### Synthesis and antibacterial activities of quaternary ammonium salt of chitosan

Carbohydr. Res. 2001, 333, 1

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Chitosan derivatives with quaternary ammonium salt, such as N,N,N-trimethyl chitosan, N-N-propyl-N,N-dimethyl chitosan and N-furfuryl-N,N-dimethyl chitosan were prepared using 96% deacetylated chitosan of  $M_v$   $2.14 \times 10^5$ ,  $1.9 \times 10^4$  and  $7.8 \times 10^3$ . The antibacterial activities of quaternized chitosan against *Escherichia coli* were explored.

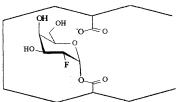
# The identification of the catalytic nucleophiles of two β-galactosidases from glycoside hydrolase family 35

Carbohydr. Res. 2001, 333, 7

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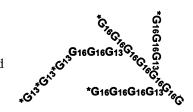
Carbohydr. Res. 2001, 333, 19

# Dextran acceptor reaction of *Streptococcus sobrinus* glucosyltransferase GTF-I as revealed by using uniformly <sup>13</sup>C-labeled sucrose

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GTF-I transferred the  $^{13}\text{C-labeled}$  glucosyl residue (\*G) to the nonreducing-end of dextran mostly by  $\alpha\text{-}(1\rightarrow6)$  linkages and partially by  $\alpha\text{-}(1\rightarrow3)$  linkages, and then preferentially to the elongated  $\alpha\text{-}(1\rightarrow3)\text{-linked}$  terminal.



# Purification and characterization of a β-glucuronidase from *Aspergillus niger*

Carbohydr. Res. 2001, 333, 27

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A fungal  $\beta$ -glucuronidase released uronic acids from p-nitrophenyl  $\beta$ -glucosiduronate and acidic galactooligosaccharides carrying either  $\beta$ -D-glucosyluronic or 4-O-methyl- $\beta$ -D-glucosyluronic residues at the nonreducing termini through  $\beta$ -(1  $\rightarrow$  6)-glycosidic linkages. The enzyme liberated non-reducing terminal uronic acids from an arabinogalactan-protein. The enzyme showed the transglycosylation action.

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#### Structure of a colitose-containing O-specific polysaccharide of the marine bacterium *Pseudoalteromonas tetraodonis* IAM 14160<sup>T</sup>

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$$\rightarrow$$
2)- $\alpha$ -Colp- $(1\rightarrow 4)$ - $\beta$ -D-GlcpNAc- $(1\rightarrow 4)$ - $\beta$ -D-GlcpA- $(1\rightarrow 3)$ - $\beta$ -D-GalpNAc- $(1\rightarrow 3)$ - $\beta$ -D-GalpNAc- $(1\rightarrow 2)$ - $\beta$ -D-Galp $\uparrow$ 

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#### Specific degradation of pectins via a carbodiimidemediated Lossen rearrangement of methyl esterified galacturonic acid residues

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The methyl esterified galacturonic acid residues of pectins are converted to hydroxamic acid residues. These are specifically degraded via a carbodiimide-mediated Lossen rearrangement, to liberate the unesterified residues as oligomeric blocks. This allows a determination of the pattern of esterification of the pectin.

#### Mild tagging procedures for the structural analysis of glycans

Carbohydr. Res. 2001, 333, 59

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HO HO 
$$R^{2}$$
  $H_{2}O$   $H_{2}O$   $H_{2}O$   $H_{3}O$   $H_{4}O$   $H_{2}O$   $H_{4}O$   $H_{5}O$   $H_{5}O$   $H_{6}O$   $H_{6}O$   $H_{6}O$   $H_{7}O$   $H_{8}O$   $H_{8}$ 

### Biotin labeling of the symbiotically important succino-

Carbohydr. Res. 2001, 333, 73

glycan oligosaccharides of Rhizobium meliloti for identification of putative plant receptors

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**Biotinylated Succinoglycan Trimer** 

Structural features of arabinogalactan-proteins from the fruit of *Lycium chinense* Mill.

Carbohydr. Res. 2001, 333, 79

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Arabinogalactan-proteins (AGPs) from the fruit of *Lycium chinense* Mill. were characterized by the ratio of 6-O-and 3,6-di-O-substituted galactosyl residues: (1) AGP being predominant in the linear domain; (2) AGP being predominant in the branching domain; and (3) AGP almost equal in quantity for both domains.

### Structural analysis of a new glycosphingolipid from the lipopolysaccharide-lacking bacterium *Sphingomonas adhaesiva*

Carbohydr. Res. 2001, 333, 87

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A new glycosphingolipid, (GSL-4B) was isolated from *Sphingomonas adhaesiva* having the following glycosyl part:  $\alpha$ -D-Glcp-(1  $\rightarrow$  4)- $\alpha$ -D-Glcp-(1  $\rightarrow$  4)-

and Cer being *erythro-2*-amino-1,3-octadecanediol (sphinganine), (13*Z*)-*erythro-2*-amino-13-eicosene-1,3-diol, and (13*Z*)-*erythro-2*-amino-13,14-methylene-1,3-eicosanediol present in the ratios 1.1:1.0:1.1, with all sphinganine bases bearing amide-linked (*S*)-2-hydroxymyristic acid.

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