Overrepresented 5046 2393 1373 3742						e <sup>c</sup> Gene name and product <sup>d</sup>	Function <sup>e</sup>	Multifun
2393 1373 3742								
1373 3742	BB BP	0382 0408	0227	0406	2.49 2.09	hypothetical protein psiF; phosphate starvation-inducible protein precursor		Unknown function, no known homologs Adaptation
	BP	0473	0425	0473	2.75	probable LysR-family transcriptional regulator		Global regulatory functions
2624	BP BP	1366 1649	1054 2224	1150 2251	5.12 2.13	prn; pertactin precursor bapA; putative autotransporter	adhesin	Pathogenicity islands/determinants Unknown function, no known homologs
303	BP	1847	2017	2397	3.00	putative haloacid-type dehydrogenase		Not classified (including putative assignments)
3756 2690	BP BP	2031 [3158] <sup>1</sup>	2741 [1652]	2588 [2837]	4.48 3.12	putative TetR-family transcriptional regulator intergenic region		Global regulatory functions
3530 1925	BP BP	3291 4137	1201 0072		3.00 9.43	tcfA; tracheal colonization factor precursor	adhesin	Pathogenicity islands/determinants
1925 3734	BP BP	4137	0632		2.15	transposase putative pimeloyl-CoA synthetase		Transposon-related functions
2343 1655	BP BP		0207 0328		13.59 2.89	putative aldehyde dehydrogenase conserved hypothetical protein		Not classified (including putative assignments)  Conserved in other organisms
1654	BP		0329		11.24	putative coenzyme A ligase		Not classified (including putative assignments)
3578 1618	BP BP		[0332] 0703		4.15 11.82	intergenic region TonB-dependent receptor protein (pseudogene)	iron uptake	Fe storage
1664	BP		[2182]		2.09	intergenic region	non optano	
1665 2563	BP BP		2183 2306		3.13 7.46	conserved hypothetical protein putative sodium:alanine symporter		Conserved in other organisms Transport/binding proteins
2747	BP		2603		2.05	hypothetical protein		Unknown function, no known homologs
3656 1231	BP BP		[2618] 2622		5.62 4.09	intergenic region HipA-like protein		Conserved in other organisms
1229 3443	BP BP		2623 2853		3.84 2.23	DNA-binding protein		Not classified (including putative assignments)
1954	BP		2854		3.40	probable short chain dehydrogenase probable short chain dehydrogenase		Pool, multipurpose conversions of intermed. met'm Pool, multipurpose conversions of intermed. met'm
1955 3535	BP BP		2855 2857		3.77 2.88	membrane transport protein putative LysR-family transcriptional regulator		Transport/binding proteins Global regulatory functions
3671	BP		multiple		13.68	IS1663 transposon	transposase	Global regulatory functions
3670 6087	BP BPP		multiple	2077	12.24 12.08	IS1663 transposon conserved hypothetical protein	transposase	Conserved in other organisms
6088	BPP			2078	12.87	conserved hypothetical protein		Conserved in other organisms
Underrepresente 5535	d in complex IV BB	0022		0022	0.33	putative metal transporter		
5536	BB	0022		0022	0.41	putative metal transporter		
5184 7004	BB BB	[0109] 0110			0.18 0.18	intergenic region putative adhesin	adhesin	Pathogenicity islands/determinants
5178 7006	BB BB	0124 0128			0.35 0.17	putative UDP-glucose 4-epimerase hypothetical protein		Not classified (including putative assignments) Unknown function, no known homologs
5173	BB	0130		0130	0.38	wbmO; hypothetical protein		Onknown function, no known nomologs
5172 5163	BB BB	0131 0138		0131 0138	0.46 0.17	wbmN; ABC transporter ATP-binding protein wbmG; nucleotide sugar epimerase/dehydratase	LPS Cantings biosynthesis	
5160	BB	0140		0140	0.33	wbmE; putative exported protein	LPS O-antigen biosynthesis	
5159 5157	BB BB	0141 0142		0141 0142	0.44 0.48	wbmD; putative membrane protein wbmC; putative glutamine amidotransferase		
5154	BB	0144		0144	0.46	wbmA; putative glycosyl transferase		
5209 5207	BB BB	0214 0216		0210 0212	0.36 0.10	AraC family transcriptional regulator conserved hypothetical protein		
5051	BB	0376		0373	0.46	putative membrane protein		
5050 5022	BB BB	0377 [0449]		0374 [0448]	0.49	putative membrane protein intergenic region		
3085 1366	BP BP	0466 0467	0433 0432	0466 0467	0.50 0.44	probable LysR-family transcriptional regulator conserved hypothetical protein		Global regulatory functions
7033	BB	0467	0432	0471	0.44	putative exported protein		Conserved in other organisms Periplasmic/exported/lipoproteins
7038 7039	BB BB	0477 0478		0477 0478	0.18 0.11	conserved hypothetical protein conserved hypothetical protein		
7040	BB	0479		0479	0.13	hypothetical protein		
6030 6037	BB BB	[0481] 0486		0482 0487	0.30 0.47	hypothetical protein (BPP) or intergenic region (BB) hypothetical protein		Unknown function, no known homologs Unknown function, no known homologs
6038	BB	0488		0488	0.34	virB6; plasmid-related protein		Plasmid-related functions
7048 7049	BB BB	0490 0491			0.16 0.11	putative membrane protein virB5; plasmid-related exported protein	plasmid- or phage-like region	Inner membrane Plasmid-related functions
7050	BB	0492			0.02	hypothetical protein		Unknown function, no known homologs
7051 7052	BB BB	0493 0494			0.18	virD2; plasmid-related protein hypothetical 20.3 kDa protein, plasmid-related protein		Plasmid-related functions Plasmid-related functions
7054	BB	0496		0488	0.10	plasmid-related protein ; (BB) hypothetical protein		Unknown function, no known homologs
7055 7056	BB BB	0497 0498			0.05 0.28	hypothetical protein hypothetical protein		Unknown function, no known homologs Unknown function, no known homologs
7057	BB	0499		0494	0.12	hypothetical protein		
7058 7064	BB BB	0500 0527			0.29	putative integrase conserved hypothetical protein		Phage-related functions and prophages Conserved in other organisms
7065 7066	BB BB	0528 0529			0.11	putative DNA-binding protein		Not classified (including putative assignments)
7071	BB	0534		0529	0.12 0.46	hypothetical protein putative exported protein		Unknown function, no known homologs
7108 7124	BB BB	0571 0587		0565 0581	0.48 0.12	putative branched-chain amino acid transport ATP-binding protein conserved hypothetical protein		
7180	BB	0652			0.16	putative exported protein		Periplasmic/exported/lipoproteins
7181 7182	BB BB	0653			0.11	putative 3-hydroxyisobutyrate dehydrogenase LysR-family transcriptional regulator		Not classified (including putative assignments) Global regulatory functions
7245		0654			0.36	bcpA; carboxyvinyl-carboxyphosphonate phosphorylmutase putative membrane protein		and a second or the second of the second
	BB	0718						Not classified (including putative assignments)
7247 7324	BB BB BB			0729	0.49	putative outer membrane protein		Inner membrane
7324 7330	BB BB BB	0718 0720 0815 0821		0729 0735	0.42 0.25	autotransporter		Inner membrane
7324 7330 5218 5219	BB BB BB BB	0718 0720 0815 0821 0908 0909			0.42 0.25 0.42 0.09	autotransporter putative helicase conserved hypothetical protein		Inner membrane  DNA - replication, repair, restr/modific'n Conserved in other organisms
7324 7330 5218 5219 5223	BB BB BB BB BB	0718 0720 0815 0821 0908 0909	3112		0.42 0.25 0.42 0.09 0.23	autotransporter putative helicase conserved hypothetical protein putative integrase (BP pseudogene)	_	Inner membrane  DNA - replication, repair, restr/modific'n  Conserved in other organisms  Conserved in other organisms
7324 7330 5218 5219 5223 5224 2267	BB BB BB BB BB BB	0718 0720 0815 0821 0908 0909 0914 0915	3454	0735	0.42 0.25 0.42 0.09 0.23 0.13	autotransporter putative heilotransporter conserved hypothetical protein putative integrase (BP pseudogene) conserved hypothetical protein putative integrortein putative lipoprotein		Inner membrane  DNA - replication, repair, restr/modific'n Conserved in other organisms Conserved in other organisms Conserved in other organisms Conserved in other organisms Periplasmic/oxported/ligoproteins
7324 7330 5218 5219 5223 5224	BB BB BB BB BB	0718 0720 0815 0821 0908 0909 0914 0915		0735	0.42 0.25 0.42 0.09 0.23 0.13	autotransporter putative helicase conserved hypothetical protein putative integrase (8P pseudogene) conserved hypothetical protein		Inner membrane  DNA - replication, repair, restr./modific'n Conserved in other organisms Conserved in other organisms Conserved in other organisms
7324 7330 5218 5219 5223 5224 2267 2266 7351 7352	BB	0718 0720 0815 0821 0908 0909 0914 0915 0924 0925 0981	3454	0830 0831 0888 0889	0.42 0.25 0.42 0.09 0.23 0.13 0.48 0.46 0.46	autotransporter putative helicase conserved hypothetical protein putative integrase (PP pseudogene) conserved hypothetical protein putative ipoprotein putative integrasion putat		Inner membrane  DNA - replication, repair, restr/modific'n Conserved in other organisms Conserved in other organisms Conserved in other organisms Conserved in other organisms Periplasmic/oxported/ligoproteins
7324 7330 5218 5219 5223 5224 2267 2266 7351 7352 7353 7354	BB BB BB BB BP BP BB BB BB BB BB BB BB B	0718 0720 0815 0821 0908 0909 0914 0915 0924 0925 0981 0982	3454	0735 0830 0831 0888	0.42 0.25 0.42 0.09 0.23 0.13 0.48 0.46 0.46 0.08	autotransporter putative heliciase conserved typothetical protein putative integrase (IP pseudogene) conserved hypothetical protein putative integrase (IP pseudogene) putative lipoprotein putative lipoprotein putative doxygenase probable agy-IC-AA dehytrogenase conserved hypothetical protein putative exported protein putative exported protein putative exported protein		Inner membrane  DNA - replication, repair, restr/modific'n Conserved in other organisms Conserved in other organisms Conserved in other organisms Periplasmo'exported flipoproteins Amnes
7324 7330 5218 5219 5223 5224 2267 2266 7351 7352 7353 7354 7391	BB BB BB BB BP BP BB BB BB BB BB BB BB B	0718 0720 0815 0821 0908 0909 0914 0915 0924 0925 0981 0982	3454	0830 0831 0888 0889 0890	0.42 0.25 0.42 0.09 0.23 0.13 0.48 0.46 0.46 0.08 0.10	autotransporter putative heliciase conserved hypothetical protein putative hierapise (BP pseudogene) conserved hypothetical protein putative literapises (BP pseudogene) putative laurine dioxygenase probable aqs/LOA delnytrogenase conserved hypothetical protein putative exported protein putative exported protein probable LysR-family transcriptional regulator putative exempticanse protein		Inner membrane  DNA - replication, repair, restr/modific'n Conserved in other organisms Conserved in other organisms Conserved in other organisms Periplasmic/exported/lipoproteins Amines
7324 7330 5218 5219 5223 5224 2267 2266 7351 7352 7353 7354 7391 7393	BB	0718 0720 0815 0821 0908 0909 0914 0915 0924 0925 0981 0982 0983 0984 1021 1024	3454	0830 0831 0888 0889 0890	0.42 0.25 0.42 0.09 0.23 0.13 0.48 0.46 0.46 0.08 0.10 0.22 0.14	autotransporter putative helicare conserved hypothetical protein putative helicare (BP pseudogene) conserved hypothetical protein putative linguises (BP pseudogene) conserved hypothetical protein putative laurine dioxygenase protabile acyl-CoA dehytrogenase conserved hypothetical protein putative experied protein protabile LysR-family transcriptional regulator putative exmethrane protein LysR-family transcriptional regulator putative exmethrane protein LysR-family transcriptional regulator putative exmethrane protein		Inner membrane  DNA - replication, repair, restr/modific'n Conserved in other organisms Conserved in other organisms Conserved in other organisms Periplasmic/syported/lipoproteins Amines  Inner membrane Global regulatory functions Periplasmic/syported/lipoproteins
7324 7330 5218 5219 5223 5224 2267 2266 7351 7352 7353 7354 7391 7393 7397 7422	88 88 88 88 88 88 88 87 88 88 88 88 88 8	0718 0720 0815 0821 0908 0909 0914 0915 0924 0925 0981 0982 0983 0984 1021 1024 1026 1028	3454	0830 0831 0888 0889 0890	0.42 0.25 0.42 0.09 0.23 0.13 0.48 0.46 0.06 0.10 0.22 0.14 0.42 0.46	autotransporter putative helicare conserved hypothetical protein putative helicare (BP pseudogene) conserved hypothetical protein putative ingrasse (BP pseudogene) conserved hypothetical protein putative laurine dioxygenase probable aqs/LOA dehytvorgenase conserved hypothetical protein putative exported protein probable LysR-family transcriptional regulator putative emportane protein LysR-family transcriptional regulator putative exported protein putative exported protein putative exported protein putative exported protein		Inner membrane  DNA - replication, repair, restr/modific'n Conserved in other organisms Conserved in other organisms Conserved in other organisms Periplasmic/sported/lipoproteins Amines  Inner membrane Global regulatory functions Periplasmic/syported/lipoproteins Periplasmic/syported/lipoproteins Periplasmic/syported/lipoproteins Global regulatory functions
7324 7330 5218 5219 5228 5224 2266 7351 7352 7354 7391 7393 7395 7397 7422 7467	88 88 88 88 88 88 88 88 88 88 88 88 88	0718 0720 0815 0821 0909 0914 0915 0824 0925 0981 0982 0983 0984 1021 1024 1026 1028	3454	0830 0831 0888 0889 0890	0.42 0.25 0.42 0.09 0.23 0.13 0.46 0.46 0.08 0.10 0.22 0.14 0.42 0.42 0.42 0.45 0.50 0.50	autotransporter putative heliciase conserved hypothetical protein putative hierages (BP pseudogene) conserved hypothetical protein putative integrates (BP pseudogene) conserved hypothetical protein putative protein putative busine discoprates proteines conserved hypothetical protein putative exported protein		Inner membrane  DNA - replication, repair, restr./modific'n Conserved in other organisms Conserved in other organisms Conserved in other organisms Conserved in other organisms Periplasmickeported/lipoproteins Amines  Inner membrane Global regulatory functions Periplasmic/exported/lipoproteins Periplasmic/exported/lipoproteins Global regulatory functions Cations Global regulatory functions Cations
7324 7330 5218 5219 5223 5224 2267 2266 7351 7352 7353 7354 7391 7393 7396 7397 7422 7467 7468 7567	88 88 88 88 88 88 88 88 88 88 88 88 88	0718 0720 0815 0821 0908 0909 0914 0915 0924 0925 0981 0982 0983 0984 1021 1024 1026 1028 1100 1100	3454	0735 0830 0831 0888 0889 0890 0891	0.42 0.25 0.42 0.09 0.23 0.13 0.48 0.46 0.46 0.08 0.10 0.22 0.14 0.42 0.42 0.43 0.50 0.50 0.50	autotranspooter putative heliciase conserved hypothetical protein putative hierages (BP pseudogene) conserved hypothetical protein putative integrates (BP pseudogene) conserved hypothetical protein putative busines dooxygenase probable apt-CA derlystrogenase conserved hypothetical protein putative exported protein Lyn-Family transcriptional regulator putative exported protein business protein putative exported protein		Inner membrane  DNA - replication, repair, restr/modific'n Conserved in other organisms Conserved in other organisms Conserved in other organisms Periplasmic/exported/lipoproteins Amines  Inner membrane Global regulatory functions Periplasmic/exported/lipoproteins Periplasmic/exported/lipoproteins Periplasmic/exported/lipoproteins Global regulatory functions
7324 7330 5218 5219 5229 5224 2267 2266 7351 7352 7353 7354 7391 7393 7395 7397 7422 7467 7468	88 88 88 88 88 88 88 88 88 88 88 88 88	0718 0720 0815 0821 0808 0909 0914 0915 0924 0925 0981 0982 1084 1021 1024 1026 1100	3454	0830 0831 0888 0889 0890 0891	0.42 0.25 0.42 0.09 0.23 0.13 0.46 0.46 0.09 0.10 0.22 0.14 0.42 0.46 0.38	autotransporter putative helicare conserved hypothetical protein putative helicare (BP pseudogene) conserved hypothetical protein putative ingrasse (BP pseudogene) conserved hypothetical protein putative laurine dioxygenase probable acyl-CAA dehytrogenase conserved hypothetical protein putative expended protein putative expended protein probable LysR-family transcriptional regulator putative membrane protein LysR-family transcriptional regulator putative expended protein		Inner membrane  DNA - replication, repair, restr./modific'n Conserved in other organisms Conserved in other organisms Conserved in other organisms Conserved in other organisms Periplasmickeported/lipoproteins Amines  Inner membrane Global regulatory functions Periplasmic/exported/lipoproteins Periplasmic/exported/lipoproteins Global regulatory functions Cations Global regulatory functions Cations
7324 7330 5218 5219 5223 5224 2267 7351 7352 7353 7354 7391 7392 7467 7468 7567 5431 5429 8166	BB	0718 0720 0815 0821 0808 0809 0814 0815 0825 0881 1024 1026 1024 1101 1221 1342 1344 1366	3454 3455 3455	0735 0830 0831 0888 0889 0890 0891 1008 1126 1128 1150	0.42 0.25 0.42 0.09 0.23 0.13 0.48 0.46 0.08 0.10 0.22 0.14 0.42 0.46 0.38 0.50 0.05 0.05 0.05	autotransporter putative helicase conserved hypothetical protein putative integrace (BP peautogene) conserved hypothetical protein putative integrace (BP peautogene) conserved hypothetical protein putative legoropean putative legoropean conserved hypothetical protein putative exported protein Lyst-R-amily transcriptional regulator putative exported protein putative exported prote	adheein	Inner membrane  DNA - replication, repair, restr/modific'n Conserved in other organisms Conserved in other organisms Conserved in other organisms Perplasmone deponded (spopportations) Amuses  Inner membrane Global regulatory functions Perplasmol/exported (spopportations) Perplasmol/exported (spopportations) Perplasmol/exported (spopportations) Global regulatory functions Clations Clations Global regulatory functions Clations Global regulatory functions Pathogenicity islands/determinants
7324 7324 7330 5218 5219 5229 5224 2267 2266 7351 7352 7353 7354 7391 7393 7395 7395 7397 7422 7467 7488 7567 5431 5429 8166 6060	B8 B	0778 0778 0720 0815 0821 0808 0809 0914 0915 0824 0925 0981 1024 1028 1054 1028 1154 1164 1164 1164 1166 1186 1186 1186 118	3454 3455	0735 0830 0831 0888 0889 0890 0891	0.42 0.25 0.42 0.09 0.23 0.13 0.46 0.46 0.08 0.10 0.22 0.14 0.42 0.42 0.42 0.40 0.50 0.50 0.50	autotranspooter putative helicase conserved hypothetical protein putative hierages (BP pseudogene) conserved hypothetical protein putative integrase (BP pseudogene) conserved hypothetical protein putative baurins discogenase probable ag-ICA dehytvorgenase conserved hypothetical protein putative exported protein putative exported protein probable LysR-family transcriptional regulator putative exported protein LysR-family transcriptional regulator putative exported protein two component sensor kinase hypothetical protein expr. Server protein precursor prize pertactin precursor prize pertactin precursor prize pertactin precursor prize pertactin precursor	adhesin adhesin	Inner membrane  DNA - replication, repair, restr/modific'n Conserved in other organisms Conserved in other organisms Conserved in other organisms Conserved in other organisms Perplasmin/exported/lipoproteins Amines  Inner membrane Global regulatory functions Perplasmin exported lipoproteins Replasmin exported lipoproteins Replasmin exported lipoproteins Cations Cations Global regulatory functions Cations Global regulatory functions Pathogenicity islands/determinants Pathogenicity islands/determinants
7324 7330 6218 6219 6229 6224 2267 7351 7352 7355 7354 7391 7393 7395 7397 7422 7467 7468 6166 6060 7633 7634	B8 B	0778 0720 0815 0821 0808 0808 0808 0914 0915 0924 0925 0981 1024 1024 1026 1028 1100 1101 1221 1342 1366 1366 1470	3454 3455 3455	0735 0830 0831 0888 0889 0890 0891 1008 1126 1128 1150	0.42 0.25 0.42 0.09 0.23 0.13 0.48 0.46 0.46 0.08 0.10 0.22 0.14 0.42 0.46 0.00 0.00 0.00 0.40 0.40 0.40 0.47 0.49 0.47	autotransporter putative heliocare conserved hypothetical protein putative historiae (BP pseudogene) conserved hypothetical protein putative integrase (BP pseudogene) conserved hypothetical protein putative busines doxygenase probable ag-15-0A dehytvorgenase conserved hypothetical protein putative exported protein putative exported protein probable LysR-family transcriptional regulator putative exported protein LysR-family transcriptional regulator putative exported protein scord, accordisa hydratisse probable hydrotiase priv; pertactin procuror priv; perta		Inner membrane  DNA - replication, repair, restr/modific'n Conserved in other organisms Conserved in other organisms Conserved in other organisms Conserved in other organisms Perplasmanic/exported/lipoproteins Amines  Inner membrane Global regulatory functions Amines  Global regulatory functions Amines  Global regulatory functions Global regulatory functions Cations Global regulatory functions Cations Global regulatory functions Cations Catio
7324 7330 5218 5219 5221 5224 2267 7351 7352 7353 7354 7391 7393 7365 7394 7393 7365 7395 7395 7395 7395 7395 7395 7395 739	B8 B	0718 0720 0815 0821 0808 0809 0914 0915 0924 0925 0981 1024 1026 1026 1026 1101 1101 121 1342 1344 1366 1366	3454 3455 3455	0735 0830 0831 0888 0889 0890 0891 1008 1126 1128 1150	0.42 0.25 0.42 0.09 0.23 0.13 0.48 0.46 0.46 0.00 0.10 0.22 0.14 0.47 0.50 0.50 0.65 0.49 0.40 0.40 0.40 0.44 0.49	autotransporter putative heliciase conserved hypothetical protein putative infegrace (8P pseudogene) conserved hypothetical protein putative integrace (8P pseudogene) conserved hypothetical protein putative legoropean putative legoropean putative legoropean putative exported protein putative exported protein putative exported protein putative exported protein putative membrane protein LysR-family transcriptional regulator putative exported protein putative exported protein putative exported protein putative exported protein protein protein protein protein protein protein properties protein protein properties protein properties protein properties protein protein procursor properties protein protein protein protein		Inner membrane  DNA - replication, repair, restr/modific'n Conserved in other organisms Conserved in other organisms Conserved in other organisms Periplasmanic exported lipoproteins Amines  Inner membrane Global regulatory functions Periplasmic/exported/lipoproteins Periplasmic/exported/lipoproteins Periplasmic/exported/lipoproteins Global regulatory functions Cations Global regulatory functions Cations Global regulatory functions Cations Pathogenicity islands/determinants Pathogenicity islands/determinants Pathogenicity islands/determinants Conserved in other organisms
7324 7330 5218 5219 5221 5224 2267 2266 7351 7352 7353 7354 7391 7383 7385 7395 7395 7395 7395 7395 7397 7467 7467 7468 7567 5431 5429 6166 6060 7633 7634 7635 7636 7636 7636 7636	B8 B	0778 0720 0815 0821 0908 0909 0914 0915 0924 0925 0881 0983 0984 1021 1024 1100 1100 1100 1101 1221 1342 1344 1366 1366 1366 1367 1477 1477 1477	3454 3455 3455	0830 0830 0831 0838 0858 0859 0850 0850 0861 1000 1100 1122 1150	0.42 0.25 0.42 0.09 0.23 0.13 0.48 0.46 0.46 0.46 0.08 0.10 0.22 0.14 0.47 0.49 0.40 0.40 0.40 0.40 0.40 0.40 0.40	autotransporter putative heliciase conserved hypothetical protein putative integrace (BP pseudogene) conserved hypothetical protein putative integrace (BP pseudogene) conserved hypothetical protein putative busine discoperate putative busine discoperate conserved hypothetical protein putative superior discoperate conserved hypothetical protein putative very depression of the protein putative very depression of the protein putative very depression of the putative putative exported protein putative depression of the protein protein protein protein protein protein protein protein protein putative oxidentelial protein putative oxidentelial protein putative oxidentelial protein putative oxidentelial protein putative voldendendenen		Inner membrane  DNA - replication, repair, restr/modific'n Conserved in other organisms Conserved in other organisms Conserved in other organisms Periplasmic desponsed lipoproteins Animes  Inner membrane Global regulatory functions Periplasmic/exported/lipoproteins Periplasmic/exported/lipoproteins Periplasmic/exported/lipoproteins Global regulatory functions Cations Global regulatory functions Cations Oliobal regulatory functions Cations Pathogenicity islands/determinants Pathogenicity islands/determinants Periplasmic/exported/lipoproteins Conserved in other organisms
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7324 7326 7330 5218 5219 5221 5224 2267 7352 7352 7353 7353 7354 7391 7393 7395 7397 7422 7467 7468 7567 7668 7668 7669 7660 7660 7660 7660 7660 7660 7660	B8 B	0778 0778 0720 0815 0821 0808 0809 0914 0915 0924 0915 0925 0981 1024 1024 1026 1028 1028 1024 1100 1100 1100 1100 1100 1100 1100	3454 3455 1054 1054	0735 0831 0831 0831 0838 0830 0830 0830 0830	0.42 0.25 0.42 0.29 0.42 0.99 0.23 0.44 0.46 0.46 0.46 0.38 0.50 0.65 0.47 0.44 0.47 0.48 0.48 0.49 0.49 0.49 0.49 0.49 0.49 0.49 0.49	autotransporter putative heliciase conserved hypothetical protein putative heliciase conserved hypothetical protein putative helicipae (BP pseudogene) conserved hypothetical protein putative begroes putative busine dicopenase probable apt/CoA dehydrogenase probable apt/CoA dehydrogenase conserved hypothetical protein putative exported protein protein protein carxi, aconitate hydratises probable hydroticase priv, pertacin procursor priv, pertacin procursor priv, pertacin procursor priv, pertacin procursor putative exported protein phage-related hypothetical protein phage-related	adhesin	Inner membrane  DNA - replication, repair, restr/modificin Conserved in other organisms Conserved in other organisms Conserved in other organisms Persplasmic-exported inpeproteins Amines  Inner membrane Global regulatory functions Persplasmic-exported ilipoproteins Persplasmic-exported ilipoproteins Global regulatory functions Global regulatory functions Global regulatory functions Cations Global regulatory functions Cations Conserved in other organisms Persplasmic-exported ilipoproteins Pathogenicity islands/determinants Conserved in other organisms Persplasmic-exported ilipoproteins Conserved in other organisms Persplasmic-exported ilipoproteins Not classified (including putative assignments) Not classified (including putative assignments) Phage-related functions and prophages
7324 7320 7330 6218 6219 62219 62224 2267 7351 7351 7351 7351 7351 7351 7351 735	B8 B	0778 0778 0720 0815 0821 0908 0821 0908 0815 0825 0881 0882 0884 1021 1024 1024 1024 11021 1342 1344 1366 1470 1471 1473 1472 1472 1473 1474 1498 1498 1498 1498 1498 1498 1498 149	3454 3455 3455	0830 0831 0833 0833 0833 0833 0833 0833	0.42 0.25 0.42 0.99 0.23 0.13 0.48 0.46 0.46 0.46 0.48 0.49 0.40 0.40 0.40 0.40 0.40 0.40 0.40	autotransporter putative heliciarie conserved hypothetical protein putative integrace (BP peaudogene) conserved hypothetical protein putative integrace (BP peaudogene) conserved hypothetical protein putative busine discoperate putative busine discoperate conserved hypothetical protein putative protein putative protein putative and protein putative protein putative exported protein protein protein arcivi, acontials hypothetical protein protein protein protein arcivi, acontials hypothetical protein protein protein protein protein protein protein protein protein putative exported protein putative exported protein putative exported protein putative exported protein putative voldordeuctare putative protein protein putative sold hunding protein conserved hypothetical protein putative sold hunding protein putative exported protein putative sold hunding protein putative sold protein putative sold protein putative protein protein phage-related hypothetical protein phage-related hypoth	adhesin	Inner membrane  DNA - replication, repair, restr./modific'n Conserved in other organisms Conserved in other organisms Conserved in other organisms Observed in other organisms Observed in other organisms Palplasmic desponed (popproteins Amilies)  Inner membrane Global regulatory functions Periplasmic/exponed (popproteins Global regulatory functions Cations Global regulatory functions Cations Global regulatory functions Cations Pathogenicity islands/determinants Pathogenicity islands/determinants Pathogenicity islands/determinants Pathogenicity islands/determinants Conserved in other organisms Periplasmic/exponed/gloporoteins Not classified (including putative assignments) Not classified (including putative assignments) Not classified (including putative assignments) Phage-related functions and prophages
7324 7320 7330 6218 5219 5228 5228 7355 7351 7352 7355 7357 7357 7397 7397 7467 7468 7468 7567 7537 7657 7657 7657 7657 7659 7660 7661 7661 7662 7663 7664 5444 5444 5444 5444 5444 5578 5578 557	B8 B	0778 0778 0720 0815 0821 0808 0809 0814 0809 0815 0825 0881 0882 0883 0884 1021 1024 11026 11026 11024 11026 11026 11026 11027 11024 11026	3454 3455 1054 1054	0735 0831 0831 0831 0838 0830 0830 0830 0830	0.42 0.25 0.42 0.29 0.42 0.99 0.23 0.13 0.46 0.46 0.46 0.47 0.42 0.47 0.42 0.40 0.40 0.40 0.40 0.40 0.40 0.40	autotransporter putative heliciase conserved hypothetical protein putative heliciase conserved hypothetical protein putative helicipae (BP pseudogene) conserved hypothetical protein putative begroes putative busine dicopenase probable apt/CoA dehydrogenase probable apt/CoA dehydrogenase conserved hypothetical protein putative exported protein protein protein carxi, aconitate hydratises probable hydroticase priv, pertacin procursor priv, pertacin procursor priv, pertacin procursor priv, pertacin procursor putative exported protein phage-related hypothetical protein phage-related	adhesin	Inner membrane  DNA - replication, repair, restr/modific'n Conserved in other organisms Conserved in other organisms Conserved in other organisms Conserved in other organisms Persplansmicesported proporteins Amines  Inner membrane Global regulatory functions Persplansmic/exported/proporteins Persplansmic/exported/proporteins Persplansmic/exported/proporteins Global regulatory functions Cations Cations Global regulatory functions Cations Object in other organisms Pathogenicity islands/determinants Pathogenicity islands/determinants Pathogenicity islands/determinants Object in other organisms Not classified (including putative assignments) Not classified (including putative assignments) Not classified (including putative assignments) Phage-related functions and prophages

10	BP	2191	0508		0.09	phage-related exonuclease		Phage-related functions and prophages
	BP BP	2194 2196	0511 0513		0.27 0.26	phage-related hypothetical protein phage-related hypothetical protein		Transport/binding proteins Ribosomal proteins - synthesis, modification
2189	BP	2201	3388		0.09	phage-related putative membrane protein		Unknown function, no known homologs
7780 7781	BB BB	2201 2203	3387		0.15 0.10	Pseudogene; (BB, BB) phage-related hypothetical protein phage-related conserved hypothetical protein		Phage-related functions and prophages Phage-related functions and prophages
7782 7783	BB BB	2204 2205			0.11 0.08	phage-related conserved hypothetical protein phage-related conserved hypothetical protein		Phage-related functions and prophages Phage-related functions and prophages
7785 5090	BB BB	2211 2212			0.32 0.30	phage-related hypothetical protein phage-related hypothetical protein		Phage-related functions and prophages Phage-related functions and prophages
5089 1356	BB BP	2213 2214	3385 3384		0.20 0.18	phage-related putative DNA binding protein putative phage terminase		Conserved in other organisms Unknown function, no known homologs
5088 5087	BB BB	2214 2215	3384 3383		0.22 0.33	putative phage terminase phage-related conserved hypothetical protein		Unknown function, no known homologs Plasmid-related functions
1357 1358	BP BP	2215 2216	3383 3382		0.21	phage-related conserved hypothetical protein phage-related conserved hypothetical protein		Plasmid-related functions Unknown function, no known homologs
5086	BB	2216	3382		0.25	phage-related conserved hypothetical protein		Unknown function, no known homologs
1359 5085	BP BB	2217 2218	3381 3380		0.30 0.21	phage-related hypothetical protein phage-related hypothetical protein	prophage	Unknown function, no known homologs Unknown function, no known homologs
1360 8066	BP BB	2219 2220	3379 3376		0.12 0.33	phage-related conserved hypothetical protein phage-related hypothetical protein		Unknown function, no known homologs Unknown function, no known homologs
7787 2137	BB BP	2220 2224	3376 3372		0.32 0.35	phage-related hypothetical protein phage-related conserved hypothetical protein		Unknown function, no known homologs Unknown function, no known homologs
8064 2138	BB BP	2224 2225	3372 3371		0.45 0.33	phage-related conserved hypothetical protein phage-related conserved hypothetical protein		Unknown function, no known homologs Conserved in other organisms
324	BP BP	2226	3370		0.33	phage-related conserved hypothetical protein phage-related conserved hypothetical protein		Conserved in other organisms
325 326	BP	2227 2228	3369 3368		0.20 0.30	phage-related conserved hypothetical protein		Unknown function, no known homologs Unknown function, no known homologs
327 328	BP BP	2229 2230	3367 3366		0.16 0.04	phage-related conserved hypothetical protein phage hk97 tail length tape measure-related protein		Unknown function, no known homologs Phage-related functions and prophages
329 333	BP BP	2231 2234	3365 3362		0.15 0.18	phage-related conserved hypothetical protein phage-related conserved hypothetical protein		Phage-related functions and prophages Phage-related functions and prophages
334 7795	BP BB	2235 2237	3361 3359		0.35 0.14	phage-related hypothetical protein phage-related hypothetical protein		Unknown function, no known homologs Phage-related functions and prophages
335 336	BP BP	2238 2239	3358 3357		0.21 0.12	phage-related hypothetical protein phage-related conserved hypothetical protein		Phage-related functions and prophages Phage-related functions and prophages
337 339	BP BP	2240 2242	3356 3354		0.06 0.32	putative phage lysozyme		Phage-related functions and prophages Unknown function, no known homologs
50	BP	2303	1112	1234	0.37	phage-related hypothetical protein bipA; putative outer membrane ligand binding protein		Pathogenicity islands/determinants
7802 6065	BB BPP	2303 2312	1112 2667	1234 1243	0.15 0.38	bipA; putative outer membrane ligand binding protein fhaS; adhesin	adhesin	Pathogenicity islands/determinants Surface structures
5385 5378	BB BB	2314 [2321]		1245 [1253]	0.47	conserved hypothetical protein intergenic region		1
5377 7806	BB BB	2322 2330	2620	1254 1269	0.11 0.40	hypothetical protein probable membrane efflux protein		Transport/binding proteins
5370 5369	BB BB	2341 2342		1277 1278	0.48	probable AraC-family transcriptional regulator putative exported protein		1
5369 5368 5367	BB BB	2342 2343 2344		1279 1279	0.32 0.32 0.40	conserved hypothetical protein putative exported protein (BPP partial)		1
5365	BB	2345		1280	0.37	putative exported protein (BPP partial)		1
5362 5360	BB BB	2347 2348		1282 1283	0.44 0.43	conserved hypothetical protein (BPP pseudogene) conserved hypothetical protein		1
5361 5358	BB BB	2349 2350		1284 1285	0.31 0.34	putative 2-pyrone-4,6-dicarboxylic acidhydrolase conserved hypothetical protein		1
5355 5353	BB BB	2352 2353		1287 1288	0.35 0.36	probable LysR-family transcription regulator (BPP pseudogene) conserved hypothetical protein		
5352 3749	BB BP	2354 2656	1868	1289 1578	0.47	putative exported protein putative cytochrome (BP pseudogene)		Electron transport
7931 7932	BB BB	2710 2711	1000	2775 2774	0.40	Putative exported protein putative exported protein		
7933	BB	2712		2773	0.35	Putative sugar ABC transport system, substrate-binding protein		
7941 3521	BB BP	2720 2732	1639	2765 2754	0.24	Conserved hypothetical protein putative exported protein (BPP pseudogene)		Inner membrane
7946 650	BB BP	2733 2735	1638 1636	2753 2751	0.49 0.40	conserved hypothetical protein putative nonspecific acid phosphatase precursor		Conserved in other organisms Not classified (including putative assignments)
649 664	BP BP	2736 2742	1635 1662	2750 2744	0.41 0.14	putative arylsulfatase protein putative DNA-binding protein		Other Not classified (including putative assignments)
3612 5270	BP BB	2743 2750	1663	2743	0.18 0.25	conserved hypothetical protein (BP partial) putative NADH:flavin oxidoreductase		Conserved in other organisms Not classified (including putative assignments)
5267 7971	BB BB	2752 2839	1333	2669	0.39	LysR-family transcriptional regulator		Global regulatory functions Unknown function, no known homologs
636	BP	2942	1609	2976	0.18	hypothetical protein probable aldehyde reductase		Not classified (including putative assignments)
634 2686	BP BP	2943 2944	1608 1607	2977 2978	0.18 0.22	putative membrane protein (BP pseudogene) probable LysR-family transcriptional regulator		Conserved in other organisms Global regulatory functions
3621 1211	BP BP	2963 3061	1586 2645	2997 3098	0.12 0.50	conserved hypothetical protein putative IcIR-family regulatory protein		Conserved in other organisms Global regulatory functions
1209 1208	BP BP	3063 3064	2647 2648	3100 3101	0.21	putative exported protein conserved hypothetical protein		Periplasmic/exported/lipoproteins Conserved in other organisms
3400 8029	BP BB	3065 3128	2649	3102 2807	0.19	conserved hypothetical protein putative membrane protein		Conserved in other organisms
8030 8037	BB BB	3130 3160		2809 2839	0.37	putative exported protein putative membrane protein		1
8173	BB	multiple	1201	1617	0.49	tcfA; tracheal colonization factor precursor and other autotransporters	adhesin	Pathogenicity islands/determinants
6083 5392	BPP BB	3291		1618 1684	0.44 0.27	tcfA; tracheal colonization factor precursor fimbrial protein	adhesin adhesin	_
5408		3424			0.32	phage-related hypothetical protein	prophage	Unknown function, no known homologs
8058	BB BB	3479 3484	3354 3359		0.27	phage-related hypothetical protein		Phage-related functions and prophages
8058 5567	BB BB	3479 3484 3516			0.27	phage-related hypothetical protein	prophage	Phage-related functions and prophages Phage-related functions and prophages Phage-related functions and prophages
8058 5567 8074 5105	BB BB BB BB	3479 3484 3516 3521 3538			0.27 0.43 0.28 0.11	phage-related hypothetical protein cro; phage regulatory protein phage-related conserved hypothetical protein	prophage	Phage-related functions and prophages Phage-related functions and prophages Phage-related functions and prophages Phage-related functions and prophages
8058 5567 8074 5105 5106 5107	88 88 88 88 88 88	3479 3484 3516 3521 3538 3539 3540			0.27 0.43 0.28 0.11 0.35 0.12	phage-related hypothetical protein oro, phage regulatory protein phage-related conserved hypothetical protein phage-related hypothetical protein phage-related hypothetical protein	prophage	Phage-related functions and prophages Periplasmic/exported/lipoproteins
8058 5567 8074 5105 5106 5107 8081 5108	88 88 88 88 88 88 88	3479 3484 3516 3521 3538 3539 3540 3542 3543	3359		0.27 0.43 0.28 0.11 0.35 0.12 0.22 0.37	phage-related hypothetical protein crox phage regulatory protein phage-related conserved hypothetical protein phage-related hypothetical protein phage-related hypothetical protein putative phage excisionase phage integrase		Phage-elated functions and prophages
8058 5567 8074 5105 5106 5107 8081 5108 5345 5340	BB BB BB BB BB BB BB BB	3479 3484 3516 3521 3538 3539 3540 3542 3543 3614 3620	3359		0.27 0.43 0.28 0.11 0.35 0.12 0.22 0.37 0.16 0.21	phage-related hypothetical protein cro. phage regulatory protein phage-related conserved hypothetical protein phage-related hypothetical protein phage-related hypothetical protein putative phage excisionase phage-related hypothetical protein phage related conserved hypothetical protein phage-related conserved hypothetical protein phage-related conserved hypothetical protein		Priage-leated functions and prophages
8058 5567 8074 5105 5106 5107 8081 5108 5345 5340 5334 443	BB	3479 3484 3516 3521 3538 3539 3540 3542 3543 3614 3620 3629 3893	0504 2456	3443	0.27 0.43 0.28 0.11 0.35 0.12 0.22 0.37 0.16 0.21 0.25 0.47	phage-related hypothetical protein cro. phage regulatory protein phage-related conserved hypothetical protein phage-related dypothetical protein phage-related hypothetical protein phage-related hypothetical protein phage-related conserved hypothetical protein aidx2 placingly insolymbesis exception	prophage prophage	Phage-leated functions and prophages
8058 5567 8074 5105 5106 5107 8081 5108 5345 5340 5334 433 439	BB	3479 3484 3516 3521 3538 3539 3540 3542 3543 3614 3620 3629 3893 3897 3978	3359 0504	3443 3447 3543	0.27 0.43 0.28 0.11 0.35 0.12 0.22 0.37 0.16 0.21 0.25 0.47 0.25 0.47	phage-related hypothetical protein cro. phage regulatory protein phage-related conserved hypothetical protein phage-related objective in phage-related hypothetical protein phage-related hypothetical protein phage-related hypothetical protein plage-related excitonises phage integrates phage integrates phage-related conserved hypothetical protein dick, disclaigh related hypothetical protein dick, disclaigh related hypothetical protein dick, disclaigh records the protein dick demonstrated twoin	prophage	Pinage-related functions and prophages
8058 \$557 8074 \$105 \$106 \$107 8081 \$108 \$345 \$345 \$344 443 439 188 8140	BB BB BB BB BB BB BB BB BB BB BB BB BP BP	3479 3484 3516 3521 3538 3539 3540 3542 3543 3614 3620 3629 3893 3897 3978 4124	0504 0504 2456 2460	3447 3543 3690	0.27 0.43 0.28 0.11 0.35 0.12 0.22 0.37 0.16 0.21 0.25 0.47 0.25 0.21	phage-related hypothetical protein cro. phage regulatory protein phage-related conserved hypothetical protein phage-related phypothetical protein phage-related hypothetical protein phage-related hypothetical protein plage-related conserved hypothetical protein phage-related conserved hypothetical protein phage-related conserved hypothetical protein phage-related conserved hypothetical protein plage-related conserved hypothetical protein plage-related conserved hypothetical protein dict, dicaligin biosynthesis enzyme aict; putative innerature protein drit, demonscrotic toxin putative enzyme-regulator fusion protein	prophage prophage fron uptake	Pinage-related functions and prophages Partogenicity standardeterminants Partogenicity standardeterminants Partogenicity standardeterminants
8058 \$557 8074 \$105 \$106 \$107 8081 \$108 \$345 \$345 \$344 439 188 8140 8141 8141	B8 B8 B8 B8 B8 B8 B8 B8 B8 B9 B9 BP BP BP BP BB	3479 3484 3516 3516 3521 3538 3539 3540 3542 3543 3614 3620 3629 3893 3897 3978 4124 4125 4126	0504 0504 2456 2460	3447 3543 3690 3691 3692	0.27 0.43 0.23 0.11 0.35 0.12 0.22 0.37 0.16 0.21 0.25 0.47 0.25 0.21 0.50 0.08	phage-related hypothetical protein cro. phage regulatory protein phage-related conserved hypothetical protein phage-related hypothetical protein phage-related hypothetical protein phage-related hypothetical protein putative phage exictionase phage integrase phage integrase phage-related conserved hypothetical protein dick; ciaciligin biosynthesis enzyme alcic; putative inne-duffur protein dr.t demonserodic toxin putative enzyme-regulator fusion protein putative ring-hydroxylating dioxygenase lang subunit putative ring-hydroxylating dioxygenase small subunit	prophage prophage fron uptake	Pinage-related functions and prophages Partogenicity standardeterminants Partogenicity standardeterminants Partogenicity standardeterminants
8058 5567 8074 5105 5106 5107 8081 5108 5345 5344 339 158 8141 8142 8143 8144	88 88 88 88 88 88 88 88 88 89 89 89 89 8	3479 3484 3516 3521 3538 3539 3540 3542 3543 3614 3620 3629 3893 3897 34124 4125 4126 4127 4128	0504 0504 2456 2460	3447 3543 3690 3691 3692 3693 3694	0.27 0.43 0.23 0.11 0.35 0.12 0.22 0.37 0.16 0.21 0.25 0.47 0.25 0.21 0.50 0.04 0.13 0.11	phage-related hypothetical protein cro. phage regulatory protein phage-related conserved hypothetical protein phage-related hypothetical protein phage-related hypothetical protein phage-related hypothetical protein putative phage exicionisase phage integrase phage related conserved hypothetical protein phage-related conserved hypothetical protein phage-related conserved hypothetical protein phage-related conserved hypothetical protein plage-related conserved hypothetical protein dick; classifigh biosynthesis enzyme alcic; putative inne-affur protein drit; demonserodic toxin putative ring-hydroxylating dioxygenase large subunit putative ring-hydroxylating dioxygenase small subunit putative LysR-family transcriptional regulator putative or protein protein	prophage prophage Iron uptake	Pinage-related functions and prophages Partogenicity standardeterminants Partogenicity standardeterminants Partogenicity standardeterminants
8058 5567 8074 5105 5106 5107 8081 5108 5345 5340 5340 5340 5340 8141 8142 8143 8144 8144 8144	88 88 88 88 88 88 88 88 88 89 89 89 89 8	3477 3484 3516 3521 3538 3539 3540 3642 3543 3614 3620 3692 3893 3897 4124 4125 4126 4127 4128 4129	0504 0504 2456 2460	3447 3543 3690 3691 3692 3693 3694 3695 3696	0.27 0.43 0.28 0.11 0.35 0.12 0.22 0.37 0.16 0.21 0.25 0.21 0.25 0.21 0.50 0.08 0.04 0.13 0.11 0.07 0.15	phage-related hypothetical protein cro. phage regulatory protein phage-related conserved hypothetical protein phage-related hypothetical protein phage-related hypothetical protein phage-related hypothetical protein putative phage exicionianse phage integrase phage integrase phage-related conserved hypothetical protein dick; ciaciligin biosynthesis enzyme alcic; putative incredular protein durt demonecrotic toxin putative ring-hydroxylating dioxygenase lang subunit putative (p-gk-relativ) transcriptional regulator putative protein protein putative pydrolated protein putative hydrolase	prophage prophage Iron uptake	Pinage-related functions and prophages Partogenicity standardeterminants Partogenicity standardeterminants Partogenicity standardeterminants
8058 5557 8074 5105 5106 5107 8081 5108 5345 5340 5344 433 188 8140 8144 8144 8144 8144 8144	88 88 88 88 88 88 88 88 88 88 89 89 89 8	3479 3484 3516 3521 3538 3539 3540 3542 3543 3614 3620 3629 3893 3897 3978 4124 4125 4127 4128 4127 4128	0504 0504 2456 2460	3447 3543 3690 3691 3692 3693 3694 3695	0.27 0.43 0.28 0.11 0.35 0.12 0.22 0.37 0.16 0.21 0.25 0.47 0.25 0.40 0.08 0.04 0.13 0.11 0.07	phage-related hypothetical protein cro. phage regulatory protein phage-related conserved hypothetical protein phage-related objecthetical protein phage-related hypothetical protein phage-related hypothetical protein puttive phage excitonase phage integrace hypothetical protein phage-related conserved hypothetical protein discrete phage related hypothetical protein discrete phage related hypothetical protein discrete phage-related hypothetical protein puttive renzyme-regulator fusion protein puttive renzyme-regulator fusion protein puttive renzyme-regulator fusion protein puttive renzyme-regulator dioxygenase large subunit puttive in right-yrity yriting dioxygenase small subunit puttive to hypothetical protein puttive veryme-regulator protein puttive by renzyme transcriptional regulator puttive by renzyme-regulator puttive by renzyme-regulator	prophage prophage Iron uptake	Pinage-related functions and prophages Partogenicity standardeterminants Partogenicity standardeterminants Partogenicity standardeterminants
8058 5557 8074 5105 5106 5107 8081 5108 5345 5340 5344 443 439 188 8140 8144 8144 8144 8144 8144 8144	BB	3479 3484 3516 3521 3523 3539 3540 3542 3553 3614 3622 3893 3697 3978 4124 4125 4126 4127 4128 4130 4131	0504 0504 2456 2460	3447 3543 3690 3691 3692 3693 3694 3695 3696 3697	0.27 0.43 0.26 0.11 0.35 0.12 0.27 0.36 0.21 0.25 0.47 0.25 0.47 0.25 0.40 0.08 0.04 0.13 0.11 0.07	phage-related hypothetical protein cro. phage regulatory protein phage-related conserved hypothetical protein phage-related chypothetical protein phage-related hypothetical protein phage-related hypothetical protein puttive phage excisionase phage integrace phage related conserved hypothetical protein phage-related conserved hypothetical protein phage-related conserved hypothetical protein phage-related conserved hypothetical protein phage-related conserved hypothetical protein discrepancy of the phage-related hypothetical protein discrepancy of the phage-related hypothetical protein discrepancy of the phage-related hypothetical protein puttive enzyme-regulator trainor protein puttive in-phystropoling discoyenase small subunit puttive in-phystropoling discoyenase small subunit puttive in-phystropoling discoyenase phage subunit puttive in-phystropoling discoyenase phage subunit puttive exported protein puttive bydrolate conserved hypothetical protein puttive deprotein	prophage prophage Iron uptake	Priage-leated functions and prophages Priage-related functions and prophages Partogenicity slands/determinants Colicin-related functions Colicin-related functions
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8058 5567 8074 5105 5106 5106 5107 8081 5108 5344 534 439 188 8140 8141 8142 8143 8144 8144 8145 8144 8145 8146 8146 8147 8148 8149 5546 5556 3733	BB	3479 3484 3516 3521 3533 3540 3533 3540 3542 3543 3544 3620 3697 3078 4124 4125 4126 4126 4126 4130 4131 4132 4133 4328 4328 4328 4328 4328 4328 4328 43	0504 0504 2456 2460 3439	3447 3543 3690 3691 3692 3693 3694 3695 3696 3697 3696 3699	0.27 0.43 0.28 0.11 0.35 0.12 0.25 0.57 0.65 0.25 0.21 0.25 0.21 0.30 0.30 0.31 0.31 0.31 0.31 0.31 0.3	phage-related hypothetical protein cro. phage regulatory protein phage-related conserved hypothetical protein phage-related hypothetical protein phage-related hypothetical protein phage-related hypothetical protein phage-related conserved hypothetical protein dick, alcalign blosymhetis erusyme alck; patalive incise-algulator leader putative ing-i-yelroxylating dioxygenase large subunit putative ing-i-yelroxylating dioxygenase small subunit putative experted protein	prophage prophage Iron uptake	Phage-leated functions and prophages Phage-leate
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8058 5567 8074 5105 5106 5107 8088 538 538 534 439 188 8140 8141 8144 8144 8144 8144 8144	BB	3477 3484 3516 3521 3521 3533 3540 3542 3543 3542 3543 3641 4126 4126 4127 4128 4129 4130 4130 4131 4132 4130 4130 4131 4132 4130 4131 4132 4130 4131 4132 4130 4131 4132 4130 4131 4132 4130 4131 4132 4132 4133 4134 4136 4137 4137 4138 4138 4138 4138 4138 4138 4138 4138	2456 2460 3439 0612 0672 3731 3783 3784	3447 3543 3690 3691 3691 3692 3693 3694 3695 3695 3696 3699 4220 4230 4300 4304 4305	0.27 0.43 0.28 0.11 0.35 0.12 0.12 0.12 0.12 0.17 0.16 0.17 0.17 0.19 0.21 0.25 0.20 0.21 0.21 0.21 0.21 0.21 0.21 0.21	phage-related hypothetical protein cro. phage residued conserved hypothetical protein phage-related conserved hypothetical protein phage-related conserved hypothetical protein phage-protein conserved hypothetical protein phage-related hypothetical protein dick; schollary hypothetical protein putative enzyme-regulator fusion protein putative reg-rystrocylating dioxygenase large subunit putative rig-rystrocylating dioxygenase sumal subunit putative rig-rystrocylating dioxygenase hypothetical protein putative exported protein putative deprotein putative deprotein potative exported protein putative deprotein putative exported protein putative giventure protein putative giventure protein putative giventure protein putative giventure protein perfusis toxin subunit 2 precursor (PPP pseudogene)	prophage prophage Iron uptake	Phage-related functions and prophages Packed Phage-related functions Colicin-related functions  Global regulatory functions Perplasmic/exported/ipopreteins Perplasmic/exported/ipopreteins Perplasmic/exported/ipopreteins Paralysamic/exported/ipopreteins Paralysamic/exported/ipopreteins Paralysamic/exported/ipopreteins Paralysamic/exported/ipopreteins Paralysamic/exported/ipopreteins Paralysamic/exported/ipopreteins
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8058 5567 8074 5105 5106 5106 5107 8081 5108 5340 5340 5344 439 4439 4439 4439 4439 4439 4439	BB	5479 3484 3516 3521 3533 3521 3533 3540 2540 2553 3640 2554 2650 3693 3897 4124 4126 4126 4128 4133 4124 4133 4128 4128 4131 4181 4182 4189 4899 4899	0504 2455 2460 3439 0612 0672 3783 3784 3785 3787 3787 3787 3788	3447 3543 3690 3543 3690 3691 3692 3693 3694 3695 3695 3696 4220 4230 4300 4305 44007 44008 4309 4310	0.27 0.43 0.28 0.11 0.35 0.12 0.22 0.23 0.37 0.36 0.47 0.55 0.47 0.55 0.67 0.13 0.11 0.07 0.13 0.10 0.08 0.04 0.13 0.11 0.07 0.15 0.07 0.32 0.37 0.31 0.31 0.32 0.32 0.32 0.32 0.32 0.33 0.31 0.42 0.35 0.45 0.36 0.36 0.37 0.38 0.49 0.39 0.39 0.39 0.49 0.30 0.30 0.30 0.31 0.31 0.32 0.33 0.31 0.31 0.32 0.33 0.33 0.33 0.34 0.35 0.36 0.36 0.37 0.37 0.37 0.33	phage-related hypothetical protein cro. phage regulatory protein phage-related conserved hypothetical protein phage-related hypothetical protein phage-related hypothetical protein phage-related hypothetical protein phage-related conserved hypothetical protein putative enzyme-regulator fusion protein putative ing-hydropaliting dioxygenase large subunit putative ing-hydropaliting dioxygenase area subunit putative ing-hydropaliting dioxygenase paral subunit putative hydrolate putative dioxygenase putative hydrolate conserved hypothetical protein putative exported protein putative diarrelation putative planetical protein putative diarrelation perfusiasi toxin subunit 2 precursor (PPP pseudogene) perfusiasi toxin subunit 2 precursor perfusiasi toxin subunit 3 precursor	prophage prochage Iron uptake toxin	Priage-leated functions and prophages Priage-leated functions Global regulatory functions Priage-leated functions United functions Pripage-leated functions Pripag
8058 5567 8074 5105 5106 5106 5107 8081 5108 5340 5340 5344 439 4439 4439 4439 4439 4439 4439	BB	5479 3484 3516 3521 5538 3521 5538 3539 3540 3542 3543 3641 3542 3641 3641 3641 3641 3641 3641 3641 3641	0504 2455 2460 3439 0612 0672 3783 3784 3785 3787 3787 3787 3788 3789 3790 3790	3447 3543 3690 3543 3690 3691 3692 3693 3694 3695 3696 7 3696 7 3697 3699 3697 3699 3697 3699 3699	0.27 0.43 0.28 0.11 0.35 0.12 0.22 0.23 0.37 0.46 0.52 0.47 0.55 0.67 0.51 0.09 0.09 0.13 0.11 0.07 0.15 0.07 0.32 0.33 0.31 0.37 0.31 0.39 0.39 0.39 0.39 0.39 0.39 0.39 0.39	phage-related hypothetical protein cov. phage regulatory protein phage-related conserved hypothetical protein phage-related hypothetical protein phage-related hypothetical protein phage-related hypothetical protein phage-related hypothetical protein plate hypothetical protein plate hypothetical protein phage-related conserved hypothetical protein putative enzyme-regulator fusion protein putative reng-hypothetical protein putative reng-hypothetical protein putative kepyface-painly transcriptional regulator putative exported protein putative deported protein putative exported protein pertussis toxin subunit 2 precursor pertussis toxin transport protein putative bacterial secretion system protein	prophage prochage Iron uptake toxin	Pinage-related functions and prophages Parbage-related functions Perplasamic responsed related functions Perplasamic responsed related functions Parbage-related func
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<sup>&</sup>lt;sup>a</sup> Species from which the PCR product was amplified <sup>b</sup> ORF numbers as annotated by the Sanger Centre sequencing team <sup>c</sup>Fold difference between mean cy5/Cy7 atio in B. bronchiseptica complex IV versus complex I. <sup>d</sup> Gene name and product as annotated by the Sanger Centre sequencing team

Contiguous colors indicate that the probes are clustered on the genome.

<sup>&</sup>lt;sup>e</sup> Selected functional annotations <sup>f</sup> ORF numbers between brackets indicate intergenic regions