

## Supplementary Material

for

# Regulation of Iron Transport Related Genes by Boron in the Marine Bacterium *Marinobacter algicola* DG893

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**Table S1. List of primers used in qPCR to quantify gene transcripts of important iron uptake genes.**

Target Gene	Primer Sequences	Putative Function	Accession No.
<i>pvsA</i>	TGTGATCAGTTCTGGCAAGG CCAATGGTCTCCAGAGTGTG	Vibrio ferrin biosynthesis gene	ZP_01892156
<i>fbpA</i>	TCGCTCACCATGGCGAAGAAGC AATGTCGCACTCGCCGGCAT	Periplasmic iron binding protein	ZP_01892821
<i>pvuA</i>	GGTTCTGGCCGAAGAAGAAGG ACGAAGCGGACATGAGTCG	VF outer membrane receptor	ZP_01892151
<i>fhuA</i>	TGGACCGTCGTGCCATTGCC CGGGCTTTCTGCAAGGCGGA	Ferric hydroxamate uptake protein	ZP_01893439
<i>vciA</i>	CTGAACCTACCGCCCTGTATCC CGATTGGTGTCTCGATCTCC	TonB-dependent outer membrane siderophore receptor	ZP_01893080
<i>gyrA</i>	GTGCATCGCCGCGTACTGTT ATAACGCATGGCAGCCGCGT	DNA gyrase subunit A	ZP_01895129
<i>rpoD</i>	GGACAGGTGTTTGGCGCCGTT TGC GCGGCATCTTGACTCA	RNA polymerase	ZP_01893908

Table S2. MALDI-TOF Identification of Proteins and Mascot Scores for Highly Boron Regulated Proteins

Spot number	MALDI well number	Match Quality	NCBI								comments	
			Top Ranked Protein Name(Species)	Accession No.	Protein MW	Protein PI	Pep.Count	Protein Score	Protein Score C. I. %	Total Ion Score		Total Ion C. I. %
38	A11		flagellin domain protein [Marinobacter algicola DG893]	gi 149376772	49717.9	4.13	14	764	100	588	100	
39	A12		Extracellular ligand-binding receptor [Marinobacter algicola DG893]	gi 149375741	39398.4	4.32	11	354	100	198	100	
48	A13		TRAP dicarboxylate transporter, DctP subunit [Marinobacter algicola DG893]	gi 149375450	38562.8	4.37	8	524	100	426	100	
51	A14		ABC-type Fe3+ transport system, periplasmic component [Marinobacter algicola DG893]	gi 149375048	37589.7	4.79	13	475	100	296	100	
52	A15		ABC-type Fe3+ transport system, periplasmic component [Marinobacter algicola DG893]	gi 149375048	37589.7	4.79	11	382	100	240	100	
53	A16		ABC-type amino acid transport/signal transduction system, periplasmic component [Marinobacter algicola DG893]	gi 149376724	36497.2	4.76	16	564	100	322	100	
62	A17		probable oxidoreductase [Marinobacter algicola DG893]	gi 149375909	30724	5.2	4	214	100	176	100	
66	A18		immunogenic protein [Marinobacter algicola DG893]	gi 149374491	34910.3	5.11	14	591	100	415	100	see detail hit#2
68	A19		extracellular solute-binding protein, family 3 [Marinobacter algicola DG893]	gi 149376080	27876.5	4.34	5	220	100	163	100	
69	A20		extracellular solute-binding protein, family 3 [Marinobacter algicola DG893]	gi 149375977	27565.5	4.29	4	240	100	196	100	

high confidence
low confidence
no confidence

Table S3. Maldi-TOF Identification of Proteins and Mascot Scores for Highly Iron Regulated Proteins

Spot number	MALDI well number	Match Quality / Species	NCBI								
			Top Ranked Protein Name(Species)	Accession No.	Protein MW	Protein PI	Pep.Count	Protein Score	Protein Score C. I. %	Total Ion Score	Total Ion C. I. %
11	E6		hypothetical protein MDG893_17602 [Marinobacter algicola DG893]	gi 149377570	76214.5	4.46	24	415	100	180	100
13	E7		TonB-dependent siderophore receptor [Marinobacter algicola DG893]	gi 149375670	77163	4.64	33	538	100	240	100
14	E8		hypothetical protein MDG893_17602 [Marinobacter algicola DG893]	gi 149377570	76214.5	4.46	33	517	100	145	100
79	E9		ferredoxin--NADP+ reductase [Marinobacter algicola DG893]	gi 149376730	29200.6	5.1	15	467	100	295	100
82	E10		2-dehydro-3-deoxyglucarate aldolase [Marinobacter algicola DG893]	gi 149374383	24935.5	5.12	9	422	100	334	100

high confidence
low confidence
no confidence

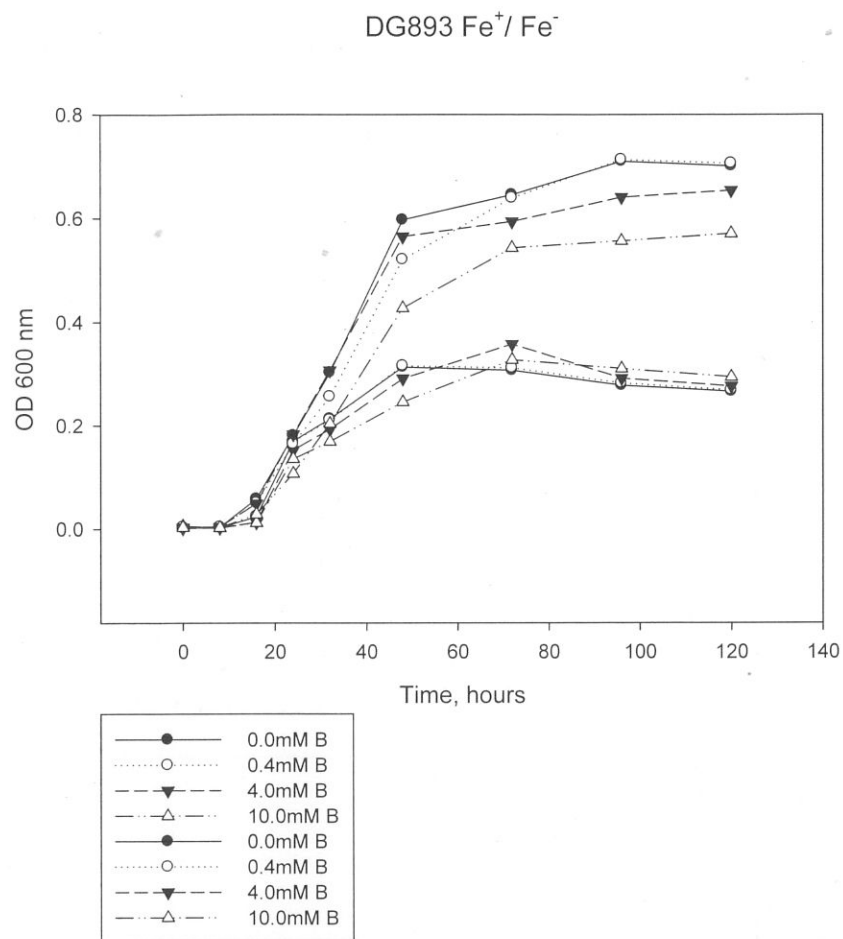


Figure S4. Growth curves for DG893 under various boron and iron concentrations as described in the Materials and Methods. The upper four curves represent growth under iron sufficient (10  $\mu$ M) conditions as a function of boron concentration while the lower four curves represent the growth under iron deficient (50 nM) conditions.