

BIBLIOGRAPHY ON CARBOHYDRATE POLYMERS

1 Books, Reviews and Symposia

Smidsrod O, Skjak-Braek G//Norwegian Inst Technol, Div Biotechnol, N-7034 Trondheim, Norway

TRENDS BIOTECH 1990, 8 (3) 71

Alginate as immobilization matrix for cells (Review)

Treiber E//Address not available

HOLZFORSCHUNG 1990, 44 (2) 94

Congress Report: Cellucon '89 Conference, Wrexham, Wales

Waring DR, Hallas G (Eds)

Chemistry and Application of Dyes

Topics in Applied Chemistry

Plenum Publ Corp (New York), 1990, 414pp, \$85.00 Hardbound, ISBN: 0-306-43278-1

Includes the chapter: Dyes for cellulosic fibers (Waring DR)

PEDIATRICS 1990, 85 (4) Suppl

Special Issue - Current status of Haemophilus influenzae type-B vaccines

Robbins JB, Schneerson R//NICHHD, Dev & Molec Immun Lab, Bldg 6, Room 416, Bethesda, Md 20205, USA

J INFEC DIS 1990, 161 (5) 821

Polysaccharide-protein conjugates: A new generation of vaccines (ISDA meeting presentation)

Tipson RS, Horton D (Eds)

Advances in Carbohydrate Chemistry and Biochemistry, Vol 47

Academic Press Inc (San Diego), 1989, 424pp, \$85.00, Hardbound, ISBN: 0-12-007247-5

Includes the chapters: Application of anhydrous hydrogen fluoride for the structural analysis of polysaccharides (Knirel YA, Vinogradov EV, Mort AJ); The thermal decomposition of carbohydrates. 2. The decomposition of starch (Tomasiak P, Wiejak S, Palasinski M)

2 Cellulose

Ruys AJ, Sorrell CC//Univ New S Wales, Sch Ceram Engrg, Kensington, NSW, Australia

AMER CERAM SOC BULL 1990, 69 (5) 828

Slip casting of high-purity alumina using sodium carboxymethylcellulose as deflocculant/binder

Aboul-Encin HY, Islam MR//King Faisal Specialist Hosp & Res Ctr, Dept Radionuclide & Cyclotron Operat, Drug Develop Dev Lab, POB 3354, Riyadh 11211, Saudi Arabia

J LIQ CHROMATOGR 1990, 13 (3) 485

Structural factors affecting chiral recognition and separation on cellulose based chiral stationary phases

Blodorn W, Krismer R, Orthner HM, Stummeyer J, Wilhartitz P, Wunsch G*//Univ Hannover, Inst Inorgan Chem, Callinstr 9, D-3000 Hanover 1, Fed Rep Ger

MIKROCHIM ACTA 1989, 3 (3-6) 423

Trace-matrix separations for high-purity chromium, molybdenum and tungsten with cellulose collectors

Bouchard J, Garnier G, Vidal P, Chornet E, Overend RP//Univ Sherbrooke, Fac Sci Appl, Dept Genie Chim, Sherbrooke, Quebec, Canada J1K 2R1

WOOD SCI TECHNOL 1990, 24 (2) 159

Characterization of depolymerized cellulosic residues. Part 2. Residues derived from ethylene glycol solvolysis of cellulose

Buyanov AL, Revelskaya LG, Petropavlovskii GA//Acad Sci USSR, Inst Macromolec Cpds, Moscow V-71, USSR

J APPL CHEM-ENGL TR 1989, 62 (8) 1723

Mechanism of formation and structural feature of highly swollen acrylate hydrogels cross-linked with cellulose allyl ethers

Ermolenko IN, Lukashev VK, Loseva EI, Luneva NK//Acad Sci BeSSR, Inst Gen & Inorgan

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 ten sections: 1 Books, Reviews and Symposia; 2 Cellulose; 3 Cellulose-degrading Enzymes; 4 Cyclodextrins; 5 Lignin; 6 Polysaccharides - Named; 7 Polysaccharides - Other; 8 Lipopolysaccharides; 9 Starch; 10 Starch-degrading Enzymes. 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.

Chem, Minsk, Belorussia, USSR

DOKL AKAD NAUK BSSR 1990, 34 (4) 357

Sorption of radionuclides by cellulose polyphosphate-based sorbents (Russian, English Abstract)

Fernandez MJ, Fernandez MD, Casinos I, Guzman GM//Univ Pais Vasco, Fac Ciencias Quim, Dept Ciencia & Technol Polimeros, Apdo 1072, E-20080 San Sebastian, Spain

J APPL POLYM SCI 1990, 39 (11-12) 2219

Thermal behavior of cellulosic graft copolymers. I. Cotton grafted with vinyl acetate and methyl acrylate

Horrocks AR, Price D*, Tunc M//*Univ Salford, Dept Chem & Appl Chem, Salford M5 4WT, Lancs, England

J APPL POLYM SCI 1990, 39 (1) 2165

Studies on the temperature dependence of extinction oxygen index values for cellulosic fabrics: III. Comparison with limiting oxygen index for commercial flame-retarded cotton

Izawa K, Matsukura M, Ishizu Y//Japan Tobacco Inc, Tobacco Sci Res Lab, 6-2 Umegaoka, Midori-ku, Yokohama 227, Japan

AGR BIOL CHEM TOKYO 1990, 54 (4) 957

Curie-point pyrolysis of cellulose in the presence of potassium malate

Johansson A//Tech Res Ctr Finland, Biologinkuja 3-5, SF-02150 Espoo, Finland

HOLZFORSCHUNG 1990, 44 (2) 103

The linear free energy relation of the acid-base interactions between cellulose and organic molecules. A possible method for characterizing new pulp qualities

Kabrelian V, Berger W, Schmidt H, Philipp B//Tech Univ Dresden, Zentrum Chem, DDR-8027 Dresden, Ger Dem Rep

Z CHEM 1990, 30 (3) 96

N-methyl-N,N-dicyclohexylamine-N-oxide - A new solvent for cellulose

Krylova RG, Shashkov AS, Usov AI//ND Zelinskii Organ Chem Inst, Moscow, USSR

BIOORG KHIM 1990, 16 (1) 105

Reaction of 6-O-trityl-cellulose with tribromomidazole and triphenylphosphine in presence of imidazole - Synthesis of a 3-bromo-3-deoxy derivative having allo configuration of the pyranose ring (Russian, English Abstract)

Lowary TL, Richards GN//Univ Montana, Wood Chem Lab, Missoula, Mt 59812, USA

CARBOHYD RES 1990, 198 (1) 79

Mechanisms of pyrolysis of polysaccharides: Cellobiitol as a model for cellulose

Millili GP, Schwartz JB//Philadelphia Coll Pharm & Sci, Dept Pharmaceut, Philadelphia, Pa 19104, USA

DRUG DEVELOP IND PHARM 1990, 16 (8) 1411

The strength of microcrystalline cellulose pellets: The effect of granulating with water/ethanol mixtures

Saito K//Hokkaido Tokai Univ, Sch Engrg, Dept Biosci & Technol, Sapporo 005, Japan

FOOD CHEM 1990, 36 (4) 243

Possible locality of affinitive sites(s) on cellulose for preservation of stable red colour of carthamin

Schneider HA, Stehle A, Leikauf B, Regel W//Univ Freiburg, Hermann Staudinger Haus, Inst Makromolek Chem, Stefan Meier Str 31, D-7800 Freiburg, Fed Rep Ger

POLYMER 1990, 31 (5) 829

Effect of charge-transfer interaction on thermal and rheological properties of silicone-cellulose blends

Singh K, Shahi VK//Gorakhpur Univ, Dept Chem, Gorakhpur 273009, Uttar Pradesh, India

J MEMBRANE SCI 1990, 49 (2) 223

Studies on electrochemical characterization of ion selective cellulose acetate membranes with and without a lecithin liquid membrane

Soubelet O, Presta MA, Marx-Figini M//*Natl Univ La Plata, Fac Exact Sci, Inst Nacl Invest Fis Teor & Aplicadas, Div Polymer, RA-1900 La Plata, Argentina

ANGEW MAKROMOL CHEM 1990, 175 (FEB) 117

SEC on cellulose nitrate: DP-V_e relationship and evaluation of different methods to determine the calibration parameters

Tsurumi T, Osawa N, Hirasaki T, Yamaguchi K, Manabe S, Yamashiki T//Asahi Chem Ind Co Ltd, Fibers & Text Adm, BMM Project, Imperial Towe 18F, Tokyo 100, Japan

POLYM J 1990, 22 (4) 304

Mechanism of removing monodisperse gold particles from a suspension using cuprammonium

regenerated cellulose hollow fiber (BMM hollow Fiber)

Vinokurova LG, Erofeev BV, Volkovich SM, Matskevich DV//Acad Sci BeSSR, Inst Phys & Organ Chem, Minsk, Belorussia, USSR
DOKL AKAD NAUK BSSR 1990, 34 (1) 64

The acid catalytic destruction of accessible cellulose regions (Russian, English Abstract)

Sa B, Banyopadhyay AK, Gupta BK//Jadavpur Univ, Fac Engn & Technol, Dept Pharm, Div Pharmaceut, Calcutta 700032, W Bengal, India
DRUG DEVELOP IND PHARM 1990, 16 (7) 1153

Development and in vitro evaluation of ethyl cellulose micropellets as a controlled release dosage form for theophylline

Suto S, Maruyama T//Yamagata Univ, Fac Engn, Dept Polymer Chem, Jonan 4-3-16, Yonezawa, Yamagata 992, Japan
J APPL POLYM SCI 1990, 39 (1) 2179

Effect of molecular weight on the birefringence of lyotropic liquid crystalline ethyl cellulose and hydroxypropyl cellulose

Fujiyama M//Tokuyama Soda Co Ltd, Polymer Dev Lab, Tokuyama, Yamaguchi 745, Japan
J APPL POLYM SCI 1990, 40 (1-2) 67

Capillary flow properties of thermotropic hydroxypropylcelluloses

Bautista J, Parrado J, Machado A//Univ Seville, Dept Bioquim Bromatol & Toxicol, E-41012 Seville, Spain
BIOL WASTE 1990, 32 (3) 225

Composition and fractionation of sunflower meal: Use of the lignocellulosic fraction as substrate in solid-state fermentation

Saddler JN, Mackie K//Forintek Canada Corp, 800 Montreal Rd, Ottawa, Ontario, Canada K1G 3Z5
BIOMASS 1990, 22 (1-4) 293
Bioconversion of lignocellulosics

Simkovic I, Mlynar J, Alfodi J, Micko MM//Slovak Acad Sci, Inst Chem, CS-84238 Bratislava, Czechoslovakia
HOLZFORSCHUNG 1990, 44 (2) 113

New aspects in cationization of lignocellulose materials. XI. Modification of bagasse with quaternary ammonium groups

Coghlan LG, Hanausek M*//Univ Texas, MD Anderson Canc Ctr, Dept Carcinogenesis, Div Res, Sci Pk, POB 389, Smithville, Tx 78957, USA
J IMMUNOL METHOD 1990, 129 (1) 135

Subcutaneous immunization of rabbits with nitrocellulose paper strips impregnated with microgram quantities of protein

Siochi EJ, Ward TC//Virginia Polytech Inst & State Univ, Dept Chem, Blacksburg, Va 24061, USA

J MACROMOL SCI-REV MACROMOL 1989, C29 (4) 561

Absolute molecular weight distribution of nitrocellulose

Warren RC//Def Sci & Technol Org, Weap Syst Res Lab, Div Ordnance Syst, Salisbury, SA, Australia

POLYMER 1990, 31 (5) 861

The effect of ageing and annealing on the physical properties of nitrocellulose plasticized with nitroglycerin

3 Cellulose-degrading Enzymes

El Shafei AM, Vega JL, Klasson KT, Clausen EC, Gaddy JL//Nat'l Res Ctr, Dept Microbial Chem, Cairo, Egypt
BIOL WASTE 1990, 32 (3) 209

Cellulase and hemicellulase formation by fungi using corn stover as the substrate

Huang L, Forsberg CW*//Univ Guelph, Dept Microbiol, Guelph, Ontario, Canada N1G 2W1
APPL ENVIRON MICROBIOL 1990, 56 (5) 1221

Cellulose digestion and cellulase regulation and distribution in *Fibrobacter succinogenes* subsp *succinogenes* S85

Huang L, McGavin M, Forsberg CW*, Lam JS, Cheng KJ//Univ Guelph, Dept Microbiol, Guelph, Ontario, Canada N1G 2W1
APPL ENVIRON MICROBIOL 1990, 56 (5) 1229

Antigenic nature of the chloride-stimulated cellobiosidase and other cellulases of *Fibrobacter succinogenes* subsp *succinogenes* S85 and related fresh isolates

Nakashima Y, Orskov ER//Iwate Univ, Fac Agr, Morioka, Iwate 020, Japan
ANIM PROD 1990, 50 (APR) PT2, 309

Rumen degradation of straw. 9. Effect of cellulase and ammonia treatment of different varieties of rice straws and their botanical fractions

Rakshit SK, Sahai V//Indian Inst Technol, Dept Chem Engn, Madras 600036, Tamil Nadu, India
J GEN APPL MICROBIOL TOKYO 1989, 35 (6) 441

Cellulase production by a partially catabolite-resistant mutant of *Trichoderma reesei*

Singh A, Abidi AB*, Darmwal NS, Agrawal AK//Narendra Dev Univ Agr & Technol, Dept Biochem, Faizabad 224229, India
MIRCEN J APPL MICROBIOL 1989, 5 (4) 451

Production of protein and cellulase by *Aspergillus niger* in solid state culture

McGavin M, Lam J, Forsberg CW**//Univ Guelph, Dept Microbiol, Guelph, Ontario, Canada N1G 2W1

APPL ENVIRON MICROBIOL 1990, 56 (5) 1235

Regulation and distribution of *Fibrobacter succinogenes* subsp *succinogenes* S85 endoglucanases

4 Cyclodextrins

Armstrong DW, Li WY, Chang CD, Pitha J//Univ Missouri, Dept Chem, Rolla, Mo 65401, USA

ANAL CHEM 1990, 62 (9) 914

Polar-liquid derivatized cyclodextrin stationary phases for the capillary gas chromatography separation of enantiomers

Baeyens W, Lin B, Corbisier V//State Univ Ghent, Fac Pharmaceut Sci, Pharmaceut Chem & Drug Anal Lab, Harelbekestr 72, B-9000 Ghent, Belgium

ANALYST 1990, 115 (4) 359

Surfactant and cyclodextrin fluorescence enhancement of dansylamino acids and of thiol-ammonium 7-fluoro-benzo-2-oxa-1,3-diazole-4-sulphonate derivatives

Beyrich T, Wagener J//Univ Greifswald, Sekt Pharm, Fredrich Ludwig Jahn Str 17 DDR-2200 Greifswald, Ger Dem Rep

PHARMAZIE 1990, 45 (3) 217

Determination of the association constant of metronidazol benzoate with cyclodextrin using the competitive tracer method

Brewster ME, Estes KS, Bodor N**//Pharmatec

Inc, Alachua, Fl 32615, USA

INT J PHARM 1990, 59 (3) 231

An intravenous toxicity study of 2-hydroxypropyl-beta-cyclodextrin, a useful drug solubilizer, in rats and monkeys

Dietzel K, Estes KS, Brewster ME, Bodor NS, Derendorf H//Univ Florida, Coll Pharm, Dept Pharmaceut, Box J-494, Gainesville, Fl 32610, USA

INT J PHARM 1990, 59 (3) 225

The use of 2-hydroxypropyl-beta-cyclodextrin as a vehicle for intravenous administration of dexamethasone in dogs

Djedaini F, Perly B**//CEA, DLPC SCM, Ctr Etudes Nucl Saclay, F-91191 Gif sur Yvette, France

MAGN RESON CHEM 1990, 28 (4) 372

Anthraquinone sulphonate as a general-purpose shift reagent for the NMR analysis of cyclodextrins

Harada A, Kamachi M//Osaka Univ, Fac Sci, Dept Macromolec Sci, Toyonaka, Osaka 560, Japan

MACROMOLECULES 1990, 23 (10) 2821

Complex formation between poly(ethylene glycol) and alpha-cyclodextrin

Martre AM, Mousset G, Pouillen P//Univ Clermont Ferrand, Electrochim Organ Lab, CNRS, URA 434, F-63177 Clermont Ferrand, France

J ELECTROANAL CHEM INTERFAC 1990, 281 (1-2) 279

Cyclodextrin host-guest inclusion complexes - Electrochemical characterization of a specific interaction with alpha-CD

Saito H, Yonemura H, Nakamura H, Matsuo T**//Kyushu Univ, Fac Engn, Dept Organ Synth, Higashi ku, Fukuoka 812, Japan

CHEM LETT 1990, (4) 535

Stability and exchange properties of through-ring cyclodextrin complexes - Effects of chain length in polymethylene bis[1-pyridinium] as guest molecules

Shimada K, Kurata Y, Oe T//Kanazawa Univ, Fac Pharmaceut Sci, 13-1 Takara machi, Kanazawa, Ishikawa 920, Japan

J LIQ CHROMATOGR 1990, 13 (3) 493

Utility of cyclodextrin in mobile phase for high-performance liquid chromatographic separation of bufadienolides

Stalcup AM, Jin HL, Armstrong DW//Univ Missouri, Dept Chem, Rolla, Mo 65401, USA

J LIQ CHROMATOGR 1990, 13 (3) 473

Separation of enantiomers using a gamma-cyclodextrin liquid chromatographic bonded phase

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

J CHEM TECHNOL BIOTECHNOL 1990, 48 (3) 313

A novel method for continuous production of cyclodextrins using an immobilized enzyme system

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

BULL CHEM SOC JPN 1990, 63 (4) 1246

Association of halobenzenes with cyclodextrins in aqueous medium

Ueno A, Minato S, Suzuki I, Fulkushima M, Ohkubo M, Osa T, Hamada F, Murai K//Tohoku Univ, Inst Pharmaceut, Sendai, Miyagi 980, Japan

CHEM LETT 1990, (4) 605

Host guest sensory system of dansyl-modified beta-cyclodextrin for detecting steroidal compounds by dansyl fluorescence

Woerdenbag HJ, Pras N, Frijlink HW, Lerk CF, Malingre TM//Univ Groningen, Ctr Pharm, Dept Pharmaceut Technol & Biopharm, Ant Deusinglaan 2, 9713 AW Groningen, The Netherlands

PHYTOCHEMISTRY 1990, 29 (5) 1551

Cyclodextrin-facilitated bioconversion of 17beta-estradiol by a phenol-oxidase from Mucuna pruriens cell cultures

5 Lignin

Chiang VL, Funaoka M//Michigan Technol Univ, Sch Forestry & Wood Prod, Houghton, MI 49931, USA

HOLZFORSCHUNG 1990, 44 (2) 147

The dissolution and condensation reactions of guaiacyl and syringyl units in residual lignin during Kraft delignification of sweetgum

Ede RM, Brunow G, Simola LK, Lemmetyinen J//Univ Waikato, Dept Chem, Hamilton, New Zealand

HOLZFORSCHUNG 1990, 44 (2) 95

Two-dimensional ^1H - ^1H chemical shift correlation and J-resolved NMR studies on isolated and

synthetic lignins

Erismann ND, Fernandez AM, Baeza J, Freer J, Mansilla H, Duran N//Univ Estadual Campinas, Inst Quim, Biol Chem Lab, CP 6154, BR-13100 Campinas, SP Brazil

BIOTECHNOL LETT 1990, 12 (4) 305

Non-polluting wood and pulp delignification - Biomimetic ligninase system

Jin L, Schultz TP, Nicholas DD//Mississippi State Univ, Mississippi Forest Prod Lab, PO Drawer FP, Mississippi State, Ms 39762, USA

HOLZFORSCHUNG 1990, 44 (2) 133

Structure characterization of brown-rotted lignin

Karhunen E, Kantelinen A, Niku-Paavola M-L//Valt Teknillinen Tutkimuskeskus, Biotech Lab, Tietotie 2, SF-02150 Espoo, Finland

ARCH BIOCHEM BIOPHYS 1990, 279 (1) 25

Mn-dependent peroxidase from the lignin-degrading white rot fungus *Phlebia radiata*

Luthe CE//Pulp & Paper Res Inst Canada, 570 St Johns Blvd, Pointe Claire, Quebec, Canada H9R 3J9

HOLZFORSCHUNG 1990, 44 (2) 107

Isolation and characterization of lignosulphonates from an ultra high yield neutral sulphite pulping effluent

Pouwels AD, Boon JJ//FOM, Inst Atom & Molec Phys, Mass Spectrometry Macromolec Syst Unit, Kruislaan 407, 1098 SJ Amsterdam, The Netherlands

J ANAL APPL PYROL 1990, 17 (2) 97

Analysis of beech wood samples, its milled wood lignin and polysaccharide fractions by platinum filament pyrolysis-mass spectrometry

Skvortsov SV//All Union Plant Mat Hydrolysis Res Inst, Leningrad, USSR

KHIM PRIOR SOEDIN SSSR 1990, (1) 3

Radiation destruction of lignin (Russian)

Smirnova LS, Mukhamedova S, Abduazimov KA//YA V Samoilov Fertilizers & Insectofungicides Res, Moscow, USSR

KHIM PRIOR SOEDIN SSSR 1990, (1) 93

Study of dimer products of cotton plant lignin and rice husk degradation (Russian)

Tolic LP, Kovac B, Klasinc L, Shevchenko SM//Rudjer Boskovic Inst, YU-41001 Zagreb, Yugosl-

lavia

CROAT CHEM ACTA 1990, 62 (1) 37

Photoelectron spectra of lignin model compounds

Tuisel H, Sinclair R, Bumpus JA, Ashbaugh W, Brock BJ, Aust SD/**Utah State Univ, Ctr Biotechnol, Logan, Ut 84322, USA

ARCH BIOCHEM BIOPHYS 1990, 279 (1) 158

Lignin peroxidase H2 from *Phanerochaete chrysosporium*: Purification, characterization and stability to temperature and pH

6 Polysaccharides - Named

Higashi N, Takematsu M, Niwa M/**Doshisha Univ, Fac Engn, Dept Appl Chem, Kamikyo ku, Kyoto 602, Japan

CHEM LETT 1990, (4) 675

Permeation characteristics of a glycolipid monolayer-deposited agar hydrogel

Nisizawa M, Hirano T/Def Acad, Yokosuka, Japan

J APPL POLYM SCI 1990, 39 (1) 2173

Studies on irradiation of agar-agar film produced by irradiation

Blair SDF, Jarvis P, Salmon M, McCollum C//Univ Hosp S Manchester, Dept Surg, Manchester M20 8LE, England

BRIT J SURG 1990, 77 (5) 568

Clinical trial of calcium alginate haemostatic swabs

Chapuis A, Dollfus P//Ctr Readaptat, 57 Rue Albert Camus, F-68093 Mulhouse, France

PARAPLEGIA 1990, 28 (4) 269

The use of a calcium alginate dressing in the management of decubitus ulcers in patients with spinal cord lesions

Eaton NL, Niemeyer GP, Doody MC//Univ Tennessee, Med Ctr, Dept Obstet & Gynecol, 1924 Alcoa Highway, Knoxville, Tn 37920, USA

J IN VITRO FERTIL EMBRYO TRAN 1990, 7 (1) 28

The use of an alginic acid matrix to support in vitro development of isolated murine blastomeres

Haugen F, Kortner F, Larsen B/**Univ Trondheim, Inst Biotechnol, N-7034 Trondheim, Norway

CARBOHYD RES 1990, 198 (1) 101

Kinetics and specificity of alginate lyases: Part I, A case study

Kojima T, Hashimoto K, Ito S, Hori Y, Tomizuka T, Oguri N//Nat'l Inst Anim Ind, Dept Anim Reprod, Tsukuba norindanchi, POB 5, Ibaraki 305, Japan

J EXP ZOOL 1990, 254 (2) 186

Protection of rabbit embryos against fracture damage from freezing and thawing by encapsulation in calcium alginate gel

Strullu D-G, Plenchette C//Univ Angers, Phyton Lab, 2 Blvd Lavoisier, F-49045 Angers, France

C R ACAD SCI SER III-VIE 1990, 310 (10) 447

Encapsulation of intraradical form of *Glomus* in alginate and use of the capsules as inoculum (French, English Abstract)

Ebringerova A, Hromadkova Z, Petrakova E, Hricovini M//Slovak Acad Sci, Inst Chem, CS-84238 Bratislava, Czechoslovakia

CARBOHYD RES 1990, 198 (1) 57

Structural features of a water-soluble L-arabinod-xylan from rye bran

Damasio MH, Cappilla C, Costell E, Duran L//CSIC, Inst Agroquim & Tecnol Alimentos, Jaime Roig 11, E-46010 Valencia, Spain

REV AGROQUIM TECNOL ALIMENT 1990, 30 (1) 109

Influence of composition on mechanical properties of kappa-carrageenan, locust bean gum, guar gum mixed gels. Puncture and penetration tests

Malfait T, van Cauwelaert F//Katholieke Univ Leuven, Interdisciplinary Res Ctr, Campus Kortrijk, B-8500 Kortrijk, Belgium

J CHROMATOGR 1990, 504 (2) 369

Preparative and analytical separation of oligosaccharides from kappa-carrageenan

Choi KS//Hanyang Univ, Dept Ind Chem, Seoul 133791, South Korea

MAKROMOL CHEM-MACROMOL SYMP 1990, 33 (MAR) 55

Synthesis of chitin derivatives and their metal complexes

Kono M, Matsui T, Shimizu C, Koga D//Univ Tokyo, Fac Agr, Fisheries Res Lab, Hamana, Shizuoka 43102, Japan

AGR BIOL CHEM TOKYO 1990, 54 (4) 973

Purification and some properties of chitinase from the stomach of Japanese eel, *Anguilla japonica*

Krajewska B, Leszko M, Zaborska W//Jagiellonian Univ, Fac Chem, Karasia 3, PL-30060 Krakow, Poland

J CHEM TECHNOL BIOTECHNOL 1990, 48 (3) 337

Urease immobilized on chitosan membrane: Preparation and properties

Matsuda S//Hokkaido Univ, Hokumon cho, Asahikawa 070, Japan

NIPPON KAGAKU KAISHI 1990, (4) 376

The color change of calchichrome caused by methyl glycol chitosan (Japanese, English Abstract)

Mitsutomi M, Ohtakara A*, Fukamizo T, Goto S//Saga Univ, Fac Agr, Dept Appl Biol Sci, Saga 840, Japan

AGR BIOL CHEM TOKYO 1990, 54 (4) 871

Action pattern of *Aeromonas hydrophila* chitinase on partially N-acetylated chitosan

Pal MK, Pal PK//Univ Kalyani, Dept Biochem & Biophys, Kalyani 741235, W Bengal, India

BIOPOLYMERS 1990, 29 (4-5) 751

Induction of CD in some anionic dyes by cationic chitosan

Ogamo A, Metori A, Yamada T, Nagasawa K**//Kitasato Univ, Sch Pharmaceut Sci, 9-1 Shirokane 5 chome, Minato ku, Tokyo 108, Japan

CARBOHYD RES 1990, 198 (1) 157

Fractionation of whale cartilage chondroitin sulfate on sepharose CL-4B in the presence of high concentration of ammonium sulfate. Relationship between molecular size and unit-disaccharide composition of the polysaccharide

Bossennec V, Petitou M, Perly B**//CENS, Dept Physicochim, IRDI, Desicp, F-91191 Gif Sur Yvette, France

BIOCHEM J 1990, 267 (3) 625

¹H-n.m.r. investigation of naturally occurring and chemically over-sulphated dermatan sulphates. Identification of minor monosaccharide residues

Vacek A, Bartonickova A, Rotkowska D//Czechoslovak Acad Sci, Inst Biophys, CS-61265 Brno, Czechoslovakia

NEOPLASMA 1990, 37 (2) 159

Hydroxyurea as a suppressor of the radioprotective effect of dextran sulfate on bone marrow hemopoietic stem cells in mice

Wang SC, Wikstrom MG, White DL, Klaveness J, Holtz E, Rongved P, Moseley ME, Brasch RC**//Univ Calif San Francisco, Contrast Media Lab, S-372, 515 Parnassus Ave, San Francisco, Ca 94143, USA

RADIOLOGY 1990, 175 (2) 483

Evaluation of Gd-DTPA labeled dextran as an intravascular MR contrast agent - Imaging characteristics in normal rat tissues

Tsumuraya Y, Mochizuki N, Hashimoto Y, Kovac P//Saitama Univ, Fac Sci, Dept Biochem, 255 Shimo okubo, Urawa, Saitama 338, Japan

J BIOL CHEM 1990, 265 (13) 7207

Purification of an exo-beta-(1-3)-D-galactanase of *Irpex lacteus* (*Polyporus tulipiferae*) and its action on arabinogalactan-proteins

Kusakabe I, Kaneko R, Takada N, Zamora AF, Fernandez WL, Murakami K//Univ Tsukuba, Inst Appl Biochem, Tannocho 1-1-1, Tsukuba, Ibaraki 305, Japan

AGR BIOL CHEM TOKYO 1990, 54 (4) 1081

A simple method for elucidating structures of galactomanno oligosaccharides by sequential actions of beta-mannosidase and alpha-galactosidase

Petrich H, Boucaud J//Univ Caen, Inst Rech Biol Appl, Physiol & Biochim Vegetales Lab, F-14032 Caen, France

LEBENSME-WISS TECHNOL 1990, 23 (2) 184

Purification and characterization of endo-polygalacturonases from *Trichoderma viride* TS (French, English Abstract)

Adachi Y, Ohno N, Yadomae T, Suzuki Y, Ohsawa M, Oikawa S//Tokyo Coll Pharm, Immunopharmacol Microbial Prod Lab, Hachioji, Tokyo 19203, Japan

CARBOHYD RES 1990, 198 (1) 111

Thermal denaturation of (1-3)-beta-D-glucans in neutral aqueous solution above 130°C: Effect on physicochemical properties

Adachi Y, Ohno N, Ohsawa M, Oikawa S, Yadomae T**//Tokyo Coll Pharm, Hachioji, Tokyo 19203, Japan

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Macrophage activation in vitro by chemically

cross-linked (1-3)-beta-D-glucans

James PG, Cherniak R*, Jones RG, Stortz CA, Reiss E//Georgia State Univ, Dept Chem, Atlanta, Ga 30303, USA

CARBOHYD RES 1990, 198 (1) 23

Cell-wall glucans of *Cryptococcus neoformans* CAP 67

Kato K, Kawaguchi M, Kumada K, Yamauchi R, Ueno Y//Gifu Univ, Dept Agr Chem, Gifu 50111, Japan

CARBOHYD RES 1990, 198 (1) 149

An alkali-soluble alpha-D-glucan from the fruiting body of *Grifola frondosa*

Rodriguez EB, Stick RV*//Univ Western Australia, Dept Organ Chem, Nedlands, Australia

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