Supplementary materials

Table S1 The recipe of LB

Materials	Weight(g)
Tryptone	10
Yeast Extract	5
NaCl	10

Notes: Dissolve components in 1 L of distilled water and adjust pH to 7.2.

Table S2 Formulation of DM to test the effect of Cl^-/Na^+

Materials	Quantity
KNO_3	2.166g
$MgSO_4 \cdot 7H_2O$	0.2g
K_2HPO_4	1.0g
NaAc	10g
the trace-element solution	10mL
$NaCl/Na_2SO_4$(0‰, 5‰, 15‰, 25‰, 40‰)	0g, 5g, 15g, 25g, 40g

Notes: All these materials are dissolved in 1 L of distilled water and set three parallel for each concentration of $NaCl/Na_2SO_4$. The initial pH of all media was set to 7.2, and all media were autoclaved for 20 minutes at 121 °C.

Table S3 The composition of the trace-element solution

Materials	Weight(g)
EDTA	50
$ZnSO_4 \cdot 7H_2O$	3.92
$CaCl_2$	5.5
$MnCl_2$	3.22
$FeSO_4 \cdot 7H_2O$	5.0
$(NH_4)_6Mo_7O_2$	1.1
$CuSO_4 \cdot 5H_2O$	1.57
$CoCl_2 \cdot 6H_2O$	1.61

Notes: All these materials are dissolved in 1 L of distilled water and adjust pH to 7.2.

Table S4 Formulation of basic $NaCl/Na_2SO_4$ DM for qPCR

Materials	Quantity
KNO_3	2.166g
$MgSO_4 \cdot 7H_2O$	0.2g
KAc	11.964g
the trace-element solution	10mL
$NaCl/Na_2SO_4$	0.3M, 0.6M, 0.9M

Notes: All these materials are dissolved in 1 L of distilled water. The initial pH of all media was set to 7.2, and all media were autoclaved for 20 minutes at 121 °C.

Table S5 Names and sequences of primers for qPCR amplification

Abbreviation	Name	Sequence (5'→3')
16S rRNA	16S ribosomal RNA	CCTACGGGAGGCAGCAG
		ATTACCGCGGCTGCTGG
NapA	periplasmic dissimilatory nitrate reductase	GCAACGTAGCCAAGTACAG
		TTCGCAAGAGCAGATCCAG
NasA	assimilatory nitrate reductase	AACGCCATCATTAACTGCC
		TGCCAGAAATCCGAAACCC
NasB	assimilatory nitrate reductase (electron transfer subunit)	TGATTACCCACGATGTGGAC
		ACAGGAACGACAACACCTC
NirD	nitrite reductase large subunit	TTACCCTGGAGAACCGCTAC
		GCCATTGCCACACACATAC
NirX	nitrite reductase	TGCCAAGATTGTTCGCTCC
		GCCGTAACTGATAAACGCC
NorB	nitric oxide reductase	GCAACCCACGATAACCAAG
		GAAGGAGAACAGCCACAATAC
NosZ	nitrous-oxide reductase	GGTGAAGGAGGGTGATGAAG
		GGAGAGCATGACAGAACCAG
GLUD	NAD-glutamate dehydrogenase	CCTTCAACCACATCCACATC
		CCCAGCAGCTTTTTCATTTC
GLUS	glutamate synthase large subunit	CAGGAATATCACGCCTTCAAC
		ATTGACTGGATGCCCTCAC

AT	2acetyltransferase _F	AACCGAAGCCTATATCGCC
	2acetyltransferase _R	CCCACCTTGTTAAGAATGACC
CS	2citrate synthase_F	CCCAGCGAAGAAGAAAACAAG
	2citrate synthase_R	CGTGATAGAACGCAGACAG
CT	2carboxyl transferase_F	ATCACCGACGAAATCAGCC
	2carboxyl transferase_R	ATGCAGCTCGTCAAAATCC
AK	2acetate kinase_F	GCTTACCGATACGCACTACC
	2acetate kinase_R	TGATGCTACAACCGTTACCC
MT	2S-malonyltransferase_F	GCTCAAGCAGCTATACTCAC
	2S-malonyltransferase_R	TCAGCCAGAGAATCAGGAC
NhaB	sodium/proton antiporter	GCAACTTCTTCTACAACGACC
		GCAGTAGTCATCCAGAATGCC
CL	chloride channel	AATGGCCACTGGAGCATTTC
	protein(Marinbacter)	ATGAACGATGCCGACTTTGC
OSMC	osmotically inducible	GCAACTTCTTCTACAACGACC
	peroxiredoxin	GCAGTAGTCATCCAGAATGCC