



Bibliography of carbohydrate polymers

1 BOOKS, REVIEWS & SYMPOSIA

- CARBOHYD RES 1992, 231 (JUL)
Special issue: Microbial polysaccharides
Betts WB (Ed)
Biodegradation: Natural and Synthetic Materials
Springer-Verlag (Berlin), 1991, 238 pages, \$95.00 Hardbound, ISBN: 3-540-19705-2
Contains several papers on polysaccharides
Flach J, Pilet PE, Jolles P*// *Univ Lausanne, Inst Biol & Physiol Vegetale, Batiment & Biol, CH-1015 Lausanne, Switzerland
EXPERIENTIA 1992, 48 (8) 701
What's new in chitinase research (Review)
Kaneko Y// Ajinomoto Co Inc, Chuo ku, Tokyo 104, Japan
NIPPON NOGEIKAGAKU KAISHI 1992, 66 (9) 1360
Polysaccharides and their derivatives (Minireview) (Japanese, English Abstract)
Li S, Purdy WC*// *McGill Univ, Dept Chem, 801 Sherbrooke St W, Montreal, Quebec, Canada H3A 2K6
CHEM REV 1992, 92 (6) 1457
Cyclodextrins and their applications in analytical chemistry (Review)
Yoshioka H// Minist Agr Forestry & Fisheries, Fruit Tree Res Str, Morioka 02001, Japan
J JPN SOC FOOD SCI TECHNOL 1992, 39 (8) 733
Role of pectin and pectin-degrading enzymes on the softening of fruits and vegetables (Review) (Japanese, English Abstract)

2 CELLULOSE

- Antal M, Micko M// Slovak Acad Sci, Inst Chem, 842 38 Bratislava, Czechoslovakia
CARBOHYD POLYM 1992, 19 (3) 167
Preparation of microcrystalline cellulose aminoderivatives
Azzam AM// Natl Res Ctr, Dept Biotechnol Food Technol & Dairy Ind, Cairo, Egypt
J ENVIRON SCI HEALTH A-SCI E 1992, A27 (7) 1643
Pretreatments of agrocellulosic waste for microbial biomass production with a defined mixed culture
Bernalier A, Fonty G*, Bonnemoy F, Gouet P// *INRA, Microbiol Lab, Cr Clermont Ferrand Theix, F-63122 St Genes Champane, France
CURR MICROBIOL 1992, 25 (3) 143
Degradation and fermentation of cellulose by the rumen anaerobic fungi in axenic cultures or in association with cellulolytic bacteria
Chan WH, Lamleung SY, Fong WS, Kwan FW// Hong Kong Baptist Coll, Dept Chem, 224 Waterloo Rd, Kowloon, Hong Kong
J APPL POLYM SCI 1992, 46 (5) 921
Synthesis and characterization of iminodiacetate cellulosic sorbent and its application in metal ion extraction
Demidov VV, Remez VP, Shubin AS// Ural Chem Res Inst, Sverdlovsk, Russia
J APPL CHEM-ENGL TR 1991, 64 (8) 1626
Effect of the conditions of synthesis of inorganically modified cellulose sorbent based on iron potassium ferrocyanide on sorption of cesium ions from aqueous solutions
Erler U, Mischnick P, Stein A, Klemm D*// *Univ Jena, Inst Organ Chem & Makromolek Chem, Humboldtstr 10, O-6900 Jena, FRG
POLYM BULL 1992, 29 (3-4) 349

- Determination of the substitution patterns of cellulose methyl ethers by HPLC and GLC - Comparison of methods
Fengel D// Univ Munich, Inst Holzforsch, Winzererstr 45, W-8000 Munich 40, FRG
HOLZFORSCHUNG 1992, 46 (4) 283
Characterization of cellulose by deconvoluting the OH valency range in FTIR spectra
Fernandez MJ, Fernandez MD, Guzman GM, Montiel R, Castano VM// Univ Alcala de Henares, Dept Quim Organ, Alcala de Henares, Spain
EUR POLYM J 1992, 28 (8) 969
Graft copolymerization of vinyl acetate and methyl acrylate onto cellulose by ceric ion initiator system - Study of the crystallinity
Ferrari MD, Neirotti E, Albornoz C, Saucedo E// Adm Nacl Combustibles Alcohol & Portland, Ctr Invest Tecnol, CP 91000, Canelones, Uruguay
BIOTECHNOL BIOENG 1992, 40 (7) 753
Ethanol production from eucalyptus wood hemicellulose hydrolysate by *Pichia stipitis*
Ghosh S, Kalpagam V*// *Indian Inst Sci, Dept Inorgan & Phys Chem, Bangalore 560012, Karnataka, India
INDIAN J CHEM SECT A 1992, 31 (6) 338
Electromembrane from polyelectrolyte complex of polyaniline and carboxymethylcellulose
Goddard ED, Leung PS// 349 Pleasant Lane, Haworth, NJ 07641, USA
COLLOID SURFACE 1992, 65 (2-3) 211
Studies of gel formation, phase behavior and surface tension in mixtures of a hydrophobically modified cationic cellulose polymer and surfactant
Goddard ED// Union Carbide Chem & Plast Co Inc, Div Specialty Chem, Tarrytown, NY 10591, USA
J COLLOID INTERFACE SCI 1992, 152 (2) 578
Phase relationships in mixtures of surfactants and a hydrophobically modified hydroxyethylcellulose
Govorkov AT, Bannova YA// Kemerovo State Univ, Kemerovo 650043, Russia
VYSOKOMOL SOEDIN SER A SSSR 1992, 34 (8) 39
Effect of the solvent nature on radiation-chemical degradation of cellulose nitrate in solutions (Russian)
Grossman PD, Hino T, Soane DS// Appl Biosyst Inc, 850 Lincoln Ctr Dr, Foster City, Ca 94404, USA
J CHROMATOGR 1992, 608 (1-2) 79
Dynamic light-scattering studies of hydroxyethyl cellulose solutions used as sieving media for electrophoretic separations
Helmy SA, El-Motagali HAA// Univ Cairo, Fac Sci, Dept Chem, Giza, Egypt
POLYM DEGRAD STABIL 1992, 38 (3) 235
Studies of the alkaline degradation of cellulose. 1. Changes in the characteristics of cellulose with time and temperature
Hwang ST, Shim IW*// *Chung Ang Univ, Dept Chem, Seoul 156756, Sth Korea
J APPL POLYM SCI 1992, 46 (4) 603
The chemistry of Pd in cellulose acetate
Ibrahim NA// Natl Res Ctr, Div Text, Cairo, Egypt
J APPL POLYM SCI 1992, 46 (5) 829
New cation exchange composite based upon cellulose melamine formaldehyde citric acid reaction products
Iijima H, Kowsaka K, Kamide K*// *Asahi Chem Ind Co Ltd, Fundamental Res Lab Fibers & Fiber Forming Polymers, 11-7 Hacchonawate, Takatsuki, Osaka 569, Japan

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 & 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 author. When there are no publications to appear under one of these headings, that section will be omitted.

- POLYM J 1992, 24 (10) 1077
Determination of sequence distribution of substituted and unsubstituted glucopyranose units in water-soluble cellulose acetate chain as revealed by enzymatic degradation
- Iordanskii AL, Polishchuk AY, Razumovskii LP// Acad Sci, Inst Chem Phys, 4 Kosygin St, Moscow 117334, Russia
INDIAN J CHEM SECT A 1992, 31 (6) 366
Transport of water through cellulose derivatives used as the cover of osmotic systems for drug release
- Itoh K, Ikeda T*, Tazuke S, Shibata T// *Tokyo Inst Technol, Resources Utilizat Res Lab, 4259 Nagatsuta, Midori ku, Yokohama, Kanagawa 227, Japan
J PHYS CHEM 1992, 96 (14) 5759
Chiral recognition and molecular interaction in cellulose derivatives
- Jones JC, Rahmati H, Do TDH// Univ New Sth Wales, Sch Chem Engr & Ind Chem, POB 1, Kensington, NSW 2033, Australia
J CHEM TECHNOL BIOTECHNOL 1992, 54 (4) 317
The thermal ignition of lignocellulosics in infinite slab and cubic geometries
- Kats BM, Kutarov VV, Kutovaya LM// II Mechnikov State Univ, Phys Res Inst, Odessa, Ukraine
J APPL CHEM-ENGL TR 1991, 64 (8) 1568
Kinetics of water-vapor sorption by anion-exchange fibers based on cellulose or polyacrylonitrile
- Keates P, Mitchell GR, Peuvrel E// Univ Reading, JJ Thomson Phys Lab, Ctr Polymer Sci, Reading RG6 2AF, England
POLYMER 1992, 33 (15) 3298
Local structural correlations in anisotropic aqueous solutions of hydroxypropyl cellulose
- Khrapkovskii GM, Filippov AS, Garifzyanov GG, Rafeev VA, Rubtsov YI// Acad Sci, Inst Chem Phys, Chernogolovka, Russia
BULL ACAD SCI USSR D CHEM SCI 1991, 40 (12) PT1, 2389
Kinetics of the thermal decomposition of nitrocellulose after treatment with weak acids
- Koda S, Hori T, Nomura H// Nagoya Univ, Sch Engr, Dept Chem Engr, Chikusa ku, Nagoya 46401, Japan
POLYMER 1992, 33 (15) 3234
Hydrophobic hydration of hydroxyalkyl cellulose
- Kragten EA, Kamerling JP, Vliegthart JFG*, Botter H, Batelaan JG// *Univ Utrecht, Bijvoet Ctr, Dept Bioorgan Chem, POB 80075, 3508 TB Utrecht, The Netherlands
CARBOHYD RES 1992, 233 81
Composition analysis of sulfoethylcelluloses by high pH anion-exchange chromatography with pulsed amperometric detection
- Kuzmin AA, Adaeva VA, Kostochko AV, Kovalenko VI, Maklakova LN// SM Kirov Chem Technol Inst, Kazan, Russia
VYSOKOMOL SOEDIN SER A SSSR 1992, 34 (8) 66
On localization of OH-groups in amorphous-crystalline regions of cellulose nitrates
- Levic J, Delic I, Ivic M, Rac M, Stefanovic S// Fac Technol Novi Sad, Dept Feed Technol, Bulevar Avnoja 1, YU-21000 Novi Sad, Yugoslavia
J AMER OIL CHEM SOC 1992, 69 (9) 890
Removal of cellulose from sunflower meal by fractionation
- Lin MS, Huang CS// Natl Chiao Tung Univ, Dept Appl Chem, Hsinchu 30050, Taiwan
J POLYM SCI A-POLYM CHEM 1992, 30 (11) 2303
Syntheses and characterizations of allyl cellulose and glycidyl cellulose
- Lotti N, Scandola M*// *Univ Bologna, Dipartimento Chim G Ciamician, Via Selmi 2, I-40126 Bologna, Italy
POLYM BULL 1992, 29 (3-4) 407
Miscibility of bacterial poly(3-hydroxybutyrate-co-3-hydroxyvalerate) with ester substituted celluloses
- Moll HD, Wolfe DF, Schumacher J, Wright JC// Virginia Maryland Reg Coll Vet Med, Dept Large Anim Clin Sci, Blacksburg, Va 24061, USA
AMER J VET RES 1992, 53 (8) 1454
Evaluation of sodium carboxymethylcellulose for prevention of adhesions after uterine trauma in ewes
- Mooyoung M, Chisti Y, Vlach D// Univ Waterloo, Dept Chem Engr, Waterloo, Ontario, Canada N2L 3G1
BIOTECHNOL LETT 1992, 14 (9) 863
Fermentative conversion of cellulosic substrates to microbial protein by *Neurospora sitophila*
- Muhammad NA, Boisvert W, Harris MR, Weiss J// Warner Lambert Parke Davis, Parke Davis Pharmaceut Res Div, Morris Plains, NJ 07950, USA
DRUG DEVELOP IND PHARM 1992, 18 (16) 1787
Evaluation of hydroxypropyl methylcellulose phthalate-50 as film forming polymer from aqueous dispersion systems
- Nguyen C, Zavarin E*// *Univ Calif, Forest Prod Lab, Richmond, Ca 94804, USA
J APPL POLYM SCI 1992, 46 (6) 1103
Graft copolymerization of polyfurfuryl alcohol and cellulose
- Nirmal JD, Pandya VP, Desai NV*, Rangarajan R// *Cent Salt & Marine Chem Res Inst, Bhavnagar 364002, Gujarat, India
SEPAR SCI TECHNOL 1992, 27 (13) 1801
Reverse osmosis transport of alkali halides and nickel salts through cellulose triacetate membranes - Performance prediction from NaCl experiments
- Nishioka N, Yoshida N// Osaka Electrocommun Univ, Fac Engr, Neyagawa, Osaka 572, Japan
POLYM J 1992, 24 (10) 1009
Thermal decomposition of cellulose/synthetic polymer blends containing graft copolymers
- Ogawa R, Tokura S// Hokkaido Univ, Fac Sci, Dept Polym Sci, Sapporo 060, Japan
CARBOHYD POLYM 1992, 19 (3) 171
Preparation of bacterial cellulose containing N-acetylglucosamine residues
- Ogawa T, Kamihira M, Terashima S, Yasuda K, Iijima S, Kobayashi T*// *Nagoya Univ, Fac Engr, Dept Biotechnol, Furo cho, Chikusa ku, Nagoya 46401, Japan
J FERMENT BIOENG 1992, 74 (1) 27
High cell density cultivation of anchorage-dependent cells using a novel macroporous cellulosic support
- Pasteka M// Slovak Acad Sci, Inst Chem, Dubravska Cesta 9, CS-84238 Bratislava, Czechoslovakia
ACTA POLYM 1992, 43 (4) 227
Metallic derivatives of cellulose
- Petkov VI, Zarudaeva SS, Mochalov AN// NI Lobachevskii State Univ, Gorki, Russia
J APPL CHEM-ENGL TR 1991, 64 (12) 2539
Phase composition and relaxation transitions of mixtures of cellulose acetate with dibutyl phthalate
- Pommerening K, Rein H, Bertram D, Muller R// Cent Inst Molec Biol, Robert Rossle Str 10, O-1115 Berlin, FRG
CARBOHYD RES 1992, 233 219
Estimation of dialdehyde groups in 2,3-dialdehyde bead-cellulose
- Rassokhin DN, Kovalev GV, Bugaenko LT// MV Lomonosov Moscow State Univ, Dept Chem, Moscow 119899, Russia
MENDELEEV COMMUN 1992, (3) 103
Comparative study of the sonolysis and radiolysis of carboxymethylcellulose in aqueous solution
- Reddy NV, Rao VVRN// Sri Venkateswara Univ, Coll Engr, Dept Phys, Tirupati 517502, Andhra Pradesh, India
J MATER SCI LETT 1992, 11 (15) 1036
Effect of iodine on electrical conduction in cellulose acetate butyrate polymer films
- Ryo Y, Nakai Y, Kawaguchi M*// *Mie Univ, Fac Engr, Dept Chem Mat, 1515 Kamihama cho, Tsu, Mie 514, Japan
LANGMUIR 1992, 8 (10) 2413
Viscoelastic measurements of silica suspensions in aqueous cellulose derivative solutions
- Saake B, Patt R*, Puls J, Linow KJ, Philipp B// *Univ Hamburg, Holztechnol Holzchem, W-2050 Hamburg 80, FRG
MAKROMOL CHEM-MACROMOL SYMP 1992, 61 219
Molar-mass distribution of celluloses
- Schnabelrauch M, Vogt S, Klemm D, Nehls I, Philipp B// Univ Zurich, Inst Organ Chem, Winterthurer Str 190, CH-8057 Zurich, Switzerland
ANGEW MAKROMOL CHEM 1992, 198 155
Readily hydrolyzable cellulose esters as intermediates for the regioselective derivatization of cellulose. I. Synthesis and characterization of soluble, low-substituted cellulose formates
- Schultz G// Phys Chem Sci Corp, 36 W 20th St, New York, NY 10011, USA
J APPL POLYM SCI 1992, 46 (7) 1177
Association phenomena between copolymers of para-styrenesulfonate(Cs⁺)/3-methacryloxypropyltrimethoxysilane and hydroxypropylcellulose in aqueous solution and solvent-cast films
- Shah PS, Zatz JL// Rutgers State Univ, Coll Pharm, Piscataway, NJ 08855, USA
DRUG DEVELOP IND PHARM 1992, 18 (16) 1759
Plasticization of cellulose esters used in the coating of sustained-release solid dosage forms
- Shukla SR, Athalye AR// Univ Bombay, Dept Chem Technol, Bombay 400019, India
POLYMER 1992, 33 (17) 3729
Bifunctional monomers in photoinduced vinyl grafting on cotton cellulose -

Use of divinyl benzene in grafting of styrene

Spaul V// Sth African Sugar Assoc Expt Stn, Private Bag X02, Mt Edgecombe 4300, Sth Africa
FUND APPL NEMATOL 1992, 15 (5) 457

On the use of a methylcellulose polymer to increase the effectiveness of a *Heterorhabditis* species against the sugarcane stalk borer, *Eldana saccharina*

Sugiyama J, Chanzy H*, Maret G// *CNRS, Ctr Rech Macromolec Vegetales, F-38042 Grenoble, France

MACROMOLECULES 1992, 25 (16) 4232

Orientation of cellulose microcrystals by strong magnetic fields

Tanaka H, Swerin A, Odberg L*// *Swedish Pulp & Paper Res Inst, Box 5604, S-11486 Stockholm, Sweden

J COLLOID INTERFACE SCI 1992, 153 (1) 13

Cleavage of polymer chains during transfer of cationic polyacrylamide from cellulose fibers to polystyrene latex

Tanaka R, Williams PA*, Meadows J, Phillips GO// *NE Wales Inst, Fac Sci Hlth & Med Studies, Polymer & Colloid Chem Grp, Connahs Quay, Deeside CH5 4BR, Clwyd, Wales

COLLOID SURFACE 1992, 66 (1) 63

The adsorption of hydroxyethyl cellulose and hydrophobically modified hydroxyethyl cellulose onto polystyrene latex

Tang L-g, Zhu Y-q, Kennedy JF*// *Univ Birmingham, Sch Chem, Res Lab Chem Bioactive Carbohydr & Proteins, Birmingham B15 2TT, England

CARBOHYD POLYM 1992, 19 (3) 191

Electron microscopical examinations of grafted nitrocellulose

Thomas KC, Ramachandran V, Misra BM, Ramani MPS*// *Bhabha Atom Res Ctr, Div Desalinat, Bombay 400085, India

INDIAN J CHEM SECT A 1992, 31 (6) 376

Studies on ultrafiltration membrane systems based on cellulosic and polysulfone polymers

Tsvetkov NV, Marchenko GN, Didenko SA, Khripunov AK, Lezov AV, Tsvetkov VN// St Petersburg State Univ, Inst Phys St Petersburg, Russia
VYSOKOMOL SOEDIN SER A SSSR 1992, 34 (8) 98

Equilibrium and nonequilibrium Kerr effect in solutions of cellulose acetocinnamate in dioxane (Russian, English Abstract)

Varlamov AV, Novikov DV, Sidorova IV, Mnatsakanov SS// Leningrad Cine Photo Engrn Inst, Leningrad, Russia

J APPL CHEM-ENGL TR 1991, 64 (8) 1592

Effect of small additions of polyvinyl butyral on the viscosity of solutions, supermolecular structure, and physicomechanical properties of cellulose triacetate films

Vennat B, Gross D, Pourrat A*// *Fac Pharm Clermont Ferrand, Pharm Galen & Pharmacotech, 28 Pl Henri Dunant, F-63001 Clermont Ferrand, France
DRUG DEVELOP IND PHARM 1992, 18 (14) 1535

Procyanidin gels based on cellulose and carrageenan derivatives

Vishalakshi B, Kalpagam V*// *Indian Inst Sci, Dept Inorgan & Phys Chem, Bangalore 560012, Karnataka, India

INDIAN J CHEM SECT A 1992, 31 (6) 334

Permeability properties of polyelectrolyte complexes from carboxymethylcellulose and poly(2-vinyl-N-methylpyridinium iodide)

Voronkova VM, Voronkov MG// Acad Sci, Inst Organ Chem, Irkutsk, Russia

J APPL CHEM-ENGL TR 1991, 64 (11) 2253

Finishing of cellulose materials with polymetasiloxanes

Wang CS, Fried JR// Univ Dayton, Res Inst, Dayton, Oh 45469, USA

J RHEOL 1992, 36 (5) 929

Viscoelastic properties of concentrated cellulose acetate solutions

Yamaguchi F, Shimizu N, Kawada M, Takagi Y, Maeda S// Japan Tobacco Inc, Ctr Food Res & Dev, 6-2 Umegaoka, Midori ku, Yokohama, Kanagawa 227, Japan

J JPN SOC FOOD SCI TECHNOL 1992, 39 (7) 625

Extraction of hemicellulose in alkaline condition using twin screw extruder (Japanese, English Abstract)

Yashima E, Noguchi J, Okamoto Y// Nagoya Univ, Fac Engrn, Dept Appl Chem, Chikusa ku, Nagoya 46401, Japan

CHEM LETT 1992, (10) 1959

Enantiomer separation with cellulose tris(3,5-dimethylphenylcarbamate) membrane - Enantioselective adsorption and desorption

Youssef KA, Ghareib M, El-Dein MMN// Ain Shams Univ, Fac Sci, Dept Bot, Cairo, Egypt

ACTA MICROBIOL POL 1991, 40 (3-4) 187

Improvement of the biodegradation of some cellulosic wastes by acid pretreatment

Zotova IS, Kim V, Kienskaya KI, Frolov YG// DI Mendeleev Chemicotechnol Inst, Moscow, Russia

COLLOID J USSR-ENGL TR 1992, 54 (1) 44

Influence of surfactants on the colloidal chemical properties of Na-CMC and polysaccharides

Zugenmaier P, Siekmeyer M// Tech Univ Clausthal, Inst Phys Chem, W-3392 Clausthal Zellerfe, FRG

MAKROMOL CHEM-MACROMOL SYMP 1992, 61 405

Molecular mass determination in the liquid crystalline state - Lyotropic cholesteric phase of a cellulose derivative

3 CELLULOSE-DEGRADING ENZYMES

Bughrara SS, Slepier DA*, Beuselinck PR// *Univ Missouri, Dept Agron, Columbia, Mo 65211, USA

AGRON J 1992, 84 (4) 631

Comparison of cellulase solutions for use in digesting forage samples

Bughrara SS, Slepier DA*, Roberts CA// *Univ Missouri, Dept Agron, Columbia, Mo 65211, USA

AGRON J 1992, 84 (4) 636

Cellulase solution concentrations used to develop spectral equations for predicting tall fescue digestibility

Chahal PS, Chahal DS*, Andre G// *Univ Quebec, Inst Armand Frappier, Laval, Quebec, Canada H7N 4Z3

J FERMENT BIOENG 1992, 74 (2) 126

Cellulase production profile of *Trichoderma reesei* on different cellulosic substrates at various pH levels

Demerdash M, Attia RM// Agr Res Ctr, Soils & Water Res Inst, Microbiol Res Dept, Giza, Egypt

ZBL MIKROBIOL 1992, 147 (7) 477

Thermal deactivation kinetics of CM-cellulase from a local isolate of *Aspergillus niger* (Rd-2231)

Evans ET, Wales DS*, Bratt RP, Sagar BF// *British Text Technol Grp, Biotechnol Grp, Shirley Towers, Manchester M20 8RX, England

J GEN MICROBIOL 1992, 138 (AUG) 1639

Investigation of an endoglucanase essential for the action of the cellulase system of *Trichoderma reesei* on crystalline cellulose

Gusakov AV, Sinityn AP// MV Lomonosov State Univ, Dept Chem, Moscow 117234, Russia

BIOTECHNOL BIOENG 1992, 40 (6) 663

A theoretical analysis of cellulase product inhibition - Effect of cellulase binding constant, enzyme substrate ratio, and beta-glucosidase activity on the inhibition pattern

Keskar SS// Natl Chem Lab, Div Biochem Sci, Poona 411008, Maharashtra, India

WORLD J MICROBIOL BIOTECHNOL 1992, 8 (5) 534

Cellulase production by *Penicillium janthinellum*

Kremer SM, Wood PM// Univ Bristol, Dept Biochem, Univ Walk, Bristol BS8 1TD, England

APPL MICROBIOL BIOTECHNOL 1992, 37 (6) 750

Continuous monitoring of cellulase action on microcrystalline cellulose

Marinova DN, Atev AP// Sofia Univ St Kl Ochriski, Fac Biol, Dept Engrn Biol, Dragan Tzankov Str 8, Sofia, Bulgaria

ACTA BIOTECHNOL 1992, 12 (4) 319

Cellulase secretion by immobilized protoplasts of *Trichoderma reesei*

Morag E, Bayer EA*, Lamed R// *Tel Aviv Univ, George S Wise Fac Life Sci, Dept Molec Microbiol & Biotechnol, IL-69978 Tel Aviv, Israel

APPL BIOCHEM BIOTECH 1992, 33 (3) 205

Unorthodox intrasubunit interactions in the cellulosome of *Clostridium thermocellum* - Identification of structural transitions induced in the S1-subunit

Mori Y// Chugoku Natl Agr Expt Stn, Fukuyama, Hiroshima 721, Japan

BIOSCI BIOTECHNOL BIOCHEM 1992, 56 (8) 1198

Purification and characterization of an endoglucanase from the cellulosomes (multi-component cellulase complexes) of *Clostridium thermocellum*

Murao S, Nomura Y, Yoshikawa M, Shin T, Oyama H, Arai M// Kumamoto Inst Technol, Dept Appl Microbial Technol, Ikeda 4-22-1, Kumamoto 860, Japan

BIOSCI BIOTECHNOL BIOCHEM 1992, 56 (8) 1366

Enhancement of activities of cellulases under high hydrostatic pressure

O'Donoghue EM, Huber DJ// Univ Florida, Inst Food & Agr Sci, Gainesville, FL 32611, USA

PHYSIOL PLANT 1992, 86 (1) 33

Modification of matrix polysaccharides during avocado (*Persea americana*) fruit ripening - An assessment of the role of C_x-cellulase

Okeke BC, Paterson A// Univ Strathclyde, Dept Biosci & Biotechnol, Food Sci Labs, 131 Albion St, Glasgow G1 1SD, Scotland

WORLD J MICROBIOL BIOTECHNOL 1992, 8 (5) 483

Simultaneous production and induction of cellulolytic and xylanolytic enzymes

in a *Streptomyces* sp

- Prasertsan P, Oi S// Prince Songkla Univ, Fac Nat Resources, Dept Agroid, Hat Yai, Thailand
 WORLD J MICROBIOL BIOTECHNOL 1992, 8 (5) 536
 Production of cellulolytic enzymes from fungi and use in the saccharification of palm cake and palm fibre
- Roussos S, Raimbault M, Saucedo-Castaneda G, Lonsane BK// Orstom, Ctr Montpellier, Biotechnol Unit, 911 Ave Agropolis, BP 5045, F-34032 Montpellier, France
 BIOTECHNOL TECHNIQUE 1992, 6 (5) 429
 Efficient leaching of cellulases produced by *Trichoderma harzianum* in solid state fermentation
- Saad RR// Fac Educ Cairo, Dept Biol Sci & Geol, Cairo, Egypt
 ZBL MIKROBIOL 1992, 147 (6) 427
 Fungi of biodeteriorated paint film and their cellulolytic activity
- Schlachtermeier A, Niemeyer F, Schrempf H*// *Uni Osnabruck, Fachbereich Biol Chem, W-4500 Osnabruck, FRG
 APPL ENVIRON MICROBIOL 1992, 58 (10) 3240
 Biochemical and electron microscopic studies of the *Streptomyces reticuli* cellulase (avicelase) in its mycelium-associated and extracellular forms
- Schmidhalter DR, Canevascini G*// *Univ Fribourg, Inst Biol Vegetale & Phytchim, CH-1700 Fribourg, Switzerland
 APPL MICROBIOL BIOTECHNOL 1992, 37 (4) 431
 Characterization of the cellulolytic enzyme system from the brown-rot fungus *Coniophora puteana*
- Sprey B, Bochem HP// KFA Julich GmbH, BEO, Postfach 1913, W-5170 Julich 1, FRG
 FEMS MICROBIOL LETT 1992, 97 (1-2) 113
 Effect of endoglucanase and cellobiohydrolase from *Trichoderma reesei* on cellulose microfibril structure
- Teunissen MJ, De Kort GVM, Den Camp HJMO, Tveld JHJH// Catholic Univ Nijmegen, Fac Sci, Dept Microbiol, 6525 ED Nijmegen, The Netherlands
 J GEN MICROBIOL 1992, 138 (AUG) 1657
 Production of cellulolytic and xylanolytic enzymes during growth of the anaerobic fungus *Piromyces* sp on different substrates
- Walker LP, Wilson DB, Irwin DC, Mcquire C, Price M// Cornell Univ, Dept Agr & Biol Engr, Riley Robb Hall, Ithaca, NY 14853, USA
 BIOTECHNOL BIOENGR 1992, 40 (9) 1019
 Fragmentation of cellulose by the major *Thermomonospora fusca* cellulases, *Trichoderma reesei* CBHI, and their mixtures
- Wayman M, Chen S// Univ Toronto, Dept Chem Engr & Appl Chem, Toronto, Ontario, Canada M5S 1A4
 ENZYME MICROB TECHNOL 1992, 14 (10) 825
 Cellulase production by *Trichoderma reesei* using whole wheat flour as a carbon source
- and bis-CuBr₂ complexes of 6-A,6-B,6-D,6-E-tetra-O-nicotinoyl- α -cyclodextrin
- Cruzado ID, Vigh G*// *Texas A&M Univ Syst, Dept Chem, Coll Stn, Tx 77843, USA
 J CHROMATOGR 1992, 608 (1-2) 421
 Chiral separations by capillary electrophoresis using cyclodextrin-containing gels
- DeVries NK, Coussens B, Meier RJ, Heemels G// DSM Res BV, POB 18, 6160 MD Geleen, The Netherlands
 HRC-J HIGH RES CHROMATOGR 1992, 15 (8) 499
 The separation of enantiomers on modified cyclodextrin columns - Measurements and molecular modeling
- Fujita K, Ishizu T, Obe K, Minamiura N, Yamamoto T// Nagasaki Univ, Fac Pharmaceut Sci, Nagasaki 852, Japan
 J ORG CHEM 1992, 57 (21) 5606
 Preparation and enzymatic structure determination of a complete set of 2(A),6(X)-bis-O-(sulfonyl)- β -cyclodextrins
- Fujita K, Tahara T, Egashira Y, Imoto T, Koga T// Nagasaki Univ, Fac Pharmaceut Sci, Bunkyo machi, Nagasaki 852, Japan
 TETRAHEDRON LETT 1992, 33 (37) 5385
 A complete set of 3(A),6(X)-di-O-sulfonylated α -cyclodextrins
- Hamai S, Ikeda T, Nakamura A, Ikeda H, Ueno A, Toda F// Miyazaki Med Coll, Dept Phys, Miyazaki 88916, Japan
 J AMER CHEM SOC 1992, 114 (15) 6012
 Inclusion of azulene and alcohol by β -cyclodextrin in aqueous solution
- Heyes SJ, Clayden NJ, Dobson CM// Univ Oxford, Inorgan Chem Lab, Sth Parks Rd, Oxford OX1 3QR, England
 CARBOHYD RES 1992, 233 1
¹³C-CP/MAS NMR studies of the cyclomalto-oligosaccharide (cyclodextrin) hydrates
- Hirai H, Mihori H// Sci Univ Tokyo, Fac Engr, Dept Ind Chem, Shinjuku ku, Tokyo 162, Japan
 CHEM LETT 1992, (8) 1523
 Carboxylation of benzoic acid using cyclodextrin as catalyst
- Hooper AJ, Heindl J, Wright P, Eastman MP, Kooser RG*// *Knox Coll, Dept Chem, Galesburg, IL 61401, USA
 J PHYS CHEM 1992, 96 (13) 5495
 Solute-solvated cyclodextrin-bonded phase interactions as studied by the spin probe technique
- Irie T, Wakamatsu K, Arima H, Aritomi H, Uekama K*// *Kumamoto Univ, Fac Pharmaceut Sci, 5-1 Oe Honmachi, Kumamoto 862, Japan
 INT J PHARM 1992, 84 (2) 129
 Enhancing effects of cyclodextrins on nasal absorption of insulin in rats
- Katay R, Bates PS, Parker D*// *Univ Durham, Dept Chem, Sth Rd, Durham DH1 3LE, England
 ANALYST 1992, 117 (8) 1313
 Functionalized α -cyclodextrins as potentiometric chiral sensors
- Khan AR, Barton L, D'Souza VT*// *Univ Missouri, Dept Chem, St Louis, Mo 63121, USA
 J CHEM SOC CHEM COMMUN 1992, (16) 1112
 Heptakis-2,3-epoxy- β -cyclodextrin, a key intermediate in the synthesis of custom designed cyclodextrins
- Kiji J, Konishi H, Okano T, Terashima T, Motomura K// Tottori Univ, Fac Engr, Dept Mat Sci, Tottori 680, Japan
 ANGEW MAKROMOL CHEM 1992, 199 207
 Adsorption of organic species by a cyclodextrin epichlorohydrin network polymer
- Kitamura K, Imayoshi N// Kyoto Pharmaceut Univ, Kyoto 607, Japan
 ANAL SCI 1992, 8 (4) 497
 2nd-derivative spectrophotometric determination of the binding constant between chlorpromazine and β -cyclodextrin in aqueous solutions
- Kurono S, Hirano T, Tsujimoto K, Ohashi M*, Yoneda M, Ohkawa Y// *Univ Electrocommun, Dept Appl Phys & Chem, Chofu, Tokyo 182, Japan
 ORG MASS SPECTROM 1992, 27 (10) 1157
 Detection of molecule-ions of cyclodextrin inclusion complexes
- Leroy-Lechat F, Wouessidjewe D, Herren-Knecht C, Duchene D*// *Univ Paris 11, Fac Pharm, Physicochim Pharmacotech & Biopharm Lab, CNRS, URA 1218, F-92290 Chatenay Malabry, France
 DRUG DEVELOP IND PHARM 1992, 18 (17) 1853
 Preparation and stability of iodine/ α -cyclodextrin inclusion complex
- Matsue H, Sekine T, Yoshihara K*// *Tohoku Univ, Fac Sci, Dept Chem, Sendai, Miyagi 980, Japan
 J RADIOANAL NUCL CHEM LETT 1992, 166 (2) 123
 An approach to study 'molecular rocket' reaction using metallocene-cyclodextrin inclusion compounds

4 CYCLODEXTRINS

- Albers E, Muller BW*// *Univ Kiel, Dept Pharmaceut, Gutenbergstr 76-78, W-2300 Kiel 1, FRG
 J PHARM SCI 1992, 81 (8) 756
 Complexation of steroid hormones with cyclodextrin derivatives - Substituent effects of the guest molecule on solubility and stability in aqueous solution
- Aoyama Y, Nagai Y, Otsuki J, Kobayashi K, Toi H// Nagaoka Univ Technol, Dept Chem, Nagaoka, Niigata 94201, Japan
 ANGEW CHEM INT ED 1992, 31 (6) 745
 Selective binding of sugar to β -cyclodextrin - A prototype for sugar-sugar interactions in water
- Bradley D// Address not available
 CHEM BRIT 1992, 28 (10) 870
 Unlocking the cyclodextrin straitjacket (Perspective)
- Camilleri P, Edwards AJ, Rzepa HS, Green SM// SmithKline Beecham Pharmaceut, Welwyn Garden City AL6 9AR, England
 J CHEM SOC CHEM COMMUN 1992, (16) 1122
 Aryl group pi-facial electrostatic asymmetry as a contributing factor to chiral resolution on β -cyclodextrin HPLC phases
- Chokchainarong S, Fennema OR*, Connors KA// *Univ Wisconsin, Dept Food Sci, Madison, WI 53706, USA
 CARBOHYD RES 1992, 232 (1) 161
 Binding constants for complexes of α -cyclodextrin with L-phenylalanine and some related substrates
- Coleman AW, Ling CC, Miocque M// Univ Paris 11, Ctr Pharmaceut, Chim Organ Lab, CNRS, SDI 6233, F-92290 Chatenay Malabry, France
 J COORD CHEM 1992, 26 (1) 137
 1st sphere coordination chemistry of modified cyclodextrins - The bis-CoCl₂

- Meert TF, Mesens J, Ver Heyen P, Noorduyn H// Jansen Res Fdn, Dept Neuropsychopharmacol, Turnhoutseweg 30, B-2340 Beerse, Belgium
EUR J ANAESTH 1992, 9 (5) 399
Hydroxypropyl-beta-cyclodextrin can modulate the activity of spinally administered sufentanil
- Mikami B, Sato M, Shibata T, Hirose M, Aibara S, Katsube Y, Morita Y// Kyoto Univ, Food Sci Res Inst, Uji, Kyoto 611, Japan
J BIOCHEM TOKYO 1992, 112 (4) 541
3-dimensional structure of soybean beta-amylase determined at 3.0 Å resolution - Preliminary chain tracing of the complex with alpha-cyclodextrin
- Palmieri GF, Wehrle P, Duportail G, Stamm A// Fac Pharm Strasbourg, BP 24, F-67401 Illkirch Graffen, France
DRUG DEVELOP IND PHARM 1992, 18 (19) 2117
Inclusion complexation of vitamin A palmitate with beta-cyclodextrin in aqueous solution
- Rao KR// Indian Inst Chem Technol, Organ Chem 1, Hyderabad 500007, India
PURE APPL CHEM 1992, 64 (8) 1141
New trends in biocatalysis in the presence of cyclodextrins
- Sabioni JG, Park YK// Univ Fed Ouro Preto, Escola Farm, Dept Nutr, BR-35400 Ouro Preto, MG, Brazil
REV MICROBIOL 1992, 23 (2) 128
Cyclodextrin glycosyltransferase production by alkalophilic *Bacillus lentus*
- Saha BC, Zeikus JG// Michigan State Univ, Dept Biochem, East Lansing, MI 48824, USA
STARCH 1992, 44 (8) 312
Cyclodextrin-degrading enzymes
- Shangraw RF, Pande GS, Gala P// Univ Maryland, Sch Pharm, 20 N Pine St, Baltimore, Md 21201, USA
DRUG DEVELOP IND PHARM 1992, 18 (17) 1831
Characterization of the tableting properties of beta-cyclodextrin and the effects of processing variables on inclusion complex formation, compactibility and dissolution
- Shao Z, Krishnamoorthy R, Mitra AK// *Purdue Univ, Sch Pharm & Pharmaceutical Sci, Dept Ind & Phys Pharm, W Lafayette, In 47907, USA
PHARMACEUT RES 1992, 9 (9) 1157
Cyclodextrins as nasal absorption promoters of insulin - Mechanistic evaluations
- Soujanya T, Krishna TSR, Samanta A// *Univ Hyderabad, Sch Chem, Hyderabad 500134, Andhra Pradesh, India
J PHYS CHEM 1992, 96 (21) 8544
The nature of 4-aminophthalimide cyclodextrin inclusion complexes
- Stoddart JF// Univ Birmingham, Sch Chem, Birmingham B15 2TT, England
ANGEW CHEM INT ED 1992, 31 (7) 846
Cyclodextrins, off-the-shelf components for the construction of mechanically interlocked molecular systems
- Suh JH, Lee SH, Zoh KD// Seoul Natl Univ, Dept Chem, Seoul 151742, Sth Korea
J AMER CHEM SOC 1992, 114 (20) 7916
A novel host containing both binding site and nucleophile prepared by attachment of beta-cyclodextrin to poly(ethylenimine)
- Suzuki I, Sakurai Y, Ohkubo M, Ueno A, Osa T// *Tohoku Univ, Inst Pharmaceut, Sendai, Miyagi 980, Japan
CHEM LETT 1992, (10) 2005
Extremely promoted guest binding ability of gamma-cyclodextrin bearing a pyrene derivative on the secondary hydroxyl side
- Tong LH, Hou ZJ, Inoue Y, Tai A// Himeji Inst Technol, Dept Mat Sci, JRDC, Grp Presto, Kamigori, Hyogo 67812, Japan
J CHEM SOC PERKIN TRANS II 1992, (8) 1253
Molecular recognition by modified cyclodextrins - Inclusion complexation of beta-cyclodextrin 6-O-monobenzoate with acyclic and cyclic hydrocarbons
- Weiner DB, Williams WV, Weisz PB, Greene MI// Wistar Inst, 3600 Spruce St, Philadelphia, Pa 19104, USA
PATHOBIOLOGY 1992, 60 (4) 206
Synthetic cyclodextrin derivatives inhibit HIV infection *in vitro*
- Wenz G, Von der Bey E, Schmidt L// Max Planck Inst Polymer Res, Ackermannweg 10, W-6500 Mainz, FRG
ANGEW CHEM INT ED 1992, 31 (6) 783
Synthesis of a lipophilic cyclodextrin-[2]-rotaxane
- Zhang P, Parrot-Lopez H, Tchoreloff P, Baszkin A, Ling CC, Derango C, Coleman AW// *Univ Paris 11, Ctr Pharmaceut, Chim Organ Lab, CNRS, SDI 6233, F-92290 Chatenay Malabry, France
J PHYS ORG CHEM 1992, 5 (8) 518
Self-organizing systems based on amphiphilic cyclodextrin diesters
- Zhdanov YA, Alekseev YE, Kompantseva EV, Vergeychik EN// Rostov Don State Univ, Phys & Organ Chem Res Inst, Rostov, Russia
- USP KHM SSSR 1992, 61 (6) 1025
Induced optical activity in cyclodextrin complexes (Russian)

5 LIGNIN

- Archibald FS// Pulp & Paper Res Inst Canada, 570 St Johns Blvd, Pointe Claire, Quebec, Canada H9R 3J9
APPL ENVIRON MICROBIOL 1992, 58 (9) 3110
A new assay for lignin-type peroxidases employing the dye azure B
- Asther M, Vilter H, Kurek B, Meunier JC// *Inst Natl Agron Paris Grignon, Ctr Biotechnol Agroind, Chim Biol Lab, F-78850 Thiverval Grignon, France
INT J BIOCHEM 1992, 24 (9) 1377
An improved method for the purification of lignin peroxidases from *Phanerochaete chrysosporium* INA 12 - Properties of 2 major isoforms
- Balogh DT, Curvelo AAS*, De Groot RAMC// *Univ Sao Paulo, Inst Fis & Quim Sao Carlos, CP 369, BR-13560 Sao Carlos, SP, Brazil
HOLZFORSCHUNG 1992, 46 (4) 343
Solvent effects on organosolv lignin from *Pinus caribaea hondurensis*
- Bonnarme P, Delattre M, Corrieu G, Asther M// *INRA, Biotechnol Champignons Filamenteux Lab, F-78850 Thiverval Grignon, France
APPL MICROBIOL BIOTECHNOL 1992, 37 (5) 670
Activation of lignin and manganese peroxidase excretion in *Phanerochaete chrysosporium* by fungal extracts
- Boyle CD, Kropp BR, Reid ID// Res & Productiv Council, 921 Coll Hill Rd, Fredericton, New Brunswick, Canada E3B 6Z9
APPL ENVIRON MICROBIOL 1992, 58 (10) 3217
Solubilization and mineralization of lignin by white rot fungi
- Faix O, Beinhoff O// Bundesforsch Anstalt Forst & Holzwirtschaft, Inst Holzchem & Chem Technol Holzes, Leuschnerstr 91, W-2050 Hamburg 80, FRG
HOLZFORSCHUNG 1992, 46 (4) 355
Improved calibration of high-performance size-exclusion chromatography of lignins using lignin-like model compounds - Short note
- Flint SI, Camire ME// Univ Maine, Dept Food Sci, Orono, Me 04469, USA
CEREAL CHEM 1992, 69 (4) 444
Recovery of lignin during nonstarch polysaccharide analysis
- Hayani A, Obeidou W, Kiffer E, Loubinoux B, Botton B// Univ Nancy 1, Physiol Vegetale & Forestiere Lab, BP 239, F-54506 Vandoeuvre Nancy, France
C R ACAD SCI SER III-VIE 1992, 315 (4) 171
Estimation of wood degradation and lignin loss by direct photometric measurements upon decay of sawdust samples by the white-rot fungus *Phanerochaete chrysosporium* (French, English Abstract)
- Ignatenko OV, Arkhangelskaya AS, Chupka EI// Bratsk Ind Inst, Bratsk, Russia
KHM PRIR SOEDIN SSSR 1992, (3-4) 413
Formation of peroxide compounds during lignin oxidation by oxygen in organic solvent (Russian)
- Jones SC, Briedis DM// *Michigan State Univ, Dept Chem Engr, Engr Bldg A202, East Lansing, MI 48824, USA
J BIOTECHNOL 1992, 24 (3) 277
Adhesion and lignin peroxidase production by the white-rot fungus *Phanerochaete chrysosporium* in a rotating biological contactor
- Kazayawoko JSM, Riedl B, Poliquin J// Univ Laval, Ctr Rech Sci & Ingn Macromolec, Fac Forestiere & Geomat, Dept Sci Bois, St Foy, Quebec, Canada G1K 7P4
HOLZFORSCHUNG 1992, 46 (4) 349
A lignin-phenol-formaldehyde binder for particleboard. 2. Physico-mechanical properties
- Li P, Pelton R// *McMaster Univ, McMaster Ctr Pulp & Paper Res, Dept Chem Engr, Hamilton, Ontario, Canada L8S 4L7
COLLOID SURFACE 1992, 64 (3-4) 217
Wood pulp washing. 1. Complex formation between Kraft lignin and cationic polymers
- Li P, Pelton R// *McMaster Univ, McMaster Ctr Pulp & Paper Res, Dept Chem Engr, Hamilton, Ontario, Canada L8S 4L7
COLLOID SURFACE 1992, 64 (3-4) 223
Wood pulp washing. 2. Displacement washing of aqueous lignin from model beds with cationic polymer solutions
- Love GD, Snape CE, Jarvis MC// Univ Strathclyde, Dept Pure & Appl Chem, Glasgow G1 1XL, Scotland
BIOPOLYMERS 1992, 32 (9) 1187
Determination of the aromatic lignin content in oak wood by quantitative solid state ¹³C-NMR
- Metzger JO, Bicke C, Faix O, Tuszyński W, Angermann R, Karas M, Strupat K// Univ Oldenburg, Fachbereich Chem, Carl von Ossietzky Str 9-11, W-2900

- Oldenburg, FRG
 ANGEW CHEM INT ED 1992, 31 (6) 762
 Matrix-assisted laser desorption mass spectrometry of lignins
- Nakashima H, Murakami T, Yamamoto N, Naoe T, Kawazoe Y*, Konno K, Sakagami H// *Nagoya City Univ, Fac Pharmaceut Sci, Mizuho ku, Nagoya, Aichi 467, Japan
 CHEM PHARM BULL TOKYO 1992, 40 (8) 2102
 Lignified materials as medicinal resources. 5. Anti-HIV (human immunodeficiency virus) activity of some synthetic lignins
- Perez J, Jeffries TW*// *US Forest Serv, Inst Microbial & Biochem Technol, Forest Prod Lab, Madison, WI 53705, USA
 APPL ENVIRON MICROBIOL 1992, 58 (8) 2402
 Roles of manganese and organic acid chelators in regulating lignin degradation and biosynthesis of peroxidases by *Phanerochaete chrysosporium*
- Qian P, Islam A, Sarkanan KV, McCarthy JL*// *Univ Washington, Coll Forest Resources, Seattle, WA 98195, USA
 HOLZFORSCHUNG 1992, 46 (4) 321
 Certain characteristics of the dissolved alkali lignins of 4 angiosperm plant species
- Rios S, Eyz-Aguirre J*// *Catholic Univ Chile, Fac Ciencias Biol, Bioquim Lab, Casilla 114-D, Santiago, Chile
 APPL MICROBIOL BIOTECHNOL 1992, 37 (5) 667
 Conditions for selective degradation of lignin by the fungus *Ganoderma australis*
- Rubinchik GF, Tadzhiyev AT, Beglov BM// Uzbekistan Acad Sci, Inst Chem, Tashkent, Uzbekistan
 J APPL CHEM-ENGL TR 1992, 65 (1) 162
 Production of active reagents from hydrolysis lignin and their interaction with potassium phosphate
- Sayadi S, Ellouz R// Ctr Biotechnol Sfax, BOP W, Sfax 3038, Tunisia
 APPL MICROBIOL BIOTECHNOL 1992, 37 (6) 813
 Decolourization of olive mill waste-waters by the white-rot fungus *Phanerochaete chrysosporium* - Involvement of the lignin-degrading system
- Terashima N, Fukushima K, Imai T// Nagoya Univ, Fac Agr, Nagoya 46401, Japan
 HOLZFORSCHUNG 1992, 46 (4) 271
 Morphological origin of milled wood lignin studied by radiotracer method
- Venkatadri R, Tsai SP, Vukanic N, Hein LB// Argonne Natl Lab, Div Energy Syst, Bldg 362, Argonne, IL 60439, USA
 HAZARD WASTE HAZARD MATER 1992, 9 (3) 231
 Use of a biofilm membrane reactor for the production of lignin peroxidase and treatment of pentachlorophenol by *Phanerochaete chrysosporium*
- chitosan derivative possessing pyridyl group
- Bakshi A, Patnaik PR*, Gupta JK// *Punjab Univ, Dept Microbiol, Chandigarh 160014, India
 BIOTECHNOL LETT 1992, 14 (8) 689
 Thermostable pullulanase from a mesophilic *Bacillus cereus* isolate and its mutant UV7.4
- Basten J, Jaurand G, Oldehanter B, Duchaussoy P, Petitou M*, Van Boeckel CAA// *Sanofi Rech, 9 rue President Salvador Allende, F-94256 Gentilly, France
 BIOORG MEDICINAL CHEM LETTER 1992, 2 (9) 905
 Biologically active heparin-like fragments with a non-glycosaminoglycan structure. 3. Ortho-alkylated-ortho-sulphated pentasaccharides
- Basten J, Jaurand G, Oldehanter B, Petitou M*, Van Boeckel CAA// *Sanofi Rech, 9 rue President Salvador Allende, F-94256 Gentilly, France
 BIOORG MEDICINAL CHEM LETTER 1992, 2 (9) 901
 Biologically active heparin-like fragments with a non-glycosaminoglycan structure. 2. A tetra ortho-methylated pentasaccharide with high affinity for antithrombin-III
- Bater B, Descamps O, Maurer AJ// Univ Wisconsin, Dept Poultry Sci, Madison, WI 53706, USA
 J FOOD SCI 1992, 57 (4) 845
 Kappa-carrageenan effects on the gelation properties of simulated oven-roasted turkey breast juice
- Betaneli VI, Brukhanova OV, Ott AY, Kochetkov NK// ND Zelinskii Organ Chem Inst, Moscow, Russia
 BIOORG KHIM 1992, 18 (6) 818
 Synthesis of polymannuronides by trityl-cyanoethylidene condensation (Russian, English Abstract)
- Bezukladnikov PV, Elyakova LA// Acad Sci, Pacific Ocean Inst Bioorgan Chem, Vladivostok, Russia
 BIOCHEMISTRY-ENGL TR 1992, 57 (2) 172
 Multiple attack on substrates by endo-beta-1,3-glucanase-L-IV from the marine mollusk *Spisula sachalinensis*. 3. Change in the general distribution of products in the hydrolysis of laminarin by glucanase-L-IV and glucanases-L(0)
- Bhatty RS// Univ Saskatchewan, Ctr Crop Dev, Saskatoon, Saskatchewan, Canada S7N 0W0
 CEREAL CHEM 1992, 69 (5) 469
 Beta-glucan content and viscosities of barleys and their roller-milled flour and bran products
- Bourret E// Univ Montpellier, Fac Pharm, Dept Phys, Ave Charles Flahaut, F-34060 Montpellier, France
 RHEOL ACTA 1992, 31 (4) 368
 Formation of agar gels and yield stress
- Breedveld MW, Zevenhuizen LPTM, Zehnder AJB// Penn State Univ, Dept Food Sci, 101 Borland Lab, Univ Pk, Pa 16802, USA
 J BACTERIOL 1992, 174 (20) 6336
 Synthesis of cyclic beta-(1,2)-glucans by *Rhizobium leguminosarum* biovar *trifolii* TA-1 - Factors influencing excretion
- Brewer MS, McKeith FK, Britt K// Univ Illinois, Div Foods & Nutr, 386 Bevier Hall, 905 S Goodwin Ave, Urbana, IL 61801, USA
 J FOOD SCI 1992, 57 (5) 1051
 Fat, soy and carrageenan effects on sensory and physical characteristics of ground beef patties
- Buchert J, Ranua M, Kantelinen A, Viikari L// VTT, Biotechn Lab, POB 202, SF-02151 Espoo, Finland
 APPL MICROBIOL BIOTECHNOL 1992, 37 (6) 825
 The role of 2 *Trichoderma reesei* xylanases in the bleaching of pine Kraft pulp
- Buescher RW, Burgin C// Univ Arkansas, Dept Food Sci, Fayetteville, AR 72703, USA
 J FOOD BIOCHEM 1992, 16 (1) 59
 Diffusion plate assay for measurement of polygalacturonase activities in pickle brines
- Burger K, Sipos P, Illes J// Attila Jozsef Univ, Dept Inorgan & Analyt Chem, POB 440, H-6701 Szeged, Hungary
 BULL CHEM SOC JPN 1992, 65 (8) 2211
 Utilization of enzymatic digestion for the study of the macromolecular effect in complexation process - Protonation and copper coordination equilibria of hyaluronate and its fragments
- Cameron RG, Buslig BS, Shaw PE// USDA ARS, Citrus & Subtrop Prod Lab, POB 1909, Winter Haven, FL 33883, USA
 J FOOD SCI 1992, 57 (4) 1006
 Adaptation of a spectrophotometric assay for pectinmethylesterase to a kinetic microplate reader
- Cantor S, Meredith FI, Wicker L*// *Univ Georgia, Dept Food Sci, Athens, GA 30602, USA
 J FOOD BIOCHEM 1992, 16 (1) 15
- ## 6 POLYSACCHARIDES - NAMED
- Adt M, Lamparter B, Reimann HJ*// *Deutsch Herzzentrum Berlin, Inst Anaesthesiol, Augustenburger Pl 1, W-1000 Berlin 65, FRG
 AGENT ACTION 1992, SPEC ISS C C184
 Does heparin in clinical use contain histamine
- Aiba S// Tohoku Univ, Sch Med, Dept Dermatol, 1-1 Seiryomachi, Sendai, Miyagi 980, Japan
 INT J BIOL MACROMOL 1992, 14 (4) 225
 Studies on chitosan. 4. Lysozymic hydrolysis of partially N-acetylated chitosans
- Alban S, Kraus J, Franz G*// *Univ Regensburg, Dept Pharmacol, Univ Str 31, W-8400 Regensburg, FRG
 ARZNEIM-FORSCH-DRUG RES 1992, 42-2 (8) 1005
 Synthesis of laminarin sulfates with anticoagulant activity
- Annisson G, Choct M, Cheetham NW// CSIRO Div Human Nutr, Glenelg Lab, O'Halloran Hill, SA 5158, Australia
 CARBOHYD POLYM 1992, 19 (3) 151
 Analysis of wheat arabinoxylans from a large-scale isolation
- Arnaud JP, Lacroix C*, Castaigne F// *Univ Laval, Dept Sci & Technol Aliments, Quebec City, Quebec, Canada G1K 7P4
 ENZYME MICROB TECHNOL 1992, 14 (9) 715
 Counterdiffusion of lactose and lactic acid in kappa-carrageenan locust bean gum gel beads with or without entrapped lactic acid bacteria
- Arranz F, Sanchez-Chaves M, Ramirez JC// Inst Ciencia & Tecnol Polimeros, Juan Cierva 3, E-28006 Madrid, Spain
 MAKROMOL CHEM-RAP COMM 1992, 13 (9) 403
 Adducts of succinylated dextran-benzocaine - Synthesis and controlled release behaviour
- Baba Y, Hirakawa H// Saga Univ, Ctr Joint Res & Dev, Saga 840, Japan
 CHEM LETT 1992, (10) 1905
 Selective absorption of palladium(II), platinum(IV), and mercury(II) on a new

Postharvest changes of pectic substances in chilled peaches

Chen D, Ainsworth AJ*// *Mississippi State Univ, Coll Vet Med, Drawer V, Mississippi State, Ms 39762, USA
J FISH DISEASES 1992, 15 (4) 295

Glucan administration potentiates immune defence mechanisms of channel catfish, *Ictalurus punctatus* Rafinesque

Combrier E, Castelli D// Roc SA Labs, 50 rue Seine, F-92700 Colombes, France

ALTA-ALTERN LAB ANIM 1992, 20 (3) 438

The agarose overlay method as a screening approach for ocular irritancy - Application to cosmetic products

Costell E, D'Amasio MH, Izquierdo L, Duran I// CSIC, Inst Agroquim & Tecnol Alimentos, Jaime Roig 11, E-46010 Valencia, Spain
FOOD HYDROCOLLOID 1992, 6 (3) 275

Composite mechanical behaviour of carrageenan gum mixed gels - Influence of composition

Cote GL// US Dept Agr, ARS, Natl Ctr Agr Utilizat Res, Biopolymer Res Unit, 1815 N Univ St, Peoria, IL 61604, USA

CARBOHYD POLYM 1992, 19 (4) 249

Low-viscosity alpha-D-glucan fractions derived from sucrose which are resistant to enzymatic digestion

Czuchajowska Z, Szczodrak J, Pomeranz Y// Washington State Univ, Dept Food Sci & Human Nutr, Pullman, Wa 99164, USA
CEREAL CHEM 1992, 69 (4) 413

Characterization and estimation of barley polysaccharides by near-infrared spectroscopy. 1. Barleys, starches, and beta-deuterium-glucans

Da Silva JAL, Goncalves MP, Rao MA// Univ Catolica Portuguesa, Escola Super Biotecnol, Rua Dr Antonio Bernardino Almeida, P-4200 Oporto, Portugal
J FOOD SCI 1992, 57 (2) 443

Rheological properties of high-methoxyl pectin and locust bean gum solutions in steady shear

Damm JBL, Overklist GT, Vermeulen BWM, Fluitsma CF, Van Dedem GWK// Organon Int BV, Dept Analyt Chem, Akzo Pharma Grp, POB 20, 5340 BH Oss, The Netherlands
J CHROMATOGR 1992, 608 (1-2) 297

Separation of natural and synthetic heparin fragments by high-performance capillary electrophoresis

Davoust N, Persson A*// *Anox AB, Ideon Res Pk, S-22370 Lund, Sweden
APPL MICROBIOL BIOTECHNOL 1992, 37 (5) 572

Effects of growth morphology and time of harvesting on the chitosan yield of *Absidia repens*

Dhoot S, Goddard ED*, Murphy DS, Tirrell M// *349 Pleasant Lane, Haworth, NJ 07641, USA

COLLOID SURFACE 1992, 66 (2) 91

Surface force measurements on cationic polymer/hyaluronic acid mixtures on mica

Dickinson E, Semenova MG// Univ Leeds, Procter Dept Food Sci, Leeds LS2 9JT, England

COLLOID SURFACE 1992, 64 (3-4) 299

Emulsifying properties of covalent protein-dextran hybrids

Djelveh G, Malmgren Y, Gros JB// Univ Clermont Ferrand, Genie Chim Biol Lab, F-63177 Clermont Ferrand, France

J FOOD SCI 1992, 57 (2) 449

Component flows and interactions in agar gels predicted by linear irreversible thermodynamics

Doan DNP, Fincher GB*// *La Trobe Univ, Dept Biochem, Bundoora, Vic 3083, Australia

FEBS LETT 1992, 309 (3) 265

Differences in the thermostabilities of barley (1-3,1-4)-beta-glucanases are only partly determined by N-glycosylation

Dragnet KI, Varum KM, Moen E, Gynnild H, Smidsrod O// Univ Trondheim, Norwegian Inst Technol, Div Biotechnol, Norwegian Biopolymer Lab, N-7034 Trondheim, Norway

BIOMATERIALS 1992, 13 (9) 635

Chitosan cross-linked with Mo(VI) polyoxyanions - A new gelling system

Edens RE, Alhakim A, Weiler JM, Rethwisch DG, Fareed J, Linhardt RJ*// *Univ Iowa, Coll Pharm, Div Med & Nat Prod, Iowa City, Ia 52242, USA

J PHARM SCI 1992, 81 (8) 823

Gradient polyacrylamide gel electrophoresis for determination of molecular weights of heparin preparations and low-molecular-weight heparin derivatives

Elghaouth A, Arul J, Grenier J, Asselin A// Univ Laval, Dept Sci & Technol Aliments, Quebec City, Quebec, Canada G1K 7P4

EXP MYCOL 1992, 16 (3) 173

Effect of chitosan and other polyions on chitin deacetylase in *Rhizopus stolonifer*

El-Sayed AMM, Abdul-Wahid K, Coughlin RW*// *Univ Connecticut, Dept Chem Engr, Storrs, Ct 06269, USA

BIOTECHNOL BIOENG 1992, 40 (5) 617

Investigation of production of dextran and dextranase by *Leuconostoc mesenteroides* immobilized within porous stainless steel

Encke A// Univ Frankfurt Klinikum, Allgemeinchirurg Klin, Theodor Stein Kai 7, W-6000 Frankfurt, FRG

LANGENBECKS ARCH CHIR 1992, 377 (5) 257

Efficiency and safety of low molecular weight heparin (German, English Abstract) (Editorial)

Faivre B, Menu P, Labrude P, Grandgeorge M, Vigneron C, Dellacherie E// Fac Pharm Nancy, Nancy, France

BIOMATER ARTIF CELL IMMOBIL BIOTECH 1992, 20 (2-4) 597

A potential blood substitute from carboxylic dextran and oxyhemoglobin. 2. Physicochemical and physiological assessments - Preliminary results on guinea pig

Farkas V, Sulova Z, Stratilova E, Hanna R, MacLachlan G*// *McGill Univ, Dept Biol, 1205 Dr Penfield Ave, Montreal, Quebec, Canada H3A 1B1

ARCH BIOCHEM BIOPHYS 1992, 298 (2) 365

Cleavage of xyloglucan by *Nasturtium* seed xyloglucanase and transglycosylation of xyloglucan subunit oligosaccharides

Fernandes PB, Goncalves MP, Doublier JL// Univ Catolica Portuguesa, Escola Superior Biotecnol, Rua Dr Antonio Bernardino Almeida, 4200 Porto, Portugal

CARBOHYD POLYM 1992, 19 (4) 261

Effect of galactomannan addition on the thermal behaviour of kappa-carrageenan gels

Feste AS, Khan I// Baylor Coll Med, USDA ARS, Childrens Nutr Res Ctr, 1100 Bates St, Houston, Tx 77030, USA

J CHROMATOGR 1992, 607 (1) 7

Separation of glucose polymers by hydrophilic interaction chromatography on aqueous size-exclusion columns using gradient elution with pulsed amperometric detection

Flatt JH, Hardin RS, Gonzalez JM, Dogger DE, Lightfoot EN, Cameron DC*// *Univ Wisconsin, Dept Chem Engr, 1415 Johnson Dr, Madison, Wi 53706, USA

BIOTECHNOL PROGR 1992, 8 (4) 327

An anionic galactomannan polysaccharide gum from newly-isolated lactose-utilizing bacterium. 1. Strain description and gum characterization

Flatt JH, Cooper TA, Gonzalez JM, Dogger DE, Lightfoot EN, Cameron DC*// *Univ Wisconsin, Dept Chem Engr, 1415 Johnson Dr, Madison, Wi 53706, USA

BIOTECHNOL PROGR 1992, 8 (4) 335

An anionic galactomannan polysaccharide gum from a newly-isolated lactose-utilizing bacterium. 2. Fermentation kinetics and lactose transport

Fostier AH, Korn-Probst JM, Combaut G// Univ Perpignan, Etud Metab Marine Interet Biol Grp, F-66860 Perpignan, France

BOT MAR 1992, 35 (4) 351

Chemical composition and rheological properties of carrageenans from 2 Senegalese Soleraceae *Anathea montagnei* Schmitz and *Meristotheca senegalensis* Feldmann

Fouissac E, Milas M, Rinaudo M*, Borsali R// *Joseph Fourier Univ Grenoble, Ctr Rech Macromolec Vegetales, BP 53X, F-38041 Grenoble, France

MACROMOLECULES 1992, 25 (21) 5613

Influence of the ionic strength on the dimensions of sodium hyaluronate

Gomez-Guillen M, Gomez-Sanchez A*, Martin-Zamora ME// *Univ Sevilla, Dept Quim Organ Prof Garcia Gonzalez, Apartado de Correos 553, E-41071 Seville, Spain

CARBOHYD RES 1992, 233 255

A derivative of chitosan and 2,4-pentanedione with strong chelating properties

Goto F, Ogawa T*// *Riken Inst Phys & Chem Res, Wako, Saitama 35101, Japan

TETRAHEDRON LETT 1992, 33 (35) 5099

Synthesis of a sulfated glycopeptide corresponding to the carbohydrate-protein linkage region of proteoglycans - beta-D-GlcA-(1-3)(SO₃Na-4)-beta-D-Gal-(1-3)-beta-D-Gal-(1-4)-beta-D-Xyl-(1-3)-Ser

Gruppen H, Hamer RJ, Voragen AGJ*// *Agr Univ Wageningen, Dept Food Sci, POB 8129, 6700 EV Wageningen, The Netherlands

J CEREAL SCI 1992, 16 (1) 53

Water-unextractable cell wall material from wheat flour. 2. Fractionation of alkali-extracted polymers and comparison with water-extractable arabinoxylans

Gruppen H, Hoffmann RA, Kormelink FJM, Voragen AGJ*, Kamerling JP, Vliegthart JFG// *Agr Univ Wageningen, Dept Food Sci, POB 8129, 6700 EV Wageningen, The Netherlands

CARBOHYD RES 1992, 233 45

Characterisation by ¹H NMR spectroscopy of enzymically derived oligosaccharides from alkali-extractable wheat-flour arabinoxylan

- Hagmar B, Ryd W, Skomedal H// Sahlgrönska Univ Hosp, Dept Pathol, S-41345 Gothenburg, Sweden
 INVAS METAST 1991, 11 (6) 348
 Arabinogalactan blockade of experimental metastases to liver by murine hepatoma
- Hang YD, Woodams EE// Cornell Univ, Dept Food Sci & Technol, Geneva, NY 14456, USA
 WORLD J MICROBIOL BIOTECHNOL 1992, 8 (5) 480
 Production and characterization of polygalacturonase from *Geotrichum candidum*
- Hansen RW, Byrnes SM, Johnson AD// CSIRO, Div Trop Crops & Pastures, Cunningham Lab, 306 Carmody Rd, St Lucia, Qld 4067, Australia
 J SCI FOOD AGR 1992, 59 (3) 419
 Determination of galactomannan (gum) in guar (*Cyamopsis tetragonolobus*) by high-performance liquid chromatography
- Hespell RB// USDA ARS, Natl Ctr Agr Utilizat Res, Fermentat Biochem Res, 1815 N Univ St, Peoria, IL 61604, USA
 CURR MICROBIOL 1992, 25 (4) 189
 Fermentation of xylans by *Butyrivibrio fibrilans* and *Thermoanaerobacter* strain B6A - Utilization of uronic acids and xylanolytic activities
- Hirsch J, Dalen JE, Deykin D, Poller L// Hamilton Civ Hosp, Med Ctr, Hamilton, Ontario, Canada
 CHEST 1992, 102 (4) S337
 Heparin - Mechanism of action, pharmacokinetics, dosing considerations, monitoring, efficacy, and safety
- Honda S, Ueno T, Kakehi K// Kinki Univ, Fac Pharmaceut Sci, 3-4-1 Kowakae, Higashi-Osaka, Osaka 577, Japan
 J CHROMATOGR 1992, 608 (1-2) 289
 High-performance capillary electrophoresis of unsaturated oligosaccharides derived from glycosaminoglycans by digestion with chondroitinase ABC as 1-phenyl-3-methyl-5-pyrazolone derivatives
- Hoppensteadt D, Walenga JM, Fareed J// Loyola Univ, Med Ctr, Dept Pathol, 2160 S 1st Ave, Maywood IL 60153, USA
 DRUG AGING 1992, 2 (5) 406
 Low molecular weight heparins - An objective overview
- Huber DJ// Univ Florida, Inst Food & Agr Sci, Gainesville, FL 32611, USA
 PHYSIOL PLANT 1992, 86 (1) 25
 The inactivation of pectin depolymerase associated with isolated tomato fruit cell wall - Implications for the analysis of pectin solubility and molecular weight
- Hwang J, Roshdy TH, Kontominas M, Kokini JL// *Rutgers State Univ, Ctr Adv Food Technol, Dept Food Sci, POB 231, New Brunswick, NJ 08903, USA
 J FOOD SCI 1992, 57 (5) 1180
 Comparison of dialysis and metal precipitation effects on apple pectins
- Irinoda K, Masihi KN, Chihara G, Kaneko Y, Katori T// *Robert Koch Inst, Fed Hlth Off, Nordufer 20, W-1000 Berlin 65, FRG
 INT J IMMUNOPHARMACOL 1992, 14 (6) 971
 Stimulation of microbicidal host defence mechanisms against aerosol influenza virus infection by lentinan
- Izume M, Nagae S, Kawagishi H, Ohtakara A// Katakura Chikkarin Co Ltd, Ctr Res & Dev, Tsuchiura, Ibaraki 300, Japan
 BIOSCI BIOTECHNOL BIOCHEM 1992, 56 (8) 1327
 Preparation of normal-acetylchito-oligosaccharides from enzymatic hydrolyzates of chitosan
- Jaurand G, Basten J, Lederman I, Van Boeckel CAA*, Petitou M// *Organon Int BV, POB 20, 5340 BH Oss, The Netherlands
 BIOORG MEDICINAL CHEM LETTER 1992, 2 (9) 897
 Biologically active heparin-like fragments with a non-glycosaminoglycan structure. 1. A pentasaccharide containing a 3-ortho-methyl iduronic acid unit
- Kambourova MS, Emanuilova EI// Inst Microbiol, Dept Enzyme Biosynth, Acad G Bontchev Str Bl 26, BU-1113 Sofia, Bulgaria
 APPL BIOCHEM BIOTECH 1992, 33 (3) 193
 Purification and general biochemical properties of thermostable pullulanase from *Bacillus stearothermophilus* G-82
- Kawakami T, Antoh M, Hasegawa H, Yamagishi T, Ito M, Eda S// Matsumoto Dent Coll, Dept Oral Pathol, 1780 Gohara, Shiojiri, Nagano 39907, Japan
 BIOMATERIALS 1992, 13 (11) 759
 Experimental study on osteoconductive properties of a chitosan-bonded hydroxyapatite self-hardening paste
- Kida K, Inoue T, Kaino Y, Goto Y, Ikeuchi M, Ito T, Matsuda H, Elliott RB// Ehime Univ, Sch Med, Dept Pediat, Shigenobu, Ehime 79102, Japan
 DIABETES RES CLIN PRACT 1992, 17 (2) 75
 An immunopotentiator of beta-1,6,1,3 D-glucan prevents diabetes and insulinitis in BB rats
- Kikuchi A, Satoh S, Fujii T// Univ Tsukuba, Inst Biol Sci, Tsukuba, Ibaraki 305, Japan
 BIOSCI BIOTECHNOL BIOCHEM 1992, 56 (7) 1144
 Analysis of plant pectic substances by electrophoresis on cellulose acetate membrane
- Knutsen SH, Grasdalén H// Univ Trondheim, Norwegian Inst Technol, Div Biotechnol, Lab Marine Biochem, N-7034 NTH Trondheim, Norway
 CARBOHYD POLYM 1992, 19 (3) 199
 Analysis of carrageenans by enzymic degradation, gel filtration and ¹H-NMR spectroscopy
- Koga D, Nomura Y, Tabata H, Ide A, Nakamura Y// Yamaguchi Univ, Fac Agr, Biochem Lab, Yamaguchi 753, Japan
 BIOSCI BIOTECHNOL BIOCHEM 1992, 56 (8) 1331
 Induction of fine bent-grass callus and appearance of chitinase during the subculture
- Kravtchenko TP, Arnould I, Voragen AGJ, Pilnik W// Sanofi Bio Industries, Ctr Rech Baupre, F-50500 Carentan, France
 CARBOHYD POLYM 1992, 19 (4) 237
 Improvement of the selective depolymerization of pectic substances by chemical beta-elimination in aqueous solution
- Kulicke WM, Van Eikeren A// Univ Hamburg Inst Tech & Makromolekul Chem, Bundesstr 45, W-2000 Hamburg 13, FRG
 MAKROMOL CHEM-MACROMOL SYMP 1992, 61 75
 Determination of the microstructure of the fermentation polymer xanthan
- Kumar RA, Jayaraman A, Lakshmanan M, Gunasekaran P// *Madurai Kamaraj Univ, Sch Biol Sci, Dept Microbiol & Microbial Technol, Madurai 625021, Tamil Nadu, India
 J FERMENT BIOENG 1992, 74 (3) 159
 Bioconversion of gallic acid into pyrogallol by immobilized *Citrobacter freundii* TB3
- Kurita K, Yoshino H, Yokota K, Ando M, Inoue S, Ishii S, Nishimura SI// Seikei Univ, Fac Engr, Dept Ind Chem, Musashino, Tokyo 180, Japan
 MACROMOLECULES 1992, 25 (14) 3786
 Preparation of tosylchitins as precursors for facile chemical modifications of chitin
- Lee I, Atkins EDT, Miles MJ// Univ Bristol HH Wills Phys Lab, Tundall Ave, Bristol BS8 1TL, England
 ULTRAMICROSCOPY 1992, 42 PT B, 1107
 Visualization of the algal polysaccharide carrageenan by scanning tunnelling microscopy
- Lee YM, Nam SY, Kim JH// Hanyang Univ, Coll Engr, Dept Ind Chem, Seoul 133791, Sth Korea
 POLYM BULL 1992, 29 (3-4) 423
 Pervaporation of water-ethanol through poly(vinyl alcohol)/chitosan blend membrane
- Lin SY, Ayres JW// *Oregon State Univ, Coll Pharm, Corvallis, Or 97331, USA
 PHARMACEUT RES 1992, 9 (9) 1128
 Calcium alginate beads as core carriers of 5-aminosalicylic acid
- Liu JH, Waterhouse AL// *Univ Calif, Dept Viticulture & Enol, Davis, Ca 95616, USA
 CARBOHYD RES 1992, 232 (1) 1
 Conformational analysis of levanbiose by molecular mechanics
- Lobas D, Schumpe S, Deckwer WD// *Gesell Biotechnol Forsch GmbH, Div Biochem Engr, Mascheroder Weg 1, W-3300 Braunschweig, FRG
 APPL MICROBIOL BIOTECHNOL 1992, 37 (4) 411
 The production of gellan exopolysaccharide with *Sphingomonas paucimobilis* E2 (DSM-6314)
- Lokhande HT, Varadarajan PV// Univ Bombay, Dept Chem Technol, Bombay 400019, India
 BIORESOURCE TECHNOL 1992, 42 (2) 119
 A new guar gum-based superabsorbent polymer synthesised using gamma-radiation as a soil additive
- Manzoni M, Cavazzoni V// Dipartimento Sci & Technol Alimentari & Microbiol, Sez Microbiol Ind, Via Celoria 2, I-20133 Milan, Italy
 J CHEM TECHNOL BIOTECHNOL 1992, 54 (4) 311
 Hydrolysis of topinambur (Jerusalem artichoke) fructans by extracellular inulinase of *Kluyveromyces marxianus* var *bulgaricus*
- Mathew R, Rao KK// Maharaja Sayajirao Univ Baroda, Fac Sci, Dept Microbiol, Baroda 390002, Gujarat, India
 ANAL BIOCHEM 1992, 206 (1) 50
 Activity staining of endoglucanases in polyacrylamide gels
- Matsushashi S, Inoue S, Hatanaka C// *Hiroshima Univ, Fac Appl Biol Sci, Dept Appl Biochem, Hiroshima 724, Japan
 BIOSCI BIOTECHNOL BIOCHEM 1992, 56 (7) 1053
 Simultaneous measurement of the galacturonate and neutral sugar contents of pectic substances by an enzymic-HPLC method

- Matsumoto T, Kawai M, Masuda T// Kyoto Univ, Dept Polymer Chem, Kyoto 606, Japan
 MACROMOLECULES 1992, 25 (20) 5430
 Viscoelastic and SAXS investigation of fractal structure near the gel point in alginate aqueous systems
- Matsumoto T, Kawai M, Masuda T// Kyoto Univ, Dept Polymer Chem, Kyoto 606, Japan
 J CHEM SOC FARADAY TRANS 1992, 88 (18) 2673
 Influence of chain stiffness on the gelation and gel structure of alginate aqueous systems
- Mehvar R, Shepard TL// Drake Univ, Coll Pharm & Hlth Sci, Des Moines, Ia 50311, USA
 J PHARM SCI 1992, 81 (9) 908
 Molecular-weight-dependent pharmacokinetics of fluorescein-labeled dextrans in rats
- Miyano H, Suzuki E// Ajinomoto Co Inc, Cent Res Labs, Suzuki cho, Kawasaki, Kanagawa 210, Japan
 ANAL SCI 1992, 8 (4) 561
 Nondestructive analyses of residue types in beta-D-glucan derivatives by 2-dimensional homonuclear Hartmann-Hahn spectroscopy
- Mizushima Y// NGK Spark Plug Co Ltd, Dept Res & Dev, Komaki Factory 2808, Komaki 485, Aichi, Japan
 J NON-CRYST SOLIDS 1992, 144 (2-3) 305
 Preparation of alkoxide-derived chitosan silica complex membrane
- Mobed M, Chang TMS// McGill Univ, Artificial Cells & Organs Res Ctr, Montreal, Quebec, Canada H3A 2T5
 BIOMATER ARTIF CELL IMMOBIL BIOTECH 1992, 20 (2-4) 369
 Purification and quantitative determination of carboxymethylchitin incorporation into submicron bilayer-lipid membrane artificial cells (liposomes) encapsulating hemoglobin
- Moe ST, Draget KI, Skjak-Braek G, Smidsrod O// Univ Trondheim, Norwegian Inst Technol, Norwegian Biopolymer Lab (NOBIPOL), Lab Biotechnol, Sem Soelands vei 6-8, N-7034 Trondheim, Norway
 CARBOHYD POLYM 1992, 19 (4) 279
 Temperature dependence of the elastic modulus of alginate gels
- Moss SF, Vallance SL// SmithKline Beecham Pharmaceut, Div Res, Brockham Pk, Betchworth RH3 7AJ, Surrey, England
 J CHEM SOC PERKIN TRANS I 1992, (15) 1959
 Enantiospecific synthesis of aza-analogues of the N-acetylglucosamine-N-acetylmuramic acid repeating unit in peptidoglycan
- Mouelle P, Menu P, Labrude P, Grandgeorge M, Vigneron C// Fac Pharm Nancy, Nancy, France
 BIOMATER ARTIF CELL IMMOBIL BIOTECH 1992, 20 (2-4) 697
 A potential blood substitute from carboxylic dextran and oxyhemoglobin. 3. Evaluations by perfusion of normal and ischemic guinea-pig heart
- Moutet JC, Saintaman E*, Tranvan F, Angibeaud P Utile JP// *Univ Joseph Fourier Grenoble 1, CNRS, URA 1210, Electrochim Organ & Photochim Redox Lab, BP 53X, F-38041 Grenoble, France
 ADVAN MATER 1992, 4 (7-8) 511
 Poly(glucose-pyrrole) modified electrodes - A novel chiral electrode for enantioselective recognition
- Muzzarelli RAA// Fac Med, Univ Ancona, Via Ranieri 67, I-60100 Ancona, Italy
 CARBOHYD POLYM 1992, 19 (4) 231
 Modified chitosans carrying sulfonic acid groups
- Myshkina LA, Petukhova TV, Levina OI, Korofaev GK// Biotekhnologiya Sci Ind Assoc, Moscow, Russia
 VYSOKOMOL SOEDIN SER B SSSR 1992, 34 (5) 17
 Polyelectrolyte complexes of collagen with chitosan (Russian)
- Neville GA, Gallicano KD, Beckstead HD, McGilveray IJ// Hlth & Welf Canada, Bur Drug Res, Hlth Protect Branch, Banting Bldg, Tunneys Pasture, Ottawa, Ontario, Canada K1A 0L2
 DRUG DEVELOP IND PHARM 1992, 18 (19) 2067
 Disintegration of dextran sulfate tablet products - Effect of physiochemical properties
- Nielsen JI// Novo Nordisk AS, Div Biopharmaceut, Heparin Res Lab, DK-2880 Bagsvaerd, Denmark
 THROMB HAEMOST 1992, 68 (4) 478
 A convenient method for molecular mass determination of heparin (Letter)
- Nilsson S// Univ Lund, Ctr Chem, Dept Phys Chem 1, Box 124, S-22100 Lund, Sweden
 BIOPOLYMERS 1992, 32 (10) 1311
 A thermodynamic analysis of calcium-alginate gel formation in the presence of inert electrolyte
- Nishinari K, Watase M, Kohyama K, Nishinari N, Oakenfull D, Koide S, Ogino K, Williams PA, Phillips GO// Natl Food Res Inst, Tsukuba 305, Japan
 POLYM J 1992, 24 (9) 871
 The effect of sucrose on the thermoreversible gel-sol transition in agarose and gelatin
- Nishinari K, Watase M// Natl Food Res Inst, Tsukuba, Ibaraki 305, Japan
 THERMOCHIM ACTA 1992, 206 (SEP) 149
 Effects of sugars and polyols on the gel-sol transition of kappa-carrageenan gels
- Nishitani K, Tominaga R// Kagoshima Univ, Coll Liberal Arts, Dept Biol, Kagoshima 890, Japan
 J BIOL CHEM 1992, 267 (29) 21058
 Endoxylglucan transferase, a novel class of glycosyltransferase that catalyzes transfer of a segment of xyloglucan molecule to another xyloglucan molecule
- Oderiz LV, Blanco EV, Hernandez JL, Rodriguez AR// Fac Pharm Santiago de Compostela, Dept Quim Analit Nutr & Bromatol, Area Nutr & Bromatol, E-15706 Santiago de Compostela, Spain
 IND ALIMENT 1992, 31 (305) 533
 Comparison of 2 spectrophotometric methods for determination of different pectic fractions - Application of 7 varieties of raspberry (Italian, English Abstract)
- Ohno N, Miura T, Saito K, Nishijima M, Miyazaki T, Yadamoe T// *Tokyo Coll Pharm, 1432-1 Horinouchi, Hachioji, Tokyo 19203, Japan
 CHEM PHARM BULL TOKYO 1992, 40 (8) 2215
 Physicochemical characteristics and antitumor activities of a highly branched fungal (1-3)-beta-D-glucan, OL-2, isolated from *Omphalia lapidescens* - Note
- Oka M, Yoshino S, Hazama S, Shimoda K, Suzuki T// Yamaguchi Univ, Sch Med, Dept Surg 2, Kogushi 1144, Ube, Yamaguchi 755, Japan
 BIOTHERAPY 1992, 5 (2) 107
 Immunological analysis and clinical effects of intraabdominal and intrapleural injection of lentinan for malignant ascites and pleural effusion
- Okeke BC, Obi SKC// Univ Strathclyde, Dept Biosci & Biotechnol, Royal Coll Bldg, Glasgow G1 1WX, Scotland
 FEMS MICROBIOL LETT 1992, 96 (1) 43
 Preliminary studies on a xylanase from an *Arthrophaphis* species
- Orosco CA, Anong C, Nukaya M, Ohno M, Sawamura M, Kusunose H// Kochi Univ, Fac Agr, Dept Agr Chem, Nankoku, Kochi 783, Japan
 NIPPON SUISAN GAKKAISHI 1992, 58 (9) 1711
 Yield and physical characteristics of agar from *Gracilaria chorda* Holmes - Comparison with those from southeast Asian species
- Orosco CA, Sawamura M, Ohno M, Kusunose H// Kochi Univ, Fac Agr, Dept Agr Chem, Nankoku, Kochi 783, Japan
 NIPPON SUISAN GAKKAISHI 1992, 58 (8) 1493
 Effects of thallus age and alkali treatment on pyruvic acid contents of agars from the red alga *Gracilaria chorda*
- Park YS, Yum DY, Bai DH, Yu JH// *Yonsei Univ, Dept Food Engn, Seoul 120749, Sth Korea
 BIOSCI BIOTECHNOL BIOCHEM 1992, 56 (8) 1355
 Xylanase from alkalophilic *Bacillus* sp YC-335
- Pavlov GM, Korneeva EV, Michailova NA, Ananyeva EP// Univ, Inst Phys, St Petersburg 198904, Russia
 CARBOHYD POLYM 1992, 19 (4) 243
 Hydrodynamic properties of the fractions of mannan formed by *Rhodotorula rubra* yeast
- Pavlova ZN, Ash OA, Vnuchkova VA, Babakov AV, Torgov VI, Nechaev OA, Usov AI, Shibaev VN// Moscow Agr Biotechnol Inst, 12 Pskovskaya St, Moscow 127253, Russia
 PLANT SCI 1992, 85 (2) 131
 Biological activity of a synthetic pentasaccharide fragment of xyloglucan
- Peniche-Covas C, Alvarez LW, Arguelles-Monal W// Univ Havana, Fac Chem, Havana 10400, Cuba
 J APPL POLYM SCI 1992, 46 (7) 1147
 The adsorption of mercuric ions by chitosan
- Persson JE, Domard A, Chanzy H// *Univ Grenoble, Ctr Rech Macromolec Vegetales, CNRS, BP 53X, F-38041 Grenoble, France
 INT J BIOL MACROMOL 1992, 14 (4) 221
 Single crystals of alpha-chitin
- Pitkanen K, Heikinheimo R, Pakkanen R// Genesit Ltd, Helsinki, Finland
 ENZYME MICROB TECHNOL 1992, 14 (10) 832
 Purification and characterization of *Erwinia chrysanthemi* B374 pectin methyl-esterase produced by *Bacillus subtilis*
- Planas A, Juncosa M, Cayetano A, Querol E// *Univ Autonoma Barcelona, Inst Biol Fundamental 5, E-08193 Barcelona, Spain
 APPL MICROBIOL BIOTECHNOL 1992, 37 (5) 583
 Studies on *Bacillus licheniformis* endo-beta-1,3-1,4-D-glucanase - Characterization and kinetic analysis
- Ploger A// Copenhagen Pectin AS, DK-4623 Lille Skensved, Denmark

- J FOOD SCI 1992, 57 (5) 1185
Conductivity detection of pectin - A rapid HPLC method to analyze degree of esterification
- Prisell PT, Camber O, Hiselius J, Norstedt G// Huddinge Univ Hosp, Karolinska Inst, Novum, Ctr Biotechnol, S-14157 Huddinge, Sweden
INT J PHARM 1992, 85 (1-3) 51
Evaluation of hyaluronan as a vehicle for peptide growth factors
- Prokop A, Rapp P, Wagner F// W Neudorff GmbH, Klausdorfer Str 26-38, W-2313 Ralsdorf, FRG
EXP MYCOL 1992, 16 (3) 197
Production of extracellular beta-1,3-/beta-1,6-glucan by monokaryons and dikaryons of *Schizophyllum commune*
- Prouchayret F, Fasan G, Grandgeorge M, Vigneron C, Menu P, Dellacherie E// CNRS, URA 494, Nancy, France
BIOMATER ARTIF CELL IMMOBIL BIOTECH 1992, 20 (2-4) 319
A potential blood substitute from carboxylic dextran and oxyhemoglobin. 1. Preparation, purification and characterization
- Qurashi MT, Blair HS, Allen SJ// House 251 St 19, Islamabad, Pakistan
J APPL POLYM SCI 1992, 46 (2) 263
Studies on modified chitosan membranes. 2. Dialysis of low molecular weight metabolites
- Qurashi MT, Blair HS, Allen SJ// House 251, St 19, Islamabad, Pakistan
J APPL POLYM SCI 1992, 46 (2) 255
Studies on modified chitosan membranes. 1. Preparation and characterization
- Ramaswamy HS, Basak S// McGill Univ, MacDonald Coll, Dept Food Sci & Agr Chem, St Anne Bellevue, Quebec, Canada H0A 1C0
J FOOD SCI 1992, 57 (2) 357
Pectin and raspberry concentrate effects on the rheology of stirred commercial yogurt
- Ratto M, Poutanen K, Viikari L// Valt Teknillinen Tutkimuskeskos, Biotech Lab, POB 202, SF-02151 Espoo, Finland
APPL MICROBIOL BIOTECHNOL 1992, 37 (4) 470
Production of xylanolytic enzymes by an alkali-tolerant *Bacillus circulans* strain
- Real A, Guenechea G, Bueren JA, Maganto G*// *Ctr Invest Energet Medioambientales & Technol, Inst Medioambiente, Ed 3, Avda Complutense 22, E-28040 Madrid, Spain
INT J RADIAT BIOL 1992, 62 (1) 65
Radioprotection mediated by the haemopoietic stimulation conferred by AM5 - A protein-associated polysaccharide
- Renard CMGC, Lomax JA, Boon JJ// INRA, Biochim & Technol, Glucides Lab, rue Geraudiere, BP 527, F-44026 Nantes 03, France
CARBOHYD RES 1992, 232 (2) 303
Apple-fruit xyloglucans - A comparative study of enzyme digests of whole cell walls and of alkali-extracted xyloglucans
- Rodriguez H, Alea F// Cuban Res Inst Sugar Cane By-prod, Via Blanca 804, POB 26, Havana 11000, Cuba
ACTA BIOTECHNOL 1992, 12 (4) 337
Regulation of xylanase activity in *Cellulomonas* sp Iibc
- Rosiak J, Ulanski P, Kucharska M, Dutkiewicz J, Judkiewicz L// Tech Univ Lodz, Inst Appl Radiat Chem, Wroblewskiego 15, PL-93590 Lodz, Poland
J RADIOANAL NUCL CHEM ART 1992, 159 (1) 87
Radiation sterilization of chitosan sealant for vascular prostheses
- Rothlisberger P, Fiechter A, Zimmermann W// Swiss Fed Inst Technol, Inst Biotechnol, CH-8093 Zurich, Switzerland
APPL MICROBIOL BIOTECHNOL 1992, 37 (4) 416
Production of thermostable xylanases in batch and continuous culture by *Thermomonospora fusca* KW-3
- Rubinstein A, Nakar D, Sintov A// Hebrew Univ Jerusalem, Sch Pharm, POB 12065, IL-91120 Jerusalem, Israel
INT J PHARM 1992, 84 (2) 141
Chondroitin sulfate - A potential biodegradable carrier for colon-specific drug delivery
- Sakurai T, Ohno N, Yadoama T*// *Tokyo Coll Pharm, Immunopharmacol Microbial Prod Lab, Horinouchi 1432-1, Hachioji, Tokyo 19203, Japan
CHEM PHARM BULL TOKYO 1992, 40 (8) 2120
Intravenously administered (1-)-beta-D-glucan, SSG, obtained from *Sclerotinia sclerotiorum* IFO 9395 augments murine peritoneal macrophage functions in vivo
- Sano T, Imura R, Morishita Y, Matsuda Y, Yamada K*// *Kyowa Hakko Kogyo Co Ltd, Pharmaceut Res Labs, Nagaizumi, Shizuoka 411, Japan
LIFE SCI 1992, 51 (18) 1445
HS-142-1, a novel polysaccharide of microbial origin, specifically recognizes guanylyl cyclase-linked ANP receptor in rat glomeruli
- Sapers GM// USDA ARS, Eastern Reg Res Ctr, 600 E Mermaid Lane, Philadelphia, Pa 19118, USA
J FOOD SCI 1992, 57 (5) 1192
Chitosan enhances control of enzymatic browning in apple and pear juice by filtration
- Schuster RP, Sikora RA// Univ Bonn, Inst Pflanzenkrankheiten, Nussallee 9, W-5300 Bonn, FRG
FUND APPL NEMATOL 1992, 15 (5) 449
Persistence and growth of an egg pathogenic fungus applied in alginate granules to field soil and its pathogenicity toward *Globodera pallida*
- Shimamura A, Uezono Y, Tsumori H, Mukasa H// Natl Def Med Coll, Dept Chem, Tokorozawa, Saitama 359, Japan
CARBOHYD RES 1992, 233 237
Assignment of ¹³C NMR signals for reduced nigeroligosaccharides prepared by partial acid hydrolysis of (1-3)-alpha-D-glucan
- Shimizu N, Tomoda M*, Takada K, Gonda R// *Kyoritsu Coll Pharmaceut Sci, Minato ku, Tokyo 105, Japan
CHEM PHARM BULL TOKYO 1992, 40 (8) 2125
The core structure and immunological activities of glycyrrhizin UA, the main polysaccharide from the root of *Glycyrrhiza uralensis*
- Shinonaga MA, Kawamura Y, Yamane T// Fuji Spinning Co Ltd, Inst Res & Dev, Oyama, Shizuoka 41013, Japan
J FERMENT BIOENG 1992, 74 (2) 90
Immobilization of yeast cells with cross-linked chitosan beads
- Shirahama K, Kameyama K, Takagi T// Saga Univ, Fac Sci & Engr, Dept Chem, Saga 840, Japan
J PHYS CHEM 1992, 96 (16) 6817
Bimodality in the dodecylpyridinium bromide sodium dextran sulfate system as observed by an electrophoretic method
- Siessere V, Fonseca MJV, Said S*// *Univ Sao Paulo, Fac Ciencias Farmaceut Ribeirao Preto, Dept Ciencias Farmaceut, BR-14049 Ribeirao Preto, SP, Brazil
J GEN MICROBIOL 1992, 138 P9, 1801
Extracellular polygalacturonases from *Penicillium frequentans* - Separation and regulatory aspects
- Sims IM, Pollock CJ, Horgan R// AFR, Inst Grassland & Environm Res, Dept Environm Biol, Welsh Plant Breeding Stn, Aberystwyth SY23 3EB, Wales
PHYTOCHEMISTRY 1992, 31 (9) 2989
Structural analysis of oligomeric fructans from excised leaves of *Lolium temulentum*
- Slaghek T, Nakahara Y, Ogawa T*// *Inst Phys & Chem Res Riken, Wako, Saitama 35101, Japan
TETRAHEDRON LETT 1992, 33 (34) 4971
Stereocontrolled synthesis of hyaluronan tetrasaccharide
- Sova VV, Filitova MB, Makareva TN, Elyakova LA// Russian Acad Sci, Far East Sci Ctr, Pacific Oceanol Inst, Vladivostok, Russia
KHIM PRIR SOEDIN SSSR 1992, (3-4) 316
Natural effectors of beta-1,3-glucanases - Activator of beta-1,3-gluconases of sea mollusks (Russian)
- Stahmann KP, Pielken P, Schimz KL, Sahn H// KFA Julich GmbH, Forschungszentrum, Inst Biotechnol 1, Postfach 1913, W-5170 Julich 1, FRG
APPL ENVIRON MICROBIOL 1992, 58 (10) 3347
Degradation of extracellular beta-(1,3)(1,6)-D-glucan by *Botrytis cinerea*
- Stumm I, Baltes W*// *Tech Univ Berlin, Inst Lebensmittelchem, Gustav Meyer Allee 25, W-1000 Berlin 65, FRG
Z LEBENSMITTEL-UNTERSUCH FORS 1992, 195 (3) 246
Determination of the synthetic carbohydrate polydextrose (German, English Abstract)
- Szczodrak J, Czuchajowska Z, Pomeranz Y// Marie Curie Sklodowska Univ, Dept Appl Microbiol, PL-20033 Lublin, Poland
CEREAL CHEM 1992, 69 (4) 419
Characterization and estimation of barley polysaccharides by near-infrared spectroscopy. 2. Estimation of total beta-deuterium-glucans
- Tabata T, Watanabe W, Horita K, Kamegai J, Moriyama S, Hibino Y, Ohashi Y, Sugano N*// *Toyama Med & Pharmaceut Univ, Fac Pharmaceut Sci, Div Cell Biol, 2630 Sugitani, Toyama 93001, Japan
IMMUNOPHARMACOLOGY 1992, 24 (1) 57
Mitogenic activities of heteroglycan and heteroglycan-protein fractions from culture medium of *Lentinus edodes* mycelia
- Tako M// Univ Ryukyus, Dept Biosci & Biotechnol, Okinawa 90301, Japan
BIOSCI BIOTECHNOL BIOCHEM 1992, 56 (8) 1188
Synergistic interaction between xanthan and konjac glucomannan in aqueous media
- Teixeira AZA, Iacomini M, Gorin PAJ// Univ Fed Parana, Dept Bioquim, CP 19046, BR-81531 Curitiba, Parana, Brazil
PHYTOCHEMISTRY 1992, 31 (10) 3467
An unusual glucomannan from *Tornabenia intricata*

- Terashita T, Ueda M, Yoshikawa K, Kono M, Shishiyama J// Kinki Univ, Fac Agr, Food Microbiol Lab, 3327-204 Nakamachi, Nara 631, Japan
J JPN SOC FOOD SCI TECHNOL 1992, 39 (9) 827
Changes in chitin and normal-acetylglucosamine contents and chitinolytic enzyme activities (Japanese)
- Tokura S, Kaneda Y, Miura Y, Uraki Y// Dept Polym Sci, Fac Sci, Hokkaido Univ, Sapporo 060, Japan
CARBOHYD POLYM 1992, 19 (3) 185
Two-step hydrolyses of a polymeric drug under a model system
- Tomoda M, Asahara H, Gonda R, Takada K// Kyoritsu Coll Pharmaceut Sci, Minato ku, Tokyo 105, Japan
CHEM PHARM BULL TOKYO 1992, 40 (8) 2219
Constituents of the seed of *Malva verticillata*. 8. Smith degradation of MVS-VI, the major acidic polysaccharide, and anti-complementary activity of products - Note
- Tsami E, Vagenas GK, Marinoukouris D*// *Natl Techn Univ Athens, Dept Chem Engr, Sector 2, Unit Operat Lab, 9 Heron Polytech St, Zografos, GR-15773 Athens, Greece
J FOOD PROCESS PRESERV 1992, 16 (3) 151
Moisture sorption isotherms of pectins
- Tsigenidis T// Univ Patras, Dept Chem, Patras, Greece
COMP BIOCHEM PHYSIOL PT B 1992, 103 (1) 275
Influence of oversulphation and neutral sugar presence on the chondroitinases AC and ABC actions towards glycosaminoglycans from ray (*Raja clavata*) and squid (*Illex illecebrosus coidentii*) skin
- Tsujibo H, Yoshida Y, Miyamoto K, Hasegawa T, Inamori Y// Osaka Univ Pharmaceut Sci, 10-65 Kawai 2 chome, Matsubara, Osaka 580, Japan
BIOSCI BIOTECHNOL BIOCHEM 1992, 56 (8) 1304
Purification and properties of 2 types of chitinases produced by an alkalophilic actinomycete
- Tsybulsky AV, Isachkova LM, Ovodova RG, Glazkova VE, Besednova NN, Orlova TG// Russian Acad Med Sci, Siberian Div, Epidemiol & Microbiol Res Inst, Vladivostok, Russia
ZH MIKROB EPIDEM IMMUN SSSR 1992, (3) 62
Influence of mytilane, bioglycan obtained from mussels of the species *Crenomytilus grayanus*, on the course and outcome of experimental influenza infection
- Turner SH, Chermiak R*, Reiss E, Kwonchung KJ// *Georgia State Univ, Dept Chem, Atlanta, Ga 30303, USA
CARBOHYD RES 1992, 233 205
Structural variability in the glucuronyloxylomannan of *Cryptococcus neoformans* serotype A isolates determined by ¹³C NMR spectroscopy
- Upadrashta SM, Katikaneni PR, Nuessle NO// Univ Missouri, Sch Pharm, Kansas City, Mo 64110, USA
DRUG DEVELOP IND PHARM 1992, 18 (15) 1701
Chitosan as a tablet binder
- Van Buren JP, Pitifer LA// Cornell Univ, Dept Food Sci & Technol, Geneva, NY 14456, USA
J FOOD SCI 1992, 57 (4) 1022
Retarding vegetable softening by cold alkaline pectin de-esterification before cooking
- Vitovskaya GA, Ananeva EP, Golovkin VV// St Petersburg Chemicopharmaceut Inst, St Petersburg, Russia
MICROBIOLOGY-ENGL TR 1992, 61 (1) 18
Synthesis of extracellular heteroglucans by the yeasts *Cryptococcus humicolus* and *Bullera alba*
- Waler PJ, Andersen M, Graffner C, Muller BW// Apothekernes Lab AS, POB 158, N-0212 Oslo, Norway
ACTA PHARM NORDICA 1992, 4 (3) 167
Influence of compaction pressure on the properties of xanthan/guar gum matrix tablets
- Walinder G, Arora RG, Bierke P, Broomekarlsson A, Svedenstal BM // Swedish Univ Agr Sci, Exptl Pathol & Risk Res Unit, POB 7031, S-75007 Uppsala, Sweden
ACTA ONCOL 1992, 31 (4) 461
Effects of glucan on the reticuloendothelial system and on the development of tumors in ⁹⁰Sr-exposed mice
- Wang P, Broda P*// *Univ Manchester, Inst Sci & Technol, Dept Biochem & Appl Molec Biol, POB 88, Manchester M60 1QD, England
APPL ENVIRON MICROBIOL 1992, 58 (10) 3433
Stable defined substrate for turbidimetric assay of endoxylanases
- Watase M, Kohyama K, Nishinari K*// *Shizuoka Univ, Fac Liberal Arts, Chem Res Lab, Oya, Shizuoka 422, Japan
THERMOCHIM ACTA 1992, 206 (SEP) 163
Effects of sugars and polyols on the gel-sol transition of agarose by differential scanning calorimetry
- Wegrzyn TF, MacRae EA// DSIR, Private Bag, Auckland 1, New Zealand
HORTSCIENCE 1992, 27 (8) 900
Pectinesterase, polygalacturonase, and beta-galactosidase during softening of ethylene-treated kiwifruit
- Wei YC, Hudson SM*, Mayer JM, Kaplan DL// *Nth Carolina State Univ, Fiber & Polymer Sci Program, Box 8301, Raleigh, NC 27695, USA
J POLYM SCI A-POLYM CHEM 1992, 30 (10) 2187
The crosslinking of chitosan fibers
- Wicker L// Univ Georgia, Dept Food Sci & Technol, Athens, Ga 30602, USA
J FOOD SCI 1992, 57 (2) 534
Selective extraction of thermostable pectinesterase
- Will F, Handschuh D, Dietrich H// Forsch Anstalt Geisenheim, Fachgebiet Weinanalyt & Getrankeforsch, Postfach 1154, W-6222 Geisenheim, FRG
FOOD SCI TECHNOL-LEBENS WISS 1992, 25 (4) 380
Influence of residual pectins on the cross-flow filtration of apple juice - Results of enzymic degradation studies (German, English Abstract)
- Williams AG, Withers SE// Hannah Res Inst, Ayr KA6 5HL, Scotland
CURR MICROBIOL 1992, 25 (5) 297
Induction of xylan-degrading enzymes in *Butyrivibrio fibrisolvens*
- Williams DL, Pretus HA, Bowder IW// E Tennessee State Univ, James H Quillen Coll Med, Dept Surg, Glucan Res Lab, Johnson City, Tn 37614, USA
J LIQ CHROMATOGR 1992, 15 (13) 2297
Application of aqueous gel permeation chromatography with in-line multiangle laser light scattering and differential viscometry detectors for the characterization of natural product carbohydrate pharmaceuticals
- Windle JJ, Scherrer R// USDA ARS, Western Reg Res Ctr, Albany, Ca 94720, USA
MAGN RESON CHEM 1992, 30 (10) 927
ESR spin probe study of water within covalently crosslinked, dextran-based microbead hydrogels (sephadex G)
- Wolfort SF, Angel MF*, Knight KR, Amiss LR, Morgan RF// *Johns Hopkins Univ, Sch Med, Div Plast Surg, 600 N Wolfe St, Harvey 811, Baltimore, Md 21205, USA
J RECONSTR MICROSURG 1992, 8 (5) 375
The beneficial effect of dextran on anastomotic patency and flap survival in a strongly thrombogenic model
- Xie WB, Lecourtier J*// *Inst Francais Petr, 1 & 4 Ave Bois Preau, F-92500 Rueil Malmaison, France
POLYM DEGRAD STABIL 1992, 38 (2) 155
Xanthan behaviour in water-based drilling fluids
- Yamasaki Y, Ohta Y, Morita K, Nakagawa T, Kawamukai M, Matsuda H// Shimane Univ, Fac Agr, Matsue, Shimane 690, Japan
BIOSCI BIOTECHNOL BIOCHEM 1992, 56 (8) 1325
Isolation, identification, and effect of oxygen supply on cultivation of chitin and chitosan degrading bacterium
- Yanase H, Iwata M, Nakahigashi R, Kita K, Kato N, Tonomura K// Tottori Univ, Fac Engr, Dept Biotechnol, Tottori 680, Japan
BIOSCI BIOTECHNOL BIOCHEM 1992, 56 (8) 1335
Purification, crystallization, and properties of the extracellular levansucrase from *Zymomonas mobilis*
- Yaron A, Cohen E, Arad SM// Ben Gurion Univ Negev, Inst Appl Res, POB 1025, IL-84110 Beer Sheva, Israel
J AGR FOOD CHEM 1992, 40 (8) 1316
Stabilization of *Aloe vera* gel by interaction with sulfated polysaccharides from red microalgae and with xanthan gum
- Yilmazer G, Kokini JL// Rutgers State Univ, Cook Coll, New Jersey Agr Exptl Stn, Ctr Adv Food Technol, Dept Food Sci, POB 231, New Brunswick, NJ 08903, USA
J TEXTURE STUD 1992, 23 (2) 195
Effect of salt on the stability of propylene glycol/alginate/xanthan gum/polysorbate-60 stabilized oil-in-water emulsions
- Yoshida K, Minami Y*, Nemoto H, Numata K, Yamanaka E// *Taiho Pharmaceut Co Ltd, Biol Res Lab, Kawauchi cho, Tokushima 77101, Japan
TETRAEDRON LETT 1992, 33 (34) 4959
Structure of DHG, A depolymerized glycosaminoglycan from sea cucumber, *Stichopus japonicus*
- Yoshioka S, Ukeda H, Matsumoto K, Osajima Y// Kyushu Univ, Fac Agr, Dept Food Sci & Technol, 6-10-1 Hakozaiki, Higashi ku, Fukuoka 812, Japan
J JPN SOC FOOD SCI TECHNOL 1992, 39 (9) 821
Enzymatic determination of pectin and related lower molecular weight compounds in fruits and vegetables using polygalacturonase, pectinesterase, glucuronolactone reductase and ascorbate oxidase (Japanese, English Abstract)
- Zawadzki-Baggio SF, Sierakowski MR, Correa JBC, Reicher F*// *Univ Fed Parana, Dept Biochem, POB 19046, BR-81531 Curitiba, Brazil
CARBOHYD RES 1992, 233 265
A linear (1-5)-linked alpha-L-arabinofuranan from the seeds of guapuruvu

(Schizolobium parahybum)

Zekorn T, Siebers U, Horcher A, Schnettler R, Zimmermann U, Bretzel RG, Federlin K// Univ Giessen, Med 3 Klin, Rodthohl 6, W-6300 Giessen, FRG
 ACTA DIABETOL 1992, 29 (1) 41
 Alginate coating of islets of Langerhans - *In vitro* studies on a new method for microencapsulation for immunoisolated transplantation

7 POLYSACCHARIDES - OTHER

Akiyoshi K, Nagai K, Nishikawa T, Sunamoto J*// *Kyoto Univ, Fac Engr, Dept Polymer Chem, Yoshida Hommachi, Sakyo ku, Koto 606, Japan
 CHEM LETT 1992, (9) 1727
 Self-aggregates of hydrophobized polysaccharide as a host for macromolecular guests

Arad SM, Lerental YB, Dubinsky O// Ben Gurion Univ Negev, Inst Appl Res, POB 1025, IL-84110 Beer Sheva, Israel
 BIORESOURCE TECHNOL 1992, 42 (2) 141

Effect of nitrate and sulfate starvation on polysaccharide formation in *Rhodella reticulata*

Arifkhodjaev AO, Rakhimov DA// Acad Sci, Inst Bot Subst Chem, Tashkent, Uzbekistan

KHIM PRIR SOEDIN SSSR 1992, (3-4) 434

Polysaccharides of saponin-bearing plants. 5. Polysaccharides of above-ground organs of *Allochrysa gypsophiloides* (Russian)

Benhura MAN, Marume M// Univ Zimbabwe, Dept Biochem, POB MP167, Mt Pleasant, Harare, Zimbabwe
 FOOD CHEM 1993, 46 (1) 7

The mucilaginous polysaccharide material isolated from ruredzo (*Dicercocaryum zanguebarium*)

Beynon LM, Richards JC*, Perry MB, Kniskern PJ// *Nat'l Res Council Canada, Inst Biol Sci Ottawa, Ontario, Canada K1A 0R6
 CAN J CHEM 1992, 70 (1) 218

Antigenic and structural relationships within group 19 *Streptococcus pneumoniae* - Chemical characterization of the specific capsular polysaccharides of type 19B and type 19C

Bhattacharjee AK, Kwonchung KJ, Glaudemans CPJ*// *NIH, Bethesda, Md 20892, USA
 CARBOHYD RES 1992, 233 271

The major capsular polysaccharide of *Cryptococcus neoformans* serotype-B

Brink C, Osterberg E, Holmberg K, Tiberg F// Berol Nobel, S-44485 Stenungsund, Sweden
 COLLOID SURFACE 1992, 66 (2) 149

Using poly(ethylene imine) to graft poly(ethylene glycol) or polysaccharide to polystyrene

Callstrom MR, Bednarski MD// Ohio State Univ, Dept Chem, Columbus, Oh 43210, USA

MRS BULL 1992, 17 (10) 54

New carbohydrate-based polymeric materials

Chai WG, Hounsell EF, Cashmore GC, Rosankiewicz JR, Feeney J, Lawson AM*// *MRC, Clin Res Ctr, Clin Mass Spectrometry Sect, Watford Rd, Harrow HA1 3UJ, Middx, England
 EUR J BIOCHEM 1992, 207 (3) 973

Characterisation by mass spectrometry and ¹H-NMR of novel hexasaccharides among the acidic O-linked carbohydrate chains of bovine submaxillary mucin

Ciuffreda P, Colombo D, Ronchetti F, Toma L*// *Univ Pavia, Dipartimento Chim Organ, Viale Taramelli 10, I-27100 Pavia, Italy
 CARBOHYD RES 1992, 232 (2) 327

Conformational analysis of the trisaccharide components of the repeating units of the capsular polysaccharides of *Streptococcus pneumoniae* types 19F and 19A

De Bruin AH, Parolis H*, Parolis LAS// *Rhodes Univ, Sch Pharmaceut Sci, Grahamstown 6140, S Africa

CARBOHYD RES 1992, 233 195

Structural elucidation of the capsular polysaccharide of *E. coli* serotype-K47

Dubinsky O, Simon B, Karamanos Y, Geresh S, Barak Z, Arad SM*// *Ben Gurion Univ Negev, Inst Appl Res, POB 1025, IL-84110 Beer Sheva, Israel
 PLANT PHYSIOL BIOCHEM 1992, 30 (4) 409

Composition of the cell wall polysaccharide produced by the unicellular red alga *Rhodella reticulata*

Dusterhoft EM, Posthumus MA, Voragen AGJ*// *Agr Univ Wageningen, Dept Food Sci, POB 8129, 6700 EV Wageningen, The Netherlands
 J SCI FOOD AGR 1992, 59 (2) 151

Non-starch polysaccharides from sunflower (*Helianthus annuus*) meal and palm kernel (*Elaeis guineensis*) meal investigation of the structure of major polysaccharides

Filippova OE, Borisova VN// Address not available

J APPL CHEM-ENGL TR 1991, 64 (8) 1654

IR-spectral analysis of immunodominant acetyl groups in natural polysaccharides

Girhammar U, Nair BM// Univ Lund, Ctr Chem, Dept Appl Nutr & Food Chem, Box 124, S-22100 Lund, Sweden
 FOOD HYDROCOLLOID 1992, 6 (3) 285

Isolation, separation and characterization of water soluble non-starch polysaccharides from wheat and rye

Gruppen H, Hame RJ, Voragen AGJ*// *Agr Univ Wageningen, Dept Food Sci, POB 8129, 6700 EV Wageningen, The Netherlands
 J CEREAL SCI 1992, 16 (1) 41

Water-unextractable cell wall material from wheat flour. 1. Extraction of polymers with alkali

Hansman D// Adelaide Childrens Hosp Inc, Womens & Childrens Hosp, Dept Microbiol, Adelaide, SA 5006, Australia
 MED J AUSTRALIA 1992, 157 (6) 430

Licensure of new generation conjugated *Haemophilus influenzae* type b vaccines (Letter)

Hatanaka K, Song SC, Maruyama A, Kobayashi A, Kuzuhara H, Akaike T// Tokyo Inst Technol, Dept Biomolec Engr, Midori ku, Yokohama, Kanagawa 227, Japan

BIOCHEM BIOPHYS RES COMMUN 1992, 188 (1) 16

A new synthetic hypoglycaemic polysaccharide

Henk LL, Linden JC// Colorado State Univ, Dept Agr & Chem Engr, Ft Collins, Co 80523, USA

ENZYME MICROB TECHNOL 1992 14 (11) 923

Simultaneous ensiling and enzymatic hydrolysis of structural polysaccharides

Huber A// Karl Franzens Univ, Inst Phys Chem, Heinrichstr 28, A-8010 Graz, Austria

MAKROMOL CHEM-MACROMOL SYMP 1992, 61 248

Characterization of polysaccharide solutions by means of chromatography multidetector

Ikekawa T, Saitoh H, Feng WJ, Zhang HL, Li LF, Matsuzawa T// Nat'l Canc Ctr, Res Inst, Tsukiji 5-1-1, Chuo ku, Tokyo 104, Japan

CHEM PHARM BULL TOKYO 1992, 40 (7) 1954

Antitumor activity of *Hypsizigus marmoreus*. 1. Antitumor activity of extracts and polysaccharides - Note

Iwahara S, Maeyama T, Mishima T, Jikibara T, Takegawa K, Iwamoto H// Kagawa Univ, Fac Agr, Dept Bioresource Sci, Miki, Kagawa 76107, Japan

J BIOCHEM TOKYO 1992, 112 (3) 355

Studies on the uronic acid-containing glycoproteins of *Fusarium* sp M7-1. 4. Isolation and identification of 4 novel oligosaccharide units derived from the acidic polysaccharide chain

Kaida Y, Okamoto Y*// *Nagoya Univ, Fac Engr, Dept Appl Chem, Furo cho, Chikusa ku, Nagoya 46401, Japan

BULL CHEM SOC JPN 1992, 65 (8) 2286

Optical resolution by supercritical fluid chromatography using polysaccharide derivatives as chiral stationary phases

Kandil AA, Chan N, Chong P, Klein M// Connaught Ctr Biotechnol Res, 1755 Steeles Ave W, Nth York, Ontario, Canada M2R 3T4

SYNLETT 1992, (7) 555

Synthesis of fragments of the capsular polysaccharide of *Haemophilus influenzae* type b on soluble polymeric support

Kavitha R, Chandrashekar A// Cent Food Technol Res Inst, Discipline Cereal Sci & Technol, Mysore 570013, Karnataka, India

CEREAL CHEM 1992, 69 (4) 440

Content and composition of nonstarchy polysaccharides in endosperms of sorghums varying in hardness

Kiho T, Shiose Y, Nagai K, Sakushima M, Ukai S*// *Gifu Pharmaceut Univ, 6-1 Mitahora Higashi 5 chome, Gifu 502, Japan

CHEM PHARM BULL TOKYO 1992, 40 (8) 2212

Polysaccharides in fungi. 29. Structural features of 2 antitumor polysaccharides from the fruiting bodies of *Amillariella tabescens* - Note

Kiho T, Shiose Y, Nagai K, Ukai S*// *Gifu Pharmaceut Univ, Mitahora Higashi 5 chome, Gifu 502, Japan

CHEM PHARM BULL TOKYO 1992, 40 (8) 2110

Polysaccharides in fungi. 30. Antitumor and immunomodulating activities of 2 polysaccharides from the fruiting bodies of *Armillariella tabescens*

Kishida E, Kinoshita C, Sone Y, Misaki A// Hyogo Univ Teachers Educ, Hyogo 67314, Japan

BIOSCI BIOTECHNOL BIOCHEM 1992, 56 (8) 1308

Structures and antitumor activities of polysaccharides isolated from mycelium of *Volvariella volvacea*

Konicek J, Lasik J// Czechoslovak Acad Sci, Inst Microbiol, CS-14220 Prague 4, Czechoslovakia

- FOLIA MICROBIOL PRAGUE 1992, 37 (4) 242
The possibilities of changing the production of exocellular polysaccharides of a mutant *Mycobacterium* strain
- Lapasin R, Pricl S, Tracanelli P// Univ Trieste, Ist Chim Applicata & Ind, Via Valerio 2, I-34127 Trieste, Italy
RHEOL ACTA 1992, 31 (4) 374
Different behaviors of concentrated polysaccharide systems in large-amplitude oscillating shear fields
- Malamataris S, Goidas P, Avgoustakis K// Aristotelian Univ Salonika, Dept Pharm, Pharmaceut Technol Lab, Salonika, Greece
DRUG DEVELOP IND PHARM 1992, 18 (14) 1575
Comparative evaluation of soy polysaccharide as direct compression excipient
- Matsuda M, Worawattanamatekul W, Okutani K// Kagawa Univ, Fac Agr, Miki, Kagawa 76107, USA
NIPPON SUISAN GAKKAISHI 1992, 58 (9) 1735
Simultaneous production of mucopolysaccharides and sulfated polysaccharides by marine *Pseudomonas*
- Matsuhiro B, Rivas P, Lamba D// Univ Santiago Chile, Fac Ciencia, Dept Quim, Casilla 307, Santiago 2, Chile
BOL SOC CHIL QUIM 1992, 37 (2) 89
Polysaccharides from nuclear phases of *Gracilaria chilensis* (Spanish, English Abstract)
- Okada M, Kubota Y// Nagoya Univ, Fac Agr, Chikusa ku, Nagoya 46401, Japan
POLYM J 1992, 24 (10) 1137
Chemical synthesis of polysaccharides. 11. Ring-opening polymerization of 1,6-anhydro-2-O-(para-substituted benzoyl) deoxysugar derivatives
- Osman SF, O'Connor J// USDA ARS, Eastern Reg Res Ctr, 600 E Mermaid Lane, Philadelphia, Pa 19118, USA
J CHROMATOGR 1992, 606 (2) 285
Gas chromatography-mass spectrometry method for the determination of the reducing end of oligosaccharides and polysaccharides
- Paoletti LC, Wessels MR, Michon F, Di Fabio J, Jennings HJ, Kasper DL// Brigham & Womens Hosp, Channing Lab, Boston, Ma 02115, USA
INFEC IMMUNITY 1992, 60 (10) 4009
Group B *Streptococcus* type II polysaccharide-tetanus toxoid conjugate vaccine
- Peeters CCAM, Tenbergen-Meekes AMJ, Poolman JT, Zegers BJM, Rijkers GT// Univ Utrecht, Hosp Children & Youth, Dept Immunol, POB 18009, 3501 CA Utrecht, The Netherlands
VACCINE 1992, 10 (12) 833
Immunogenicity of a *Streptococcus pneumoniae* type 4 polysaccharide-protein conjugate vaccine is decreased by admixture of high doses of free saccharide
- Perry MB, MacLean LL// Natl Res Council Canada, Inst Biol Sci, Ottawa, Ontario, Canada K1A 0R6
CARBOHYD RES 1992, 232 (1) 143
Structure of the polysaccharide O antigen of *Salmonella riogrande* O:40 (group R) related to blood group A activity
- Potin P, Patier P, Floch JY, Yvin JC, Rochas C, Kloareg B// Ctr Etud Oceanog & Biol Marine, CNRS, UPR 4601, BP 74, F-29682 Roscoff, France
J APPL PHYCOL 1992, 4 (2) 119
Chemical characterization of cell-wall polysaccharides from tank-cultivated and wild plants of *Delesseria sanguinea* (Hudson) Lamouroux (Ceramiales, Delesseriaceae) - Culture patterns and potent anticoagulant activity
- Puhlmann J, Knaus U, Tubaro L, Schaefer W, Wagner H*// *Univ Munich, Inst Pharmaceut Biol, W-8000 Munich 2, FRG
PHYTOCHEMISTRY 1992, 31 (8) 2617
Immunologically active metallic ion-containing polysaccharides of *Achyrocline satureioides*
- Reimer KB, Gidney MAJ, Bundle DR, Pinto BM*// *Simon Fraser Univ, Dept Chem, Burnaby, Brit Columbia, Canada V5A 1S6
CARBOHYD RES 1992, 232 (1) 131
Immunochemical characterization of polyclonal and monoclonal *Streptococcus* group A antibodies by chemically defined glycoconjugates and synthetic oligosaccharides
- Roy R, Tropper FD, Romanowska A, Jain RK, Piskorz CE, Matta KL// Univ Ottawa, Dept Chem, Ottawa, Ontario, Canada K1N 6N5
BIOORG MEDICINAL CHEM LETTER 1992, 2 (9) 911
Direct access to neoglycoproteins and glycopolymers from single precursors - Synthesis of T-antigen and N-acetyl-lactosamine-beta-D-(1-6)-alpha-D-GalNAc conjugates
- Sarrette M, Nout MJR, Gervais P, Rombouts FM// Ecole Natl Super Biol Appl Nutr & Alimentat, CUM, Genie Procedes Lab, F-21000 Dijon, France
APPL MICROBIOL BIOTECHNOL 1992, 37 (4) 420
Effect of water activity on production and activity of *Rhizopus oligosporus* polysaccharidases
- Schneerson R, Levi L, Robbins JB, Bryla DM, Schiffman G, Lagergard T// NICHHD, Dev & Molec Immun Lab, Bethesda, Md 20892, USA
INFEC IMMUNITY 1992, 60 (9) 3528
Synthesis of a conjugate vaccine composed of *Pneumococcus* type 14 capsular polysaccharide bound to pertussis toxin
- Spijker NM, Westerduin P, Van Boeckel CAA// Organon Int BV, Sci Dev Grp, POB 20, 5340 BH Oss, The Netherlands
TETRAHEDRON 1992, 48 (30) 6297
Synthesis of a pentasaccharide and a heptasaccharide corresponding to an ovarian glycoprotein - Studies towards glycosylations
- Sunamoto J, Sato T, Taguchi T, Hamazaki H// Kyoto Univ, Dept Polymer Chem, Mat Sci Polymer & Artificial Cell Technol Labs, Sakyo ku, Kyoto 606, Japan
MACROMOLECULES 1992, 25 (21) 5665
Naturally occurring polysaccharide derivatives which behave as an artificial cell wall on an artificial cell liposome
- Tandavanit S, Tajima S, Okutani K// Kagawa Univ, Fac Agr, Kida, Kagawa 76107, Japan
NIPPON SUISAN GAKKAISHI 1992, 58 (8) 1511
The structure of an extracellular mucopolysaccharide produced by a marine *Pseudomonas*
- Tzianabos AO, Pantosti A, Baumann H, Brisson JR, Jennings, HJ, Kasper DL// Harvard Univ, Brigham & Womens Hosp, Sch Med, Channing Lab, 180 Longwood Ave, Boston, Ma 02115, USA
J BIOL CHEM 1992, 267 (25) 18230
The capsular polysaccharide of *Bacteroides fragilis* comprises 2 ionically linked polysaccharides
- Ukai S, Kiriki H, Nagai K, Kiho T// Gifu Pharmaceut Univ, 6-1 Mitahora Higashi 5 chome, Gifu 502, Japan
YAKUGAKU ZASSHI-J PHARM SOC J 1992, 112 (9) 663
Synthesis and antitumor activities of conjugates of mitomycin C-polysaccharide from *Tremella fuciformis*
- Wang JZ, Tsumura H, Shimura K, Ito H*// *Mie Univ, Sch Med, Dept Pharmacol, Tsu, Mie 514, Japan
CANCER LETT 1992, 65 (1) 79
Antitumor activity of polysaccharide from a Chinese medicinal herb, *Acanthopanax giraldui* Harms
- Windhab E, Hone TZ// Deutsch Inst Lebensmitteltech EV, Professor von Klitzing Str 7, W-4570 Quakenbruck, FRG
MAKROMOL CHEM-MACROMOL SYMP 1992, 61 317
Influence of mechanical stress on the molar mass distribution and the rheological behavior of polysaccharides
- Wong CH// Scripps Clin & Res Fdn, Res Inst, Dept Chem, 10666 N Torrey Pines, Rd, La Jolla, Ca 92037, USA
TRENDS BIOTECH 1992, 10 (10) 337
Engineering enzymes for chemoenzymatic synthesis. 1. Practical routes to azasugars and complex carbohydrates
- Worawattanamatekul W, Okutani K// Kagawa Univ, Fac Agr, Miki, Kagawa 76107, Japan
NIPPON SUISAN GAKKAISHI 1992, 58 (9) 1729
Isolation and characterization of a sulfated polysaccharide produced by a marine bacterium
- Xie SS, Liu XJ, Zhang YX, Zhang JL, Zhang DY, Wang YL, Li D, Ni D// Acad Sinica, Chengdu Inst Organ Chem, Chengdu 61005, Peoples Rep China
MACROMOL SCI PURE APPL CHEM 1992, 29 (10) 931
Preparation and release test of rotundine-PIC polysaccharide granules
- Zhang L, Qiu X, Xu J, Du Y, Qian B, Kennedy JF*// *Univ Birmingham, Sch Chem, Res Lab Chem Bioactive Carbohydr & Proteins, Birmingham B15 2TT, England
CARBOHYD POLYM 1992, 19 (3) 161
Studies on fractionation and molecular weights of Chinese lacquer polysaccharide
- Zhbankov RG// BI Stepanov Phys Inst, Prospekt Skaryna 70, Minsk 220072, Belorussia
J MOL STRUCT 1992, 272 (OCT) 347
Vibrational spectra and conformations of monosaccharides and polysaccharides

8 LIPOPOLYSACCHARIDES

- Beynon LM, Griffith DW, Richards JC*, Perry MB// *Natl Res Council Canada, Inst Biol Sci, Ottawa, Ontario, Canada K1A 0R6
J BACTERIOL 1992, 174 (16) 5324
Characterization of the lipopolysaccharide O antigens of *Actinobacillus pleuropneumoniae* serotype 9 and serotype 11 - Antigenic relationships among serotype 9, serotype 11, and serotype 1
- Cryz SJ, Furer E, Bruderer U, Lang AB, Que JU, Wedgwood J, Ruedeberg A, Schaad UB// Univ Bern, Swiss Serum & Vaccine Inst, CH-3000 Bern, Switzerland

- land
PEDIAT PULM 1992, SUPPL 8, 191
Safety and immunogenicity of a *Pseudomonas aeruginosa* O-polysaccharide (O-PS)-toxin a conjugate vaccine in noncolonized and colonized cystic fibrosis (CF) patients
Di Fabio JL, Caroff M, Karibian D, Richards JC, Perry MB*// *Nat'l Res Council Canada, Inst Biol Sci, Ottawa, Ontario, Canada K1A 0R6
FEMS MICROBIOL LETT 1992, 97 (3) 275
Characterization of the common antigenic lipopolysaccharide O-chains produced by *Bordetella bronchiseptica* and *Bordetella parapertussis*
Gupta RK, Szu SC*, Finkelstein RA, Robbins JB// *NICHHD, Dev & Molec Immun Lab, Bethesda, Md 20892, USA
INFEC IMMUNITY 1992, 60 (8) 3201
Synthesis, characterization, and some immunological properties of conjugates composed of the detoxified lipopolysaccharide of *Vibrio cholerae* O1 serotype inaba bound to cholera toxin
Kawahara K, Dejsirilert S, Danbara H, Ezaki T// Kitasato Univ, Dept Bacteriol, 5-9-1 Shirokane, Minato ku, Tokyo 108, Japan
FEMS MICROBIOL LETT 1992, 96 (2-3) 129
Extraction and characterization of lipopolysaccharide from *Pseudomonas pseudomallei*
Knirel YA, Paramonov NA, Shashkov AS, Kochetkov NK, Yarulin RG, Farber SM, Efremenko VI// ND Zelinskii Organ Chem Inst, Moscow, Russia
CARBOHYD RES 1992, 233 185
Structure of the polysaccharide chains of *Pseudomonas pseudomallei* lipopolysaccharides
- ## 9 STARCH
- Aboshosha MH, Ibrahim NA// Natl Res Ctr, Div Text Res, Cairo, Egypt
STARCH 1992, 44 (8) 296
Synthesis and characterization of starch-N-methylol acrylamide-methacrylic acid cation exchange composites
Attenburrow GE, Davies AP*, Goodband RM, Ingman SJ// *Unilever Res Labs, Colworth House, Sharnbrook MK44 1LQ, England
J CEREAL SCI 1992, 16 (1) 1
The fracture behaviour of starch and gluten in the glassy state
Bertoft E, Avall AK// Univ Turku, Abo Akad, Dept Biochem & Pharm, PB 66, SF-20521 Turku, Finland
J INST BREW 1992, 98 (5) 433
Structural analysis on the amylopectin of waxy-barley large starch granules
Bertrand D, Scotter CNG// INRA, BP 527, rue Geraudiere, F-44026 Nantes 03, France
APPL SPECTROSC 1992, 46 (9) 1420
Application of multivariate analyses to NIR spectra of gelatinized starch
Carcea M, Cubadda R, Acquistucci R// Natl Inst Nutr, Studies Cereals Lab, Via Ardeatina 546, I-00178 Rome, Italy
J FOOD SCI 1992, 57 (4) 1024
Physicochemical and rheological characterization of sorghum starch
Case SE, Hamann DD, Schwartz SJ// Nth Carolina State Univ, Dept Food Sci, Raleigh, NC 27695, USA
CEREAL CHEM 1992, 69 (4) 401
Effect of starch gelatinization on physical properties of extruded wheat-based and corn-based products
Chedid LL, Kokini JL// Rutgers State Univ, Ctr Adv Food Technol, Dept Food Sci, New Jersey Agr Expt Stn, New Brunswick, NJ 08903, USA
CEREAL CHEM 1992, 69 (5) 551
Influence of protein addition on rheological properties of amylose-based and amylopectin-based starches in excess water
Cherian XM, Satyamoorthy P, Kumar VNG// Hindustan Lever Res Ctr, Bombay 400099, India
STARCH 1992, 44 (8) 301
Starch derivatives for flocculation of ferric soaps
Doane WM// USDA ARS, Natl Ctr Agr Utilizat Res, 1815 N Univ St, Peoria, IL 61604, USA
STARCH 1992, 44 (8) 293
USDA research on starch-based biodegradable plastics
Fannon JE, Bemiller JN*// *Purdue Univ, Dept Food Sci, Whistler Ctr Carbohydrate Res, West Lafayette, In 47907, USA
CEREAL CHEM 1992, 69 (4) 456
Structure of corn starch paste and granule remnants revealed by low-temperature scanning electron microscopy after cryopreparation
Fanta GF, Dintzis FR, Bagley EB, Christianson DD// US Dept Agr, ARS, Natl Ctr Agr Utilizat Res, Plant Polymer Res, 1815 N Univ St, Peoria, IL 61604, USA
CARBOHYD POLYM 1992, 19 (4) 253
The influence of pH on the viscous behavior of starch-poly(ethylene-co-acrylic acid) complexes
Fiedurek J// Univ Marie Curie Sklodowska, Inst Microbiol, Akademicka 19, PL-20033 Lublin, Poland
ACTA MICROBIOL POL 1991, 40 (3-4) 197
Glucose oxidase synthesis by *Aspergillus niger* BIV-10 on starch
Goni I, Gurruchaga M, Vazquez B, Valero M, Guzman GM// Univ Pais Vasco, Fac Quim, Dept Ciencia & Tecnol Polimeros, Apdo 1072, E-20080 San Sebastian, Spain
EUR POLYM J 1992, 28 (8) 975
Synthesis of graft copolymers of acrylic monomers on amylose - Effect of reaction time
Gudmundsson M, Eliasson AC// Univ Lund, Dept Food Technol, Box 124, S-22100 Lund, Sweden
J CEREAL SCI 1992, 16 (2) 95
Some physical properties of barley starches from cultivars differing in amylose content
Gurruchaga M, Goni I, Valero M, Guzman GM// Univ Pais Vasco, Fac Quim, Dept Ciencia & Tecnol Polimeros, Apdo 1072, E-20080 San Sebastian, Spain
POLYMER 1992, 33 (13) 2860
Graft copolymerization of hydroxylic methacrylates and ethyl acrylate onto amylopectin
Gurruchaga M, Goni I, Valero M, Guzman GM// Univ Pais Vasco, Fac Quim, Dept Ciencia & Tecnol Polimeros, Apdo 1072, E-20080 San Sebastian, Spain
POLYMER 1992, 33 (15) 3274
Synthesis of graft copolymers of hydrophobic and hydrophilic methacrylates onto amylopectin
Hauber RJ, Bemiller JN*, Fannon JE// *Purdue Univ, Whistler Ctr, Carbohydrate Res, 1160 Smith Hall, West Lafayette, In 47907, USA
STARCH 1992, 44 (9) 323
Swelling and reactivity of maize starch granules
Hoover R, Vasanthan T// Mem Univ Newfoundland, Dept Biochem, St John's, NF, Canada A1B 3X9
CARBOHYD POLYM 1992, 19 (4) 285
Studies on isolation and characterization of starch from oat (*Avena nuda*) grains
Horn CH, Dupreez JC*, Kilian SG// *Univ Orange Free State, Dept Microbiol & Biochem, POB 339, Bloemfontein 9300, S Africa
BIORESOURCE TECHNOL 1992, 42 (1) 27
Fermentation of grain sorghum starch by co-cultivation of *Schwanniomyces occidentalis* and *Saccharomyces cerevisiae*
Islam MN, Azemi BMNM// Univ Sains Malaysia, Sch Ind Technol, George Town 11800, Malaysia
STARCH 1992, 44 (9) 332
Effect of molar substitution (MS) on calcium binding by hydroxypropyl rice starches
Jane J, Shen L, Chen J, Lim S, Kasemsuwan T, Nip WK// Iowa State Univ Sci & Technol, Dept Food Sci & Human Nutr, Ames, Ia 50011, USA
CEREAL CHEM 1992, 69 (5) 528
Physical and chemical studies of taro starches and flours
Jane J, Xu A, Radosavljevic M, Seib PA// Iowa State Univ Sci & Technol, Dept Food Sci & Human Nutr, Ames, Ia 50011, USA
CEREAL CHEM 1992, 69 (4) 405
Location of amylose in normal starch granules. 1. Susceptibility of amylose and amylopectin to cross-linking reagents
Kalichevsky MT, Blanshard JMV// Nottingham Univ, Sch Agr, Dept Appl Biochem & Food Sci, Sutton Bonington, Loughborough LE12 5RD, England
CARBOHYD POLYM 1992, 19 (4) 271
A study of the effect of water on the glass transition of 1:1 mixtures of amylopectin, casein and gluten using DSC and DMTA
Kim CS, Walker CE// Kansas State Univ Agr & Appl Sci, Dept Grain Sci & Ind, Manhattan, Ks 66506, USA
J FOOD SCI 1992, 57 (4) 1009
Changes in starch pasting properties due to sugars and emulsifiers as determined by viscosity measurement
Kim HR, Eliasson A-C, Larsson K// Univ Lund, Chem Ctr, Dept Food Technol, POB 124, S-22100 Lund, Sweden
CARBOHYD POLYM 1992, 19 (3) 211
Dynamic rheological studies on an interaction between lipid and various native and hydroxypropyl potato starches
Kim SS, Setser CS// Korean Food Res Inst, Kyonggi-do, Sth Korea
CEREAL CHEM 1992, 69 (4) 447
Wheat starch gelatinization in the presence of polydextrose or hydrolyzed barley beta-glucan

- Lawton JW// USDA ARS, Natl Ctr Agr Utilizat Res, Peoria, IL 61604, USA
CEREAL CHEM 1992, 69 (4) 351
Viscoelasticity of zein-starch doughs
- Lim H, Setser CS, Paukstelis JV, Sobczynska D// Kansas State Univ Agr & Appl Sci, Dept Food & Nutr, Manhattan, KS 66506, USA
CEREAL CHEM 1992, 69 (4) 382
¹⁷O nuclear magnetic resonance studies on wheat starch-sucrose-water interactions with increasing temperature
- Liu H, Lelievre J*// *Acadia Univ, Dept Food Sci, Wolfville, Nova Scotia, Canada B0P 1X0
CARBOHYD POLYM 1992, 19 (3) 179
Transitions in frozen gelatinized-starch systems studied by differential scanning calorimetry
- Madeka H, Kokini JL*// *Rutgers State Univ, Ctr Adv Food Technol, Dept Food Sci, New Brunswick, NJ 08903, USA
CEREAL CHEM 1992, 69 (5) 489
Effect of addition of zein and gliadin on the rheological properties of amylopectin starch with low to intermediate moisture
- Margeli MT, Vazquez B, Valero M, Guzman GM// Ctr Estudios & Invest Tecn, Apartado 1555, Donostia, Spain
EUR POLYM J 1992, 28 (8) 981
Effect of acetonitrile as cosolvent on the grafting of methyl methacrylate onto amylose
- McGuire MR, Shasha BS// USDA ARS, Natl Ctr Agr Utilizat Res, 1815 N Univ, Peoria, IL 61604, USA
J ECON ENTOMOL 1992, 85 (4) 1425
Adherent starch granules for encapsulation of insect control agents
- Mistry AH, Schmidt SJ, Eckhoff SR*, Sutherland JW// *Univ Illinois, Dept Agr Engr, 1302 W Penn Ave, Urbana, IL 61801, USA
STARCH 1992, 44 (8) 284
Alkali extraction of starch from corn flour
- Mok KL, Duvnjak Z*// *Univ Ottawa, Fac Engr, Dept Chem Engr, 161 Louis Teur, Ottawa, Ontario, Canada K1N 6N5
ACTA BIOTECHNOL 1992, 12 (4) 303
Effect of calcium carbonate on conversion of starch to ethanol by *Schwanniomyces castellii*
- Moradian A, Benner SA*// *Swiss Fed Inst Technol, Organ Chem Lab, CH-8092 Zurich, Switzerland
J AMER CHEM SOC 1992, 114 (18) 6980
A mimetic biotechnological process for converting starch to fructose - Thermodynamic and evolutionary considerations in applied enzymology
- Murdoch KA// Univ Glasgow, Dept Chem, Glasgow G12 8QQ, Scotland
CARBOHYD RES 1992, 233 161
The amylose iodine complex
- Nguyen V, Bednarski W*, Kowalewska-Piontas J, Tomasik J// *Univ Agr 7 Technol, Inst Food Biotechnol, PL-10957 Olsztyn, Poland
ACTA BIOTECHNOL 1992, 12 (4) 325
The growth conditions of *Cephalosporium eichhorniae* for the conversion of starch substrates to protein
- Nguyen XQ, Sipek M, Nguyen QT// Czechoslovak Acad Sci, Inst Chem Proc Fundamentals, Suchbát 2, CS-16502 Prague 6, Czechoslovakia
POLYMER 1992, 33 (17) 3698
Permeation of carbon dioxide and water vapour in plasticized poly(vinylchloride) starch blends - Anomalous behaviour
- Padmanabhan S, Lonsane BK// Cent Food Technol Res Inst, Fermentat Technol & Bioengn Discipline, Mysore 570013, Karnataka, India
STARCH 1992, 44 (9) 328
Comparative physico-chemical and functional properties of cassava starches obtained by conventional and enzyme-integrated conventional techniques
- Pettijohn TM// Phillips Petr Co, 83 E Prc, Bartlesville, OK 74004, USA
CHEMTECH 1992, 22 (10) 627
Starch polyolefin blends as environmentally degradable plastics
- Potze J// AVEBE, Res & Dev, Proc Res, Benden Oosterdiep 158, POB 15, 96400 AA Veendam, The Netherlands
STARCH 1992, 44 (8) 283
Determination of the potato starch content in a slurry by an areometer
- Rajagopalan S, Seib PA*// *Kansas State Univ Agr & Appl Sci, Dept Grain Sci & Ind, Manhattan, KS 66506, USA
J CEREAL SCI 1992, 16 (1) 13
Granular cold-water-soluble starches prepared at atmospheric pressure
- Rajagopalan S, Seib PA*// *Kansas State Univ Agr & Appl Sci, Dept Grain Sci & Ind, Manhattan, KS 66506, USA
J CEREAL SCI 1992, 16 (1) 29
Properties of granular cold-water-soluble starches prepared at atmospheric pressure
- Sala RM, Tomka IA*// *Swiss Fed Inst Technol, Inst Polymere, CH-8092 Zurich, Switzerland
ANGEW MAKROMOL CHEM 1992, 199 45
Sorption behaviour of native and thermoplastic starch (German, English Abstract)
- Sarazin D, Francois JH, Verwaerde C, Fleche G// Univ Strasbourg 1, Inst Charles Sadron, 6 rue Boussingault, F-67083 Strasbourg, France
J APPL POLYM SCI 1992, 46 (4) 715
Structural study of fractionated hydroxyethyl-amylopectin in aqueous solution
- Schafhauser DY, Storey KB*// *Carleton Univ, Inst Biochem, Dept Biol, Ottawa, Ontario, Canada K1S 5B6
APPL BIOCHEM BIOTECH 1992, 36 (1) 63
Fructose production - Coimmobilized amyloglucosidase, pullulanase, and glucose isomerase on BioBone
- Sebecic B// Univ Zagreb, Fac Pharm & Biochem, Dept Food Chem, Domagojeva 2-1, Zagreb-41000, Croatia
NAHRUNG 1992, 36 (4) 333
Re-evaluation of simple colorimetric method for damaged starch determination
- Shogren RL, Swanson CL, Thompson AR// USDA ARS, Natl Ctr Agr Utilizat Res, 1815 N Univ St, Peoria, IL 61604, USA
STARCH 1992, 44 (9) 335
Extrudates of cornstarch with urea and glycols - Structure mechanical property relations
- Shukla PG, Sivaram S*, Mohanty B// *Natl Chem Lab, Div Polymer Chem, Poona 41108, Maharashtra, India
POLYMER 1992, 33 (17) 3611
Structure of carbofuran in crosslinked starch matrix by ¹³C NMR - Correlation of release and swelling kinetics with the dynamic behaviour of polymer chains
- Sims KA, Cheryan M// Univ Georgia, Dept Food Sci & Technol, Athens, GA 30602, USA
STARCH 1992, 44 (9) 341
Continuous saccharification of corn starch in a membrane reactor. 1. Conversion, capacity and productivity
- Sims KA, Cheryan M// Univ Georgia, Dept Food Sci & Technol, Athens, GA 30602, USA
STARCH 1992, 44 (9) 345
Continuous saccharification of corn starch in a membrane reactor. 2. Membrane performance and reactor stability
- Sissons MJ, Lance RCM, Sparrow DHB// Univ Adelaide, Waite Agr Res Inst, Dept Plant Sci, Glen Osmond, SA 5064, Australia
J CEREAL SCI 1992, 16 (2) 107
Studies on limit dextrinase in barley. 1. Purification of malt limit dextrinase and production of monospecific antibodies
- Sissons MJ, Lance RCM, Sparrow DHB// Univ Adelaide, Waite Agr Res Inst, Dept Plant Sci, Glen Osmond, SA 5064, Australia
J CEREAL SCI 1992, 16 (2) 117
Studies on limit dextrinase in barley. 2. Application of an ELISA and immunoblotting to studies of genetic variability and malting effects
- Sowa SMH, White PJ*// *Iowa State Univ Sci & Technol, Dept Food Sci & Human Nutr, 3367 Dairy Ind Bldg, Ames, IA 50011, USA
CEREAL CHEM 1992, 69 (5) 521
Characterization of starch isolated from oat groats with different amounts of lipid
- Strantz AA, Zottola EA*// *Univ Minnesota, Dept Food Sci & Nutr, 1334 Eckles Ave, St Paul, MN 55108, USA
J FOOD PROTECT 1992, 55 (9) 736
Stability of cornstarch-containing polyethylene films to starch-degrading enzymes
- Takahashi K, Wada K// Tokyo Noko Univ, Fac Agr, Fuchu, Tokyo 183, Japan
J FOOD SCI 1992, 57 (5) 1140
Reversibility of salt effects on the thermal stability of potato starch granules
- Teo CH, Seow CC*// *Univ Sains Malaysia, Sch Ind Technol, Div Food Technol, George Town 11800, Malaysia
STARCH 1992, 44 (8) 288
A pulsed NMR method for the study of starch retrogradation
- Vasanthan T, Hoover R*// *Mem Univ Newfoundland, Dept Biochem, St Johns, Newfoundland, Canada A1B 3X9
FOOD CHEM 1992, 45 (5) 337
Effect of defatting on starch structure and physicochemical properties
- Vorwerg W, Burchard W// Fraunhofer Inst Appl Polymer Res Teltow, O-1505 Bergholz Rehbrücke, FRG
MAKROMOL CHEM-MACROMOL SYMP 1992, 61 342
Molecular characterization of starch polysaccharides
- Waliszewski KN, Garcia M, Medina A, Medina JD// Inst Technol, Ctr Grad, POB 1420, Veracruz 91870, Mexico

- INT J FOOD SCI TECHNOL 1992, 27 (4) 465
Kinetics of enzymic hydrolysis of cassava flour starch - Optimization and modelling
Wang XX, Huang MY, Jiang YY*// *Acad Sinica, Inst Chem, Beijing 100080, Peoples Rep China
REACT POLYM 1992, 18 (1) 1
Hydrogenation of aromatic compounds catalyzed by platinum complex of starch poly-gamma-aminopropylsiloxane
Wienhold BJ, Gish TJ// USDA ARS, Beltsville Agr Res Ctr, Hydrol Lab, Bldg 265, Barc E, Beltsville, Md 20705, USA
J ENVIRON QUAL 1992, 21 (3) 382
Effect of water potential, temperature, and soil microbial activity on release of starch-encapsulated atrazine and alachlor
Zhang JW, Wu DH// Tianjin Univ, Dept Chem, Tianjin 300072, Peoples Rep China
J APPL POLYM SCI 1992, 46 (2) 369
Characteristics of the aqueous solution of carboxymethyl starch ether
Zhang QZ, Kullmann A, Greef JM// Zhejiang Agr Univ, Inst Nucl Agr Sci, Zhejiang, Peoples Rep China
J AGRON CROP SCI 1992, 169 (4) 217
A practical application of starch determination in vegetative plant material
- ## 10 STARCH-DEGRADING ENZYMES
- Ajandouz EH, Abe J, Svensson B, Marchis-Mouren G*// *Univ Aix Marseille 3, Fac Sci, Biochim & Biol Molec Nutr Lab, Ave Escadr Normandie Niemen, F-13397 Marseille 13, France
BIOCHEM BIOPHYS ACTA 1992, 1159 (2) 193
Barley malt alpha-amylase - Purification, action pattern, and subsite mapping of isozyme-1 and 2 members of the isozyme-2 subfamily using para-nitrophenylated malto-oligosaccharide substrates
Bayramoglu Z, Akbulut U*, Sungur S// *Middle East Tech Univ, Dept Chem, Ankara, Turkey
BIOMATERIALS 1992, 13 (10) 704
Immobilization of alpha-amylase into photographic gelatin by chemical cross-linking
Hata Y, Kawato A, Abe Y, Imayasu S, Ono K, Oka S// Gekkeikan Sake Co Ltd, Res Inst, 24 Shimotoba Koyanagi cho, Fushimi ku, Kyoto 612, Japan
J FERMENT BIOENG 1992, 74 (2) 85
Adsorption of glucoamylase in unpasteurized sake on an affinity column of immobilized glucoamylase inhibitors
Hata Y, Tanaka T, Suizu T, Kawato A, Abe Y, Imayasu S, Ono K, Oka S// Gekkeikan Sake Co Ltd, Res Inst Gekkeikan, 24 Shimotoba Koyanagi cho, Fushimi ku, Kyoto 612, Japan
BIOSCI BIOTECHNOL BIOCHEM 1992, 56 (8) 1345
Rapid assay of glucoamylase using a fluorescence-labeled glucoamylase inhibitor, acarbose
Kilikian BV, Facciotti MCR, Schmidell W// Univ Sao Paulo, Escola Politecn, Dept Engrn Quim, BR-05508 Sao Paulo, Brazil
REV MICROBIOL 1992, 23 (2) 123
Analysis of the kinetic pattern of glucoamylase production regarding the *Aspergillus awamori* preservation time
Kiranias ER, Tzouwaras-Karayannis SM, Karayannis MI*// *Univ Ioannina, Dept Chem, GR-45110 Ioannina, Greece
ACTA CHIM HUNG 1992, 129 (3-4) 461
A comparative kinetic study of soluble and immobilized amyloglucosidase on non-porous glass beads with an automated flow injection analysis system
Kunikata T, Yamano H, Nagamura T, Nitta Y*// *Univ Osaka Prefecture, Coll Agr, Biophys Chem Lab, Sakai, Osaka 593, Japan
J BIOCHEM TOKYO 1992, 112 (3) 421
Study on the interaction between soybean beta-amylase and substrate by the stopped-flow method
Leloup VM, Colonna P*, Marchis-Mouren G// *INRA, BP 527, F-44026 Nantes 03, France
CARBOHYD RES 1992, 232 (2) 367
Mechanism of the adsorption of pancreatic alpha-amylase onto starch crystallites
Linko P, Zhu YH// Helsinki Univ Technol, Dept Chem Engrn, Biotechnol & Food Engrn Lab, SF-02150 Espoo, Finland
PROCESS BIOCHEM 1992, 27 (5) 275
Neural network modelling for real time variable estimation and prediction in the control of glucoamylase fermentation
Luna B, Brena B, Diaz T, Batista-Viera F*// *Quim Montevideo, Catedra Bioquim, Gral Flores 2124, Casilla de Correo 1157, Uruguay
HRC-J HIGH RES CHROMATOGR 1992, 15 (7) 482
Affinity chromatography of soybean beta-amylase on phenylboronate agarose
Mai NT, Giang DT*, Minh NTN, Thao VT// *Food Ind Res Inst, Km 8 Nguyen Trai Rd, Hanoi, Vietnam
WORLD J MICROBIOL BIOTECHNOL 1992, 8 (5) 505
Thermophilic amylase-producing bacteria from Vietnamese soils
Pritchard PE// Flour Milling & Baking Res Assoc, Biochem Sect, Chorleywood WD3 5SH, Herts, England
J BIOL EDUC 1992, 26 (1) 12
Studies on the bread-improving mechanism of fungal alpha-amylase
Ratanakhanokchai K, Kaneko J, Kamio Y, Izaki K*// *Tohoku Univ, Fac Agr, Dept Appl Biol Chem, Sendai 981, Japan
APPL ENVIRON MICROBIOL 1992, 58 (8) 2490
Purification and properties of a maltotetraose-producing and maltotriose-producing amylase from *Cloroflexus aurantiacus*
Robbins DJ, Egan B// CSIR, Div Food Sci & Technol, POB 395, Pretoria 0001, Sth Africa
J INST BREW 1992, 98 (5) 383
Failure of mercuric chloride to selectively inhibit beta-amylase in sorghum malt
Sani A, Awe FA, Akinyanju JA// Univ Ilorin, Dept Biol Sci, PMB 1515, Ilorin, Nigeria
J IND MICROBIOL 1992, 10 (1) 55
Amylase synthesis in *Aspergillus flavus* and *Aspergillus niger* grown on cassava peel
Saucedo-Castaneda G, Lonsane BK, Navarro JM, Roussos S, Raimbault M// Autonomous Metropolitan Univ, Dept Biotechnol, Iztapalapa Campus, AP 55-535, Mexico City 9340, Mexico
APPL BIOCHEM BIOTECH 1992, 36 (1) 47
Potential of using a single fermenter for biomass build-up, starch hydrolysis, and ethanol production - Solid state fermentation system involving *Schwan-niomyces castellii*
Soni BK, Kapp C, Goma G, Soucaille P*// *Inst Natl Sci Appl, Dept Genie Biochim & Alimentaire, CNRS, URA 544, Ave Rangueil, F-31077 Toulouse, France
APPL MICROBIOL BIOTECHNOL 1992, 37 (5) 539
Solvent production from starch - Effect of pH on alpha-amylase and glucoamylase localization and synthesis in synthetic medium
Spreinat A, Antranikian G*// *Tech Univ Hambrug, Denickestr 15, W-2100 Hamburg 90, FRG
STARCH 1992, 44 (8) 305
Analysis of the amylolytic enzyme system of *Clostridium thermosulfurogenes* EM1 - Purification and synergistic action of pullulanases and maltohexaoase forming alpha-amylase
Takasaki Y, Tsuruta T, Hayashi S, Imada K// Miyazaki Univ, Fac Engrn, Dept Mat Sci, 1-1 Nishi, Gakuen Kibanadai, Miyazaki 88921, Japan
HAKKOKOGAKU KAISHI 1992, 70 (4) 255
Conditions of saccharification of liquefied starch by a maltotriose-producing amylase from *Microbacterium imperiale* (Japanese, English Abstract)
Takase K// Natl Inst Agrobiol Resources, Dept Molec Biol, Tsukuba, Ibaraki 305, Japan
BIOCHIM BIOPHYS ACTA 1992, 1122 (3) 278
Interaction of catalytic-site mutants of *Bacillus subtilis* alpha-amylase with substrates and acarbose
Thacker SP, Ramamurthy V, Kethari RM// Address not available
STARCH 1992, 44 (9) 339
Characterization of barley beta-amylase for application in maltose production
Weiss W, Postel W, Baumer M, Gorg A// Tech Univ Munich, Lehrstuhl Allgemeine Lebensmitteltechnol, W-8050 Freising, FRG
MONATSSCHR BRAUWISSEN 1992, 45 (9) 285
Isoelectric focussing of amylase isoenzymes for determination of the brewing quality of barley (German, English Abstract)
Yankov D, Peeva L, Beschkov V// Bulgarian Acad Sci, Inst Chem Engrn, Acad G Bonchev Str, Bl 103, BU-1113 Sofia, Bulgaria
STARCH 1992, 44 (8) 315
Maltodextrin hydrolysis with glucoamylase immobilized in polyacrylamide gel
Zheng BY, Khinmaungu, Lu RB, Lebenthal E// Hahnemann Univ, Int Inst Infant Nutr & Gastrointestinal Dis, Mail Stop 402, Philadelphia, Pa 19102, USA
TRANS ROY SOC TROP MED HYG 1992, 86 (4) 451
An optimal rice-based oral rehydration solution - The effect of different concentrations of amylase on production of short chain polymers of glucose