Distinct pathways carry out α and β galactosylation of secondary cell wall polysaccharide in *Bacillus anthracis* - SUPPLEMENTARY INFORMATION

Alice Chateau[a]*, So Young Oh[a], Anastasia Tomatsidou[a], Inka Brockhausen[b], Olaf Schneewind[a]†, Dominique Missiakas[a,c#]

[a]Howard Taylor Ricketts Laboratory, Argonne National Laboratory, Lemont, Illinois, USA

[b]Department of Biomedical and Molecular Sciences, Queen's University, Kingston, Ontario, Canada

[c]Department of Microbiology, University of Chicago, Chicago, Illinois, USA

Running Head: Glycosyltransferases of *Bacillus anthracis*

*Present address: INRAE, Avignon Université, UMR SQPOV, F-84914 Avignon, France

[#]Address correspondence to Dominique Missiakas, dmissiak@bsd.uchicago.edu

† Deceased 26 May 2019

Table S1. List of oligonucleotides used in this study.

Oligonucleotide	Sequence	Purpose
UpF-BAS5280-SacI	aaagagctcCTCTTTCATTCATGGGGTTGACG	Cloning 1 kbp upstream of *gtsE* in pLM4
upR-BAS5280-NheI	tttgctagcATCATCACGTCTGCCACAAGTAGCC	Cloning 1 kbp upstream of *gtsE* in pLM4
downF-BAS5280-NheI	aaagctagcCGCTTACGCGGAATTGTTCGTGGA	Cloning 1 kbp downpstream of *gtsE* in pLM4
downR-BAS5280-XmaI	aaacccgggGTTGCTGTGTAACGCGTCATTTTTGTG	Cloning 1 kbp downpstream of *gtsE* in pLM4
BAS5280 ExF	GCTTTATCATCCTTTGTGCTC	Validate *gtsE* allelic replacement
BAS5280-ExR	GCCAGTCGTTGAGTAACGAGC	Validate *gtsE* allelic replacement
pJK4-5280F-XbaI-TTG	aaatctagaTTGAAATTTTCTTTAATCATGGCTACT	Cloning of *gtsE* in pJK4
pJK4-5280R-KpnI	aaaggtaccTTATTTTAAATATCCACGAACAATTCCGCG	Cloning of *gtsE* in pJK4
5280R-His-KpnI	aaaggtaccTTAgTGATGATGATGATGATGTTTTAAATATCCACGAACAATTCCGCG	Appending 6 histidines at the C-terminus of GtsE
BAS5280D86A-F	TTATCGCTTTTCCAGcTGATGATTGTATTTATG	Generate GtsE D86A
BAS5280D86A-R	CATAAATACAATCATCAgCTGGAAAAGCGATAA	Generate GtsE D86A
BAS5280D162A-F	GATGTAGGTACATTTGcTGAAGATTTAGGTGTTGG	Generate GtsE D162A
BAS5280D162A-R	CCAACACCTAAATCTTCAgCAAATGTACCTACATC	Generate GtsE D162A
BAS5286-upF-EcoRI	aaagaattcGCCCAGGCTAATAACAGTATTGTAC	Cloning 1 kbp upstream of *gtsB* in pLM4
BAS5286-upR-NheI	tttgctagcGAGTTTCTCCATAATAGTATCCTCAAC	Cloning 1 kbp upstream of *gtsB* in pLM4
BAS5286-downF-NheI	aaagctagcTAAACTGAAACAATTTATTAAAAATACGGAGGATAC	Cloning 1 kbp downpstream of *gtsB* in pLM4
BAS5286-downR-XmaI	aaacccgggGTGCAGTCTCTTCTTGGTCAATGTTGATTG	Cloning 1 kbp downpstream of *gtsB* in pLM4
ExF86	CATCCATATCGCTAAGGCTATAATTGGC	Validate *gtsB* allelic replacement
ExR86	GAGGCAGAAATGAGGTTGCCAAATCC	Validate *gtsB* allelic replacement
BAS5286F-XbaI	aaatctagaATGGAGAAACTCTTAAAGTTTGGTTTAGTAGGG	Cloning *gtsB* in pJK4
BAS5286R-KpnI	aaaggtaccTTAATTAGTAGCCTTTTCCGTTTGGTTGAATG	Cloning *gtsB* in pJK4
BAS5286-NdeI	aaacatatgGAGAAACTCTTAAAGTTTGGTTTAGTAGGG	Cloning *gtsB* in pWWW412
BAS5286-XhoI	aaactcgagTTAATTAGTAGCCTTTTCCGTTTGGTTGAATG	Cloning *gtsB* in pWWW412
BAS5284-upF-XmaI	taacccgggCATTCCCTAGCTTAGACCAACATCA	Cloning 1 kbp upstream of *gtsD* in pLM4
BAS5284-upR-NheI	tttgctagcGCCATTCTTCCAGCCCATTCA	Cloning 1 kbp upstream of *gtsD* in pLM4
BAS5285-upF-SacI	aaagagctcCCTGTGCTACTTCTTCCTCGAAG	Cloning 1 kbp upstream of *gtsC* in pLM4
BAS5285-upR-NheI	tttgctagcTCAAGATATAGCGATCCACTGCTAAG	Cloning 1 kbp upstream of *gtsC* in pLM4
BAS5285-downF-NheI	ttagctagcAGCTGCTTTTGGCATTAAGCATATTTAC	Cloning 1 kbp downstream of *gtsC* in pLM4
BAS5285-downR-XmaI	taacccgggGCCACATTCCTATTTTATCTTGGATTTTAC	Cloning 1 kbp downstream of *gtsC* in pLM4
BAS5285F-XbaI	aaatctagaTTGGAACGTTTTTCTGGATTATTTTCAAC	Cloning *gtsC* in pJK4
BAS5285R-KpnI	aaaggtaccTTATATTCTTTTTTTATTGTAAATATGCTTAATGCCAAAAGCAGC	Cloning *gtsC* in pJK4
BAS5284-ExF	GGTGACTTCTTAAATCCATCATACTTCGAGC	Validate *gtsCD* allelic replacement
BAS5285-ExF	CCATTGTACGATCTGTACTACCGTC	Validate *gtsCD* allelic replacement
BAS5285-ExR	GTTATTCGGCGAAGGACCTTTCC	Validate *gtsCD* allelic replacement
5287-upF-sacI	aaagagctcCGGATCAATCTTATATGTAACAATCCATGCAG	Cloning 1 kbp upstream of *gtsA* in pLM4

5287upR	GCAGTCTCTTCTTGGTCAATGTTGgctagcTCCTGTG CTACTTCTTCCTCGAAGTAC	Cloning 1 kbp upstream of *gtsA* in pLM4
5287downF-overlap	GGAAGAAGTAGCACAGGAgctagcCAACATTGACCA AGAAGAGACTGCAC	Cloning 1 kbp downstream of *gtsA* in pLM4
5287downR-XmaI	taacccgggCTGACTGATTGGTCAGCCGTCAATG	Cloning 1 kbp downstream of *gtsA* in pLM4
5287-ExF	CTCACTCCACCAATTCGTCTAGC	Validate *gtsA* allelic replacement
5287-ExR	CCCTGCAATGGTAACGATAATGGTTAG	Validate *gtsA* allelic replacement
5287F-NdeI	aaacatatgCAAAAATTAATCTCGGTTGTAGTTCC	Cloning *gtsA* in pWWW412
5287R-XhoI	AAACTCGAGTTATGCATTCACTTTTTCTTTTTTCA GTGCAG	Cloning *gtsA* in pWWW412
5287F-XbaI	aaatctagaATGCAAAAATTAATCTCGGTTGTAGTTCC	Cloning *gtsA* in pJK4 and pLM5
5287R-KpnI	aaaggtaccTTATGCATTCACTTTTTCTTTTTTCAGTGC AG	Cloning *gtsA* in pJK4 and pLM5

Lower cases depict sequences of enzyme restriction sites used for cloning.