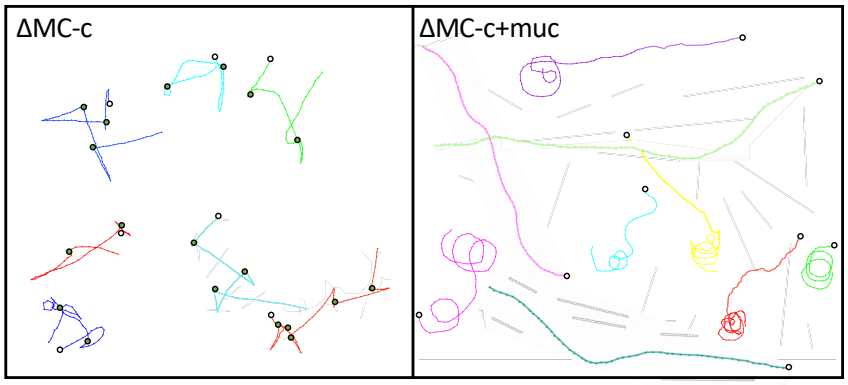

Figure S1. Motility behavior of the complemented ΔMC strain in the presence of mucin. 2D traces of complemented ΔMC cells were captured by dark-field microscopy of bacterial motility in M9 media without or with 2% mucin. Different single-cell trajectories in x and y are indicated by different colors. Open circles denote the start position for each trace and green circles indicate flicks. Traces from a single representative experiment are shown.

Table S1. Primers used in this study

Primer	Purpose	Sequence
Ec*lacZ*-F	Amplify *E. coli lacZ*	ATGACCATGATTACGGATTCAC
Ec*lacZ*-R		GCCGGCGGCCGCTCTAGTTATTTTTGACACCAGACCAAC
VchΔP_{lacZ}-1	Delete promoter of chromosomal *V. cholerae lacZ*	GTACCGGGTTGAGAAGCGGTGTAAGTGAACTGCATCATCTCTGGTGTCAGCAC
VchΔP_{lacZ}-2		AAATAGAGGTCGATATTGACC
VchΔP_{lacZ}-3		GGTCAATATCGACCTCTATTTCGCAACTTCTCCGATATTCTTC
VchΔP_{lacZ}-4		TTGCTACGCCTGAATAAGTGATAGGGCCCGATCCCCTGAGTGATTTCTACTTTGCG
VchΔ*vipA*-1	Construct the *V. cholerae* ΔMC mutant	CGCTTATGAGCTCGCGCTG
VchΔ*vipA*-TpK7-2		GTCGACGGATCCCCGGAATCATATTACGTCTCCAATACCTAT
VchΔ*hsiF*-TpK7-3		GAAGCAGCTCCAGCCTACATAACCTCTATGACGCAAGACAA
VchΔ*hsiF*-4		GTATCTTGCCAACCAACCACT
Vch*vipA-hsiF*-F	Amplify *vipA-hsiF* region with native promoter for cloning into pSW23T-*lacZ*^{Vc400}	GCCATGTATCAGTGGACGAAACAACAACACTCTGTGACATGGC
Vch*vipA-hsiF*-R		GACGCGATGGGTCGCGCTGTTAAAACACTCGATATTTTCTG
VchP_{vipA}-F	Amplify the *V. cholerae vipA* promoter for *lacZ* reporter construction	GACTCACTATAGGGCGAATTGCAACAACACTCTGTGACATGGC
VchP_{vipA}-R		GTGAATCCGTAATTTTGGGAGCTACACTTCCTTC
TmR-F	Amplify the Tm resistance cassette	ATTCCGGGGATCCGTCGAC
TmR-R		TGTAGGCTGGAGCTGCTTC
VchΔ*cheY3*-1	Construct the *V. cholerae* Δ*cheY3* mutant	ATTAACATTAGTGACAGAACGG
VchΔ*cheY3*-TpK7-2		GTCGACGGATCCCCGGAATTGCCTCCACTGAGTTTGAGATC
VchΔ*cheY3*-TpK73		GAAGCAGCTCCAGCCTACATTATAAACGCTCAAAAATTTTGTC
VchΔ*cheY3*-4		CCATTTCGTAAAATGTCGAACAC
Vch*cheY3-F*	Amplify *cheY3* fused to P_{tac} for cloning into pSW23T-*lacZ*^{Vc400}	GACTCACTATAGGGCGAATTGGAGGCAATTTTGAATAAAAACATG
Vch*cheY3*-R		GCCGGCGGCCGCTCTAGTTATAAACGCTCAAAAATTTTGTC

Table S2. Plasmid used in this study

Plasmid	Purpose	Source
pNKTXI-SceI	mini*Tn10* transposon mutagenesis plasmid	(3)
pMMB-TfoX	Allelic replacement of target *V. cholerae* genes by MuGENT	(4)
pRE112	Conditionally replicating plasmid for generating markerless deletions; *cat*, *sacB1*, RP4*oriT*, R6K*gori pir*	(1)
pRE112-ΔP_{lacZ}^{Vch}	Markerless deletion of the chromosomal $lacZ^{Vch}$ promoter	This work
pSW23T	Conditionally replicating plasmid; *cat*, RP4*oriT*, R6K*gori pir*	(2)
pSW23T-$lacZ^{Vc400}$	Integration into the chromosomal *lacZ*	This work
pSW23T-$lacZ^{Vc400}$-$P_{vipA}lacZ^{Ec}$	Reporter plasmid for P_{vipA} expression	This work
pSW23T-$lacZ^{Vc400}$-*vipA-hsiF*	Complementation of ΔMC	This work

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