SUPPLEMENTAL TABLE S1. Primers used in this study.

Primer function	Primer name	Direction	Sequence 5'→3'	Restriction site
ygfA E. coli knockout	EcΔygfA	F	GCGGGCCAGTCCCCTGA	
		R	AAGCCCTCACCGAAGCGAGG	
	EcKeioK1	R	CAGTCATAGCCGAATAGCCT	
	EcKeioK2	F	CGGTGCCCTGAATGAACTGC	
Functional complementation	AbFT	F	CTAGTCTAGACTGA*AGGAAA*CAGCT**ATGCCCTCTACTCTTGTTG**	*Xba*I
		R	CTAGGGTAC**CTATTTCAGTGCCGCCAC**	*Kpn*I
	EmFT	F	CTAGTCTAGACTGA*AGGAAA*CAGCT**ATGGCTATGATAGAATGCG**	*Xba*I
		R	CTAGGGTACC**TTATATTATTTTTTTGGAATAGTC**	*Kpn*I
	HaFT	F	CTAGTCTAGACTGA*AGGAAA*CAGCT**ATGGGCTTGGTCGAAAG**	*Xba*I
		R	CTAGGGTAC**CTAGAGTGTCGTCAGTTTTTG**	*Kpn*I
	SaFT	F	CTAGTCTAGACTGA*AGGAAA*CAGCT**ATGAAAATCATCGAATGCG**	*Xba*I
		R	CTAGGGTACC**TTATTCGGCTTTCTTGAATG**	*Kpn*I
	SpFT	F	CTAGTCTAGACTGA*AGGAAA*CAGCT**ATGGCGAAAATTGTTG**	*Xba*I
		R	CTAGGGTAC**CTAACCTAGCAAATGGTTTTC**	*Kpn*I
	PtFT	F	CTAGGAATTCCTGA*AGGAAA*CAGCT**ATGCCTGATAAAGAAGTTAAAATTGTTGAAGC**	*Eco*RI
		R	CTAGGGTACC**TTATGTAAATATCTTATATTCTAAAATCTTATCCCTTG**	*Kpn*I
	TaFT	F	CTAGTCTAGACTGA*AGGAAA*CAGCT**ATGTCTCTTGTTGAATGCGTACCCAAC**	*Xba*I
		R	CTAGGGTACC**TTATTCCATATTTGCTGCCTTCTCCATCTTG**	*Kpn*I
	EcYgfA	F	CTAGTCTAGACTGA*AGGAAA*CAGCT**ATGACGCAACTACCAGAACTCCC**	*Xba*I
		R	CTAGGGTACC**TTACCACTCCCAGACTTTCGACG**	*Kpn*I
Protein overexpression	AbFT	F	AGCTAGCAT**ATG**CCCTCTACTCTTGTTGAATGTGTTCC	*Nde*I
		R	TCTAGCTGCGGCCGC**TTTCAGTGCCGCCACCTTCTCGC**	*Not*I
	SpFT	F	CTAGCC**ATGG**CGAAAATTGTTGAATGTATTCCCAAC	*Nco*I
		R	GATCCTCGAG**ACCTAGCAAATGGTTTTCAAGAATCTGTTTATG**	*Xho*I
	PtFT	F	AGCTAGCAT**ATG**CCTGATAAAGAAGTTAAAATTGTTGAAGCCG	*Nde*I
		R	AGCTCTCGAG**TGTAAATATCTTATATTCTAAAATCTTATCCCTTGTAATATTTGATTTC**	*Xho*I
	TaFT	F	AGCTAGCAT**ATG**TCTCTTGTTGAATGCGTACCCAACTTC	*Nde*I
		R	AGCTCTCGAG**TTCCATATTTGCTGCCTTCTCCATCTTGC**	*Xho*I
FT S. pyogenes knockout	KO-Sp	F	**GTATGGGAGCAACCGATGTCTGC**	
		R	**CGGTCTTCTAACATGACACCGATAGC**	
	SpKOver	F	**CTTCTCAGAAGGCCAAAATCAGGCTG**	
		R	**GTAGTATTCAGCCACATCGATTAAGGC**	
	QueD	F	TGCGATTTCTTATGGGATGT	
		R	TCAATAATAAGTGATCCTATGA	
	SpOri23	F	CTAGGGATCCCTGA*GGAGGA*CAGCTCAG**ATGGCGAAAATTGTTGAATGTATTCCCAACTTC**	*Bam*HI
		R	CTAGGTCGAC**CTAACCTAGCAAATGGTTTTCAAGAATCTGTTTATTATAG**-	*Sal*I
	M13	F	CGCCAGGGTTTTCCCAGTCACGAC	
		R	TCACACAGGAAACAGCTATGAC	
	SpOri23	F	CTAGGGATCCCTGA*GGAGGA*CAGCTCAG**ATGGCGAAAATTGTTGAATGTATTCCCAACTTC**	*Bam*HI
		R	CTAGGTCGAC**CTAACCTAGCAAATGGTTTTCAAGAATCTGTTTATTATAG**-	*Sal*I

Ec, *Escherichia coli*; **Ab**, Acidobacteria bacterium Ellin 345; **Em**, *Elusimicrobium minutum*; **Ha**, *Herpetosiphon aurantiacus*; **Sa**, *Syntrophus acidotrophicus*; **Sp**, *Streptococcus pyogenes*; **Pt**, *Picrophilus torridus*; **Ta**, *Thermoplasma acidophilum*. **Bold**, gene sequence; underlined, restriction site; *italics*: Shine-Dalgarno sequence.