

Supplementary Table 2. Identification of multi-stress response-associated genes through RAST SEEDs annotation

Subststem	1 (52)	2 (48)	3 (46)	4 (45)	5 (45)	5 (24)
Osmoregulation	Aquaporin Z; Glycerol uptake facilitator protein	Glycerol uptake facilitator protein	Glycerol uptake facilitator protein	Aquaporin Z; Glycerol uptake facilitator protein		
Choline and betaine uptake and betaine biosynthesis		Glycine betaine ABC transport system, ATP- binding protein OpuAA (EC 3.6.3.32); Glycine betaine ABC transport system, permease protein OpuAB	Glycine betaine transporter OpuD; Glycine betaine ABC transport system, glycine betaine- binding protein OpuAC; Sarcosine oxidase alpha subunit (EC 1.5.3.1); Glycine betaine ABC transport system, ATP-binding protein OpuAA (EC 3.6.3.32); Sarcosine oxidase beta subunit (EC 1.5.3.1); Glycine betaine ABC transport system, permease protein OpuAB	Glycine betaine ABC transport system, glycine betaine-binding protein OpuAC; Glycine betaine ABC transport system, ATP- binding protein OpuAA (EC 3.6.3.32); Glycine betaine ABC transport system, permease protein OpuAB; L-proline glycine betaine ABC transport system permease protein ProW (TC 3.A.1.12.1)	Choline ABC transport system, permease protein OpuBB; Glycine betaine ABC transport system, glycine betaine- binding protein OpuAC; ATP- binding protein OpuBA, OpuAA (EC 3.6.3.32); Choline-binding protein OpuBC; Glycine betaine transporter OpuD; Permease protein OpuAB	Glycine betaine transporter OpuD; High- affinity choline uptake protein BetT
Synthesis of osmoregulated periplasmic glucans	Cyclic beta-1,2- glucan synthase (EC 2.4.1.-)			Cyclic beta-1,2- glucan synthase (EC 2.4.1.-)		
Protection from Reactive Oxygen Species	Superoxide dis- mutase [Cu-Zn] precursor (EC 1.15.1.1); Super- oxide dismutase [Fe] (EC 1.15.1.1)	Superoxide dis- mutase [Cu-Zn] precursor (EC 1.15.1.1); Super- oxide dismutase [Fe] (EC 1.15.1.1)	Superoxide dismutase [Cu- Zn] precursor (EC 1.15.1.1); Superoxide dismutase [Fe] (EC 1.15.1.1)		Superoxide dis- mutase [Fe] (EC 1.15.1.1)	Cytochrome c551 peroxidase (EC 1.11.1.5); Superoxide dismutase [Fe] (EC 1.15.1.1)

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Supplementary Table 2. Continued

Subststem	1 (52)	2 (48)	3 (46)	4 (45)	5 (45)	5 (24)
Glutathione: Non-redox reactions	Lactoylglutathione lyase (EC 4.4.1.5)	Lactoylglutathione lyase (EC 4.4.1.5)	Lactoylglutathione lyase (EC 4.4.1.5); Hydroxyacylglutathione hydro-lase (EC 3.1.2.6)	Lactoylglutathione lyase (EC 4.4.1.5); Glutathione S-transferase, omega (EC 2.5.1.18)		Lactoylglutathione lyase (EC 4.4.1.5)
Glutathione: Redox cycle	Glutaredoxin; Glutathione peroxidase (EC 1.11.1.9)	Glutaredoxin; Glutathione peroxidase (EC 1.11.1.9)	Glutaredoxin; Glutathione peroxidase (EC 1.11.1.9)	Glutathione peroxidase (EC 1.11.1.9)	Glutathione peroxidase (EC 1.11.1.9)	Glutathione peroxidase (EC 1.11.1.9)
Glutaredoxins	Glutaredoxin	Glutaredoxin; Glutaredoxin-related protein	Glutaredoxin- no subcategory	Glutaredoxin-relat- ed protein	Flavoheмоprotein (Hemoglobin-like protein) (Flavoheмоglobin) (Nitric oxide dioxygenase) (EC 1.14.12.17)	
CoA disulfide thiol-disulfide redox system			CoA-disulfide reductase (EC 1.8.1.14)		CoA-disulfide reductase (EC 1.8.1.14)	
Uptake of selenate and selenite	Sulfate and thiosulfate import ATP-binding protein CysA (EC 3.6.3.25)	Sulfate and thiosulfate import ATP-binding protein CysA (EC 3.6.3.25)	Sulfate and thiosulfate import ATP-binding protein CysA (EC 3.6.3.25)			
SigmaB stress responce regulation	Serine phosphatase RsbU, regulator of sigma subunit	RsbS, negative regulator of sigma-B; Anti-sigma B factor RsbT; Serine-protein kinase RsbW (EC 2.7.11.1); Serine phosphatase RsbU, regulator of sigma subunit; RsbR, positive regulator of sigma-B; RNA polymerase sigma factor SigB	Serine-protein kinase RsbW (EC 2.7.11.1); Serine phosphatase RsbU, regulator of sigma subunit; RNA polymerase sigma factor SigB;	RsbS, negative regulator of sigma-B; Anti-sigma B factor RsbT; Serine-protein kinase RsbW (EC 2.7.11.1); Serine phosphatase RsbU, regulator of sigma subunit; RsbR, positive regulator of sigma-B; RNA polymerase sigma factor SigB	RsbS, negative regulator of sigma-B; Anti-sigma B factor RsbT; Serine-protein kinase RsbW (EC 2.7.11.1); Serine phosphatase RsbU, regulator of sigma subunit; RNA polymerase sigma factor SigB; Anti-sigma B factor antagonist RsbV	

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Subststem	1 (52)	2 (48)	3 (46)	4 (45)	5 (45)	5 (24)
Hfl operon	RNA-binding protein Hfq	RNA-binding protein Hfq	RNA-binding protein Hfq	RNA-binding protein Hfq	RNA-binding protein Hfq	RNA-binding protein Hfq
Dimethylarginine metabolism	Ornithine aminotransferase (EC 2.6.1.13); NG,NG-dimethylarginine dimethylamino-hydrolase 1 (EC 3.5.3.18)	Ornithine aminotransferase (EC 2.6.1.13); NG,NG-dimethylarginine dimethylamino-hydrolase 1 (EC 3.5.3.18)	Ornithine aminotransferase (EC 2.6.1.13); NG,NG-dimethylarginine dimethylamino-hydrolase 1 (EC 3.5.3.18);	Ornithine aminotransferase (EC 2.6.1.13); NG,NG-dimethylarginine dimethylamino-hydrolase 1 (EC 3.5.3.18);		
Bacterial hemoglobins	diguanylate cyclase/phosphodiesterase (GGDEF & EAL domains) with PAS/PAC sensor(s); Hemoglobin-like protein HbO	diguanylate cyclase/phosphodiesterase (GGDEF & EAL domains) with PAS/PAC sensor(s); Cyanoglobin; Hemoglobin-like protein HbO	diguanylate cyclase/phosphodiesterase (GGDEF & EAL domains) with PAS/PAC sensor(s); Hemoglobin-like protein HbO	diguanylate cyclase/phosphodiesterase (GGDEF & EAL domains) with PAS/PAC sensor(s); Cyanoglobin; Hemoglobin-like protein HbO	diguanylate cyclase/phosphodiesterase (GGDEF & EAL domains) with PAS/PAC sensor(s); Flavohemoprotein (Hemoglobin-like protein) (Flavohe-moglobin) (Nitric oxide dioxygenase) (EC 1.14.12.17); Cyanoglobin; Hemoglobin-like protein HbO	diguanylate cyclase/phosphodiesterase (GGDEF & EAL domains) with PAS/PAC sensor(s); Hemoglobin-like protein HbO
Carbon starvation	Carbon starvation protein A	Carbon starvation protein A	Carbon starvation protein A	Carbon starvation protein A	Carbon starvation protein A	
Periplasmic stress response	Intramembrane protease RasP/YluC, implicated in cell division based on FtsL cleavage	Intramembrane protease RasP/YluC, implicated in cell division based on FtsL cleavage	Intramembrane protease RasP/YluC, implicated in cell division based on FtsL cleavage	Intramembrane protease RasP/YluC, implicated in cell division based on FtsL cleavage	Intramembrane protease RasP/YluC, implicated in cell division based on FtsL cleavage	Intramembrane protease RasP/YluC, implicated in cell division based on FtsL cleavage
Tellurite resistance: Chromosomal determinants		Tellurite resistance protein TehB	Tellurite resistance protein TehB		Tellurite resistance protein TehB	

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Flavo-haemoglobin					ABC-type Fe ³⁺ -siderophore transport system, permease 2 component; Flavohemoprotein (Hemoglobin-like protein) (Flavohemoglobin) (Nitric oxide dioxygenase) (EC 1.14.12.17)	
Glutathionylspermidine and Trypanothione						Similarity with glutathionylspermidine synthase (EC 6.3.1.8), group 2

Strains: 1, *Neobacillus endophyticus* BRMEA1^T; 2, *N. drentensis* DSM 15600^T; 3, *N. mesonae* FJAT-13985^T; 4, *N. cucumis* DSM 101566^T; 5, *N. notoginsengisoli* SYP-B691^T; 6, *N. niacini* DSM 2923^T.