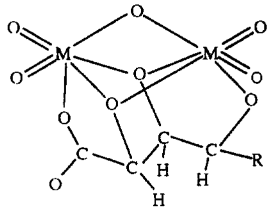
GRAPHICAL ABSTRACT

Carbohydr. Res. **1997,** *304*, 97

NMR spectroscopy study of the complexation of D-gluconic acid with tungsten(VI) and molybdenum(VI)

M. Luísa Ramos, M. Madalena Caldeira, Victor M.S. Gil
University of Coimbra, Department of Chemistry, P-3049 Coimbra, Portugal

Eight and ten complexes have been identified with molybdate and tungstate ions, respectively, in aqueous solution, depending on pH and concentration conditions; the structure of an important species formed both with tungstate and molybdate ions is shown.

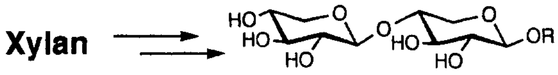


R=$CHOHCH_2OH$

Carbohydr. Res. **1997,** *304*, 111

An efficient chemical-enzymatic synthesis of 4-nitrophenyl *β*-xylobioside: a chromogenic substrate for xylanases

Adva Mechaly [a], Valery Belakhov [b], Yuval Shoham [a], Timor Baasov [b]
[a] *Department of Food Engineering and Biotechnology, Technion — Israel Institute of Technology, Haifa 32000, Israel*
[b] *Department of Chemistry, Technion — Israel Institute of Technology, Haifa 32000, Israel*

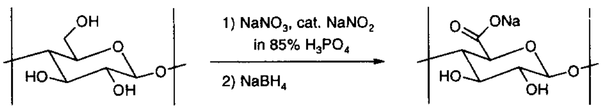


R = 4-nitrophenyl

Carbohydr. Res. **1997,** *304*, 117

Autocatalytic oxidation of primary hydroxyl functions in glucans with nitrogen oxides

Arjan E.J. de Nooy [a], Mario Pagliaro [a], Herman van Bekkum [b], Arie C. Besemer [a]
[a] *TNO Nutrition and Food Research Institute, Department of Biochemistry, Utrechtseweg 48, Zeist 3700 AJ, The Netherlands*
[b] *Delft University of Technology, Laboratory of Organic Chemistry and Catalysis, Julianalaan 136, Delft 2628 BL, The Netherlands*

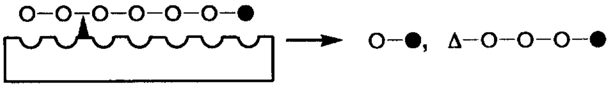


Carbohydr. Res. **1997,** *304*, 125

Some properties and action mode of (1(ar4-*α*-L-guluronan lyase from *Enterobacter cloacae* M-1

Tomoko Shimokawa [a], Shigeki Yoshida [a], Isao Kusakabe [a], Toshio Takeuchi [b], Katsumi Murata [b], Hideyuki Kobayashi [c]
[a] *Institute of Applied Biochemistry, University of Tsukuba, Tsukuba-shi, Ibaraki 305, Japan*
[b] *Research and Development Department, Kibun Food Chemifa, Chuo-ku, Tokyo 104, Japan*
[c] *National Food Research Institute, Ministry of Agriculture, Forestry, and Fisheries, Tsukuba-shi, Ibaraki 305, Japan*

E. cloacae (1 → 4)-α-L-guluronan lyase degraded hepta(GulA) to dimer and pentamer.



Carbohydr. Res. **1997**, *304*, 143

Cellobiohydrolase I from *Trichoderma reesei*: Identification of an active-site nucleophile and additional information on sequence including the glycosylation pattern of the core protein

Klaus Klarskov [a], Kathleen Piens [a], Jerry Ståhlberg [b], Peter B. Høj [c], Jozef Van Beeumen [a], Marc Claeyssens [a]

[a] *Department of Biochemistry, Physiology and Microbiology, University of Gent, B-9000 Gent, Belgium*
[b] *Department of Molecular Biology, University of Uppsala, Biomedical Center, S-75124 Uppsala, Sweden*
[c] *Department of Horticulture, Viticulture and Oenology, University of Adelaide, 5064 Glen Osmond, Austria*

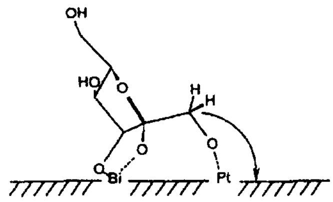
(*R*,*S*)-3,4-Epoxybutyl β-cellobioside inactivates cellobiohydrolase I from *T. reesei* by covalent modification of Glu^{212}, the putative active site nucleophile.

Carbohydr. Res. **1997**, *304*, 155

The oxidation of fructose on Pt / C catalysts. The formation of D-*threo*-hexo-2,5-diulose and the effect of additives

Annemieke W. Heinen, Joop A. Peters, Herman van Bekkum

Laboratory of Organic Chemistry and Catalysis, Delft University of Technology, Julianalaan 136, Delft 2628 BL, The Netherlands



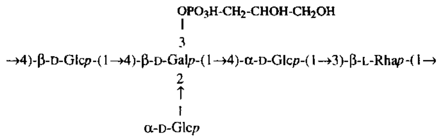
Carbohydr. Res. **1997**, *304*, 165

Structural elucidation of the capsular polysaccharide from *Streptococcus pneumoniae* type 18B

Camilla Karlsson [a], Per-Erik Jansson [a], Göran Widmalm [b], Uffe B. Skov Sørensen [c]

[a] *Clinical Research Centre, Analytical Unit, Karolinska Institute, Huddinge Hospital, Novum, S-141 86 Huddinge, Sweden*
[b] *Department of Organic Chemistry, Arrhenius Laboratory, Stockholm University, S-106 91 Stockholm, Sweden*
[c] *Department of Vaccine Development, Statens Serum Institut, DK-2300 Copenhagen S, Denmark*

Streptococcus pneumoniae type 18B was shown to have a capsular polysaccharide with the following structure:

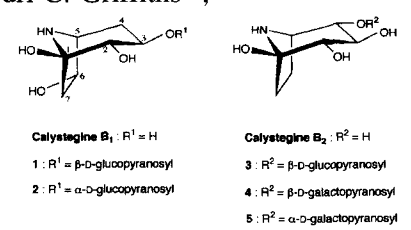


Carbohydr. Res. **1997**, *304*, 173

Enzymatic synthesis of the glycosides of calystegines B_1 and B_2 and their glycosidase inhibitory activities

Naoki Asano [a], Atsushi Kato [a], Haruhisa Kizu [a], Katsuhiko Matsui [a], Rhodri C. Griffiths [b], M. George Jones [b], Alisan A. Watson [c], Robert J. Nash [c]

[a] *Faculty of Pharmaceutical Sciences, Hokuriku University, Kamazawa 920-11, Japan*
[b] *Institute of Biological Sciences, University of Wales, Aberystwyth, Cardiganshire, UK*
[c] *Institute of Grassland and Environmental Research, Aberystwyth, Cardiganshire, UK*



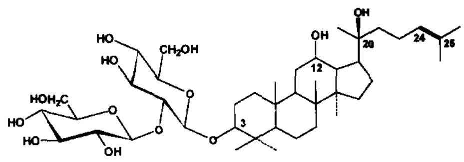
Carbohydr. Res. **1997**, *304*, 179

Synthesis of ginsenoside Rg_3, a minor constituent of Ginseng Radix

Victor Ph. Anufriev [a], Galina V. Malinovskaya [a], Vladimir A. Denisenko [a], Nina I. Uvarova [a], Georgi B. Elyakov [a], Shin-Il Kim [b], Nam-In Baek [b]

[a] *Laboratory of Organic Synthesis of Natural Products, Pacific Institute of Bioorganic Chemistry, Far East Division, Russian Academy of Sciences, Valdivostok 690022, Russia*

[b] *Division of Biochemical Pharmacology, Korea Ginseng & Tobacco Institute, Science Town, Yusung P.O. Box 7, Taejon, Korea*



Glycosylation of 12-acetoxy-protopanaxadiol, with α-acetobromosophorose under catalysis by Ag_2CO_3 or Ag_2O, followed by deacetylation, afforded a mixture of the α- and β-linked sophorosides. The last was identical in all respects with ginsenoside Rg_3, the minor component of Ginseng Radix Rubra.

Carbohydr. Res. **1997**, *304*, 183

IR spectra and hydrogen bonding in tetritols

Mark Rozenberg, Aharon Loewenschuss, Yizhak Marcus

Department of Inorganic and Analytical Chemistry, The Hebrew University of Jerusalem, Jerusalem 91904, Israel

The enhanced water absorption capability of D,L-threitol as compared to *meso*-erythritol is ascribed to differences in strength of H-bonds in the crystals based on IR spectral data.