonzales-Castaneda J, Montes-Rivera R//Inst Politecn Nac, Ctr Invest & Estudios Avanzados, Unidad Irapuato, Apdo Postal 629, Irapuato 36500, Guanajuato, Mexico

STARCH 1988 40 (1) 11

Physico-chemical and functional properties of common bean (*Phaseolus vulgaris*) starches

Robles RR, Murray ED, Paredes-Lopez O*//Inst Polytech Nacl, CIEA, Unidad Irapuato, Apdo Postal 629, Irapuato 36500, Mexico

INT J FOOD SCI TECHNOL 1988 23 (1) 91

Physicochemical changes of maize starch during the lime-heat treatment for tortilla

Scott FW, Hatina G//Hlth & Welf Canada, Banting Res Ctr, Hlth Protect Branch, Food Directorate, Ottawa, Ontario, Canada K1A 0L2

J FOOD SCI 1988 53 (1) 264

HPLC determination of sugars, starch and oligosaccharides in infant formulas using resin-based, fixed-ion columns

Sosulski FW, Walker AF, Fedec P, Tyler RT//Univ Saskatchewan, Dept Crop Sci, Saskatoon, Saskatchewan, Canada S7N 0W0

LEBENS-M-WISS-TECHNOL 1987 20 (5) 221

Comparison of air classifiers for separation of protein and starch in pin-milled legume

Starkhammar H, Hakansson L//Linköping Univ Hosp, Dept Oncol, S-58185 Linköping, Sweden
ACTA ONCOL 1987 26 (5) 361

Effect of starch microspheres on the passage of labelled erythrocytes and a low molecular weight marker through the liver

Takeda Y, Shitaozono T, Hizukuri S//Kagoshima Univ, Dept Agr Chem, Korimoto-1, Kagoshima 890, Japan

STARCH 1988 40 (2) 51

Molecular structure of corn starch

Teder H, Erichsen C, Christensson PI, Jonsson PE, Stenram U//Helsingborgs Lasarett, Dept Surg, S-25187 Helsingborg, Sweden

CANC DRUG DEL 1987 4 (3) 169

5-Fluorouracil incorporation into RNA of a rat liver adenocarcinoma after hepatic artery injection together with degradable starch microspheres

Tumaalii F, Wootton M//Univ New S Wales, Dept Food Sci & Technol, POB 1, Kensington, NSW 2033, Australia

STARCH 1988 40 (1) 6

Properties of starches isolated from Western Samoan breadfruit using a traditional method

Vergnes B, Villemaire JP//Ecole Natl Super Mines Paris, Ctr Mise Forme Mat, CNRS, Unite 852, F-06560 Valbonne, France

RHEOL ACTA 1987 26 (6) 570

Rheological behaviour of low moisture molten maize starch

Windhab E, Tegge G, Tiemeier U//Deutsch Inst Lebensmitteltech EV, Klitzing Str 7, D-4570 Quakenbruck, Fed Rep Ger

STARCH 1988 40 (1) 20

Absolute measurements of the rheological properties of gelatinized starches (German, English Abstract)

Zobel HF//CPC Int Inc, Argo, IL 60501, USA

STARCH 1988 40 (1) 1

Starch crystal transformations and their industrial importance

& Petr Quim, Serrano 119, E-28006 Madrid, Spain

ENZYME MICROBIAL TECHNOL 1988 10 (4) 227

Protecting effect of competitive inhibitors during very intense insolubilized enzyme-activated support multipoint attachments: trypsin (amine)-agarose (aldehyde) system

Jones CL, Simpson NJ, Waryas VL, Pappas MG//Promega, 2800 S Fish Hatchery Rd, Madison, WI 53711, USA

BIOTECHNIQUES 1988 6 (2) 118

An inexpensive method of drying multiple agarose gels

Annisson G, Couperwhite I//Univ New S Wales, Sch Microbiol, POB 1, Kensington, NSW 2033, Australia

AUST J BIOL SCI 1987 40 (4) 435

Composition of alginate synthesized during the growth cycle of *Pseudomonas aeruginosa*

Carperlier B, Festino C, Aubart C//Bio-magaz, Rech Fermentat Lab, Aschach le Bas, F-68700 Cernay, France

BIOL WASTE 1988 23 (4) 269

Anaerobic digestion of flotation sludges from the alginic acid extraction process

Graben N, Windeck R//Univ Klinikum Essen, Med Klin & Poliklin, Nieren & Hochdruck-Kranke Abt, Hufelandstr 55, D-4300 Essen, Fed Rep Ger

NIEREN HOCHDRUCK 1988 17 (2) 52

Calcium carbonate and calcium alginate as oral phosphate binders for chronic dialysis patients (German, English Abstract)

Hassan RM, Wahdan MH, Hassan A//Univ Assiut, Fac Sci, Dept Chem, Assiut, Egypt

EUR POLYM J 1988 24 (3) 281

Kinetics and mechanism of sol-gel transformation on polyelectrolytes of nickel alginate ionotropic membranes

Marwaha SS, Kennedy JF, Sehgal VK//Punjabi Univ, Dept Biotechnol, Patiala 147002, Punjab, India

PROCESS BIOCHEM 1988 23 (1) 17

Simulation of process conditions of continuous

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Blanco RM, Guisan JM//CSIC, Inst Catalis

ethanol fermentation of whey permeate using alginate entrapped *Kluyveromyces marxianus* NCYC 179 cells in a packed-bed reactor system

Scott RI, Sladen S, Maidment M, Rashid T, Pratsis C, Perry D//Polytech Cent London, Sch Biotechnol, 115 New Cavendish St, London W1M 8JS, England

J CHEM TECHNOL BIOTECHNOL 1988 41 (2) 145

The effects of oxygen on beta-lactam biosynthesis by alginate entrapped *Streptomyces clavuligerus*

Kato Y, Iki K, Matsuda K//Hirosaki Univ, Fac Educ, Food Sci Lab, Hirosaki, Aomori 036, Japan

AGR BIOL CHEM TOKYO 1988 52 (2) 533

Characterization of an acidic arabinoxylan from cell walls of immature barley plants

Scott RI, Wills SJ, Bucke C//Polytech Cent London, Sch Biotechnol, 115 New Cavendish St, London W1M 8JS, England

ENZYME MICROB TECHNOL 1988 10 (3) 151

Oxygen uptake by kappa-carrageenan entrapped *Streptomyces clavuligerus*

Muzzarelli RAA//Inst Biochem, Chem Div, Fac Med, Univ Ancona, I-60020 Ancona, Italy

CARBOHYD POLYM 1988 8 (1) 1

Carboxymethylated chitins and chitosans

Chavasit V, Kienzie-Sterzer C, Torres JA*//Oregon State Univ, Dept Food Sci & Technol, Corvallis, Or 97331, USA

POLYM BULL 1988 19 (3) 223

Formation and characterization of an insoluble polyelectrolyte complex: chitosan-polyacrylic acid

Holme KR, Hall LD, Armstrong CR, Withers SG*//Univ British Columbia, Dept Chem, Vancouver, BC, Canada V6T 1Y6

CARBOHYD RES 1988 173 (2) 287

Synthesis and evaluation of chitosan-based affinity-chromatography materials

Lopez de Alba PL, Pacheco MA, Andreu de Riquer GA//Univ Guanajuato, Inst Invest Cient, L Rectana 5, Guanajuato 3600, Mexico

BOL SOC CHIL QUIM 1988 33 (1) 59

Interaction study between any transition metal ions in addition to cerium(IV) and uranium(VI)

and chitosan hydrochloride

Rogozhin SV, Gamzazade AI, Chlenov MA, Leonova YY, Skiyar AM, Dotdaev SK//AN Nesmeyanov Organoelement Cpds Inst, Moscow, USSR

VYSOKOMOL SOEDIN SER A SSSR 1988 30 (3) 610

Partial acidic hydrolysis of chitosan (Russian, English Abstract)

Sugano M, Watanabe S, Kishi A, Izume M, Ohtatara A//Kyushu Univ, Sch Agr 4609, Nutr Chem Lab, Fukuoka 812, Japan

LIPIDS 1988 23 (3) 187

Hypocholesterolemic action of chitosans with different viscosity in rats

Alexander G, Juvancz Z, Szejtli J//Hungarian Acad Sci, Inorgan Chem Res Lab, Budaorsi UT 45, H-1112 Budapest, Hungary

J HIGH RES CHROMATOGR 1988 11 (1) 110

Cyclodextrins and their derivatives as stationary phases in GC capillary columns

Gazdag M, Szepesi G*, Huszar L//Gedeon Richter Ltd, Chem Works, Gyomroi UT 19-21, H-1475 Budapest, Hungary

J CHROMATOGR 1988 436 (1) 31

Alpha-, beta- and gamma-cyclodextrins as mobile phase additives in the high-performance liquid chromatographic separation of enantiomeric compounds. II. Optimization of the separation method by using alpha-, beta- and gamma-cyclodextrins in mixture

Harada A, Hu Y, Yamamoto S, Takahashi S//Osaka Univ, Inst Sci & Ind Res, Ibaraki, Osaka 567, Japan

J CHEM SOC DALTON TRANS 1988 (3) 729

Preparation and properties of inclusion compounds of ferrocene and its derivatives with cyclodextrins

Lai CSI, Moody GJ, Thomas JDR, Mulligan DC, Stoddart JF, Zarzycki R//UNIST, Dept Appl Chem, Redwood Bldg, POB 13, Cardiff CF1 3XF, Wales

J CHEM SOC PERKIN TRANS II 1988 (3) 319

Piezoelectric quartz crystal detection of benzene vapour using chemically modified cyclodextrins

Matsuyama K, El-Gizawy S, Perrin JH//Kyushu Univ, Fac Pharmaceut Sci, Fukuoka 812, Japan

DRUG DEVELOP IND PHARM 1987 13 (15)

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Thermodynamics of binding of aromatic amino acids to alpha-, beta-, and gamma-cyclodextrins

Palepu R, Reinsborough VC//Univ Coll Cape Breton, Dept Chem, Sydney, NS, Canada B1P 6L2

CAN J CHEM 1988 66 (2) 325

Surfactant-cyclodextrin interactions by conductance measurements

Sokolov VI, Bondareva VL, Chizhevskii IT, Reutov OA//AN Nesmeyanov Heteroorgan Cpd Inst, Moscow, USSR

BULL ACAD SCI USSR D CHEM SCI 1987 36 (7) PT2 1572

pi-Cyclopentadienylrhodium dienes - a new class of organometallic compounds capable of forming cyclodextrin complexes

Suzuki M, Ueda S, Kusai A//Sankyo Co Ltd, Prog Dev Labs, Shinagawa ku, Tokyo 140, Japan
CHEM PHARM BULL TOKYO 1988 36 (2) 720

Application of freezing point depression to drug interaction studies. I. Interaction between cyclodextrins and alcohols

Zhang LM, Chen SX//Chinese Acad Sci, Inst Chem, Beijing, Peoples R China
J LUMINESC 1988 40-1 (FEB) 266

Enhancing affection of excimer formation of phenyl propionate by beta-cyclodextrin

Zukowski J, Sybilska D*, Bojarski J, Szejtli J//Polish Acad Sci, Inst Phys Chem, Kasprzaka 44, PL-01224 Warsaw, Poland
J CHROMATOGR 1988 436 (3) 381

Resolution of chiral barbiturates into enantiomers by reversed-phase high-performance liquid chromatography using methylated beta-cyclodextrins

Arranz F, Sanchez-Chaves M, Martinez R//Inst Plast & Caucho, Juan Cierva 3, E-28006 Madrid, Spain
MAKROMOL CHEM-MACRO CHEM PHYS 1987 188 (12) 2831

Water-insoluble dextrans by grafting, 3. Reaction of dextran with butyl isocyanate. Chemical hydrolysis

Arranz F, Sanchez-Chaves M//CSIC, Inst Plast & Caucho, Juan Cierva 3, E-28006 Madrid, Spain

POLYMER 1988 29 (3) 507

¹³C nuclear magnetic resonance spectral study on the distribution of substituents in relation to the preparation method of partially acetylated dextrans

Clarke MA, Godshall MA//Sugar Proc Res Inc, 1100 Robert E Lee Blvd, New Orleans, La 70124, USA

J ASSN OFFIC ANAL CHEM 1988 71 (2) 276

Determination of dextran in raw cane sugar by Roberts copper method: collaborative study

Kikuchi S, Inaba A, Takahashi M, Aramaki Y, Tsuchiya S//Tokyo Coll Pharm, 1432-1 Horinouchi, Hachioji, Tokyo 19203, Japan

INT J PHARM 1988 42 (1-3) 193

Decreased distribution of gentamicin in rat kidney by complexation with dextran

Kornyei J, Szirtes L//Hungarian Acad Sci, Inst Isotopes, POB 77, H-1525 Budapest, Hungary
REACT POLYM ION EXCH SORBENTS 1988 7 (2-3) 247

Chromatographic studies on mixed derivatized zirconium phosphate and dextran gels

Kulakov VN, Pimenova GN, Kivman GY, Shvarts IS, Vasilyev AE//Moscow Chem Prod Biol Testing Res Inst, Dev Med Preparat Branch, Moscow, USSR

FARMAKOL TOKSIKOL 1988 51 (2) 99

Pharmacokinetic study of dextran conjugates with catecholamines possessing the hypotensive activity (Russian, English Abstract)

Modig J//Univ Hosp Uppsala, Dept Anesthesiol & Intens Care, S-75185 Uppsala, Sweden
RESUSCITATION 1988 16 (1) 1

Beneficial effects of dextran 70 versus Ringer's acetate on pulmonary function, hemodynamics and survival in a porcine endotoxin shock model

Nakane S, Matsumoto S, Takakura Y, Hashida M, Sezaki H//Kyoto Univ, Fac Pharmaceut Sci, Dept Basic Pharmaceut, Kyoto 606, Japan
J PHARM PHARMACOL 1988 40 (1) 1

The accumulation mechanism of cationic mitomycin C-dextran conjugates in the liver: in vivo cellular localization and in vitro interaction with hepatocytes

Waki H, Noda S, Yamashita M//Kyushu Univ, Fac Sci, Dept Chem, Higashi ku, Fukuoka, Japan

REACT POLYM ION EXCH SORBENTS 1988 7 (2-3) 227

Spectroscopy of ion exchangers and its applications - Ion-exchanger phase absorptiometry and spectrofluorometry using a crosslinked dextran ion exchanger

Yang CG, Lu BT, Jiang SZ, Li GD//Ningbo Baoli Hosp, Ningbo, Peoples R China
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Okada G, Takayanagi T, Sawai T//Shizuoka Univ, Fac Educ, Dept Biol, Shizuoka 422, Japan
AGR BIOL CHEM TOKYO 1988 52 (2) 495
Improved purification and further characterization of an isomalto-dextranase from *Arthrobacter globiformis* T6

Perry C, Meadon P//Univ London, Kings Coll, Kensington Campus, Campden Hill Rd, London W8 7AH, England

J INST BREW 1988 94 (2) 64

Properties of a genetically-engineered dextrin fermented strain of brewers' yeast

Chalykh AE, Ptichkina NM, Kudashova RV//NG Chernyshevskii State Univ, Chem Res Inst, Saratov, USSR

COLLOID J USSR-ENGL TR 1987 49 (4) 729

Sorption of water vapor by furcellaran films and their structure

Gey C, Noble O, Perez S, Taravel FR//Univ Grenoble 1, Ctr Rech Macromolec Vegetales, CNRS, BP 68, F-38402 St Martin d'Heres, France

CARBOHYD RES 1988 173 (2) 175

Complexes of borate ions with guar D-galacto-D-mannan polymer and related model compounds

Gupta AK, Grasdalen H//Purdue Univ, Whisler Ctr Carbohydrate Res, Smith Hall, W Lafayette, IN 47907, USA

CARBOHYD RES 1988 173 (1) 159

A galacto-D-mannan from *Melilotus officinalis* seeds

Kramer J, Prud'homme RK*, Wiltzius P, Mirau P, Knoll S//Princeton Univ, Sch Engrg & Appl Sci, Dept Chem Engrg, Princeton, NJ 08544, USA

COLLOID POLYM SCI 1988 266 (2) 145

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Kobayashi K, Ichikawa H, Sumitomo H, Schuerch C//Nagoya Univ, Fac Agr, Nagoya, Aichi 464, Japan

MACROMOLECULES 1988 21 (2) 542

Sterically controlled ring-opening polymerization of a 1,6-anhydro-beta-D-galactopyranose derivative by neighbouring group participation. (1-6)-beta-D-galactopyranan

Buddle BM, Pulford HD, Ralston M//Minist Agr & Fisheries, Wallaceville Anim Res Ctr, Div Res, Upper Hutt, New Zealand

VET MICROBIOL 1988 16 (1) 67

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Defaye J, Kohlmunzer S, Sodzawiczny K, Wong E//CNRS, Ctr Rech Macromolec Vegetales, BP 68, F-38042 Grenoble, France

CARBOHYD RES 1988 173 (2) 316

Structure of an antitumor, water-soluble D-glucan from the carpophores of *Tylophilus felleus*

Henry RJ//Queensland Wheat Res Inst, POB 5282, Toowoomba, Qld 4350, Australia

J SCI FOOD AGR 1988 42 (4) 333

Changes in beta-glucan and other carbohydrate components of barley during malting

Saito H, Tabeta R, Yoshioka Y, Hara C, Kiho T, Ukai S//Natl Canc Ctr, Res Inst, Div Biophys, Tsukiji 5-chome, Chuo ku, Tokyo 104, Japan

BULL CHEM SOC JPN 1987 60 (12) 4267

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Shinohara H, Ohno N, Yadomae T//Tokyo Coll Pharm, 1432-1 Horinouchi, Hachioji, Tokyo 19203, Japan

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Antitumor activity and structural characterization of a (1-3)-beta-D-glucan extracted with cold alkali from sclerotia of *Sclerotinia sclerotiorum* IFO9395

Stuart IM, Loi L, Fincher GB//Victoria Crops Res Inst, Horsham, Vic 3400, Australia
J CEREAL SCI 1988 7 (1) 61

Varietal and environmental variations in (1-3, 1-4)-beta-glucan levels and (1-3, 1-4)-beta-glucanase potential in barley: relationships to malting quality

Acebal C, Castillon MP, Estrada P//Univ Complutense, Fac Quim, Dept Bioquim & Biol Molec, E-28040 Madrid, Spain

BIOTECHNOL APPL BIOCHEM 1988 10 (1) 1
Endoglucanase and beta-glucosidase location in *Trichoderma reesei* QM 9414 growing in different carbon sources

Al Bustany Z, Elwinger K//Swedish Univ Agr Sci, Dept Anim Nutr & Management, Funbo Lovsta, S-75590 Uppsala, Sweden

SWED J AGR RES 1988 18 (1) 31
Whole grains, unprocessed rapeseed and beta-glucanase in diets for laying hens

Hikino H, Takahashi M, Oshima Y, Konno C//Tohoku Univ, Inst Pharmaceut, Sendai, Miyagi 980, Japan

PLANTA MED 1988 (1) (FEB) 1
Isolation and hypoglycemic activity of oryzabrans A, B, C and D, glycans of *Oryza sativa* bran

Berardesca E, Gabba P, Borroni G, Rabbiosi G//Univ Pavia, Dept Dermatol, I-27100 Pavia, Italy

INT J CLIN PHARM RES 1988 8 (1) 69
Assessment of the effects of a topical product containing glycosaminoglycans in cutaneous hydration

Raval DK, Patel RG, Patel VS//Sardar Patel Univ, Dept Chem, Vallabh Vidyanagar 388120, Gujarat, India

STARCH 1988 40 (2) 66
Graft polymerization of acrylonitrile onto guar gum by hydrogen peroxide initiation

Tunali G, Westhues M, von Stetten D, Huth K*//Diaknissen Krankenhauses, Inneren Abt, Holzhausenstr 72-92, D-6000 Frankfurt 1, Fed Rep Ger

MED WELT 1988 39 (10) 309
The effect of guar-gum in sulfonyl urea- and insulin-dependent diabetic patients (German)

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

FOOD ADDIT CONTAM 1988 5 (1) 1
The amino acid composition and quantitative sugar-amino acid relationships in sequential Smith-degradation products from gum talha (*Acacia seyal* Del.)

Connolly S, Fenyo JC*, Vandeveld MC//Lab Echanges Cell, Scueor, UA CNRS No 203, Fac Sci & Techniques, Univ Rouen, 76130 Mont-Saint-Aignan, France

CARBOHYD POLYM 1988 8 (6) 23
Effect of proteinase on the macromolecular distribution of *Acacia senegal* gum

Malhotra S, Taneja SC, Dhar KL*//Nat Prod Chem Reg Res Lab, Canal Rd, Jammu Tawi 180001, India

J INDIAN CHEM SOC 1987 64 (11) 775
Chemical constituents of *Canarium strictum* gum

Kinsella MG, Wight TN//Univ Washington, Sch Med, Dept Pathol SM30, Seattle, Wa 98195, USA

BIOCHEMISTRY-USA 1988 27 (6) 2136
Structural characterization of heparan sulfate proteoglycan subclasses isolated from bovine aortic endothelial cell cultures

Chiba T, Jacquinet JC, Sinay P*, Petitou M, Choay J//Ecole Normale Super, Chim Lab, UA 1110, 24 rue Lhomond, F-75231 Paris, France

CARBOHYD RES 1988 174 (MAR) 253
Chemical synthesis of L-iduronic acid-containing disaccharide fragments of heparin

Faivre R, Neuhaert Y, Kieffer Y, Apfel F, Magnin D, Didier D, Toulemonde F, Bassand JP, Maurat JP//Chu St Jacques, Serv Cardiol, F-25000 Besancon, France

PRESSE MEDICALE 1988 17 (5) 197
A new treatment of deep vein thrombosis: low molecular weight heparin fractions. A randomized comparative study (French, English Abstract)

Henrickson KJ, Powell KR, Schwartz CL//St Jude Childrens Res Hosp, Div Infect Dis, 332 N Lauderdale, POB 318, Memphis, Tn 38101, USA

J INFEC DIS 1988 157 (3) 600
A dilute solution of vancomycin and heparin retains antibacterial and anticoagulant activities

Hoyle CF, Swirsky DM, Freedman L, Hayhoe FGJ//Univ Cambridge, Sch Clin, Dept Haematol Med, Hills Rd, Cambridge CB2 2QL, England

BRIT J HAEMATOL 1988 68 (3) 283

Beneficial effect of heparin in the management of patients with APL

Millot F, Bara L, Etienne J, Samama M, Laruelle P//Hop Tenon, Biochim Lab, 4 rue Chine, F-75970 Paris 20, France

NOUV REV FR HEMATOL 1987 29 (6) 397

Lipolytic and anticoagulant activities of a low molecular weight heparin derivative (French, English Abstract)

Samama M, Wajman A//Hotel Dieu, Cent Hematol Lab, 1 pl Parvis Notre Dame, F-75181 Paris 04, France

COEUR 1988 19 (1) 42

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Staskus PW, Johnson WC**//Oregon State Univ, Dept Biochem & Biophys, Corvallis, Or 97331, USA

BIOCHEMISTRY-USA 1988 27 (5) 1522

Conformational transition of hyaluronic acid in aqueous-organic solvent monitored by vacuum ultraviolet circular dichroism

Staskus PW, Johnson WC**//Oregon State Univ, Dept Biochem & Biophys, Corvallis, Or 97331, USA

BIOCHEMISTRY-USA 1988 27 (5) 1528

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Velichko TI, Anikeeva NN, Fedoseeva NV, Katrukha GS//MV Lomonosov State Univ, Moscow 117234, USSR

KHIM PRIR SOEDIN SSSR 1987 (5) 771

Immobilization of modified heparin on a collagen film (Russian)

Velichko TI, Shtopenko AN, Fedoseeva NV, Katrukha GS//MV Lomonosov State Univ, Moscow 117234, USSR

KHIM PRIR SOEDIN SSSR 1987 (5) 700

Covalent heparin immobilization on a collagen film (Russian)

Wattler PK, Cholakis CH, Sefton MV**//Univ

Toronto, Dept Chem Engn & Appl Chem, Toronto, Ontario, Canada M5S 1A4

BIOMATERIALS 1988 9 (2) 150

Water content and compression modulus of some heparin-PVA hydrogels

Hara C, Yokomori Y, Kiho T, Nagai K, Ukai S**//Gifu Coll Pharm, Gifu 502, Japan

CARBOHYD RES 1988 173 (2) 332

A (1-3)-alpha-D-mannan from a water extract of *Diclyophora indusiata* Fisch

Kogan G, Pavliak V, Masler L//Slovak Acad Sci, Inst Chem, Dubravska Cesta 9, CS-84238 Bratislava, Czechoslovakia

CARBOHYD RES 1988 172 (2) 243

Structural studies of mannans from the cell walls of the pathogenic yeasts *Candida albicans* serotypes A and B and *Candida parapsilosis*

Kusakabe I, Park GG, Kumita N, Yasui T, Murakami K//Univ Tsukuba, Inst Appl Biochem, Sakura mura, Tsukuba, Ibaraki 305, Japan

AGR BIOL CHEM TOKYO 1988 52 (2) 519

Specificity of beta-mannanase from *Penicillium purpurogenum* for konjac glucomannan

Johnson RM, Breene WM//Calreco Inc, Res & Dev, Van Nuys, Ca 91412, USA

FOOD TECHNOL 1988 42 (2) 87

Pectin gel strength measurement

Massoit P, Rouau X, Thibault JF//INRA, Biochim & Technol Glucides Lab, rue Geraudiere, F-44072 Nantes, France

CARBOHYD RES 1988 172 (2) 217

Isolation and characterisation of the cell-wall fibres of carrot

Massoit P, Rouau X, Thibault JF//INRA, Biochim & Technol Glucides Lab, rue Geraudiere, F-44072 Nantes, France

CARBOHYD RES 1988 172 (2) 229

Characterisation of the extractable pectins and hemicelluloses of the cell wall of carrot

Roth JN//RCR Sci Inc, 206 W Lincoln Ave, Goshen, In 46526, USA

J ASSN OFFIC ANAL CHEM 1988 71 (2) 343

Temperature-independent pectin gel method for aerobic plate count in dairy and nondairy food products: collaborative study

Tanabe H, Kobayashi Y//Govt Ind Res Inst, 2-3-3 Hananomiya cho, Shiko ku, Takamatsu 761, Japan

HOLZFORSCHUNG 1988 42 (1) 47

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von Mollendorff LJ, Devilliers OT//Fruit & Fruit Technol Res Inst, Stellenbosch 7600, South Africa

J HORT SCI 1988 63 (1) 53

Role of pectolytic enzymes in the development of wooliness in peaches

Hours RA, Voget CE, Ertola RJ//Natl Univ La Plata, Fac Ciencias Exactas, Ctr Invest & Desarrollo Fermentaci Ind, 47 & 115, RA-1900 La Plata, Argentina

BIOL WASTE 1988 23 (3) 221

Apple pomace as raw material for pectinases production in solid state culture

Wicker L, Temelli F//Univ Florida, Ctr Agr Res & Educ, Ctr Citrus Res & Educ, Inst Food & Agr Sci, 700 Expt Stn Rd, Lake Alfred, FL 33850, USA

J FOOD SCI 1988 53 (1) 162

Heat inactivation of pectinesterase in orange juice pulp

Plastow GS//Leicester Bioctr, Univ Rd, Leicester LE1 7RH, England

MOLEC MICROBIOL 1988 2 (2) 247

Molecular cloning and nucleotide sequence of the pectin methyl esterase gene of *Erwinia chrysanthemi* E374

Dhaliwal AS, Mares DJ, Marshall DR, Skeritt JH//Univ Sydney, Inst Plant Breeding, IA Watson Wheat Res Ctr, Narrabri, NSW 2390, Australia

CEREAL CHEM 1988 65 (2) 143

Protein composition and pentosan content in relation to dough stickiness of 1B/1R translocation wheats

Romero C, Manjon A, Iborra JL//Univ Murcia, Fac Chem, Dept Biochem & Molec Biol, E-30001 Murcia, Spain

BIOTECHNOL LETT 1988 10 (2) 97

Synergistic effect of endo-D-polygalacturonase on coimmobilized pectinesterase

Tanabe H, Kamishima H//Govt Ind Res Inst, 2-3-3 Hananomiya, Shiko ku, Takamatsu 761, Japan

AGR BIOL CHEM TOKYO 1988 52 (2) 611

Cryptococcus albidus assimilating pectic substances and its extracellular polygalacturonase

Tazaki M, Maruyama I, Takase S, Homma T//Ikutoku Tech Univ, Dept Chem Proc Engn, 1030 Shimo ogino, Atsugi, Kanagawa 24302, Japan

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Capillary hydrodynamic chromatography of polysaccharides, schizophyllan, and xanthan

Funahashi H, Hirai K, Yoshida T*, Taguchi H//Osaka Univ, Fac Engn, Int Ctr Cooperat Res Biotechnol, 2-1 Yamada oka, Suita, Osaka 565, Japan

J FERMENT TECHNOL 1988 66 (1) 103

Mixing state of xanthan gum solution in an aerated and agitated fermentor - Effects of impeller size on volumes of mixing regions and circulation time distribution

Milas M, Linossier JL, Contat F//Univ Sci Technol & Med Grenoble, Ctr Rech Macromolec Vegetales, CNRS, Propre Lab, BP 68, F-38402 St Martin d'Heres, France

J APPL POLYM SCI 1988 35 (4) 1115

The effect of thermal aging on xanthan solutions

Torrestiana B, Galindo E*, Brito E//Univ Nacl Autonoma Mexico, Ctr Invest Sobre Ingn Genet & Biotecnol, AP 510-3, Cuernavaca 62270, Morelos, Mexico

BIOTECHNOL PROGR 1988 4 (1) 1

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IUPAC recommendation on nomenclature and symbols and technical reports from commissions - Commission on Biotechnology (Bose TK, Bisaria VS)//No address available

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Meagher MM, Tao BY, Chow JM, Reilly PJ//Iowa State Univ Sci & Technol, Dept Chem Engn, Ames, Ia 50011, USA

CARBOHYD RES 1988 173 (2) 275

Kinetics and subsite mapping of a D-xylobiose- and D-xylose-producing *Aspergillus niger* endo-(1-4)-beta-D-xylanase

Edwards M, Bowman YJL, Dea ICM, Reid JSG/*Univ Stirling, Dept Biol Sci, Stirling FK9 4LA, Scotland

J BIOL CHEM 1988 263 (9) 4333

A beta-D-galactosidase from nasturtium (*Tropaeolum majus* L.) cotyledons. Purification, properties, and demonstration that xyloglucan is the natural substrate

York: WS, Oates JE, van Halbeek H, Darvill AG, Albersheim P*, Tiller PR, Dell A/*Univ Georgia, Russell Lab, Complex Carbohydrate Res Ctr, POB 5677, Athens, Ga 30613, USA

CARBOHYD RES 1988 173 (1) 113

Location of the O-acetyl substituents on a non-asaccharide repeating unit of sycamore extracellular xyloglucan