

Characterization of the isolated oligosaccharides.

Table S1. Proton chemical shift values (ppm) of GOS disaccharide and trisaccharide components.

	IV-2	IV-1	IV-3/III-1	IV-4/III-4	IV-5/III-5/II-3	III-1b
	Gal β 4G 1c	Gal β 6G al	Gal β 6Gal β 4Glc	Gal β 3Gal β 3Glc	Gal β 3Gal β 4Glc	GalNAc α 3Gal β 4Glc
Glc						
H1 α	5.223		5.222	5.222	5.224	5.225
H1 β	4.665		4.669	4.663	4.666	4.667
Gal						
H1 α		5.265				
H1 β		4.594				
Gal(4)						
H1	4.452		4.461		4.511	4.514
H4					4.197	4.111
H6			4.07			
Gal(6)						
H1 α		4.444				
H1 β		4.454				
Gal(3)						
H1				4.484		
H4				4.194		
Gal(6,4)						
H1			4.485			
Gal(3,4)					4.614	
H1						4.614
Gal(3,3)						
H1				4.602		
GalNAc(3,4)						
)						
H1						5.082
H2						4.231
H5						4.195

Table S2. Proton chemical shift values (ppm) of GOS tetrasaccharide components.

	III-3/II-2	II-4	II-5	II-6
	Gal β 6Gal β 6Gal β 4 Glc	Gal β 3Gal β 6Gal β 4 Glc	Gal β 6Gal β 3Gal β 4 Glc	Gal β 3Gal β 3Gal β 4 Glc
Glc				
H1 α	5.222	5.223	5.225	5.224
H1 β	4.668	4.670	4.667	4.666
Gal(4)				
H1	4.461	4.481	4.511	4.512
H4			4.223	4.199
H6	4.05	4.064		
Gal(6,4)				
H1	4.501	4.518		
H4		4.236		
H6	4.05			
Gal(6,6,4)				
H1	4.453			
Gal(3,4)				
H1			4.622	4.678
H4				4.199
H6			4.040	
Gal(6,3,4)				
H1			4.432	
Gal(3,6,4)				
H1		4.612		
Gal(3,3,4)				
H1				4.618

Table S3. Proton chemical shift values (ppm) of GOS tetrasaccharide components.

	II-1	III-2
	Gal β 6GalNAc α 3Gal β 4 Glc	Gal β 6Gal β 6Gal β 6Glc
Glc		
H1 α	5.224	5.223
H1 β	4.666	4.684
H6 α		4.213
H6 β		4.287
Gal(4)		
H1	4.511	
H4	4.076	
Gal(6)		
H1 α		4.444
H1 β		4.455
H6		4.07
GalNAc(3,4)		
H1	5.068	
H2	4.225	
H5	4.396	
Gal(6,6)		
H1		4.514
H6		4.07
Gal(6,3,4)		
H1	4.446	
Gal(6,6,6)		
H1		4.506

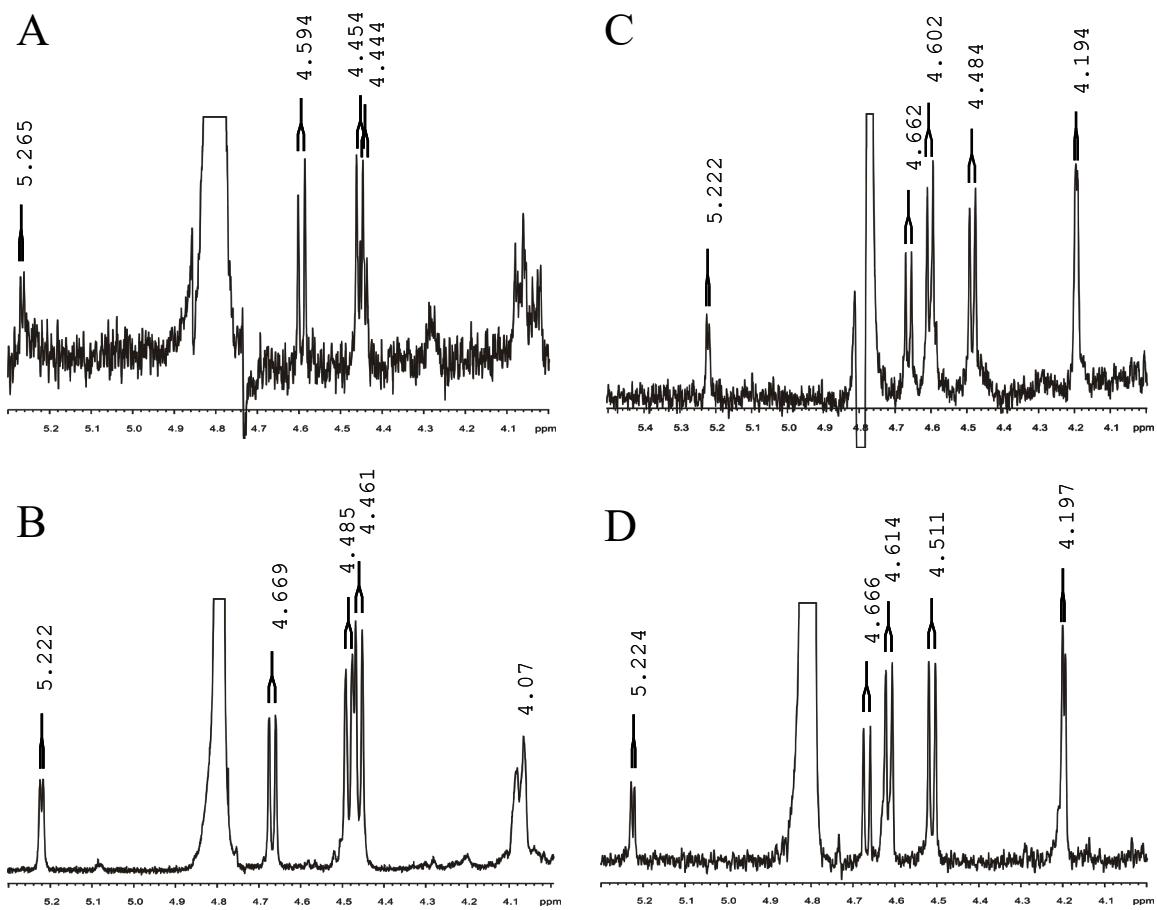


Figure S1. ¹H-NMR spectra of GOS components from fraction IV. (A) IV-1, (B) IV-3, (C) IV-4 and (D) IV-5. See text and Table 1 for assignments.

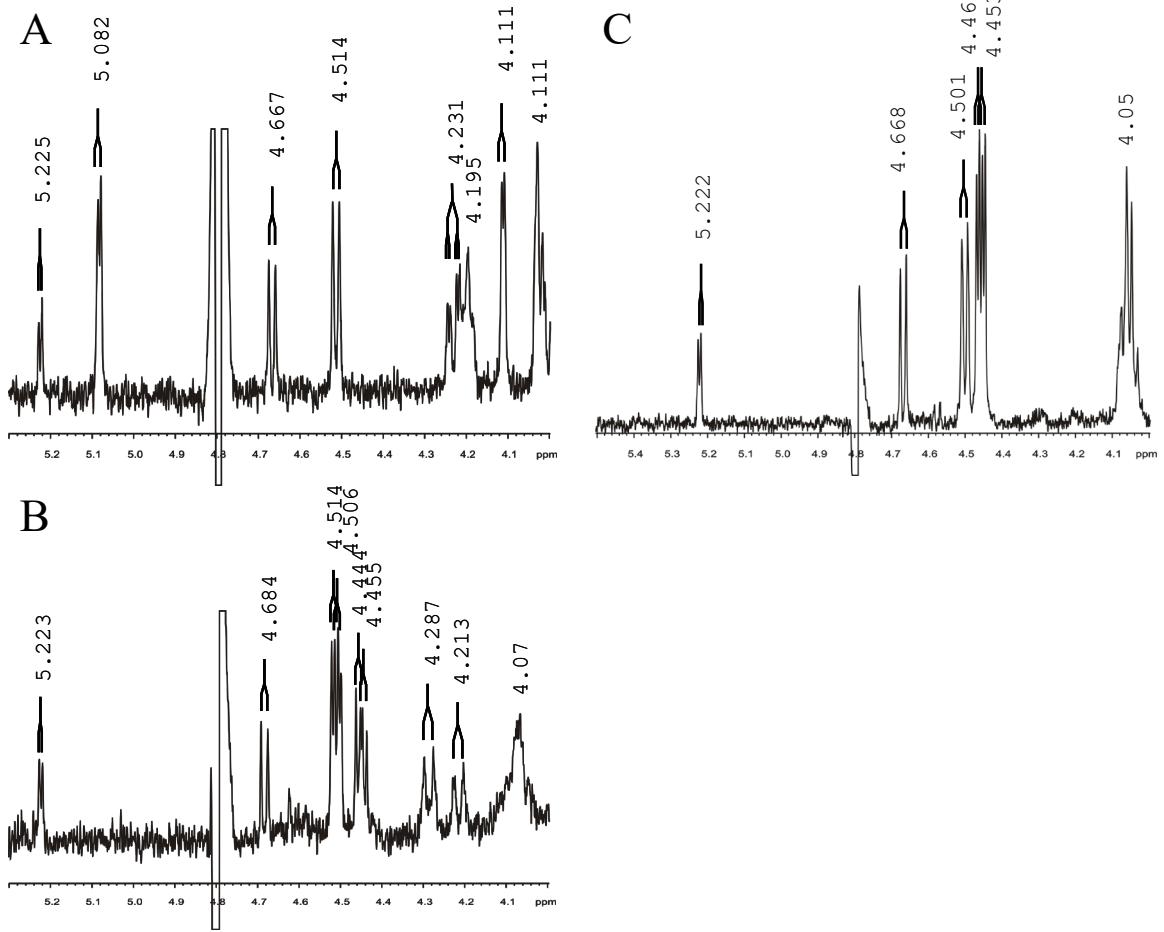


Figure S2. ¹H-NMR spectra of GOS components from fraction III. (A) III-1b, (B) III-2 and (C) III-3. See text and Tables S1–S3 for assignments.

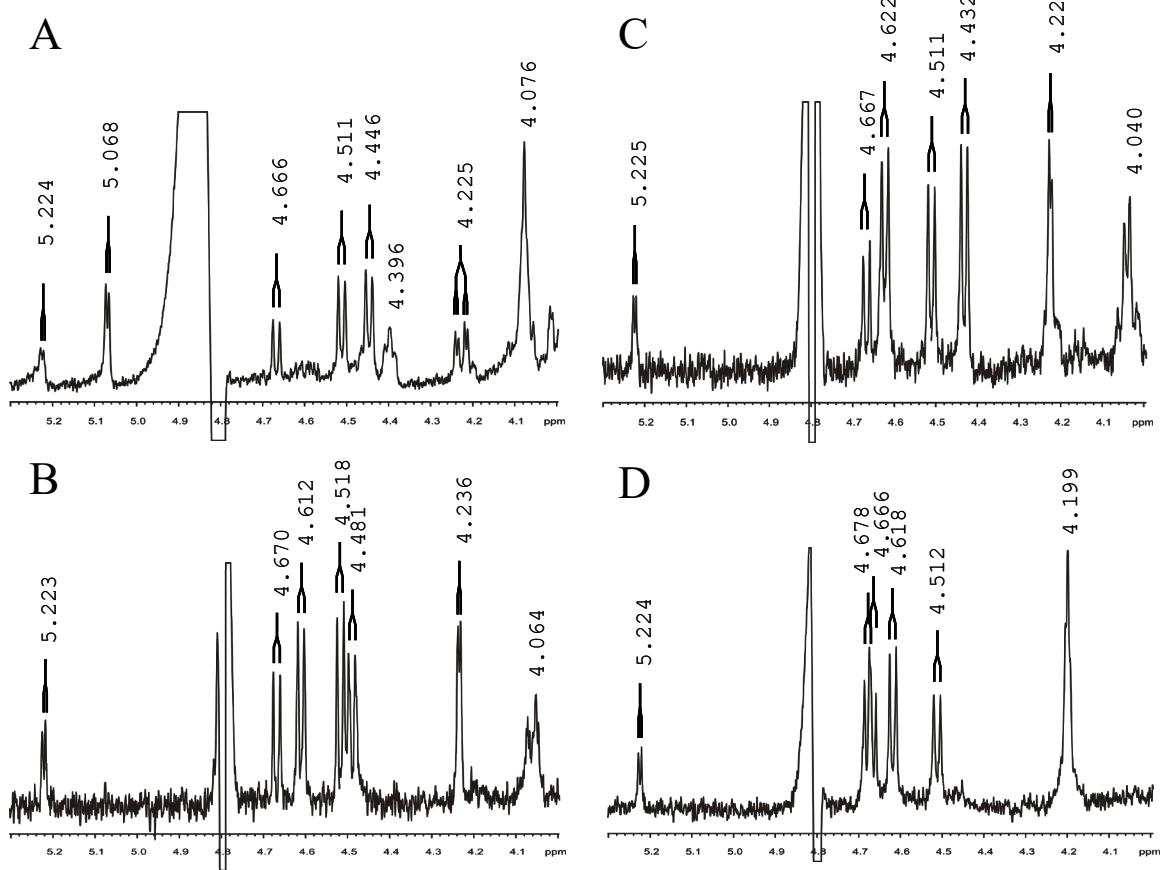


Figure S3. ¹H-NMR spectra of GOS components from fraction II. (A) II-1, (B) II-4, (C) II-5 and (D) II-6. See text and Tables 2 and 3 for assignments.