Table S4. Bacterial strains and plasmids used in this study

Strains	Genotype or markers; characteristics and uses	Reference or source
Shewanella oneidensis		
MR-1	Dissimilatory metal-reducing strain (Lake Oneida, NY)	Myers and Nealson (1988) *Science* 240:1319-1321.
Δ*ldhA*	*SO0968 (ldhA)* deletion derivative of *S. oneidensis* MR-1	This study
Δ*dld-II*	*SO1521 (lldD)* deletion derivative of *S. oneidensis* MR-1	This study
Δ*lldE*	*SO1520 (lldE)* deletion derivative of *S. oneidensis* MR-1	This study
Δ*lld*F	*SO1519 (lldF)* deletion derivative of *S. oneidensis* MR-1	This study
Δ*lldG*	*SO1518 (lldG)* deletion derivative of *S. oneidensis* MR-1	This study
Δ*dld-II*Δ*lldF*	*SO1519 (lldF)/SO1521 (lldD)* double deletion derivative of *S. oneidensis* MR-1	This study
Escherichia coli		
BL21/DE3	Host used for purification of *S. oneidensis* MR-1 LdhA (SO0968)	Stratagene, La Jolla, CA
DH10B (GeneHog)	Host used for overexpression of *E. coli* K12 *ykgEFG* and S. oneidensis MR-1 *dld-II* and *lldEFG* genes	Invitrogen, Carlsbad, CA
Top10	Host used for construction of pBBR1MCS-5 clones. Invitrogen F- *mcrA* Δ(*mrr-hsdRMS-mcrBC*) φ80*lacZ*ΔM15 Δ*lacX*74 *recA*1 *araD*139 Δ(*ara-leu*)7697 *galU galK rpsL* (*Str*^{r}) *endA*1 *nupG*	Invitrogen, Carlsbad, CA
EC100D *pir*-116	Host used for construction of pDS3.1 clones; F$^-$ *mcrA* Δ(*mrr-hsdRMS-mcrBC*) φ80d*lacZ*ΔM15 Δ*lacX*74 *recA*1 *endA*1 *araD*139 Δ(*ara*, *leu*)7697 *galU galK* λ$^-$ *rpsL nupG pir*-116(DHFR)	Epicenter Biotechnologies, Madison, WI
B2155 lpir	Donor strain used for conjugation with *S. oneidensis* MR-1; *thrB*1004 *pro thi strA hsdS lacZ* ΔM15 (F9 *lacZ* ΔM15 *lacIq traD*36 *proA*1 *proB*1) Δ*dapA*::*erm* (Erm^r) *pir*::RP4 (::*kan* (Km^r) from SM10)	Dehio and Meyer (1997) *J Bacteriol* 179:538-540.
WM3064	Donor strain used for conjugation with *S. oneidensis* MR-1; *thr*B1004 *pro thi rpsL hsdS lac*ZDM15 RP4–1360 (*araBAD*)567 *dapA*1341::[*erm pir*(wt)]	Saltikov, *et al*. (2003) *Appl Environ Microbiol* 69: 2800-2809.
Δ*lldD*	Deletion derivative of *E. coli* K-12; Db3605 (*lldD*), used for complementation analysis	Baba and Mori (2008) *Methods Mol Biol* 416:171-81.
Δ*dld*	*Deletion derivative of E. coli K-12; Δb2133 (Δdld),* used for complementation analysis	Baba and Mori (2008) *Methods Mol Biol* 416:171-81.
Bacillus subtilis		
168 Marburg	Type strain, *trpC2*	Culture collection of Japanese and European *B. subtilis* Functional Analysis Programs

yvfV::pMUTIN2	*trpC2*, pMUTIN2 insertion in *yvfV (Bsu3402), Em*^{r}	Culture collection of Japanese and European *B. subtilis* Functional Analysis Programs
yvfW::pMUTIN2	*trpC2*, pMUTIN2 insertion in *yvfW (Bsu3401), Em*^{r}	Culture collection of Japanese and European *B. subtilis* Functional Analysis Programs
yvbY::pMUTIN2	*trpC2*, pMUTIN2 insertion in *yvbY (Bsu3401), Em*^{r}	Culture collection of Japanese and European *B. subtilis* Functional Analysis Programs
Plasmids		
pBAD-TOPO	4.1-kb vector used for gene expression in *E. coli*; Amp^r, *araC*	Invitrogen, Carlsbad, CA
pDS3.0	Suicide vector derived from pCDV224; Amp^r, Gm^r, *sacB*	Wan, *et al*. (2004) *J Bacteriol* 186:8385-8400.
pBBR1MCS-5	5.1-kb broad-host range plasmid; Gm^r, *lac*Z	Kovach, *et al*. (1994) *BioTechniques* 16, 800–802.
pMCSG7	Vector used for cloning *ldhA*	Stols, *et al*. (2002) *Protein Expr Purif* 25, 8-15.
pBAD (SO1521)	SO1521 gene was cloned into pBAD-TOPO	This study
pBAD (SO1518-19-20)	2.7-kb PCR fragment containing *lldEFG* operon was cloned into pBAD-TOPO	This study
pBAD (SO1519-20)	2.1-kb PCR fragment containing *lldEF* genes was cloned into pBAD-TOPO	This study
pBAD (SO1520)	SO1520 gene was cloned into pBAD-TOPO	This study
pBAD (YkgEFG)	2.8-kb PCR fragment containing E. coli K-12 ykgEFG genes (b0306-8) was cloned into pBAD-TOPO	This study
pBBR*lldEFG*	*lldEFG* 2.7 kb *Bam*HI-*Pme*I restriction fragment of pBAD-*lldEFG* cloned in the *Bam*HI-*Pvu*II site of pBBR1MCS-5	This study
pBBR*dld-II*	*dld-II* PCR product cloned into the x site of pBBR1MCS-5	This study
pDSD*ldhA*	2-kb fusion PCR fragment encoding DNA flanking *ldhA* cloned in pDS3.0; used to delete *ldhA* from the MR-1 genome	This study
pDSD*dld-II*	2-kb fusion PCR fragment encoding DNA flanking *dld-II* cloned in pDS3.0; used to delete *dld-II* from the MR-1 genome	This study
pDSD*lldE*	2-kb fusion PCR fragment encoding DNA flanking *lldE* cloned in pDS3.0; used to delete *lldE* from the MR-1 genome	This study
pDSD*lldF*	2-kb fusion PCR fragment encoding DNA flanking *lldF* cloned in pDS3.0; used to delete *lldF* from the MR-1 genome	This study
pDSD*lldG*	2-kb fusion PCR fragment encoding DNA flanking *lldG* cloned in pDS3.0; used to delete *lldG* from the MR-1 genome	This study