

BIBLIOGRAPHY ON CARBOHYDRATE POLYMERS

1. Books, Reviews and Symposia

Aubert JP, Beguin P, Millet J (Eds)
Biochemistry and Genetics of Cellulose
Degradation
(FEMs Symposium no 43))

Symposium on Biochemistry and Genetics of
Cellulose Degradation, Pasteur Inst, Paris,
France, Sept 1987

Academic Press (London) 1988 428pp \$59.00
hardbound ISBN 0-12-067575-7

Kennedy JF, Cabalda VM, White CA//Univ Bir-
mingham, Dept Chem, Chem Bioact Car-
bohydrates & Prot Res Lab, POB 363, Birmin-
gham B15 2TT, W Midlands, England
TRENDS BIOTECH 1988 6 (8) 184

Enzymic starch utilization and genetic engineer-
ing (TIBiot Review)

Morrison WR//Univ Strathclyde, Dept Biosci &
Biotechnol, Div Food Sci, Glasgow G1 1SD,
Scotland

J CEREAL SCI 1988 8 (1) 1

Lipids in cereal starches: a review

2. Cellulose

Musaev KN, Akbarov KI, Nikonovich GV, Tash-
mukhamedov SA//Tashkent Cotton Cellulose
Chem & Technol Res Inst, Tashkent, Uzbekis-
tan, USSR

VYSOKOMOL SOEDIN SER A SSSR 1988 30
(7) 1370

Characterization of acetic cellulose esters con-
taining microgel particles by light scattering
method (Russian, English Abstract)

Selin MM//All Union Blood Substitutes & Hor-
monal Preparat Technol Res Inst, Moscow,
USSR

KHIM-FARM ZH SSSR 1988 22 (6) 742

Exploration of acetylcellulose membrane per-
meabilities during dextran water solution

ultrafiltration (Russian)

Abou-State MA, Ali AFH, Mostafa NYS//Univ
Cairo, Fac Sci, Dept Chem, Giza, Egypt

ANGEW MAKROMOL CHEM 1988 161
(JUL) 69

On the chemical reactivity of cotton cellulose in
xanthogenation

Bhattacharya S, Eatman JF, Biswas PK, Tolbert
MEM//Tuskegee Inst, Carver Res Fdn, Tus-
kegee, AL 36088, USA

BIOMASS 1988 15 (4) 259

CO₂ enrichment and its relationship to biocon-
version of cellulosic biomass of sweet potato
(Ipomoea batatas L) into fermentable sugars

Dhanni R, Singh A*, Dhillion GS, Kalra
MS//Punjab Agr Univ, Dept Microbiol, Lud-
hiana 141004, Punjab, India

BIOL WASTE 1988 25 (2) 87

Isolation of hypercellulolytic mutants of
Sclerotium rolfsii and saccharification of cel-
lulosic residues

Ermolenko IN, Lazareva TG, Dovgyallo AG,
Borisenko EM//Acad Sci BeSSR, Inst Gen & In-
organ Chem, Minsk, Belorussia, USSR

DOKL AKAD NAUK BSSR 1988 32 (7) 624

The effect of high-frequency electric field upon
sorption of dyes by cellulose materials (Russian,
English Abstract)

Gert EV, Shishonok MV, Torgashov VI,
Kaputskii FN//VI Lenin State Univ, Phys Chem
Res Inst, Minsk, Belorussia, USSR

DOKL AKAD NAUK BSSR 1988 32 (7) 627

Crystallization of amorphous cellulose as in-
clusion compounds (Russian, English Abstract)

Graczyk T, Hornof V//Univ Ottawa, Dept
Chem Engn, Ottawa, Ontario, Canada K1N 9B4

J POLYM SCI-A POLYM CHEM 1988 26 (8)
2019

Graft copolymerization of cellulose initiated by

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 publica-
tions to appear under one of these headings, that section will be omitted.

ceric salts: Effect of reaction conditions on the consumption of ceric ion

Hofmann B, Lieser KH*//TH Darmstadt, Fachbereich Anorgan Chem & Kernchem, D-6100 Darmstadt, Fed Rep Ger

ANGEW MAKROMOL CHEM 1988 161 (JUL) 175

Cellulose exchanger with glyoxal-bis-(2-mercaptoanil) as anchor group for the separation of silver, gold, and mercury

Kobayashi S, Kaku M, Saegusa T//Tohoku Univ, Fac Engr, Dept Appl Chem, Sendai, Miyagi 980, Japan

MACROMOLECULES 1988 21 (7) 1921

Grafting of 2-oxazolines onto cellulose and cellulose diacetate

Meier zu Kocker H, Nelte A//Tech Univ Berlin, Inst Chem Ingn Tech, Fasanstr 89, D-1000 Berlin 12, Fed Rep Ger

HOLZFORSCHUNG 1988 42 (4) 259

Liquid hydrocarbons from lignocellulosic materials. Part 2. Extractive liquefaction of biomass residues, cellulose and lignin (German, English Abstract)

Murtagh J, Thomas JK//Univ Notre Dame, Dept Chem, Notre Dame, In 46556, USA

CHEM PHYS LETT 1988 148 (4) 445

Effect of humidity and temperature on photoinduced reactions in cellulose

Myasoedova VV, Alekseeva OV, Krestov GA//Acad Sci USSR, Inst Nonaqueous Solut Chem, Moscow V-71, USSR

J APPL CHEM-ENGL TR 1988 60 (11) PT2 2334

Phase diagrams of nonaqueous solutions of cellulose with liquid-crystalline order

Niemela K//Helsinki Univ Technol, Wood Chem Lab, SF-02150 Espoo, Finland

BIOMASS 1988 15 (4) 223

The conversion of cellulose into carboxylic acids by a drastic oxygen-alkali treatment

Petropoulos JH, Kimura Y, Iijima T//Democritus Natl Res Ctr, Aghia Paraskevi, Athens, Greece

J MEMBRANE SCI 1988 38 (1) 39

Ionic partition equilibria of a simple organic electrolyte in chemically modified charged cel-

lulosic membranes

Sato T, Nambu Y, Endo T*//Tokyo Inst Technol, Resources Utilizat Res Lab, Midori ku, Yokohama, Kanagawa 227, Japan

J POLYM SCI-C POLYM LETT 1988 26 (8) 341

Preparation of cellulose derivatives containing the viologen moiety

Westerlind BS, Berg JC*//Univ Washington, Dept Chem Engr, Seattle, Wa 98195, USA

J APPL POLYM SCI 1988 36 (3) 523

Surface energy of untreated and surface-modified cellulose fibers

Yurkshtovich TL, Golub NV, Kaputskii FN//VI Lenin State Univ, Physicochem Problems Res Inst, Minsk, Belorussia, USSR

COLLOID J USSR-ENGL TR 1987 49 (6) 1018

Swelling of cellulose ampholyte in binary aqueous-organic media

Schwartz HH, Lukas J, Vacik J//Acad Sci GDR, Inst Polymer Chem Eric Correns, DDR-1530 Teltow Seehof, Ger Dem Rep

COLLECT CZECH CHEM COMMUN 1988 53 (6) 1247

Dialysis experiments with asymmetric cellulose acetate membranes

Gafurov IR, Skirda VD, Maklakov AI, Ryskina II//VI Lenin State Univ, Kazan, USSR

VYSOKOMOL SOEDIN SER A SSSR 1988 30 (7) 1551

Selfdiffusion and gelation in solutions of cellulose triacetate in benzyl alcohol (Russian, English Abstract)

Sidorova IV, Mankov VP, Varlamov AV, Romanova OS, Mnatsakanov SS//Leningrad Cinematog Engr Inst, Leningrad, USSR

J APPL CHEM-ENGL TR 1987 60 (12) PT2 2534

Viscosity of cellulose triacetate solutions modified by poly(vinyl acetate) and poly(butyl acrylate)

Rials TG, Glasser WG//Univ Calif Berkeley, Dept Forest Prod, 1301 S 46th St, Richmond, Ca 94804, USA

J APPL POLYM SCI 1988 36 (4) 749

Thermal and dynamic mechanical properties in hydroxypropyl cellulose films

Bruchmann EE, Jager A/Univ Hohenheim, Tech Biochem Lab, Garbenstr 25, D-7000 Stuttgart 70, Fed Rep Ger

CHEM ZTG 1988 112 (6) 209

Formation of ergosterol endoperoxide in the fermentation of a lignocellulose (German, English Abstract)

Goldstein IS/N Carolina State Univ, Dept Wood & Paper Sci, Raleigh, NC 27695, USA

BIOMASS 1988 15 (2) 121

Implications of chemical and physical factors on the biological processing of lignocellulose

Hamilton JW, Wagner J, Burdick BB, Bass P/H6-512, 600 Highland Ave, Madison, WI 53792, USA

DIGEST DIS SCI 1988 33 (8) 993

Clinical evaluation of methylcellulose as a bulk laxative

Pissis P, Daoukaki-Diamanti D/Natl Tech Univ Athens, Dept Phys, Polytechnioupolis, Zografou, GR-15773 Athens, Greece

CHEM PHYS 1988 123 (1) 165

Dielectric relaxation of water in the water-methylcellulose system

3. Lignin

Burlakov VM, Chupka EI, Chuvashv DD, Ratovskii GV, Maksimova LB/Siberian Cellulose & Paperboard Inst, Bratsk, USSR

KHIM PRIR SOEDIN SSSR 1988 (2) 265

Intramolecular interactions and nature of the low electron excitation states in model compounds of the lignin structure. 1. Molecular forms (Russian)

Burlakov VM, Chupka EI, Chuvashv DD, Ratovskii GV, Maksimova LB/Siberian Cellulose & Paperboard Inst, Bratsk, USSR

KHIM PRIR SOEDIN SSSR 1988 (2) 275

Intramolecular interactions and nature of the low electron excitation states in model compounds of the lignin structure. 2. Phenolate anions (Russian)

Kelley SS, Glasser WG, Ward TC/Tennessee Eastman Co, Kingport, Tn 37662, USA

J APPL POLYM SCI 1988 36 (4) 759

Engineering plastics from lignin. XV. Polyurethane films from chain-extended hydroxypropyl lignin

Lindstrom T, Wallis A, Tulonen J, Kolseth P/STFI, POB 5604, S-11486 Stockholm, Sweden

HOLZFORSCHUNG 1988 42 (4) 225

The effect of chemical environment on swelling and dynamic mechanical properties of milled wood lignin gels

Ralph J/Univ Wisconsin, USDA, Dairy Forage Res Ctr, 1925 Linden Dr W, Madison, WI 53706, USA

HOLZFORSCHUNG 1988 42 (4) 273

NMR of lignin model; compounds; application of long-range C-H correlations through oxygen (Short note)

Sadownick BA, Farrell R/Repligen Sandoz Res Corp, 128 Spring St, Lexington, Ma 02173, USA

BIOMASS 1988 15 (2) 77

Enzymatic treatment of lignochemicals - Adhesive and resin uses

Sagfors PE, Starck B/Finnish Pulp & Paper Res Inst, POB 136, SF-00101 Helsinki, Finland

WATER SCI TECHNOL 1988 20 (2) 49

High molecular mass lignin in bleached Kraft pulp mill effluents

Saltveit ME/Univ Calif Davis, Dept Vegetable Crops, Davis, Ca 95616, USA

J AMER SOC HORT SCI 1988 113 (4) 569

Postharvest glyphosate application reduces toughening, fiber content, and lignification of stored asparagus spears

Wesen C/Univ Lund, Ctr Chem, Dept Tech Analyt Chem, S-22100 Lund, Sweden

WATER SCI TECHNOL 1988 20 (2) 185

Chemical characterization of chlorinated lignin derivatives in organisms, sediment and air

Woerner DL, McCarthy JL/**Univ Washington, Dept Chem Engr, Seattle, Wa 98195, USA

MACROMOLECULES 1988 21 (7) 2160

Lignin 24 ultrafiltration and light-scattering evidence for association of Kraft lignins in aqueous solutions

4. Polysaccharides

Baba T, Imamura J, Izawa K, Ikeda K/Univ Osaka Prefecture, Coll Agr, Dept Vet Microbiol, Mozu Umemachi 4, Sakai, Osaka 591, Japan

J FISH DISEASES 1988 11 (3) 237

Immune protection in carp, *Cyprinus carpio* L, after immunization with *Aeromonas hydrophila* crude lipopolysaccharide

Drozanski W, Moustafa AEHA, Luderitz O, Westphal O//Marie Curie Skłodowska Univ, Inst Mikrobiol, PL-20033 Lublin, Poland
CARBOHYD RES 1988 178 (JUL) 225

Removal of ester-bound fatty acyl residues from *Salmonella* lipopolysaccharide by enzyme preparations from *Acanthamoeba castellanii*

Gillespie J, Weintraub ST, Wong GG, Holt SC//Univ Texas, Hlth Sci Ctr, Dept Peridont, 7703 Floyd Curl Dr, San Antonio, Tx 78284, USA

INFEC IMMUNITY 1988 56 (8) 2028

Chemical and biological characterization of the lipopolysaccharide of the oral pathogen *Wolinella recta* ATCC 33238

Kulakowska M, Lugowski C, Romanowska E*, Bundle DR//Polish Acad Sci, Inst Immunol & Exptl. PL-50329 Wrocław, Poland

CARBOHYD RES 1988 178 (JUL) 233

The comparison of monoclonal antibodies specific for two general epitopes located on *Citrobacter* O36 lipopolysaccharide

Liptak A, Kerekgyarto J, Popsavin V, Kajtar-Peredy M, Radics L//Lajos Kossuth Univ, Inst Biochem, POB 55, H-4010 Debrecen, Hungary
J CARBOHYD CHEM 1988 7 (2) 337

Synthesis and high-field NMR of alpha-D-arabinofuranosyl-(1-6)-2-acetamido-2-deoxy-beta-D-glucopyranosyl-(1-3)-6-deoxy-L-talose, the repeating unit of an O-specific lipopolysaccharide from *Pseudomonas maltophilia* NCIB 9204

Ovodov YS, Gorshkova RP//Acad Sci USSR, Vladivostok 690022, USSR

KHIM PRIR SOEDIN SSSR 1988 (2) 163

Lipopolysaccharides of pseudotuberculosis microbes (Russian)

Ceroni M, Camana C, Franciotta DM, Savoldi F, Scelsi R, Fumagalli M//Univ Pavia, IRCCS Fdn C Mondino, Neurol Clin, I-27100 Pavia, Italy

FARM ED SCI 43 (4) 381

Acute experimental allergic encephalitis. Treatment with fungal polysaccharides

Dengler T, Himmelsbach K, Jann B, Jann

K//Max Planck Inst Immunbiol, D-7800 Freiburg, Fed Rep Ger

CARBOHYD RES 1988 178 (JUL) 191

Structure of the capsular K3 antigen of *Escherichia coli* O4:K3:H4, a polysaccharide containing a 4-deoxy-2-hexulosonic acid

Eskola J, Kayhty H, Gordon LK, Hovi T, Stenvik M, Ronnberg PR, Kela E, Peltola H//Natl Publ Hlth Inst, Mannerheimintie 166, SF-00280 Helsinki 28, Finland

PEDIAT INF DIS J 1988 7 (7) 480

Simultaneous administration of *Haemophilus influenzae* type b capsular polysaccharide-diphtheria toxoid conjugate vaccine with routine diphtheria-tetanus-pertussis and inactivated poliovirus vaccinations of childhood

Fujita H, Ogawa K, Ikuzawa M, Muto S*, Matsuki M, Nakajima S, Shimamura M, Togawa M, Yoshikumi C, Kawai Y//Tsurumi Univ, Sch Dent Med, Dept Bacteriol, Yokohama, Kanagawa, Japan

INT J IMMUNOPHARMACOL 1988 10 (4) 445

Effect of PSK, a protein bound polysaccharide from *Coriolus versicolor*, on drug-metabolizing enzymes in sarcoma-180 bearing and normal mice

Granoff DM, Weinberg GA, Shackelford PG//Washington Univ, Biochem Pharmacol, Sch Med, Dept Pediat, Div Infect Dis, 400 S Kingshighway Blvd, St Louis, Mo 63110, USA

PEDIAT RES 1988 24 (2) 180

IgG subclass response to immunization with *Haemophilus influenzae* type b polysaccharide-outer membrane protein conjugate vaccine

Hoogerhout P, Funke CW, Mellema JR, Wagenaars GN, van Boeckel CAA, Evenberg D, Poolman JT, Lefeber AWM, van der Marel GA, van Boom JH//Gorlaeus Labs, POB 9502, 2300 RA Leiden, The Netherlands

J CARBOHYD CHEM 1988 7 (2) 399

Synthesis of fragments of the capsular polysaccharide of *Haemophilus influenzae* type B. II. Preparation and structural analysis of fragments comprising two and three repeating units

Ikuzawa M, Matsunaga K*, Nishiyama S, Nakajima S, Kobayashi Y, Andoh T, Kobayashi A, Ohhara M, Ohmura Y, Wada T, Yoshikumi C//Kureha Chem Ind Co Ltd, Biomed Res Labs, 3-26-2 Hyakunin cho, Shinjuku ku, Tokyo 160, Japan

INT J IMMUNOPHARMACOL 1988 10 (4) 415
Fate and distribution of an antitumor protein-bound polysaccharide PSK (Krestin[®])

Inzana TJ, Ma J, Workman T, Gogolewski RP, Anderson P//Virginia Polytech Inst & State Univ, Virginia Maryland Reg Coll Vet Med, Dept Pathobiol, Blacksburg Va 24061 USA
INFECT IMMUNITY 1988 56 (8) 1880

Virulence properties and protective efficacy of the capsular polymer of *Haemophilus* (*Actinobacillus*) pleuropneumoniae serotype 5

Linton JD, Gouldney D, Woodard S//Koninklijke Shell Lab, Badhuisweg 3, 1003 AA Amsterdam, The Netherlands

J GEN MICROBIOL 1988 134 (JUL) PT7 1913
Efficiency and stability of exopolysaccharide production from different carbon sources by *Erwinia herbicola*

Ravenscroft N, Jackson GE, Joao H, Stephen AM*//Univ Cape Town, Dept Organ Chem, Rondebosch 7700, South Africa
S AFR J CHEM 1988 41 (2) 42

Spectroscopic analysis of the oligosaccharides produced by bacteriophage-borne enzyme action on *Klebsiella* K36 polysaccharide

Rozkin MY, Levina MN, Efimov VS, Usov AI//NI Pirogov Med Inst, Cent Res Lab, 1 Ostrovityanov St, Moscow 117513, USSR
FARMAKOL TOKSIKOL 1988 51 (4) 63

A comparative study of the anticoagulant activity of sulfated polysaccharides of brown sea algae (Russian, English Abstract)

Tackett CO, Levine MM, Robbins JB//Univ Maryland, Dept Med, Div Geog Med, Ctr Vaccine Dev, Baltimore, Md 21201, USA
VACCINE 1988 6 (4) 307

Persistence of antibody titres three years after vaccination with Vi polysaccharide vaccine against typhoid fever

Uryu T, Yamanaka M, Date M, Ogawa M, Hatanaka K//Univ Tokyo, Inst Ind Sci, Minato ku, Tokyo 106, Japan
MACROMOLECULES 1988 21 (7) 1916

Selective synthesis of polysaccharide macromers by ring-opening polymerization of anhydro sugar

Whitfield C//Univ Guelph, Coll Biol Sci, Dept Microbiol, Guelph, Ontario, Canada N1G 2W1

CAN J MICROBIOL 1988 34 (4) 415
Bacterial extracellular polysaccharides

Yoshida O, Nakashima H, Yoshida T, Kaneko Y, Yamamoto I, Matsuzaki K, Uryu T, Yamamoto N//Yamaguchi Univ, Sch Med, Dept Virol & Parasitol, Ube, Yamaguchi 755, Japan
BIOCHEM PHARMACOL 1988 37 (14) 2887
Sulfation of the immunomodulating polysaccharide lentinan: a novel strategy for antivirals to human immunodeficiency virus

Zarins ZM, Marshall WE//USDA ARS, So Reg Res Ctr, New Orleans, La 70179, USA
CEREAL CHEM 1988 65 (4) 359
Polysaccharides and proteins of glandless cottonseed flour

5. Starch

Henson CA, Stone JM//USDA ARS, Cereal Crops Res Unit, 1575 Linden Dr, Madison, WI 53706, USA

J CEREAL SCI 1988 8 (1) 39
Variation in alpha-amylase and alpha-amylase inhibitor activities in barley malts

Kennedy JF, Stevenson DL, White CA//Univ Birmingham, Dept Chem, Chem Bioact Carbohydrates & Prot Res Lab, POB 363, Birmingham B15 2TT, W Midlands, England
STARCH 1988 40 (6) 218

Interference of non-enzyme protein in the reaction of alpha-amylase

Eliasson AC, Ljunger G//Univ Lund, Dept Food Technol, Box 124, S-22100 Lund, Sweden
J SCI FOOD AGR 1988 44 (4) 353

Interactions between amylopectin and lipid additives during retrogradation in a model system

Jiang XK, Li XY, Huang BZ//Acad Sinica, Shanghai Inst Organ Chem, 345 Ling Ling Lu, Shanghai 200032, Peoples R China
J PHYS ORG CHEM 1988 1 (3) 133

The effect of hydrophobic-lipophilic interactions on chemical reactivity. 11. The dependence of the wrapping-up capability of sodium carboxymethylamylose on its degree of substitution

Munsch CM, MacIntyre E, Machin SJ, Mackie IJ, Treasure T//Baker Med Res Inst, Cardiac Surg Res Lab, Commercial Rd, Prahran, Vic 3181, Australia

BRIT J SURG 1988 75 (7) 675

Hydroxyethyl starch - An alternative to plasma for postoperative volume expansion after cardiac surgery

Bowen JH, Lowe RG, Macrae EA//DSIR, Mt Albert Res Ctr, Div Hort & Proc, Auckland, New Zealand

SCI HORT-AMSTERDAM 1988 35 (3-4) 251

The effect of a preharvest treatment with Ethrel on the starch content of kiwifruit

Dreese PC, Faubion JM, Hoseney RC//Kansas State Univ Agr & Appl Sci, Dept Grain Sci & Ind, Manhattan, Ks 66506, USA

CEREAL CHEM 1988 65 (4) 348

Dynamic rheological properties of flour, gluten, and gluten-starch doughs. I. Temperature dependent changes during heating

Dreese PC, Faubion JM, Hoseney RC//Kansas State Univ Agr & Appl Sci, Dept Grain Sci & Ind, Manhattan, Ks 66506, USA

CEREAL CHEM 1988 65 (4) 354

Dynamic rheological properties of flour, gluten, and gluten-starch doughs. II. Effect of various processing and ingredient changes

Eliasson AC//Univ Lund, Dept Food Technol, Box 124, S-22100 Lund, Sweden

ISI ATLAS SCI - ANIM PLANT SCI 1988 1 (1) 89

Physical and chemical characteristics of legume starches

Hari PK, Agarwala AK, Garg S//Indian Inst Technol, Dept Text Technol, New Delhi 110016, India

STARCH 1988 40 (6) 221

Moisture accessibility of hydrophilic sites in starch and modified starch

He GC, Suzuki H//Kagoshima Univ, Fac Agr, Kagoshima 890, USA

CEREAL CHEM 1988 65 (4) 307

A method to remove the outer layer of rice endosperm without damaging starch granules

Hebeish A, Bayazeed A, El-Alfy E, Khalil MI//Natl Res Ctr, Div Text Res, Cairo, Egypt

STARCH 1988 40 (6) 223

Synthesis and properties of polyacrylamide-starch graft copolymers

Imberty A, Perez S*//INRA, Physicochim Macromolec Lab, Rue Geraudiere, F-44072 Nantes, France

BIOPOLYMERS 1988 27 (8) 1205

A revisit to the three-dimensional structure of B-type starch

Jenkins DJA, Wolever TMS, Buckley G, Lam KY, Giudici S, Kalmusky J, Jenkins AL, Patten RL, Bird J, Wong GS, Josse RG//Univ Toronto, Fac Med, Dept Nutr Sci, Toronto, Ontario, Canada M5S 1A8

AMER J CLIN NUTR 1988 48 (2) 249

Low-glycemic index starchy foods in the diabetic diet

MacLeod LC, Duffus CM//Univ Adelaide, Waite Agr Res Inst, Dept Agron, Glen Osmond, SA 5064, Australia

J CEREAL SCI 1988 8 (1) 29

Temperature effects on starch granules in developing barley grains

Nellaiah H, Karunakaran T, Gunasekaran P*//Madurai Kamaraj Univ, Sch Biol Sci, Dept Microbiol, Madurai 625021, Tamil Nadu, India

BIOMASS 1988 15 (3) 201

Ethanol fermentation of cassava starch by *Zymomonas mobilis* NRRL B-4286

Paredes-Lopez O, Maza-Calvino EC, Montes-Rivera R//Inst Polytech Nacl, CIEA, Unidad Irapuato, Apdo Postal 629, Irapuato 36500, Mexico

STARCH 1988 40 (6) 205

Effect of the hard-to-cook phenomenon on some physicochemical properties of bean starch

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

STARCH 1988 40 (6) 214

Rheological properties of *Leucaena glauca* gum in aqueous solutions

Rodriguez A, Martin L*, Alonso JR, Nicholas G, Villa N*//Univ Salamanca, Fac Biol, Dept Biol Vegetale, Salamanca, Spain

STARCH 1988 40 (6) 211

Scanning electron microscopy study of starch granule degradation in chick pea cotyledons. Part I: Influence of embryonic axis on degradation processes

Seguchi M, Yamada Y//Seibo Jogakuin Jr Coll, Tayamachi, Fushimi ku, Kyoto 612, Japan
CEREAL CHEM 1988 65 (4) 375

Hydrophobic character of heat-treated wheat starch (Note)

Straathof AJJ, van Bekkum H, Kieboom APG//Delft Univ Technol, Organ Chem Lab, Julianalaan 136, 2628 BL Delft, The Netherlands
STARCH 1988 40 (6) 229

Efficient preparation of octyl alpha-D-glucopyranoside monohydrate: A recirculation procedure involving water removal by product crystallization

Wyatt GM, Horn N//AFRC, Inst Food Res, Norwich Lab, Colney Lane, Norwich NR4 7UA, Norfolk, England
J SCI FOOD AGR 1988 44 (3) 281

Fermentation of resistant food starches by human and rat intestinal bacteria

Yin XS, Stark JR**//Heriott Watt Univ, Dept Brewing & Biol Sci, Edinburgh EH1 1HX, Midlothian, Scotland
J CEREAL SCI 1988 8 (1) 17

Molecular modification of barley starch granules by different types of physical treatment

6. Others

Declaire M, De Cat W, van Huynh N, Motte JC//Inst Rech Chim, Museumlaan 5, B-1980 Teruren, Belgium
ACTA BIOTECHNOL 1987 7 (6) 563

Hydrolysis of whey by *Kluyveromyces fragilis* cells immobilized in stabilized alginate and in chitosan beads

Draget KI, Myhre S, Skjakbrk G, Ostgaard K//Univ Trondheim, Div Biotechnol, N-7035 Trondheim Nth, Norway
J PLANT PHYSIOL 1988 132 (5) 552

Regeneration, cultivation and differentiation of plant protoplasts immobilized in Ca-alginate beads

Audet P, Paquin C, Lacroix C**//Univ Laval, Dept Sci & Technol Aliments, Rech Stela Grp, Ste Foy, Quebec, Canada G1K 7P4
APPL MICROBIOL BIOTECHNOL 1988 29 (1) 11

Immobilized growing lactic acid bacteria with kappa-carrageenan-locust bean gel

Segal E, Gottfried L, Lehrer N//Tel Aviv Univ, Sackler Sch Med, Dept Human Microbiol, IL-69978 Tel Aviv, Israel

MYCOPATHOLOGIA 1988 102 (3) 157

Candidal vaginitis in hormone-treated mice - Prevention by a chitin extract

Takiguchi Y, Shimahara K//Seikei Univ, Dept Ind Chem, Musashino, Tokyo 180, Japan
LETT APPL MICROBIOL 1988 6 (6) 129

N,N-diacetylchitinobiose production from chitin by *Vibrio anguillarum* strain E-383a

Jha IN, Iyengar L, Rao AVSP//IOC, Baroda, India
J ENVIRON ENG-ASCE 1988 114 (4) 962

Removal of cadmium using chitosan

Nikolaev AF, Prokopov AA, Vinogradov MV, Shulgina ES//Lensovet Technol Inst, Dept Plastic Chem Technol, Leningrad, USSR
IZV VYSSH UCH ZAV KHIM KHIM T 1988 31 (1) 115

Thermal properties of films of chitosan N-carboxyacetyl derivatives (Russian)

Hall KS, Nissan RA, Quintana RL, Hollins RA//USN, Ctr Weap, Dept Res, Div Chem, China Lake, Ca 93555, USA
J CATAL 1988 112 (2) 464

Inclusion complexes of diisopropylfluorophosphate with cyclodextrins

Harata K//Res Inst Polymers & Text, 1-1-4 Higashi, Tsukuba, Ibaraki 305, Japan

J CHEM SOC CHEM COMMUN 1988 (14) 928
X-ray crystal structure of the permethylated beta-cyclodextrin complex with m-iodophenol. A stabilized skew-boat pyranose conformation in the distorted macrocyclic ring

Higashi M, Yamaguchi H, Oda M//Ibaraki Univ, Coll Technol, 4-12-1 Nakanarusawa, Hitachi 316, Japan

J INCLUSION PHENOM 1988 6 (3) 249

Induced circular dichroism spectra of 2-(2,4,6-cycloheptatrien-1-ylidene)-4-cyclopentene-1,3-dione included in beta-cyclodextrin

Kawabata Y, Matsumoto M, Nakamura T, Tanaka M, Manda E, Takahashi H, Tamura S, Tagaki W, Nakahara H, Fukuda K//Nat'l Chem Lab Ind, Yatabe, Ibaraki 305, Japan

THIN SOLID FILMS 1988 159 (MAY) 353

Langmuir-Blodgett films of amphiphilic cyclodextrins

Kobayashi N//Tohoku Univ, Inst Pharmaceut, Sendai, Miyagi 980, Japan

J CHEM SOC CHEM COMMUN 1988 (14) 918

Lid-type inclusion of pyrene-1,3,6,8-tetrakisulfonate anion by beta-cyclodextrin

Koch HP, Steinacker C//Vienna Univ, Inst Pharmaceut Chem, Währinger Str 10, A-1090 Vienna, Austria

ARCH PHARM 1988 321 (6) 371

Improvement of solubility and stability of thalidomide by inclusion complexation with cyclodextrins (German, English Abstract)

Komiyama M//Univ Tsukuba, Inst Mat Sci, Sakura, Ibaraki 305, Japan

POLYM J 1988 20 (5) 439

Catalysis by cyclodextrin for para-oriented attack of formaldehyde to phenol

Menard FA, Dedhiya MG, Rhodes CT//Univ Rhode Isl, Dept Pharmaceut, Kingston, RI 02881, USA

DRUG DEVELOP IND PHARM 1988 14 (11) 1529

Potential pharmaceutical applications of a new beta cyclodextrin derivative

Monzen H, Yoshida N*, Fujimoto M//Hokkaido Univ, Fac Sci, Dept Chem 2, Sapporo, Hokkaido 060, Japan

CHEM LETT 1988 (7) 1129

Kinetic studies on the inclusion reaction of ethylenediamine mono-substituted alpha-cyclodextrin with sodium-para-(3-tert-butyl-4-hydroxyphenylazo)benzenesulfonate in aqueous solution

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

J INCLUSION PHENOM 1988 6 (3) 277

Influence of tert-butyl alcohol on cyclodextrin inclusion complexes of pyrene

Okada Y, Kubota Y, Koizumi K*, Hizukuri S, Ohfuji T, Ogata K//Mukogawa Womens Univ, Fac Sci, 11-68 Koshien Kyuban cho, Nishinomiya, Hyogo 663, Japan

CHEM PHARM BULL TOKYO 1988 36 (6) 2176

Some properties and the inclusion behaviour of branched cyclodextrins

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

BULL CHEM SOC JPN 1988 61 (7) 2663

A new method for determining cyclodextrin complex formation constants with electrolytes in aqueous medium

Szente L, Galfuzy M, Szejtli J//Cyclodextrin Lab Chinoin, Endrody S U 38-40, H-1026 Budapest, Hungary

ACTA ALIMENT 1988 17 (2) 193

Tea aromatization with beta-cyclodextrin complexed flavours

Takeo K, Uemura K, Mitoh H//Kyoto Prefectural Univ, Dept Agr Chem, Kyoto 606, Japan

J CARBOHYD CHEM 1988 7 (2) 293

Derivatives of alpha-cyclodextrin and the synthesis of 6-O-alpha-D-glucopyranosyl-alpha-cyclodextrin

Yabe A, Kawabata Y, Niino H, Matsumoto M, Ouchi A, Takahashi H, Tamura S, Tagaki W, Nakahara H, Fukuda K//Natl Chem Lab Ind, Yatabe, Ibaraki 305, Japan

THIN SOLID FILMS 1988 160 (1-2) 33

Photoisomerization of the azobenzenes included in Langmuir-Blodgett films of cyclodextrins

Kikuchi Y, Kubota N//Oita Univ, Fac Engr, 700 Dannoharu, Oita 870, Japan

J APPL POLYM SCI 1988 36 (3) 599

Macromolecular complexes consisting of poly(aluminium chloride), [2-(diethylamino)-ethyl]dextran hydrochloride, and potassium poly(vinyl sulfate)

Petrov PT, Shtykova EV//Acad Sci BeSSR, Inst Phys & Organ Chem, Minsk, Belorussia, USSR

DOKL AKAD NAUK BSSR 1988 32 (7) 631

Hydrodynamic and conformational properties of irradiated dextran (Russian, English Abstract)

Fugedi P, Garegg PJ, Kvarnstrom I, Svensson L//Lajos Kossuth Univ, Inst Biochem, POB 55, H-4010 Debrecen, Hungary

J CARBOHYD CHEM 1988 7 (2) 389

Synthesis of a heptasaccharide, structurally related to the phytoelictor active glucan of *Phytophthora megasperma* f sp *glycinea*

Schwartz WH, Schimming S, Staudenbauer WL//Tech Univ Munich, Inst Mikrobiol, Ar-

- cisstr 21, D-8000 Munich 2, Fed Rep Ger
 APPL MICROBIOL BIOTECHNOL 1988 29
 (1) 25
 Degradation of barley beta-glucan by en-
 doglucanase-C of *Clostridium thermocellum*
- Takeyama T, Suzuki I, Ohno N, Oikawa S, Sato
 K, Ohsawa M, Yadomae T//Tokyo Coll Pharm,
 Hachioji, Tokyo 19203, Japan
 J PHARMACOBIO-DYNAM 1988 11 (6) 381
 Distribution of grifolan NMF-5N (I/B), a chemi-
 cally modified antitumor beta-glucan in mice
- Williams DL, Sherwood ER, Browder IW,
 McNamee RB, Jones EL, Di Luzio NR//Tulane
 Univ, Sch Med, Dept Physiol, New Orleans, La
 70112, USA
 INT J IMMUNOPHARMACOL 1988 10 (4) 405
 Pre-clinical safety evaluation of soluble glucan
- Hopman WPM, Houben PGMP, Speth PAJ,
 Lamers CBHW//Catholic Univ Nijmegen, Rad-
 boud Hosp, Div Gastroenterol, 6500 HB Nij-
 megen, The Netherlands
 GUT 1988 29 (7) 930
 Glucomannan prevents postprandial hypo-
 glycaemia in patients with previous gastric
 surgery
- Faivre R, Ducellier D, Kieffer Y, Bassand JP,
 Maurat JP//CHU St Jacques, Serv Cardiol, F-
 25000 Besancon, France
 THERAPIE 1988 43 (3) 183
 Treatment of deep vein thrombosis by low
 molecular weight heparin (French, English
 Abstract)
- Toulemonde F//Inst Choay, 46 Av Theophile
 Gautier, F-75782 Paris 16, France
 THERAPIE 1988 43 (3) 187
 The development of the low molecular weight
 heparin fraction (CY 216) in the prophylaxis of
 thromboembolic diseases after general surgery
 (French, English Abstract)
- Irwin PL, Sevilla MD, Chamulitrat W//USDA
 ARS, Eastern Reg Res Ctr, Philadelphia, Pa
 19118, USA
 BIOPHYS J 1988 54 (2) 337
 Homopolygalacturonan molecular size in plant
 cell wall matrices via paramagnetic ion and
 nitroxyl amide dipolar spin-spin interactions
- Dark WA//Millipore Corp, Div Waters
- Chromatog, Ind Mkt Lab, Milford, Ma 01757,
 USA
 AMER LAB 1988 20 (8A) 22
 Aqueous gel permeation chromatography
 analysis of hyaluronic acid
- Hara T, Iio M, Inagaki K//Natl Nakano Chest
 Hosp, 3 Egota, Nakanoku, Tokyo, Japan
 EUR J NUCL MED 1988 14 (4) 167
 Synthesis of ^{11}C -methylated inulin as a
 radiopharmaceutical for imaging brain edema
 and pulmonary edema
- Adegoroye AS, Jolliffe PA, Tung MA//Obafemi
 Awolowo Univ, Dept Plant Sci, Ile Ife, Nigeria
 J FOOD SCI TECHNOL-MYSORE 1988 25
 (1) 72
 Instrumental measures of texture of tomato
 fruit and their correlation with protopectin con-
 tent - Effect of fruit size and stage of ripeness
- Katseva GN, Kukhta EP, Panova EP, Chirva
 VY//MV Frunze State Univ, Simferopol, Uk-
 raine, USSR
 KHIM PRIR SOEDIN SSSR 1988 (2) 171
 Interaction of pectinic substances with copper,
 mercury, zinc and cadmium salts (Russian)
- Lapenko VL, Potapova LB, Slivkin AI, Razum-
 naya ZA//Voronezh State Univ, Voronezh,
 USSR
 J APPL CHEM-ENGL TR 1988 60 (11) PT2
 2398
 New substituted amides and hydrazides of pectic
 acid
- Martinez MJ, Vazquez C, Diaz I, Reyes
 F//CSIC, Ctr Invest Biol, Velazquez 144, E-
 28006 Madrid, Spain
 MICROBIOLOGICA 1988 11 (3) 255
 Pectic enzymes from autolyzed cultures of *Alter-
 naria alternata* in plant protoplast production
- Fengler AI, Marquardt RR//Univ Alberta, Dept
 Anim Sci, Edmonton, Alberta, Canada T6G 2P5
 CEREAL CHEM 1988 65 (4) 291
 Water-soluble pentosans from rye: I. Isolation,
 partial purification, and characterization
- Fengler AI, Marquardt RR//Univ Alberta, Dept
 Anim Sci, Edmonton, Alberta, Canada T6G 2P5
 CEREAL CHEM 1988 65 (4) 298
 Water-soluble pentosans from rye: II. Effects of
 rate of dialysis and on the retention of nutrients

by the chick

Freyburger G, Manciet G, Larrue J, Boisseau MR//Hop Cardiol Bordeaux, Serv Hemobiol, INSERM, U8, F-33604 Pessac, France

THERAPIE 1988 43 (3) 205

Role of leukocytes in thrombosis: effect of pentosan polysulfate (French, English Abstract)

Klocking HP, Richter M, Marwardt F//Med Acad Erfurt, Inst Pharmacol & Toxicol, Nordhauser Str 74, DDR-5010 Erfurt, Ger Dem Rep

PHARMAZIE 1988 43 (6) 440

On the thrombolytic effect of pentosan polysulfate in animals

Akiyama T, Tanaka K, Yamamoto S, Iseki S//Natl Res Inst Police Sci, Serol & Biochem Lab, 6 Sanban cho, Chiyoda ku, Tokyo 102, Japan

CARBOHYD RES 1988 178 (JUL) 320

Blood-group active proteoglycan containing 3-O-methylrhamnose (acofriose) from young plants of *Osmunda japonica*

Allain C, Lecourtier J, Chauveteau G//Ecole Super Phys & Chim Ind, Hydrodynam & Mecan Phys Lab, CNRS, UA 857, 10 Rue Vauquelin, F-75271 Paris, France

RHEOL ACTA 1988 27 (3) 255

Mesophase formation in high-molecular weight xanthan solutions

Ramirez ME, Fucikovsky L, Garciajimenez F, Quintero R, Galindo E**//Univ Nael Autonoma Mexico, Ctr Invest Sobre Ingn Genet & Biotecnol, Apdo Post 510-3, Cuernavaca 62270, Mexico

APPL MICROBIOL BIOTECHNOL 1988 29 (1) 5

Xanthan gum production by altered pathogenicity variants of *Xanthomonas campestris*

Ebringerova A, Pastyr J//Slovak Acad Sci, Inst Chem, Ctr Chem Res, CS-84238 Bratislava, Czechoslovakia

CHEM PAP-CHEM ZVESTI 1988 42 (3) 407

Sulfoethylation of D-xylans in heterogeneous phase (German, English Abstract)

Simkovic I, Varhegyi G, Antal MJ, Ebringerova A, Szekely T, Szabo P//Slovak Acad Sci, Inst Chem, CS-84238 Bratislava, Czechoslovakia

J APPL POLYM SCI 1988 36 (3) 721

Thermogravimetric/mass spectrometric characterization of the thermal decomposition of (4-O-methyl-D-glucurono)-D-xylan