

TABLE S1. Bacterial strains and plasmids used in this study

Strain or plasmid	Relevant characteristic(s)	Source or reference
Strains		
<i>E. coli</i>		
TOP10	<i>recA1 endA1 gyrA96 thi-1 hsdR17</i> ($r_K^- m_K^+$) <i>supE44 relA1 ΔlacU169</i>	Invitrogen, Carlsbad, CA
<i>G. metallireducens</i>		
wild type (DSM 7210)	wild type	Lovley and Lonergan, 1990
ppsA	<i>ΔppsA ::Sp^r</i>	This work
ppcB	<i>ΔppcB ::Sp^r</i>	This work
<i>G. sulfurreducens</i>		
PCA (ATCC51573)	wild type	Caccavo et al, 1994
Plasmids		
pCR2.1-TOPO	PCR cloning vector; Ap ^r , Km ^r	Invitrogen, Carlsbad, CA
pRG5	Broad-host range <i>taclac</i> expression vector; Sp ^r	Kim <i>et al.</i> , 2005
pCM66	Broad-host range <i>lac</i> expression vector; Km ^r	Marx and Lidstrom, 2001
pCR2.1ppsAup5'+3'dn	pCR2.1TOPO carrying <i>ppsAup5'+3'dn</i> ; Ap ^r , Km ^r	This work
pCR2.1ΔppsA::Sp ^r	pCR2.1TOPO carrying <i>ΔppsA::Sp^r</i> ; Ap ^r , Km ^r	This work
pCR2.1ppcBup5'+3'dn	pCR2.1TOPO carrying <i>ppcBup5'+3'dn</i> ; Ap ^r , Km ^r	This work
pCR2.1ΔppcB::Sp ^r	pCR2.1TOPO carrying <i>ΔppcB::Sp^r</i> ; Ap ^r , Km ^r	This work
pCM66ppsA	pCM66 carrying <i>ppsA</i> ; Km ^r	This work
pCM66ppcB	pCM66 carrying <i>ppcB</i> ; Km ^r	This work

References

- Caccavo, F., Jr, Lonergan, D.J., Lovley, D.R., Davis, M., Stolz, J.F., and McInerney, M.J. (1994) *Geobacter sulfurreducens* sp. nov., a hydrogen- and acetate-oxidizing dissimilatory metal-reducing microorganism. *Appl Environ Microbiol* **60**: 3752-3759.
- Kim, B.C., Leang, C., Ding, Y.H., Glaven, R.H., Coppi, M.V., and Lovley, D.R. (2005) OmcF, a putative *c*-type monoheme outer membrane cytochrome required for the expression of other outer membrane cytochromes in *Geobacter sulfurreducens*. *J Bacteriol* **187**: 4505-4513.
- Marx, C. J., and Lidstrom, M. E. (2001) Development of improved versatile broad-host-range vectors for use in methylotrophs and other Gram-negative bacteria. *Microbiology* **147**: 2065-2075.
- Lovley D.R., and Lonergan, D.J. (1990) Anaerobic oxidation of toluene, phenol, and p-cresol by the dissimilatory iron-reducing organism, GS-15. *Appl Environ Microbiol* **56**: 1858-64.

TABLE S2. Primers used for RT-qPCR and mutants construction

Primer name	Purpose	Location	Sequence (5' to 3')
2143_46F	qRT-PCR <i>bamY</i>	Sense strand	TACTTCATCGACCGCAACAT
2143_226R		Antisense strand	AGACCTCCGTATCCAGCAGA
1539_1490F	qRT-PCR <i>bssA</i>	Sense strand	GCAGGCGTAAGACCCATAAG
1539_1595R		Antisense strand	CCCGAATAGGACCAGTCAAA
2100_475F	qRT-PCR <i>ppsA</i>	Sense strand	AGCGTGGTCACTGAAGGAAT
2100_613R		Antisense strand	AAAAGACGTAGGCGGCATAG
0899_139F	qRT-PCR <i>proC</i>	Sense strand	CGGGAGACCTACGGTATTGA
0899_293R		Antisense strand	ATGATGGAGATGACGAGCTTC
ppsAupBHI	PCR of <i>ppsA</i> 5' flanking region	Sense strand	CTCGGATCCGTCAGATGAACCAGT TTCGTACCA
ppsAupAvrII		Antisense strand	TGACCTAGGCATCGCGTGTCTCCCG AATGTACG
ppsAdnAvrII	PCR of <i>ppsA</i> 3' flanking region	Sense strand	TCACCTAGGTGAGAAAACCGGACA GAGGAGGCA
ppsAdnNXbaI		Antisense strand	AAGTCTAGAAAAGCTCGCGCCGGGC AGGTCCT
ACDL1	PCR of <i>ppcB</i> 5' flanking region	Sense strand	AGCCCGCAGATCTATAGCCTACCG GATCAACCAG
ACDL2		Antisense strand	ATCAGGCCTAGGCATACTGCCTCCT TATCTGTTG
ACDL3	PCR of <i>ppcB</i> 3' flanking region	Sense strand	AAGATGCCTAGGCGAGATGATCCC GCGTCTCAC
ACDL4		Antisense strand	AGTATTCAGATCTCGTATGGTGAT GGTGATGTCG
ACDL5	PCR of spectinomycin resistance cassette	Sense strand	ACCATACCTAGGATTCGAGCT CGGTACCCG
ACDL6		Antisense strand	ACCATACCTAGGGACCATGATTAC AAGCTTGC
ppsAComBHIUP	PCR of <i>ppsA</i> for complementation	Sense strand	CCTGGATCCCGTACATTCGGGAGA CACGCGATG
ppsAComSacIDN		Antisense strand	GACGAGCTCTGCCTCCTCTGTCCGG TTTTCTCA
ppcBComXbaIIUP	PCR of <i>ppcB</i> for complementation	Sense strand	GGTTCTAGACCAACAGATAAGGAG GCAGTATG
ppcBComSacIDN		Antisense strand	CACGAGCTCAGGGAGTGCTTGGAT GTCCTA