

Supplementary Materials

Coupling Ion Specificity of the Flagellar Stator Proteins MotA1/MotB1 of *Paenibacillus* sp. TCA20

Sakura Onoe, Myu Yoshida, Naoya Terahara and Yoshiyuki Sowa

Table S1. Strains used in this study

Strain	Relevant characteristics	Source or Reference
<i>E. coli</i>		
RP437	wild type for motility	Parkinson JS
RP6665	Δ <i>motAB</i>	Parkinson JS
JHC36	Δ <i>cheY</i> Δ <i>pilA</i> Δ <i>motAB</i> <i>fliC-sticky</i>	Inoue et al. 2008 [13]
ME9783	strain for iVEC	NRBP
<i>B. subtilis</i>		
AB1	Δ <i>motAB</i> Δ <i>motPS</i> <i>lacA::P_{xyIA}-motAB1</i>	Imazawa et al. 2016 [20]
Δ AB Δ PS Δ Hag	Δ <i>motAB</i> Δ <i>motPS</i> Δ <i>hag::spec</i>	Terahara et al. 2017 [19]
WT-sticky	Δ <i>hag::spec</i> <i>amyE::P_{hag}-hagsticky</i>	Terahara et al. 2017 [19]
SHU399	Δ <i>motAB</i> Δ <i>motPS</i> Δ <i>hag::spec</i>	This study
(AB1-sticky)	<i>amyE::P_{grac}-motAB1</i> , <i>P_{hag}-hagsticky</i>	

Table S2. Plasmids used in this study

Plasmid	Relevant characteristics	Antibiotic resistance	Source or Reference
pBAD24	expression vector by P_{ara} promoter	Amp ^r	Lab stock
pYS16	pBAD24- <i>motA^{Ec}motB^{Ec}</i>	Amp ^r	This study
pSHU157	pBAD24- <i>motA1^{TCA}motB1^{TCA}</i>	Amp ^r	This study
pSHU161	pBAD24- <i>motA1^{TCA}motB1B^{TE-3}</i>	Amp ^r	This study
pSHU162	pBAD24- <i>motA1^{TCA}motB1B^{TE-2}</i>	Amp ^r	This study
pSHU163	pBAD24- <i>motA1^{TCA}motB1B^{TE-1}</i>	Amp ^r	This study
pSHU164	pBAD24- <i>motA1^{TCA}motB1B^{TE-4}</i>	Amp ^r	This study
pSHU165	pBAD24- <i>motA1^{TCA}motB1B^{TE-5}</i>	Amp ^r	This study
pSHU166	pBAD24- <i>motA1^{TCA}motB1B^{TE-6}</i>	Amp ^r	This study
pSHU167	pBAD24- <i>motA1^{TCA}motB1B^{TE-7}</i>	Amp ^r	This study
pHT-AB	pHT01 + P_{grac} - <i>motAB</i> of <i>B. subtilis</i>	Amp ^r Cm ^r	Terahara et al. 2017 [19]
pDR-hagsticky	pDR67 + P_{hag} - <i>hagsticky</i>	Amp ^r Cm ^r	Terahara et al. 2017 [19]
pSHU1347	pBAD24- <i>motA1^{TCA}(R55R, D174D)</i> <i>motB1^{TCA}</i>	Amp ^r	This study
pSHU1348	pHT01 + P_{grac} - <i>motA1^{TCA}motB1^{TCA}</i>	Amp ^r Cm ^r	This study
pSHU1351	pDR-hagsticky + P_{grac} - <i>motA1^{TCA}motB1^{TCA}</i>	Amp ^r Cm ^r	This study

Table S3. Primers used in this study

Primer	Sequence
1198_pBAD24-f	cggatgagagaagatttca
1200_motA1 ^{TCA} -f	gggcttgcaggaggaattcaatggatatcgcgaccctaat
1201_motB1 ^{TCA} -r	tgaaaatcttctctcatccgttactcactttgcagctgtc
1204_pBAD24-r	tgaattcctcctgcaagccc
1222_BamHI-motA1 ^{TCA} -f	accgggatccatggatatcgcgaccctaatcgg
1223_motB1 ^{TCA} -XmaI-r	tcccccggttactcactttgcagctgtcgcag
1224_XmaI-Pgrac-f	tcccccggtttaaatgcaaccgtttttc
1225_motB1 ^{TCA} -SphI-r	acatgatgcttactcactttgcagctgtcgcag
1228_motA1 ^{TCA} (R55R)-f	ctatccaatgcaccgcacccgactctgcct
1229_motA1 ^{TCA} (R55R)-r	aggcagagtgcggatgcggtgcatggatag
1230_motA1 ^{TCA} (D174D)-f	tggccatctgacggaccgagtcagctcgg
1231_motA1 ^{TCA} (D174D)-r	accgagctgactcgggtccgtcagatggcca
1313_motB ^{Ec} -f for TE3	cttcaaactacctttgcgactcgggttacggggcg
1314_motB ^{Ec} -f for TE2	aagtatgaggaagtcgaggacttccggactcc
1315_motB ^{Ec} -f for TE1	tatgcgatgagccggtccagccaaaagagctgat
1316_motB ^{Ec} -r for TE1-7	atcttctctcatccgtcacctcgggttcggctgatg
1317_pBAD24-f for TE1-7	gccgaaccgaggtgacggatgagagaagatttca
1318_motB1 ^{TCA} -r for TE3	cgtaaccgcagtcgcaaaggtagttgaaggagc
1319_motB1 ^{TCA} -r for TE2	ccggaagtactccgcgacttctcacttgccttg
1320_motB1 ^{TCA} -r for TE1	ctctttgggctggaccggtcatcgcatacatca
1331_motB ^{Ec} -f for TE4	attgactaccctctaatagtgaaagcccaattcc
1332_motB ^{Ec} -f for TE5	accgaacgagagtctcgattgcggaaattgcgggg
1333_motB ^{Ec} -f for TE6	gacaagcctcaagggcagatcatcgaagccagaa
1334_motB ^{Ec} -f for TE7	agggatctcgagacacgtattagcctttcagggtca
1335_motB1 ^{TCA} -r for TE4	tgggcttactattagagggtagtcaatgacac
1336_motB1 ^{TCA} -r for TE5	caattccgcaatcgagactctcgttcgggtcaag
1337_motB1 ^{TCA} -r for TE6	gctatcgatgatctgcccttgaggctgtccacta
1338_motB1 ^{TCA} -r for TE7	tgaaaggctaatacgtgtctcgagatccctaaaca