

Supporting Information

Table S1. *Myxococcus xanthus* genes containing the MazF recognition sequence GAGTTGCA within coding sequence. The five candidates analyzed in the main text are shown in red. List was generated using Pattern Locater

Gene	Annotation
MXAN_0052	hypothetical protein
MXAN_0114	transglycosylase SLT domain-containing protein
MXAN_0146	hypothetical protein
MXAN_0170	hypothetical protein
MXAN_0180	sigma-54 dependent transcriptional regulator
MXAN_0535	topB,RecQ family DNA topoisomerase III/ATP-dependent DNA helicase
MXAN_0730	O-methyltransferase family protein
MXAN_0735	hypothetical protein
MXAN_0777	MerR family transcriptional regulator
MXAN_0826	erythromycin esterase family protein
MXAN_0867	hypothetical protein
MXAN_1043	glycosyl transferase
MXAN_1081	NADH dehydrogenase I subunit M
MXAN_1145	DnaJ domain-containing protein
MXAN_1200	phage integrase family site specific recombinase
MXAN_1238	hypothetical protein
MXAN_1243	hypothetical protein
MXAN_1410	hypothetical protein
MXAN_1683	LysR family transcriptional regulator
MXAN_1713	peptidyl-prolyl cis-trans isomerase domain-containing protein
MXAN_1796	hypothetical protein
MXAN_1817	hypothetical protein
MXAN_1985	hypothetical protein
MXAN_2204	RNA polymerase sigma-70 factor
MXAN_2300	hypothetical protein
MXAN_2317	sensory box histidine kinase/response regulator
MXAN_2326	aldehyde dehydrogenase family protein
MXAN_2469	hypothetical protein
MXAN_2527	hypothetical protein
MXAN_2561	fibronectin type III domain-containing protein
MXAN_2785	sensory box histidine kinase/response regulator
MXAN_3095	sigma-54 dependent transcriptional regulator
MXAN_3335	indigoidine synthase A-like protein
MXAN_3462	polyketide synthase type I
MXAN_3618	non-ribosomal peptide synthetase
MXAN_3634	non-ribosomal peptide synthase
MXAN_3648	putative permease

MXAN_3779	non-ribosomal peptide synthetase/polyketide synthase
MXAN_3933	mixed type I polyketide synthase - peptide synthetase
MXAN_3962	pyridine nucleotide-disulphide oxidoreductase
MXAN_3977	hypothetical protein
MXAN_4001	non-ribosomal peptide synthase/polyketide synthase
MXAN_4030	hypothetical protein
MXAN_4042	nla6,sigma-54 dependent DNA-binding reponse regulator Nla6
MXAN_4128	transposase
MXAN_4144	frzZ,response regulator FrzZ
MXAN_4189	TPR repeat-containing protein
MXAN_4601	(non-ribosomal peptide synthase
MXAN_4678	AAA family ATPase
MXAN_5253	putative acetylpolyamine aminohydrolase
MXAN_5348	M23 peptidase domain-containing protein
MXAN_5410	ECF subfamily RNA polymerase sigma factor
MXAN_5427	hypothetical protein
MXAN_5539	ccoP,cbb3-type cytochrome c oxidase subunit III
MXAN_5815	putative sporulation initiation inhibitor protein
MXAN_5842	hypothetical protein
MXAN_5852	sensory box histidine kinase
MXAN_5894	LysR family transcriptional regulator
MXAN_5928	dapA,dihydrodipicolinate synthase
MXAN_5960	fatty acid desaturase family protein
MXAN_5975	putative lipoprotein
MXAN_6026	clpA,ATP-dependent Clp protease, ATP-binding subunit ClpA
MXAN_6410	hypothetical protein
MXAN_6656	2'-5' RNA ligase
MXAN_6679	hypothetical protein
MXAN_6679	hypothetical protein
MXAN_6919	ferredoxin reductase
MXAN_7009	hypothetical protein
MXAN_7151	orn,oligoribonuclease
MXAN_7206	sensor histidine kinase/response regulator
MXAN_7321	AfsR/DnrI/RedD family transcriptional regulator
MXAN_7445	EpsE, group 1 family glycosyl transferase

Table S2. PCR Primers used in the course of this Study.

Name	Sequence
Cloning	
<i>mrpC</i> F	5'-GTTCTTCATATGCACGGCTTTAACCGCCCG-3'
<i>mrpC</i> R	5'-GTTCTTCTCGAGTTTTTCTTTACCCGCGATTTTACGCAGTG-3'
<i>mrpC2</i> F	5'-GTTCTTCATATGGTCACCGCTACCGCTAAC-3'
<i>mrpC2</i> R	5'-GTTCTTCTCGAGTTTTTCTTTACCCGCGATTTTACGCAGTG-3'
<i>nla6</i> up F	5'-GTTCTTGGTACCTTGGGCAGCGCACGAATC-3'
<i>nla6</i> up R	5'-GTTCTTGAGCTCGATGGGGATCTCACCCAATTC-3'
<i>nla6</i> down F	5'-GTTCTTGAGCTCCAGGCCAAGCTCCTGCG-3'
<i>nla6</i> down R	5'-GTTCTTAAGCTTTCAGCGGATGACGAACGAGTTG-3'
qRT-PCR	
<i>mazF</i> F	5'-ACGACGTCTTCAATCACTCACGCA-3'
<i>mazF</i> R	5'-TTTCCCTCTCCCACTTCGAGCA-3'
<i>mrpC</i> F	5'-TCCTTCGTGTCCACGCTCATCAA-3'
<i>mrpC</i> R	5'-TACTTCTCCTTGCCGGCGATCTT-3'
<i>rpoC</i> F	5'-ATGCTGGACGTGATTCCGGTGATT-3'
<i>rpoC</i> R	5'-TTCAGACGGTTGTTGCGGTTGATG-3'
<i>nuoM</i> F	5'-TTCATCGTCCTGGTCGCTGTGAT-3'
<i>nuoM</i> R	5'-ATCACCTCTACCCGAAGTCGGTC-3'
<i>clpA</i> F	5'-GCTTGTTTCATCTACGGCGCGTT-3'
<i>clpA</i> R	5'-ATGGTGAGCACCGTCTCGGA-3'
<i>nla6</i> F	5'-TCTTTCCTGGACGAATTGGGTGAGA-3'
<i>nla6</i> R	5'-ATCTCCTGCTTGAGGTCACGGTT-3'
<i>frzZ</i> F	5'-TTCTGCCGCTTCATCAAGAGCAAC-3'
<i>frzZ</i> R	5'-TACTCGTTACCGGTGGGCATCA-3'
<i>epsE</i> F	5'-TGCCATCCAGTGTGCAGAAGATTG-3'
<i>epsE</i> R	5'-GCCAGCTGTGCGAGATGAT-3'
MXAN1501F	5'-ATGAGAATGCGTTGCGTGGTTTCG-3'
MXAN1501R	5'-TTTGACCACGCCATTCTCTTGCAC-3'

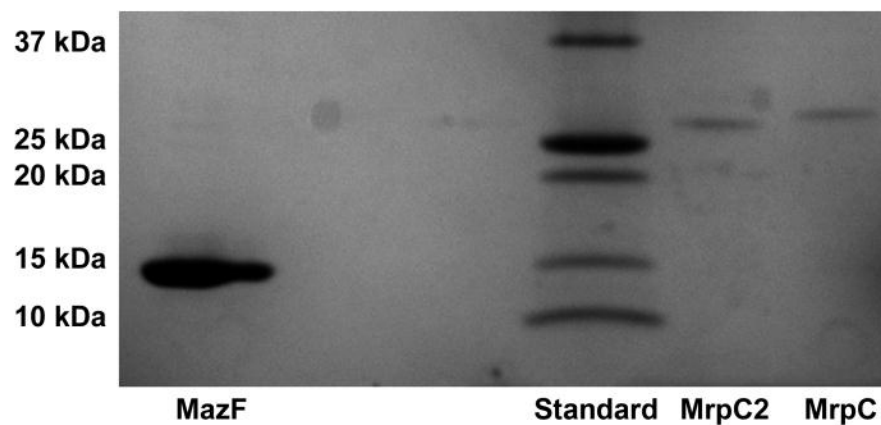


Figure S1. SDS-PAGE of purified, recombinant MazF, MrpC, and MrpC2 proteins. MazF possesses a band of approximately 15 kDa. MrpC and MrpC2 appear as single bands of approximately 27 and 25 kDa, respectively. Precision Plus Protein standard (Bio-Rad, Hercules, CA) is shown for size comparison.

Optimized	1	CCGCCGGAACGCATCAATCGTGGTGACGTGTTTTGGGTGGAACCGACGACAGCCGTGGC
Original	1	CCGCCGGAACGCATTAACCGCGCGATGTGTTTTGGGTGGAACCGGATGATAGCCGCGGC
Optimized	60	CCGGTGCCGAGCTACTCTCATCCGCATGTGGTTGTCCAGGATGACGTGTTTAATCATAGC
Original	60	CCGGTGCCGAGCTATAGCCATCCGCATGTGGTGGTGCAGGATGATGTGTTTAACCATAGC
Optimized	120	CGTATTACCACGGTGGTTGTCTGCGCACTGACCTCAAACCTGCACCGCGTTCCGGAACCG
Original	120	CGCATTACCACCGTGGTGGTGTGCGCGCTGACCAGCAACCTGCATCGCGCGAGCGAACCG
Optimized	180	GGCAATGTGCTGCTGGAA GTTGGCGAAGGTAACCTGCCGAAACAGAGTGTGGTTGTCTGTG
Original	180	GGCAACGTGCTGCTGGAAGTGGGCGAAGGCAACCTGCCGAAACAGAGCGTGGTGGTGGTG
Optimized	240	TCCCAAGTTAGCTCTGTGCGATAAAGCACGTCTGGGTGAACGTATCGGTGCACTGAGTGAC
Original	240	AGCCAGGTGAGCAGCGTGGATAAAGCGCGCCTGGGCGAACGCATTGGCGCGCTGAGCGAT
Optimized	300	GCCCGTGTGGAA CAAATCCTGGCTGGTCTGCGTTTTCAACAAGTCTCCTTCTTCGCTCGT
Original	300	GCGCGCGTGGAAACAGATTCTGGCGGGCCTGCGCTTTCAGCAGGTGAGCTTTTTTTCGCGC
Optimized	360	CCGTAA
Original	360	CCGTGA

Figure S2. Codon optimized sequence of *mazF* (MXAN_1659) used to create the MazF expression vector pTOB2 . Changed codons are shown in red. Sequence was optimized for expression and secondary structure in *E. coli* by Genscript (Piscataway, NJ, USA).

Figure S3

Optimized	0	CACGGCTTTAACCGCCCGCTGGGTCGGATTGGCTCAAATGTTGTGGCACCGCTGCAAACG
Original	0	CATGGCTTTAACCGCCCGCTGGGCCGATTGGCAGCAACGTGGTGGCGCCGCTGCAGACC
Optimized	60	ACGTCCTCAGGCATGATGGTACCCTAACAACTGGTCCCGGTCAGGAAGCCATCGAT
Original	60	ACCAGCAGCGGCATGATGGTGACCGCAACAACTGGTGCCGGCCAGGAAGCGATTGAT
Optimized	120	TTCAAAGGCTACTTCAAAGTTGAATCGTTCCGCATAACAGCACCATCTATCGTCCGGGT
Original	120	TTTAAAGGCTATTTTAAAGTGAATCGTTCCGCATAACAGCACCATTTATCGCCCGGGC
Optimized	180	GATAATACGGACCGCTTACCTGCTGAAATCTGGTCGTGTCGCGCTGATGCGTATTGGC
Original	180	GATAACACCGATCGCGTGTATCTGCTGAAAAGCGGCCGCTGCGCTGATGCGCATTGGC
Optimized	240	AAA AATAGTACCCGCTCCGCTGGTTTCAATCTGCGTCCGGGTGACCTGTTTGGTGAAGT
Original	240	AAAAACAGCACCCGCGAGCGTGGTGAGCATTCTGCGCCCGGGCGATCTGTTTGGCGAACTG
Optimized	300	TTCCGTCCGGAGGGTACGCCGATTGAAGAAATGGCGATCGCGGCCGGTGAAGCCGAAGT
Original	300	TTTCGCCCGGAAGGCACCCCGATTGAAGAAATGGCGATTGCGCGGGCGAAGCGGAAGT
Optimized	360	TGGTCCATTGAAGGCCGTGATTTTCTGTCACAACTGGAAGCACGTCCGGCACTGGCTGTT
Original	360	TGGAGCATTGAAGGCCGCGATTTTCGCGCGCAGCTGGAAGCGCGCCCGCGCTGGCGGTG
Optimized	420	GACGTCGTGCGTGCATACGCAGAACGTGTGCGTGCACTGCGTAAACGCGTTCTGGGTCTG
Original	420	GATGTGGTGCAGCGTATGCGGAACCGTGCAGCGCTGCGCAAACGCGTGTGGCCCTG
Optimized	480	ACCTTCAAAGAAGTGCCGCGCACGTCTGGCTGATACCCTGCTGACGCTGTTGAAGCGCAT
Original	480	ACCTTTAAAGAAGTGCCGGCGCGCTGGCGGATACCCTGCTGACCCTGGTGAAGCGCAT
Optimized	540	GGCGAA CGTTGCCCGCACGGCGGTGAAACCGACCTGCGTGGTATTACGCAGCAAGATCTG
Original	540	GGCGAACGCTGCCCGCATGGCGGCGAAACCGATCTGCGGGCATTACCCAGCAGGATCTG
Optimized	600	GCAGACCTGGTCGGTGCGAGCCGCTCTTTCTGTGAGCACCTGATCAACGAAATGAAACGT
Original	600	GCGGATCTGGTGGGCGGAGCCGCGAGCTTTGTGAGCACCTGATTAACGAAATGAAACGC
Optimized	660	GAAGGCGTTCTGGTAATGTCCGGCTATCCTGTGTGTCCGTGACCAGAAAGCACTGCGT
Original	660	GAAGGCGTGTGGCAACGTGGGCCGATTCTGTGCGTGCAGATCAGAAAGCGTGCAGC
Optimized	720	AAAATCGCGGTAAGAAAAATAA
Original	720	AAAATTGCGGGCAAAGAAAAATGA

Figure S3. Codon optimized sequence of *mrpC* (MXAN_5125) used to create the MrpC and MrpC2 expression vectors pTOB14 and pTOB15. Changed codons are shown in red. Sequence was optimized for expression in *E. coli* by Genscript (Piscataway, NJ, USA).