

Table S1: Primers used in this study

| Construction of pNPTS138-R6KT | | |
|---|---|-------------------------|
| Primer name | Sequence (5' to 3') | Restriction site |
| <i>BssSI</i> -R6KT-for | GCA <u>TCA CGA GCC</u> TTA AGG TAT ACT TTC CGC TGC | <i>BssSI</i> |
| <i>DraIII</i> -R6KT-rev | GAA <u>TCA CTA CGT GCC</u> GGT TGT CAG CCG TTA AGT G | <i>DraIII</i> |
| In-frame Deletions in <i>Shewanella sp.</i> Arc-coding genes | | |
| Primer name | Sequence (5' to 3') | Restriction site |
| <u>SO 0577 (<i>arcS</i>)</u> | | |
| <i>XbaI</i> -ΔSO_0577-us-for | CGT CTA GAG CGT TGT TCG TTC ACG CTT GG | <i>XbaI</i> |
| ΔSO_0577-us-rev | ATG CTT GTG CTC TTC GCG CTG CTC CAT CT | |
| ΔSO_0577-ds-for | CGC GAA GAG CAC AAG CAT AAT CAC CGT TAA TTG TTC | |
| <i>NcoI</i> -ΔSO_0577-ds-rev | <u>ATC CAT GGC</u> GTT TTT CAG CGG CAT CTT GGG | <i>NcoI</i> |
| ΔSO_0577-chk-for | CAG CGC AAA CCT GTA TCT GA | |
| ΔSO_0577-chk-rev | CAC GAG GTT GAT ACC CAT CC | |
| <i>SacI</i> -RBS-SO_0577-for | <u>TGA GCT CAG</u> GAG GAT TTA TAT GGA GCA GCG CGA AGA GC | <i>SacI</i> |
| <i>XbaI</i> -RBS-SO_0577-rev | <u>GTC TAG ATT</u> AAC GGT GAT TAT GCT TGT GTT TAA TCC | <i>XbaI</i> |
| <u>SO 1327 (<i>hptA</i>)</u> | | |
| <i>PspOMI</i> -ΔSO_1327-us-for | TAT <u>AGG GCC CAA</u> ACA CCG CTC GAT TAT ATG GCG | <i>PspOMI</i> |
| ΔSO_1327-us-rev | GCT TTA GCC TGT AAT TCA ACT GTG GCC ATC GAG G | |
| ΔSO_1327-ds-for | GTT GAA TTA CAG GCT AAA GCC TAA TTT GTT TCG C | |
| <i>EcoRI</i> -ΔSO_1327-ds-rev | <u>CGA ATT CCT</u> GAG TAG AAA CGG CGC AAT GG | <i>EcoRI</i> |
| SO_1327-chk-for | CGA TGT ATG GTT AGA GCT GGG C | |
| SO_1327-chk-rev | GCA TCG AGT AAA CGT TCC GTC G | |
| <i>KpnI</i> -RBS-SO_1327-for | <u>CTG GTA CCA</u> GGA GGA TTA CGA TGG CCA CAG TTG AAT TAG AG | <i>KpnI</i> |
| <i>XbaI</i> -SO_1327-rev | <u>GTC TAG ATT</u> AGG CTT TAG CCT GTA AGA ATT GC | <i>XbaI</i> |

| Primer name | Sequence (5' to 3') | Restriction site |
|--|--|------------------|
| SO_3988 (<i>arcA</i>) | | |
| <i>Bam</i> HI-ΔSO_3988-us-for | TGG ATC CAC GGC GTT TGA TAA TGC TGC C | <i>Bam</i> HI |
| ΔSO_3988-us-rev | GCA GAA ACG GTG CGG ATT TTG CAT ATT AAG TAC CT | |
| ΔSO_3988-ds-for | AAT CCG CAC CGT TTC TGC GGT AAC TTA GAA GAC | |
| <i>Pst</i> I-ΔSO_3988-ds-rev | CAT CTG CAG CCG ATT GGC GTT TGT ATG ACA CC | <i>Pst</i> I |
| SO_3988-chk-for | GGG TTA TGG GCG GTA ATT ACA GC | |
| SO_3988-chk-rev | GCG ATT TAT GGC CAC AGC TAC G | |
| <i>Kpn</i> I-RBS-SO_3988-for | CAG GTA CCA GGA GGA TAA AGA TGC AAA ATC CGC ACA TTC TGA TCG | <i>Kpn</i> I |
| <i>Xba</i> I-RBS-SO_3988-rev | CGC TCT AGA TTA GTC TTC TAA GTT ACC GCA GAA ACG | <i>Xba</i> I |
| SputCN32_3300 (<i>arcS</i>) | | |
| <i>Sal</i> I-ΔSputCN32_3300-us-for | CTA GTC GAC TAC CCT CAA TGA CCT TCC CTT GC | <i>Sal</i> I |
| ΔSputCN32_3300-us-rev | TCG AGT GAG TGG ATC CAG CAC AAG AAC CAG C | |
| ΔSputCN32_3300-ds-for | CTG GAT CCA CTC ACT CGA TTT CAT CCA CTA CCC | |
| <i>Eco</i> RI-SputCN32_3300-ds-rev | CGA ATT CAG TCG ATT AAC TTT ATG CGT GGC C | <i>Eco</i> RI |
| SputCN32_3300-chk-for | ACG TAA GCT GGA CAT CAA CAT CG | |
| SputCN32_3300-chk-rev | CGG GCA GTC TCA ATT ACA TTA TGG | |
| Construction of pBAD33-<i>arcB</i> (<i>E.coli</i> K12-MG1655) to complement <i>S. oneidensis</i> MR-1 <i>arc</i>-deletion mutants | | |
| Primer name | Sequence (5' to 3') | Restriction site |
| <i>Kpn</i> I-RBS-ArcB(MG1655)-for | CGG TAC CAG GAG GTC CCT AAT GAA GCA AAT TCG TCT GC | <i>Kpn</i> I |
| <i>Xba</i> I-ArcB (MG1655)-rev | ATC TAG AGC CGG GGT CAT TTT TTA GTG GC | <i>Xba</i> I |

Quantitative Realtime PCR of selected genes regulated by ArcS

| Primer name | Sequence (5' to 3') | Restriction site |
|----------------------------|-------------------------------------|------------------|
| recA-Q-PCR-651-for | TCA CAT CAA CCG CAC CAG AAC G | |
| recA-Q-PCR-781-rev | CGC TCT TGA TCC TAT CTA CGC G | |
| csgA-Q-PCR-971-for | CGT ATT GTT TGA TAT CGC CGT CG | |
| csgA-Q-PCR-1109-rev | CAA TTA GGT GAG CTG AAC GAA AGC | |
| csgB-Q-PCR-249-for | TTG GTT TGC AGT TCC TTG CTG C | |
| csgB-Q-PCR-348-rev | TAT CTG ACA CCC ACC CAT GCG | |
| dmsA-Q-PCR-134-for | GTC ATC TTG CTT GGT TAA CTG TGG | |
| dmsA-Q-PCR-226-rev | GGT GGT TGC CAT ACT CAT CAT TGG | |
| dmsB-Q-PCR-113-for | CGA TGT GAT GAA TAA TGG TGT CGC | |
| dmsB-Q-PCR-219-rev | TAC AAC CAA TAG ACA TGT AGT AGG CAA | |
| aggA-Q-PCR-109-for | GCA CAC ACA CTC GAT ACA AAC CC | |
| aggA-Q-PCR-210-rev | CCA TAA CCA CCA GTG AGA TCA ACT | |
| SO_4179-Q-PCR-1050-for | GTA AAC CTG TTC GAT AAA GGA GTC G | |
| SO_4179-Q-PCR-PCR-1148-rev | TTT CGT GCA GAT CCC TCG GC | |
| SO_4180-Q-PCR-1197-for | ACA CTT ATC TTG TTC TTC AGC TTG C | |
| SO_4180-Q-PCR-1307-rev | ATT GGT CCC TGT CAT CAG CAC C | |
| rpoS-Q-PCR-819-for | TGT GGC ATC AAG ATT TTT TTG CAG G | |
| rpoS-Q-PCR-908-rev | TGA TAC CGC TGA GTT TGA TCT CG | |
| SO_2427-2009-Q-PCR-for | CTA CCG TTC ATA TCA AAC TGG AAG C | |
| SO_2427-2126-Q-PCR rev | GCG TTG AAA TCC TGA AAG ATG GC | |

Overexpression of *S. oneidensis* MR-1 Arc-components

| Primer name | Sequence (5' to 3') | Restriction site |
|----------------------------------|--|------------------|
| <i>BglII</i> -NOE-SO_0577-for | CAT GCA <u>AGA TCT</u> GTA CCC ATA AGG ATA TTA CCC GCC | <i>BglII</i> |
| <i>HindIII</i> -SO_0577-rev | TCA <u>AGC TTT</u> TAA CGG TGA TTA TGC TTG TGT TTA ATC | <i>HindIII</i> |
| <i>BglII</i> -NOE-arcA-for | CAG <u>GTA CCT</u> TAG TCT TCT AAG TTA CCG CAG AAA CG | <i>BglII</i> |
| <i>KpnI</i> -arcA-Rev | ACT GGA <u>AGA TCT</u> CGA TAT CGA TAT ATT TAG TTG ACG ATC ATG A | <i>KpnI</i> |
| <i>EcoRI</i> -hptA-for | CGA <u>ATT CAT</u> GGC CAC AGT TGA ATT AGA GAC AAT C | <i>EcoRI</i> |
| <i>XhoI</i> -hptA-rev | <u>ACT CGA GTT</u> AGG CTT TAG CCT GTA AGA ATT GC | <i>XhoI</i> |
| <i>XhoI</i> -SO_3457-181-for | <u>TCT CGA GGC</u> CGC CTT TAT TAT CGT GTT GAT TG | <i>XhoI</i> |
| <i>EcoRI</i> -SO_3457-C-Term-rev | <u>CGA ATT CTT</u> AAA GAA GCC CGT TTT TTT GGT CAT C | <i>EcoRI</i> |
| arcA-OL-D54N-for | ACC TCG TGG TTA TGA ACA TTA ACC | |
| arcA-OL-D54N-rev | GGT TAA TGT TCA TAA CCA CGA GGT | |
| hptA-OL-H62A-for | CTC GGA AGC CGC TAA ATT TAA AGG | |
| hptA-OL-H62A-rev | CCT TTA AAT TTA GCG GCT TCC GAG | |
| Seq33-Fw-100 | GGC GTC CAC ACT TTG CTA TGC | |
| pBAD-HisA-rev | CAG TTC CCT ACT CTC GCA TG | |
| pGEX4T1-for | GGG CTG GCA AGC CAC GTT TGG TG | |
| pGEX4T1-rev | CCG GGA GCT GCA TGT GTC AGA GG | |

Bacterial Two Hybrid on *S. oneidensis* MR-1 Arc-System

| Primer name | Sequence (5' to 3') | Restriction site |
|-----------------------|--|------------------|
| pKT25-for | CAC TGA CGG CGG ATA TCG ACA TGT T | |
| pKT25-rev | CCG CCG GAC ATC AGC GCC ATT C | |
| pUT18-for | CCA GGC TTT ACA CTT TAT GCT TCC | |
| pUT18-rev | GAC GCG CCT CGG TGC CCA CTG C | |
| pKNT25-for | CCC AGG CTT TAC ACT TTA TGC TTC C | |
| pKNT25-rev | GTT TTT TTC CTT CGC CAC GGC CTT G | |
| pUT18C-for | CGG CGT GCC GAG CGG ACG TTC G | |
| pUT18C-rev | TCA GCG GGT GTT GGC GGG TGT C | |
| PAS-SO_0577-for | GTC TAG AGC TAC TGG TGA GCC GAA TTT TTG AG | <i>XbaI</i> |
| HisKA-SO_0577-for | GTC TAG AGG GTA CCC ATA AGG ATA TTA CCC GC | <i>XbaI</i> |
| Rec-SO_0577-rev | GAT <u>CCC GGG</u> AAC GGT GAT TAT GCT TGT GTT TAA TCC A | <i>XmaI</i> |
| Hpt-SO_1327-for | GTC TAG AGA TGG CCA CAG TTG AAT TAG AGA CAA T | <i>XbaI</i> |
| Hpt-SO_1327-rev | GAT <u>CCC GGG</u> AGG CTT TAG CCT GTA AGA ATT GCT TT | <i>XmaI</i> |
| HAMP-SO_3457-for | GTC TAG AGC TCG AAC AAC ACA GAG CCG C | <i>XbaI</i> |
| Hpt-SO_3457-rev | GAT <u>CCC GGG</u> ATT AAA GAA GCC CGT TTT TTT GGT CAT C | <i>XmaI</i> |
| ArcA-SO_3988-KT25-for | GAC <u>CTG CAG</u> TGC AAA ATC CGC ACA TTC TGA TCG | <i>PstI</i> |
| ArcA-SO_3988-for | GAC <u>CTG CAG</u> TAT GCA AAA TCC GCA CAT TCT GAT CG | <i>PstI</i> |
| ArcA-SO_3988-rev | CGG <u>ATC CCA</u> GTC TTC TAA GTT ACC GCA GAA ACG | <i>BamHI</i> |
| PAS-arcB-E.coli-for | GAT <u>CCC GGG</u> AAA GCG CAT CCT GAT ACC GCT T | <i>XmaI</i> |
| HisKA-arcB-E.coli-for | GAT <u>CCC GGG</u> ATC ATT TTT TAG TGG CTT TTG CCA CC | <i>XmaI</i> |
| Hpt-arcB-E.coli-rev | GTC TAG AGA CCG AGC GTA AGC GGT ATC AG | <i>XbaI</i> |