

ORFs that are either deleted or present in higher copy number among the *Xylella fastidiosa* strains

Update: 17 October, 2007

	187b	36f	56a	912c	Cv21	Fb7
Number of ORFs present in higher copy number in the genomes of strains used in this study	306	39	81	109	41	00
Number of ORFs found to be deleted in genomes of strains used in this study	00	01	20	18	13	20

187b (higher copy)

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XF0132 Copper resistance protein A precursor-copA
 XF0133 COPB; copper resistance protein B precursor
 XF0134 VALS OR HI1391; valyl-tRNA synthetase
 XF0135 Hypothetical protein
 XF0136 DNA polymerase III holoenzyme chi subunit - holC
 XF0137 Hypothetical protein
 XF0138 PEPA OR XERB OR CARP aminopeptidase A I
 XF0140 Conserved hypothetical protein
 XF0250 Conserved hypothetical protein
 XF0258 4-keto-L-rhamnose reductase -rfbC - dTDP
 XF0276 MPL; UDP-N-acetylmuramate-L-alanine ligase
 XF0277 Conserved hypothetical protein
 XF0294 Hypothetical protein
 XF0296 Type I restriction-modification system specificity determinant
 XF0297 MJ1220 - type I restriction-modification system DNA methylase
 XF0298 Hypothetical protein
 XF0299 Hypothetical protein
 XF0300 Hypothetical protein
 XF0324 Periplasmic iron-binding protein -afuA
 XF0422 Exodeoxyribonuclease V gamma chain - RECC
 XF0423 Exodeoxyribonuclease V beta chain - RECB OR RORA
 XF0424 Hypothetical protein
 XF0425 RECD - exodeoxyribonuclease V alpha chain
 XF0430 DNAG OR DNAP OR PARB; DNA primase
 XF0489 Hypothetical protein
 XF0502 Conserved hypothetical protein
 XF0503 Hypothetical protein
 XF0504 Hypothetical protein
 XF0505 Hypothetical protein
 XF0506 Virulence-associated protein E
 XF0507 Hypothetical protein
 XF0508 Phage-related terminase large subunit - gp2
 XF0510 Hypothetical protein
 XF0511 Hypothetical protein
 XF0512 Hypothetical protein
 XF0513 Phage-related endolysin - lycV
 XF0514 Hypothetical protein
 XF0515 Hypothetical protein
 XF0516 Hypothetical protein
 XF0517 Hypothetical protein

XF0518	Hypothetical protein
XF0519	Hypothetical protein
XF0521	Conserved hypothetical protein
XF0522	Hypothetical protein
XF0523	Hypothetical protein
XF0524	Hypothetical protein
XF0526	Hypothetical protein
XF0527	Hypothetical protein
XF0528	Hypothetical protein
XF0529	Hypothetical protein
XF0535	Transposase OrfA
XF0547	YDGM ferredoxin II
XF0549	METG OR HI1276 methionyl-tRNA synthetase
XF0552	Conserved hypothetical protein
XF0553	Conserved hypothetical protein
XF0554	Conserved hypothetical protein
XF0556	Conserved hypothetical protein
XF0557	Electron transfer protein azurin I - az1
XF0560	SCF55.27 GMP synthase
XF0631	Phage-related integrase - int
XF0633	Hypothetical protein
XF0634	Hypothetical protein
XF0636	Hypothetical protein
XF0639	Hypothetical protein
XF0659	MESJ cell cycle protein
XF0668	FRPC; hemolysin-type calcium binding protein
XF0685	Phage-related protein
XF0687	Hypothetical protein
XF0713	Phage-related portal protein- gp4
XF0714	Hypothetical protein
XF0715	Hypothetical protein
XF0717	Hypothetical protein
XF0718	Conserved hypothetical protein
XF0719	Phage-related baseplate assembly protein- gpV
XF0721	Proteic killer suppression protein- higA
XF0723	Phage-related baseplate assembly protein- gpW
XF0724	Phage-related baseplate assembly protein- gpJ
XF0725	Phage-related tail protein- gpl
XF0726	Hypothetical protein
XF0727	FIR2; phage-related contractile tail sheath protein
XF0733	Phage-related tail protein-gpD
XF0754	Virulence protein - acvB
XF0755	XSEA; exodeoxyribonuclease VII large subunit
XF0757	Conserved hypothetical protein
XF0758	Conserved hypothetical protein
XF0759	AMIC; N-acetylmuramoyl-L-alanine amidase precursor
XF0760	MUTL - DNA mismatch repair protein MutL
XF0770	Hypothetical protein
XF0774	Hypothetical protein
XF0777	Membrane protein- ACTII-3
XF0813	Hypothetical protein
XF0820	Hypothetical protein
XF0830	Hypothetical protein

XF0831 CYSK - cysteine synthase
 XF0832 CYSG - siroheme synthase
 XF0833 CYSB OR HI1200 - transcriptional regulator (LysR family)
 XF0834 Conserved hypothetical protein
 XF0835 UBIH OR VISB - 2-octaprenyl-6-methoxyphenol hydroxylase
 XF0840 BGA - beta-galactosidase
 XF0842 Conserved hypothetical protein
 XF0843 Conserved hypothetical protein
 XF0844 Hypothetical protein
 XF0845 Family 3 glycoside hydrolase - xylA
 XF0868 Dihydrolipoamide dehydrogenase - lpdA or lpd
 XF0882 YOAA - ATP-dependent helicase
 XF0889 Hemagglutinin-like secreted protein- pspA
 XF0890 Hypothetical protein
 XF0891 Hypothetical protein
 XF0892 Hypothetical protein
 XF0893 Hypothetical protein
 XF0894 Hypothetical protein
 XF0895 Hypothetical protein
 XF0896 Hypothetical protein
 XF0897 Hypothetical protein
 XF0928 Conserved hypothetical protein
 XF0929 Conserved hypothetical protein
 XF0950 RIBD OR RIBG; riboflavin-specific deaminase
 XF0995 CYSS OR HI0078; cysteinyl-tRNA synthetase
 XF0999 ARGG OR MJ0429; argininosuccinate synthase
 XF1000 ARGE; acetylornithine deacetylase
 XF1003 ASL; argininosuccinate lyase
 XF1004 DR1827; glutamate 5-kinase
 XF1005 PROA; gamma-glutamyl phosphate reductase
 XF1011 FRPC; hemolysin-type calcium binding protein
 XF1012 Conserved hypothetical protein
 XF1015 Manganese transport protein- mntH2
 XF1062 EDD 6-phosphogluconate dehydratase
 XF1063 6-phosphogluconolactonase - pgl
 XF1064 GLK glucose kinase
 XF1114 Regulator of pathogenicity factors -RPFC
 MURD OR RV2155C OR MTCY270.13 UDP-N-acetylmuramoylalanine--D-glutamate
 XF1118 ligase
 XF1120 Bifunctional DGTP-pyrophosphohydrolase thiamine phosphate synthase - mutT or thiE1
 XF1121 METF OR AQ_1429 5;10-methylenetetrahydrofolate reductase
 XF1126 Conserved hypothetical protein
 XF1229 DR0420 - ATP-dependent helicase
 XF1241 Aconitate hydratase 1 - ACNA OR CAN
 XF1243 Hypothetical protein
 XF1252 Conserved hypothetical protein
 XF1341 Copper homeostasis protein - cutC
 XF1372 Hypothetical protein
 XF1383 HRP A - helicase; ATP dependent
 XF1423 PURL OR PURI phosphoribosylformylglycinamide synthetase
 XF1437 Thiol disulfide interchange protein - dsbA
 XF1470 Conserved hypothetical protein
 XF1499 CYSJ NADPH-sulfite reductase; flavoprotein subunit

XF1568 Hypothetical protein
XF1718 Phage-related integrase - int
XF1719 Hypothetical protein
XF1720 Hypothetical protein
XF1721 Hypothetical protein
XF1722 Hypothetical protein
XF1723 Sugar-phosphate dehydrogenase - yrpG
XF1726 LINC - 2;5-dichloro-2;5-cyclohexadiene-1;4-diol dehydrogenase
XF1727 ADH - NADP-alcohol dehydrogenase
XF1728 Transport protein - f451
XF1729 DR1890 - phenylacetaldehyde dehydrogenase
XF1730 YAFC - transcriptional regulator (LysR family)
XF1732 NAD(P)H-dependent 2-cyclohexen-1-one reductase - ncr
XF1733 AF0343 - tryptophan repressor binding protein
XF1735 Conserved hypothetical protein
XF1736 Hypothetical protein
XF1737 Conserved hypothetical protein
XF1738 Hypothetical protein
XF1739 Outer membrane protein - romA
XF1740 YLII - glucose dehydrogenase B
XF1741 Daunorubicin C-13 ketoreductase - dnrU
XF1742 Conserved hypothetical protein - drp35
XF1743 Esterase - est
XF1744 Oxidoreductase
XF1745 Conserved hypothetical protein
XF1747 Conserved hypothetical protein
XF1748 MJ0671 - 5-amino-6-(5-phosphoribosylamino)uracil reductase
XF1750 Conserved hypothetical protein
XF1751 Hypothetical protein
XF1753 Hypothetical protein
XF1754 Conserved hypothetical protein
XF1755 Conserved hypothetical protein
XF1756 Hypothetical protein
XF1758 Hypothetical protein
XF1759 Conserved hypothetical protein
XF1760 Hypothetical protein
XF1761 Hypothetical protein
XF1762 Conserved hypothetical protein
XF1764 Hypothetical protein
XF1766 Hypothetical protein
XF1767 Hypothetical protein
XF1768 YCJZ - transcriptional regulator (LysR family)
XF1769 Hypothetical protein
XF1770 Hypothetical protein
XF1771 Hypothetical protein
XF1772 Hypothetical protein
XF1773 Hypothetical protein
XF1774 HPAIIM DNA methyltransferase
XF1775 IS629 - reverse transcriptase
XF1776 DNA topoisomerase III - topB
XF1777 Hypothetical protein
XF1779 Single-stranded DNA binding protein- ssb
XF1780 Hypothetical protein

XF1783 Hypothetical protein
 XF1784 Hypothetical protein
 XF1785 SOJ; chromosome partitioning related protein
 XF1786 Hypothetical protein
 XF1787 Hypothetical protein
 XF1788 Hypothetical protein
 XF1929 Hypothetical protein
 XF1931 PLSB OR HI0748-glycerol-3-phosphate acyltransferase
 XF1934 HETI HetI protein
 XF2035 Hypothetical protein
 XF2036 Hypothetical protein
 XF2038 PAIB; transcriptional regulator
 XF2043 Hypothetical protein
 XF2067 Conserved plasmid protein -yacB
 XF2068 Hypothetical protein
 XF2084 Component of multidrug efflux system - mexE
 XF2108 Hypothetical protein
 XF2109 Hypothetical protein
 XF2112 Hypothetical protein
 XF2114 Hypothetical protein
 XF2115 Hypothetical protein
 XF2117 Hypothetical protein
 XF2118 Hypothetical protein
 XF2119 Hypothetical protein
 XF2120 Hypothetical protein
 XF2121 Virulence-associated protein E - vapE
 XF2123 Hypothetical protein
 XF2125 Hypothetical protein
 XF2132 Hypothetical protein
 XF2179 Conserved hypothetical protein
 XF2207 SC1C3.02; cationic amino acid transporter
 XF2214 HISF - cyclase
 XF2215 phosphoribosylformimino-5-aminoimidazole carboxamide ribotide isomerase
 XF2216 HISH OR HI0472 amidotransferase
 HISB - imidazoleglycerolphosphate dehydratase histidinol-phosphate phosphatase
 XF2217 bifunctional enzyme
 XF2218 HISC - histidinol-phosphate aminotransferase
 XF2219 HISD - histidinol dehydrogenase
 XF2220 HISG - ATP phosphoribosyltransferase
 XF2221 Conserved hypothetical protein - yecD
 XF2223 THRC - threonine synthase
 XF2224 THRB - homoserine kinase
 XF2225 THRA OR THRA1 OR THRA2 - bifunctional aspartokinase homoserine dehydrogenase I
 XF2233 DNAJ; DnaJ protein
 XF2271 Hypothetical protein
 XF2273 Conserved hypothetical protein
 XF2276 Hypothetical protein
 XF2290 Phage-related protein
 XF2291 Phage-related protein
 XF2292 Hypothetical protein
 XF2294 KILA phage-related protein
 XF2302 HEML glutamate-1-semialdehyde 2;1-aminomutase
 XF2317 Hypothetical protein

XF2385 YEGN - acriflavin resistance protein D
XF2409 Conserved hypothetical protein
XF2410 Hypothetical protein
XF2417 LSPA lipoprotein signal peptidase
XF2418 ILES OR ILVS isoleucyl-tRNA synthetase
XF2419 RIBF riboflavin biosynthesis protein
XF2455 Heme ABC transporter ATP-binding protein - ccmA
XF2456 Heme ABC transporter membrane protein - ccmB
XF2457 Heme ABC transporter membrane protein - ccmC
XF2459 CYCJ c-type cytochrome biogenesis protein
XF2460 CYCK c-type cytochrome biogenesis membrane protein
XF2461 DSBE OR CCMG c-type cytochrome biogenesis protein thioredoxin
XF2462 CYCL c-type cytochrome biogenesis protein (16.3 kDa)-orf 2462
XF2463 Hypothetical protein
XF2470 CBBZC phosphoglycolate phosphatase
XF2471 UBIG OR PUF3 3-demethylubiquinone-9 3-methyltransferase
XF2472 Conserved hypothetical protein
XF2473 EFP elongation factor P
XF2474 Conserved hypothetical protein
XF2475 HI0380 tRNA rRNA methyltransferase
XF2477 BIOD dethiobiotin synthetase
XF2483 Conserved hypothetical protein
XF2486 Hypothetical protein
XF2487 Hypothetical protein
XF2488 Phage-related baseplate assembly protein - gpJ
XF2492 Phage-related baseplate assembly protein - gpV
XF2493 Conserved hypothetical protein
XF2494 Hypothetical protein
XF2497 Hypothetical protein
XF2522 Phage-related protein
XF2523 Phage-related protein
XF2538 PILC - fimbrial assembly protein
XF2549 Hypothetical protein
XF2551 Conserved hypothetical protein - At2g47390
XF2556 DNA ligase
XF2705 Conserved hypothetical protein
XF2721 Type I restriction-modification system endonuclease - hsdR1
XF2722 MJ1218; type I restriction-modification system specificity determinant
XF2723 Type I restriction-modification system DNA methylase - hsdM
XF2724 Type I restriction-modification system- hsdM
XF2734 Hypothetical protein
XF2735 Hypothetical protein
XF2740 Hypothetical protein
XF2741 Type I restriction-modification system specificity determinant - hsdS
XF2742 Type I restriction-modification system DNA methylase - hsdM
XF2744 Hypothetical protein
XF2745 Hypothetical protein
XF2745 Hypothetical protein
XF2747 Hypothetical protein
XF2748 Hypothetical protein
XF2762 Hypothetical protein
XF2764 Conserved hypothetical protein
XF2767 Hypothetical protein

XF2773 Hypothetical protein
XF2775 Hemagglutinin-like secreted protein - pspA
XF2777 Hypothetical protein

36f (higher copy)

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XF0279 Hypothetical protein
XF0424 Hypothetical protein
XF0425 RECD - exodeoxyribonuclease V alpha chain
XF0508 Phage-related terminase large subunit - gp2
XF0510 Hypothetical protein
XF0514 Hypothetical protein
XF0516 Hypothetical protein
XF0518 Hypothetical protein
XF0523 Hypothetical protein
XF0526 Hypothetical protein
XF0757 Conserved hypothetical protein
XF0832 CYSG - siroheme synthase
XF0835 UBIH OR VISB - 2-octaprenyl-6-methoxyphenol hydroxylase
XF0845 Family 3 glycoside hydrolase - xylA
XF0889 Hemagglutinin-like secreted protein- pspA
XF0890 Hypothetical protein
XF0896 Hypothetical protein
XF1005 PROA; gamma-glutamyl phosphate reductase
MURD OR RV2155C OR MTCY270.13 UDP-N-acetylmuramoylalanine--D-glutamate
ligase
XF1118
XF1744 Oxidoreductase
XF1752 Transcriptional regulator (LysR family)
XF1753 Hypothetical protein
XF1756 Hypothetical protein
XF1769 Hypothetical protein
XF1769 Hypothetical protein
XF1776 DNA topoisomerase III - topB
XF1785 SOJ; chromosome partitioning related protein
XF2037 Conserved hypothetical protein - bioF2
XF2114 Hypothetical protein
XF2121 Virulence-associated protein E - vapE
XF2456 Heme ABC transporter membrane protein - ccmB
XF2475 HI0380 tRNA rRNA methyltransferase
XF2487 Hypothetical protein
XF2492 Phage-related baseplate assembly protein - gpV
XF2723 Type I restriction-modification system DNA methylase
XF2735 Hypothetical protein
XF2736 Hypothetical protein
XF2742 Type I restriction-modification system DNA methylase - hsdM
XF2775 Hemagglutinin-like secreted protein - pspA

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XF2663 Hypothetical protein

56a (higher copy)

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XF0138 PEPA OR XERB OR CARP aminopeptidase A I
XF0298 Hypothetical protein

XF0422	Exodeoxyribonuclease V gamma chain - RECC
XF0425	RECD - exodeoxyribonuclease V alpha chain
XF0490	Hypothetical protein
XF0503	Hypothetical protein
XF0504	Hypothetical protein
XF0505	Hypothetical protein
XF0506	Virulence-associated protein E
XF0508	Phage-related terminase large subunit - gp2
XF0510	Hypothetical protein
XF0511	Hypothetical protein
XF0513	Phage-related endolysin - lycV
XF0514	Hypothetical protein
XF0516	Hypothetical protein
XF0517	Hypothetical protein
XF0518	Hypothetical protein
XF0519	Hypothetical protein
XF0521	Conserved hypothetical protein
XF0522	Hypothetical protein
XF0523	Hypothetical protein
XF0524	Hypothetical protein
XF0526	Hypothetical protein
XF0527	Hypothetical protein
XF0528	Hypothetical protein
XF0529	Hypothetical protein
XF0556	Conserved hypothetical protein
XF0715	Hypothetical protein
XF0718	Conserved hypothetical protein
XF0723	Phage-related baseplate assembly protein- gpW
XF0730	Phage-related tail protein-gpT
XF0759	AMIC; N-acetylmuramoyl-L-alanine amidase precursor
XF0879	Lipopolysaccharide biosynthesis protein - rfbU
XF0889	Hemagglutinin-like secreted protein- pspA
XF1012	Conserved hypothetical protein-YFHC
XF1723	Sugar-phosphate dehydrogenase - yrpG
XF1728	Transport protein - f451
XF1730	YAFC - transcriptional regulator (LysR family)
XF1736	Hypothetical protein
XF1737	SCM11.20c - conserved hypothetical protein
XF1738	Hypothetical protein
XF1741	Daunorubicin C-13 ketoreductase - dnrU
XF1742	Conserved hypothetical protein - drp35
XF1743	Esterase - est
XF1744	Oxidoreductase
XF1745	Conserved hypothetical protein
XF1747	Conserved hypothetical protein
XF1751	Hypothetical protein
XF1752	Transcriptional regulator (LysR family)
XF1753	Hypothetical protein
XF1756	Hypothetical protein
XF1763	Phage-related protein
XF1766	Hypothetical protein
XF1767	Hypothetical protein
XF1768	YCJZ - transcriptional regulator (LysR family)

XF1772 Hypothetical protein
 XF1774 HPAIIM DNA methyltransferase
 XF1776 DNA topoisomerase III - topB
 XF1777 Hypothetical protein
 XF1780 Hypothetical protein
 XF1785 SOJ; chromosome partitioning related protein
 XF2112 Hypothetical protein
 XF2114 Hypothetical protein
 XF2115 Hypothetical protein
 XF2119 Hypothetical protein
 XF2120 Hypothetical protein
 XF2121 Virulence-associated protein E - vapE
 XF2222 Histidyl-tRNA synthetase - hisS
 XF2290 Phage-related protein
 XF2417 LSPA lipoprotein signal peptidase
 XF2479 Phage-related protein
 XF2483 Conserved hypothetical protein
 XF2485 FIR2 phage-related contractile tail sheath protein
 XF2486 Hypothetical protein
 XF2488 Phage-related baseplate assembly protein - gpJ
 XF2492 Phage-related baseplate assembly protein - gpV
 XF2522 Phage-related protein
 XF2525 Phage-related DNA polymerase - dpoL
 XF2538 PILC - fimbrial assembly protein
 XF2735 Hypothetical protein
 XF2775 Hemagglutinin-like secreted protein - pspA

56a (deleted)

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XF0078 MRKD - fimbrial adhesin precursor
 XF0497 Conserved hypothetical protein - Rv2514c
 XF0667 Hypothetical protein
 XF1160 RPMC - 50S ribosomal protein L29
 XF1250 Arginine deaminase -rocF
 XF1646 LPXD OR FIRA; UDP-3-O-(R-3-hydroxymyristoyl)-glucosamine N-acyltransferase
 XF1664 Hypothetical protein
 XF1665 Hypothetical protein
 XF1707 Hypothetical protein
 XF1708 Conserved hypothetical protein
 XF1851 Serine protease
 XF1859 Hypothetical protein
 XF1861 Hypothetical protein
 XF1863 Hypothetical protein
 XF1880 Hypothetical protein
 XF1884 Hypothetical protein
 XF1885 Hypothetical protein
 XFa0003 Topoisomerase I
 XFa0004 Hypothetical protein
 XFa0012 Conjugal transfer protein

912c (higher copy)

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XF0133 COPB; copper resistance protein B precursor
 XF0297 MJ1220 - type I restriction-modification system DNA methylase

XF0423	Exodeoxyribonuclease V beta chain - RECB OR RORA
XF0424	Hypothetical protein
XF0430	DNAG OR DNAP OR PARB; DNA primase
XF0489	Hypothetical protein
XF0490	Hypothetical protein
XF0503	Hypothetical protein
XF0504	Hypothetical protein
XF0505	Hypothetical protein
XF0506	Virulence-associated protein E
XF0507	Hypothetical protein
XF0508	Phage-related terminase large subunit - gp2
XF0510	Hypothetical protein
XF0511	Hypothetical protein
XF0513	Phage-related endolysin - lycV
XF0514	Hypothetical protein
XF0515	Hypothetical protein
XF0516	Hypothetical protein
XF0517	Hypothetical protein
XF0518	Hypothetical protein
XF0521	Conserved hypothetical protein
XF0522	Hypothetical protein
XF0523	Hypothetical protein
XF0524	Hypothetical protein
XF0526	Hypothetical protein
XF0527	Hypothetical protein
XF0528	Hypothetical protein
XF0715	Hypothetical protein
XF0719	Phage-related baseplate assembly protein- gpV
XF0723	Phage-related baseplate assembly protein- gpW
XF0754	Virulence protein - acvB
XF0755	XSEA; exodeoxyribonuclease VII large subunit
XF0757	Conserved hypothetical protein
XF0758	Conserved hypothetical protein
XF0759	AMIC; N-acetylmuramoyl-L-alanine amidase precursor
XF0832	CYSG - siroheme synthase
XF0835	UBIH OR VISB - 2-octaprenyl-6-methoxyphenol hydroxylase
XF0840	BGA - beta-galactosidase
XF0842	Conserved hypothetical protein
XF0843	Conserved hypothetical protein
XF0879	Lipopolysaccharide biosynthesis protein - rfbU
XF0882	YOAA - ATP-dependent helicase
XF0889	Hemagglutinin-like secreted protein- pspA
XF0928	Conserved hypothetical protein
XF0950	RIBD OR RIBG; riboflavin-specific deaminase
XF1002	AF2071; N-acetyl-gamma-glutamyl-phosphate reductase
XF1003	ASL; argininosuccinate lyase
XF1241	Aconitate hydratase 1 - ACNA OR CAN
XF1383	HRPA - helicase; ATP dependent
XF1719	Hypothetical protein
XF1723	Sugar-phosphate dehydrogenase - yrpG
XF1735	Conserved hypothetical protein
XF1737	Conserved hypothetical protein
XF1738	Hypothetical protein

XF1741	Daunorubicin C-13 ketoreductase - dnrU
XF1743	Esterase - est
XF1744	Oxidoreductase
XF1745	Conserved hypothetical protein
XF1750	Conserved hypothetical protein
XF1751	Hypothetical protein
XF1753	Hypothetical protein
XF1755	Conserved hypothetical protein
XF1756	Hypothetical protein
XF1769	Hypothetical protein
XF1772	Hypothetical protein
XF1773	Hypothetical protein
XF1774	HPAIIIM DNA methyltransferase
XF1775	IS629 - reverse transcriptase
XF1776	DNA topoisomerase III - topB
XF1779	Single-stranded DNA binding protein- ssb
XF1780	Hypothetical protein
XF1784	Hypothetical protein
XF1785	SOJ; chromosome partitioning related protein
XF2112	Hypothetical protein
XF2114	Hypothetical protein
XF2115	Hypothetical protein
XF2120	Hypothetical protein
XF2121	Virulence-associated protein E - vapE
XF2123	Hypothetical protein
XF2125	Hypothetical protein
XF2207	SC1C3.02; cationic amino acid transporter
XF2223	THRC - threonine synthase
XF2224	THRB - homoserine kinase
XF2227	Conserved hypothetical protein
XF2416	Drug tolerance protein - lytB
XF2418	ILES OR ILVS isoleucyl-tRNA synthetase
XF2455	Heme ABC transporter ATP-binding protein - ccmA
XF2456	Heme ABC transporter membrane protein - ccmB
XF2469	Hypothetical protein
XF2481	Phage-related tail protein - gpX
XF2482	Phage-related protein
XF2486	Hypothetical protein
XF2494	Hypothetical protein
XF2497	Hypothetical protein
XF2522	Phage-related protein
XF2523	Phage-related protein
XF2538	PILC - fimbrial assembly protein
XF2705	Conserved hypothetical protein
XF2733	Hypothetical protein
XF2735	Hypothetical protein
XF2736	Hypothetical protein
XF2738	Hypothetical protein
XF2775	Hemagglutinin-like secreted protein - pspA
XFa0020	Hypothetical protein
XFa0027	plasmid maintenance protein
XFa0028	Hypothetical protein
XFa0033	Hypothetical protein

XFa0060 Plasmid replication protein

912c (deleted)

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XF0078 MRKD - fimbrial adhesin precursor
XF0497 Conserved hypothetical protein
XF0665 Phosphohydrolase - orfU1
XF0666 Hypothetical protein
XF1167 RPLF - 50S ribosomal protein L6
XF1250 Arginine deaminase -rocF
XF1646 LPXD OR FIRA; UDP-3-O-(R-3-hydroxymyristoyl)-glucosamine N-acyltransferase
XF1664 Hypothetical protein
XF1665 Hypothetical protein
XF1707 Hypothetical protein
XF1708 Conserved hypothetical protein
XF1851 Serine protease
XF1859 Hypothetical protein
XF1861 Hypothetical protein
XF1863 Hypothetical protein
XF1880 Hypothetical protein
XF1884 Hypothetical protein
XF1885 Hypothetical protein

Cv21 (higher copy)

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XF0485 Phage-related protein
XF0487 fimbrillin
XF0489 Hypothetical protein
XF0490 Hypothetical protein
XF0492 Hypothetical protein
XF0493 Hypothetical protein
XF0503 Hypothetical protein
XF0506 Virulence-associated protein E
XF0508 Phage-related terminase large subunit - gp2
XF0510 Hypothetical protein
XF0511 Hypothetical protein
XF0512 Hypothetical protein
XF0513 Phage-related endolysin - lycV
XF0514 Hypothetical protein
XF0515 Hypothetical protein
XF0516 Hypothetical protein
XF0517 Hypothetical protein
XF0518 Hypothetical protein
XF0519 Hypothetical protein
XF0521 Conserved hypothetical protein
XF0522 Hypothetical protein
XF0523 Hypothetical protein
XF0524 Hypothetical protein
XF0527 Hypothetical protein
XF0528 Hypothetical protein
XF0532 Hypothetical protein
XF0790 Conserved hypothetical protein
XF0889 Hemagglutinin-like secreted protein- pspA
XF1118 MURD OR RV2155C OR MTCY270.13 UDP-N-acetylmuramoylalanine--D-glutamate ligase

XF2112	Hypothetical protein
XF2114	Hypothetical protein
XF2115	Hypothetical protein
XF2118	Hypothetical protein
XF2119	Hypothetical protein
XF2120	Hypothetical protein
XF2123	Hypothetical protein
XF2494	Hypothetical protein
XFa0004	Hypothetical protein
XFa0022	Conserved hypothetical protein
XFa0027	Plasmid maintenance protein
XFa0028	Hypothetical protein

Cv21 (deleted)

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XF0078	MRKD - fimbrial adhesin precursor
XF0497	Conserved hypothetical protein
XF1646	LPXD OR FIRA; UDP-3-O-(R-3-hydroxymyristoyl)-glucosamine N-acyltransferase
XF1664	Hypothetical protein
XF1665	Hypothetical protein
XF1707	Hypothetical protein
XF1708	Conserved hypothetical protein
XF1851	Serine protease
XF1859	Hypothetical protein
XF1861	Hypothetical protein
XF1863	Hypothetical protein
XF1880	Hypothetical protein
XF1885	Hypothetical protein

Fb7 (deleted)

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XF0497	Conserved hypothetical protein
XF1707	Hypothetical protein
XF1863	Hypothetical protein
XF1880	Hypothetical protein
XF1885	Hypothetical protein
XF2040	Hypothetical protein
XFa0001	Transcriptional regulator
XFa0002	Conjugal transfer protein
XFa0003	Topoisomerase I
XFa0004	Hypothetical protein
XFa0012	Conjugal transfer protein
XFa0047	Nnickase
XFa0048	Hypothetical protein
XFa0051	Hypothetical protein
XFa0055	Conserved hypothetical protein
XFa0059	Plasmid replication partition protein
XFa0060	Plasmid replication protein
XFa0062	Hypothetical protein
XFa0063	Hypothetical protein
XFa0064	Hypothetical protein