

## BIBLIOGRAPHY ON CARBOHYDRATE POLYMERS

### 1. Books, Reviews and Symposia

Pomeranz Y (Ed)

*Advances in Cereal Science and Technology* vol. IX

1987 345pp ISBN:0-913250-51-1 \$60.00  
(Hardbound) American Association of Cereal Chemists

Includes: Cereal-amylases in grain research and technology

Wachenheim DE, Patterson JA//Purdue Univ, Dept Anim Sci, W Lafayette, In 47907, USA

ENZYME MICROB TECHNOL 1988 10 (1) 56  
Potential for industrial polysaccharides from anaerobes (Literature Survey)

Watson SA, Ramstad PE (Eds)

Corn: Chemistry and Technology

1987 605pp ISBN:0-913250-48-1 \$87.00  
(Hardbound) American Association of Cereal Chemists

Includes: Corn starch modification and uses

### Papers

#### 2. Cellulose

El-Sisi F, Hafiz SAA, Hebeish A\*\*/Natl Res Ctr, Div Text Res, Cairo, Egypt

ANGEW MAKROMOL CHEM 1988 156 (JAN) 79

Synthesis and application of reactive carbohydrates. III. Preparation and methylation of polyacrylamide-carboxymethyl cellulose graft copolymers

Schnabelrauch M, Klemm D, Philipp B, Wagenknecht W//Friedrich Schiller Univ, Sekt Chem, DDR-6900 Jena, Ger Dem Rep

Z CHEM 1987 27 (12) 436

Investigation on sulphation and phosphorylation of carboxymethyl cellulose (German)

Bhat NV, Makwana DN//Univ Bombay, Dept Chem Technol, Dept Phys, Bombay 400019, India

INDIAN J PURE APPL PHYS 1987 25 (10) 402  
Investigation of electrical conduction in doped cellophane film

Bronnenmeier K, Staudenbauer WL\*\*/Tech Univ Munich, Inst Microbiol, Arcisstr 21, D-8000 Munich 2, Fed Rep Ger

APPL MICROBIOL BIOTECHNOL 1988 27 (5-6) 432

Resolution of *Clostridium stercorarium* cellulase by fast protein liquid chromatography (FPLC)

Guo Z, Arfman N, Ong E, Gilkes NR, Kilburn DG, Warren RAJ, Miller RC\*\*/Univ British Columbia, Dept Microbiol, Vancouver, BC, Canada V6T 1W5

FEMS MICROBIOL LETT 1988 49 (2) 279

Leakage of *Cellulomonas fimi* cellulases from *Escherichia coli*

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

GENE 1987 61 (2) 199

The expression of *Cellulomonas fimi* cellulase genes in *Brevibacterium lactofermentum*

Turker M, Mavituna F//Univ Manchester, Inst Sci & Technol, Dept Chem Engr, POB 88, Manchester M60 1QD, Lancs, England

ENZYME MICROB TECHNOL 1987 9 (12) 739

Production of cellulase by freely suspended and immobilized cells of *Trichoderma reesei*

Atamanenko ID, Bryk MT//Acad Sci UkSSR, Inst Colloid Chem & Water Chem, Kiev, Ukraine, USSR

COLLOID J USSR-ENGL TR 1987 49 (3) 465

Some features of dehydration of cellulose acetate membranes

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

- Berseneva EA, Pavlova LA, Smagina LS//Vitamins Sci Ind Assoc, Moscow, USSR  
 KHIM-FARM ZH SSSR 1988 22 (1) 78  
 Acetylphthalyl cellulose-coated microcapsules of dibunol (Russian)
- Biermann CJ, Narayan R//Oregon State Univ, Dept Forest Prod, Corvallis, Or 97331, USA  
 FOREST PROD J 1988 38 (1) 27  
 Grafting of preformed polyamide onto cellulose acetate
- Borchert A, Buchholz K//Fachsch Ostfriesland, Emden, Fed Rep Ger  
 PROCESS BIOCHEM 1987 22 (6) 173  
 Enzymatic hydrolysis of cellulosic materials
- Burba P, Willmer PG//Inst Spektrochem & Angew Spekt, Postfach 778, D-6400 Dortmund 1, Fed Rep Ger  
 FRESENIUS Z ANAL CHEM 1987 329 (5) 539  
 Multielement-preconcentration for atomic spectroscopy by sorption of dithiocarbamate-metal complexes (e.g., HMDC) on cellulose collectors
- Dermoun Z, Belaich JP//CNRS, Chim Bacterienne Lab, Bp 71, F-13277 Marseille 9, France  
 APPL MICROBIOL BIOTECHNOL 1988 27 (4) 399  
 Crystalline index change in cellulose during aerobic and anaerobic Cellulomonas uda growth
- Dumitriu S, Popa M, Dumitriu C//Polytech Inst Jassy, Dept Organ & Molec Chem & Technol, R-6600 Jassy, Romania  
 J MACROMOL SCI-CHEM 1987 A24 (10) 1135  
 Immobilization of pepsin on N-(4-carboxyphenyl-carbamoylmethyl)cellulose
- Ergashev KE, Slepakova SI, Piskaeva OB//Tashkent Text & Light Ind Inst, Tashkent, Uzbekistan, USSR  
 COLLOID J USSR-ENGL TR 1987 49 (3) 536  
 Appearance of extrema of the properties of concentrated solutions of mixtures of cellulose acetate and polyvinyl acetate in the region preceding phase separation
- Ermolenko IN, Lazareva TG, Shpilevskaya LE, Omelchuk AP//Acad Sci BelSSR, Inst Gen & Inorgan Chem, Minsk, Belorussia, USSR  
 DOKL AKAD NAUK BSSR 1988 32 (1) 43  
 Photoconductivity of hydrated cellulose film materials in the uv spectral range (Russian)
- Fukuhara T, Yuasa S//Osaka Univ, Coll Gen Educ, Dept Biol, Toyonaka, Osaka 560, Japan  
 J CHROMATOGR 1987 411 (DEC) 502  
 Rapid resolution of 2,4-dinitrophenyl-DL-amino acids on a native cellulose column
- Furieux RH, Mason JM\*, Miller IJ//DSIR, Div Chem, Petone, New Zealand  
 J CHEM SOC PERKIN TRANS I 1988 (1) 49  
 A novel hydroxylactone from the Lewis acid catalysed pyrolysis of cellulose
- Ishiyama J, Shirakawa T, Kurokawa Y\*, Imazumi S//Tohoku Univ, Fac Engr, Dept Engr Sci, Sendai, Miyagi 980, Japan  
 ANGEW MAKROMOL CHEM 1988 156 (JAN) 179  
 Highly dispersed Ni catalysts on carbon from thermal decomposition of cellulose-hydrous nickel gel membrane
- Jones EO, Lee JM\*//Washington State Univ, Dept Chem Engr, Pullman, Wa 99164, USA  
 BIOTECHNOL BIOENG 1988 31 (1) 35  
 Kinetic analysis of bioconversion of cellulose in attrition bioreactor
- Kagan EZ, Sinitsyna NI//All Union Antibiot Res Inst, Moscow, USSR  
 ANTIBIOT MED BIOTEK 1988 33 (1) 40  
 Rheological studies in development of antibiotic hydrogels based on cellulose ethers
- Kamide K, Saito M, Kowsaka K//Asahi Chem Ind Co Ltd, Fundamental Res Lab Fiber & Fiber Forming Polymers, 11-7 Hacchonawate, Osaka 569, Japan  
 POLYM J 1987 19 (10) 1173  
 Temperature dependence of limiting viscosity number and radius of gyration for cellulose dissolved in aqueous 8% sodium hydroxide solution
- Karpenko GV, Osovskaya II, Prosviryakova EP, Sokolov VV//Leningrad Paper & Pulp Technol Inst, Leningrad, USSR  
 IZV VYSSH UCH ZAV KHIM KHIM T 1987 30 (8) 104  
 Thermochemical study of cellulose interaction with alkali solutions of sodium sulfide of different composition at 298-K (Russian)
- Long WJ, Su SY\*//Virginia Commonwealth

Univ, Dept Chem, Richmond, Va 23284, USA  
 MICROCHEM J 1988 37 (1) 59

Evaluation of polyamide and crystalline cellulose as substrates for room temperature phosphorimetry

Majdanac LD, Teodorovic MJ//Univ Beograd, Fac Technol & Met, YU-1101 Beograd, Yugoslavia

ACTA POLYM 1987 38 (12) 661

The influence of supramolecular structure on the kinetics of thermal decomposition of cellulose

Mashadi AB, Newton JM\*\*//Univ London, Sch Pharm, 29-39 Brunswick Sq, London WC1N 1AX, England

J PHARM PHARMACOL 1987 39 (12) 961

The characterization of the mechanical properties of microcrystalline cellulose: a fracture mechanics approach

Nagase Y, Ochiai J, Matsui K, Uchikura M//Sagami Chem Res Ctr, Nishi Ohnuma, Sagamihara, Kanagawa 229, Japan

POLYMER COMMUN 1988 29 (1) 10

Synthesis and gas permeability of ethyl cellulose/poly(dialkyl siloxane) graft copolymers

Okieimen FE, Maya AO, Oriakhi CO//Univ Benin, Dept Chem, Benin City, Nigeria

INT J ENVIRON ANAL CHEM 1988 32 (1) 23

Sorption of cadmium, lead and zinc ions on sulphur-containing chemically modified cellulosic materials

Ovcharenko VV, Govorkov AT, Zaitseva VI, Vedel GF//Kemerovo State Univ, Solid Spectroscopy Lab, Kemerovo 650043, USSR

IZV VYSSH UCH ZAV KHIM KHIM T 1987 30 (8) 75

Effect of the degree of nitration on characteristics of cellulose nitro-esters (Russian)

Pankonin B, Habeger C//Mead Corp, Chillicothe, Oh 45601, USA

J POLYM SCI B-POLYM PHYS 1988 26 (2) 339

A strip resonance technique for measuring the ultrasonic viscoelastic parameters of polymeric sheets with application to cellulose

Price D, Horrocks AR, Akalin M//Univ Salford, Dept Chem & Appl Chem, Salford M5 4WT,

Lancs, England

BRIT POLYM J 1988 20 (1) 61

Use of DTA with infrared analysis of evolved gas to investigate the effect of flame retardants on gas evolution from pyrolysed cellulose (cotton)

Sanyal A, Kundu RK\*, Dube S, Dube DK\*\*//Univ Calcutta, Dept Biochem, Calcutta 700019, W Bengal, India

ENZYME MICROB TECHNOL 1988 10 (2) 91

Extracellular cellulolytic enzyme system of *Aspergillus japonicus*: 2. Purification and characterization of an inducible extracellular beta-glucosidase

Sanyal A, Kundu RK\*, Sinha SN, Dube DK\*\*//Univ Calcutta, Dept Biochem, Calcutta 700019, W Bengal, India

ENZYME MICROB TECHNOL 1988 10 (2) 85

Extracellular cellulolytic enzyme system of *Aspergillus japonicus*: 1. Effect of different carbon sources

Schwartz HH, Richau K, Hicke HG//Akad Wissensch GDR, Inst Polymerenchem Erich Correns, Kantstr 55, DDR-1530 Teltow Seehof, Ger Dem Rep

J MEMBRANE SCI 1987 34 (3) 283

Annealing effect in porous cellulose acetate membranes

Shishonok MV, Gert EV, Filanchuk TI, Kaputskii FN//No address available

J APPL CHEM-ENGL TR 1987 60 (5) P2 1086

Structural modification of various forms of cellulose by nitric acid solutions

Soundar S, Chandra TS\*\*//Indian Inst Technol, Dept Chem, Div Biochem, Madras 600036, Tamil Nadu, India

J IND MICROBIOL 1987 2 (5) 257

Cellulose degradation by a mixed bacterial culture

Su CS//Natl Tsing Hua Univ, Inst Nucl Sci, Hsinchu 300, Taiwan

NUCL TRACK RADIAT MEAS 13 (2-3) 147

The radiation effects of gammas and neutrons on cellulose nitrate

Takeuchi Y, Hagi T, Murayama A, Koizumi T, Ichida A//Toyama Med & Pharmaceut Univ, Fac Pharmaceut Sci, Sugitani 2630, Sugitani,

Toyama 93001, Japan

J LIQ CHROMATOGR 1987 10 (15) 3279

The first chromatographic resolution and electronic effects of multifunctional carbon compounds on cellulose-based adsorbents

Wainer IW, Stiffin RM, Shibata T//St Jude Childrens Res Hosp, Div Pharmaceut, Memphis, Tn 38101, USA

J CHROMATOGR 1987 411 (DEC) 139

Resolution of enantiomeric aromatic alcohols on a cellulose tribenzoate high-performance liquid chromatography chiral stationary phase. A proposed chiral recognition mechanism

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

INT J PHARM 1988 41 (1-2) 159

Effect of microcrystalline cellulose and cross-linked sodium carboxymethylcellulose on the properties of tablets with methylcellulose as a binder

Willison JHM, Abeysekera RM//Dalhousie Univ, Dept Biol, Halifax, NS, Canada B3H 4J1

J POLYM SCI 1988 26 (2) 71

A liquid crystal containing cellulose in living plant tissue

Xiquan L, Tingzhu Q, Kexuan Y//Acad Sinica, Guangzhou Inst Chem, POB 1122, Guangzhou, Peoples R China

INT J BIOL MACROMOL 1988 10 (1) 34

Study of the thermal/oxidation degradation of the sodium-cellulose sulphate half-ester

Yu JC, Baizer MM, Nobe K//Univ Calif Los Angeles, Dept Chem Engr, Los Angeles, Ca 90024, USA

J ELECTROCHEM SOC 1988 135 (1) 83

Electrochemical generated acid catalysis of cellulose hydrolysis

Reddy KJ, Kuwabara T, Sherman LA//Univ Missouri, Div Biol Sci, Tucker Hall, Columbia, Mo 65211, USA

ANAL BIOCHEM 1988 168 (2) 324

A simple and efficient procedure for the isolation of high-quality phage lambda DNA using a DEAE-cellulose column

Nemchinov IA, Molotkov VA, Kurlyankina VI//Acad Sci USSR, Inst Macromolec Cpd,

Leningrad, USSR

ZH OBSHCH KHIM SSSR 1987 57 (9) 2019

Reactivity of cobalt(III) and its complexes with monobasic organic acids in the reaction of hydroxyethylcellulose oxidation (Russian)

Meeten GH, Navard P//City London Polytech, Sir John Cass Sch Phys Sci & Technol, Dept Phys, Opt Phys Grp, London EC3N 2EY, England

J POLYM SCI B-POLYM PHYS 1988 26 (2) 413

Cholesteric hydroxypropylcellulose solutions: microscopy and small-angle light scattering

Feely LC, Davis SS//Reckitt & Colman, Div Pharmaceut, Dansom Lane, Kingston upon Hull HU8 7DS, England

INT J PHARM 1988 41 (1-2) 83

Influence of surfactants on drug release from hydroxypropylmethylcellulose matrices.

Baugh KD, Levy JA, McCarty PL//Kennedy Jenks Chilton Consulting Engineers, 657 Howard St, San Francisco, Ca 94105, USA

BIOTECHNOL BIOENG 1988 31 (1) 62

Thermochemical pretreatment of lignocellulose to enhance methane fermentation. II. Evaluation and application of pretreatment model

Baugh KD, McCarty PL//Kennedy Jenks Chilton Consulting Engineers, 657 Howard St, San Francisco, Ca 94105, USA

BIOTECHNOL BIOENG 1988 31 (1) 50

Thermochemical pretreatment of lignocellulose to enhance methane fermentation. I. Monosaccharide and furfurals hydrothermal decomposition and product formation rates

Vallander L, Eriksson KE//STFI, Box 5604, S-11486 Stockholm, Sweden

ENZYME MICROB TECHNOL 1987 9 (12) 714

Enzyme recirculation in saccharification of lignocellulosic materials

Winkler DA, Starks A//CSIRO, Div Appl Organ Chem, GPO Box 4331, Melbourne, Vic 3001, Australia

J APPL POLYM SCI 1988 35 (1) 51

The non-Fickian diffusion of detergents into a nitrocellulose-based propellant

Ballesteros P, Claramunt RM, Elguero J, Gal-

Ilego-Preciado MDCL, Roussel C, Chemlal A//Ciudad Univ Madrid, UNED, Dept Quim Organ, E-28049 Madrid, Spain

HETEROCYCLES 1988 27 (2) 351

Enantiomeric resolution of 3,5'-dimethyl-4,4'-dibromo-1,1'-bispyrazolylphenylmethane by liquid chromatography on triacetylcellulose

### 3. Lignin

Duran N, Ferrer I, Rodriguez J, Mansilla H, Baeza J//Univ Estadual Campinas, Inst Quim, Biol Chem Lab, CP 6154, BR-13081 Campinas, SP, Brazil

J PHOTOCHEM PHOTOBIOLOG A-CHEM 1988 41 (2) 267

Biomass photochemistry XIII: pre-irradiated lignin from *Pinus radiata* D. Don and its degradation by ligninase and horseradish peroxidase

Feldman D, La Casse M, Manley RSJ//Concordia Univ, Ctr Bldg Studies, Montreal, Quebec, Canada H3G 1M8

J APPL POLYM SCI 1988 35 (1) 247

Polyurethane-based sealants modified by blending with Kraft lignin

Fischer K, Goldberg W, Schmidt I, Wilke M//Tech Univ Dresden, Sekt Forstwirtschaft, Pienner Str, DDR-8223 Tharandt, Ger Dem Rep

MAKROMOL CHEM-MACROMOL SYMP

1987 12 (DEC) 303

Changes in lignin and cellulose by irradiation

Platt SR, Clydesdale FM//Gen Mills Inc, 9000 Plymouth Ave, Minneapolis, Mn 55427, USA

J FOOD SCI 1987 52 (5) 1414

Mineral binding characteristics of lignin, guar gum, cellulose, pectin and neutral detergent fiber under simulated duodenal pH conditions

Puech JL, Goffinet B//INRA, Inst Prod Vigne, Polymers & Tech Physicochim Lab, Pl Viala, F-34060 Montpellier, France

J FOOD SCI 1987 52 (5) 1280

Adjustment of nonlinear models for lignin and its degradation products during the aging of Armagnac

Vanucci C, de Violet PF, Bouas-Laurent H, Castellani A\*\*//Univ Bordeaux 1, Photochim Organ Lab, CNRS, Unite 348, F-33405 Talence, France

J PHOTOCHEM PHOTOBIOLOG A-CHEM 1988 41 (2) 251

Photodegradation of lignin: a photophysical and photochemical study of a non-phenolic alpha-carbonyl beta-O-4 lignin model dimer, 3,4-dimethoxy-alpha-(2'-methoxyphenoxy)acetophenone

Asther M, Lesage L, Drapron R, Corrieu G, Odier E//INRA, Genie Procédés Biotechnol Agro Alimentaires Lab, F-78850 Thiverval Grignon, France

APPL MICROBIOL BIOTECHNOL 1988 27 (4) 393

Phospholipid and fatty acid enrichment of *Phanerochaete chrysosporium* INA-12 in relation to ligninase production

Jonsson L, Johansson T, Sjöström K, Nyman PO//Univ Lund, Ctr Chem, Div Biochem, POB 124, S-22100 Lund, Sweden

ACTA CHEM SCAND SER B 1987 41 (10) 766

Purification of ligninase isozymes from the white-rot fungus *Trametes versicolor*

Tonon F, Odier E\*\*//INRA, Ctr Biotechnol, Microbiol Lab, F-78850 Thiverval Grignon, France

APPL ENVIRON MICROBIOL 1988 54 (2) 466

Influence of veratryl alcohol and hydrogen peroxide on ligninase activity and ligninase production by *Phanerochaete chrysosporium*

### 4. Polysaccharides

Altman E, Brisson JR, Bundle DR, Perry MB//Natl Res Council Canada, Div Biol Sci, Ottawa, Ontario, Canada K1A 0R6

BIOCHEM CELL BIOL 1987 65 (10) 876

Structural studies of the O-chain of the phenol-phase soluble lipopolysaccharide from *Haemophilus pleuropneumoniae* serotype 2

di Fabio JL, Perry MB, Bundle BR//Natl Res Council Canada, Div Biol Sci, Ottawa, Ontario, Canada K1A 0R6

BIOCHEM CELL BIOL 1987 65 (11) 968

Analysis of the lipopolysaccharide of *Pseudomonas maltophilia* 555

Gross M, Mayer H, Widemann C, Rudolph K//Inst Pflanzenpathol & Pflanzenschutz, Grisebachstr 6, D-3400 Göttingen, Fed Rep Ger

ARCH MICROBIOL 1988 149 (4) 377

Comparative analysis of the lipopolysaccharides

of a rough and a smooth strain of *Pseudomonas syringae* pv. *phaseolicola*

Nakamoto S, Achiwa K/\*\*Shizuoka Univ, Sch Pharmaceut Sci, Oshika 2-2-1, Oya, Shizuoka 422, Japan

CHEM PHARM BULL TOKYO 1988 36 (1) 202

Lipid A and related compounds. XVII. Synthesis of 3-deoxy-D-manno-2-oculosonic acid (KDO)-(alpha2-6)-D-glucosamine-4-phosphates, analogs of the biologically active moiety of lipopolysaccharide from *Escherichia coli* re mutant

Ray TC, Smith ARW\*, Wait R, Hignett RC/\*\*Thames Polytech, Sch Biol Sci & Environm Hlth, Wellington St, London SE18 6PF, England

EUR J BIOCHEM 1987 170 (1-2) 357

Structure of the sidechain of lipopolysaccharide from *Erwinia amylovora* T

Rivera M, Bryan LE, Hancock REW, McGroarty EJ\*\*Michigan State Univ, Dept Biochem, E Lansing, Mi 48824, USA

J BACTERIOL 1988 170 (2) 512

Heterogeneity of lipopolysaccharides from *Pseudomonas aeruginosa*: analysis of lipopolysaccharide chain length

Altman E, Brisson JR, Perry MB\*\*Natl Res Council Canada, Div Biol Sci, Ottawa, Ontario, Canada K1A 0R6

EUR J BIOCHEM 1987 170 (1-2) 185

Structure of the capsular polysaccharide of *Haemophilus pleuropneumoniae* serotype 5

Altman E, Brisson JR, Perry MB//Natl Res Council Canada, Div Biol Sci, Ottawa, Ontario, Canada K1A 0R6

BIOCHEM CELL BIOL 1987 65 (11) 960

Structure of the capsular polysaccharide of *Haemophilus pleuropneumoniae* serotype 3

Bernal VM, Smajda CH, Smith JL, Stanley DW//Univ Guelph, Dept Food Sci, Guelph, Ontario, Canada N1G 2W1

J FOOD SCI 1987 52 (5) 1121

Interactions in protein/polysaccharide/calcium gels

Buchholz K//Tech Univ Brunswick, Inst Landwirtschaftliche Technol & Zuckerind, Langer Kamp 5, D-3300 Brunswick, Fed Rep

Ger

ZUCKERINDUSTRIE 1987 112 (12) 1059

Enzymatic synthesis of oligo- and polysaccharides from sucrose (German, English Abstract)

Chapman HD, Chilvers GR; Morris VJ//AFRC, Inst Food Res, Norwich Lab, Colney Lane, Norwich NR4 7UA, Norfolk, England

CARBOHYD POLYM 1987 7 (6) 449

Light scattering studies of solutions of the bacterial polysaccharide (XM6) elaborated by enterobacter (NCIB-11870)

Cochi SL, Omara D, Preblud SR//Ctr Dis Control, Div Immunizat, Atlanta, Ga 30333, USA

PEDIATRICS 1988 81 (1) 166

Progress in *Haemophilus* type-B polysaccharide vaccine use in the United-States (Letter)

Dev SB, Burum DP, Rha CK//MIT, Dept Appl Biol Sci, Biomat Sci & Engrn Lab, Cambridge, Ma 02139, USA

SPECTROSC LETT 1987 20 (11) 853

High resolution CPMAS and solution NMR studies of polysaccharides. I. Starch

Fedorova GA, Ivko AA, Bondarenko NT, Sharpatyi VA//Acad Sci USSR, Inst Chem Phys, Moscow V-71, USSR

DOKL AKAD NAUK SSSR 1987 297 (4) 902

A role of the adsorbed water in the radiolysis of polysaccharides (Russian)

Hale AD, Pollock CJ, Dalton SJ//Welsh Plant Breeding Stn, Dept Plant & Cell Biol, Aberystwyth SY23 3EB, Dyfed, Wales

PLANT CELL REP 1987 6 (6) 435

Polysaccharide production in liquid cell suspension cultures of *Phleum pratense* L.

Hollingsworth RI, Dazzo FB\*, Hallenga K, Muselman B/\*\*Michigan State Univ, Dept Microbiol & Publ Hlth, E Lansing, Mi 48824, USA

CARBOHYD RES 1988 172 (1) 97

The complete structure of the trifoliin lectin-binding capsular polysaccharide of *Rhizobium trifolii* 843

Kimoto T//Kawasaki Med Sch, Dept Pathol, 577 Matsushima, Kurashiki, Okayama 70101, Japan

ACTA PATHOL JPN 1987 37 12 1919

Pathological studies on three cases of cancer

treated with polysaccharides from human-type *Mycobacterium tuberculosis* - Antitumor activity through collagen fiber proliferation

Knutsen SH, Grasdalen H//Univ Trondheim, Norwegian Inst Technol, Div Biotechnol, Marine Biochem Lab, N-7034 Trondheim, Norway

BOT MAR 1987 30 (6) 497

Characterization of water-extractable polysaccharides from Norwegian *Furcellaria lumbricalis* (Huds.) Lamour. (Gigartinales, Rhodophyta) by IR and NMR spectroscopy

Larionova NI, Makevnina LG, Nartikova VF, Pashkina TS//MV Lomonosov State Univ, Fac Chem, Moscow 117234, USSR

BIOCHEMISTRY-ENG TR 1987 52 (5) P2 709

Influence of covalent bonding of aprotinin to a polysaccharide carrier on its inhibition of human blood plasma kallikrein, and trypsin

Lee CK, Gray GR\*//Univ Minnesota, Dept Chem, Minneapolis, Mn 55455, USA

J AMER CHEM SOC 1988 110 (4) 1292

A general strategy for the chemical sequencing of polysaccharides

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

J BIOTECHNOL 1987 6 (4) 293

Production and recovery of rhamnose-containing polysaccharides from *Acinetobacter calcoaceticus*

Muroga Y, Yamada Y, Noda I, Nagasawa M//Nagoya Univ, Fac Engr, Dept Synthet Chem, Furo cho, Chikusa ku, Nagoya, Aichi 464, Japan

MACROMOLECULES 1987 20 (12) 3003

Local conformation of polysaccharides in solution investigated by small-angle X-ray scattering

Nardin R, Vincendon M\*//CEN, Dept Rech Fondamentale, Chim Labs, 85X, F-38041 Grenoble, France

MAKROMOL CHEM-MACRO CHEM PHYS 1988 189 (1) 153

Conformational analysis of beta(1-4)-linked polysaccharides in aprotic solvent solutions

Read RR, Costerton JW\*//Univ Calgary, Dept Biol, Calgary, Alberta, Canada T2N 1N4

CAN J MICROBIOL 1987 33 (12) 1080

Purification and characterization of adhesive exopolysaccharides from *Pseudomonas putida* and *Pseudomonas fluorescens*

Scott JA, Palmer SJ//Univ Bath, Sch Chem Engr, Claverton Down, Bath BA2 7AY, Avon, England

BIOTECHNOL LETT 1988 10 (1) 21

Cadmium bio-sorption by bacterial exopolysaccharide

Shimizu N, Tomoda M\*//Kyoritsu Coll Pharm, Shibakoen, Minato ku, Tokyo 105, Japan

CHEM PHARM BULL TOKYO 1987 35 (12) 4981

Constituents of the seed of *Malva verticillata*. I. Structural features of the major neutral polysaccharide

Thompson M, Wong HE, Dorn AW//Univ Toronto, Dept Chem, 80 St George St, Toronto, Ontario, Canada M5S 1A1

ANAL CHIM ACTA 1987 200 (1) 319

The Langmuir-Blodgett monolayer dipole potential: a smeared dipole model for a lipid array, and pulsing of the potential by direct subphase infusion of immunochemical and lectin/polysaccharide complexes

## 5. Starch

David MH, Gunther H, Roper H//Cerestar, Ctr Res & Dev, Havenstr 84, B-1800 Vilvoorde, Belgium

STARCH 1987 39 (12) 436

Catalytic properties of *Bacillus megaterium* amylase

Dobransky T, Polivka L, Haas I, Sova O\*, Petrvalsky E\*//Slovak Acad Sci, Inst Anim Physiol, Dukelskych Hrdinov 1-B, CS-04001 Kosice, Czechoslovakia

J CHROMATOGR 1987 411 (DEC) 486

Purification of alpha-amylase by industrial autofocusing

Dubois B, Garabedian N, Sounthavong JP, Tournier G//Hop Trousseau, Serv Pediat, 28 av Dr A Netter, F-75571 Paris 12, France

THERAPIE 1987 42 (6) 545

Efficacy of alpha-amylase syrup in glue-ear with mucus spinability test

- Gibson RM, Svensson B//Carlsberg Lab, Dept Chem, Gamle Carlsberg Vej 10, DK-2500 Copenhagen, Denmark  
CARLSBERG RES COMMUN 1987 52 (6) 373  
Identification of tryptophanyl residues involved in binding of carbohydrate ligands to barley alpha-amylase 2
- Harington A, Watson TG, Louw ME, Rodel JE, Thomson JA\*\*//CSIR, Molec & Cell Biol Lab, POB 30947 Braamfontein 2017, South Africa  
APPL MICROBIOL BIOTECHNOL 1988 27 (5-6) 521  
Stability during fermentation of a recombinant alpha-amylase plasmid in *Bacillus subtilis*
- Kerhardy F, Bureau D, Meyer C, Daussant J//CNRS, Physiol Organes Vegetaux apres Recolte Lab, 4 Ter Route Gardes, F-92190 Meudon, France  
J INST BREW 1988 94 (1) 38  
Purification of barley malt alpha-amylase by immunoaffinity chromatography
- Khovrychev MP, Lirova SA, Rabotnova IL//Acad Sci USSR, Inst Microbiol, Moscow V-71, USSR  
MICROBIOLOGY-ENGL TR 1987 56 (3) 341  
Biosynthesis of thermostable alpha-amylase under continuous cultivation
- Kimura K, Tsukamoto A, Ishii Y, Takano T, Yamane K\*\*//Univ Tsukuba, Inst Biol Sci, Sakura, Ibaraki 305, Japan  
APPL MICROBIOL BIOTECHNOL 1988 27 (4) 372  
Cloning of a gene for maltohexaose producing amylase of an alkalophilic *Bacillus* and hyperproduction of the enzyme in *Bacillus subtilis* cells
- Kunze G, Meixner M, Steinborn G, Hecker M, Bode R, Samsonova IA, Birnbaum D, Hofmeister J//Acad Sci GDR, Zent Inst Genet & Kulturpflanzenforsch, DDR-4325 Gatersleben, Ger Dem Rep  
J BIOTECHNOL 1988 7 (1) 33  
Expression in yeast of a *Bacillus* alpha-amylase gene by the ADH1 promoter
- Oriel P, Schwacha A//Michigan State Univ, Dept Microbiol & Publ Hlth, E Lansing, Mi 48824, USA  
ENZYME MICROB TECHNOL 1988 10 (1) 42  
Growth on starch and extracellular production of thermostable amylase by *Escherichia coli*
- Ruohonen L, Hackman P, Lehtovaara P, Knowles JKC, Keranen S//Univ Helsinki, Recombinant DNA Lab, Valimotie 7, SF-00380 Helsinki, Finland  
GENE 1987 59 (2-3) 161  
Efficient secretion of *Bacillus amyloliquefaciens* alpha-amylase by its own signal peptide from *Saccharomyces cerevisiae* host cells
- Srivastava RAK//CSIR, Reg Res Lab, Div Biochem, Jorhat 785006, Assam, India  
ENZYME MICROB TECHNOL 1987 9 (12) 749  
Purification and chemical characterization of thermostable amylases produced by *Bacillus stearothermophilus*
- Suominen I, Karp M, Lahde M, Kopio A, Glumoff T, Meyer P, Mantsala P//Univ Turku, Dept Biochem, SF-20500 Turku 50, Finland  
GENE 1987 61 (2) 165  
Extracellular production of cloned alpha-amylase by *Escherichia coli*
- Ohnishi M, French D//Kyoto Univ, Coll Agr, Dept Food Sci & Technol, Sakyo ku, Kyoto 606, Japan  
CARBOHYD RES 1988 172 (1) 164  
Iodine binding to amylopectin fractions studied by difference spectrophotometry and potentiometry
- Eliasson AC//Univ Lund, Dept Food Technol, Box 124, S-22100 Lund, Sweden  
CARBOHYD RES 1988 172 (1) 83  
On the thermal transitions of the amylose-cetyltrimethylammonium bromide complex
- Raphaelides S, Karkalas J\*\*//Univ Strathclyde, Dept Biosci & Biotechnol, Div Food Sci, 131 Albion St, Glasgow G1 1SD, Scotland  
CARBOHYD RES 1988 172 (1) 65  
Thermal dissociation of amylose-fatty acid complexes
- Veregin RP, Fyfe CA, Marchessault RH\*\*//Xerox Res Ctr Canada Ltd, 2660 Speakman Dr, Mississauga, Ontario, Canada L5K 2L1  
MACROMOLECULES 1987 20 (12) 3007  
Investigation of the crystalline "V" amylose complexes by high resolution <sup>13</sup>C CP/MAS NMR spectroscopy



- Toldra F, Jansen NB, Tsao GT//CSIC, Inst Agroquim & Technol Alimentos, Jaime Roig 11, E-46010 Valencia, Spain  
 J CHEM TECHNOL BIOTECHNOL 1987 40 (4) 275  
 Immobilization of glucoamylase in porous glass fibers
- Ukai S, Honda A, Nagai K, Kiho T, Tsuchiya T//Gifu Coll Pharm, 6-1 Mitahora Higashi 5-chome, Gifu 502, Japan  
 J CHROMATOGR 1988 435 (2) 374  
 Gas-liquid chromatography of acid hydrolysates of hydroxyethylstarch and hydroxyethylcellulose
- Abe J, Bergmann FW, Obata K, Hizukuri S\*//  
 \*Kagoshima Univ, Dept Agr Chem, 21-24 Korimoto-1, Kagoshima 890, Japan  
 APPL MICROBIOL BIOTECHNOL 1988 27 (5-6) 447  
 Production of the raw-starch digesting amylase of *Aspergillus* sp K-27
- Analytical Working Party of the Starch Experts Group of the European Starch Association  
 STARCH 1987 39 (12) 414  
 Measurements of the starch content of commercial starches
- Annisson EF, Balnave D, Bryden WL, Mollah Y, Rogel AM//Univ Sydney, Dept Anim Husb, Werombi Rd, Camden, NSW 2570, Australia  
 BRIT POULTRY SCI 1987 28 (4) 781  
 Clarification of the relationship between digestible starch content and the metabolisable energy of Australian wheats (Letter)
- Archer AW//New S Wales Dept Hlth, Div Analyt Labs, POB 162, Lidcombe, NSW 2141, Australia  
 J ASSN PUBLIC ANAL 1987 25 (2) 43  
 The adulteration of white pepper with rice starch
- Arutyunyan AM, Amirkhanyan SA//No address available  
 J APPL CHEM-ENG TR 1987 60 (3) P1 483  
 Effect of composition of starch suspensions of silica gel on properties of plates for thin-layer chromatography
- Bergmann FW, Abe J, Hizukuri S\*//Kagoshima Univ, Dept Agr Chem, 21-24 Korimoto-1, Kagoshima 890, Japan  
 APPL MICROBIOL BIOTECHNOL 1988 27 (5-6) 443  
 Selection of microorganisms which produce raw-starch degrading enzymes
- Bhattacharya M, Hanna MA//Univ Nebraska, Dept Agr Engr, Lincoln, Ne 68583, USA  
 LEBENS-M-WISS-TECHNOL 1987 20 (4) 195  
 Textural properties of extrusion-cooked corn starch
- Buleon A, Bizot H, Delage MM, Pontoire B//INRA, Physicochim Macromolec Lab, rue Geraudiere, F-44072 Nantes 03, France  
 CARBOHYD POLYM 1987 7 (6) 461  
 Comparison of X-ray diffraction patterns and sorption properties of the hydrolyzed starches of potato, wrinkled and smooth pea, broad bean and wheat
- Caransa A, Bakker WGM//Dorr Oliver Europe BV, POB 9090, 1006 AB Amsterdam, The Netherlands  
 STARCH 1987 39 (11) 381  
 Modern process for the production of sorghum starch
- Chinnaswamy R, Hanna MA//Univ Nebraska, Dept Agr Engr, 213 LW Chase Hall, Lincoln, Ne 68583, USA  
 J FOOD SCI 1987 52 (6) 1746  
 Nozzle dimension effects on the expansion of extrusion cooked corn starch
- Franco CML, Ciacco CF//Univ Nacl Estadual Sao Paulo, Inst Biociencias Letras & Ciencias Exatas, Caixa Postal 136, BR-15055 Sao Jose Do Rio, SP, Brazil  
 STARCH 1987 39 (12) 432  
 Studies of the susceptibility of granular cassava and corn starches to enzymatic attack. Part I. Study of the conditions of hydrolysis
- Frese L, Schittenhelm S, Dambroth M//Bundesforsch Anstalt Landwirtschaft Braunschweig Volkenrode, Inst Pflanzenbau & Pflanzenzucht, D-3300 Braunschweig, Fed Rep Ger  
 LANDBAUFORSCH VOLKENRODE 1987 37 (4) 213  
 Development of base populations from root and tuber crops for the production of sugar and starch as raw material for the industry (German, English Abstract)

- Haase NU, Kempf W, Tegge G, D'heur U//Bundesforsch Anstalt Getreide & Kartoffelverarbeitung, Inst Starke & Kartoffeltechnolog, D-4930 Detmold, Fed Rep Ger  
 STARCH 1987 39 (12) 416  
 Comparative investigations on the wet-separation of pea starch (German, English Abstract)
- Juliano BO, Villareal RM, Perez CM, Villareal CP, Takeda Y, Hizukuri S//POB 933, Manila, Philippines  
 STARCH 1987 39 (11) 390  
 Varietal differences in properties among high amylose rice starches
- Kahn V//Agr Res Org, Volcani Ctr, POB 6, IL-50250 Bet Dagan, Israel  
 J FOOD SCI 1987 52 (6) 1646  
 Characterization of starch isolated from avocado seeds
- Kim K, Hamdy MK//Univ Georgia, Dept Food Sci, Athens, Ga 30602, USA  
 J FOOD SCI 1987 52 (5) 1387  
 Depolymerization of starch by high pressure extrusion
- Kurosawa H, Ishikawa H, Tanaka H\*\*//Univ Tsukuba, Inst Appl Biochem, Sakura, Ibaraki 305, Japan  
 BIOTECHNOL BIOENG 1988 31 (2) 183  
 L-lactic acid production from starch by coimmobilized mixed culture system of *Aspergillus awamori* and *Streptococcus lactis*
- Laakso T, Edman P, Brunk U//Univ Uppsala, Dept Pharmaceut Biochem, S-75105 Uppsala, Sweden  
 J PHARM SCI 1988 77 (2) 138  
 Biodegradable microspheres VII: alterations in mouse liver morphology after intravenous administration of polyacryl starch microparticles with different biodegradability
- Leelavathi K, Indrani D, Sidhu J//Cent Food Technol Res Inst, Discipline Baking Technol, Mysore 570013, Karnataka, India  
 STARCH 1987 39 (11) 378  
 Amylograph pasting behaviour of cereal and tuber starches
- Leszczynski W//Acad Agr Wroclaw, Dept Storage & Food Technol, Norwida 25, PL-50375 Wroclaw, Poland  
 STARCH 1987 39 (11) 375  
 New methods for determination of starch gelatinisation temperatures
- Mischnick-Lubbecke P, Konig WA, Radeloff M//Univ Hamburg, Inst Organ Chem & Biochem, Martin Luther King Platz 6, D-2000 Hamburg 13, Fed Rep Ger  
 STARCH 1987 39 (12) 425  
 Determination of the substitution pattern of chemical modified starches (German, English Abstract)
- Neszmelyi A, Laszlo E, Hollo J//Hungarian Acad Sci, Cent Res Inst Chem, POB 17, H-1525 Budapest, Hungary  
 STARCH 1987 39 (11) 393  
 Biomolecular modelling: an interactive program for the visualization and modelling of carbohydrate (starch and oligosaccharide) complexes in solution
- Oriol E, Raimbault M\*, Roussos S, Viniegragonzales G//Orstom Ctr, 2051 ave Val Montferand, BP 5045, F-34032 Montpellier, France  
 APPL MICROBIOL BIOTECHNOL 1988 27 (5-6) 498  
 Water and water activity in the solid state fermentation of cassava starch by *Aspergillus niger*
- Pearce LE, Davis EA\*, Gordon J, Miller WG//Univ Minnesota, Dept Food Sci & Nutr, 1334 Eckles Ave, St Paul, Mn 55108, USA  
 FOOD MICROSTRUCT 1987 6 (2) 121  
 An electron spin resonance study of stearic acid interactions in model wheat starch and gluten systems
- Perez CM, Juliano BO, Pascual CG, Novenario VG//POB 933, Manila, Philippines  
 STARCH 1987 39 (11) 386  
 Extracted lipids and carbohydrates during washing and boiling of milled rice
- Praznik W, Beck RHF, Berghofer E//Agr Univ Vienna, Inst Chem, Arbeitsgrp Lebensmittel Umwelt & Nat Chem, Gregor Mendelstr 33, A-1180 Vienna, Austria  
 STARCH 1987 39 (11) 397  
 Molecular characterization of hydrolytically degraded starches with high performance GPC analysis (German, English Abstract)
- Rickard JE, Behn KR//Trop Dev & Res Inst, 56-

62 Grays Inn Rd, London WC1X 8LU, England  
J SCI FOOD AGRIC 1987 41 (4) 373

Evaluation of acid and enzyme hydrolytic methods for the determination of cassava starch

Schroder G, Dambroth M//Bundesforsch Anstalt Landwirtschaft Braunschweig Volkenrode, Inst Pflanzenbau & Pflanzenzuchtung, D-3300 Braunschweig, Fed Rep Ger  
LANDBAUFORSCH VOLKENRODE 1987 37 (4) 195

Development of basis populations of pea, lupin and Phaseolus-bean with high grain yields for the production of chemical raw materials as starch, protein, oil, lecitin and others (German, English Abstract)

Shamala TR, Sreekantiah KR//Cent Food Technol Res Inst, Dept Microbiol & Sanitat, Mysore 570013, Karnataka, India  
ENZYME MICROB TECHNOL 1987 9 (12) 726

Degradation of starchy substrates by a crude enzyme preparation and utilization of the hydrolysates for lactic fermentation

Singh V, Ali SZ\*//Cent Food Technol Res Inst, Discipline Grain Sci & Technol, Mysore 570013, Karnataka, India  
STARCH 1987 39 (11) 402

Comparative acid modification of various starches

Soni PL, Sharma HW, Bisen SS, Srivastava HC, Gharia MM//Forest Res Inst & Coll, Chem Forest Prod Branch, Po New Forest, Dehra Dun 248006, India  
STARCH 1987 39 (12) 411

Unique physico-chemical properties of sal (*Shorea robusta*) starch

Starkhammar H, Hakansson L, Morales O, Svedberg J//Linkoping Univ Hosp, Dept Oncol, S-58185 Linkoping, Sweden  
ACTA ONCOL 1987 26 (4) 295

Intra-arterial mitomycin C treatment of unresectable liver tumours - Preliminary results on the effect of degradable starch microspheres

Tsapyuk EA, Mank VV//Acad Sci UkSSR, Inst Colloid Chem & Water Chem, Kiev, Ukraine, USSR  
COLLOID J USSR-ENGL TR 1987 49 (2) 354  
Effect of the structure of starch and gelatin mac-

romolecules on the properties of dynamic membranes formed from them

Wing RE, Maiti S, Doane WM//USDA ARS, No Reg Res Ctr, 1815 N Univ St, Peoria, IL 61604, USA  
STARCH 1987 39 (12) 422

Effectiveness of jet-cooked pearl cornstarch as a controlled release matrix

## 6. Others

Bird KT//Harbor Branch Oceanog Inst, Div Appl Biol, 5600 Old Dixie Hwy, Ft Pierce, FL 34946, USA

BOT MAR 1988 31 (1) 33

Agar production and quality from *Gracilaria* sp. strain G-16: effects of environmental factors

Onraet AC, Robertson BL//Univ Port Elizabeth, Inst Coastal Res, Dept Bot, POB 1600, Port Elizabeth 6000, South Africa  
BOT MAR 1987 30 (6) 491

Seasonal variation in yield and properties of agar from sporophytic and gametophytic phases of *Onikusa pristoides* (Turner) Akatsuka (Gelidiaceae, Rhodophyta)

Parkin BH, Hartley K//Metropolitan Police Forens Sci Lab, 109 Lambeth Rd, London SE1 7LP, England  
FORENSIC SCI INT 1987 35 (2-3) 267

The detection of fingerprints and other marks in body fluids by the use of agar gels

Patwary MU//Univ Dhaka, Dept Bot, Dhaka 1000, Bangladesh

BANGLADESH J BOTANY 1987 16 (2) 221

Fronde composition and some physical characteristics of agars from female, male and tetrasporophyte clones of *Gracilaria tikvahiae* mutant Mp-40

Attwood TK, Nelmes BJ, Sellen DB//Univ Leeds, Dept Biophys, Leeds LS2 9JT, W Yorkshire, England  
BIOPOLYMERS 1988 27 (2) 201

Electron microscopy of beaded agarose gels

West R//Western Gen Hosp, MRC, Clin & Populat Cytogenet Unit, Crewe Rd, Edinburgh EH4 2XU, Midlothian, Scotland  
BIOPOLYMERS 1988 27 (2) 231

The structure of agarose gels, and the ac-

comodation within them of irregularly shaped particles

Kennedy JF, Bradshaw IJ//Univ Birmingham, Dept Chem, Chem Bioact Carbohydrates & Prot, POB 363, Birmingham B15 2TT, W Midlands, England

CARBOHYD POLYM 1987 7 (6) 409

A comparison of the poly(hexamethylenebiguanidinium chloride) assay and a neutral equivalent method for the determination of alginates in industrial liquors extracted from brown seaweed

Lewis JA, Papavizas GC//USDA ARS, Beltsville Agr Res Ctr, Inst Plant Protect, Biocontrol Plant Dis Lab, Beltsville, Md 20705, USA

PLANT PATHOL 1987 36 (4) 438

Application of Trichoderma and Gliocladium in alginate pellets for control of Rhizoctonia damping-off

Vuilleumard JC, Terre S, Benoit S, Amiot J//Univ Laval, Dept Sci & Technol Aliments, Quebec City, Quebec, Canada G1K 7P4

APPL MICROBIOL BIOTECHNOL 1988 27 (5-6) 423

Protease production by immobilized growing cells of *Serratia marcescens* and *Myxococcus xanthus* in calcium alginate gel beads

Baidon S, Fiszman SM, Costell E, Duran L//CSIC, Inst Agroquim & Tecnol Alimentos, Jaime Roig 11, E-46010 Valencia, Spain

REV AGROQUIM TECNOL ALIMENT 1987 27 (4) 545

Syneresis in agar and in kappa-carrageenan gels. Effects of the addition of carob bean and guar gums

Fiszman SM, Baidon S, Costell E, Duran L//CSIC, Inst Agroquim & Tecnol Alimentos, Jaime Roig 11, E-46010 Valencia, Spain

REV AGROQUIM TECNOL ALIMENT 1987 27 (4) 519

Functional properties of carob bean gum. Effects on compression resistance of both agar and kappa-carrageenan gels

Chevalier P, de la Noue J//Univ Laval, Rech Recyclage Biol & Aquiculture Grp, Quebec City, Quebec, Canada G1K 7P4

ENZYME MICROB TECHNOL 1988 10 (1) 19

Behaviour of algae and bacteria co-immobilized

in carrageenan, in a fluidized bed

Precht D, Peters KH, Peterson J//Bundesanstalt Milchwforsch, Inst Chem & Phys, D-2300 Kiel, Fed Rep Ger

MILCHWISSENSCHAFT 1987 42 (12) 776

Improvement of quality of whipping cream by adding carrageenan and milk constituents. 2. Influence of additives on the physical properties of whipped cream (German, English Abstract)

Rochas C, Landry S//CNRS, Ctr Rech Macromolec Vegetales, BP 68, F-38402 St Martin d'Heres, France

CARBOHYD POLYM 1987 7 (6) 435

Molecular organization of kappa-carrageenan in aqueous solutions

Stortz CA, Cerezo AS\*\*//Univ Buenos Aires, Fac Ciencias Exactas & Nat, Dept Quim Organ, Pabellon 2, Ciudad Univ, RA-1428 Buenos Aires, Argentina

CARBOHYD RES 1988 172 (1) 139

The lambda-components of the "intermediate" fractions of the carrageenan from *Iridaea undulosa*

Hunt S, Huckerby TN//Univ Lancaster, Dept Biol Sci, Lancaster LA1 4YQ, England

COMP BIOCHEM PHYSIOL PT B 1987 88 (4) 1107

A comparative study of molluscan and crustacean chitin proteoglycans by carbon-13 NMR spectroscopy. Identification of carbohydrate and amino acid contributions and the determination of amino acid chemical shifts in anhydrous formic acid

Mayuravalli VVL, Punnaiah KC, Reddy GPV//Agr Coll, Bapatla 522001, Andhra Pradesh, India

INDIAN J AGR RES 1987 57 (12) 956

Evaluation of stage specificity of chitin-inhibitors for control of tobacco caterpillar, *Spodoptera litura*

Revol JF, Gardner KH, Chanzy H//McGill Univ, Pulp & Paper Res Inst Canada, 3420 Univ St, Montreal, Quebec, Canada H3A 2A7

BIOPOLYMERS 1988 27 (2) 345

Beta-chitin: molecular imaging at 0.35-nm resolution

Uchiyama H, Kikuchi K, Ogamo A, Nagasawa K\*\*//Kitasato Univ, Sch Pharmaceut Sci, 5-9-1

Shiokane, Minato ku, Tokyo 108, Japan

BIOCHIM BIOPHYS ACTA 1987 926 (3) 239

Determination of the distribution of constituent disaccharide units within the chain near the linkage region of shark cartilage chondroitin sulfate C

Armstrong DW, Spino LA, Han SM, Seeman JI, Secor HV//Univ Missouri, Dept Chem, Rolla, Mo 65401, USA

J CHROMATOGR 1987 411 (DEC) 490

Enantiomeric resolution of racemic nicotine and nicotine analogues by micro-column liquid chromatography with beta-cyclodextrin inclusion complexes

Imai T, Odakiri Y, Saito H, Uekama K\*\*//Kumamoto Univ, Fac Pharmaceut Sci, 5-1 Oe-Honmachi, Kumamoto 862, Japan

CHEM PHARM BULL TOKYO 1988 36 (1) 354

Inclusion mode of flurbiprofen with beta-cyclodextrin and heptakis(2,3,6-tri-O-methyl)-beta-cyclodextrin, and improvements of some pharmaceutical properties of flurbiprofen by complexation

Jelinek I, Dohnal J, Snopek J, Smolkova-Keulemansova E//Res Inst Pharm & Biochem, Kourimska 17, CS-136000 Prague 3, Czechoslovakia

J CHROMATOGR 1988 435 (3) 496

Use of cyclodextrins in isotachopheresis. III. Purity control of naftidrofuryl hydrogenoxalate and some of its synthesis intermediates

Kano K, Matsumoto H, Yoshimura Y, Hashimoto S//Doshisha Univ, Dept Appl Chem, Kamikyo ku, Kyoto 602, Japan

J AMER CHEM SOC 1988 110 (1) 204

Binding sites of pyrene and related compounds and chiral excimer formation in the cavities of cyclodextrins and branched cyclodextrins

Makela MJ, Korpela TK, Puisto J, Laakso SV\*\*//Univ Turku, Dept Forens Med, SF-20500 Turku 50, Finland

J AGR FOOD CHEM 1988 36 (1) 83

Nonchromatographic cyclodextrin assays: evaluation of sensitivity, specificity, and conversion mixture applications

Nelson G, Patonay G, Warner IM\*\*//Emory Univ, Dept Chem, Atlanta, Ga 30322, USA

ANAL CHEM 1988 60 (3) 274

Effects of selected alcohols on cyclodextrin inclusion complexes of pyrene using fluorescence lifetime measurements

Pszczola DE//No address available

FOOD TECHNOL 1988 42 (1) 96

Production and potential food applications of cyclodextrins

Snopek J, Jelinek I, Smolkova-Keulemansova E\*\*//Charles Univ, Dept Analyt Chem, Albertov 2030, CS-12840 Prague 2, Czechoslovakia

J CHROMATOGR 1987 411 (DEC) 153

Use of cyclodextrins in isotachopheresis. II. Alpha-, beta- and gamma-cyclodextrins as leading electrolyte additives for the separation of ortho-, meta- and para-substituted halogenobenzoic acids

Yoshida N, Fujimoto M\*\*//Hokkaido Univ, Fac Sci, Dept Chem 2, Coordinat Chem Lab, Sapporo, Hokkaido 060, Japan

J PHYS CHEM 1987 91 (27) 6691

Compensation effect in host-guest interactions. The activation parameters for the inclusion reactions of alpha-cyclodextrin with hydroxyphenylazo derivatives of naphthalene-sulfonic acids

Kaneko T, Hamamoto T, Horikoshi K//Riken Inst, Wako, Saitama 35101, Japan

J GEN MICROBIOL 1988 134 (1) 97

Molecular cloning and nucleotide sequence of the cyclomaltodextrin glucantransferase gene from the alkalophilic *Bacillus* sp. strain no. 38-2

Angelico F, Arca M, del Ben M//Univ Roma La Sapienza, Ist Terapia Med Sistemate, Serv Tipiazaz Iperlipoprot, I-00185 Roma, Italy

INT J OBESITY 1987 11 S3 221

Use of diethylaminoethyl-dextran (DEAE-D) in the treatment of hyperlipoproteinemias and obesity

Cairella M//Univ Roma La Sapienza, Policlin Umberto I, Ist Terapia Med Sistemate, Serv Dietol, I-00161 Roma, Italy

INT J OBESITY 1987 11 S3 225

Use of DEAE-D in the treatment of obesity

Goisis M, Grossi F, Cellani F, Spignoli G, Daprati A//Osped Maggiore, Div Ginecol & Ostet, Lodi, Italy

INT J OBESITY 1987 11 S3 229

Changes of lipid metabolism in surgical menopause: prevention by DEAE-dextran, a new anion exchange resin

Pupita F, Barone A//Fano Prov Hosp, Ctr Metab & Vasc Dis, Dept Internal Med, Fano, Italy

INT J OBESITY 1987 11 S3 209

Action of DEAE-D on lipid digestion and absorption

Soldani G, Maccheroni M, Martelli F, Mengozzi G, Cardini G//Univ Pisa, Ist Clin Med Vet, Farmacol Lab, Viale Piagge 2, I-56100 Pisa, Italy

INT J OBESITY 1987 11 S3 201

Biochemistry and pharmacology of diethylaminoethyl-dextran (DEAE-D)

Vita F, di Luigi L, Tofini G, Isidori A//Ist Nazl Invest Grottaferrata, Ctr Ric Malattie Dis-metab, Roma, Italy

INT J OBESITY 1987 11 S3 215

Use of diethylaminoethyl-dextran (DEAE-D) in the management of obesity: effect on insulin secretion

Barker PE, England K, Ganetsos G//Univ Aston, Dept Chem Engr, Birmingham B4 7ET, W Midlands, England

J CHEM TECHNOL BIOTECHNOL 1988 41 (1) 61

Fractionation of dextran using repetitive batch chromatography

Castro MR//Inst Municipal Invest Med, Paseo Maritimo 25-27, E-08003 Barcelona, Spain

ALLERGOL IMMUNOPATHOL 1987 15 (4) 225

Tolerance induction by continuous stimulation with dextran-B512

Dunn BE, Edberg SC, Torres AR\*//Bio Fractionat, 1725 S Highway 89-91, Logan, Ut 84321, USA

ANAL BIOCHEM 1988 168 (1) 25

Purification of *Escherichia coli* alkaline phosphatase on an ion-exchange high-performance liquid chromatographic column using carboxymethyl dextrans

Koopal LK, Hlady V, Lyklema J//Agr Univ Wageningen, Dept Phys & Colloid Chem, de Dreijen 6, 6703 BC Wageningen, The Netherlands

J COLLOID INTERFACE SCI 1988 121 (1) 49  
Electrophoretic study of polymer adsorption: dextran, polyethylene oxide and polyvinyl alcohol on silver iodide

Radzicka A, Konieczny M, Piasecki E, Inglot AD//Polish Acad Sci, Inst Immunol & Exptl Therapy, Gen Chem Lab, Czerska 122, PL-53114 Wroclaw, Poland

ARCH IMMUNOL THER EXP 1987 35 (2) 185  
New benzoquinone derivatives of dextran as carriers for interferon

Saundry RH, Harrison P, Savidge GF//United Med & Dent Sch Guys & St Thomas, Div Haematol, London SE1 7EH, England

THROMB RES 1987 48 (6) 641

Chromatography of vWF on dextran sulphate sepharose

Nelson CJ, Spollen WG//Univ Missouri, Dept Agron, Columbia, Mo 65211, USA

PHYSIOL PLANT 1987 71 (4) 512

Fructans

Miller LJ, Furneaux RH//Carina Chem Labs Ltd, POB 30366, Lower Hutt, New Zealand

BOT MAR 1987 30 (6) 427

Chemical characteristics of the galactans from the forms of *Gracilaria secundata* from New Zealand

Andaluz E, Ridruejo JC, Ramirez M, Ruiz-Herrera J, Larriba G//Univ Extremadura, Fac Ciencias, Dept Microbiol, E-06071 Badajoz, Spain

FEMS MICROBIOL LETT 1988 49 (2) 251

Initiation of glucan synthesis in yeast

Autio K, Myllymaki O, Malkki Y//Tech Res Ctr Finland, Food Res Lab, Biologinkuja 1, SF-02150 Espoo, Finland

J FOOD SCI 1987 52 (5) 1364

Flow properties of solutions of oat beta-glucans

Ghosh R, Das A\*//Jadavpur Univ, Dept Chem, Calcutta 700032, W Bengal, India

INDIAN J CHEM SECT B 1987 26 (11) 1059

Structure of a glucan isolated from tal fruit (*Borassus flabellifer*)

Beldman G, Voragen AGJ, Rombouts FM, Pilnik W//Agr Univ Wageningen, Dept Food Sci, de Dreyen 12, 6703 BC Wageningen, The Netherlands

- BIOTECHNOL BIOENG 1988 31 (2) 173  
Synergism in cellulose hydrolysis by endoglucanases and exoglucanases purified from *Trichoderma viride*
- Beldman G, Voragen AGJ, Rombouts FM, Searle-van Leeuwen MF, Pilnik W//Agr Univ Wageningen, Dept Food Sci, de Dreyen 12, 6703 BC Wageningen, The Netherlands  
BIOTECHNOL BIOENG 1988 31 (2) 160  
Specific and nonspecific glucanases from *Trichoderma viride*
- Lejeune A, Courtois S, Colson C\*//Catholic Univ Louvain, Unite Genet, Pl Croix Sud 4, Bte 3, B-1348 Louvain La Neuve, Belgium  
APPL ENVIRON MICROBIOL 1988 54 (2) 302  
Characterization of an endoglucanase from *Pseudomonas fluorescens* subsp. *cellulosa* produced in *Escherichia coli* and regulation of the expression of its cloned gene
- Tan LUL, Mayers P, Illing M, Sadler JN//Forintek Canada Corp, Dept Biotechnol & Chem, 800 Montreal Rd, Ottawa, Ontario, Canada K1G 3Z5  
BIOCHEM CELL BIOL 1987 65 (9) 822  
The copurification of beta-glucosidase, beta-xylosidase, and 1,3-beta-glucanase in two separate enzyme complexes isolated from *Trichoderma harzianum*
- Cherniak R, Jones RG\*, Reiss E//Georgia State Univ, Dept Chem, Atlanta, Ga 30303, USA  
CARBOHYD RES 1988 172 (1) 113  
Structure determination of *Cryptococcus neoformans* serotype A-variant glucuronoxylomannan by <sup>13</sup>C-n.m.r. spectroscopy
- Fournet B, Leroy Y, Montreuil J, Decaro J, Rovey M, van Kuik JA, Vliegthart JFG//Univ Sci & Technol Lille Flandres Artois, Chim Biol Lab, F-59655 Villeneuve Dasq, France  
EUR J BIOCHEM 1987 170 (1-2) 369  
Primary structure of the glycans of porcine pancreatic lipase
- Company M, Zuluaga J, Jimenez JS//Univ Autonoma Madrid, Fac Sci, Dept Chem, Madrid 34, Spain  
INT J BIOL MACROMOL 1988 10 (1) 21  
Continuous spectrophotometric assay for glycogen phosphorylase activity
- Collins TFX, Welsh JJ, Black TN, Graham SL, O'Donnell MW//US FDA, Ctr Food Safety & Appl Nutr, Washington, DC 20204, USA  
FOOD CHEM TOXICOL 1987 25 (11) 807  
Study of the teratogenic potential of guar gum
- Patel SP, Patel RG, Patel VS\*//Sardar Patel Univ, Dept Chem, Vallabh Vidyanagar 388120, Gujarat, India  
BRIT POLYM J 1988 20 (1) 43  
Curing kinetics of epoxy-anhydride systems using quaternary ammonium guar and hydroxyethyl guar as catalysts
- Rajput LP, Murthy KN, Ramamani S//Jawaharlal Nehru Agr Univ, Jabalpur 482004, Madhya Pradesh, India  
J FOOD SCI 1987 52 (6) 1755  
Antinutritive effects and proximate composition of guar meals (*Cyamopsis tetragonoloba*)
- Naidoo S, Joffe R, Neuse EW\*//Univ Witwatersrand, Dept Chem, Johannesburg 2001, South Africa  
ANGEW MAKROMOL CHEM 1988 156 (JAN) 59  
PAN-grafted guaran. II. Short-chain grafting
- Collins TFX, Welsh JJ, Black TN, Graham SL, Brown LH//US FDA, Ctr Food Safety & Appl Nutr, Washington, DC 20204, USA  
FOOD CHEM TOXICOL 1987 25 (11) 815  
Study of the teratogenic potential of guar arabic
- Kovensky J, Cirelli AF//Univ Buenos Aires, Fac Ciencias Exactas & Nat, Dept Quim Organ, Pabellon 2, Ciudad Univ, RA-1428, Buenos Aires, Argentina  
AN ASOC QUIM ARGENT 1987 75 (6) 563  
Comparative studies of heparan sulfates from rat tissues
- Andrew M, Schmidt B//McMaster Univ, Med Ctr, Dept Pediat, Rm HSC-3N27, 1200 Main St W, Hamilton, Ontario, Canada L8N 3Z5  
SEMIN THROMB HEMOSTASIS 1988 14 (1) 28  
Use of heparin in newborn infants
- Boneu B, Caranobe C, Cadroy Y, Dol F, Gabaig AM, Dupouy D, Sie P//Purpan Hosp, Hemostasis Lab, F-31052 Toulouse, France  
SEMIN THROMB HEMOSTASIS 1988 14 (1) 18

Pharmacokinetic studies of standard unfractionated heparin, and low molecular weight heparins in the rabbit

Braud C, Vert M, Granger P//Univ Rouen Haute Normandie, Inst Natl Sci Appl Rouen, LSM, CNRS, Unite 500, BP 8, F-76131 Mt St Aignan, France

INT J BIOL MACROMOL 1988 10 (1) 2

Ca<sup>2+</sup>-heparin interactions: effects of counterions on n.m.r. and c.d. of fractionated heparin and related compounds

Guo Y, Conrad HE//Univ Illinois, Dept Biochem, Urbana, Il 61801, USA

ANAL BIOCHEM 1988 168 (1) 54

Analysis of oligosaccharides from heparin by reversed-phase ion-pairing high-performance liquid chromatography

Ichikawa Y, Monden R, Kuzuhara H\*\*//Inst Phys & Chem Res, Wako, Saitama 35101, Japan

CARBOHYD RES 1988 172 (1) 37

Synthesis of methyl glycoside derivatives of tri- and penta-saccharides related to the antithrombin III-binding sequence of heparin, employing cellobiose as a key starting material

Levine MN, Hirsh J//Hamilton Reg Canc Ctr, Ontario Canc Treatment & Res Fdn, 711 Concess St, Hamilton, Ontario, Canada L8V 1C3

SEMIN THROMB HEMOSTASIS 1988 14 (1) 116

Clinical use of low molecular weight heparins and heparinoids

Ofosu FA, Gray E//McMaster Univ, Dept Pathol, 1200 Main St W, Hamilton, Ontario, Canada L8N 3Z5

SEMIN THROMB HEMOSTASIS 1988 14 (1) 9

Mechanisms of action of heparin: applications to the development of derivatives of heparin and heparinoids antithrombotic properties

Samama M, Bernard P, Bonnardot JP, Combetamzali S, Lanson Y, Tissot E//Hotel Dieu, Cent Hematol Lab, F-75181 Paris 04, France

BRIT J SURG 1988 75 (2) 128

Low molecular weight heparin compared with unfractionated heparin in prevention of postoperative thrombosis

van Aelst SF, van Boeckel CAA //Organon Int BV, Sci Dev Grp, POB 20, 2340 BH Oss, The Netherlands

REC TRAV CHIM-J ROY NETH CHEM 1987 106 (11) 593

Synthesis of an analogue of the antithrombin-binding region of heparin containing alpha-L-idopyranuronate

van Boeckel CAA, Lucas H, van Aelst SF, van den Nieuwenhof MWP, Wagenaars GN, Mellemma JR//Organon Int BV, Sci Dev Grp, POB 20, 2340 BH Oss, The Netherlands

REC TRAV CHIM-J ROY NETH CHEM 1987 106 (11) 581

Synthesis and conformational analysis of an analogue of the antithrombin-binding region of heparin: the role of the carbohydrate function of alpha-L-idopyranuronate

Motohashi N, Nakamichi Y, Mori I, Nishikawa H, Umemoto J//Kobe Womens Coll Pharm, Dept Pharmaceut Radiochem, 4-19-1 Motoyamakita machi, Kobe 658, Japan

J CHROMATOGR 1988 435 (2) 335

Analysis by high-performance gel permeation chromatography of hyaluronic acid in animal skins and rabbit synovial fluid

Chou TD, Kokini JL//Rutgers State Univ, Cook Coll, New Jersey Agr Expt Stn, Dept Food Sci, New Brunswick, NJ 08903, USA

J FOOD SCI 1987 52 (6) 1658

Rheological properties and conformation of tomato paste pectins, citrus and apple pectins

Fuchigami M//Okayama Prefectural Jr Coll, Dept Food Sci, 3-1-1 Ishima cho, Okayama, Japan

J FOOD SCI 1987 52 (5) 1317

Relationship between pectic compositions and the softening of the texture of Japanese radish roots during cooking

Kang JY, Tay HH, Guan R, Math MV, Yap I, Labrooy SJ//Natl Univ Singapore, Natl Univ Hosp, Dept Med, Div Gastroenterol, Lower Kent Ridge Rd, Singapore 0511, Singapore

SCAND J GASTROENTEROL 1988 23 (1) 95

Dietary supplementation with pectin in the maintenance treatment of duodenal ulcer. A controlled study

Goff HD, Liboff M, Jordan WK, Kinsella JE//Univ Guelph, Dept Food Sci, Guelph, Ontario, Canada N1G 2W1

FOOD MICROSTRUCT 1987 6 (2) 193

The effects of polysorbate 80 on the fat emul-



sion in ice cream mix: evidence from transmission electron microscopy studies

Tonogai Y, Nakamura Y, Tsuji S, Ito Y//*Natl Inst Hyg Sci*, 1-1-43 Hoenzaka, Higashi ku, Osaka, Japan

*J FOOD HYG SOC JPN* 1987 28 (6) 427

Detection and determination of polysorbate in instant noodles of powdered soup by colorimetry (Japanese, English Abstract)

Inerot S, Heinegard D//*Rush Presbyterian St Lukes Med Ctr, Dept Biochem*, 1753 W Congress, Chicago, Il 60612, USA

*COLLAGEN REL RES* 1987 7 (6) 423

The normal variation in structure and composition of canine hip articular cartilage proteoglycans

Scott JE//*Univ Manchester, Dept Chem Morphol*, Manchester M13 9PL, Lancs, England

*COLLECT CZECH CHEM COMMUN* 1988 53 (1) 202

Proteoglycan-collagen interactions. Structure in the amorphous ground substance

van Kuppevelt THSM, Janssen HMJ, van Beuningen HM, Cheung KS, Schijen MMA, Kuyper CMA, Veerkamp JH\*//*Catholic Univ Nijmegen, Dept Biochem*, POB 9101, 6500 HB Nijmegen, The Netherlands

*BIOCHEM BIOPHYS ACTA* 1987 926 (3) 296

Isolation and characterization of a collagen fibril-associated dermatan sulphate proteoglycan from bovine lung

Kojima T, Ito T, Teramoto A\*//*Osaka Univ, Dept Macromolec Chem*, Toyonaka, Osaka 560, Japan

*POLYM J* 1987 19 (10) 1225

Further evidence for the multiphase separation in aqueous solutions of schizophyllan, a triple-helical polysaccharide

Wixtrom RN, Silva MH, Hammock BD\*//*Univ Calif Davis, Dept Entomol*, Davis, Ca 95616, USA

*ANAL BIOCHEM* 1988 169 (1) 71

Affinity purification of cytosolic epoxide hydrolase using derivatized epoxy-activated sepharose gels

Foss P, Stokke BT, Smidsrod O//*Norsk Bioferm AS*, N-4301 Sandnes, Norway

*CARBOHYD POLYM* 1987 7 (6) 421

Thermal stability and chain conformational studies of xanthan at different ionic strengths

Liu W, Norisuye T//*Osaka Univ, Dept Macromolec Sci*, Toyonaka, Osaka 560, Japan

*INT J BIOL MACROMOL* 1988 10 (1) 44

Thermally induced conformation change of xanthan: interpretation of viscosity behaviour in 0.01 M aqueous sodium chloride

Adams NM, Furneaux RH\*, Miller IJ, Whitehouse LA\*//*DSIR, Div Chem*, Petone, New Zealand

*BOT MAR* 1988 31 (1) 9

Xylan from *Leptosarca simplex* and carrageenans from *Iridea*, *Cenacrum* and *Nemastoma* species from the subantarctic islands of New Zealand