

Table S8. Unique genesets in the pan-genome of *Ca. Nitrospirillum RS* (relative to the genome of *Nitrospina gracilis*). Genes discussed in the main text or depicted in Figure 6 are highlighted in red.

Gene locus IDs	Predicted function	Remarks
NspA02_00001	radical SAM domain-containing protein	
NspA02_00002	hypothetical protein	
NspA02_00003	hypothetical protein	
NspA02_00004	lipopolysaccharides biosynthesis glycosyltransferase protein	
NspA02_00008	Pyruvate dehydrogenase E1 component subunit alpha protein	
NspA02_00010	UDP-4-amino-4-deoxy-L-arabinose--oxoglutarate aminotransferase protein	
NspA02_00011	Putative mannose-1-phosphate guanyltransferase protein	
NspA02_00013	RNA pyrophosphohydrolase protein	
NspA02_00014	Release factor glutamine methyltransferase protein	
NspA02_00015	Methyltransferase domain protein	
NspA02_00016	putative membrane protein	
NspA02_00017	hypothetical protein	
NspA02_00018	polysaccharide transporter protein	
NspA02_00019	hypothetical protein	
NspA02_00020	hypothetical protein	
NspA02_00023	Cyanobacterial phytochrome A protein	
NspA02_00039	N-alpha-acetyl-L-24-diaminobutyrate deacetylase protein	
NspA02_00040	hypothetical protein	
NspA02_00043	hypothetical protein	
NspA02_00044	hypothetical protein	
NspA02_00045	putative RNA polymerase sigma-C factor protein	
NspA02_00051	TPR repeat domain containing protein	
NspA02_00057	ATPase-like protein	
NspA02_00058	Alginate biosynthesis protein AlgK	
NspA02_00059	heat shock protein DnaJ domain-containing protein	
NspA02_00061	hypothetical protein	
NspA02_00064	Iron-dependent oxidoreductase EgtB protein	
NspA02_00070	hypothetical protein	
NspA02_00071	Sensory rhodopsin II transducer protein	
NspA02_00072	Nitrogen fixation protein NifU	
NspA02_00073	hypothetical protein	
NspA02_00074	hypothetical protein	
NspA02_00076	transposase of ISGsu5 protein	
NspA02_00077	hypothetical protein	
NspA02_00078	adventurous gliding protein T	
NspA02_00079	hypothetical protein	
NspA02_00080	hypothetical protein	
NspA02_00082	Cyclic nucleotide-binding domain protein	
NspA02_00085	Dolichyl-phosphate-mannose-protein domain containing protein	
NspA02_00086	putative 1-acyl-sn-glycerol-3-phosphate acyltransferase protein	
NspA02_00087	hypothetical protein	
NspA02_00088	hypothetical protein	
NspA02_00089	aspartyl protease protein	
NspA02_00092	hypothetical protein	
NspA02_00093	membrane YfhO protein	
NspA02_00094	putative spermidine synthase protein	
NspA02_00095	membrane YfhO protein	
NspA02_00096	dolichol-phosphate mannosyltransferase protein	
NspA02_00098	serine O-acetyltransferase protein	
NspA02_00103	TPR repeat domain containing protein	
NspA02_00107	Group 1 hemoglobin GlnN protein	
NspA02_00108	PilZ domain protein	
NspA02_00110	hypothetical protein	
NspA02_00111	type IV pilus minor pilin PilW protein	
NspA02_00112	hypothetical protein	
NspA02_00115	putative type IV pilus assembly protein PilP	
NspA02_00116	pilus assembly protein PilO	
NspA02_00117	hypothetical protein	
NspA02_00119	hypothetical protein	
NspA02_00120	hypothetical protein	
NspA02_00124	hypothetical protein	
NspA02_00125	hypothetical protein	
NspA02_00131	hypothetical protein	
NspA02_00145	hypothetical protein	
NspA02_00146	hypothetical protein	
NspA02_00147	hypothetical protein	
NspA02_00149	Magnesium-protoporphyrin IX monomethyl ester oxidative cyclase protein	
NspA02_00150	Mtn3-saliva-related transmembrane protein conserved region	
NspA02_00151	hypothetical protein	
NspA02_00156	hypothetical protein	
NspA02_00160	hypothetical protein	
NspA02_00161	oxidoreductase protein	
NspA02_00162	myo-inositol 2-dehydrogenase protein	
NspA02_00163	flagellar protein FlaG protein	
NspA02_00164	Flagellin protein	
NspA02_00166	NAD+ kinase protein	
NspA02_00179	SPOR domain-containing protein	
NspA02_00184	Protein of unknown function DUF58	
NspA02_00186	Ribosomal RNA large subunit methyltransferase M protein	
NspA02_00187	hypothetical protein	
NspA02_00188	hypothetical protein	
NspA02_00190	hypothetical protein	
NspA02_00191	Sensor histidine kinase AruS protein	
NspA02_00195	hypothetical protein	
NspA02_00196	hypothetical protein	
NspA02_00197	Cyanobacterial phytochrome A protein	
NspA02_00198	hypothetical protein	

NspA02_00199 Transcriptional regulatory protein ZraR
NspA02_00200 hypothetical protein
NspA02_00203 Chaperone protein DnaJ
NspA02_00205 Undecaprenyl-phosphate 4-deoxy-4-formamido-L-arabinose transferase protein
NspA02_00206 Lipid-A-disaccharide synthase protein
NspA02_00207 hypothetical protein
NspA02_00208 phosphoglycerol transferase protein
NspA02_00209 hypothetical protein
NspA02_00218 hypothetical protein
NspA02_00220 Serine-threonine-protein kinase pkn1
NspA02_00231 Cellulose synthesis regulatory protein
NspA02_00240 hypothetical protein
NspA02_00244 tRNA-lysine synthase protein
NspA02_00245 Chaperone SurA protein
NspA02_00247 Transcription-repair-coupling factor protein
NspA02_00249 Chromosomal replication initiator protein DnaA
NspA02_00250 transposase protein
NspA02_00252 hypothetical protein
NspA02_00253 hypothetical protein
NspA02_00254 hypothetical protein
NspA02_00255 hypothetical protein
NspA02_00256 metal dependent phosphohydrolase protein
NspA02_00257 metal-dependent phosphohydrolase HDOD domain-containing protein
NspA02_00258 Sensory rhodopsin II transducer protein
NspA02_00259 Group 1 hemoglobin Gln protein
NspA02_00260 sodium-glucose cotransport protein
NspA02_00262 Para-aminobenzoate synthase protein
NspA02_00278 ISCja2 transposase protein
NspA02_00279 Putative transposase y4zB protein
NspA02_00280 Chemotaxis response regulator protein-glutamate methyltransferase 1
NspA02_00281 hypothetical protein
NspA02_00282 hypothetical protein
NspA02_00283 Coenzyme PQQ synthesis protein E
NspA02_00284 hypothetical protein
NspA02_00285 hypothetical protein
NspA02_00286 transposase protein
NspA02_00287 zinc-ribbon domain protein
NspA02_00290 putative transmembrane protein
NspA02_00292 Peptide deformylase 2 protein
NspA02_00296 Cbb3-type cytochrome c oxidase subunit CcoP protein
NspA02_00298 Pyruvate kinase protein
NspA02_00313 hypothetical protein
NspA02_00321 hypothetical protein
NspA02_00322 alkylhydroperoxidase protein
NspA02_00323 HTH-type transcriptional repressor AcnR protein
NspA02_00326 hypothetical protein
NspA02_00332 Cell division protein FtsQ
NspA02_00333 hypothetical protein
NspA02_00334 Sensory rhodopsin II transducer protein
NspA02_00342 Response regulator SaeR protein
NspA02_00343 metal-dependent phosphohydrolase HDOD domain-containing protein
NspA02_00344 hypothetical protein
NspA02_00346 hypothetical protein
NspA02_00348 hypothetical protein
NspA02_00349 Sensor histidine kinase AruS protein
NspA02_00350 glutamine synthetase protein
NspA02_00351 metal dependent phosphohydrolase protein
NspA02_00352 putative lipoprotein
NspA02_00354 Photosystem I assembly protein ycf3
NspA02_00355 Transposase protein
NspA02_00356 RNA polymerase-associated protein RapA
NspA02_00357 ATP-dependent DNA helicase PcrA protein
NspA02_00358 Modification methylase BabI protein
NspA02_00359 type III restriction enzyme res subunit protein
NspA02_00360 hypothetical protein
NspA02_00361 NAD+ kinase protein
NspA02_00362 two-component response regulator protein
NspA02_00363 hypothetical protein
NspA02_00364 MotA-TolQ-ExbB proton channel protein
NspA02_00365 Aerobic cobaltochelate subunit CobN protein
NspA02_00366 Putative transposase y4zB protein
NspA02_00367 hypothetical protein
NspA02_00368 putative addiction module antidote protein
NspA02_00369 death-on-curing family protein
NspA02_00370 hypothetical protein
NspA02_00371 Cyanobacterial phytochrome B protein
NspA02_00375 Photosystem I assembly protein ycf3
NspA02_00376 hypothetical protein
NspA02_00377 MOSC domain-containing protein
NspA02_00379 PQQ-like domain protein
NspA02_00380 hypothetical protein
NspA02_00381 putative manganese-dependent inorganic pyrophosphatase protein
NspA02_00382 hypothetical protein
NspA02_00383 hypothetical protein
NspA02_00384 hypothetical protein
NspA02_00386 glycosyltransferase protein
NspA02_00387 dolichol-phosphate mannosyltransferase protein
NspA02_00388 hypothetical protein
NspA02_00389 Vitamin B12 transporter BtuB protein

NspA02_00390 transmembrane protein
NspA02_00391 two-component system NarL family sensor histidine kinase UhpB protein
NspA02_00395 Phosphate transport system permease protein PstA
NspA02_00396 Phosphate transport system permease protein PstC
NspA02_00397 phosphate binding protein
NspA02_00398 putative transposase protein
NspA02_00399 hypothetical protein
NspA02_00400 heme d1 biosynthesis protein
NspA02_00401 Secreted effector protein pipB2
NspA02_00402 Photosystem I assembly protein ycf3
NspA02_00403 hypothetical protein
NspA02_00404 hypothetical protein
NspA02_00405 lipoprotein
NspA02_00406 Helix-turn-helix domain protein
NspA02_00415 Protein of unknown function DUF115
NspA02_00418 putative flagellar hook-length control protein
NspA02_00420 Sensor protein ZraS
NspA02_00424 hypothetical protein
NspA02_00426 Photosystem I assembly protein ycf3
NspA02_00427 O-antigen polymerase protein
NspA02_00429 Extracellular endonuclease protein
NspA02_00430 hypothetical protein
NspA02_00433 hypothetical protein
NspA02_00441 Monofunctional biosynthetic peptidoglycan transglycosylase protein
NspA02_00443 hypothetical protein
NspA02_00445 hypothetical protein
NspA02_00446 hypothetical protein
NspA02_00448 Protein PilH
NspA02_00449 hypothetical protein
NspA02_00451 Protease HtpX protein
NspA02_00452 SH3 domain protein
NspA02_00458 Sec-independent protein translocase protein Tata
NspA02_00459 Lipid A 3-O-deacylase protein
NspA02_00464 hypothetical protein
NspA02_00469 Short domain protein
NspA02_00470 hypothetical protein
NspA02_00480 hypothetical protein
NspA02_00481 hypothetical protein
NspA02_00482 3'-5'-bisphosphate nucleotidase CysQ protein
NspA02_00483 hypothetical protein
NspA02_00485 hypothetical protein
NspA02_00487 CDP-diacylglycerol-glycerol-3-phosphate 3-phosphatidyltransferase protein
NspA02_00489 hypothetical protein
NspA02_00490 8-amino-7-oxononanoate synthase protein
NspA02_00491 fatty acid desaturase protein
NspA02_00492 MMPL domain containing protein
NspA02_00493 hypothetical protein
NspA02_00495 GIY-YIG catalytic domain-containing protein
NspA02_00498 hypothetical protein
NspA02_00499 Carboxypeptidase regulatory-like domain protein
NspA02_00502 hypothetical protein
NspA02_00504 Cell cycle protein GpsB
NspA02_00510 hypothetical protein
NspA02_00511 Putative toxin RelE4 protein
NspA02_00512 hypothetical protein
NspA02_00520 Glutaminase 2 protein
NspA02_00523 hypothetical protein
NspA02_00525 hypothetical protein
NspA02_00527 hypothetical protein
NspA02_00528 AsmA-like region protein
NspA02_00529 hypothetical protein
NspA02_00547 Archaeal glutamate synthase NADPH protein
NspA02_00549 outer membrane protein W
NspA02_00550 Inosine-5'-monophosphate dehydrogenase protein
NspA02_00551 Endonuclease III protein
NspA02_00552 hypothetical protein
NspA02_00553 hypothetical protein
NspA02_00554 protein-S-isoprenylcysteine O-methyltransferase
NspA02_00555 hypothetical protein
NspA02_00559 orotate phosphoribosyltransferase protein
NspA02_00560 hypothetical protein
NspA02_00561 BNR repeat-containing glycosyl hydrolase protein
NspA02_00562 CheC domain-containing protein
NspA02_00563 Chemotaxis protein methyltransferase 1
NspA02_00564 Chemotaxis protein CheY
NspA02_00571 chemotaxis protein motB Motility protein B
NspA02_00573 methyl-accepting chemotaxis sensory transducer protein
NspA02_00574 metal-dependent phosphohydrolase HDOD domain-containing protein
NspA02_00575 Chemotaxis protein CheY
NspA02_00576 putative ubiquinone biosynthesis protein UbiB
NspA02_00579 Cyanobacterial phytochrome A protein
NspA02_00580 Sporulation kinase C protein
NspA02_00585 ATP-dependent helicase-deoxyribonuclease subunit B protein
NspA02_00587 hypothetical protein
NspA02_00588 Cyanobacterial phytochrome B protein
NspA02_00589 Sensor protein ZraS
NspA02_00590 Alginate biosynthesis transcriptional regulatory protein AlgB
NspA02_00591 hypothetical protein
NspA02_00592 hypothetical protein

NspA02_00594 Diguanylate cyclase DosC protein
NspA02_00595 hypothetical protein
NspA02_00598 Response regulator MprA protein
NspA02_00599 metal-dependent phosphohydrolase HDOD domain-containing protein
NspA02_00600 hypothetical protein
NspA02_00601 hypothetical protein
NspA02_00602 Inosine-5'-monophosphate dehydrogenase protein
NspA02_00604 hypothetical protein
NspA02_00605 Sensor protein GacS
NspA02_00606 putative peptidase protein
NspA02_00607 Glutaminase 2 protein
NspA02_00608 Positive alginate biosynthesis regulatory protein
NspA02_00614 hypothetical protein
NspA02_00615 hypothetical protein
NspA02_00616 hypothetical protein
NspA02_00617 ATP-binding protein
NspA02_00618 hypothetical protein
NspA02_00619 plasmid-like protein
NspA02_00620 hypothetical protein
NspA02_00621 Tyrosine recombinase XerC protein
NspA02_00622 VTC domain protein
NspA02_00623 hypothetical protein
NspA02_00624 ral secretion pathway protein H
NspA02_00625 type IV pilus minor pilin PilV protein
NspA02_00626 type IV pilus minor pilin PilW protein
NspA02_00627 PilX domain containing protein
NspA02_00628 hypothetical protein
NspA02_00629 TPR domain protein
NspA02_00630 hypothetical protein
NspA02_00631 sulfatase protein
NspA02_00632 Dolichyl-phosphate-mannose-protein domain containing protein
NspA02_00633 group 1 glycosyl transferase protein
NspA02_00634 Polysaccharide biosynthesis protein
NspA02_00635 starch synthase protein
NspA02_00636 Glycosyl hydrolase protein
NspA02_00637 CDP-diaclyglycerol-glycerol-3-phosphate 3-phosphatidyltransferase protein
NspA02_00638 glycoprotein 3-alpha-L-fucosyltransferase
NspA02_00639 beta-site APP-cleaving enzyme 2 memapsin 1 protein
NspA02_00640 sulfatase protein
NspA02_00641 putative cyclic pyranopterin monophosphate synthase protein
NspA02_00642 Undecaprenyl-phosphate 4-deoxy-4-formamido-L-arabinose transferase protein
NspA02_00643 group 1 glycosyl transferase protein
NspA02_00644 PRY3 protein
NspA02_00645 hypothetical protein
NspA02_00646 Sensor protein GacS
NspA02_00647 LexA repressor protein
NspA02_00648 hypothetical protein
NspA02_00649 hypothetical protein
NspA02_00650 hypothetical protein
NspA02_00651 hypothetical protein
NspA02_00654 hypothetical protein
NspA02_00656 Ribosomal RNA small subunit methyltransferase G protein
NspA02_00664 hypothetical protein
NspA02_00665 phage tail protein
NspA02_00666 Gp37Gp68 family protein
NspA02_00667 phage protein
NspA02_00668 hypothetical protein
NspA02_00669 Oligopeptide transport system permease protein OppC
NspA02_00671 Putative adenylate cyclase 3 protein
NspA02_00672 hypothetical protein
NspA02_00674 hypothetical protein
NspA02_00675 D-inositol 3-phosphate glycosyltransferase protein
NspA02_00676 Lipopolysaccharide core biosynthesis glycosyltransferase LpsD protein
NspA02_00677 hypothetical protein
NspA02_00682 3-deoxy-manno-octulosonate cytidyltransferase protein
NspA02_00683 Exopolysaccharide production protein PSS
NspA02_00684 GDP-mannose-dependent alpha--phosphatidylinositol mannosyltransferase protein
NspA02_00685 tol-pal system protein ybgf
NspA02_00686 Cysteine desulfurase protein
NspA02_00688 hypothetical protein
NspA02_00689 hypothetical protein
NspA02_00690 TraT complement resistance protein
NspA02_00691 cytochrome c class I protein
NspA02_00692 Seven time protein
NspA02_00693 Cytochrome b6 protein
NspA02_00694 Cytochrome b6-f complex iron-sulfur subunit protein
NspA02_00695 Plastocyanin protein
NspA02_00697 hypothetical protein
NspA02_00698 aliphatic sulfonates ABC transporter substrate-binding protein
NspA02_00699 Cyanobacterial phytochrome A protein
NspA02_00700 Tyrosine phenol-lyase protein
NspA02_00701 hypothetical protein
NspA02_00702 putative spermidine synthase protein
NspA02_00703 Undecaprenyl-phosphate 4-deoxy-4-formamido-L-arabinose transferase protein
NspA02_00704 Photosystem I assembly protein ycf3
NspA02_00705 hypothetical protein
NspA02_00706 FecR protein
NspA02_00707 hypothetical protein
NspA02_00708 Adenylate cyclase 1 protein

NspA02_00709 Polar-differentiation response regulator DivK protein
 NspA02_00713 FlgN protein
 NspA02_00714 Peptidoglycan hydrolase FlgJ protein
 NspA02_00716 Ig domain-containing protein
 NspA02_00717 Ig-like domain protein
 NspA02_00719 Flagella basal body P-ring formation protein FlgA
 NspA02_00724 Nitrite oxidoreductase, beta subunit NxrB (missing in *N. gracilis*, but could be amplified by PCR; Luckner et al., 2013)
 NspA02_00729 hypothetical protein
 NspA02_00733 D-inositol 3-phosphate glycosyltransferase protein
 NspA02_00734 Cyanobacterial phytochrome A protein
 NspA02_00743 hypothetical protein
 NspA02_00746 cAMP receptor protein
 NspA02_00747 hypothetical protein
 NspA02_00751 leucine-rich-repeat type III effector protein
 NspA02_00752 Penicillin-binding protein 1A
 NspA02_00753 Penicillin-binding protein 1A
 NspA02_00757 hypothetical protein
 NspA02_00758 hypothetical protein
 NspA02_00764 PiIT protein-like protein
 NspA02_00765 hypothetical protein
 NspA02_00766 Cation efflux system protein CusA
 NspA02_00767 RND family metal ion efflux pump membrane fusion protein
 NspA02_00768 hypothetical protein
 NspA02_00769 carbohydrate-selective porin OprB protein
 NspA02_00770 hypothetical protein
 NspA02_00772 hypothetical protein
 NspA02_00774 thiamine kinase protein
 NspA02_00778 dolichol-phosphate mannosyltransferase protein
 NspA02_00779 multidrug resistance efflux pump-antipporter protein
 NspA02_00792 Periplasmic protein CpxP
 NspA02_00798 rhamnukinase protein
 NspA02_00799 tRNA uridine 5-carboxymethylaminomethyl modification enzyme MnmG protein
 NspA02_00800 ATPase protein
 NspA02_00801 Chemotaxis protein CheY
 NspA02_00802 Adenylate cyclase 1 protein
 NspA02_00804 Secreted effector protein pipB2
 NspA02_00807 hypothetical protein
 NspA02_00809 TPR repeat domain containing protein
 NspA02_00810 TPR domain-containing protein
 NspA02_00811 hypothetical protein
 NspA02_00812 hypothetical protein
 NspA02_00813 hypothetical protein
 NspA02_00814 methyl-CpG-binding domain protein
 NspA02_00816 Cyclic pyranopterin monophosphate synthase protein
 NspA02_00819 hypothetical protein
 NspA02_00822 Flagellar hook-length control FliK protein
 NspA02_00823 hypothetical protein
 NspA02_00824 flagellar basal body-associated protein FliI
 NspA02_00827 colicin V production protein
 NspA02_00829 hypothetical protein
 NspA02_00830 hypothetical protein
 NspA02_00837 menaquinol oxidoreductase complex Cbc5 cytochrome c subunit protein
 NspA02_00838 Short domain protein
 NspA02_00839 hypothetical protein
 NspA02_00840 hypothetical protein
 NspA02_00844 hypothetical protein
 NspA02_00845 Shufflon-specific DNA recombinase protein
 NspA02_00846 hypothetical protein
 NspA02_00847 DNA binding domain-containing protein
 NspA02_00848 replicative DNA helicase protein
 NspA02_00849 hypothetical protein
 NspA02_00850 hypothetical protein
 NspA02_00851 hypothetical protein
 NspA02_00852 nuclease protein
 NspA02_00853 hypothetical protein
 NspA02_00854 hypothetical protein
 NspA02_00855 hypothetical protein
 NspA02_00856 putative periplasmic serine endoprotease DegP protein
 NspA02_00862 hypothetical protein
 NspA02_00863 GDSL-like Lipase/Acylhydrolase protein
 NspA02_00864 hypothetical protein
 NspA02_00865 Flagellar motor switch protein FliG
 NspA02_00866 NADH-quinone oxidoreductase subunit N protein
 NspA02_00875 hypothetical protein
 NspA02_00876 hypothetical protein
 NspA02_00903 4-hydroxybenzoate octaprenyltransferase protein
 NspA02_00904 hypothetical protein
 NspA02_00907 hypothetical protein
 NspA02_00910 Nitrate transport ATP-binding protein NrtC NRT gene cluster
 NspA02_00911 Nitrate transport permease protein NrtB NRT gene cluster
 NspA02_00912 Nitrate transport ATP-binding protein NrtC NRT gene cluster
 NspA02_00913 hypothetical protein
 NspA02_00914 hypothetical protein
 NspA02_00915 Nitrite reductase, beta subunit (nirB) NIR gene cluster
 NspA02_00916 Nitrite reductase, delta subunit (nirD) NIR gene cluster
 NspA02_00920 Oxygen sensor histidine kinase NreB protein
 NspA02_00921 Response regulator GacA protein
 NspA02_00922 response regulator receiver protein
 NspA02_00923 Putative sensory transducer protein

NspA02_00931 hypothetical protein
NspA02_00936 Radical SAM domain-containing protein
NspA02_00939 DNA methylase N-4-N-6 domain-containing protein
NspA02_00940 hypothetical protein
NspA02_00941 Alginate biosynthesis transcriptional regulatory protein AlgB
NspA02_00942 hypothetical protein
NspA02_00943 metal-dependent phosphohydrolase HDOD domain-containing protein
NspA02_00944 Sensor protein ZraS
NspA02_00945 Cyanobacterial phytochrome B protein
NspA02_00946 Glutathione peroxidase protein
NspA02_00947 hypothetical protein
NspA02_00951 Undecaprenyl-diphosphatase protein
NspA02_00955 Serine-threonine-protein kinase pkn1
NspA02_00957 hypothetical protein
NspA02_00958 tRNA-splicing ligase RtcB protein
NspA02_00959 IMP dehydrogenase protein
NspA02_00960 Toluene 12-dioxygenase system ferredoxin subunit protein
NspA02_00964 hypothetical protein
NspA02_00965 hypothetical protein
NspA02_00968 hypothetical protein
NspA02_00969 peptidase C14 caspase catalytic subunit p20 protein
NspA02_00970 hypothetical protein
NspA02_00972 PD-D/EXK nuclease superfamily protein
NspA02_00973 FOG TPR repeat containing protein
NspA02_00976 glycosylphosphatidylinositol phospholipase D protein
NspA02_00983 TPR repeat domain containing protein
NspA02_00988 putative transposase protein
NspA02_00989 transposase protein
NspA02_00990 ADP-heptose-LPS heptosyltransferase 2 protein
NspA02_00991 Cyclic pyranopterin monophosphate synthase protein
NspA02_00992 3-demethylubiquinone-9 3-methyltransferase protein
NspA02_00993 Biotin synthase 2 protein
NspA02_00994 glycoprotein 3-alpha-L-fucosyltransferase
NspA02_00995 Toluene 12-dioxygenase electron transfer component protein
NspA02_00996 Fe-S oxidoreductase protein
NspA02_00997 putative cyclic pyranopterin monophosphate synthase protein
NspA02_00998 TetR family transcriptional regulator protein
NspA02_00999 hypothetical protein
NspA02_01003 Glutaminase 1 protein
NspA02_01006 hypothetical protein
NspA02_01009 mRNA interferase MazF2 protein
NspA02_01010 hypothetical protein
NspA02_01011 DNA polymerase III subunit alpha protein
NspA02_01016 dolichol-phosphate mannosyltransferase protein
NspA02_01017 4-hydroxybenzoate octaprenyltransferase protein
NspA02_01018 hypothetical protein
NspA02_01020 Chemotaxis protein CheY
NspA02_01021 inhibitor of MCP methylation CheC-like protein
NspA02_01022 Chemotaxis response regulator protein-glutamate methyltransferase
NspA02_01023 hypothetical protein
NspA02_01027 hypothetical protein
NspA02_01028 Polar-differentiation response regulator DivK protein
NspA02_01029 PilZ domain protein
NspA02_01030 hypothetical protein
NspA02_01034 hypothetical protein
NspA02_01037 hypothetical protein
NspA02_01038 response regulator receiver protein
NspA02_01039 Response regulator MprA protein
NspA02_01040 Transcriptional regulatory protein OmpR
NspA02_01041 Type 4 fimbriae expression regulatory protein PflR
NspA02_01042 Histidine kinase-DNA gyrase B- protein
NspA02_01043 hypothetical protein
NspA02_01044 Type II secretion system protein E
NspA02_01045 hypothetical protein
NspA02_01046 Response regulator MprA protein
NspA02_01047 Response regulator MprA protein
NspA02_01048 DNA gyrase subunit A protein
NspA02_01051 hypothetical protein
NspA02_01052 hypothetical protein
NspA02_01053 GDSL-like Lipase/Acylhydrolase protein
NspA02_01056 ATP-dependent DNA helicase PcrA protein
NspA02_01059 hypothetical protein
NspA02_01060 Phenylalanine--tRNA ligase alpha subunit protein
NspA02_01061 TPR repeat domain containing protein
NspA02_01062 hypothetical protein
NspA02_01063 TPR repeat domain containing protein
NspA02_01064 Putative adenylate cyclase 3 protein
NspA02_01070 Exodeoxyribonuclease 7 large subunit protein
NspA02_01071 hypothetical protein
NspA02_01073 hypothetical protein
NspA02_01083 glycosyl transferase family protein
NspA02_01084 Putative sugar dehydratase-epimerase YfnG protein
NspA02_01085 Malonyl-acyl-carrier protein O-methyltransferase
NspA02_01086 tocopherol O-methyltransferase protein
NspA02_01087 hypothetical protein
NspA02_01088 glycosyltransferase protein
NspA02_01089 D-inositol 3-phosphate glycosyltransferase protein
NspA02_01090 group 1 glycosyl transferase protein
NspA02_01091 magnesium-protoporphyrin IX monomethyl ester cyclase protein

NspA02_01092 3-demethylubiquinone-9 3-methyltransferase protein
 NspA02_01093 ISDvu4 transposase protein
 NspA02_01114 peptidase M15A protein
 NspA02_01116 hypothetical protein
 NspA02_01117 3-oxoacyl-acyl-carrier-protein reductase FabG
 NspA02_01126 methyl-accepting chemotaxis protein
 NspA02_01127 Motility protein B
 NspA02_01128 EH Signature domain protein
 NspA02_01129 DNA repair protein RAD50
 NspA02_01130 hypothetical protein
 NspA02_01131 hypothetical protein
 NspA02_01133 hypothetical protein
 NspA02_01135 Nitrogen regulatory protein P-II
 NspA02_01136 putative efflux pump membrane transporter SepB protein
 NspA02_01137 Cation efflux system protein CzcA
 NspA02_01138 membrane protein in asrC 5' region
 NspA02_01140 hypothetical protein
 NspA02_01141 Transposase InsF for insertion sequence IS3A protein
 NspA02_01148 8-amino-7-oxononanoate synthase protein
 NspA02_01150 Sensor protein GacS
 NspA02_01152 Protein of unknown function DUF115
 NspA02_01153 Protein of unknown function DUF115
 NspA02_01154 Adenylyl-sulfate kinase protein
 NspA02_01155 Undecaprenyl-phosphate 4-deoxy-4-formamido-L-arabinose transferase protein
 NspA02_01156 alcohol sulfotransferase protein
 NspA02_01157 hypothetical protein
 NspA02_01158 Chito oligosaccharide deacetylase protein
 NspA02_01159 anaerobic magnesium-protoporphyrin IX monomethyl ester cyclase protein
 NspA02_01160 Nodulation protein NolNO
 NspA02_01161 UDP-N-acetylglucosamine 2-epimerase protein
 NspA02_01162 hypothetical protein
 NspA02_01166 hypothetical protein
 NspA02_01167 hypothetical protein
 NspA02_01175 hypothetical protein
 NspA02_01176 hypothetical protein
 NspA02_01177 hypothetical protein
 NspA02_01178 Sensory rhodopsin II transducer protein
 NspA02_01182 hypothetical protein
 NspA02_01183 menaquinol oxidoreductase complex Cbc3 cytochrome c subunit protein
 NspA02_01184 glycosyltransferase protein
 NspA02_01186 putative multihem cytochrome c protein
 NspA02_01189 hypothetical protein
 NspA02_01190 anti-sigma-factor antagonist protein
 NspA02_01191 hypothetical protein
 NspA02_01192 hypothetical protein
 NspA02_01193 hypothetical protein
 NspA02_01194 Modification methylase MthTI protein
 NspA02_01195 hypothetical protein
 NspA02_01196 PD-D/EXK nuclease superfamily protein
 NspA02_01197 phosphomethylpyrimidine kinase protein
 NspA02_01198 hypothetical protein
 NspA02_01199 Leucine rich repeat domain containing protein
 NspA02_01200 ADP-ribosylation-crystallin J1 protein
 NspA02_01201 ATP-dependent Lon protease protein
 NspA02_01202 hypothetical protein
 NspA02_01203 transcriptional regulator protein
 NspA02_01204 bacteriophage protein
 NspA02_01205 hypothetical protein
 NspA02_01208 AAA ATPase domain protein
 NspA02_01213 Alginate biosynthesis transcriptional regulatory protein AlgB
 NspA02_01214 hypothetical protein
 NspA02_01217 Photosystem I assembly protein ycf3
 NspA02_01219 hypothetical protein
 NspA02_01223 Flagellar motor switch protein FlIG
 NspA02_01224 N-6 Adenine-specific DNA methylase protein
 NspA02_01225 helicase domain-containing protein
 NspA02_01226 hypothetical protein
 NspA02_01227 Helix-turn-helix domain protein
 NspA02_01228 hypothetical protein
 NspA02_01229 hypothetical protein
 NspA02_01230 hypothetical protein
 NspA02_01231 type I restriction enzyme r fragment n term motif protein
 NspA02_01232 Virulence-associated protein A'
 NspA02_01233 Periplasmic nitrate reductase protein NAP gene cluster (napA)
 NspA02_01234 Periplasmic nitrate reductase electron transfer subunit protein NAP gene cluster (napB)
 NspA02_01235 Cytochrome NAP gene cluster (napC)
 NspA02_01236 Cytochrome b6-f complex iron-sulfur subunit protein NAP gene cluster (putative napG, with 1 signal P on the N terminus, and a transmembrane spanni
 NspA02_01237 Cytochrome bc complex cytochrome b subunit protein NAP gene cluster (putative napH with four transmembrane spanning regions)
 NspA02_01238 Cytochrome b protein NAP gene cluster (napL, with two transmembrane spanning regions)
 NspA02_01239 GYD domain protein
 NspA02_01240 NapC-NirT family cytochrome c protein
 NspA02_01241 cytochrome c protein
 NspA02_01242 HIRAN domain protein
 NspA02_01243 prophage MuMc02 S24 family peptidase protein
 NspA02_01244 hypothetical protein
 NspA02_01250 hypothetical protein
 NspA02_01251 phosphoribosyl 12-cyclic phosphate phosphodiesterase protein
 NspA02_01252 hypothetical protein
 NspA02_01253 hypothetical protein

NspA02_01254 hypothetical protein
 NspA02_01255 Photosystem I assembly protein ycf3
 NspA02_01256 glycosyl transferase family protein
 NspA02_01257 hypothetical protein
 NspA02_01258 Acetoin utilization protein AcuC
 NspA02_01259 Virulence-associated protein I
 NspA02_01260 killer suppression protein HigA
 NspA02_01268 hypothetical protein
 NspA02_01270 L-24-diaminobutyric acid acetyltransferase protein Ectoine/hydroxyectoine biosynthesis
 NspA02_01271 Diaminobutyrate--2-oxoglutarate transaminase protein Ectoine/hydroxyectoine biosynthesis
 NspA02_01272 L-ectoine synthase protein Ectoine/hydroxyectoine biosynthesis
 NspA02_01273 Ectoine hydroxylase protein Ectoine/hydroxyectoine biosynthesis
 NspA02_01274 putative amino-acid ABC transporter periplasmic-binding protein y4tE related ectoine ABC-type transporter
 NspA02_01275 putative amino-acid ABC transporter permease protein y4tF related ectoine ABC-type transporter
 NspA02_01276 putative amino-acid ABC transporter permease protein y4tG related ectoine ABC-type transporter
 NspA02_01278 Trans-aconitate 2-methyltransferase protein
 NspA02_01279 hypothetical protein
 NspA02_01281 hypothetical protein
 NspA02_01285 Macrolide export ATP-binding-permease protein MacB
 NspA02_01286 Macrolide export ATP-binding-permease protein MacB
 NspA02_01287 Macrolide export ATP-binding-permease protein MacB
 NspA02_01288 Macrolide-specific efflux protein MacA
 NspA02_01289 assembly protein
 NspA02_01290 Modification methylase HpaI protein
 NspA02_01291 hypothetical protein
 NspA02_01292 hypothetical protein
 NspA02_01295 PD-D/EXK nuclease superfamily protein
 NspA02_01298 hypothetical protein
 NspA02_01299 Tyrosine--tRNA ligase protein
 NspA02_01300 hypothetical protein
 NspA02_01301 hypothetical protein
 NspA02_01302 hypothetical protein
 NspA02_01304 hypothetical protein
 NspA02_01305 hypothetical protein
 NspA02_01306 cyclic nucleotide-binding protein
 NspA02_01307 Inosine-5'-monophosphate dehydrogenase protein
 NspA02_01313 hypothetical protein
 NspA02_01314 type IV pilus assembly protein PilM
 NspA02_01315 hypothetical protein
 NspA02_01316 msha biosis protein msho
 NspA02_01317 MshA pilin protein MshD
 NspA02_01318 methylation protein
 NspA02_01319 hypothetical protein
 NspA02_01320 hypothetical protein
 NspA02_01321 30S ribosomal protein S13
 NspA02_01326 magnesium-protoporphyrin IX monomethyl ester cyclase protein
 NspA02_01329 TPR domain-containing protein
 NspA02_01330 hypothetical protein
 NspA02_01332 hypothetical protein
 NspA02_01339 hypothetical protein
 NspA02_01340 Cyanobacterial phytochrome B protein
 NspA02_01341 Phosphate regulon transcriptional regulatory protein PhoB
 NspA02_01349 hypothetical protein
 NspA02_01350 protein phosphoaspartate phosphatase CheX associated with MCPs of classes 40H
 NspA02_01351 CBS domain protein
 NspA02_01352 hypothetical protein
 NspA02_01353 Virulence-associated protein A
 NspA02_01354 putative transposase protein
 NspA02_01355 Sensor protein SrrB
 NspA02_01356 Inosine-5'-monophosphate dehydrogenase protein
 NspA02_01357 Transcriptional regulatory protein FixJ
 NspA02_01359 AAA domain protein
 NspA02_01360 DNA replication protein
 NspA02_01361 hypothetical protein
 NspA02_01362 hypothetical protein
 NspA02_01370 Succinate dehydrogenase flavoprotein subunit
 NspA02_01371 hypothetical protein
 NspA02_01372 TPR repeat-containing protein
 NspA02_01373 hypothetical protein
 NspA02_01374 hypothetical protein
 NspA02_01375 hypothetical protein
 NspA02_01376 sodium-proline symporter protein
 NspA02_01378 Leucine--tRNA ligase protein
 NspA02_01382 hypothetical protein
 NspA02_01383 two-component system NarL family sensor histidine kinase BarA protein
 NspA02_01384 Response regulator MprA protein
 NspA02_01385 hypothetical protein
 NspA02_01386 hypothetical protein
 NspA02_01387 AAA-like domain protein
 NspA02_01388 hypothetical protein
 NspA02_01389 hypothetical protein
 NspA02_01390 Tetratricopeptide repeat domain containing protein
 NspA02_01396 PAS-PAC sensor hybrid histidine kinase protein
 NspA02_01402 Chemotaxis response regulator protein-glutamate methyltransferase 1
 NspA02_01403 metal-dependent phosphohydrolase HDOD domain-containing protein
 NspA02_01404 Chemotaxis protein methyltransferase 1
 NspA02_01405 Transcriptional regulatory protein WalR
 NspA02_01406 Sensory rhodopsin II transducer protein
 NspA02_01407 hypothetical protein

NspA02_01411 Alginate biosynthesis protein AlgK
NspA02_01412 ATP-dependent DNA helicase UvrD1 protein
NspA02_01415 cyclic nucleotide-binding protein
NspA02_01416 protease I protein
NspA02_01417 hypothetical protein
NspA02_01418 polypeptide N-acetylglucosaminyltransferase protein
NspA02_01419 D-inositol 3-phosphate glycosyltransferase protein
NspA02_01420 GIY-YIG catalytic domain protein
NspA02_01421 transposase protein
NspA02_01427 TPR-repeat-containing protein
NspA02_01428 HAMP domain protein
NspA02_01429 hypothetical protein
NspA02_01430 copper-binding protein
NspA02_01434 Chaperone protein DnaJ
NspA02_01435 hypothetical protein
NspA02_01437 hypothetical protein
NspA02_01443 Foldase protein PrsA
NspA02_01449 hypothetical protein
NspA02_01450 hypothetical protein
NspA02_01451 Bacteriohemerythrin protein
NspA02_01452 Sensor protein FixL
NspA02_01455 hypothetical protein
NspA02_01456 Sensor protein FixL
NspA02_01457 Sensor protein kinase Walk
NspA02_01458 Phosphate regulon transcriptional regulatory protein PhoB
NspA02_01461 hypothetical protein
NspA02_01462 hypothetical protein
NspA02_01465 putative cyclic pyranopterin monophosphate synthase protein
NspA02_01466 Putative dihydroflavonol-4-reductase protein
NspA02_01467 magnesium-protoporphyrin IX monomethyl ester cyclase protein
NspA02_01468 integrase catalytic region protein
NspA02_01469 transposase of ISGsu3 IS5 family protein
NspA02_01470 Coenzyme PQQ synthesis protein E
NspA02_01471 Oxidoreductase UcpA protein
NspA02_01472 putative cyclic pyranopterin monophosphate synthase protein
NspA02_01473 Bifunctional purine biosynthesis protein PurH
NspA02_01475 hypothetical protein
NspA02_01476 hypothetical protein
NspA02_01478 outer membrane efflux protein
NspA02_01479 hypothetical protein
NspA02_01480 hypothetical protein
NspA02_01484 putative two-component sensor histidine kinase protein
NspA02_01485 hypothetical protein
NspA02_01486 PD-D/EXK nuclease superfamily protein
NspA02_01487 Tyrosine recombinase XerC protein
NspA02_01488 hypothetical protein
NspA02_01489 Acetylornithine aminotransferase protein
NspA02_01492 hypothetical protein
NspA02_01494 hypothetical protein
NspA02_01496 Oxygen sensor histidine kinase NreB protein
NspA02_01497 LexA repressor protein
NspA02_01503 Foldase protein PrsA
NspA02_01505 adenine-specific DNA methyltransferase protein
NspA02_01506 hypothetical protein
NspA02_01507 hypothetical protein
NspA02_01508 hypothetical protein
NspA02_01509 metallo beta lactamase SLH domain-containing protein
NspA02_01510 transcriptional regulator protein
NspA02_01511 hypothetical protein
NspA02_01512 Ribbon-helix-helix protein
NspA02_01513 putative transposase orfA for insertion sequence element protein
NspA02_01514 HTH-like domain protein
NspC22_00006 GDP-mannose 46-dehydratase protein
NspC22_00008 Transketolase protein
NspC22_00009 1-deoxy-D-xylulose-5-phosphate synthase 2 protein
NspC22_00061 hypothetical protein
NspC22_00064 hypothetical protein
NspC22_00065 hypothetical protein
NspC22_00068 Putative N-acetylmuramoyl-L-alanine amidase YrvJ protein
NspC22_00070 hypothetical protein
NspC22_00077 hypothetical protein
NspC22_00079 metal dependent phosphohydrolase protein
NspC22_00085 oxygen-independent coproporphyrinogen III oxidase protein
NspC22_00096 putative plasmid-partitioning protein ParA
NspC22_00097 ATP-dependent DNA helicase RecG protein
NspC22_00101 Plasmid stabilization system protein
NspC22_00102 protein parD
NspC22_00103 Serine-threonine-protein kinase pkn1
NspC22_00104 TPR repeat domain containing protein
NspC22_00107 Nucleotidyltransferase substrate binding like protein
NspC22_00115 Leucine Rich repeat domain containing protein
NspC22_00116 type III effector protein
NspC22_00117 Cytochrome C oxidasecb3-type protein
NspC22_00119 hypothetical protein
NspC22_00120 hypothetical protein
NspC22_00122 two-component system chemotaxis family CheB-CheR fusion protein
NspC22_00128 Endonuclease III protein
NspC22_00130 Tetratricopeptide repeat domain containing protein
NspC22_00132 hypothetical protein

NspC22_00133 N-acetylmuramoyl-L-alanine amidase CwlM protein
NspC22_00138 regulator of sigma E protease protein
NspC22_00143 Adenylate cyclase protein
NspC22_00146 Protein AmpG
NspC22_00150 Protein YdeP
NspC22_00151 TPR repeat domain containing protein
NspC22_00152 Oxygen tolerance protein
NspC22_00153 BatC protein
NspC22_00154 Lipoprotein Nlpl
NspC22_00157 Cyanobacterial phytochrome B protein
NspC22_00195 hypothetical protein
NspC22_00197 Mrr restriction system protein
NspC22_00198 putative transcriptional regulator protein
NspC22_00199 addiction module killer protein
NspC22_00220 sphingosine kinase protein
NspC22_00231 hypothetical protein
NspC22_00236 Protein TonB
NspC22_00238 putative cobalt-precorrin-6Y C-methyltransferase decarboxylating protein
NspC22_00240 hypothetical protein
NspC22_00242 Cobalamin biosynthesis protein CobD
NspC22_00243 Putative threonine-phosphate decarboxylase protein
NspC22_00251 CCA-adding enzyme protein
NspC22_00253 hypothetical protein
NspC22_00255 Cyanobacterial phytochrome B protein
NspC22_00261 hypothetical protein
NspC22_00293 dolichol-phosphate mannosyltransferase protein
NspC22_00294 hypothetical protein
NspC22_00297 Putative dihydroflavonol-4-reductase protein
NspC22_00298 undecaprenyl-phosphate 4-deoxy-4-formamido-L-arabinose transferase protein
NspC22_00299 glycosyl transferase family protein
NspC22_00300 dolichol-phosphate mannosyltransferase protein
NspC22_00301 D-inositol 3-phosphate glycosyltransferase protein
NspC22_00302 hypothetical protein
NspC22_00303 hypothetical protein
NspC22_00304 methyltransferase protein
NspC22_00306 S23 ribosomal protein
NspC22_00308 putative cyclic pyranopterin monophosphate synthase protein
NspC22_00309 dolichol-phosphate mannosyltransferase protein
NspC22_00310 Tetratricopeptide repeat domain containing protein
NspC22_00311 dolichol-phosphate mannosyltransferase protein
NspC22_00312 Coenzyme PQQ synthesis protein E
NspC22_00313 hypothetical protein
NspC22_00314 Methyltransferase domain protein
NspC22_00315 NHL repeat containing protein
NspC22_00321 hypothetical protein
NspC22_00322 Integrase-recombinase protein
NspC22_00324 Metallothiol transferase FosB protein
NspC22_00326 hypothetical protein
NspC22_00328 hypothetical protein
NspC22_00335 anaerobic magnesium-protoporphyrin IX monomethyl ester cyclase protein
NspC22_00339 oxalate decarboxylase protein
NspC22_00343 hypothetical protein
NspC22_00344 Peptidoglycan-associated lipoprotein
NspC22_00346 Type V secretory pathway adhesin AidA protein
NspC22_00352 Alcohol dehydrogenase cytochrome c subunit protein
NspC22_00353 hypothetical protein
NspC22_00371 Sensor protein kinase Walk
NspC22_00388 hypothetical protein
NspC22_00390 B12 binding domain protein
NspC22_00391 hypothetical protein
NspC22_00392 B12 binding domain protein
NspC22_00394 geranylgeranyl reductase protein
NspC22_00437 hypothetical protein
NspC22_00442 hypothetical protein
NspC22_00460 radical sam domain-containing protein
NspC22_00462 Nitrate-nitrite sensor protein NarX
NspC22_00463 Response regulator GacA protein
NspC22_00464 Spermidine synthase protein
NspC22_00465 DNA-binding CopG-like domain-containing protein
NspC22_00466 Putative toxin Y4kP protein
NspC22_00467 hypothetical protein
NspC22_00484 NAD+ kinase protein
NspC22_00493 hypothetical protein
NspC22_00494 putative periplasmic serine endoprotease DegP protein
NspC22_00495 putative periplasmic serine endoprotease DegP protein
NspC22_00496 putative periplasmic serine endoprotease DegP protein
NspC22_00500 FOG TPR repeat containing protein
NspC22_00509 hypothetical protein
NspC22_00514 cyclic nucleotide-binding protein
NspC22_00519 hypothetical protein
NspC22_00520 peptidoglycan-binding protein LysM
NspC22_00521 50S ribosomal protein L34
NspC22_00527 hypothetical protein
NspC22_00528 hypothetical protein
NspC22_00529 PA14 domain-containing protein
NspC22_00530 hypothetical protein
NspC22_00534 hypothetical protein
NspC22_00535 hypothetical protein
NspC22_00536 DNA methyltransferase protein

NspC22_00537 DNA polymerase subunit beta protein
NspC22_00538 putative toxin-antitoxin system antitoxin component protein
NspC22_00542 hypothetical protein
NspC22_00543 hypothetical protein
NspC22_00556 Cysteine synthase B protein
NspC22_00557 thiosulfate dehydrogenase quinone small subunit protein
NspC22_00558 Virulence-associated protein I
NspC22_00559 plasmid maintenance system killer protein
NspC22_00561 Protein of unknown function DUF115
NspC22_00564 hypothetical protein
NspC22_00572 Guanylate kinase protein
NspC22_00575 hypothetical protein
NspC22_00576 Cyclic nucleotide-binding domain signature 1 protein
NspC22_00577 hypothetical protein
NspC22_00578 PII family protein
NspC22_00579 hypothetical protein
NspC22_00580 hypothetical protein
NspC22_00586 D-inositol 3-phosphate glycosyltransferase 2 protein
NspC22_00587 TolC family type I secretion outer membrane protein
NspC22_00593 Multicopper oxidase protein
NspC22_00594 Putative beta-lactamase HcpC protein
NspC22_00595 Type 4 fimbriae expression regulatory protein PilR
NspC22_00596 hypothetical protein
NspC22_00597 Transcriptional regulatory protein AruR
NspC22_00598 hypothetical protein
NspC22_00599 protein kinase cGMP-dependent
NspC22_00600 Crp-Fnr family transcriptional regulator protein
NspC22_00606 Cyclic pyranopterin monophosphate synthase protein
NspC22_00612 Inosine-5'-monophosphate dehydrogenase protein
NspC22_00613 Archaeal glutamate synthase NADPH protein
NspC22_00652 phosphonate ABC transporter periplasmic phosphonate-binding protein
NspC22_00653 Cyanobacterial phytochrome A protein
NspC22_00654 dGTPase protein
NspC22_00655 hypothetical protein
NspC22_00661 hypothetical protein
NspC22_00663 Spermidine synthase 1 protein
NspC22_00689 hypothetical protein
NspC22_00693 HNH endonuclease protein
NspC22_00694 N-6 DNA Methylase protein
NspC22_00716 AsmA-like region protein
NspC22_00745 hypothetical protein
NspC22_00751 hypothetical protein
NspC22_00754 regulatory protein ArsR
NspC22_00756 Transcriptional regulatory protein ZraR
NspC22_00757 hypothetical protein
NspC22_00758 Cyclic nucleotide-binding domain signature 2 protein
NspC22_00794 hypothetical protein
NspC22_00810 euchromatic histone-lysine N-methyltransferase protein
NspC22_00816 hypothetical protein
NspC22_00817 Modification methylase HinfI protein
NspC22_00819 hypothetical protein
NspC22_00823 hypothetical protein
NspC22_00826 hypothetical protein
NspC22_00831 putative periplasmic serine endoprotease DegP protein
NspC22_00832 CheC inhibitor of MCP methylation protein
NspC22_00833 Nitrogen regulation protein NtrB
NspC22_00834 Chemotaxis protein CheY
NspC22_00855 mRNA interferase MazF protein
NspC22_00856 Antitoxin MazE protein
NspC22_00857 PHP domain-containing protein
NspC22_00861 hypothetical protein
NspC22_00901 hypothetical protein
NspC22_00918 Peptidyl-prolyl cis-trans isomerase A protein
NspC22_00926 hypothetical protein
NspC22_00927 Foldase protein PrsA
NspC22_00932 Cyclic nucleotide-binding domain signature 2 protein
NspC22_00933 Cyclic nucleotide-gated potassium channel RHE CH03180 protein
NspC22_00934 cAMP receptor protein
NspC22_00935 hypothetical protein
NspC22_00937 AsmA domain containing protein
NspC22_00938 putative oxaloacetate decarboxylase gamma chain protein
NspC22_00945 hypothetical protein
NspC22_00946 hypothetical protein
NspC22_00951 Membrane-bound lytic murein transglycosylase A protein
NspC22_00974 Cytochrome c3 protein
NspC22_00980 Transposase protein
NspC22_01006 Putative zinc-finger protein
NspC22_01007 Putative sensory transducer protein YvaQ
NspC22_01008 Sensor protein kinase Walk
NspC22_01009 hypothetical protein
NspC22_01010 Tetrathionate reductase subunit B protein
NspC22_01011 Hdr-like menaquinol oxidoreductase integral membrane subunit protein
NspC22_01012 Thiosulfate reductase protein
NspC22_01013 hypothetical protein
NspC22_01014 transposase for insertion sequence NGRIS-20g protein
NspC22_01015 Ribonuclease VapC1 protein
NspC22_01016 hypothetical protein
NspC22_01017 transposase for insertion sequence NGRIS-20g protein
NspC22_01019 Sulfoxide reductase catalytic subunit YedY protein

NspC22_01020	Serine-threonine-protein kinase pkn1	
NspC22_01021	hypothetical protein	
NspC22_01022	hypothetical protein	
NspC22_01027	hypothetical protein	
NspC22_01031	hypothetical protein	
NspC22_01062	hypothetical protein	
NspC22_01065	Modification methylase HpaI protein	
NspC22_01068	glutaredoxin protein	
NspC22_01071	tRNA -methyltransferase protein	
NspC22_01073	15-anhydro-D-fructose reductase protein	
NspC22_01080	lipopolysaccharide ABC transporter periplasmic protein LptA	
NspC22_01081	Lipopolysaccharide-assembly domain containing protein	
NspC22_01085	Chemotaxis response regulator protein-glutamate methyltransferase	
NspC22_01086	Repeat domain in VibrioColwellia protein	
NspC22_01088	hypothetical protein	
NspC22_01091	Photosystem I assembly protein ycf3	
NspC22_01092	hypothetical protein	
NspC22_01097	Type 4 prepilin-like protein leader peptide-processing enzyme	
NspC22_01098	hypothetical protein	
NspC22_01099	Photosystem I assembly protein ycf3	
NspC22_01100	hypothetical protein	
NspC22_01104	4-alpha-glucanotransferase protein	
NspC22_01105	alpha-D-glucan 1-alpha-D-glucosylmutase protein	
NspC22_01106	transposase protein	
NspC22_01107	hypothetical protein	
NspC22_01120	hypothetical protein	
NspC22_01171	Cyanobacterial phytochrome A protein	
NspC22_01172	Type 4 fimbriae expression regulatory protein PilR	
NspC22_01173	outer membrane efflux protein	
NspC22_01174	putative metal ion efflux outer membrane family protein	
NspC22_01175	Cation efflux system protein CusB	
NspC22_01176	Putative cation efflux system protein SiIA	
NspC22_01177	cation diffusion facilitator family transporter protein	
NspC22_01179	mercuric transport protein selenocysteine-containing	
NspC22_01180	hypothetical protein	
NspC22_01181	Mercuric transport protein periplasmic component	Mercury resistance
NspC22_01182	heavy metal transport-detoxification protein	Mercury resistance
NspC22_01183	Putative MetA-pathway of phenol degradation protein	Mercury resistance
NspC22_01184	NHL repeat containing protein	Mercury resistance
NspC22_01185	Mercuric resistance operon regulatory protein	Mercury resistance
NspC22_01188	Mercuric transport protein	Mercury resistance
NspC22_01189	Mercuric reductase protein	Mercury resistance
NspC22_01190	alkylmercury lyase protein	Mercury resistance
NspC22_01191	Serine-threonine-protein kinase pkn1	
NspC22_01192	Inosine-5'-monophosphate dehydrogenase protein	
NspC22_01202	hypothetical protein	
NspC22_01208	type II site-specific deoxyribonuclease protein	
NspC22_01209	Modification methylase SmaI protein	
NspC22_01210	DNA methylase N-4-N-6 domain-containing protein	
NspC22_01212	Dolichyl-phosphate-mannose-protein domain containing protein	
NspC22_01215	hypothetical protein	
NspC22_01216	GDSL-like Lipase/Acylhydrolase protein	
NspC22_01218	Transcriptional regulatory protein FixJ	
NspC22_01219	TPR repeat domain containing protein	
NspC22_01220	Inosine-5'-monophosphate dehydrogenase protein	
NspC22_01221	Protease HtpX protein	
NspC22_01222	Putative heavy-metal-binding protein	
NspC22_01223	Putative heavy-metal-binding protein	
NspC22_01224	hypothetical protein	
NspC22_01225	type II secretion system protein D signal peptide	
NspC22_01230	tubulin-FtsZ GTPase protein	
NspC22_01238	Sulfatase-modifying factor enzyme 1 protein	
NspC22_01239	putative GMP synthase glutamine-hydrolyzing protein	
NspC22_01240	Alginate biosynthesis transcriptional regulatory protein AlgB	
NspC22_01241	hypothetical protein	
NspC22_01252	Poly-beta-16-N-acetyl-D-glucosamine synthase protein	
NspC22_01254	periplasmic trypsin-like serine protease DegP protein	
NspC22_01257	nucleotidyltransferase protein	
NspC22_01258	DNA polymerase subunit beta protein	
NspC22_01270	Inositol-1-monophosphatase protein	
NspC22_01274	hypothetical protein	
NspC22_01275	VacJ family lipoprotein	
NspC22_01276	hypothetical protein	
NspC22_01280	hypothetical protein	
NspC22_01289	hypothetical protein	
NspC22_01290	binding protein	
NspC22_01291	25-diketo-D-gluconic acid reductase A protein	
NspC22_01292	Transcriptional regulatory protein SrrA	
NspC22_01322	NAD-dependent malic enzyme protein	
NspC22_01323	hypothetical protein	
NspC22_01324	hypothetical protein	
NspC22_01325	FG-GAP repeat domain containing protein	
NspC22_01329	Cyanobacterial phytochrome A protein	
NspC22_01335	hypothetical protein	
NspC22_01337	putative restriction endonuclease protein	
NspC22_01346	Virulence-associated protein I	
NspC22_01347	plasmid maintenance system killer protein	
NspC22_01349	B-type flagellar hook-associated protein 2	
NspC22_01352	MnxG protein cupredoxin domain-containing protein	

NspC22_01355 Energy-coupling factor transporter transmembrane protein EcFt
 NspC22_01357 Quinone oxidoreductase protein
 NspC22_01359 phosphohistidine phosphatase SixA protein
 NspC22_01366 hypothetical protein
 NspC22_01373 Glutamate-1-semialdehyde 21-aminomutase 2 protein
 NspC22_01377 Aspartate-semialdehyde dehydrogenase protein
 NspC22_01379 3-isopropylmalate dehydrogenase protein
 NspC22_01380 putative nitrate reductase subunit gamma protein
 NspC22_01412 5-formyltetrahydrofolate cyclo-ligase protein
 NspC22_01414 2'3'-cyclic-nucleotide 2'-phosphodiesterase protein
 NspC22_01421 14-alpha-glucan branching enzyme GlgB protein
 NspC22_01422 hypothetical protein
 NspC22_01431 hypothetical protein
 NspC22_01448 hypothetical protein
 NspC22_01457 RND family efflux transporter MFP subunit protein
 NspC22_01458 **alkylphosphonate ABC transporter protein**
 NspC22_01461 putative integral membrane protein
 NspC22_01462 fibronectin type III protein
 NspC22_01463 putative lipoprotein
 NspC22_01470 hypothetical protein
 NspC22_01471 hypothetical protein
 NspC22_01472 cytoplasmic protein
 NspC22_01473 hypothetical protein
 NspC22_01474 hypothetical protein
 NspC22_01475 DEAD-DEAH box helicase protein
 NspC22_01476 hypothetical protein
 NspC22_01488 Cyanobacterial phytochrome A protein
 NspC22_01489 hypothetical protein
 NspC22_01490 CotH protein
 NspC22_01491 hypothetical protein
 NspC22_01492 hypothetical protein
 NspC22_01505 two-component system chemotaxis family CheB-CheR fusion protein
 NspC22_01516 Ribosomal RNA large subunit methyltransferase M protein
 NspC22_01517 hypothetical protein
 NspC22_01523 Hydrogenase expression-formation protein HypD
 NspC22_01524 hypothetical protein
 NspC22_01525 magnesium-protoporphyrin IX monomethyl ester cyclase protein
 NspC22_01526 ubiquinone-menaquinone biosynthesis methyltransferase protein
 NspC22_01527 hypothetical protein
 NspC22_01528 putative cyclic pyranopterin monophosphate synthase protein
 NspC22_01529 hypothetical protein
 NspC22_01530 Cyclic pyranopterin monophosphate synthase protein
 NspC22_01531 radical SAM domain-containing protein
 NspC22_01532 Ketoacyl reductase HetN protein
 NspC22_01533 UDP-N-acetylglucosamine 46-dehydratase protein
 NspC22_01534 B12 binding -radical SAM domain-containing protein
 NspC22_01538 hypothetical protein
 NspC22_01546 hypothetical protein
 NspC22_01547 Restriction endonuclease Defense protein
 NspC22_01548 trans-aconitate 2-methyltransferase protein
 NspC22_01549 hypothetical protein
 NspC22_01550 RNA polymerase-associated protein RapA
 NspC22_01553 Putative aspartate aminotransferase YhdR protein
 NspC22_01560 GMP synthase glutamine-hydrolyzing protein
 NspC22_01561 hypothetical protein
 NspC22_01570 hypothetical protein
 NspC22_01571 Lipoprotein NlpI
 NspC22_01572 LPP20 lipoprotein
 NspC22_01573 CHAT domain protein
 NspC22_01574 hypothetical protein
 NspC22_01575 RNA polymerase ECF-type sigma factor protein
 NspC22_01587 Serine-rich adhesin for platelet protein
 NspC22_01588 Collagen triple helix repeat domain containing protein
 NspC22_01589 hypothetical protein
 NspC22_01590 Cold shock-like protein CspE
 NspC22_01591 hypothetical protein
 NspC22_01592 Type II secretion system protein E
 NspC22_01602 NADH-quinone oxidoreductase subunit H 1 protein
 NspC22_01603 metal-dependent phosphoesterase protein
 NspC22_01604 hypothetical protein
 NspC22_01608 hypothetical protein
 NspC22_01610 adenine specific DNA methyltransferase protein
 NspC22_01611 putative signal-transduction protein containing cAMP-binding protein
 NspC22_01612 Molybdenum import ATP-binding protein ModC
 NspC22_01614 Molybdate-binding periplasmic protein
 NspC22_01618 metal-dependent phosphohydrolase HDOD domain-containing protein
 NspC22_01620 hypothetical protein
 NspC22_01621 putative cytochrome c protein
 NspC22_01622 hypothetical protein
 NspC22_01623 Hydrogen peroxide-inducible s activator protein
 NspC22_01627 putative multihem cytochrome c protein
 NspC22_01628 **Nitrate-nitrite sensor protein NarQ**
 NspC22_01630 anaerobic magnesium-protoporphyrin IX monomethyl ester cyclase protein
 NspC22_01634 zinc finger SWIM domain-containing protein
 NspC22_01635 adenosine tRNA methylthiotransferase MiaB protein
 NspC22_01645 Aspartyl-glutamyl-tRNA amidotransferase subunit B protein
 NspC22_01648 hypothetical protein
 NspC22_01651 pheromone shutdown protein
 NspC22_01652 hypothetical protein

NspC22_01661 MnxG protein cupredoxin domain-containing protein
NspC22_01662 RNA polymerase sigma-H factor protein
NspC22_01664 Phytanoyl-CoA dioxygenase protein
NspC22_01665 putative lipoprotein
NspC22_01666 hypothetical protein
NspC22_01667 putative multihem cytochrome c protein
NspC22_01668 euchromatic histone-lysine N-methyltransferase protein
NspC22_01669 Ankyrin repeat domain containing protein
NspC22_01670 hypothetical protein
NspC22_01671 putative cytochrome c protein
NspC22_01673 YeeE-YedE family protein
NspC22_01674 sulfur transport protein
NspC22_01675 hypothetical protein
NspC22_01677 hypothetical protein
NspC22_01691 Type II secretion system protein
NspC22_01692 fimbrial assembly family protein
NspC22_01693 Type II secretion system protein K
NspC22_01694 ral secretion pathway protein J
NspC22_01695 ral secretion pathway protein I
NspC22_01696 hypothetical protein
NspC22_01700 helicase domain-containing protein
NspC22_01701 putative helicase protein
NspC22_01702 hypothetical protein
NspC22_01704 hypothetical protein
NspC22_01705 hypothetical protein
NspC22_01708 hypothetical protein
NspC22_01709 hypothetical protein
NspC22_01710 Leucine Rich repeat domain containing protein
NspC22_01714 PAS-PAC sensor-containing diguanylate cyclase-phosphodiesterase protein
NspC22_01715 Phosphate-selective porin O protein
NspC22_01718 hypothetical protein
NspC22_01725 hypothetical protein
NspC22_01726 Serine-threonine-protein kinase pkn1
NspC22_01727 NLP-P60 protein
NspC22_01728 hypothetical protein
NspC22_01729 hypothetical protein
NspC22_01730 fumarylacetoacetate hydrolase family protein
NspC22_01731 BadM-Rrf2 family transcriptional regulator protein
NspC22_01732 Iron-sulfur cluster repair protein Ytfe
NspC22_01733 hypothetical protein
NspC22_01734 Trk system potassium uptake protein TrkH
NspC22_01735 Ion transport protein
NspC22_01736 phosphate sensor histidine kinase HAMP protein
NspC22_01738 SprA-related domain containing protein
NspC22_01739 hypothetical protein
NspC22_01740 curli production assembly-transport component CsgG protein
NspC22_01741 Membrane-bound lytic murein transglycosylase F protein
NspC22_01743 Putative transposase y4zB protein
NspC22_01744 Fic/DOC domain containing protein
