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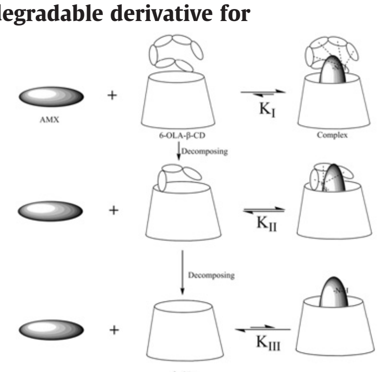
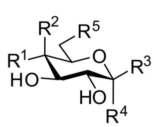
Contents

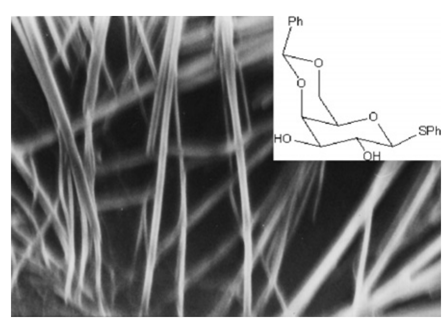
FULL PAPERS

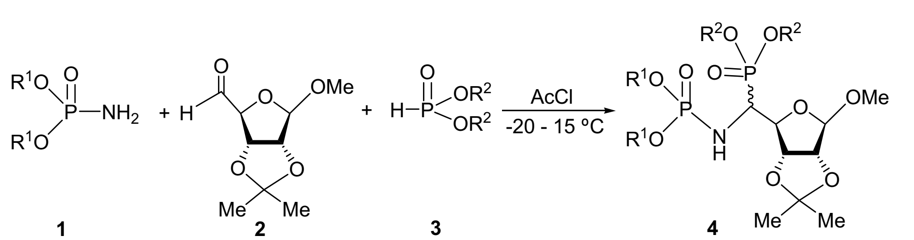
A new water-soluble cyclomaltoheptaose derivative, 6-oligo(lactic acid)cyclomaltoheptaose (6-oligo(lactic acid)-βCD) for the controlled release of the common drug Amoxicillin (AMX).



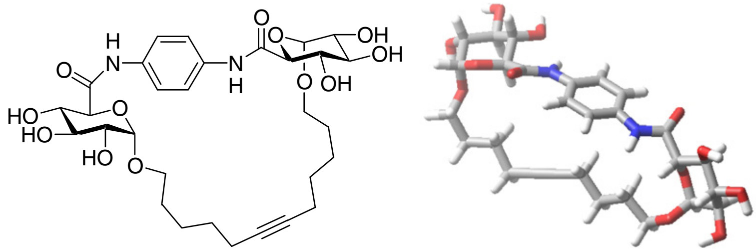


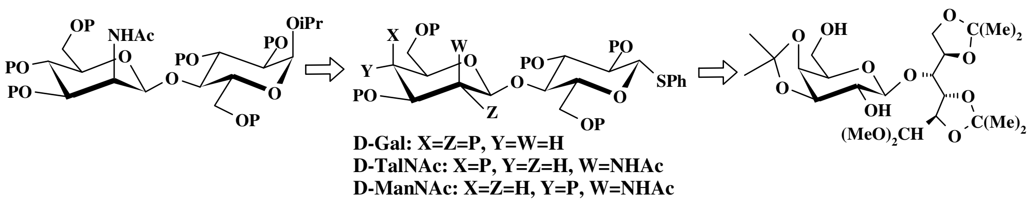
R^2,R^4 = H; R^1,R^5 = $OCHC_6H_5$; R^3 = SPh
R^1,R^4 = H; R^2,R^5 = $OCHC_6H_5$; R^3 = SPh
R^2,R^4 = H; R^1,R^5 = OCH-*p*-$NO_2C_6H_4$; R^3 = SPh
R^1,R^4 = H; R^2,R^5 = OCH-*p*-$NO_2C_6H_4$; R^3 = SPh
R^2,R^4 = H; R^1,R^5 = OCH-*p*-$NO_2C_6H_4$; R^3 = STol
R^1,R^4 = H; R^2,R^5 = OCH-*p*-$NO_2C_6H_4$; R^3 = STol

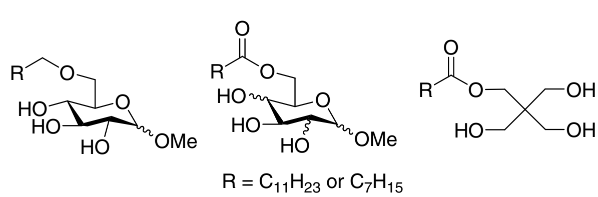


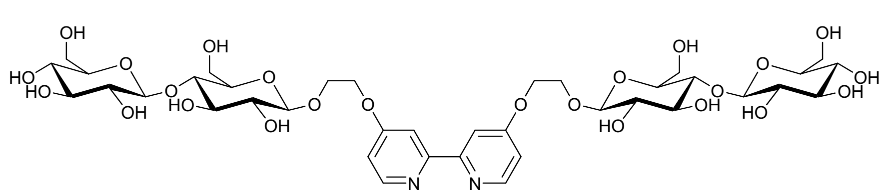


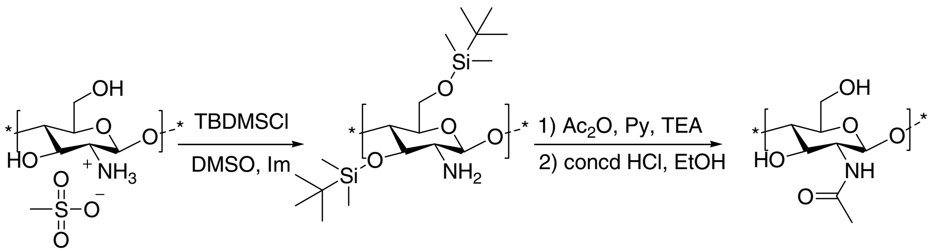
$R^1 = C_2H_5$, *n*-C_3H_7
$R^2 = CH_3$, C_2H_5, *n*-C_3H_7, *i*-C_3H_7, *n*-C_4H_9

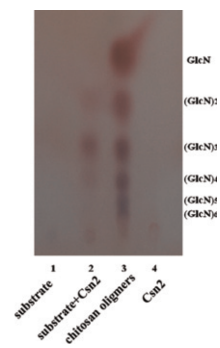



D-Gal: X=Z=P, Y=W=H
D-TalNAc: X=P, Y=Z=H, W=NHAc
D-ManNAc: X=Z=H, Y=P, W=NHAc

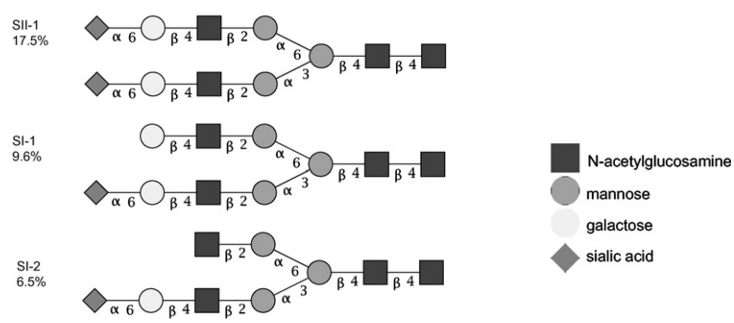

R = $C_{11}H_{23}$ or C_7H_{15}

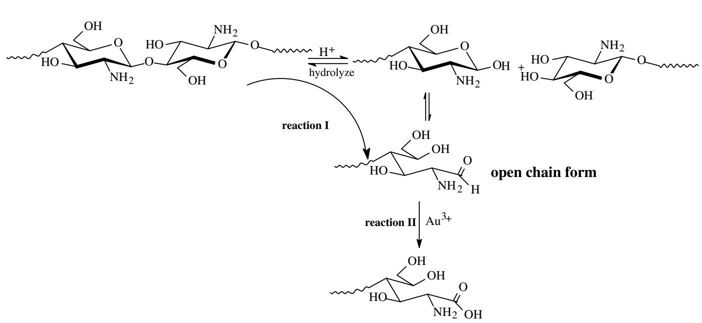




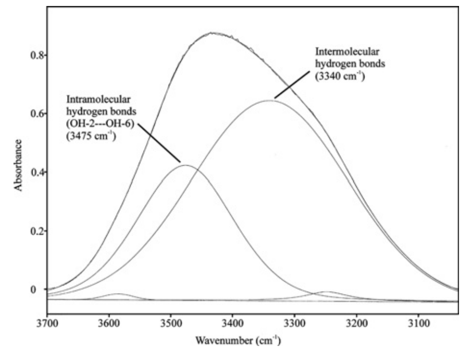


The end products of 85% deacetylated chitosan hydrolyzed by Csn2.



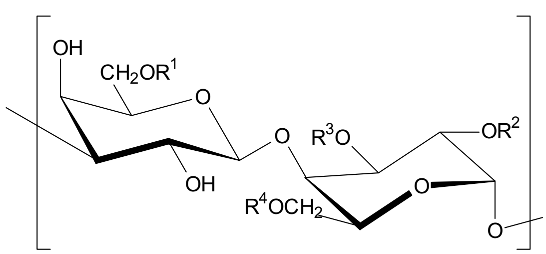


The hydrogen bond formation in 3-mono-*O*-methyl cellulose was elucidated by means of ^{13}C CP/MAS NMR- and FTIR spectroscopy. The deconvolution revealed an intramolecular hydrogen bond between the OH groups of positions 2 and 6 of adjacent repeating units of the highly crystalline polymer.

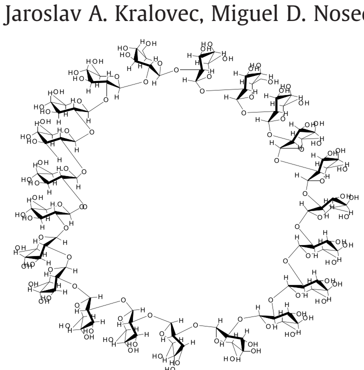


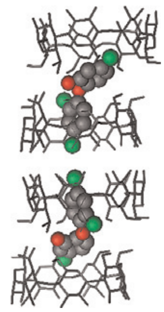
α-D-GlcA*p*-(1→2) α-L-Fuc*f*-(1→4)-α-D-GlcA*p*-(1→2)
→3)-α-L-Fuc*p*-(1→3)-α-L-Fuc*p*-(1→3)-α-L-Fuc*p*-(1→3)-α-L-Fuc*p*-(1→3)-α-L-Fuc*p*(1→
α-L-Fuc*f*-(1→2)-α-L-Fuc*f*-(1→4)-α-D-GlcA*p*-(1→2)

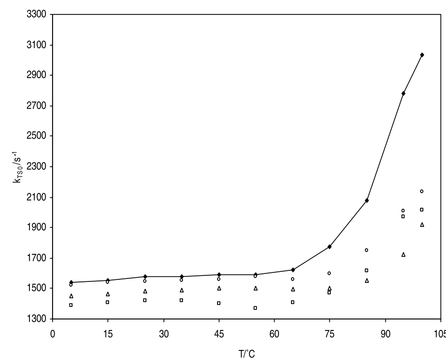
In the native fucoidan some fucofuranose residues are mono- and disulfated at different positions, additional sulfate groups may occupy C-2 and C-4 of the backbone, the latter position being also partially acetylated.

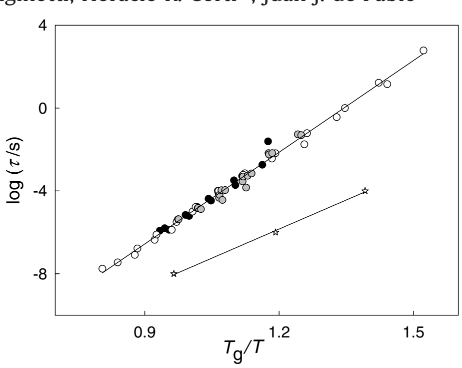


R^1 = Mostly β-D-Xyl-[1→, few Me, H and SO_3^-
R^2 = Mostly H, some Me and SO_3^-
R^3 = Mostly H, few Me and glycosyl
R^4 = Mostly H, few glycosyl
R^3 / R^4 = In part, joined to give a 3,6-AnGal unit
Glycosyl = single stubs of Xyl, 3-*O*-MeGal or 2,3-di-*O*-Me-Gal







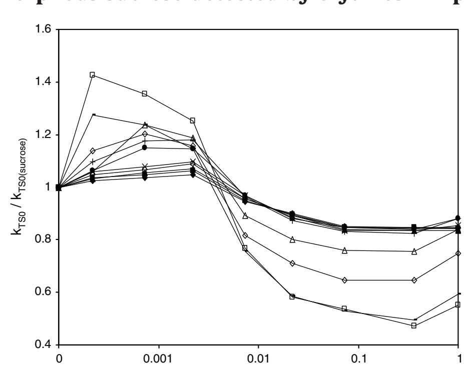


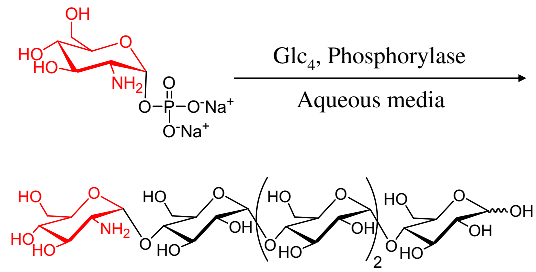
(●) aqueous sucrose with 20, 25 and 30 wt% water content (this work).

(○) aqueous sucrose with 20 and 25 wt% water content [Jansson, H.; Huldt, C.; Bergman, R.; Swenson, J. *Phys. Rev. E*, **2005**, 71, 011901-1-7].

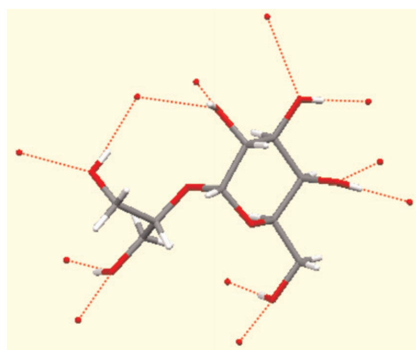
(●) aqueous sucrose-borate mixtures with 20 and 30 wt% water content (this work).

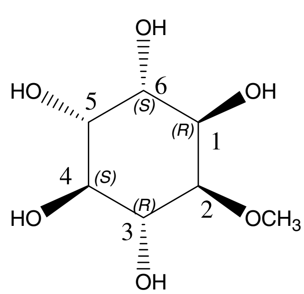
(☆) aqueous sucrose with 1 wt% water content [Champion, D.; Maglione, M.; Niquet, G; Simatos, D.; Le Meste, M. *J. Thermal Anal. Calorim.*, **2003,** 71, 249-261].





Main product





α-GalA-(1-*P*-4)
|
β-Fru*f*-(2→6)-α-Gal-(1→6)-α-Gal-(1→3)-α-Gal-(1-*P*-3)-α-DDHep-(1→5)-α-8-aminoKdo-(2→6)-α-GlcNac4*P*-(1→6)-β-GlcNac1*P*

α-GalA-(1-*P*-4)
|
α-DDHep2*PPEtN*3*PN*-(1→5)-α-8-aminoKdo-(2→6)-β-GlcNac4*P*-(1→6)-α-GlcNac1*P*

ac = 14:0(3-OH); PN = phosphoramide

Providencia alcalifaciens O8

Dhpa
2
|
4
→3)-β-D-Fuc*p*NAc4N-(1→3)-β-D-Glc*p*NAc-(1→3)-β-D-Gal*p*-(1→2)-D-Gro-3-P-(O→

*Corresponding author

(i)+ Supplementary data available via ScienceDirect

COVER

The graphic represents a molecular dynamics simulation of water density around the disaccharide α-D-Ara*f*-(1→5)-α-D-Ara*f*-OCH_3, highlighting the interglycosidic linkage. The red clouds represent regions where the probability of finding an oxygen atom is high while the gray clouds are for hydrogen atoms. This work is the result of a collaboration in the Alberta Ingenuity Centre for Carbohydrate Science and Department of Chemistry at the University of Alberta between the groups of Pierre-Nicolas Roy and Todd L. Lowary (Castillo, N.; Roy, P. N.; Lowary, T. L. Manuscript in Preparation).

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