

SUPPLEMENTAL INFORMATION

Domain Organization of the Polymerizing Mannosyltransferases Involved in Synthesis of the *Escherichia coli* O8 and O9a Lipopolysaccharide O Antigens

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Table S1: Primer sequences used for the production of recombinant plasmids and site-directed mutants.

Primer	Sequence ^{a,b,c} (5' → 3')	Features
WbdCE275AFwd	CGCATCTGCGCTCTGCGGCG TTTGGC	Forward primer used to generate the E275A mutation of WbdC ^{O9a} in the creation of pWQ583
WbdCE275ARev	CGTAATGCCAAACGCCGCA GAGCGCAG	Reverse primer used to generate the E275A mutation of WbdC ^{O9a} in the creation of pWQ583
WbdCE283AFwd	GGCATTACGTTATTGGCAGG CGCACGC	Forward primer used to generate the E283A mutation of WbdC ^{O9a} in the creation of pWQ584
WbdCE283ARev	CTTGCAAAGCGTGCGCCTGC CAATAACG	Reverse primer used to generate the E283A mutation of WbdC ^{O9a} in the creation of pWQ584
WbdBE294AFwd	GTTTATCCCTCCTTCTATGCG GGATTCGGTTTACC	Forward primer used to generate the E294A mutation of WbdB ^{O9a} in the creation of pWQ585
WbdBE294ARev	CAAGAATAGGTAAACCGAA TCCCGCATAGAAGGAGGG	Reverse primer used to generate the E294A mutation of WbdB ^{O9a} in the creation of pWQ585
WbdBE302AFwd	GATTCGGTTTACCTATTCTTG CAGCGATGTCTTGC	Forward primer used to generate the E302A mutation of WbdB ^{O9a} in the creation of pWQ586
WbdBE302ARev	CACACCGCAAGACATCGCTG CAAGAATAGG	Reverse primer used to generate the E302A mutation of WbdB ^{O9a} in the creation of pWQ586
LG33	gatcgaattccatcatcatcatcatcatcat catcatcatCATATTTTGATTGAT GTCCAGGG	Forward primer used for the amplification of <i>wbdA</i> ₁₋₁₃₀₅ ^{O9a} in the creation of pWQ590; <i>EcoRI</i> restriction site
LG34	gatcaagcttTTATTCGCTCAGCG CATCGATTTTCTGC	Reverse primer used for the amplification of <i>wbdA</i> ₁₋₁₃₀₅ ^{O9a} in the creation of pWQ590; <i>HindIII</i> restriction site
LG35	gatcgaattccatcatcatcatcatcatcat catcatcatcatCAGAAAATCGATG CGCTGAGCG	Forward primer used for the amplification of <i>wbdA</i> ₁₂₇₉₋₂₅₂₀ ^{O9a} in the creation of pWQ591 and pWQ632; <i>EcoRI</i> restriction site
LG10	gatcaagcttTTATTGCTTCGCGG CTGGCGCG	Reverse primer used for the amplification of <i>wbdA</i> ₁₂₇₉₋₂₅₂₀ ^{O9a} in the creation of pWQ591 and pWQ632; <i>HindIII</i> restriction site
LG101	gatcgaccATGgtaCGTATTGTCA TAGATTTACAAGGCG	Forward primer used for the amplification of <i>wbdA</i> ^{O8} in the creation of pWQ592, pWQ593 and pWQ595; <i>NcoI</i> restriction site
LG105	gatcgatctagaTTATGCCGTTTTC AGATTGTAATC	Reverse primer used for the amplification of <i>wbdA</i> ₁₋₁₃₅₀ ^{O8} in the

LG110	gatcgaccATGgtaGCCGAGACGA CAAAGATGTGG	creation of pWQ592 and pQW593; <i>Xba</i> I restriction site Forward primer used for the amplification of <i>wbdA</i> ₁₈₄₈₋₃₆₄₂ ⁰⁸ in the creation of pWQ594; <i>Nco</i> I restriction site
LG104	gatcgatctagaTTATTTAAAATAT TTAGCTTTAGCTAAGCC	Reverse primer used for the amplification of <i>wbdA</i> ⁰⁸ in the creation of pWQ594 and pWQ596; <i>Xba</i> I restriction site
LG102	gatcgatctagaTTAGCCATGAGGT GCGCTTTC	Reverse primer used for the amplification of <i>wbdA</i> ₁₋₂₅₉₅ ⁰⁸ in the creation of pWQ595; <i>Xba</i> I restriction site
LG103	gatcgaccATGgtaGCGCAGGTTT TGCCTGAAGCTTTG	Forward primer used for the amplification of <i>wbdA</i> ₁₂₃₄₋₃₆₄₂ ⁰⁸ in the creation of pWQ596; <i>Nco</i> I restriction site
WbdAE317AFwd	GTGTTCCCGTCGCTGCATGC AGGTTTCGGCC	Forward primer used to generate the E317A mutation of WbdA ^{09a} in the creation of pWQ597
WbdAE317ARev	GCGGCAGGCCGAAACCTGC ATGCAGCGACG	Reverse primer used to generate the E317A mutation of WbdA ^{09a} in the creation of pWQ597
WbdAE325AFwd	GCCTGCCGCCGCTGGCAGCG ATGCGCTG	Forward primer used to generate the E325A mutation of WbdA ^{09a} in the creation of pWQ598
WbdAE325ARev	CCCGCAGCGCATCGCTGCCA GCGGCGGC	Reverse primer used to generate the E325A mutation of WbdA ^{09a} in the creation of pWQ598
WbdAE750AFwd	CTTTGCCTCGCAGGGAGCAG GCTTTGGC	Forward primer used to generate the E750A mutation of WbdA ^{09a} in the creation of pWQ599 and pLG59
WbdAE750ARev	CGGCAGGCCAAAGCCTGCTC CCTGCGAG	Reverse primer used to generate the E750A mutation of WbdA ^{09a} in the creation of pWQ599 and pLG59
WbdAE758AFwd	GGCCTGCCGTTGATTGCAGC GGCGCAG	Forward primer used to generate the E759A mutation of WbdA ^{09a} in the creation of pWQ630 and pLG60
WbdAE758ARev	GGCAGCTTTTCTGCGCCGC TGCAATCAACGGC	Reverse primer used to generate the E759A mutation of WbdA ^{09a} in the creation of pWQ630 and pLG60

^a Restriction sites are underlined.

^b Non-chromosomal sequence is shown in lower-case letters.

^c Point mutations are bolded.

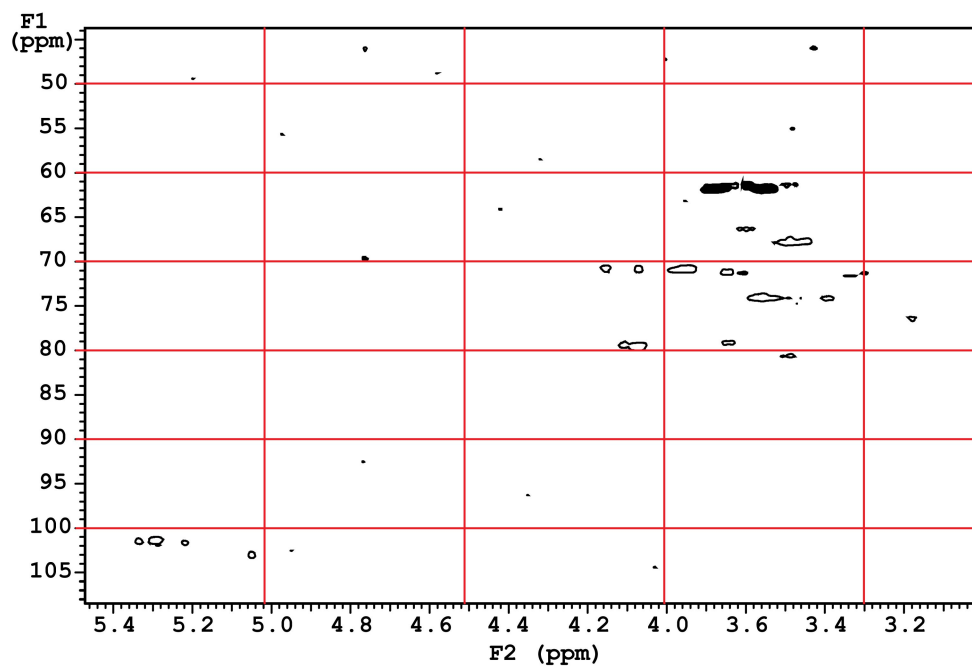


Figure S1: ^1H - ^{13}C gHSQC spectrum for the products synthesized by N-WbdA^{09a} using Acceptor B.