

BIBLIOGRAPHY ON CARBOHYDRATE POLYMERS

1. Books, Reviews and Symposia

Buswell JA, Odier E//Paisley Coll Technol, Dept Biol, Paisley PA1 2BE, Renfrew, Scotland
CRC CRIT REV BIOTECHNOL 1987 6 (1) 1
Lignin biodegradation (Review)

Kerley MS, Fahey GC, Gould JM, Iannotti EL//Univ Missouri, Coll Agr, 111 Anim Sci Res Ctr, Columbia, Mo 65211, USA

FOOD MICROSTRUCT 1988 7 (1) 59
Effects of lignification, cellulose crystallinity and enzyme accessible space on the digestibility of plant cell wall carbohydrates by the ruminant (Review)

Morris VJ//AFRC Inst Food Res, Norwich Lab, Colney Lane, Norwich NR4 7UA, England
CARBOHYD POLYM 1988 9 (2) 77
Polysaccharide research at Norwich

Kempf W//Address not available
STARCH 1988 40 (8) 319
39th Starch Convention 1988 of the Association of Cereal Research at Detmold (Report) (German)

2. Cellulose

Prokhorenko NI, Korbutyak MA, Kucheruk DD, Pilipenko AT//Acad Sci UkSSR, Inst Colloid Chem & Water Chem, Kiev, Ukraine, USSR
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Activation energy of viscous flow of electrolytes in acetyl cellulose membranes (Ukrainian, English Abstract)

Diamond MP, DeCherney AH, Linsky CB, Cunningham T, Constantine B//Yale Univ, Dept Obstet & Gynecol, Div Reprod Endocrinol, 333 Cedar St, POB 3333, New Haven, Ct 06510, USA
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Physical properties of sodium carboxymethyl cellulose molecules adsorbed on a polyacrylonitrile ultrafiltration membrane

French AD//USDA, So Reg Res Ctr, POB 19687, New Orleans, La 70179, USA
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Rao M, Lachke A, Seeta R, Joglekar A, Mishra C, Deshpande V*//Natl Chem Lab, Poona 411008, Maharashtra, India

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Evaluation of cellulase complex of *Penicillium funiculosum* and its mutant UV-49 in relation to practical saccharification

Tamada M, Kasai N, Kaetsu I//Japan Atom Energy Res Inst, Takasaki Radiat Chem Res Estab, Takasaki, Gunma 37012, Japan
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Estimation of cellulase activity based on glucose productivity

Chernoglazov VM, Ermolova OV, Klyosov

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.

AA*/*AN Bakh Biochem Inst, Carbohydrates Res Lab, Moscow 117071, USSR

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Adsorption of high-purity endo-1,4-beta-glucanases from *Trichoderma reesei* on components of lignocellulosic materials: cellulose, lignin, and xylan

David C, Atarhouch T//Univ Libre Bruxelles, Fac Sci, CP 206-1, Blvd Triomphe, B-1050 Brussels, Belgium

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Dolz-Planas M, Gonzalez-Rodriguez F, Belda-Maximino R, Herraiz-Dominguez JV//Valencia Univ, Fac Pharm, Dept Phys, E-46010 Valencia, Spain

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Thixotropic behavior of a microcrystalline cellulose-sodium carboxymethylcellulose gel

Dumitriu S, Popa M, Beldie C//Polytech Inst Jassy, Dept Organ & Macromolec Chem, R-6600 Jassy, Romania

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Fernandez MJ, Casinos I, Guzman GM//Univ Pais Vasco, Fac Quim, Dept Macromolec, Apdo 1072, E-20080 San Sebastian, Spain

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Goynes WR, Benerito RR//So Reg Res Ctr, New Orleans, La 70179, USA

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Maxson WS, Herbert CM, Oldfield EL, Hill GA//NW Ctr Infertil & Reprod Endocrinol, NW Med Plaza, Suite 200, 5800 Colonial Dr, Margate, Fl 33063, USA

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Donnelly PK, Crawford DL*//Univ Idaho, Inst Molec & Agr Genet Engr, Dept Bacteriol & Biochem, Moscow, Id 83843, USA
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Tanaka M, Fukui M, Matsuno R//Kyoto Univ, Fac Agr, Dept Food Sci & Technol, Kitashirakawa, Sakyo ku, Kyoto 606, Japan
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Baker FS, Privett GJ*//Royal Ordnance Res & Dev Ctr, Waltham Abbey EN9 1AY, Essex, England

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Vezzoli GC//USA, Mat Technol Lab, Mat Sci Branch, Watertown, Ma 02172, USA

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Aronsson E, Michelsen P*, Odham G//Univ Lund, Ctr Chem, Div Organ Chem, POB 124, S-22100 Lund, Sweden

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3. Lignin

Lindstrom M, Nystrom M*, Laatikainen M//Lappeenranta Univ Technol, Phys Chem Lab, SF-53851 Lappeenranta 85, Finland
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Interactions between chlorolignin and polysulfone ultrafiltration membranes

Ainso S, Paden C, Pethica BA, Zuman P*//Clarkson Univ, Dept Chem, Potsdam, NY 13676, USA

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Sorptions on lignin, wood and celluloses. II. Nitrosamines

Chupka EI, Gvozdev VN, Rykova TM, Shadynskaya OV//Siberian Cellulose & Cardboard Res Inst, Bratsk, USSR

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Eriksson I, Lidbrandt O, Eriksson I, Westermark U//Svenska Traforskningsinst, POB 5604, S-11486 Stockholm, Sweden

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Lignin distribution in birch (*Betula verrucosa*) as determined by mercurization with SEM- and TEM-EXDA technique

Gupta RK, Spiker JK, Crawford DL//Univ Idaho, Idaho Agr Expt Stn, Inst Molec & Agr Genet Engr, Moscow, Id 83843, USA

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Iiyama K, Wallis AFA//CSIRO, Div Forestry & Forest Prod, Private Bag 10, Clayton, Vic 3168, Australia

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Takahashi N, Koshijima T//Kyoto Univ, Wood Res Inst, Wood Chem Res Sect, Uji, Kyoto 611, Japan

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Terashima N, Fukushima K//Nagoya Univ, Fac Agr, Nagoya, Aichi 464, Japan

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Vidal PF, Molinier J//Univ Sherbrooke, Technol & Procdees Convers Grp, Sherbrooke, Quebec, Canada J1K 2R1

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Westermark U, Lidbrandt O, Eriksson I//Svenska Traforskningsinst, POB 5604, S-11486 Stockholm, Sweden

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Wojtas-Wasilewska M, Luterek J, Leonowicz A*, Dawidowicz A//Marie Curie Sklodowska Univ, Dept Biochem, M Curie Sklodowska Sq 3, PL-20031 Lublin, Poland

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

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Fujii T, Saito K, Oguchi Y, Matsunaga K, Kobayashi Y, Yoshikumi C, Taguchi T//Kureha Chem Ind Co Ltd, Biomed Res Labs, 3-26-2 Hyakunin cho, Shinjuku ku, Tokyo 160, Japan

J INT MED RES 1988 16 (4) 286

Effects of the protein-bound polysaccharide preparation, PSK on spontaneous breast cancer in mice

Gigliotti F//St Jude Childrens Res Hosp, Memphis, Tn 38101, USA

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Harrison LH, Broome CV, Hightower AW, Hoppe CC, Makintube S, Sitze SL, Taylor JA, Gaventa S, Wenger JD, Facklam RR, The Haemophilus Vaccine Efficacy Study Group//Ctr Dis Control, Div Bacterial Dis, Meningitis & Special Pathogens Branch, Bldg 1, Rm 5403, Atlanta, Ga 30333, USA

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Ichikawa H, Kobayashi K, Sumitomo H, Schuerch C//Nagoya Univ, Fac Agr, Nagoya, Aichi 464, Japan

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Synthesis of a beta-(1-6)-linked polysaccharide via ring-opening polymerisation with neighboring-group participation

Ichikawa T, Nakazima T//Otsu Womens

Univ, Fac Home Econ, 3 Bancho 12, Chiyoda ku, Tokyo 102, Japan

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A ¹³C-n.m.r. study of some Shigella flexneri O-polysaccharides

Joseleau JP, Marais MF//CNRS, Ctr Rech Macromolec Vegetales, 53X, F-38041 Grenoble, France

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The structural repeating-unit of the capsular polysaccharide from Klebsiella serotype K48

Kaplan SL, Zahradnik JM, Mason EO, Dukes CM//Texas Childrens Hosp, CT Parker Lab, Infect Dis Sect, 6621 Fannin, Houston, Tx 77030, USA

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Kayhty H, Peltola H, Eskola J//Natl Publ Hlth Inst, Mannerheimintie 166, SF-00280 Helsinki, Finland

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Kocharova NA, Knirel YA, Shashkov AS, Kochetkov NK, Pier GB*//Harvard Univ, Brigham & Womens Hosp, Sch Med, Dept Med, Channing Lab, 180 Longwood Ave, Boston, Ma 02115, USA

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Kukhta EP, Aleksandrova IV, Afanasev SP, Paukov VN, Lyalchenko MA//MV Frunze State Univ, Simferopol, Ukraine, USSR

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Polysaccharides of a culture of plant tissue. 2. Acidic hydrolysis of wastes of the ginseng tissue

(Russian)

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Long S, Reed JW, Himawan J, Walker GC*//MIT, Dept Biol, Cambridge, Ma 02139, USA

J BACTERIOL 1988 170 (9) 4239

Genetic analysis of a cluster of genes required for the synthesis of the calcofluor-binding exopolysaccharide of *Rhizobium meliloti*

Masroua A, Revillon A, Martin JC, Guyot A, Descotes G//Univ Lyon 1, Ecole Super Chim Ind Lyon, Chim Organ Lab 2, CNRS, UA 463, F-69622 Villeurbanne, France

BULL SOC CHIM FRANCE 1988 (3) (MAY-JUNE) 561

Hydrolysis of oligo and polysaccharides in the presence of ion exchange resins and hydrosoluble polymers (French, English Abstract)

Moreau M, Richards JC, Perry MB*, Kniskern PJ//Natl Res Council Canada, Div Biol Sci, Ottawa, Ontario, Canada K1A 0R6

BIOCHEMISTRY-USA 1988 27 (18) 6820

Structural analysis of the specific capsular polysaccharide of *Streptococcus pneumoniae* type 45 (American type 72)

Mortimer EA//Case Western Reserve Univ, Sch Med, Cleveland, Oh 44106, USA

JAMA-J AM MED ASSN 1988 260 (10) 1454

Efficacy of *Haemophilus b* polysaccharide vaccine: An enigma (Editorial)

Mulchandani A, Luong JHT, Leduy A//Natl Res Council, Biotechnol Res Inst, Montreal, Quebec, Canada H4P 2R2

BIOTECHNOL BIOENG 1988 32 (5) 639

Batch kinetics of microbial polysaccharide biosynthesis

Osterholm MT, Rambeck JH, White KE, Jacobs JL, Pierson LM, Neaton JD, Hedberg CW, MacDonald KL, Granoff DM//Minnesota Dept Hlth, Acute Dis Epidemiol Sect, 717 Delaware St SE, POB 9441, Minneapolis, Mn 55440, USA

JAMA-J AM MED ASSN 1988 260 (10) 1423

Lack of efficacy of *Haemophilus b* polysaccharide vaccine in Minnesota

Parolis LAS, Parolis H, Nieman H, Stirr S//Rhodes Univ, Sch Pharmaceut Sci, Grahamstown 6140, South Africa

CARBOHYD RES 1988 179 (AUG) 301

Primary structure of *Klebsiella* serotype K22 capsular polysaccharide: another glycan containing 4-O-[(S)-1-carboxyethyl]-D-glucuronic acid

Paulsen H, Helpap B, Lorentzen JP//Univ Hamburg, Inst Organ Chem, Martin Luther King Pl 6, D-2000 Hamburg 13, Fed Rep Ger

CARBOHYD RES 1988 179 (AUG) 173

Synthese von Trisaccharid-Einheiten der Kapselpolysaccharide von *Streptococcus pneumoniae*

Postal JM, Gysin J*, Crenn Y//Inst Pasteur, Immunol Parasitaire Lab, 97306 Cayenne, French Guiana

ANN INST PASTEUR IMMUNOL 1988 139 (4) 401

Protection against fatal *Klebsiella pneumoniae* sepsis in the squirrel monkey *Saimiri sciureus* after immunization with a capsular polysaccharide vaccine

Pozsgay V, Jennings HJ//Natl Res Council Canada, Div Biol Sci, Ottawa, Ontario, Canada K1A 0R6

CARBOHYD RES 1988 179 (AUG) 61

Synthesis of a di-, tri-, and tetra-saccharide unit of the group B streptococcal common antigen

Pozsgay V, Jennings HJ//Natl Res Council Canada, Div Biol Sci, Ottawa, Ontario, Canada K1A 0R6

J ORG CHEM 1988 55 (17) 4042

Synthesis of oligosaccharides corresponding to the common polysaccharide antigen of group B streptococci

Ranjbar-Hamghawandi M//Tech Univ Clausthal, Inst Aufbereitung, Flotat & Chem Verfahren, Erzstr 20, D-3392 Clausthal Zellerfe, Fed

Rep Ger

FRESENIUS Z ANAL CHEM 1988 331 (7) 759

Quantitative photometric microdetermination of polysaccharides (German, English Abstract)

Richards JC, Perry MB//Natl Res Council Canada, Div Biol Sci, Ottawa, Ontario, Canada K1A 0R6

BIOCHEM CELL BIOL 1988 66 (7) 758

Structure of the specific capsular polysaccharide of *Streptococcus pneumoniae* type 23F (American type 23)

Shapiro ED, Murphy TV, Waid ER, Brady CA//Yale Univ, Sch Med, Dept Pediat, POB 3333, New Haven, Ct 06510, USA

JAMA-J AM MED ASSN 1988 260 (10) 1419

The protective efficacy of *Haemophilus b* polysaccharide vaccine

Sudhakaran VK, Shewale JG**Hindustan Antibiot Ltd, Res & Dev, Pune 411018, India

ENZYME MICROB TECHNOL 1988 10 (9) 547

Exopolysaccharide production by *Nigrospora oryzae* var *glucanicum*

5. Starch

Fujii M, Homma T, Taniguchi M//Niigata Univ, Dept Chem Engr, Igarashi 2, Niigata 95021, Japan

BIOTECHNOL BIOENG 1988 32 (7) 910

Synergism of alpha-amylase and glucoamylase on hydrolysis of native starch granules

Kennedy JF, Stevenson DL, White CA//Univ Birmingham, Dept Chem, Chem Bioact Carbohydrates & Prot Res Lab, POB 363, Birmingham B15 2TT, West Midlands, England

STARCH 1988 40 (7) 261

Methods for the characterization of Cibacron® Blue 3G-A dyed amylose as potential substrates for the assay of alpha-amylase

Kokufuta E, Shimizu N, Tanaka H, Nakamura I//Univ Tsukuba, Inst Appl Biochem, Sakura, Ibaraki 305, Japan

BIOTECHNOL BIOENG 1988 32 (6) 756

Use of polyelectrolyte complex-stabilized calcium alginate gel for entrapment of beta-amylase

Krauze J, Wawrzyniak B//Acad Econom, Inst Commod Sci, Marchlewskiego 146-150, PL-

60967 Poznan, Poland

STARCH 1988 40 (8) 314

Properties of gel-entrapped glucoamylase

Monma M, Kainuma//Minist Agr Forestry & Fisheries, Natl Food Res Inst, 2-1-2 Kannondai, Tsukuba, Ibaraki 305, Japan

AGR BIOL CHEM TOKYO 1988 52 (8) 2087

Preparation of *Chalara paradoxa* glucoamylase modified by fluorescein-isothiocyanate and binding to raw starch

Przybył M, Sugier H//Tech Univ Lodz, Inst Gen Food Chem, Stefanowskiego 4-10, PL-90924 Lodz, Poland

STARCH 1988 40 (7) 275

Immobilization of glucoamylase on cellulose

Banerjee M, Debnath S, Majumdar SK//Jadavpur Univ, Dept Food Technol & Biochem Engr, Calcutta 700032, W Bengal, India

BIOTECHNOL BIOENG 1988 32 (6) 831

Production of alcohol from starch by direct fermentation

Brand JC//Univ Sydney, Dept Biochem, Sydney, NSW 2006, Australia

FOOD TECHNOL AUSTRALIA 1988 40 (7) 262

Food starches - The nutritional facts

Evers AD, Stevens DJ//Flour Milling & Baking Res Assoc, Chorleywood WD3 5SH, Herts, England

STARCH 1988 40 (8) 297

Production and measurement of starch damage in flour. Part 4: Effect of starch damage on hot pasting properties

Glennie CW//CSIR, Natl Food Res Inst, POB 395, Pretoria 0001, South Africa

STARCH 1988 40 (7) 259

Starch hydrolysis during Sorghum beer brewing

Grossmann MVE, El-Dash AA, Carvalho JF//Univ Estadual Londrina, Dept Tecnol Alimentos, Caixa Postal 6001, BR-86051 Londrina, Parana, Brazil

STARCH 1988 40 (8) 303

Extrusion cooking of cassava starch for ethanol production

Grossmann MVE, El-Dash AA, Carvalho JF//Univ Estadual Londrina, Dept Tecnol

Alimentos, Caixa Postal 6001, BR-86051 Londrina, Parana, Brazil

ARQ BIOL TECNOL 1988 31 (2) 329

Extrusion cooking effects on hydration properties of manioc starch

Hota AK, Maiti MM//Indian Inst Technol, Ctr Mat Sci, Kharagpur 721302, W Bengal, India

STARCH 1988 40 (7) 256

Modified starch-natural rubber blend. Part V: Effect of cyanoethylation of starch xanthide on biodegradability of vulcanizates

Huhtanen P, Robertson S//Univ Helsinki, Dept Anim Husb, SF-00170 Helsinki 17, Finland

ANIM FEED SCI TECH 1988 21 (1) 11

The effect of dietary inclusion of starch, sucrose and xylose on the utilization of dietary energy in sheep

Ishizaka T, Honda H, Ikawa K, Kizu N, Yano K, Koishi M//Sci Univ Tokyo, Fac Pharmaceut Sci, 12 Ichigaya Funagawara machi, Shinjuku ku, Tokyo 162, Japan

CHEM PHARM BULL TOKYO 1988 36 (7) 2562

Complexation of aspirin with potato starch and improvement of dissolution rate by dry mixing

Jorgensen OB, Karlsen LG, Nielsen NB, Pedersen S, Rugh S//Novo Ind AS, Novo Alle, DK-2880 Bagsvaerd, Denmark

STARCH 1988 40 (8) 307

A new immobilized glucose isomerase with high productivity produced by a strain of *Streptomyces murinus*

Lechert H, Scoggins WC, Basler WD, Schwier I//Univ Hamburg, Inst Phys Chem, Bundesstr 45, D-2000 Hamburg 13, Fed Rep Ger

STARCH 1988 40 (7) 245

New aspects of the structure of water in starches (German, English Abstract)

Logsdon G//Address not available

BIOCYCLE 1988 29 (7) 48

Cornstarch plastic that microbes love

Mica B//Forschungsinstitut Kartoffelbau, CS-58003 Havlickuv Brod, Czechoslovakia

STARCH 1988 40 (8) 288

Relation between the content of starch and the content of potassium in potato tubers (German, English Abstract)

Nam KD, Choi MH, Kim WS, Kim HS, Beung HR*//Kyungsung Univ, Coll Engn, Dept Food Sci & Technol, Dae Yon Dong, Pusan 608203, South Korea

J FERMENT TECHNOL 1988 66 (4) 427

Simultaneous saccharification and alcohol fermentation of unheated starch by free, immobilized and coimmobilized systems of glucosylase and *Saccharomyces cerevisiae*

Paredes-Lopez O, Carabez-Trejo A, Perez-Herrera S, Gonzalez-Castaneda J//Inst Politecn Nacl, Ctr Invest Estudios Avanzados, Unidad Irapuato, Apdo Postal 629, Irapuato 36500, Guanajuato, Mexico

STARCH 1988 40 (8) 290

Influence of germination on physico-chemical properties of amaranth flour and starch microscopic structure

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

STARCH 1988 40 (8) 285

Synthesis and characterization of *Leucaena glauca* gum esters

Revilla MA, Tarrago JF*//Univ Salamanca, Fac Farm, Fisiol Vegetal Lab, E-37007 Salamanca, Spain

STARCH 1988 40 (8) 294

A histological and histochemical study of starch granule degradation in the cotyledons of *Lens culinaris*

Rodriguez A, Villalobos N, Nicolas G, Martin L*//Univ Salamanca, Fac Biol, Dept Biol Vegetal, Salamanca, Spain

STARCH 1988 40 (7) 250

Scanning electron microscopy study of starch granule degradation in chick-pea cotyledons. Part II: Influence of endogenous dihydrozeatin and calcium chloride on degradation processes

Sawhney SY, Nandedkar UN, Bhide SV, Kale NR//Univ Poona, Dept Chem, Div Biochem, Poona 411007, Maharashtra, India

STARCH 1988 40 (7) 254

Crosslinked starch entrapped in agarose-beads. An affinity matrix for the preparation of alpha-D-mannose/alpha-D-glucose specific lectins

Smietana Z, Fornal L, Szpendowski J, Soral-Smietana M//Univ Agr & Technol, Fac Food Technol, Inst Food Engn & Biotechnol, PL-

10957 Olsztyn, Poland

NAHRUNG 1988 32 (6) 545

Utilization of milk proteins and cereal starches to obtain co-extrudates

Towprayoon S, Saha BC, Fujio Y, Ueda S*//Kumamoto Inst Technol, Fac Engr, Dept Appl Microbial Technol, Kumamoto 860, Japan
APPL MICROBIOL BIOTECHNOL 1988 29 (2-3) 289

Some characteristics of a raw starch digestion inhibitory factor from *Aspergillus niger*

Vijayagopal K, Balagopalan C, Moorthy SN//

Yuksome Breweries Ltd, Sikkim, India

STARCH 1988 40 (8) 300

Gelatinisation and liquefaction of cassava flour: effect of temperature, substrate and enzyme concentrations

Wayman M, Chen S, Parekh RS, Parekh SR//Univ Toronto, Dept Chem Engr & Appl Chem, Toronto, Ontario, Canada M5S 1A4

STARCH 1988 40 (7) 270

Comparative performance of *Zymomonas mobilis* and *Saccharomyces cerevisiae* in alcoholic fermentation of saccharified wheat starch B in a continuous dynamic immobilized biocatalyst bioreactor

6. Others

Blechinger JC, Madsen EL, Frank GR//Univ Wisconsin, Dept Med Phys, Madison, WI 53706, USA

MED PHYS 1988 15 (4) 629

Tissue-mimicking gelatin-agar gels for use in magnetic resonance imaging phantoms

Djelveh G, Petit M, Gros JB//Univ Blaise Pascal, Genie Chim Biol Lab, BP 45, F-63170 Aubiere, France

LEBENS-M-WISS + TECHNOL 1988 21 (2) 103

Influence of sodium chloride concentration, potassium nitrate and temperature on the apparent diffusion coefficient of chloride ions through agar gels

Kordan HA//Univ Birmingham, Dept Plant Biol, POB 363, Birmingham B15 2TT, W Midlands, England

BIOCHEM PHYSIOL PFLANZ 1988 183 (4) 355

Inorganic ions present in commercial agars

Liang C, Fung DYC*//Kansas State Univ Agr & Appl Sci, Dept Anim Sci & Ind, Manhattan, KS 66506, USA

J FOOD PROTECT 1988 51 (7) 577

Performance of some heat-sensitive differential agars prepared and melted by microwave energy

Nisizawa M//Def Acad, Dept Chem, Yokosuka, Japan

J APPL POLYM SCI 1988 36 (7) 1673

Studies on irradiation of agar-agar in the solid state: On the changes of water holding capacity of agar-agar hydrogel produced by irradiation

Truong HH, Lesecq P, Karamanos I, Quang YV, Christiaen D*//Univ Lille Flandres Artois, UFR Biol SN2, Equipe Polysaccharides Parietaux, F-59655 Villeneuve Dascq, France

BOT MAR 1988 31 (4) 289

Chemical characterization of agar from an agarophyte grown in the lagoon of Binh Tri Thien (Vietnam)

Draget KI, Myhre S, Evjen K, Ostgaard K//Univ Trondheim, Biotechnol Lab, Trondheim, Norway

STAIN TECHNOL 1988 63 (3) 159

Plant protoplasts immobilized in calcium alginate - A simple method for preparing fragile cells for transmission electron microscopy

Fukushima Y, Okamura K, Imai K, Motai H//Kikkoman Corp, Div Res & Dev, Noda, Chiba 278, Japan

BIOTECHNOL BIOENG 1988 32 (5) 584

A new immobilization technique of whole cells and enzymes with colloidal silica and alginate

Narbad A, Russell NJ, Gacesa P//Univ Wales Univ Coll Cardiff, Dept Biochem, POB 78, Cardiff CF1 1XL, S Glam, Wales

MICROBIOS 1988 54 (220-21) 171

Radiolabelling patterns in alginate of *Pseudomonas aeruginosa* synthesised from specifically-labelled ^{14}C -monosaccharide precursors

Pu HT, Yang RYK*//W Virginia Univ, Dept Chem Engr, Morgantown, WV 26506, USA

BIOTECHNOL BIOENG 1988 32 (7) 891

Diffusion of sucrose and yohimbine in calcium alginate gel beads with or without entrapped plant cells

Rozie H, Somers W, Bonte A, Visser J, van't

Riet K, Rombouts FM//Wageningen Agr Univ, Dept Food & Food Microbiol, Bomenweg 2, 6703 HD Wageningen, The Netherlands
BIOTECHNOL APPL BIOCHEM 1988 10 (4) 346

Adsorption characteristics of endo-polygalacturonase on alginate beads

Tamponnet C, Barbotin JN, Piton F//SUNY Stony Brook, Dept Biol Sci, Life Sci Bldg, Rm 372, Stony Brook, NY 11794, USA
STAIN TECHNOL 1988 63 (3) 155

A quick preparative method for electron microscopy observations of delicate objects using alginate embedding medium

Nakano H, Takenishi S, Watanabe Y//Osaka Municipal Tech Res Inst, 6-50 Morinomiya 1 chome, Joto ku, Osaka 536, Japan

AGR BIOL CHEM TOKYO 1988 52 (8) 1913
Formation of transfer products from soybean arabinogalactan and glycerol by galactanase from *Penicillium citrinum*

Roy R, Tropper D//Univ Ottawa, Ottawa Carleton Chem Inst, Dept Chem, Ottawa, Ontario, Canada K1N 6N5

J CHEM SOC CHEM COMMUN 1988 (15) 1058

Synthesis of antigenic carbohydrate polymers recognized by lectins and antibodies

Semenova MG, Plashchina IG, Braudo EE, Tolstoguzov VB//AN Nesmeyanov Inst Organoelement Cpds, USSR Acad Sci, Moscow, USSR

CARBOHYD POLYM 1988 9 (2) 133

Structure formation in sodium kappa-carrageenan solutions

Hirano S, Nagao N//Tottori Univ, Dept Agr Biochem, Tottori 680, Japan

AGR BIOL CHEM TOKYO 1988 52 (8) 2111

An improved method for the preparation of colloidal chitin by using methanesulfonic acid

Spiegel Y, Chet I, Cohn E, Galper S, Sharon E//Agr Res Org, Volcani Ctr, Dept Nematol, POB 6, IL-50250 Bet Dagan, Israel

PLANT SOIL 1988 109 (2) 251

Use of chitin for controlling plant-parasitic nematodes. III. Influence of temperature on nematocidal effect, mineralization and microbial population buildup

Inoue K, Baba Y, Yoshizuka K, Noguchi H, Yoshizaki M//Saga Univ, Fac Sci & Technol, Dept Appl Chem, Saga 840, Japan

CHEM LETT 1988 (8) (AUG) 1281

Selectivity series in the adsorption of metal ions on a resin prepared by crosslinking copper(II)-complexed chitosan

Kikuchi Y, Kubota N*//Oita Univ, Fac Engr, Marine Sci Lab, Oita 87011, Japan

BULL CHEM SOC JPN 1988 61 (8) 2943

Permeability control of polyelectrolyte complex membrane including chitosan derivative as a component

Seo T, Kanbara T, Iijima T//Tokyo Inst Technol, Dept Polymer Sci, Meguro ku, Tokyo 152, Japan

J APPL POLYM SCI 1988 36 (6) 1443

Sorption of methyl orange by chitosan gels having hydrophobic groups

Toyoda H, Shinomiya K, Yamanashi S, Koshiishi I, Imanari T//Chiba Univ, Fac Pharmaceut Sci, Yayoi cho, Chiba 260, Japan

ANAL SCI 1988 4 (4) 381

Microdetermination of unsaturated disaccharides produced from chondroitin sulfates in rabbit plasma by high performance liquid chromatography with fluorometric detection

Barak G, Sasson Y//Hebrew Univ Jerusalem, Sch Appl Sci & Technol, Casali Inst Appl Chem, IL-91904 Jerusalem, Israel

BULL SOC CHIM FRANCE 1988 (3) (MAY-JUNE) 584

Beta-cyclodextrin as a reverse phase transfer catalyst in the isomerization of 4-allyl anisole

Breslow R, Guo T//Columbia Univ, Dept Chem, New York, NY 10027, USA

J AMER CHEM SOC 1988 110 (17) 5613

Diels-alder reactions in nonaqueous polar solvents. Kinetic effects of chaotropic and antichaotropic agents and of beta-cyclodextrin

Hamilton JA, Chen L//Indiana Univ, Sch Med, Dept Biochem, Indianapolis, In 46223, USA

J AMER CHEM SOC 1988 110 (17) 5833

Crystal structure of an inclusion complex of beta-cyclodextrin with racemic fenoprofen : Direct evidence for chiral recognition

Hoshino T, Ishida K, Irie T, Hirayama F,

Uekama K*//Kumamoto Univ, Fac Pharmaceut Sci, 5-1 Oe Honmachi, Kumamoto 862, Japan

J INCLUSION PHENOM 1988 6 (4) 415

Reduction of photohemolytic activity of Benoxaprofen by beta-cyclodextrin complexations

Koehler JEH, Saenger W, van Gunsteren WF*//State Univ Groningen, Dept Phys Chem, Nijenborgu 16, 9747 AG Groningen, The Netherlands

EUR BIOPHYS J 1988 16 (3) 153

The flip-flop hydrogen bonding phenomenon. Molecular dynamics simulation of crystalline beta-cyclodextrin

Koehler JEH, Saenger W, van Gunsteren WF//Free Univ Berlin, Inst Kristallog, Takustr 6, D-1000 Berlin 33, Fed Rep Ger

J BIOMOL STRUCT DYN 1988 6 (1) 181

On the occurrence of 3-center hydrogen bonds in cyclodextrins in crystalline form and in aqueous solution - Comparison of neutron diffraction and molecular dynamics results

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

POLYM J 1988 20 (6) 525

Cyclodextrin-catalysed regioselective cleavage of adenylyl(3'-5')adenosine

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

MAKROMOL CHEM-RAP COMM 1988 9 (7) 453

Alpha-cyclodextrin-induced regiospecific cleavage of the cyclic uridine 2',3'-monophosphate

Konig WA, Lutz S, Mischnick-Lubbecke P, Brasat B, Wenz G//Univ Hamburg, Inst Organ Chem, D-2000 Hamburg 13, Fed Rep Ger

J CHROMATOGR 1988 447 (1) 193

Cyclodextrins as chiral stationary phases in capillary gas chromatography. I. Pentylated alpha-cyclodextrin

Konig WA, Lutz S, Wenz G, Vonderbey E//Univ Hamburg, Inst Organ Chem, D-2000 Hamburg 13, Fed Rep Ger

J HIGH RES CHROMATOGR 1988 11 (7) 506

Cyclodextrins as chiral stationary phases in capillary gas chromatography. 2. Heptakis(3-O-acetyl-2,6-di-O-pentyl)-beta-cyclodextrin

Konig WA, Lutz S, Wenz G//Univ Hamburg, Inst Organ Chem, Martin Luther King Pl 6, D-2000 Hamburg 13, Fed Rep Ger

ANGEW CHEM INT ED 1988 27 (7) 979

Modified cyclodextrins - Novel, highly enantioselective stationary phases for gas chromatography

Kulikov AV, Trushina EV, Shteinman AA//Acad Sci USSR, Inst Chem Phys, Chernogolovka 142432, USSR

BULL ACAD SCI USSR D CHEM SCI 1987 36 (12) PT2 2636

Enhanced stability of the oxygen complex of Co(II) protoporphyrin IX upon its association with cyclodextrins

Le Bas G, Rysanek N, Royer F, Tsoucaris G//Ctr Pharmaceut, Phys Lab, CNRS, ER 180, F-92290 Chatenay Malabry, France

MOL CRYST LIQUID CRYST 1988 161 PTB 363

Host-guest interaction in cyclodextrins

Matre AM, Mousset G, Pouillen P, Dauphin G//Univ Clermont Ferrand 2, Electrochim Organ Lab, CNRS, UA 434, 24 Ave Landais, BP 45, F-63170 Aubiere, France

BULL SOC CHIM FRANCE 1988 (3) (MAY-JUNE) 489

Electrochemical reduction in the presence of cyclodextrins. 1. Formation of beta-CD inclusion complexes with electroactive substrates - Their existence in water and DMF (French, English Abstract)

Mattson P, Makela M, Korpela T*//Univ Turku, Dept Biochem, SF-20500 Turku 50, Finland

J CHROMATOGR 1988 447 (2) 398

Chromatographic determination of cyclodextrins on benzoylated polyacrylamide gels

Ramamurthy V, Eaton DF//Dupont Co, Dept Cent Res & Dev, Exptl Stn, Wilmington, DE 19898, USA

ACCOUNT CHEM RES 1988 21 (8) 300

Photochemistry and photophysics within cyclodextrin cavities

Shimada K, Masue T, Toyoda K, Takani M, Nambara T//Kanazawa Univ, Fac Pharmaceut Sci, 13-1 Takara machi, Kanazawa, Ishikawa 920, Japan

J LIQ CHROMATOGR 1988 11 (7) 1475

The utility of cyclodextrin in mobile phase for high-performance liquid chromatographic separation of isomeric estrogens

Shimada K, Oe T, Kanno C, Nambara T//Kanazawa Univ, Fac Pharmaceut Sci, Takaramachi, Kanazawa, Ishikawa 920, Japan
ANAL SCI 1988 4 (4) 377

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

Wintgens V, Guerin B, Lennholm H, Brisson JR, Scaiano JC//Natl Res Council Canada, Div Chem, Ottawa, Ontario, Canada K1A 0R6
J PHOTOCHEM PHOTOBIOLOG A-CHEM 1988 44 (3) 367

Photochemistry of the inclusion complex of (R-) Delta^{1,9}-10-methyl-2-octalone with alpha-cyclodextrin

Yoshimura Y, Kitahata S, Okada S//Osaka Municipal Tech Res Inst, 1-6-50 Morinomiya, Jyoto ku, Osaka 536, Japan
AGR BIOL CHEM TOKYO 1988 52 (7) 1655

Effects of temperature on 6-O-alpha-maltosyl cyclodextrin production from alpha-maltosyl-fluoride and cyclodextrins

Bergqvist D, Fredin H, Linblad B//Malmo Gen Hosp, S-21401 Malmo, Sweden
BRIT J SURG 1988 75 (8) 830

Dihydroergotamine and the thromboprophylactic effect of dextran-70 in emergency hip surgery (Letter)

Sabatie J, Choplin L, Moan M, Doublier JL, Paul F, Monsan P//Dept Chem Engr, Laval Univ, Quebec, Canada
CARBOHYD POLYM 1988 9 (2) 87

The effect of synthesis temperature on the structure of dextran NRRL B 512F

Stoltz J, Bartel M//Friedrich Schiller Univ, Bereich Med, Chirurg Klin & Poliklin, Bachstr 18, DDR-6900 Jena, Ger Dem Rep
ZBL CHIR 1988 113 (16) 1044

Effects of adjuvant therapeutic infusion of low-molecular dextrans (Infukoll-M-40) and deproteinised haemoderivative (Actovegin) for chronic disorders of arterial blood flow at stage-IV according to Fontaine (German)

Oxley D, Wilkinson SG//Univ Hull, Dept Chem, Hull HU6 7RX, N Humberside, England

CARBOHYD RES 1988 179 (AUG) 341

Structural studies of an acidic galactomannan from the reference strain for *Serratia marcescens* serogroup O4

Hauser B, Geiger EM, Horn W//Tech Univ Munich, Lehrstuhl Zierpflanzenbau, D-8050 Freising, Fed Rep Ger

GARTENBAUWISSENSCHAFT 1988 53 (4) 166

Suitability of gellan and different agar qualities for in vitro cultures of *Kalanchoe* hybrids (German, English Abstract)

Sarathy C, Gowda DC//Univ Mysore, Dept Postgrad Studies & Res Chem, Mysore 570006, Karnataka, India

INDIAN J CHEM SECT B 1988 27 (7) 694

Structural features of a D-glucan from the stem bark of *Cinnamomum zeylanicum*

Varum KM, Smidsrod O//Lab Biotechnol, Norwegian Inst Technol, Univ Trondheim, 7034 Trondheim-NTLH, Norway

CARBOHYD POLYM 1988 9 (2) 103

Partial chemical and physical characterisation of (1-3),(1-4)-beta-D-glucans from oat (*Avena sativa* L.) aleurone

Jeroch H, Aboud M, Engerer KH, Gebhardt G//Karl Marx Univ, Sekr Tierprod & Vet Med, DDR-7022 Leipzig, Ger Dem Rep
ARCH TIERERNAHR 38 (5) 399

Evaluation of an enzyme preparation containing beta-glucanase in broiler fattening rations based on barley (German, English Abstract)

Craig SAS, McDonald AML, Manners DJ, Stark JR//Heriot Watt Univ, Dept Brewing & Biol Sci, Edinburgh EH1 1HX, Midlothian, Scotland

CARBOHYD RES 1988 179 (AUG) 327

The iodine-staining properties and fine structure of some mammalian and invertebrate glycogens

Karamanos NK, Hjerpe A, Tsegenidis T, Engfeldt B, Antonopoulos CA//Univ Patras, Dept Chem, Organ Chem Biochem & Nat Prod Sect, Patras, Greece

ANAL BIOCHEM 1988 172 (2) 410

Determination of iduronic acid and glucuronic acid in glycosaminoglycans after stoichiometric reduction and depolymerization using high-performance liquid chromatography and ultraviolet

detection

Tuomilehto J, Silvasti M, Aro A, Koistinen A, Karttunen P, Gref CG, Ehnholm C, Uusitupa M//Natl Publ Hlth Inst, Mannerheimintie 166, SF-00280 Helsinki, Finland

ATHEROSCLEROSIS 1988 72 (2-3) 157

Long term treatment of severe hypercholesterolaemia with guar gum

Aspinall GO, Khondo L, Kinnear JA//York Univ, Dept Chem, Downsview, Ontario, Canada M3J 1P3

CARBOHYD RES 1988 179 (AUG) 211

The hex-5-ene degradation: cleavage of modified glycosiduronic acid linkages in methylated Khaya ivorensis gum

Barrowcliffe TW, Curtis AD, Johnson EA, Thomas DP//Natl Inst Biol Stand & Control, Div Haematol, Blanche Lane, Potters Bar EN6 3QG, Herts, England

THROMB HAEMOST 1988 60 (1) 1

An international standard for low molecular weight heparin

Coyne E, Walenga JM, Fareed J//Loyola Univ, Med Ctr, Dept Pathol, Maywood, IL 60153, USA
J PHARM SCI 1988 77 (9) 818

Aggregates in heparin (Letter)

Racey TJ, Rochon P, Awang DVC, Neville GA*//Hlth & Welf Canada, Bur Drug Res, Hlth Protect Branch, Ottawa, Ontario, Canada K1A 0L2

J PHARM SCI 1988 77 (9) 820

Response to "Aggregates in heparin"

Di Stefano F, Giglio A, Vinci M, Romano M, Salanitri G, Cossarizza A, Iani P, Di Stefano VA//Univ Catania, Fac Med, I-95124 Catania, Italy

CURR THER RES 1988 44 (1) 1

Low molecular weight heparins for long-term therapy of peripheral vascular disease

Greenberg BM, Masem M, May JW*//Massachusetts Gen Hosp, Ctr Ambulatory Care, Div Plast Surg, Suite 357, Boston, MA 02114, USA
PLAST RECONSTR SURG 1988 82 (3) 463

Therapeutic value of intravenous heparin in microvascular surgery: An experimental vascular thrombosis study

Lidholt K, Riesenfeld J, Jacobsson KG, Feingold DS, Lindahl U//Swedish Univ Agr Sci, Ctr Biomed, Dept Vet Med Chem, Box 575, S-75123 Uppsala, Sweden

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Petitou M, Duchaussoy P, Lederman I, Choay J, Sinay P//Inst Choay, 46 Ave Theophile Gautier, F-75782 Paris, France

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Salt SD, Gander JE*//Univ Florida, Inst Food & Agr Sci, Dept Microbiol & Cell Sci, 1059 McCarty Hall, Gainesville, FL 32611, USA

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Stevenson TT, Darvill AG, Albersheim P*//Univ Georgia, USDA, Russell Res Ctr, Complex Carbohydrate Res Ctr, POB 5677, Athens, Ga 30613, USA

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Salon MC, Gandini A*, Gey C//Inst Natl Polytech Grenoble, Ecole Francais Papeterie, Chim Macromolec & Papetiere Lab, BP 65, F-38402 St Martin d'Heres, France

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2-Vinyltetrahydrofuran: Characterization and preliminary studies of its polymerisability

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