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Carbohydrate
RESEARCH

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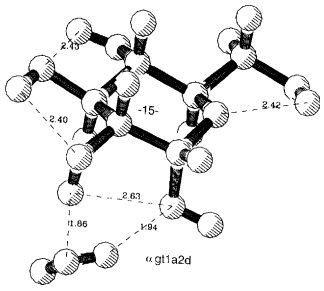
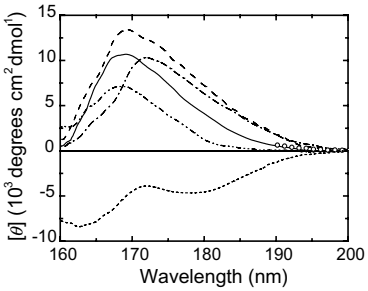
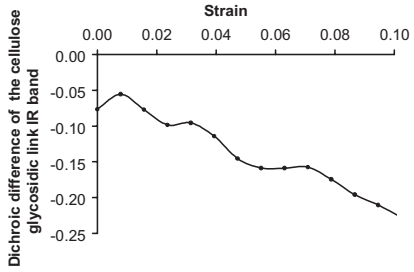
Contents

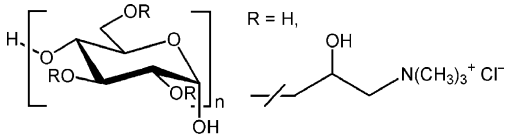


A new method based on dynamic FT-IR spectroscopy for the estimation of the allomorph composition of native cellulose in pulp samples is presented.

Binding of inactivated xylanases to arabinoxylans has been imaged by AFM and used to map structural hetereogeneity of the molecules.





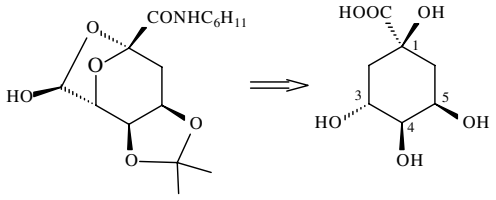


Cationic starches from various semi-technical processes (slurry, paste, dry and extrusion) were investigated by ESIMS and ESIMS^2 after enzymatic degradation with α-amylase and subsequent amyloglucosidase digestion.

$$[\rightarrow 4)\text{-}\alpha\text{-D-GalNAcAN-}(1 \rightarrow 4)\text{-}\alpha\text{-D-GalNAcAN-}(1 \rightarrow 4)\text{-}\alpha\text{-D-GalNAcAN-}(1 \rightarrow 3)\text{-}\alpha\text{-D-QuiNAc4NAc-}(1 \rightarrow]_n$$

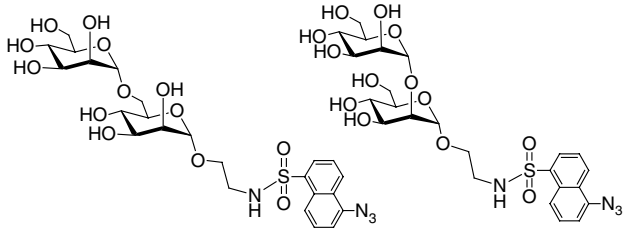
ESI-MS^n
GC-MS ⟶

β-Xyl*p*-(1→4)-*β*-Xyl*p*-(1→4)-Xyl*p*
β-Xyl*p*-(1→4)-*β*-Xyl*p*-(1→4)-Xyl*p*-(1→4)-*β*-Xyl*p*
β-Xyl*p*-(1→4)-[α-Ara*f*-(1→3)]-*β*-Xyl*p*-(1→4)-Xyl*p*
β-Xyl*p*-(1→4)-[α-Ara*f*-(1→2)-[α-Ara*f*-(1→3)]]-*β*-Xyl*p*
β-Xyl*p*-(1→4)-[α-Ara*f*-(1→3)]-*β*-Xyl*p*-(1→4)-Xyl*p*-(1→4)-Xyl*p*
β-Xyl*p*-(1→4)- Xyl*p*-(1→4)- [α-Ara*f*-(1→3)]-*β*-Xyl*p*-(1→4)-Xyl*p*

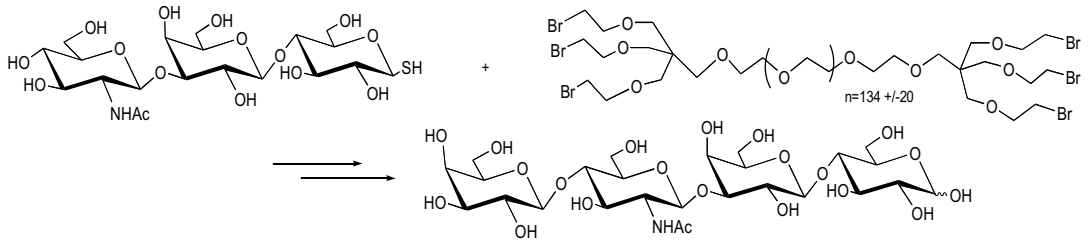


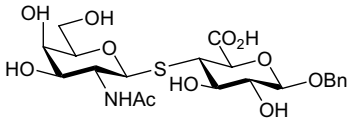
A highly stereocontrolled synthesis of a heptose derivative has been developed using naturally occurring (−)-quinic acid as a chiral starting material.

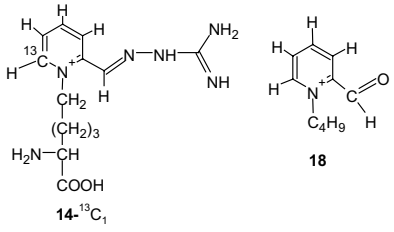
β-D-Gal*p*-(1→6)-[α-L-Ara*f*-(1→2)]-β-D-Gal*p*-(1→6)-β-D-Gal*p*-(1→6)-[α-L-Ara*f*-(1→5)-α-L-Ara*f*-(1→2)]-β-D-Gal*p*-(1→6)-β-D-Gal*p*-1→OMP



1 **2**



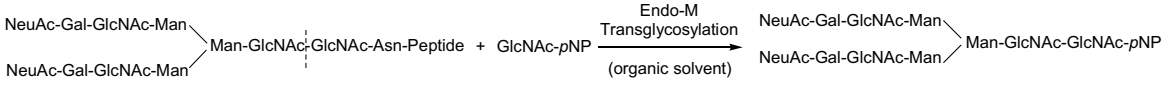


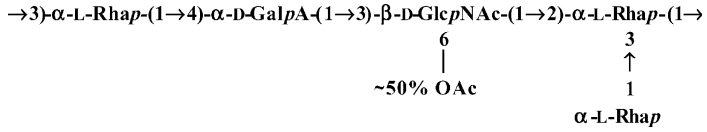


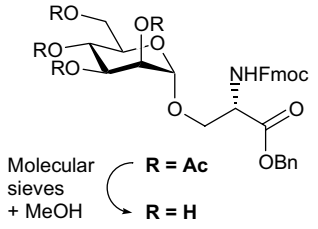
14-$^{13}C_1$ **18**

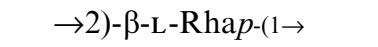
Syntheses are described for the Maillard reaction product **14**-$^{13}C_1$ and the model compound **18**.

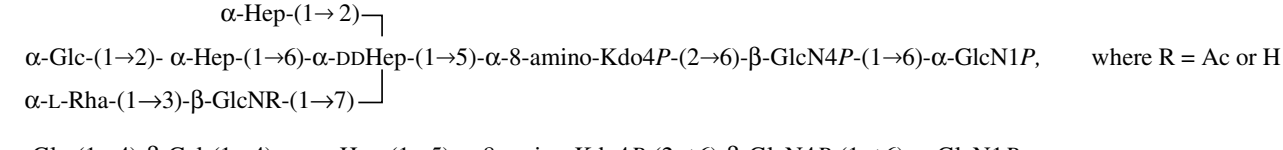
Pinus densiflora bark extracts, from among more than 1400 species examined, showed the highest inhibition activity against several carbohydrate-hydrolysing enzymes.

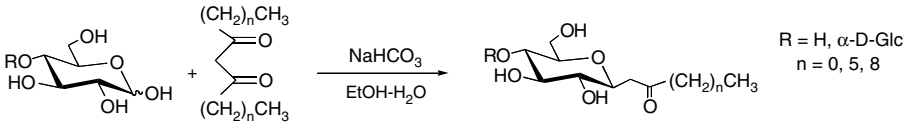












*Corresponding author

COVER

Well-defined glycoforms of glycoproteins can easily be obtained by oxidative coupling of synthetic thioaldoses with proteins that have a cysteine moiety in lieu of an asparagine residue carrying natural N-linked oligosaccharides. In vitro glycosylation offers several advantages such as quantitative conjugation, incorporation of oligosaccharides that display high bioactivities and the possibility of using convenient bacterial or yeast protein expression systems. The figure is related to Geert-Jan Boons' *Carbohydrate Research Award* paper, Carbohydr. Res., **2004**, *339*, 181–193.

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