

Table S1. Oligonucleotides

Vector ¹	Name ²	Sequence ²	Purpose
pEMG-lapB-lapA	1.2-EMG5'	GGCAGGTTGGGCGTCGC	For pEMG amplification
	3.1-lapB3'- <u>Scel</u> -EMG3'	GCAACGCTGTTGAACGTATCGATTACCTGTTATCCCTACGCGAAGTCGCTCTTCTGATGG	For pEMG amplification
	5.1-lapB5'- DS-<u>SD</u>-lapA5'	GGACTCGACTGACTTCGGATTCCACACTTAACCTTCTAGAAGGTGGTTGTATGAGCAGCGTTGTAGCCATCGT	For amplification of lapA 5' terminus
	2.3.-EMG- <u>Scel</u> -lapA3'	GCGACGCCCAACCTGCC ATTACCTGTTATCCCTA GAAATCTGGCCACCGTCGATG	For amplification of lapA 5' terminus
	4.1-lapB3'	CGATACGTTCAAACAGCGTTGC	For amplification of lapB 5' terminus
	6.1-lapB5'	GTGGAATCCGAAGTCAGTCGAGTCC	For amplification of lapB 5' terminus
pEMG-lapB-Pm-xyIS-lacI-Ptac-lapA	11-Pm- DS - lapB5'	CCGCGGTTAGAAGGGTTAAGTGTGGAATCCGAAGTCAGTCGAGTCC	For pEMG-lapB-lapA amplification
	12- Ptac- <u>SD</u> - lapA5'	CTAGAGAGAAGGTGGTTGTATGAGCAGCGTTGTAGCCATC	For pEMG-lapB-lapA amplification
	9-T1-xyIS- lacI3'	TGGGCGCGTTGCGTTGCGCTCACTGC	For amplification of lacI-P _{tac} cassette; for assessing the integrity of pEMG-PtacA-natB, and sequencing
	10-lapA5'- DS - Ptac	GCTGCTCATACAACCACCTTCTCTAGAGTCGACCTGCAGGC	For amplification of lacI-P _{tac} cassette
	7-lapB5'- DS - Pm	ATTCCACACTTAACCTTCTAACC GCGGCTAGGCATG	For amplification of Pm-xyIS-T1 cassette
	8-lacI3'-xyIS- T1	AGCGCAACGCAACGCGCCC AGCTGTCTAGG	For amplification of Pm-xyIS-T1 cassette; for assessing the integrity of pEMG-PtacA-natB, and sequencing
pEMG-PtacA-natB	1.3.- (lap)Aprom3'- T1	GCCGCTCTGGCAGGGAAGTACGGAAGTGGCTTGATTACGAACG	For pEMG-lapB-Pm-xyIS-lacI-Ptac-lapA amplification

	3.3.- (lap)Aprom5'- <i>EMG3</i>	AAGTCTGGTGAAAAATGATTACCCTGTTATCCCTACGCGAAG	For pEMG-lapB-Pm- xylS-lacI-Ptac-lapA amplification
	13.- (lap)Aprom3'	GTACTTCCCTGCCAGAGCGGC	For amplification of native <i>lapA-B</i> promoter area
	14.- <i>EMG3</i> - (lap)Aprom5'	GGGTAAT CATTTTCACCAGACTTA GCGGG	For amplification of native <i>lapA-B</i> promoter area
pGNW-lapA- Avwf	3.5-A5vwf5- <u>SceI</u> - <i>EMG3</i>	ACGTTGGTAGTGGTGCTGCTGATTACCCTGTTATCCCTACGCGAAGTCGCTCTTCTTGATGG	For pEMG amplification
	4.5.-A5vwf5	CAGCAGCACCACTACCAACGT	For amplification of <i>lapA</i> 5' DNA from vWfa domain
	6.5.1.- A3vwf5- A5vwf3	CTGATAGTAGGT GCTATCGACCATGAAGGCGATGTTG	For amplification of <i>lapA</i> 5' DNA from vWfa domain
	5.5.1.- A5vwf3- A3vwf5	GGTCGATAGCACCTACTATCAGAGCAATGAGTCCACC	For amplification of <i>lapA</i> 3' DNA from vWfa domain
	2.5.- <i>EMG</i> - <u>SceI</u> -A3vwf3	GCGACGCCCAACCTGCCATTACCCTGTTATCCCTCGTTACCTTTGCCACCATTAG	For amplification of <i>lapA</i> 3' DNA from vWfa domain
pEMG-ΔlapG	PP0164-I-fw	GAGCTCTTGTTGGCGAACGG	For the construction of <i>lapG</i> deletion (PP_0164); and assessment of <i>lapG</i> deletion
	PP0164-I-rev	CAGTGACATCTGTGCTCCTGGCAAAGCCGACATAGC	For the construction of <i>lapG</i> deletion (PP_0164);
	PP0164-2-fw	AGGAGCACAGATGTCACTG	For the construction of <i>lapG</i> deletion (PP_0164);
	PP0164-2-rev	GGCAACTCTGGCAGGCT	For the construction of <i>lapG</i> deletion (PP_0164); and assessment of <i>lapG</i> deletion
pEMG-ΔlapE	PP4519-I-fw- EcoRI	TTGAATTCGTGACTACCTCAGTGGTG	For the construction of <i>lapE</i> deletion (PP_4519); and assessment of pEMG-ΔlapE integrity and <i>lapE</i> deletion

	PP4519-l-rev	CCATTTCGAGCACAAAGCGGGTACATCTCCCTGATCCTG	For the construction of <i>lapE</i> deletion (PP_4519)
	PP4519-2-fw	CGCTTTGTGCTGCGAATGGG	For the construction of <i>lapE</i> deletion (PP_4519)
	PP4519-2-rev-BamHI	TTGGATCCGGTTATGTGGCAAAC TG	For the construction of <i>lapE</i> deletion (PP_4519); sequencing
Validation	EMG-traJ	GGCAAGGTCATGATGGGCG	For assessing the integrity of pEMG vectors, and sequencing
	lapB3'-taga	CGGTAGCCTGTTGTCAGC	For assessing the integrity of pEMG vectors, and sequencing
	lapA-rev	TGGATCCGACAATGCTTTTGACGATGG	For assessing the integrity of pEMG vectors, and sequencing
	lapA4	CGATTGTATCGGTCACTTGGG	For sequencing <i>lapA</i> 5' terminus of constructed PANB-stains
	lapB4	CGTAGCCGATGCCAGAG	For sequencing <i>lapB</i> 5' terminus of constructed stains
	lapA-RACE1	AGCTCAGTAGTCGGGTCAA	For assessing the integrity of pEMG vectors, and sequencing
	Prtac	AATTAATCATCGGCTCGTATAA	For assessing the integrity of pEMG vectors, and sequencing
	lacI-K	CAGCTGGCACGACAGGTTTC	For assessing the integrity of pEMG vectors, and sequencing
	xyIS-K	CAATGCAAAAAGGAAGTGGCTTG	For assessing the integrity of pEMG-lapB-Pm-xyIS-lacI-Ptac-lapA, and sequencing

	XylS- <i>alg</i>	ATGGATTTTGGCTTATTGAACGAG	For assessing the integrity of pEMG-lapB-Pm-xylS-lacI-Ptac-lapA, and sequencing
	xylS- <i>välja</i>	GGGCAGGCGAATAGAGTG	For assessing the integrity of pEMG-lapB-Pm-xylS-lacI-Ptac-lapA, and sequencing
	Pm-suunas	TTCACCAGTTTTGATTAAACG	For assessing the integrity of pEMG-lapB-Pm-xylS-lacI-Ptac-lapA, and sequencing
	Pm-eemale	GTTTTCCTGGTATACCGCCG	For assessing the integrity of pEMG-lapB-Pm-xylS-lacI-Ptac-lapA, and sequencing
	PP0167-down	TTTGGATCCGCGGCTCTCTTCATCC	For sequencing <i>lapAB</i> promoter-area of constructed PANB-stains
	Avwf-K2	GAAGGCAACGACATCTTCGTC	For assessing the integrity of pGNW-lapA-Avwf, and sequencing
	Avwf-K1	AGGGTTGGTGGACTCATTGC	For sequencing <i>lapA</i> of constructed Avwf-stains
	A5vwf-K3	CCAAGGAAGTCTGGACCAGC	For sequencing <i>lapA</i> of constructed Avwf-stains
	A3vwf-K4	CTTGTTGAAGTCCTTGATCACGTC	For sequencing <i>lapA</i> of constructed Avwf-stains
	LapE-fw-BamHI	TGGATCCAACCTGCACAAGCCAAAG	For sequencing <i>lapE</i> flanking DNA, and assessment of pEMG-DlapE integrity and <i>lapE</i> deletion

¹ Vector for which the oligonucleotides were used

² Underlined text, text in italic or bold indicates the match of element and sequence

Table S2 Used growth media

Abbreviation	Components
LB	10 g/L tryptone (LabM, Heywood, UK) 5 g/L yeast extract (LabM, Heywood, UK) 5 g/L NaCl
M9-0.2CAA	M9 buffer [1] 2.5 mL/L of microelements [2] 2 g/L of glucose 2 g/L CAA (casamino acid; Difco, Detroit, MI, USA) and 0.01 g/L tryptophan
M9-0.2CAA + pK	M9-0.2CAA was amended with 0.4 mg/ml poly-L-lysine (1000-5000 Da; Sigma-Aldrich, St. Louis, MO, USA)
M9-0.2CAA + tryptone	M9-0.2CAA was amended with 10 g/L tryptone (LabM, Heywood, UK)
M9-0.2CAA + cellulose	M9-0.2CAA was amended with 0.4 g/L the sodium salt of carboxyl methylcellulose (Sigma-Aldrich, St. Louis, MO, USA)
M9-0.2CAA + PGA	M9-0.2CAA was amended with PGA (poly-galacturonic acid)

1. Adams, M.H. *Bacteriophages*; Interscience Publishers, Inc.: New York, N.Y., 1959.
2. Bauchop, T.; Elsdén, S.R. The Growth of Micro-organisms in Relation to their Energy Supply. *Microbiology (Reading, England)* **1960**, *23*, 457-469, doi:<https://doi.org/10.1099/00221287-23-3-457>.