

Supplementary Table 1. Bacteria strains and plasmids used in this study

Strains or plasmids	Description	Source
<i>S. mutans</i>		
UA159	Wild type strain	ATCC 700610
UA159 Δ gtfB	UA159 Δ gtfB; Kan ^r	This study
UA159 Δ yidC1	UA159 Δ yidC1; Em ^r	This study
UA159 Δ yidC2	UA159 Δ yidC2; Em ^r	This study
UA159 Δ yajC	UA159 Δ yajC; Em ^r	This study
UA159 Δ ftsY	UA159 Δ ftsY; Em ^r	This study
UA159 Δ ffh	UA159 Δ ffh; Em ^r	This study
UA159 Δ secG	UA159 Δ secG; Em ^r	This study
UA159 Δ secE	UA159 Δ secE; Em ^r	This study
UA159 Δ secA	UA159 Δ secA; Em ^r	This study
UA159 Δ secY	UA159 Δ secY; Em ^r	This study
Δ yidC1/pDL278-yidC1	UA159 Δ yidC1/pDL278-yidC1; Em ^r , Spe ^r	This study
Δ yidC2/pDL278-yidC2	UA159 Δ yidC2/pDL278-yidC2; Em ^r , Spe ^r	This study
Δ yajC/pDL278-yajC	UA159 Δ yajC/pDL278-yajC; Em ^r , Spe ^r	This study
Δ ftsY/pDL278-ftsY	UA159 Δ ftsY/pDL278-ftsY; Em ^r , Spe ^r	This study
Δ ffh/pDL278-ffh	UA159 Δ ffh/pDL278-ffh; Em ^r , Spe ^r	This study
Δ secG/pDL278-secG	UA159 Δ secG/pDL278-secG; Em ^r , Spe ^r	This study
Δ secE/pDL278-secE	UA159 Δ secE/pDL278-secE; Em ^r , Spe ^r	This study
Δ secA/pDL278-secA	UA159 Δ secA/pDL278-secA; Em ^r , Spe ^r	This study
Δ secY/pDL278-secY	UA159 Δ secY/pDL278-secY; Em ^r , Spe ^r	This study
<i>E. coli</i>		
DH5 α	F- ϕ 80dlacZ Δ M15 Δ (lacZYA-argF)U169 deoR recA1 endA1 hsdR17 (rk- ⁻ , mk+) phoA supE44 λ - thi-1 gyrA96 relA1	Laboratory stock
Plasmids		

pDL278	E. coli-Streptococcus shuttle vector (Sper)	LeBlanc et al., 1992
pDL278- <i>yidC1</i>	pDL278 derivative for expression of smu_337 in $\Delta yidC1$	This study
pDL278- <i>yidC2</i>	pDL278 derivative for expression of smu_1727 in $\Delta yidC2$	This study
pDL278- <i>yajC</i>	pDL278 derivative for expression of smu_1787 in $\Delta yajC$	This study
pDL278- <i>ffH</i>	pDL278 derivative for expression of smu_1007 in ΔffH	This study
pDL278- <i>ftsY</i>	pDL278 derivative for expression of smu_717 in $\Delta ftsY$	This study
pDL278- <i>secA</i>	pDL278 derivative for expression of smu_1738 in $\Delta secA$	This study
pDL278- <i>secG</i>	pDL278 derivative for expression of smu_1503 in $\Delta secG$	This study
pDL278- <i>secE</i>	pDL278 derivative for expression of smu_1833 in $\Delta secE$	This study
pDL278- <i>secY</i>	pDL278 derivative for expression of smu_1891 in $\Delta secY$	This study

Supplementary Table 2. Primers used in this study

Primer	Sequence (F and R)
<i>yidC1</i>	5'-TCCTGACATGGCAGAGCT -3' 5'- TTCATGTAATCACTCCTTCCGAATAGATCCTTCCTGAT -3' 5'- GGTATACTACTGACAGCTTCGTGAATTGGAAGCTAAGA -3' 5'- AACTCCTTCAATGCCAGTAA -3'
<i>yidC2</i>	5'- GTCACAGGAATGATCAGA -3' 5'- TTCATGTAATCACTCCTTCCCACGATAATCTTCCTTTG -3' 5'- GGTATACTACTGACAGCTTCCTCATAGACTGAGCAAGAT -3' 5'- AGCAGTGATTTCGTAAGTG -3'
<i>yajC</i>	5'- AGCGGAAGACGGTTCTGT -3' 5'- TTCATGTAATCACTCCTTCCTGTAGTATAAGACATAGT -3' 5'- GGTATACTACTGACAGCTTCGTACTGAATCTGCCATTG -3' 5'- GAACACGTTTCTGCATGA -3'
<i>ftsY</i>	5'- GAGCTTGCAGATGAAGTC -3' 5'- TTCATGTAATCACTCCTTCCTCTTCAATAGAATCCGTT -3' 5'- GGTATACTACTGACAGCTTCTAGAAGGATTGCTATGAT -3' 5'- TAACACTGCCAGTTCCTG -3'
<i>secA</i>	5'- ACTGTTCGGCAATAGCAA -3' 5'- TTCATGTAATCACTCCTTCCCAATGATAGTGCGTAGAA -3' 5'- GGTATACTACTGACAGCTTCCAAATCACTTTATATCAT -3' 5'- TCATAAAGCCGCGAACAT -3'

secE 5'- GAGGAAGCGTCACAATA -3'
5'- TTCATGTAATCACTCCTTCCGTATGCTTTAGAACTGAA -3'
5'- GGTATACTACTGACAGCTTCGGATTGGCTGAATTATTA -3'
5'- CCTGATATTGAAGTCACTCTTG -3'

secG 5'- GCTACTGGTGTTATTGCTGG -3'
5'- TTCATGTAATCACTCCTTCCCTAGCAATGCTGTTACTA -3'
5'- GGTATACTACTGACAGCTTCTGCCTTGGCAATTGTTGT -3'
5'- CACATCCTCAACGCTGGC -3'

secY 5'- CTATTGGTATTACAGCAG -3'
5'-TTCATGTAATCACTCCTTCCATATTTTCTCTTCAACAG -3'
5'- GGTATACTACTGACAGCTTCAATATAAAGCGATAGAAT -3'
5'- TCTGAGCACAGAGGTAAC -3'

Ffh 5'- GCTTCGACAGGTGCAATG -3'
5'- TTCATGTAATCACTCCTTCCCACCTTGTAACGTTTCGG -3'
5'- GTACTAATATGGATGTGAGGTATACTACTGACAGCTTC -3'
5'- CTGAACCGATACTCTGTTCG -3'

pDL278-*yidC1* 5'- CGGAATTCAGAGCCCGAGCAACAATAAC -3'
5'- GATCCTTCCTGATGTTCTAAACATCTCCTTA -3'
5'- GAGAAAATAAGGAGAACGTCGACGTCGT -3'
5'- ACGACGTCGACGTTCTCCTTATTTTCTC -3'

pDL278-*yidC2* 5'- CGAGCTCAGAGCCCGAGCAACAATAAC -3'
5'- GCTTGTAATTTTTTTTCACGTTCTAAACATCTCCTTA -3'

	5'- CAAAGGAAGATTATCGTG -3'
	5'- ACATGCATGCTTATTGCTTATGGTGACGC -3'
pDL278- <i>yajC</i>	5'- GAGATGAGGAGAATATACT -3'
	5'- CCGAAGCTTCAACGATTGAGGTTTATAA -3'
	5'- TAATTGTAGTATAAGACATGTTCTAAACATCTCCTTA -3'
	5'- GAACACGTTTCTGCATGA -3'
pDL278- <i>ftsY</i>	5'- CGAGCTCAGAGCCCGAGCAACAATAACACTC -3'
	5'- GTTCTAAACATCTCCTTATAA -3'
	5'- GAGTCTGGTGTTGCCGAAG -3'
	5'- ACATGCATGCTAAAAGTCCTCTCATGAAGTC -3'
pDL278- <i>secA</i>	5'- CGGAATTCAGAGCCCGAGCAACAATAAC -3'
	5'- GAATATTTGCCATGTTCTAAACATCTCCTTA -3'
	5'- ACGACGTCGACTTAAAATCGCTTGCGTC -3'
	5'- GGAAGCACGTGATCGTGAATTGGTTTCCGTCGACGTCGT -3'
pDL278- <i>secE</i>	5'- CCTTGCATAAGGAAACACG -3'
	5'- CCAATGAATTTTCATGTTCTAAACATCTCCTTA -3'
	5'- GGTATACTACTGACAGCTTCGGATTGGCTGAATTATTA -3'
	5'- CCTGATATTGAAGTCACTCTTG -3'
pDL278- <i>secG</i>	5'- GTGGAGGAAGTAAGGAC -3'
	5'- CTAAAAAGTTGTACATGTTCTAAACATCTCCTTA -3'
	5'- ACGACGTCGACTTATTTACTTGATAAAAC -3'
	5'- CTAAAAAGTTGTACATGTTCTAAACATCTCCTTA -3'

pDL278- <i>secY</i>	5'- ACGCGTCGACAGAGCCCGAGCAACAATAAC -3'
	5'- CTTTAAAAAGTCTAAAAACATGTTCTAAACATCTCCTTA -3'
	5'- GGTATACTACTGACAGCTTCAATATAAAGCGATAGAAT -3'
	5'- CCCAAGCTTCTATTCTGTAACATTCATA -3'
pDL278- <i>ffh</i>	5'- ACGCGAGCTCAGAGCCCGAGCAACAATAAC-3'
	5'- CTTTCAAAAGCCATGTTCTAAACATCTCCTTA -3'
	5'- AGATGCATGCGATTTCATAATGATATAAAGTG-3'
	5'- CACTTTATATCATTATGAATCGCATGCATCT -3'
16S rRNA	5'-AGCGTTGTCCGGATTTATTG-3'
	5'-CTACGCATTTACCGCTACA-3'
<i>gtfB</i>	5'-CACTATCGGCGGTTACGAAT-3'
	5'-CAATTTGGAGCAAGTCAGCA-3'
<i>gtfC</i>	5'-GATGCTGCAAAC TTCGAACA-3'
	5'-TATTGACGCTGCGTTTCTTG-3'
<i>gtfD</i>	5'-TTGACGGTGTTTCGTGTTGAT-3'
	5'-AAAGCGATAGGCGCAGTTTA-3'

Supplementary Table 3. The minimum inhibitory concentration (MIC) of bacteria

Bacteria Strains	UA159	Persisters
MIC (µg/ml)	6.25	6.25 (recovered persisters 1)
		6.25 (recovered persisters 2)
		6.25 (recovered persisters 3)

Supplementary Table 4 Genes related to the EPS biosynthesis and Sec secretion system

Gene name	Functional class annotation
<i>gtfB</i>	glucosyltransferase
<i>gtfC</i>	glucosyltransferase
<i>gtfD</i>	glucosyltransferase
<i>yidC1</i>	sensor kinase
<i>yidC2</i>	PhoP family transcriptional regulator
<i>yajC</i>	glucan-binding protein
<i>ffH</i>	putative secreted antigen GbpB/SagA
<i>ftsY</i>	glucan-binding protein
<i>secA</i>	glucan-binding protein
<i>secY</i>	S-ribosylhomocysteinase
<i>secE</i>	LuxR family transcriptional regulator
<i>secG</i>	D-alanine--poly(phosphoribitol) ligase

Supplementary Table 5. The minimum inhibitory concentration (MIC) of bacteria to DMADD (persisters in medium with sucrose)

Bacteria	MIC value (µg/ml)	Bacteria	MIC value (µg/ml)
<i>ΔyidC1</i>	6.25	<i>ΔyidC2</i>	6.25
recovered persisters 1	6.25	recovered persisters 1	6.25
recovered persisters 2	6.25	recovered persisters 2	6.25
recovered persisters 3	6.25	recovered persisters 3	6.25
<i>ΔyajC</i>	6.25	<i>ΔftsY</i>	6.25
recovered persisters 1	6.25	recovered persisters 1	6.25
recovered persisters 2	6.25	recovered persisters 2	6.25
recovered persisters 3	6.25	recovered persisters 3	6.25
<i>Δffh</i>	6.25	<i>ΔsecG</i>	6.25
recovered persisters 1	6.25	recovered persisters 1	6.25
recovered persisters 2	6.25	recovered persisters 2	6.25
recovered persisters 3	6.25	recovered persisters 3	6.25
<i>ΔsecE</i>	6.25	<i>ΔsecA</i>	6.25
recovered persisters 1	6.25	recovered persisters 1	6.25
recovered persisters 2	6.25	recovered persisters 2	6.25
recovered persisters 3	6.25	recovered persisters 3	6.25
<i>ΔsecY</i>	6.25	<i>ΔgtfB</i>	6.25
recovered persisters 1	6.25	recovered persisters 1	6.25
recovered persisters 2	6.25	recovered persisters 2	6.25
recovered persisters 3	6.25	recovered persisters 3	6.25
pDL278- <i>yidC1</i>	6.25	pDL278- <i>yidC2</i>	6.25
recovered persisters 1	6.25	recovered persisters 1	6.25
recovered persisters 2	6.25	recovered persisters 2	6.25
recovered persisters 3	6.25	recovered persisters 3	6.25
pDL278- <i>yajC</i>	6.25	pDL278- <i>ftsY</i>	6.25
recovered persisters 1	6.25	recovered persisters 1	6.25
recovered persisters 2	6.25	recovered persisters 2	6.25
recovered persisters 3	6.25	recovered persisters 3	6.25
pDL278- <i>ffh</i>	6.25	pDL278- <i>secG</i>	6.25
recovered persisters 1	6.25	recovered persisters 1	6.25
recovered persisters 2	6.25	recovered persisters 2	6.25
recovered persisters 3	6.25	recovered persisters 3	6.25
pDL278- <i>secE</i>	6.25	pDL278- <i>secA</i>	6.25
recovered persisters 1	6.25	recovered persisters 1	6.25
recovered persisters 2	6.25	recovered persisters 2	6.25
recovered persisters 3	6.25	recovered persisters 3	6.25
pDL278- <i>secY</i>	6.25	UA159	
recovered persisters 1	6.25	recovered persisters 1	6.25
recovered persisters 2	6.25	recovered persisters 2	6.25
recovered persisters 3	6.25	recovered persisters 3	6.25

Supplementary Table 6. The minimum inhibitory concentration (MIC) of bacteria to DMADDM (persisters in medium without sucrose)

Bacteria	MIC value (µg/ml)	Bacteria	MIC value (µg/ml)
<i>ΔyidC1</i>	6.25	<i>ΔyidC2</i>	6.25
recovered persisters 1	6.25	recovered persisters 1	6.25
recovered persisters 2	6.25	recovered persisters 2	6.25
recovered persisters 3	6.25	recovered persisters 3	6.25
<i>ΔyajC</i>	6.25	<i>ΔftsY</i>	6.25
recovered persisters 1	6.25	recovered persisters 1	6.25
recovered persisters 2	6.25	recovered persisters 2	6.25
recovered persisters 3	6.25	recovered persisters 3	6.25
<i>Δffh</i>	6.25	<i>ΔsecG</i>	6.25
recovered persisters 1	6.25	recovered persisters 1	6.25
recovered persisters 2	6.25	recovered persisters 2	6.25
recovered persisters 3	6.25	recovered persisters 3	6.25
<i>ΔsecE</i>	6.25	<i>ΔsecA</i>	6.25
recovered persisters 1	6.25	recovered persisters 1	6.25
recovered persisters 2	6.25	recovered persisters 2	6.25
recovered persisters 3	6.25	recovered persisters 3	6.25
<i>ΔsecY</i>	6.25	<i>ΔgtfB</i>	6.25
recovered persisters 1	6.25	recovered persisters 1	6.25
recovered persisters 2	6.25	recovered persisters 2	6.25
recovered persisters 3	6.25	recovered persisters 3	6.25
pDL278- <i>yidC1</i>	6.25	pDL278- <i>yidC2</i>	6.25
recovered persisters 1	6.25	recovered persisters 1	6.25
recovered persisters 2	6.25	recovered persisters 2	6.25
recovered persisters 3	6.25	recovered persisters 3	6.25
pDL278- <i>yajC</i>	6.25	pDL278- <i>ftsY</i>	6.25
recovered persisters 1	6.25	recovered persisters 1	6.25
recovered persisters 2	6.25	recovered persisters 2	6.25
recovered persisters 3	6.25	recovered persisters 3	6.25
pDL278- <i>ffh</i>	6.25	pDL278- <i>secG</i>	6.25
recovered persisters 1	6.25	recovered persisters 1	6.25
recovered persisters 2	6.25	recovered persisters 2	6.25
recovered persisters 3	6.25	recovered persisters 3	6.25
pDL278- <i>secE</i>	6.25	pDL278- <i>secA</i>	6.25
recovered persisters 1	6.25	recovered persisters 1	6.25
recovered persisters 2	6.25	recovered persisters 2	6.25
recovered persisters 3	6.25	recovered persisters 3	6.25
pDL278- <i>secY</i>	6.25	UA159	
recovered persisters 1	6.25	recovered persisters 1	6.25
recovered persisters 2	6.25	recovered persisters 2	6.25
recovered persisters 3	6.25	recovered persisters 3	6.25

Supplementary Table 7. The minimum inhibitory concentration (MIC) of bacteria to CHX in passage 1, 2, 3

Bacteria	MIC value (µg/ml)	Bacteria	MIC value (µg/ml)
<i>ΔyidC1</i>	4	<i>ΔyidC2</i>	4
recovered persisters 1	4	recovered persisters 1	4
recovered persisters 2	4	recovered persisters 2	4
recovered persisters 3	4	recovered persisters 3	4
<i>ΔyajC</i>	4	<i>ΔftsY</i>	4
recovered persisters 1	4	recovered persisters 1	4
recovered persisters 2	4	recovered persisters 2	4
recovered persisters 3	4	recovered persisters 3	4
<i>Δffh</i>	4	<i>ΔsecG</i>	4
recovered persisters 1	4	recovered persisters 1	4
recovered persisters 2	4	recovered persisters 2	4
recovered persisters 3	4	recovered persisters 3	4
<i>ΔsecE</i>	4	<i>ΔsecA</i>	4
recovered persisters 1	4	recovered persisters 1	4
recovered persisters 2	4	recovered persisters 2	4
recovered persisters 3	4	recovered persisters 3	4
<i>ΔsecY</i>	4	<i>ΔgtfB</i>	4
recovered persisters 1	4	recovered persisters 1	4
recovered persisters 2	4	recovered persisters 2	4
recovered persisters 3	4	recovered persisters 3	4
pDL278- <i>yidC1</i>	4	pDL278- <i>yidC2</i>	4
recovered persisters 1	4	recovered persisters 1	4
recovered persisters 2	4	recovered persisters 2	4
recovered persisters 3	4	recovered persisters 3	4
pDL278- <i>yajC</i>	4	pDL278- <i>ftsY</i>	4
recovered persisters 1	4	recovered persisters 1	4
recovered persisters 2	4	recovered persisters 2	4
recovered persisters 3	4	recovered persisters 3	4
pDL278- <i>ffh</i>	4	pDL278- <i>secG</i>	4
recovered persisters 1	4	recovered persisters 1	4
recovered persisters 2	4	recovered persisters 2	4
recovered persisters 3	4	recovered persisters 3	4
pDL278- <i>secE</i>	4	pDL278- <i>secA</i>	4
recovered persisters 1	4	recovered persisters 1	4
recovered persisters 2	4	recovered persisters 2	4
recovered persisters 3	4	recovered persisters 3	4
pDL278- <i>secY</i>	4	UA159	4
recovered persisters 1	4	recovered persisters 1	4
recovered persisters 2	4	recovered persisters 2	4
recovered persisters 3	4	recovered persisters 3	4