Table S7. ECF-σ factor-containing polysaccharide utilization gene clusters in *B. distasonis* ATCC 8503 (A) and *B. vulgatus* ATCC 8482 (B).

Cluster 1		
Bd0229	putative RNA polymerase ECF-type sigma factor	UNRESOLVED
Bd0229 Bd0230	putative anti-sigma factor	UNRESOLVED
Bd0231	putative outer membrane protein, probably involved in nutrient binding	NO
Bd0232	putative outer membrane protein probably involved in nutrient binding	UNRESOLVED
Bd0232 Bd0233	conserved hypothetical protein	NO
Bd0233	glycoside hydrolase family 38, distantly related to alpha-mannosidases	NO
Bd0235	putative sodium-dependent transporter	NO
Bd0235 Bd0236	helicase domain protein	LGT-in
Bd0230 Bd0237	conserved hypothetical protein	LGT-in
Bd0238	conserved hypothetical protein	LGT-in
Bd0238 Bd0239	putative exonuclease	NOVEL
Bd0239 Bd0240	conserved hypothetical protein	NOVEL NO
Bd0240 Bd0241	putative acetyltransferase	NOVEL
Cluster 2	putative acetyntalisterase	NOVEL
Bd1126c	two component system concor histiding kingso	NO
Bd1120c Bd1127c	two-component system sensor histidine kinase conserved hypothetical protein	UNRESOLVED
Bd1127c Bd1128c		NO
	probable NADH-dependent dehydrogenase	NO NO
Bd1129c	oxidoreductase, Gfo/Idh/MocA family	
Bd1130c	putative arylsulfatase	NO
Bd1131c	putative outer membrane protein, probably involved in nutrient binding	NO
Bd1132c	putative outer membrane protein, probably involved in nutrient binding	NO
Bd1133c	putative anti-sigma factor	NO
Bd1134c	putative RNA polymerase ECF-type sigma factor	NO
Cluster 3		NO
Bd1642c	mucin-desulfating sulfatase	NO
Bd1643c	arylsulfatase A	LGT-unresolved
Bd1644c	putative outer membrane protein, probably involved in nutrient binding	NO
Bd1645c	putative outer membrane protein, probably involved in nutrient binding	NO
Bd1646c	putative anti-sigma factor	NO
Bd1647	conserved hypothetical protein	NO
Bd1648c	RNA polymerase ECF-type sigma factor	NO
Cluster 4		NO
Bd2026	RNA polymerase ECF-type sigma factor	NO
Bd2027	putative anti-sigma factor	NO
Bd2028	putative outer membrane protein probably involved in nutrient binding	NO
Bd2029	putative outer membrane protein probably involved in nutrient binding	NO
Bd2030	putative sulfatase	NO
Bd2031	arylsulfatase A	UNRESOLVED
Bd2032	putative aminotransferase	NO
Bd2033	peptidyl-prolyl cis-trans isomerase SlyD, FKBP-type	NO
Bd2034	chorismate synthase	NO
Bd2035	putative multidrug resistance protein	LGT-in
Cluster 5		
Bd2259c	conserved hypothetical protein	NO
Bd2260c	arylsulfatase A	LGT-in
Bd2261c	putative outer membrane protein probably involved in nutrient binding	NO
Bd2262c	putative outer membrane protein probably involved in nutrient binding	NO

(A). ECF-σ factor-containing polysaccharide utilization gene clusters in *B. distasonis* ATCC 8503

Bd2263c	putative anti-sigma factor	NO
Bd2264c	RNA polymerase ECF-type sigma factor	NO
Cluster 6	KINA polymetase ECT-type sigma factor	NO
Bd2265c	putative secreted sulfatase precursor	UNRESOLVED
Bd2266c	arylsulfatase A	UNRESOLVED
Bd2267c	arylsulfatase A	LGT-unresolved
Bd2268c	conserved hypothetical protein, probably involved in nutrient binding	NO
Bd2269c	putative outer membrane protein, probably involved in nutrient binding	NO
Bd2209C Bd2270c	putative outer memorale protein, probably involved in nutrient officing	NO
Bd2270c Bd2271c		NO
Cluster 7	RNA polymerase ECF-type sigma factor	NO
Bd2277c	putative 1-acyl-sn-glycerol-3-phosphate acyltransferase	NO
Bd2277c Bd2278c	glycoside hydrolase family 92, related to an ill-defined alpha-1,2-mannosidase	UNRESOLVED
Bd2279c	putative outer membrane protein, probably involved in nutrient binding	NO
Bd2280c	putative outer membrane protein, probably involved in nutrient binding	UNRESOLVED
Bd2281c	putative anti-sigma factor	NO
Bd2282	RNA polymerase ECF-type sigma factor	UNRESOLVED
Cluster 8	hymothetical protein	NOVEL
Bd2405c	hypothetical protein	NOVEL
Bd2406c	conserved hypothetical protein	LGT-unresolved
Bd2407c	conserved hypothetical protein	UNRESOLVED
Bd2408c	glycoside hydrolase family 28, related to polygalacturonases	UNRESOLVED
Bd2409c	putative outer membrane protein, probably involved in nutrient binding	UNRESOLVED
Bd2410c	putative outer membrane protein, probably involved in nutrient binding	UNRESOLVED
Bd2411c	putative anti-sigma factor	UNRESOLVED
Bd2412c	RNA polymerase ECF-type sigma factor	UNRESOLVED
Cluster 9		210
Bd2413c	putative dehydrogenase	NO
Bd2414c	putative glycosylhydrolase (putative secreted protein)	UNRESOLVED
Bd2415c	putative outer membrane protein, probably involved in nutrient binding	NO
Bd2416c	putative outer membrane protein, probably involved in nutrient binding	NO
Bd2417c	putative anti-sigma factor	NO
Bd2418	RNA polymerase ECF-type sigma factor	NO
Cluster 10		INDEGOLVED
Bd3036	RNA polymerase ECF-type sigma factor	UNRESOLVED
Bd3037	putative anti-sigma factor	UNRESOLVED
Bd3038	putative outer membrane protein probably involved in nutrient binding	NO
Bd3039	putative outer membrane protein, probably involved in nutrient binding	UNRESOLVED
Bd3040		
	conserved hypothetical protein with endonuclease/exonuclease/phosphatase	UNRESOLVED
5 10 0 11	family domain	
Bd3041	family domain conserved hypothetical protein with endonuclease/exonuclease/phosphatase	UNRESOLVED NO
	family domain	
Cluster 11	family domain conserved hypothetical protein with endonuclease/exonuclease/phosphatase family domain	NO
Cluster 11 Bd3042	family domain conserved hypothetical protein with endonuclease/exonuclease/phosphatase family domain RNA polymerase ECF-type sigma factor	NO UNRESOLVED
Cluster 11 Bd3042 Bd3043	family domain conserved hypothetical protein with endonuclease/exonuclease/phosphatase family domain RNA polymerase ECF-type sigma factor putative anti-sigma factor	NO UNRESOLVED NO
Cluster 11 Bd3042 Bd3043 Bd3044	family domain conserved hypothetical protein with endonuclease/exonuclease/phosphatase family domain RNA polymerase ECF-type sigma factor putative anti-sigma factor putative outer membrane protein probably involved in nutrient binding	NO UNRESOLVED NO NO
Cluster 11 Bd3042 Bd3043 Bd3044 Bd3045	family domain conserved hypothetical protein with endonuclease/exonuclease/phosphatase family domain RNA polymerase ECF-type sigma factor putative anti-sigma factor putative outer membrane protein probably involved in nutrient binding putative outer membrane protein probably involved in nutrient binding	NO UNRESOLVED NO NO NO
Cluster 11 Bd3042 Bd3043 Bd3044 Bd3045 Bd3046	family domain conserved hypothetical protein with endonuclease/exonuclease/phosphatase family domain RNA polymerase ECF-type sigma factor putative anti-sigma factor putative outer membrane protein probably involved in nutrient binding putative outer membrane protein probably involved in nutrient binding conserved hypothetical protein	NO UNRESOLVED NO NO LGT-in
Cluster 11 Bd3042 Bd3043 Bd3044 Bd3045 Bd3046 Bd3047	family domain conserved hypothetical protein with endonuclease/exonuclease/phosphatase family domain RNA polymerase ECF-type sigma factor putative anti-sigma factor putative outer membrane protein probably involved in nutrient binding putative outer membrane protein probably involved in nutrient binding conserved hypothetical protein hypothetical protein	NO UNRESOLVED NO NO LGT-in NOVEL
Cluster 11 Bd3042 Bd3043 Bd3044 Bd3045 Bd3046 Bd3047 Bd3048	family domain conserved hypothetical protein with endonuclease/exonuclease/phosphatase family domain RNA polymerase ECF-type sigma factor putative anti-sigma factor putative outer membrane protein probably involved in nutrient binding putative outer membrane protein probably involved in nutrient binding conserved hypothetical protein hypothetical protein hypothetical protein glycoside hydrolase family 2, candidate beta-glycosidase	NO UNRESOLVED NO NO LGT-in NOVEL UNRESOLVED
Cluster 11 Bd3042 Bd3043 Bd3044 Bd3045 Bd3046 Bd3047 Bd3048 Bd3049c	family domain conserved hypothetical protein with endonuclease/exonuclease/phosphatase family domain RNA polymerase ECF-type sigma factor putative anti-sigma factor putative outer membrane protein probably involved in nutrient binding putative outer membrane protein probably involved in nutrient binding conserved hypothetical protein hypothetical protein glycoside hydrolase family 2, candidate beta-glycosidase glycoside hydrolase family 2, candidate beta-glycosidase	NO UNRESOLVED NO NO LGT-in NOVEL UNRESOLVED NO
Cluster 11 Bd3042 Bd3043 Bd3044 Bd3045 Bd3046 Bd3047 Bd3048 Bd3049c Bd3050	family domain conserved hypothetical protein with endonuclease/exonuclease/phosphatase family domain RNA polymerase ECF-type sigma factor putative anti-sigma factor putative outer membrane protein probably involved in nutrient binding putative outer membrane protein probably involved in nutrient binding conserved hypothetical protein hypothetical protein glycoside hydrolase family 2, candidate beta-glycosidase glycoside hydrolase family 2, candidate beta-glycosidase conserved hypothetical protein	NO UNRESOLVED NO NO LGT-in NOVEL UNRESOLVED NO NO
Cluster 11 Bd3042 Bd3043 Bd3044 Bd3045 Bd3046 Bd3047 Bd3048 Bd3049c	family domain conserved hypothetical protein with endonuclease/exonuclease/phosphatase family domain RNA polymerase ECF-type sigma factor putative anti-sigma factor putative outer membrane protein probably involved in nutrient binding putative outer membrane protein probably involved in nutrient binding conserved hypothetical protein hypothetical protein glycoside hydrolase family 2, candidate beta-glycosidase glycoside hydrolase family 2, candidate beta-glycosidase	NO UNRESOLVED NO NO LGT-in NOVEL UNRESOLVED NO

Cluster 12		
Bd3052	RNA polymerase ECF-type sigma factor	NO
Bd3053	putative anti-sigma factor	NO
Bd3054	putative outer membrane protein, probably involved in nutrient binding	NO
Bd3055	putative outer membrane protein, probably involved in nutrient binding	NO
Bd3056	conserved hypothetical protein	LGT-unresolved
Bd3057	glycoside hydrolase family 97, related to alpha-glucosidases	UNRESOLVED
Bd3058	putative lysophospholipase L1 and related esterase	NO
Cluster 13		
Bd3059	RNA polymerase ECF-type sigma factor	NO
Bd3060	putative anti-sigma factor	UNRESOLVED
Bd3061	putative outer membrane protein, probably involved in nutrient binding	UNRESOLVED
Bd3062	putative outer membrane protein, probably involved in nutrient binding	UNRESOLVED
Bd3063	conserved hypothetical protein	UNRESOLVED
Bd3064	putative integrase/transposase	UNRESOLVED
Bd3065	conserved hypothetical protein	UNRESOLVED
Bd3066	hypothetical protein	UNRESOLVED
Bd3067	glycoside hydrolase family 78, related to alpha-L-rhamnosidases	NO
Bd3068	glycoside hydrolase family 92, related to an ill-defined alpha-1,2-mannosidase	NO
Cluster 14		
Bd3260c	putative exported protein	NO
Bd3261c	conserved hypothetical protein	UNRESOLVED
Bd3262c	conserved hypothetical protein	NO
Bd3263c	putative outer membrane protein, probably involved in nutrient binding	NO
Bd3264c	putative outer membrane protein, probably involved in nutrient binding	NO
Bd3265c	putative anti-sigma factor	NO
Bd3266c	putative ECF-type RNA polymerase sigma factor	NO
Cluster 15		
Bd3386	putative RNA polymerase ECF-type sigma factor	NO
Bd3387	conserved hypothetical protein	NO
Bd3388	hypothetical protein	LGT-unresolved
Bd3389	putative outer membrane protein probably involved in nutrient binding	NO
Bd3390	putative outer membrane protein probably involved in nutrient binding	UNRESOLVED
Bd3391	conserved hypothetical protein	LGT-in
Bd3392	hypothetical protein	NOVEL
Bd3393c	putative permease	NO
Cluster 16		
Bd3859	RNA polymerase ECF-type sigma factor	NO
Bd3860	putative anti-sigma factor	NO
Bd3861	putative outer membrane protein, probably involved in nutrient binding	NO
Bd3862	putative outer membrane protein, probably involved in nutrient binding	UNRESOLVED
Bd3863	arylsulfatase precursor	UNRESOLVED
Bd3864	N-acetylgalactosamine 6-sulfatase (GALNS)	UNRESOLVED

Cluster 1		
Bv0103c	hypothetical protein	NOVEL
Bv0103c Bv0104c	conserved hypothetical protein, possible ATP/GTP-binding site	UNRESOLVED
Bv0104c Bv0105c	putative oxidoreductase	NO
Bv0105c Bv0106c	putative oxidoreductase putative outer membrane protein, probably involved in nutrient binding	NO
Bv0100c Bv0107c	putative outer membrane protein, probably involved in nutrient binding	NO
Bv0107c Bv0108c	putative outer memorale protein, probably involved in nutrient officing	NO
Bv0108c Bv0109c	RNA polymerase ECF-type sigma factor	NO
Cluster 2	KINA polymenase ECT-type sigma factor	NO
Bv0110c	putative thiol:disulfide interchange protein DsbE	NO
Bv0110c Bv0111c	putative thiol:disulfide interchange protein	NO
Bv0112c	conserved hypothetical protein	NO
Bv0112c Bv0113c	conserved hypothetical protein	NO
Bv0113c Bv0114c	putative regulatory protein	NO
Bv0114c Bv0115c	glycoside hydrolase family 88, candidate delta-4,5 unsaturated glucuronyl hydrolase	NO
Bv0115c Bv0116c	glycoside hydrolase family 38, candidate deta-4,9 disaturated gluculonyi hydrolase glycoside hydrolase family 43, candidate beta-xylosidase/alpha-L-arabinofuranosidase	
Bv0110c Bv0117c	glycoside hydrolase family 43, candidate octa-xylosidase/apha-L-arabinofuranosidase glycoside hydrolase family 97, related to alpha-glucosidases	NO
Bv0117c Bv0118c	conserved hypothetical protein	NO
Bv0118c Bv0119c	putative beta-lactamase class C and other penicillin binding proteins	LGT-in
Bv0119C Bv0120c	conserved hypothetical protein	NO
Bv0120c Bv0121c	glycoside hydrolase family 28, distantly related to polygalacturonases	LGT-out
Bv0121c Bv0122c	conserved hypothetical protein	NO
Bv0122c Bv0123c	conserved hypothetical protein	NO
Bv0123c Bv0124c	glycoside hydrolase family 28, distantly related to polygalacturonases	NO
Bv0124c Bv0125c	putative outer membrane protein, probably involved in nutrient binding	NO
Bv0125c Bv0126c	putative outer membrane protein, probably involved in nutrient binding	NO
Bv0120c Bv0127c	RNA polymerase ECF-type sigma factor	NO
Cluster 3	KINA polymerase ECT-type sigma factor	NO
Bv0132c	glycoside hydrolase family 92, related to an ill-defined alpha-1,2-mannosidase	UNRESOLVED
Bv0132c Bv0133c	glycoside hydrolase family 97, related to alpha-glucosidases	NO
Bv0135c Bv0134c	putative outer membrane protein, probably involved in nutrient binding	UNRESOLVED
Bv0135c	putative outer membrane protein, probably involved in nutrient binding	NO
Bv0135c Bv0136c	putative RNA polymerase ECF-type sigma factor	UNRESOLVED
Cluster 3		OTHESOEVED
Bv0293c	glycoside hydrolase family 2, related to beta-galactosidases	UNRESOLVED
Bv0294c	glycoside hydrolase family 63, distantly related to alpha-glycosidases	UNRESOLVED
Bv0295c	putative outer membrane protein, probably involved in nutrient binding	UNRESOLVED
Bv0296c	putative outer membrane protein, probably involved in nutrient binding	NO
Bv0297c	putative anti-sigma factor	NO
Bv0298c	putative RNA polymerase ECF-type sigma factor	NO
Cluster 4		110
Bv0342c	histidyl-tRNA synthetase	NO
Bv0343c	putative ABC transporter, periplasmic sugar-binding protein	LGT-in
Bv0344c	transposase	UNRESOLVED
Bv0345c	ABC-type sugar transport system, periplasmic component	LGT-in
Bv0346c	putative integral membrane protein	NO
Bv0347c	conserved hypothetical protein	LGT-unresolved
Bv0348c	glycerol kinase 2 (ATP:glycerol 3-phosphotransferase 2)	LGT-unresolved
Bv0349c	transketolase, C-terminal subunit	LGT-unresolved
Bv0350c	transketolase, N-terminal subunit	LGT-unresolved
Bv0351c	transcriptional regulator of sugar metabolism	LGT-in
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(B). ECF-σ factor-containing polysaccharide utilization gene clusters in *B. vulgatus* ATCC 8482

Bv0352c	3,4-dihydroxy-2-butanone 4-phosphate synthase (cyclohydrolase II)	LGT-unresolved
Bv0353c	conserved hypothetical protein	LGT-unresolved
Bv0354c	two-component system sensor histidine kinase/response regulator, hybrid ('one- component system')	NO
Bv0355c	putative outer membrane protein, probably involved in nutrient binding	UNRESOLVED
Bv0356c	putative outer membrane protein, probably involved in nutrient binding	NO
Bv0357c	conserved hypothetical protein, putative anti-sigma factor	NO
Bv0358c	RNA polymerase ECF-type sigma factor	NO
Cluster 5		
Bv0377	putative RNA polymerase ECF-type sigma factor	NO
Bv0378	putative anti-sigma factor	NO
Bv0379	putative outer membrane protein, probably involved in nutrient binding	NO
Bv0380	putative outer membrane protein, probably involved in nutrient binding	NO
Bv0381	glycoside hydrolase family 2, candidate beta-glycosidase	UNRESOLVED
Bv0382	glycoside hydrolase family 20, distantly related to beta-N-acetylhexosaminidases	LGT-unresolved
Bv0383	glycoside hydrolase family 2, candidate beta-glycosidase	NO
Bv0384	arylsulfatase	NO
Bv0385	hypothetical protein	LGT-in
Bv0386	NADH-ubiquinone oxidoreductase subunit	NOVEL
Bv0387	hypothetical protein	NOVEL
Cluster 6		
Bv0472c	conserved hypothetical protein	UNRESOLVED
Bv0473c	glycoside hydrolase family 31, candidate alpha-glycosidase; related to beta-	NO
Bv0474c	putative outer membrane protein, probably involved in nutrient binding	NO
Bv0475c	putative outer membrane protein, probably involved in nutrient binding	NO
Bv0476c	two-component system response regulator	NO
Bv0477c	glycoside hydrolase family 35, candidate beta-glycosidase; related to beta-	NO
	galactosidases	
Bv0478c	glycoside hydrolase family 51, related to alpha-L-arabinofuranosidases	NO
Bv0479c	glycoside hydrolase family 43, modular protein with N-terminal domain distantly related to beta-glycosidases and C-terminal related to beta-xylosidases/alpha-L-	UNRESOLVED
5 0 100	arabinofuranosidases	
Bv0480c	glycoside hydrolase family 30, candidate beta-glycosidase	NO
Bv0481c	putative outer membrane protein, probably involved in nutrient binding	NO
Bv0482c	putative outer membrane protein, probably involved in nutrient binding	NO
Bv0483c	putative anti-sigma factor	NO
Bv0484c	putative RNA polymerase ECF-type sigma factor	NO
Cluster 7		NO
Bv0593c	putative oxidoreductase	NO
Bv0594c	conserved hypothetical protein	NO
Bv0595c	putative signal transducer	NO
Bv0596c	conserved hypothetical protein	NO
Bv0597c	exo-alpha sialidase	NO
Bv0598c	conserved hypothetical protein	NO
Bv0599c	glycoside hydrolase family 18, related to chitinases	NO NO
Bv0600c	conserved hypothetical protein	NO
Bv0601c	putative outer membrane protein, probably involved in nutrient binding	NO NO
Bv0602c	glycoside hydrolase family 97, related to alpha-glucosidases	NO
Bv0603c	putative endonuclease/exonuclease/phosphatase family protein	NO
Bv0604c	conserved hypothetical protein	NO
Bv0605c	putative outer membrane protein, probably involved in nutrient binding	NO
Bv0606c	glycoside hydrolase family 92, related to an ill-defined alpha-1,2-mannosidase	NO NO
Bv0607c	glycoside hydrolase family 92, related to an ill-defined alpha-1,2-mannosidase	NO

DV000cc plaulov anti-signa factor NO BV000vc RNA polymerase ECF-type signa factor NO BV0710c conserved hypothetical protein NO BV0711c conserved hypothetical protein NO BV0712c putative outer membrane protein, probably involved in nutrient binding NO BV0712c putative outer membrane protein, probably involved in nutrient binding NO Bv0711c conserved hypothetical protein NO Bv0711c putative outer membrane protein, probably involved in nutrient binding NO Bv0711c glycoside hydrolase family 3c, candidate alpha-glycosidase; related to alpha-glycoside putative anti-sigma factor NO Bv0915c RNA polymerase ECF-type sigma factor NO Bv0915c RNA polymerase ECF-type sigma factor NO Bv0915 RNA polymerase ECF-type sigma factor NO Bv0912 putative outer membrane protein, probably involved in nutrient binding NO Bv0921 putative outer membrane protein, probably involved in nutrient binding NO Bv0921 conserved hypothetical protein NO Bv1025 RNA polymerase ECF-ty	D0609	mutativa anti siama fastan	NO
Cluster 8 Over a structure of the second secon	Bv0608c	putative anti-sigma factor	NO
Bv0709chypothetical proteinNOVELBv07110cconserved hypothetical proteinNOBv07112cputative outer membrane protein, probably involved in nutrient bindingNOBv0712cputative outer membrane protein, probably involved in nutrient bindingNOBv0714cputative outer membrane protein, probably involved in nutrient bindingNOBv0714cputative anti-sigma factorNOBv0716cglycoside hydrolase family 36, candidate alpha-glycosidase; related to alpha- glactosidasesNOBv0715cRNA polymerase ECF-type sigma factorNOBv0916Putative outer membrane protein, probably involved in nutrient bindingNOBv0917putative outer membrane protein, probably involved in nutrient bindingNOBv0919conserved hypothetical proteinNOBv0921putative outer membrane protein, probably involved in nutrient bindingNOBv0921putative outer membrane protein, probably involved in nutrient bindingNOBv0921putative oxidoreductase (putative secreted protein)IGT-unresolvedBv1025RNA polymerase ECF-type sigma factorNOBv1026putative anti-sigma factorNOBv1027putative outer membrane protein, probably involved in nutrient bindingNOBv1028hypothetical proteinNOBv1029glycosyltransferase family 9, related to glycosyltransferasesNOBv1029putative aut-sigma factorNOBv1029glycosyltransferase family 9, related to beta-glycosyltransferasesNO <td< td=""><td></td><td>KINA polymenase ECF-type sigma factor</td><td>NO</td></td<>		KINA polymenase ECF-type sigma factor	NO
BV0710cconserved hypothetical proteinNOBV0711cconserved hypothetical proteinLGT-inBV0712cputative outer membrane protein, probably involved in nutrient bindingNOBV0713cputative outer membrane protein, probably involved in nutrient bindingNOBV0714cputative outer membrane protein, probably involved in nutrient bindingNOBV0715cRNA polymerase ECF-type sigma factorNOBV0915cRNA polymerase ECF-type sigma factorNOBV0916putative anti-sigma factorNOBV0917putative outer membrane protein, probably involved in nutrient bindingNOBV0918putative outer membrane protein, probably involved in nutrient bindingNOBV0919conserved hypothetical proteinNOBV0920conserved hypothetical proteinNOBV0921putative outer membrane protein, probably involved in nutrient bindingNOBV0922conserved hypothetical proteinNOBV0923putative outer membrane protein, probably involved in nutrient bindingNOBV024putative outer membrane protein, probably involved in nutrient bindingNOBV1025RNA polymerase ECF-type sigma factorNOBV1026putative outer membrane protein, probably involved in nutrient bindingNOBV1027putative outer membrane protein, probably involved in nutrient bindingNOBV1028hypothetical proteinNOBV1029putative outer membrane protein, probably involved in nutrient bindingNOBV1029putativ		hypothetical protain	NOVEL
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Bv0712c putative outer membrane protein, probably involved in nutrient binding NO Bv0714c putative outer membrane protein, probably involved in nutrient binding NO Bv0715c RNA polymerase ECF-type sigma factor NO Bv0915c RNA polymerase ECF-type sigma factor NO Bv0915c RNA polymerase ECF-type sigma factor NO Bv0915c RNA polymerase ECF-type sigma factor NO Bv0916 putative anti-sigma factor NO Bv0917 putative outer membrane protein, probably involved in nutrient binding NO Bv0918 putative outer membrane protein, probably involved in nutrient binding UNRESOLVED Bv0919 conserved hypothetical protein NO Bv0920 conserved hypothetical protein NO Bv0921 putative outer membrane protein, probably involved in nutrient binding NOVEI. Bv1025 RNA polymerase ECF-type sigma factor NO Bv1026 putative anti-sigma factor NO Bv1027 putative anti-sigma factor NO Bv1028 hypothetical protein NOVEI. Bv1029 putative anti-sigma factor NO Bv1020 glycosyltransferase family 9, related to glycosyltransferases NO Bv1030 glycosyltransferase family 2, related to b			
Bv0713cputative outer membrane protein, probably involved in nutrient bindingNOBv0715cRNA polymerase ECF-type sigma factorNOBv0715cRNA polymerase ECF-type sigma factorNOBv0915cRNA polymerase ECF-type sigma factorNOBv0915cRNA polymerase ECF-type sigma factorNOBv0917putative anti-sigma factorNOBv0917putative outer membrane protein, probably involved in nutrient bindingNOBv0919conserved hypothetical proteinNOBv0919conserved hypothetical proteinNOBv0920conserved hypothetical proteinNOBv0921putative outer membrane protein, probably involved in nutrient bindingNOBv0921putative anti-sigma factorNOBv1025RNA polymerase ECF-type sigma factorNOBv1026putative outer membrane protein, probably involved in nutrient bindingNOBv1027putative outer membrane protein, probably involved in nutrient bindingNOBv1028rypothetical proteinNOBv1029erythronate-4-phosphate dehydrogenaseNOBv1030glycosyltransferase family 9, related to glycosyltransferasesNOBv1031putative active farse factorNOBv1033glycosyltransferase family 2, related to beta-glycosyltransferasesNOBv1034conserved hypothetical proteinNOBv1035glycosyltransferase family 2, related to alpha-glycosyltransferasesNOBv1035glycosyltransferase family 2, related to beta-glycosyltransfe			
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Bv1723cglycoside hydrolase family 28, related to polygalacturonasesUNRESOLVED			
	Bv1723c	glycoside hydrolase family 28, related to polygalacturonases	UNRESOLVED

5 1 - 6 1		
Bv1724	hypothetical protein	NOVEL
Bv1725c	iduronate 2-sulfatase precursor	NO
Bv1726c	putative outer membrane protein, probably involved in nutrient binding	NO
Bv1727c	putative outer membrane protein, probably involved in nutrient binding	NO
Bv1728c	putative anti-sigma factor	NO
Bv1729	RNA polymerase ECF-type sigma factor	NO
Cluster 14		
Bv1733	putative ECF-type RNA polymerase sigma factor	NO
Bv1734	putative anti-sigma factor	NO
Bv1735	putative outer membrane protein, probably involved in nutrient binding	NO
Bv1736	putative outer membrane protein, probably involved in nutrient binding	NO
Bv1737	conserved hypothetical protein	NO
Bv1738	conserved hypothetical protein	NO
Bv1739	glycoside hydrolase family 2, candidate beta-glycosidase	UNRESOLVED
Bv1740	hypothetical protein	NOVEL
Bv1741	glycoside hydrolase family 78, distantly related to alpha-L-rhamnosidases	UNRESOLVED
Bv1742	two-component system response regulator	NO
Bv1743	aldehyde dehydrogenase A	LGT-unresolved
Bv1744	glycoside hydrolase family 43, related to beta-xylosidases/alpha-L-	NO
Bv1745	conserved hypothetical protein	NO
Bv1746	conserved hypothetical protein	NO
Bv1747	conserved hypothetical protein	NO
Cluster 15		110
Bv1758	putative RNA polymerase ECF-type sigma factor	NO
Bv1759	putative anti-sigma factor	NO
Bv1760	putative and signal factor putative outer membrane protein, probably involved in nutrient binding	NO
Bv1761	putative outer membrane protein, probably involved in nutrient binding	NO
Bv1762	glycoside hydrolase family 2, candidate beta-glycosidase	LGT-out
Bv1762 Bv1763	glycoside hydrolase family 2, candidate beta-glycosidase	NO
Bv1764	glycoside hydrolase family 31, candidate alpha-glycosidase	UNRESOLVED
Bv1765	conserved hypothetical protein	UNRESOLVED
Bv1765 Bv1766c		LGT-in
	putative pectin degradation protein	
Bv1767	polysaccharide lyase family 10, related to pectate lyases	LGT-in
Bv1768	conserved hypothetical protein	NO
Bv1769	carbohydrate esterase family 8, modular protein with N-terminal domain distantly	NO
	related to pectin acetylesterases and C-terminal domain related to pectin	
D 1770	methylesterases	NO
Bv1770	two-component system sensor histidine kinase/response regulator, hybrid ('one-	NO
D 1881	component system')	NO
Bv1771	hypothetical protein	NO
Bv1772	dipeptidyl peptidase IV	NO
Cluster 16		
Bv1927c	putative thiol-disulfide oxidoreductase	UNRESOLVED
Bv1928c	putative disulphide-isomerase	NO
Bv1929c	putative outer membrane protein, probably involved in nutrient binding	UNRESOLVED
Bv1930c	putative outer membrane protein, probably involved in nutrient binding	UNRESOLVED
Bv1931c	putative anti-sigma factor	NO
Bv1932c	RNA polymerase ECF-type sigma factor	UNRESOLVED
Bv1933c	glycoside hydrolase family 43, candidate beta-xylosidase/alpha-L-arabinofuranosidase	
Bv1934c	conserved hypothetical protein	NO
Bv1935c	glycoside hydrolase family 28, related to polygalacturonases	NO
Cluster 17		
Bv1972	RNA polymerase ECF-type sigma factor	NO

Bv1973 Bv1974	putative anti-sigma factor putative outer membrane protein, probably involved in nutrient binding	NO UNRESOLVED
Bv1974 Bv1975	putative outer membrane protein, probably involved in nutrient binding	UNRESOLVED
Bv1975 Bv1976	hypothetical protein	NOVEL
Bv1970 Bv1977	ABC transporter ATP-binding protein	NOVEL
Bv1978	putative endothelin-converting enzyme	NO
Bv1979	conserved hypothetical protein	NO
Bv1980	putative metal resistance related exported protein	NO
Bv1981	AcrB/AcrD/AcrF family cation efflux system protein	NO
Bv1982	conserved hypothetical protein	NO
Bv1983	ThiJ/PfpI family protein	NO
Bv1984	putative nitroreductase	NO
Cluster 18		
Bv2160	RNA polymerase ECF-type sigma factor	UNRESOLVED
Bv2161	putative anti-sigma factor	NO
Bv2162	putative outer membrane protein, probably involved in nutrient binding	NO
Bv2163	putative outer membrane protein, probably involved in nutrient binding	UNRESOLVED
Bv2164	putative thiol-disulfide oxidoreductase	UNRESOLVED
Bv2165	putative thiol-disulfide oxidoreductase	UNRESOLVED
Bv2166	glycoside hydrolase family 2, candidate beta-glycosidase	NO
Bv2167	aldose 1-epimerase precursor	NO
Cluster 19		
Bv2384c	L-serine dehydratase	NO
Bv2385c	conserved hypothetical protein	NO
Bv2386c	putative outer membrane protein, probably involved in nutrient binding	NO
Bv2387c	putative outer membrane protein, probably involved in nutrient binding	NO
Bv2388c	putative anti-sigma factor	NO
Bv2389c	RNA polymerase ECF-type sigma factor	UNRESOLVED
Cluster 20		
Bv4006c	conserved hypothetical protein	NO
Bv4007c	putative outer membrane protein, probably involved in nutrient binding	NO
Bv4008c	putative outer membrane protein, probably involved in nutrient binding	NO
Bv4009c	putative anti-sigma factor	NO
Bv4010c	RNA polymerase ECF-type sigma factor	NO

Legend: The three columns represent Gene ID, functional annotation and predicted evolutionary history of the gene (labeled as in **Table S5**).