



BIBLIOGRAPHY ON CARBOHYDRATE POLYMERS

1 Books, Reviews and Symposia

ACTA CHIR SCAND 1990, SUPPL 556

Venous Thromboembolism Managing the Risk - Proceedings of a Symposium held in Berlin, October 6th-7th 1989

Contains sub-sections on; Introduction to enoxaparin (Clexane); The clinical use of enoxaparin (Clexane)

HAEMOSTASIS 1990, 20 SUPPL 1

Special Issue - Heparin - Present and Future - Proceedings of the Symposium, Florence, 28-31 March 1990

Rose R, Rose CL, Omi SK, Forry KR, Durall DM, Bigg WL//Oregon State Univ, Dept Forest Sci, Nursery Technol Cooperat, Corvallis, Or 97331, USA

J AGR FOOD CHEM 1991, 39 (1) 2

Starch determination by perchloric acid vs enzymes - Evaluating the accuracy and precision of six colorimetric methods (Review)

2 Cellulose

Dolz-Planas M, Roldan-Garcia C, Herraiz-Dominguez JV, Belda-Maximino R//Valencia Univ, Fac Pharm, Dept Thermodynam, E-46010 Valencia, Spain

J PHARM SCI 1991, 80 (1) 75

Thixotropy of different concentrations of micro-crystalline cellulose-sodium carboxymethyl cellulose gels

Moll HD, Schumacher J, Wright JC, Spano JS//Virginia Maryland Reg Coll Vet Med, Dept Large Anim Clin Sci, Blacksburg, Va 24061, USA

AMER J VET RES 1991, 52 (1) 88

Evaluation of sodium carboxymethylcellulose for prevention of experimentally induced abdominal adhesions in ponies

Abe S, Takagi M*//Nippon Min Co Ltd, Biosci

Res Labs, Niizominami 3-17-35, Toda, Saitama, Japan

BIOTECHNOL BIOENG 1991, 37 (1) 93

Simultaneous saccharification and fermentation of cellulose to lactic acid

Eremeeva TE, Bykova TO, Gromov VS//Latvian AS, Inst Wood Chem, Cellulose Lab, 27 Acad St, Riga 226006, Latvia, USSR

J CHROMATOGR 1990, 522 (NOV) 67

Problems in the size-exclusion chromatography of cellulose nitrates - Non-exclusion effects and universal calibration

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

J APPL POLYM SCI 1991, 42 (3) 813

Effect of amines on the carbanilation of cellulose with phenylisocyanate

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

J APPL POLYM SCI 1991, 42 (3) 821

Pyridine-catalyzed depolymerization of cellulose during carbanilation with phenylisocyanate in dimethylsulfoxide

Felix JM, Gatenholm P*//Chalmers Univ Technol, Dept Polymer Technol, S-41296 Gothenburg, Sweden

J APPL POLYM SCI 1991, 42 (3) 609

The nature of adhesion in composites of modified cellulose fibers and polypropylene

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

J APPL POLYM SCI 1991, 42 (3) 767

Grafting of vinyl acetate-methyl acrylate mixture onto cellulose - Effect of inorganic salts

Gumerov FM, Akhmadeev IR, Sopin VF, Lyapin

As a service to subscribers, each issue of the Journal contains a bibliography of newly published material in the field of carbohydrate polymers. The bibliography is divided into ten sections: 1 Books, Reviews and Symposia; 2 Cellulose; 3 Cellulose-degrading Enzymes; 4 Cyclodextrins; 5 Lignin; 6 Polysaccharides - Named; 7 Polysaccharides - Other; 8 Lipopolysaccharides; 9 Starch; 10 Starch-degrading Enzymes. Within each section, articles are listed in alphabetical order with respect to the subject. When there are no publications to appear under one of these headings, that section will be omitted.

NM, Marchenko GN//Kazan Chem Prod Res Inst, Kazan, USSR

VYSOKOMOL SOEDIN SER B SSSR 1990, 32 (11) 809

Study of microstructure and phase equilibria of the cellulose nitrate-ethyl acetate system by the spin probe method (Russian)

Isogai A, Atalla RH**USDA, Forest Prod Lab, Madison, WI 53705, USA

J POLYM SCI A-POLYM CHEM 1991, 29 (1) 113

Amorphous celluloses stable in aqueous media - Regeneration from SO₂-amine solvent systems

Klemm D, Schnabelrauch M, Stein A, Niemann M, Ritter H**Berg Univ Gesamthoch Wuppertal, Fachbereich 9, Gausstr 20, W-5600 Wuppertal 1, FRG

MAKROMOL CHEM-MACRO CHEM PHYS 1990, 191 (12) 2985

Photoreactive cellulose derivatives with comb-like structure. 1. Modification of O-trialkylsilyl-cellulose with cinnamic acid-containing side chains

Lin CH, Conner AH, Hill CG**Univ Wisconsin, Dept Chem Engr, Madison, WI 53706, USA
J APPL POLYM SCI 1991, 42 (2) 417

The heterogeneous character of the dilute acid hydrolysis of crystalline cellulose. 2. Hydrolysis in sulfuric acid

Maekawa E, Koshijima T//Kyoto Univ, Wood Res Inst, Wood Chem Res Sect, Uji, Kyoto 611, Japan

J APPL POLYM SCI 1991, 42 (1) 169

Preparation and structural consideration of nitrogen-containing derivatives obtained from dialdehyde celluloses

McCormick CL, Dawsey TR, Newman JK//Univ South Mississippi, Dept Polymer Sci, Hattiesburg, MS 39406, USA

CARBOHYD RES 1990, 208 (DEC) 183

Competitive formation of cellulose para-toluene-sulfonate and chlorodeoxycellulose during homogenous reaction of para-toluenesulfonyl chloride with cellulose in N,N-dimethylacetamide lithium chloride

Okubo T//Kyoto Univ Fac Engr, Dept Polymer Chem, Sakyo ku, Kyoto 606, Japan

COLLOID POLYM SCI 1990, 268 (12) 1159

Amorphous solid-like distribution of polydis-

perse particles of colloidal clay and microcrystalline cellulose in deionized suspension

Olsson L, Mandenius CF**Kabi Peptide Hormones, Res & Dev, S-11287 Stockholm, Sweden
ANAL CHEM 1990, 62 (24) 2688

Determination of monosaccharides in cellulosic hydrolyzates using immobilized pyranose oxidase in a continuous amperometric analyzer

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

ENZYME MICROB TECHNOL 1991, 13 (1) 59
Enzyme immobilization using a cellulose-binding domain - Properties of a beta-glucosidase fusion protein

Schwarz HH, Kudela V, Richau K//Inst Polymer Chem, W-1530 Teltow Seehof, FRG

COLLECT CZECH CHEM COMMUN 1990, 55 (12) 2933

Effect of the structure of cellulose acetate membranes on their permeability, electrical conductivity and rejection

Sekiguchi S, Ito K, Kobayashi M, Ikeda H, Manabe S, Tsurumi T, Ishikawa G, Satani M, Yamaguchi K//Hokkaido Red Cross, Ctr Blood, Yamanote 2-2, Nishi ku, Sapporo, Japan
TRANSFUS SCI 1990, 11 (2) 211

An attempt to prepare hepatitis-B virus (HBV)-free plasma by ultrafiltration using microporous regenerated cellulose hollow fiber

Senjkovic R, Becirevic M, Rudic J//Univ Zagreb, Fac Pharm & Biochem, Domagojeva 2, YU-41000 Zagreb, Yugoslavia

PHARMAZIE 1990, 45 (1) 749

Pharmaceutical availability of papaverine hydrochloride from spray-dried products prepared with cellulose phthalates

Shigemasa Y, Kishimoto Y, Sashiwa H, Saimoto H//Tottori Univ, Fac Engr, Dept Mat Sci, Koyama cho, Tottori 680, Japan
POLY J 1990, 22 (12) 1101

Dissolution of cellulose in dimethyl sulfoxide - Effect of thiamine hydrochloride

Shukla SR, Sakhardande VD//Univ Bombay, Dept Chem Technol, Bombay 400019, India

J APPL POLYM SCI 1991, 42 (3) 829

Metal ion removal by dyed cellulosic materials

Tsurumi T, Sato T, Osawa N, Hitaka H, Hirasaki T, Yamaguchi K, Hamamoto Y, Manabe S, Yamashiki T, Yamamoto N//Asahi Chem Ind Co Ltd, Fibers & Text Adm, BMM Project, Imper Tower 18F, 1-1 Uchisaiwai cho 1 chome, Tokyo 100, Japan

POLY J 1990, 22 (12) 1085

Structure of filtration performances of improved cuprammonium regenerated cellulose hollow fiber (improved BMM hollow fiber) for virus removal

Tsvetkov VN, Marchenko GN, Lezov AV, Tsvetkov NV//AA Zhdanov State Univ, Inst Phys, Leningrad B-164, USSR

VYSOKOMOL SOEDIN SER A SSSR 1990, 32 (11) 2391

Kerr effect in cellulose carbanilate solutions in polar solvents (Russian, English Abstract)

York P, Bassam F, Rowe RC, Roberts RJ//Univ Bradford, Sch Pharm, Bradford BD7 1DP, England

INT J PHARM 1990, 66 (1-3) 143

Fracture mechanics of microcrystalline cellulose powders

Heller A, Fischer C//Dresden Univ Technol, Dept Chem, Mommsenstr 13, O-8027 Dresden, FRG

J THERM ANAL 1990, 36 (3) 1063

A DSC study of the ethylcellulose adsorption on silver powders

Wang LF, Pearce EM, Kwei TK**//Polytech Inst New York, Polymer Res Inst, Brooklyn, NY 11201, USA

POLYMER 1991, 32 (2) 249

Mesophase formation of hydroxypropyl cellulose as affected by miscibility with a flexible polymer

Mitchell K, Ford JL*, Armstrong DJ, Elliott PNC, Rostron C, Hogan JE//*Liverpool Polytech, Sch Hlth Sci, Ctr Pharmaceut Sci, Drug Targeting Res Grp, Byrom St, Liverpool L3 3AF, England

INT J PHARM 1990, 66 (1-3) 233

The influence of additives on the cloud point, disintegration and dissolution of hydroxypropylmethylcellulose gels and matrix tablets

Sandhya S, Joshi SR, Parhad NM//Natl Environm Engrg Res Inst, Nagpur 440020, India

J MICROBIAL BIOTECHNOL 1990, 5 (2) 5

Simultaneous disposal and resource recovery

from lignocellulosic waste of paper mills

Sharma HSS/Dept Agr North Ireland, Div Plant Pathol Res, New Forge Lane, Belfast BT9 5PX, North Ireland

THERMOCHIM ACTA 1990, 173 (DEC) 241

Analysis of the components of lignocellulose degraded by *Agaricus bisporus* and *Pleurotus ostreatus*

Johnson DJ, Compton DAC//Bio Rad, Div Digilab, Cambridge, Ma, USA

AMER LAB 1991, 23 (1) 37

Quantitative analysis of nitrocellulose and pulp in gunpowder using TGA-FTIR

Merhari L, Belorgeot C, Moliton JP//Lab Electr Polymeres Faisceaux Ion, 123 Ave Albert Thomas, F-87060 Limoges, France

APPL PHYS LETT 1990, 57 (26) 2785

Etch rate modeling for ion-irradiated nitrocellulose

3 Cellulose-degrading Enzymes

Banerjee UC, Mukhopadhyay SN//Inst Microbial Technol, Kothi 1389, Sector 33C, Chandigarh 160031, India

J MICROBIAL BIOTECHNOL 1990, 5 (2) 19

Evaluation of agro-residues and grass as carbon source for cellulase production

Cochet N//Univ Technol Compiègne, Dept Genie Chim, Div Procèdes Biotechnol, BP 649, F-60206 Compiègne, France

ENZYME MICROB TECHNOL 1991, 13 (2) 104

Cellulases of *Trichoderma reesei* - Influence of culture conditions upon the enzymatic profile

Hogan CM, Meshartree M//Forintek Canada Corp, Dept Biotechnol & Wood Chem, 800 Montreal Rd, Ottawa, Ontario, Canada K1G 3Z5

J IND MICROBIOL 1990, 6 (4) 253

Recycle of cellulases and the use of lignocellulosic residue for enzyme production after hydrolysis of steam-pretreated aspenwood

Kubicek-Franz EM, Vollenhofer S, Fritscher C, Plicka A, Hampel WA, Kubicek CP**//Vienna Tech Univ, Inst Biochem Technol & Mikrobiol, Mikrobielle Biochem Abt, A-1060 Vienna, Austria

ENZYME MICROB TECHNOL 1991, 13 (1) 39
Hexose-phosphorylating enzyme activities and carbon catabolite control of cellulase formation in *Trichoderma reesei* QM 9414 and some partially constitutive cellulase producer strains

Nakamura A, Fukumori F, Horinouchi S, Masaki H, Kudo T, Uozumi T, Horikoshi K, Beppu T//Univ Tokyo, Fac Agr, Dept Biotechnol, Yayoi 1-1-1, Bunkyo ku, Tokyo 113, Japan
J BIOL CHEM 1991, 266 (3) 1579

Construction and characterization of the chimeric enzymes between the *Bacillus subtilis* cellulase and an alkalophilic *Bacillus* cellulase

Raoul Y//Address not available

BULL ACAD NATL MED 1990, 174 (6) 853

Use of cellulase from *Trichoderma reesei* in preparation of fruit and vegetable juices

Sachse H, Kuda G, Berger R//Acad Sci GDR, Inst Biotechnol, Permoserstr 15, O-7050 Leipzig, FRG

ACTA BIOTECHNOL 1990, 10 (6) 523

Production of cellulase in a rotating disc fermenter using immobilized *Trichoderma reesei* cells

Schaffner DW, Toledo RT**//Univ Georgia, Dept Food Sci & Technol, Athens, Ga 30602, USA

BIOTECHNOL BIOENG 1991, 37 (1) 12

Cellulase production by *Trichoderma reesei* when cultured on xylose-based media supplemented with sorbose

Stockton BC, Mitchell DJ, Grohmann K, Himmel ME**//Baltimore Cty Publ Sch Syst, Towson, Md 21204, USA

BIOTECHNOL LETT 1991, 13 (1) 57

Optimum beta-D-glucosidase supplementation of cellulase for efficient conversion of cellulose to glucose

4 Cyclodextrins

Aburatani R, Okamoto Y*, Hatada K//Nagoya Univ, Fac Engn, Dept Synthet Chem, Chikusa ku, Nagoya 46401, Japan

BULL CHEM SOC JPN, 1990, 63 (12) 3606

Optical resolving ability of 3,5-dimethylphenylcarbamates of oligosaccharides of cyclodextrins

Bernabe M, Jimenez-Barbero J, Martin-Lomas M, Penades S*, Vicent C//CSIC, Inst Quim Organ, Juan Cierva 3, E-28006 Madrid, Spain
CARBOHYD RES 1990, 208 (DEC) 255

Chiral recognition of 1-O-allyl-myo-inositol and 1-O-benzyl-D-inositol and 1-O-benzyl-L-inositol myo-inositol by cyclomalto-hexaose and cyclomalto-heptaose (alpha-cyclodextrin and beta-cyclodextrin)

Breslow R, Chung S//Columbia Univ, Dept Chem, New York, NY 10027, USA

J AMER CHEM SOC 1990, 112 (26) 9659

Strong binding of ditopic substrates by a doubly linked occlusive C1 clamshell as distinguished from an aversive C2 loveseat cyclodextrin

Cai Y, Gaffney SH, Lilley TH, Magnolato D, Martin R, Spencer CM, Haslam E**//Univ Sheffield, Dept Chem, Sheffield S3 7HF, England
J CHEM SOC PERKIN TRANS II 1990, (12) 2197

Polyphenol interactions. 4. Model studies with caffeine and cyclodextrins

Chang YI, Reineccius GA//Univ Minnesota, Dept Food Sci & Nutr, St Paul, Mn 55108, USA
J FOOD SCI 1990, 55 (6) 1686

Interaction of beta-cyclodextrin with enantiomers of limonene and carvone

Du Y, Harada T, Nakamura A, Ueno A, Toda F**//Tokyo Inst Technol, Fac Biosci & Biotechnol, Dept Bioengn, O Okayama, Meguro ku, Tokyo 152, Japan
CHEM LETT 1990, (12) 2235

Modified cyclodextrin system for controlling photosensitized reduction of viologen by guests

Eliseyev AV, Yatsimirskii AK//MV Lomonosov State Univ, Moscow 117234, USSR

DOKL AKAD NAUK SSSR 1990, 314 (5) 1158

Molecular recognition of 1,2-dihydroxybenzenes by cyclodextrins (Russian)

Fellous R, Lizzani-Cuvelier L, Loiseau AM//Inst Polytech Mediterranean, UFR Sci, Chim Aromes Lab, 28 Ave Valrose, F-06034 Nice, France
HRC-J HIGH RES CHROMATOGR 1990, 13 (11) 785

Permethylated maltosyl cyclodextrins as chiral stationary phases in capillary gas chromatography - Enantiomer separation of chiral lactones

German A//Address not available

BULL ACAD NATL MED 1990, 174 (6) 833

Admissible trichlorethylene levels and purity criteria for beta-cyclodextrin in procedures using the solvent trichlorethylene

Isnin R, Salam C, Kaifer AE*//Univ Miami, Dept Chem, Coral Gables, FL 33124, USA

J ORG CHEM 1991, 56 (1) 35

Bimodal cyclodextrin complexation of ferrocene derivatives containing n-alkyl chains of varying length

Lee MJ, Fennema OR//Univ Wisconsin, Dept Food Sci, Madison, WI 53706, USA

J AGR FOOD CHEM 1991, 39 (1) 17

Ability of cyclodextrins to inhibit aggregation of beta-casein

Lu TX, Zhang DB, Dong SJ//Acad Sinica, Changchun Inst Appl Chem, Electroanal Chem Lab, Changchun, Peoples R China

ACTA CHIM SIN 1990, 48 (11) 1071

Study on cyclodextrin and its inclusion complexes - Molecular mechanical calculation

Maheswaran MM, Divakar S*//Cent Food Technol Res Inst, Organ Chem Sect, Mysore 570013, Karnataka, India

INDIAN J CHEM SECT A 1991, 30 (1) 30

Studies on the structure of the inclusion compound of beta-cyclodextrin with aspartame

Nielsen HK//Entotech Inc, New Prod Res & Dev, 1497 Drew Ave, Davis, CA 95616, USA

FOOD TECHNOL 1991, 45 (1) 102

Novel bacteriolytic enzymes and cyclodextrin glycosyl transferase for the food industry

Nishijo J, Nagai M//Kobe Womens Coll Pharm, Motoyama kitamachi, Higashinada ku, Kobe 658, Japan

J PHARM SCI 1991, 80 (1) 58

Inclusion complex of 8-anilinoanthracene-1-sulfonate with beta-cyclodextrin

Palepu R, Reinsborough VC*//Mt Allison Univ, Dept Chem, Sackville, NB, Canada E0A 3C0

AUST J CHEM 1990, 43 (12) 2119

Beta-cyclodextrin inclusion of adamantane derivatives in solution

Takahashi K, Ohtsuka Y, Hattori K//Tokyo Inst

Polytech, Fac Engr, Dept Ind Chem, Atsugi, Kanagawa 24302, Japan

CHEM LETT 1990, (12) 2227

Enantioselective inclusion behavior of monosubstituted cyclodextrins with guest-induced substituent movement

Yue W, Ishibashi K, Deguchi T, Sanemasa I*//Kumamoto Univ, Fac Sci, Dept Chem, Kurokami 2-39-1, Kumamoto 860, Japan

BULL CHEM SOC JPN, 1990, 63 (12) 3450

The solubility and cyclodextrin complexations of fluorene, fluoranthene, and pyrene in aqueous medium

5 Lignin

Antai SP, Iyo AH//Univ Calabar, Dept Biol Sci, PMB 1115, Calabar, Nigeria

J BASIC MICROB 1990, 30 (9) 643

Selection of mutant Streptomyces strains with enhanced ability for acid precipitable polymeric lignin production

Baeza J, Freer J, Pedreros A, Schmidt E, Mansilla H, Duran N//Concepcion Univ, Dept Chem, Chem Renewable Resources Lab, Casilla 3-C, Concepcion, Chile

BOL SOC CHIL QUIM 1990, 35 (4) 331

Organosolv pulping-I formic acid-lignin from Pinus radiata D Don

Hammel KE, Moen MA//SUNY Syracuse, Coll Environm Sci & Forestry, Dept Chem, Syracuse, NY 13210, USA

ENZYME MICROB TECHNOL 1991, 13 (1) 15

Depolymerization of a synthetic lignin in vitro by lignin peroxidase

Kurek B, Monties B, Odier E//INRA, Microbiol Lab, F-78850 Thiverval Grignon, France

HOLZFORSCHUNG 1990, 44 (6) 407

Dispersion of lignin in water - Characterization of the phenomenon and influence on lignin enzymic degradability

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

ANGEW CHEM IN ED 1990, 29 (12) 1471

Oxidative degradation of aromatic pollutants by chemical models of ligninase based on porphyrin complexes

Lee DY, Matsuoka M, Sumimoto M//Kyushu Univ, Fac Agr, Dept Forest Prod, Higashi ku, Fukuoka 812, Japan

HOLZFORSCHUNG 1990, 44 (6) 415

Mechanochemistry of lignin. 4. Mechanochemical reactions of phenylcoumaran models

Lestan D, Perdih A, Strancar A//Edvard Kardelj Univ, Dept Chem Technol, Murnikova 6, YU-61000 Ljubljana, Yugoslavia

APPL MICROBIOL BIOTECHNOL 1990, 34 (3) 426

Influence of some oils and surfactants on ligninolytic activity, growth and lipid fatty acids of *Phanerochaete chrysosporium*

Lobbecke JG, Lindner A, Wegener G, Wabner DW//Tech Univ Munich, Arbeitsgrp Angew Elektrochem, Lichtenberstr 4, W-8046 Garching, FRG

HOLZFORSCHUNG 1990, 44 (6) 401

Anodic modification of lignins during electrolysis in the organocell process

Madzhidova VE, Pulatov BK, Abduazimov KA//Acad Sci UzSSR, Inst Bot Chem, Tashkent, Uzbekistan, USSR

KHIM PRIR SOEDIN SSSR 1990, (4) 567

Study of lignin of C-4880 cotton plant by the acidolytic segmentation method (Russian)

Masuku CP//Helsinki Univ Technol, Dept Chem Engn, SF-02150 Espoo, Finland

HOLZFORSCHUNG 1990, 44 (6) 469

Thermal reactions of the bonds in lignin. 3. Thermolysis of alkylphenols

Maurer A, Fengel D//Univ Munich, Inst Holzforsch, Winzerestr 45, W-8000 Munich 40, FRG

HOLZFORSCHUNG 1990, 44 (6) 453

A new process for improving the quality and lignin staining of ultrathin sections from wood tissue

Pizzi A//Univ Witwatersrand, Dept Chem, Johannesburg 2001, South Africa

HOLZFORSCHUNG 1990, 44 (6) 419

Chromium interactions in CCA/CCB wood preservatives. 2. Interactions with lignin

Remko M, Tvaroska I, Fiserova M, Brezny R//Slovak Acad Sci, Inst Chem, CS-84238 Bratislava, Czechoslovakia

Z PHYS CHEM-LEIPZIG 1990, 271 (5) 927

Mo investigations on lignin model compounds. 12. Experimental and CNDO/S study of electronic spectra of beta-aryl ether structure

Romanov NA, Veryagina NV//Kharkov Cattle Breeding Forests & Woodlands Res Inst, Kharkov, Ukraine, USSR

J ANAL CHEM USSR-ENGL TR 1990, 45 (4) PT 2, 569

Spectrophotometric determination of lignin in vegetable feeds

6 Polysaccharides - Named

Stellwagen NC, Stellwagen D//Univ Iowa, Dept Chem, Iowa City, Ia 52242, USA

J BIOMOL STRUCT DYN 1990, 8 (3) 583

Electric birefringence of dilute agarose solutions

Cryz SJ, Furer E, Que JU//Swiss Serum & Vaccine Inst, CH-3001 Berne, Switzerland

INFEC IMMUNITY 1991, 59 (1) 45

Synthesis and characterization of a *Pseudomonas aeruginosa* alginate-toxin-A conjugate vaccine

Fritschy WM, Wolters GHJ, Van Schilfgaarde R//Univ Groningen, Dept Surg, Surg Res Lab, Bloemensingel 1, 9713 BZ Groningen, The Netherlands

DIABETES 1991, 40 (1) 37

Effect of alginate-polylysine-alginate microencapsulation on in vitro insulin release from rat pancreatic islets

Knudsen GR, Johnson JB, Eschen DJ//Univ Idaho, Dept Plant Soil & Entomol Sci, Moscow, Id 83843, USA

J ECON ENTOMOL 1990, 83 (6) 2225

Alginate pellet formulation of a *Beauveria bassiana* (fungi, Hyphomycetes) isolate pathogenic to cereal aphids

Lambert JR, Korman MG, Nicholson L, Chan JG//Monash Univ, Prince Henrys Hosp, Dept Med, St Kilda Rd, Melbourne, Vic 3004, Australia

ALIMENT PHARMACOL THERAPEUT 1990, 4 (6) 615

In vivo anti-reflux and raft properties of alginates

Murata Y, Kawashima S, Miyamoto E, Masauji N, Honda A//Hokuriku Univ, Sch Pharm, Kanazawa, Ishikawa 92011, Japan

CARBOHYD RES 1990, 208 (DEC) 289

Colorimetric determination of alginates and fragments thereof as the 2-nitrophenylhydrazides

Rajagopalan J, Ramakrishna SV//CSIR, Reg Res Lab, Trivandrum 695019, India

J MICROBIAL BIOTECHNOL 1990, 5 (2) 25

Growth of *Saccharomyces cerevisiae* in alginate gel matrix

Ralph WJ, Gin SSL, Cheadle DA, Harcourt JK//Univ Melbourne, Sch Dent Sci, Restorat Dent Sect, 711 Elizabeth St, Melbourne, Vic 3000, Australia

AUST DENT J 1990, 35 (6) 514

The effects of disinfectants on the dimensional stability of alginate impression materials

Varma SK, Henderson HP, Hankins CL//Leicester Royal Infirm, Dept Plast Surg, Leicester LE1 5WW, England

BRIT J PLAST SURG 1991, 44 (1) 55

Calcium alginate as a dressing for mini skin grafts (skin soup)

Swamy NR, Salimath PV//Cent Food Technol Res Inst, Dept Food Chem, Biochem Sect, Mysore 570013, Karnataka, India

PHYTOCHEMISTRY 1991, 30 (1) 263

Arabinans from *Cajanus cajan* cotyledon

Piculell L, Rochas C//Univ Lund, Ctr Chem, Box 124, S-22100 Lund, Sweden

CARBOHYD RES 1990, 208 (DEC) 127

$^{87}\text{Rb}^+$ spin relaxation in enzymically purified and in untreated iota-carrageenan

Alonso IG, Vega DO//Acad Sci Cuba, Inst Fundamental Brain Res, Havana, Cuba

J THERM ANAL 1990, 36 (3) 891

Characterization of the main sources of chitin in Cuba

Evrall CC, Attwell RW*, Smith CA//Manchester Polytech, Dept Biol Sci, Chester St, Manchester M1 5GD, England

J MICROBIOL METH 1990, 12 (3-4) 183

A semi-micro quantitative assay for determination of chitinolytic activity in microorganisms

Knorr D//Berlin Univ Technol, Dept Food Technol, Konigin Luise Str, W-1000 Berlin 33, FRG

FOOD TECHNOL 1991, 45 (1) 114

Recovery and utilization of chitin and chitosan in food processing waste management

Mathur NK, Narang CK//Univ Jodhpur, Jodhpur 342001, Rajasthan, India

J CHEM EDUC 1990, 67 (11) 938

Chitin and chitosan, versatile polysaccharides from marine animals

Murata J, Saiki I*, Makabe T, Tsuta Y, Tokura S, Azuma I//Hokkaido Univ, Inst Immunol Sci, Sapporo, Hokkaido 060, Japan

CANCER RES 1991, 51 (1) 22

Inhibition of tumor-induced angiogenesis by sulfated chitin derivatives

Vasseur V, Arigoni F, Andersen H, Defago G, Bompeix G, Seng JM//Univ Paris 06, Biochim & Pathol Vegetales Lab, Tour 53, 4 Pl Jussieu, F-75252 Paris 05, France

J GEN MICROBIOL 1990, 136 (DEC) PT 12, 2561

Isolation and characterization of *Aphanocladium album* chitinase-overproducing mutants

Baran AA, Teslenko AY//Acad Sci UkSSR, Inst Colloid Chem & Water Chem, Kiev, Ukraine, USSR

UKR KHIM ZH SSSR 1990, 56 (10) 1038

Chitosan and its derivatives - Effective flocculants of cell suspensions (Russian)

Hang YD//Cornell Univ, Dept Food Sci & Technol, Geneva, NY 14456, USA

BIOTECHNOL LETT 1990, 12 (12) 911

Chitosan production from *Rhizopus oryzae* mycelia

Hayashi T, Ikada Y//Kyoto Univ, Biomed Engn Res Ctr, Kyoto 606, Japan

J APPL POLYM SCI 1991, 42 (1) 85

Protease immobilization onto porous chitosan beads

Imai T, Shiraishi S, Saito H, Otagiri M//Kumamoto Univ, Fac Pharmaceut Sci, 5-1 OE Honmachi, Kumamoto 862, Japan

INT J PHARM 1991, 67 (1) 11

Interaction of indomethacin with low molecular weight chitosan, and improvements of some pharmaceutical properties of indomethacin by low molecular weight chitosans

Ito M//Matsumoto Dent Coll, Inst Dent Sci,

1780 Gohara, Nagano 39907, Japan

BIOMATERIALS 1991, 12 (1) 41

In vitro properties of a chitosan-bonded hydroxylapatite bone-filling paste

Kubota N, Ohga K, Moriguchi M//Oita Univ, Fac Engn, Marine Sci Lab, Dannoharu, Oita 87011, Japan

J APPL POLYM SCI 1991, 42 (2) 495

Permeability properties of glycol chitosan membrane modified with thiol groups

Miyazaki S, Yamaguchi H, Takada M, Hou WM, Takeichi Y, Yasubuchi H//Higashi Nippon Gakuen Univ, Fac Pharmaceut Sci, Ishikari tohbet-su, Hokkaido 06101, Japan

ACTA PHARM NORDICA 1990, 2 (6) 401

Pharmaceutical application of biomedical polymers. 29. Preliminary study on film dosage form prepared from chitosan for oral drug delivery

Ohtakara A, Matsunaga H, Mitsutomi M//Saga Univ, Fac Agr, Dept Appl Biol Sci, Saga 840, Japan

AGR BIOL CHEM TOKYO 1990, 54 (12) 3191

Action pattern of *Streptomyces griseus* chitinase on partially N-acetylated chitosan

Yang JH, Vigee GS**//Univ Alabama, Dept Chem, Birmingham, Al 35294, USA

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Yoshida H, Fukuda S, Okamoto A, Kataoka T//Univ Osaka Prefecture, Dept Chem Engn, Mozu umemachi, Sakai, Osaka 591, Japan

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Yoshihara K, Hosokawa J, Kubo T, Nishiyama M//Govt Ind Res Inst, Shikoku 2-3-3, Hananomiya, Kagawa 761, Japan

AGR BIOL CHEM TOKYO 1990, 54 (12) 3341

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Albuquerque M, Delima JP//Univ Hosp Coimbra, Dept Orthoped Surg, P-3000 Coimbra, Portugal

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using radiolabeled dextran

Boschetti E, Girot P, Guerrier L//IBF Biotech, 35 Ave Jean Jaures, F-92390 Villeneuve Garenne, France

J CHROMATOGR 1990, 523 (DEC) 35

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Kochkodan VM, Tsapyuk EA, Sapon IP, Bryk MT, Atamanenko ID//Acad Sci UkrSSR, Inst Colloid Chem & Water Chem, Kiev, Ukraine, USSR

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Michiels I, Christiaens MR//Battelse Bergen 16, B-2800 Mechelen, Belgium

CLIN TRIALS J 1990, 27 (4) 283

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Rozga J, Ahren B, Bengmark S//Univ Lund, Dept Surg, S-22101 Lund, Sweden

ACT CHIR SCAND 1990, 156 (11-12) 763

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Sacco D, Klettzygmunt D, Vigneron C, Dellacherie E//Ecole Natl Super Ind Chim, Chim Phys Macromolec Lab, CNRS, UA 494, 1 rue Grandville, BP 451, F-54001 Nancy, France

BIOCHIM BIOPHYS ACTA 1990, 1036 (3) 279

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Salemark L, Wieslander JB, Dougan P, Arnliots B//Malmo Gen Hosp, Dept Plast & Reconstruct Surg, S-21401 Malmo, Sweden

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Sondeen JL, Gonzaludo GA, Loveday JA, Rodkey WG, Wade CE//Letterman Army Inst Res, Div Mil Trauma Res, San Francisco, Ca 94129, USA

RESUSCITATION 1990, 20 (3) 231

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Stankovic RI, Jovanovic S, Ilic L, Nordmeier E, Lechner MD*, Iijima T//Univ Osnabruck, FB 5, W-5400 Osnabruck, FRG

POLYMER 1991, 32 (2) 235

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Albano RM, Pavao MSG, Mourao PAS*, Mulloy B//Univ Fed Rio de Janeiro, Ctr Ciencias Saude, Dept Bioquim, Caixa Postal 68401, BR-21910 Rio de Janeiro, Brazil

CARBOHYD RES 1990, 208 (DEC) 163

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Pavao MSG, Mourao PAS*, Mulloy B//Univ Fed Rio de Janeiro, Ctr Ciencias Saude, Dept Bioquim, Caixa Postal 68401, BR-21910 Rio de Janeiro, Brazil

CARBOHYD RES 1990, 208 (DEC) 153

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Turner SR, Singha S//W Virginia Univ, Div Plant & Soil Sci, Morgantown, WV 26506, USA

HORTSCIENCE 1990, 25 (12) 1648

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Erfle JD, Teather RM//Agr Canada, Anim Res Ctr, Ottawa, Ontario, Canada K1A 0C6

APPL ENVIRON MICROBIOL 1991, 57 (1) 122

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Kery V, Kogan G, Zajacova K, Slamova K, Masler L, Alfoldi J//Res Inst Rheumat Dis, Nabrezie Sov Armady 2, CS-92101 Piestany, Czechoslovakia

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Ozaki K, Ito S//Kao Corp, Tochigi Res Labs, 2606 Akabane, Ichikai, Tochigi 32134, Japan

J GEN MICROBIOL 1991, 137 (JAN) PT 1, 41

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Sandula J, Kogan G, Masler L//Slovak Acad Sci, Ctr Chem Res, Inst Chem, CS-80936 Bratislava, Czechoslovakia

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Structure and some characteristics of the yeast beta-D-glucans (Russian, English Abstract)

Sova VV, Fedoreev SA//Acad Sci USSR, Far E Sci Ctr, Pacific Oceanol Inst, Inst Bioorgan Chem, Vladivostok, USSR

KHIM PRIR SOEDIN SSSR 1990, (4) 497

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Tsujinaka T, Yokota M, Kambayashi H, Ou MC, Kido Y, Mori T//Osaka Univ, Sch Med, Dept Surg 2, 1-1-50 Fukushima, Fukushima ku, Osaka 553, Japan

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Wagner N, Kruger E//Versuchs & Lehranstalt Brauerei Berlin, Berlin, FRG

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Gazi MI//Kings Coll, Sch Med & Dent, Dept Periodontol, Denmark Hill, London SE5 9RW, England

J CLIN PERIODONTOL 1991, 18 (1) 75

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Bratt G, Aberg W, Johansson M, Tornebohm E, Granqvist S, Lockner D//Huddinge Univ Hosp, Dept Internal Med, Thrombosis Unit, S-14186 Huddinge, Sweden

THROMB HAEMOST 1990, 64 (4) 506

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Taylor CA, Erdmann GR, Canafax DM//Univ Minnesota, Coll Pharm, Drug Anal Res Lab, HSUP Room 5-130, 308 Harvard St, Minneapolis, Mn 55455, USA

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Coyne E, Outschoorn AS//Loyola Univ, Stritch Sch Med, Dept Pathol, Maywood, Il 60153, USA

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A clarification of quality attribute tests for heparin and heparin products - The antifactor-X(a) test and limit tests for dermatan sulfate

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Krupinski K, Basicmicic M, Lindhoff E, Breddin HK*//Med Acad Bialystok, Dept Hematol, PL-15062 Bialystok, Poland

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Linhardt RJ//Univ Iowa, Coll Pharm, Iowa City, Ia 52242, USA

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King SR, Hickerson WL, Proctor KG*, Newsome AM//Univ Tennessee, Ctr Hlth Sci, Hlth Sci Ctr, Dept Physiol, 894 Union Ave, Memphis, Tn 38163, USA

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Lace D, Olavesen AH, Gaces P*//Univ Coll Cardiff, Coll Cardiff, Dept Biochem, POB 903, Cardiff CF1 1ST, Wales

CARBOHYD RES 1990, 208 (DEC) 306

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Simms PJ, Boyko WJ, Edwards JR*//Villanova Univ, Dept Chem, Villanova, Pa 19085, USA

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Ogawa Y, Wakida M, Ishida H, Kiso M, Hasegawa A//Gifu Univ, Dept Appl Bioorgan Chem, Gifu 50111, Japan

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Araujo A, Ward OP*//Univ Waterloo, Dept Biol, Waterloo, Ontario, Canada N2L 3G1

J IND MICROBIOL 1990, 6 (4) 269

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Torrie JP, Senior DJ, Saddler JN*//Forintek Canada Corp, Dept Biotechnol & Chem, 800 Montreal Rd, Ottawa, Ontario, Canada K1G 3Z5

APPL MICROBIOL BIOTECHNOL 1990, 34 (3) 303

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Dellapenna D, Lashbrook CC, Toenjes K, Giovannoni JJ, Fischer RL, Bennett AB/**Univ Calif Davis, Dept Vegetable Crops, Mann Lab, Davis, Ca 95616, USA

PLANT PHYSIOL 1990, 94 (4) 1882

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Fonseca MJV, Spadaro ACC, Said S//Univ Sao Paulo, Fac Ciencias Farmaceut Ribeirao Preto, Dept Ciencias Farmaceut, via Cafe S-N, BR-14049 Ribeirao Preto, SP, Brazil

BIOTECHNOL LETT 1991, 13 (1) 39

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Jain S, Durand H, Tiraby G//Forsch Mbh, Gesell Biotechnol, Div Enzymtechnol, Mascheroder Weg 1, W-3300 Braunschweig, FRG

APPL MICROBIOL BIOTECHNOL 1990, 34 (3) 308

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Kasymalieva KK, Khidoyatov AA, Rakhimov DA, Ashubaeva ZD//Acad Sci KiSSR, Inst Organ Chem, Frunze, Kirghizia, USSR

KHIM PRIR SOEDIN SSSR 1990, (4) 541

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Kunzek H, Kleiber U, Heilscher K, Anger H//Humboldt Univ, Sekt Nahrungsguterwirtschaft & Lebensmitteltechnol, O-1086 Berlin, FRG

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Lozano P, Manjon A, Iborra JL*, Galvez DM//Univ Murcia, Fac Chem, Dept Biochem & Molec Biol, E-30004 Murcia, Spain

ACTA BIOTECHNOL 1990, 10 (6) 531

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Mukhiddinov ZK, Khalikov DK, Degtyarev VA//VI Nikitin Chem Inst, Dushanbe, Tadzhikistan, USSR

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Sun XB, Matsumoto T, Kiyohara H, Hirano M, Yamada H/**Kitasato Inst, Oriental Med Res Ctr, 5-9-1 Shirokane, Minato ku, Tokyo 108, Japan

J ETHNOPHARMACOL 1991, 31 (1) 101

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Ebina T, Murata K//Tohoku Univ, Sch Med, Dept Bacteriol, 2-1 Seiryomachi, Aoba ku, Sendai, Miyagi 980, Japan

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Tanji S, Akima K, Horiba M, Amemiya K, Aimoto T//Karen Pharmaceut Co Ltd, Cent Res Lab, 301 Gensuke, Shizuoka 426, Japan

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Tako M, Kiriaki M//Univ Ryukyus, Coll Agr, Dept Agr Chem, Nishihara, Okinawa 90301, Japan

AGR BIOL CHEM TOKYO 1990, 54 (12) 3079

Rheological properties of welan gum in aqueous media

Hansen EW, Lund T//Ctr Ind Res, POB 124, N-0314 Oslo, Norway

J PHYS CHEM 1991, 95 (1) 341

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Nakajima S, Funahashi H, Yoshida T/**Osaka Univ Fac Engn, Int Ctr Cooperat Res Biotechnol, 2-1 Yamadaoka, Suita, Osaka 565, Japan

J FERMENT BIOENG 1990, 70 (6) 392

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Senior DJ, Mayers PR*, Saddler JN/**Forintek Canada Corp, Dept Biotechnol & Chem, Ottawa, Ontario, Canada K1G 3Z5

BIOTECHNOL BIOENG 1991, 37 (3) 274

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Basu S, Pal JN//Indian Assoc Cultivat Sci, Dept Biol Chem, Calcutta 700032, W Bengal, India
CARBOHYD RES 1990, 208 (DEC) 241

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Belleville MP, Brillouet JM, Delafuente BT, Moutounet M//INRA, Inst Prod Vigne, Polymers & Tech Phys Chim Lab, 2 Pl Viala, F-34060 Montpellier 1, France

J FOOD SCI 1990, 55 (6) 1598

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Breedveld MW, Zevenhuizen LPTM, Zehnder AJB//Agr Univ Wageningen, Dept Microbiol, Hesselink van Suchtelenweg 4, 6703 Ct Wageningen, The Netherlands

J GEN MICROBIOL 1990, 136 (DEC) PT 12, 2511

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Gamini A, Civitarese G, Cesaro A, Delben F, Paoletti S*//Univ Trieste, Dept Biochem Biophys & Macromolec Chem, I-34127 Trieste, Italy
MAKROMOL CHEM-MACROMOL SYMP 1990, 39 (OCT) 143

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Geresh S, Dubinsky O, Arad SM, Christiaen D, Glaser R//Ben Gurion Univ Negev, Inst Appl Res, POB 1025, IL-84110 Beer Sheva, Israel
CARBOHYD RES 1990, 208 (DEC) 301

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Hermansson K, Kenne L, Lindberg B, Arie B, Broen RG, Stewart JE//Univ Stockholm, Arrhenius Lab, Dept Organ Chem, S-10691 Stockholm, Sweden

CARBOHYD RES 1990, 208 (DEC) 145

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Jones DNM, Sanders JKM*//Univ Cambridge, Chem Lab, Lensfield Rd, Cambridge CB2 1EW, England

CARBOHYD RES 1990, 208 (DEC) 15

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Klein J, Kowalczyk J, Engelke S, Kunz M, Puke H//Gessell Biotechnol Forsch GmbH, Mascheroder Weg 1, W-3300 Braunschweig, FRG

MAKROMOL CHEM-RAP COMM 1990, 11 (10) 477

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Koleva MI, Ninov SZ*, Siegel U, Zinsmeister HD, Kolev DN//Acad Med Sofia, Pharmacol & Pharm Res Inst, Dept Pharmacognosy & Bot, BU-1000 Sofia, Bulgaria

DOKL BOLG AKAD NAUK 1990, 43 (8) 55

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Lenter MC, Jann B, Jann K*//Max Planck Inst Immunbiol, W-7800 Freiburg, FRG

CARBOHYD RES 1990, 208 (DEC) 139

Structure of the K24 antigen of *E. coli* O83-K24-H, a polymer that consists of alpha-Kdop and glycerol phosphate

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

CARBOHYD RES 1990, 208 (DEC) 59

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Marcinak JF, Frank AL, Labotka RL, Rao S, Drawhorn L, Dampier C, Frisone LR, Yogev R, McVerry P//Univ Illinois, Coll Med, Dept Pediat, 840 S Wood St, Chicago, IL 60612, USA

J PEDIAT 1991, 118 (1) 69

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Marques AM, Bonet R, Simon-Pujol MD, Fuste MC, Congregado F*//Univ Barcelona, Fac Farm, Div Ciencias Salud, Microbiol Lab, E-08028 Barcelona, Spain

APPL MICROBIOL BIOTECHNOL 1990, 34 (3) 429

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Nazarenko EL, Shashkov AS, Knirel YA, Ivanova EP, Ovodov YS//Acad Sci USSR, Pacific Bioorgan Chem Inst, Vladivostok 690022, USSR

BIOORG KHIM 1990, 16 (10) 1426

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Ponder GR, Richards GN*//Univ Montana, Wood Chem Lab, Missoula, Mt 59812, USA

CARBOHYD RES 1990, 208 (DEC) 93

Polysaccharide from thermal polymerization of glucosides

Ramana KS, Rao EV*//Andhra Univ, Dept Pharmaceut Sci, Waltair 530003, Andhra Pradesh, India

PHYTOCHEMISTRY 1991, 30 (1) 259

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CARBOHYD RES 1990, 208 (DEC) 293

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Usov AI, Ivanova EG//ND Zelinskii Organ Chem Inst, Moscow, USSR

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Vincenzini M, Dephilippis R, Sili C, Materassi R//Univ Florence, Dipartimento Sci & Tecnol Alimentari & Microbiol, P Cascine 27, I-50144 Florence, Italy

APPL MICROBIOL BIOTECHNOL 1990, 34 (3) 392

Studies on exopolysaccharide release by diazotrophic batch cultures of *Cyanospira capsulata*

Yamasaki R, Bacon B//Univ Calif San Francisco,

Vet Adm Med Ctr 113A, 4150 Clement St, San Francisco, Ca 94143, USA

BIOCHEMISTRY-USA 1991, 30 (3) 851

Three-dimensional structural analysis of the group-B polysaccharide of *Neisseria meningitidis* 6275 by two-dimensional NMR - The polysaccharide is suggested to exist in helical conformations in solution

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PHARMACOL TOXICOL 1990, 67 (5) 387

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Kosma P, Bahnmuller R, Schulz G, Brade H//Agr Univ Vienna, Inst Chem, A-1180 Vienna, Austria

CARBOHYD RES 1990, 208 (DEC) 37

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Moran AP, Rietschel ET, Kosunen TU, Zahringier U*//Inst Exptl Biol & Med, Forschungsinst Borstel, W-2061 Borstel, FRG

J BACTERIOL 1991, 173 (2) 618

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Rani M, Gupta RK, Chhibber S*//Punjab Univ, Dept Microbiol, Chandigarh 160014, India

CAN J MICROBIOL 1990, 36 (12) 885

Protection against *Klebsiella pneumoniae* induced lobar pneumonia in rats with lipopolysaccharide and related antigens

9 Starch

Biliaderis CG, Seneviratne HD//Univ Manitoba, Dept Food Sci, Winnipeg, Manitoba, Canada R3T 2N2

CARBOHYD RES 1990, 208 (DEC) 199

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Lackner FX, Graninger W, Ilias W, Panzer S, Schulz E//Univ Vienna, Anaesthesie & Allgemeine Intens Med Klin, Spitalgasse 23, A-1090 Vienna, Austria

INFUSIONSTHERAPIE 1990, 17 (5) 276

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Zyla K//Hugo Kollataj Acad Agr, Dept Biotechnol, 29 Listopadia 46, Krakow 31425, Poland
ACTA BIOTECHNOL 1990, 10 (5) 445

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Bos CE, Vromans H, Lerk CF//Univ Groningen, Dept Pharmaceut Technol & Biopharm, Ant Deusinglaan 2, 9713 AW Groningen, The Netherlands

INT J PHARM 1991, 67 (1) 39

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Brain SM, Zallie JP//Natl Starch & Chem NZ Ltd, POB 58-230, Auckland, New Zealand
FOOD AUST 1990, 42 (11) 523

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Carr ME//North Reg Res Ctr, Food Phys Chem Res Unit, Peoria, IL 61604, USA

J APPL POLYM SCI 1991, 42 (1) 45

Starch-derived glycol and glycerol glucosides prepared by reactive extrusion processing

Chinachoti P, Stengle TR//Univ Massachusetts, Dept Food Sci, Amherst, MA 01003, USA

J FOOD SCI 1990, 55 (6) 1732

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Dail RV, Steffe JF**//Michigan State Univ, Dept Agr Engr, E Lansing, MI 48823, USA

J FOOD SCI 1990, 55 (6) 1660

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Dail RV, Steffe JF**//Michigan State Univ, Dept Agr Engr, E Lansing, MI 48823, USA

J FOOD SCI 1990, 55 (6) 1764

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Fahlvik AK, Artursson P, Edman P//Nycomed Imaging As, Div Res & Dev, Dept Pharmacol & Toxicol, PB 4220 Torshov, N-0402 Oslo, Norway

INT J PHARM 1990, 65 (3) 249

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Ignoffo CM, Shasha BS, Shapiro M//USDA ARS, Biol Control Insects Res Lab, Columbia, MO 65205, USA

J INVERTEBR PATHOL 1991, 57 (1) 134

Sunlight ultraviolet protection of the Heliothis nuclear polyhedrosis virus through starch-encapsulation technology

Jawed M, Tare V**//Indian Inst Technol, Dept Civil Engr, Kanpur 208016, Uttar Pradesh, India

J APPL POLYM SCI 1991, 42 (2) 317

Application of starch xanthates for cadmium removal - A comparative evaluation

Valk H, Poelhuis HWK, Wentink HJ//Res Inst Livestock Feeding & Nutr, POB 160, 8200 AD Lelystad, The Netherlands

NETH J AGR SCI 1990, 38 (3) PT B, 475

Effect of fibrous and starchy carbohydrates in concentrates as supplements in a herbage-based diet for high-yielding dairy cows

10 Starch-degrading Enzymes

Balasubramaniam K, Mahendran S//Univ Jaffna, Fac Med, Dept Biochem, Kokuvil, Sri Lanka

J MICROBIOL BIOTECHNOL 1990, 5 (2) 42

Corn malt amylases for saccharification of starch in corn

Konishi H, Sato T, Yamagata H*, Uda S//*Nagoya Univ, Fac Agr, Dept Food Sci & Technol, Chikusa ku, Nagoya, Aichi 464, Japan

APPL MICROBIOL BIOTECHNOL 1990, 34 (3) 297

Efficient production of human alpha-amylase by a *Bacillus brevis* mutant

Omichi K, Hase S, Ikenaka T//Osaka Univ, Dept Chem, Toyonaka, Osaka 560, Japan

CARBOHYD RES 1990, 208 (DEC) 312

Modified malto-oligosaccharides as inhibitors of human alpha-amylases

Ono M//Fuji Photo Film Co Ltd, Res Labs, Odawara, Kanagawa 25001, Japan

J SYN ORG CHEM JPN 1990, 48 (12) 1115

A novel approach to the determination of trace alpha-amylase by photographic assay

Paquet V, Croux C, Goma G, Soucaille P*//Inst Natl Sci Appl, CNRS, UA 544, Dept Genie Biochim & Alimentaire, Ave Rangueil, F-31077 Toulouse, France

APPL ENVIRON MICROBIOL 1991, 57 (1) 212

Purification and characterization of the extracellular alpha-amylase from Clostridium acetobutylicum ATCC-824

Safarik I//S Bohemian Biol Ctr, Analyt Chem Lab, Ceske Budejovice, Czechoslovakia

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Spectrophotometric determination of amylase activity in coloured solutions

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Studies on stabilization of amylase by covalent coupling to soluble polysaccharides

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Mass transfer control of enzymatic hydrolysis of polysaccharides by glucoamylase

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