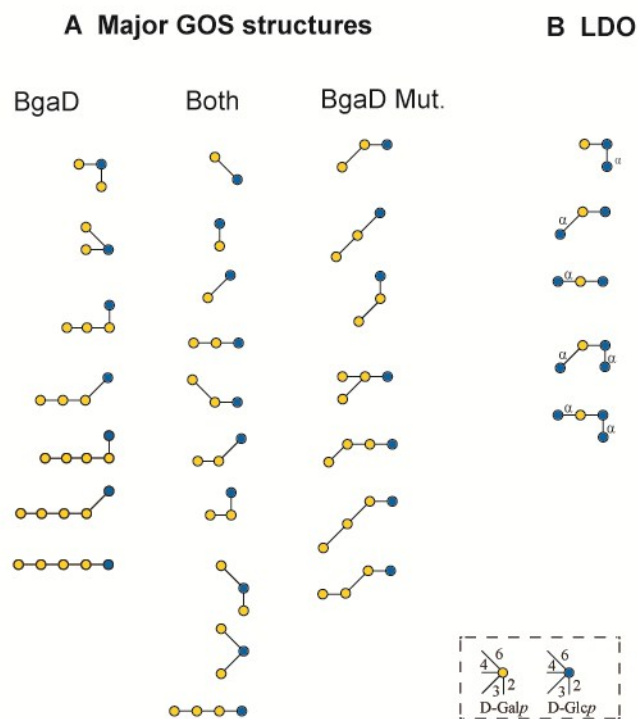
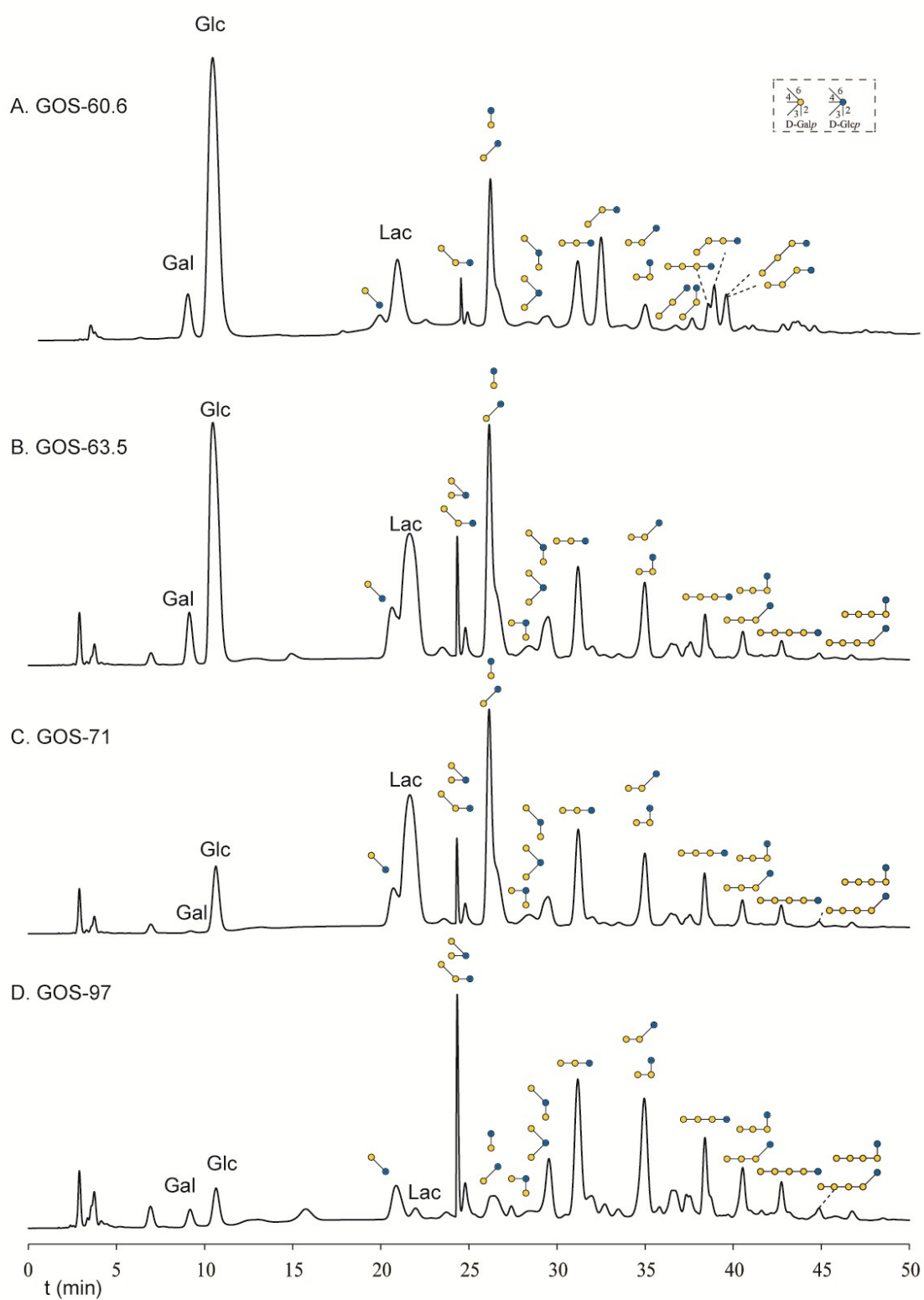


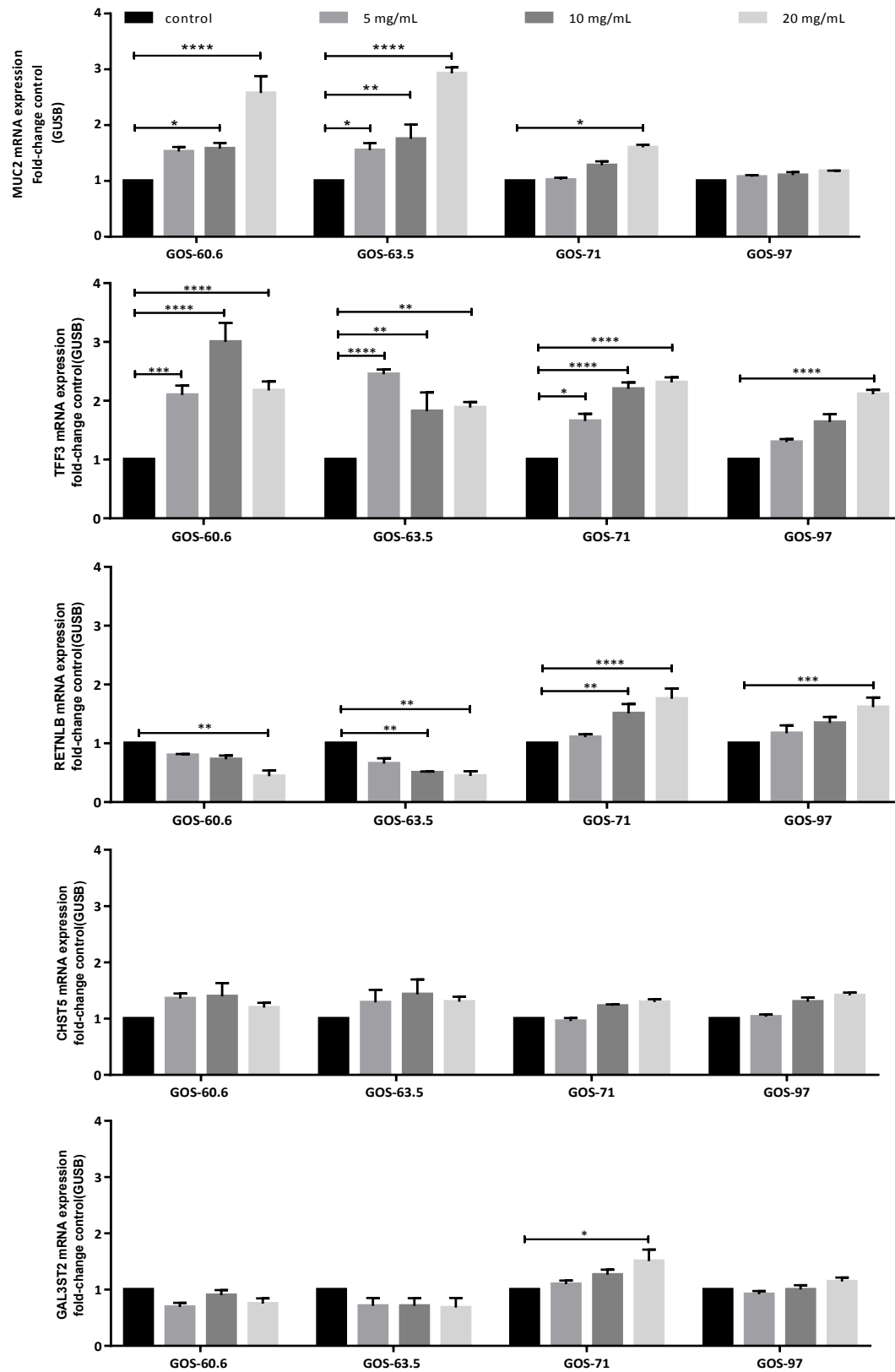
Online supplementary Material



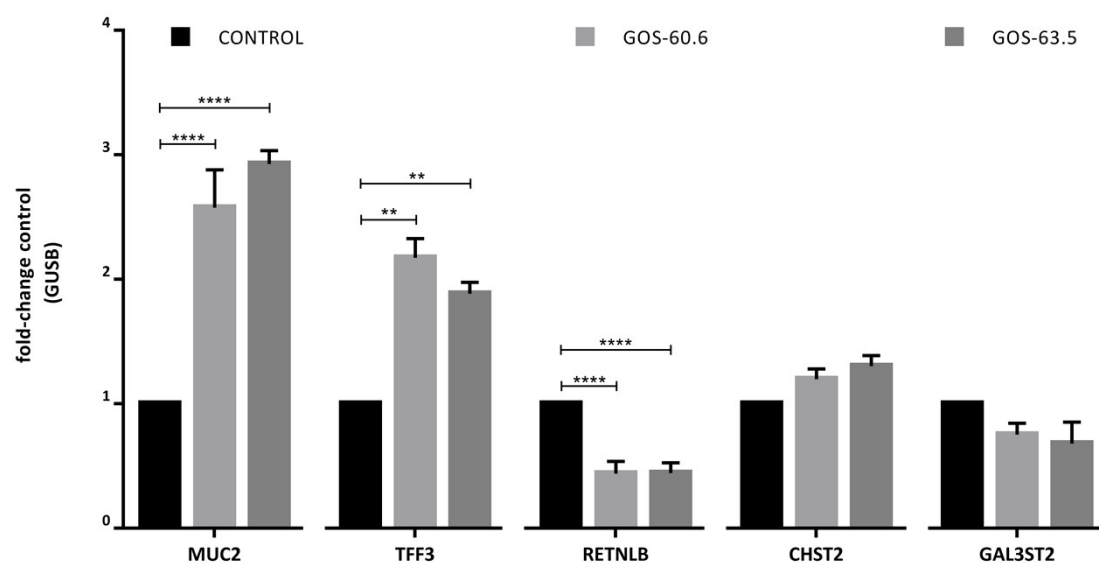
Supplemental Figure 1. Structure graphical representation. A. Major GOS structures, B. LDO. All linkages are in β -configuration, unless otherwise indicated.



Supplemental Figure 2. HPAEC-PAD analysis of GOS samples.

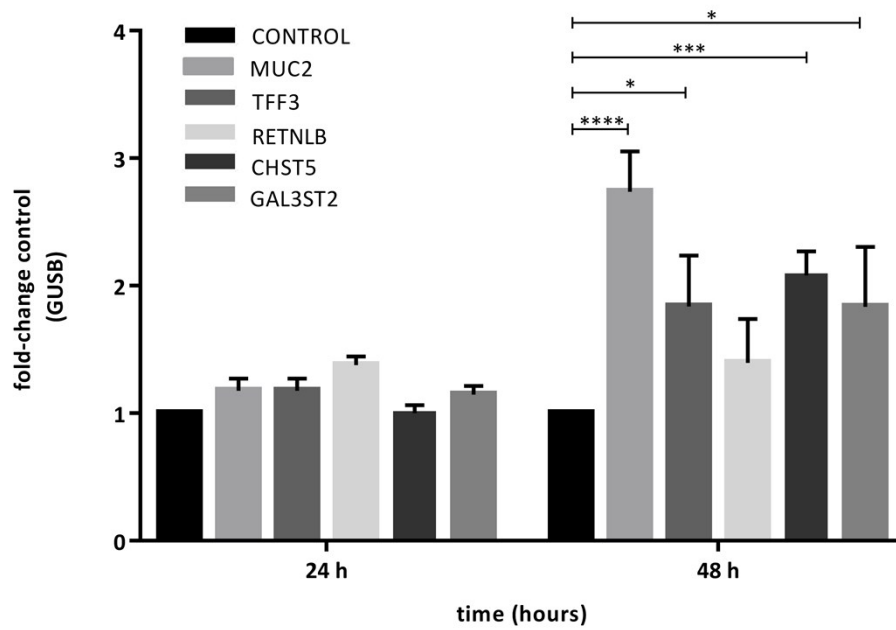


Supplemental Figure 3. LS174 cells were incubated for 48 h with GOS of variable content of transgalactosylated oligosaccharides at 5, 10 and 20 mg/mL in goblet cell. Values are expressed as means \pm SEM, n=4. The data is represented as fold-change of mRNA expression normalized to GUSB. Data were analyzed by Dunnet's post hoc test after a significant 1-way ANOVA. Values are expressed as means \pm SEM, n=4. *Different from control $p < 0.05$. GOS-60.6, GOS-63.5, GOS-71, and GOS-97. MUC2, Mucin2; TFF3, Trefoil factor 3; RETNLB, Resistin-like molecule beta; CHST5, Carbohydrate (N-acetylglucosamine-6-O) sulfotransferase 5; GAL3ST2, Galactose-3-O-sulfotransferase 2.



Supplemental Figure 4. Effect of ($\beta 1 \leftrightarrow 3/4$)GOS-60.6 and ($\beta 1 \leftrightarrow 4$)GOS-63.5 on the gene expression of goblet cells secretory products. Cells were treated with 20 mg/mL at 48 h. The data is represented as fold-change of mRNA expression normalized to GUSB. Data were analyzed by Dunnet's post hoc test after a significant 1-way ANOVA. Values are expressed as means \pm SEM, n=4. *Different from control $p < 0.05$.

MUC2, Mucin2; TFF3, Trefoil factor 3; RETNLB, Resistin-like molecule beta; CHST5, Carbohydrate (N-acetylglucosamine-6-O) sulfotransferase 5; GAL3ST2, Galactose-3-O-sulfotransferase 2.



Supplemental Figure 5. Effects of LDO at 10 mg/mL on the secretory function of goblet cells after 24 and 48 h of incubation. The data is represented as fold-change of mRNA expression normalized to GUSB. Data were analyzed by Dunnet's post hoc test after a significant 1-way ANOVA. Values are expressed as means \pm SEM, n=4. *Different from control $p < 0.05$. CON, control; MUC2, Mucin2; TFF3, Trefoil factor 3; RETNLB, Resistin-like molecule beta; CHST5, Carbohydrate (N-acetylglucosamine-6-O) sulfotransferase 5; GAL3ST2, Galactose-3-O-sulfotransferase 2.