

1 Supplementary Table S1. **Transposon insertion targets.**

Name	Insertion	Gene annotation on NCBI	Function	Reference
Transposon mutant in WT				
1C1	<i>BT1356</i>	capsule polysaccharide export protein	CPS4 synthesis	Xu <i>et al.</i> , 2003
2C7	<i>BT1342</i>	UDP-glucuronic acid epimerase	CPS4 synthesis	Xu <i>et al.</i> , 2003
3B12	<i>BT1341</i>	UDP-glucose 6-dehydrogenase	CPS4 synthesis	Xu <i>et al.</i> , 2003
1G11	<i>BT1353</i>	glycosyltransferase	CPS4 synthesis	Xu <i>et al.</i> , 2003
1F11	<i>BT1352</i>	glycosyltransferase	CPS4 synthesis	Xu <i>et al.</i> , 2003
Transposon mutant in $\Delta$ CPS4				
1G8	<i>BT1358</i>	transcriptional regulator UpxY homolog	capsule regulation	Chatzidaki-Livanis <i>et al.</i> , 2010
23A12	<i>BT1358 // BT1357</i> intergenic region	transcriptional regulator UpxY homolog // UpxZ homolog	capsule regulation	Chatzidaki-Livanis <i>et al.</i> , 2010
42B5	<i>BT1358</i>	transcriptional regulator UpxY homolog	capsule regulation	Chatzidaki-Livanis <i>et al.</i> , 2010
38G6	<i>BT1358</i>	transcriptional regulator UpxY homolog	capsule regulation	Chatzidaki-Livanis <i>et al.</i> , 2010
41C9	<i>BT1358</i>	transcriptional regulator UpxY homolog	capsule regulation	Chatzidaki-Livanis <i>et al.</i> , 2010
34H5	<i>BT2934</i>	wzx homolog, LPS biosynthesis transmembrane transport protein, Multidrug and toxin extrusion (MATE) domain	protein O-glycosylation	Fletcher <i>et al.</i> , 2009

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1. Xu J, *et al.* (2003) A genomic view of the human-Bacteroides thetaiotaomicron symbiosis.

2. Chatzidaki-Livanis M, Weinacht KG, & Comstock LE (2010) Trans locus inhibitors limit concomitant polysaccharide synthesis in the human gut symbiont Bacteroides fragilis. *Proceedings of the National Academy of Sciences of the United States of America* 107(26):11976-11980.

3. Fletcher CM, Coyne MJ, Villa OF, Chatzidaki-Livanis M, & Comstock LE (2009) A general O-glycosylation system important to the physiology of a major human intestinal symbiont. *Cell* 137(2):321-331.

4. Martens EC, Roth R, Heuser JE, & Gordon JI (2009) Coordinate regulation of glycan degradation and polysaccharide capsule biosynthesis by a prominent human gut symbiont. *The Journal of biological chemistry* 284(27):18445-18457.