**Table S2. Distribution of 344 core genes containing hotspot mutationsa between ST3 and ST36 ecotypes.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Locus Tag** | **Protein GI** | **Product** | **ST3** | **ST36** | **Shared** |
| VP0036 | 28896810 | ThiF protein | x | x | x |
| VP0044 | 28896818 | Phosphoribosylglycinamide formyltransferase | x |  |  |
| VP0088 | 28896862 | Hypothetical protein |  |  |  |
| VP0090 | 28896864 | Hypothetical protein | x |  |  |
| VP0147 | 28896921 | Formate dehydrogenase accessory protein | x | x | x |
| VP0242 | 28897016 | Thiopurine S-methyltransferase |  | x |  |
| VP0291 | 28897065 | Hypothetical protein |  | x |  |
| VP0298 | 28897072 | 6-phospho-beta-glucosidase |  |  |  |
| VP0335 | 28897109 | Hypothetical protein |  | x |  |
| VP0372 | 28897146 | ABC transporter |  | x |  |
| VP0474 | 28897248 | Hypothetical protein |  |  |  |
| VP0477 | 28897251 | Hypothetical protein | x | x | x |
| VP0485 | 28897259 | Oxidoreductase |  | x |  |
| VP0486 | 28897260 | Outer membrane protein TolC |  |  |  |
| VP0508 | 28897282 | Phosphoserine phosphatase |  |  |  |
| VP0541 | 28897315 | Periplasmic protein |  |  |  |
| VP0542 | 28897316 | Sensory box/GGDEF family protein | x |  |  |
| VP0545 | 28897319 | Hypothetical protein |  |  |  |
| VP0550 | 28897324 | Methyltransferase |  | x |  |
| VP0554 | 28897328 | Hypothetical protein |  | x |  |
| VP0571 | 28897345 | Hypothetical protein | x | x | x |
| VP0572 | 28897346 | Glyoxylase |  |  |  |
| VP0582 | 28897356 | Cytochrome c554 |  | x |  |
| **VP0607** | **28897381** | **Transcriptional regulator** | **x** | **x** | **x** |
| VP0609 | 28897383 | Hypothetical protein |  | x |  |
| VP0610 | 28897384 | Histidyl-tRNA synthetase |  |  |  |
| VP0623 | 28897397 | Orotidine 5'-phosphate decarboxylase |  | x |  |
| VP0656 | 28897430 | Beta-hexosaminidase | x |  |  |
| VP0759 | 28897533 | Hypothetical protein |  | x |  |
| VP0762 | 28897536 | Hypothetical protein |  |  |  |
| VP1138 | 28897546 | Two-component sensor |  | x |  |
| VP0789 | 28897563 | Glutamyl-tRNA synthetase | x | x | x |
| VP0823 | 28897597 | D-amino acid dehydrogenase small subunit |  |  |  |
| VP0841 | 28897615 | O-succinylbenzoate synthase | x |  |  |
| VP0856 | 28897630 | Hypothetical protein |  |  |  |
| VP0868 | 28897642 | Hypothetical protein |  | x |  |
| VP0883 | 28897657 | ComF-like protein |  |  |  |
| VP0885 | 28897659 | Hypothetical protein | x |  |  |
| VP0887 | 28897661 | Hypothetical protein | x | x | x |
| VP0893 | 28897667 | Hypothetical protein |  | x |  |
| VP0913 | 28897687 | Hypothetical protein |  | x |  |
| VP0932 | 28897706 | Glucosamine N-acyltransferase | x |  |  |
| VP0944 | 28897718 | Hypothetical protein |  |  |  |
| VP0947 | 28897721 | Dihydrodipicolinate synthase |  |  |  |
| VP0979 | 28897753 | Type III chaperone | x | x | x |
| VP0991 | 28897765 | Hypothetical protein | x | x | x |
| VP1004 | 28897778 | Cystathionine gamma-synthase |  | x |  |
| VP1015 | 28897789 | Biotin synthesis protein BioC |  | x |  |
| VP1026 | 28897800 | HesA/MoeB/ThiF family protein |  | x |  |
| VP1027 | 28897801 | Hypothetical protein | x | x | x |
| VP1096 | 28897870 | DNA-3-methyladenine glycosidase I |  |  |  |
| VP1115 | 28897889 | Acetyltransferase |  | x |  |
| VP1124 | 28897898 | Azoreductase | x | x | x |
| VP1138 | 28897912 | Hypothetical protein |  | x |  |
| VP1143 | 28897917 | Transcriptional repressor NsrR | x | x | x |
| VP1145 | 28897919 | Hypothetical protein |  | x |  |
| VP1152 | 28897926 | Hypothetical protein |  |  |  |
| VP1153 | 28897927 | MarR family transcriptional regulator | x | x | x |
| VP1179 | 28897953 | Fimbrial assembly protein PilP |  | x |  |
| **VP1202** | **28897976** | **Two-component response regulator** | **x** | **x** | **x** |
| VP1221 | 28897995 | Hypothetical protein |  | x |  |
| VP1227 | 28898001 | Hypothetical protein |  |  |  |
| VP1252 | 28898026 | Hypothetical protein | x | x | x |
| VP1260 | 28898034 | Hypothetical protein |  |  |  |
| VP1271 | 28898045 | Short-chain dehydrogenase | x |  |  |
| VP1272 | 28898046 | AsnC family transcriptional regulator |  |  |  |
| **VP1277** | **28898051** | **GntR family transcriptional regulator** | **x** | **x** | **x** |
| VP1295 | 28898069 | Hypothetical protein |  |  |  |
| VP1296 | 28898070 | Transcriptional regulator |  | x |  |
| VP1299 | 28898073 | Hypothetical protein | x | x | x |
| VP1302 | 28898076 | Imidazole glycerol phosphate synthase subunit HisF | x | x | x |
| VP1303 | 28898077 | Outer membrane lipoprotein transporter subunit LolE | x | x | x |
| VP1314 | 28898088 | Galactoside O-acetyltransferase |  | x |  |
| VP1316 | 28898090 | Outer membrane protein Ail and OmpX |  |  |  |
| VP1317 | 28898091 | Acetyltransferase |  |  |  |
| VP1332 | 28898106 | Hypothetical protein |  |  |  |
| VP1371 | 28898145 | TyrA protein | x |  |  |
| VP1373 | 28898147 | Hypothetical protein | x | x | x |
| VP1379 | 28898153 | Hypothetical protein |  |  |  |
| VP1436 | 28898210 | Transmembrane protein |  |  |  |
| VP1452 | 28898226 | Alkylphosphonate ABC transporter | x | x | x |
| VP1458 | 28898232 | Na+/H+ antiporter | x |  |  |
| VP1471 | 28898246 | Hypothetical protein | x | x | x |
| VP1497 | 28898271 | Long-chain-fatty-acid-CoA ligase |  | x |  |
| VP1501 | 28898274 | Two-component response regulator |  |  |  |
| VP1506 | 28898280 | Hypothetical protein |  |  |  |
| VP1511 | 28898285 | Hypothetical protein | x | x | x |
| VP1532 | 28898306 | NTPase |  |  |  |
| VP1546 | 28898320 | Hypothetical protein |  | x |  |
| VP1599 | 28898373 | Outer membrane phospholipase subunit A | x |  |  |
| VP1603 | 28898377 | Hypothetical protein |  |  |  |
| VP1616 | 28898390 | Hypothetical protein |  |  |  |
| VP1638 | 28898412 | Hypothetical protein |  | x |  |
| VP1639 | 28898413 | Phosphoglycerate mutase family protein | x | x | x |
| VP1640 | 28898414 | ApaG protein |  | x |  |
| VP1641 | 28898415 | Acetyltransferase | x | x | x |
| VP1643 | 28898417 | Quinone oxidoreductase |  |  |  |
| VP1669 | 28898443 | Phosphatase |  |  |  |
| VP1682 | 28898455 | Membrane-associated Zn-dependent protease |  | x |  |
| VP1681 | 28898456 | Hypothetical protein |  |  |  |
| VP1687 | 28898461 | DNA polymerase III subunit psi | x | x | x |
| VP1700 | 28898474 | Hypothetical protein |  | x |  |
| VP1716 | 28898489 | Porphobilinogen deaminase |  |  |  |
| VP1722 | 28898496 | Hypothetical protein |  |  |  |
| VP1731 | 28898505 | MutT/nudix family protein |  | x |  |
| VP1748 | 28898522 | Hypothetical protein | x | x | x |
| VP1749 | 28898523 | Hypothetical protein | x |  |  |
| VP1753 | 28898527 | Elongation factor P | x | x | x |
| VP1757 | 28898531 | Hypothetical protein | x | x | x |
| VP1758 | 28898532 | Hemolysin |  | x |  |
| VP1759 | 28898533 | Nucleoid-associated protein NdpA | x | x | x |
| VP1761 | 28898535 | PRS2 protein |  |  |  |
| VP1763 | 28898537 | Hypothetical protein |  | x |  |
| VP1764 | 28898538 | Transmembrane protein |  | x |  |
| VP1894 | 28898668 | Hypothetical protein | x |  |  |
| VP1901 | 28898675 | Phospho-2-dehydro-3-deoxyheptonate aldolase |  |  |  |
| VP1914 | 28898688 | Tryptophanyl-tRNA synthetase II |  |  |  |
| VP1930 | 28898704 | Type III secretion protein YscO | x | x | x |
| VP1948 | 28898722 | Hypothetical protein |  |  |  |
| VP1963 | 28898736 | Hypothetical protein | x | x | x |
| VP1962 | 28898737 | Hypothetical protein |  | x |  |
| VP1964 | 28898738 | Iron-regulated virulence regulatory protein | x | x | x |
| VP1984 | 28898758 | Queuosine biosynthesis protein QueC |  | x |  |
| VP1998 | 28898772 | Hypothetical protein | x | x | x |
| VP2021 | 28898795 | Formate dehydrogenase-specific chaperone |  | x |  |
| VP2026 | 28898800 | Hypothetical protein |  | x |  |
| VP2045 | 28898819 | Histidinol dehydrogenase | x |  |  |
| VP2085 | 28898859 | Sua5/YciO/YrdC family protein | x | x | x |
| VP2097 | 28898871 | Hypothetical protein | x | x | x |
| VP2098 | 28898872 | Histidine utilization repressor | x | x | x |
| VP2124 | 28898898 | Hypothetical protein |  |  |  |
| VP2125 | 28898899 | MSHA biogenesis protein MshM | x |  |  |
| VP2128 | 28898902 | Hypothetical protein |  | x |  |
| VP2146 | 28898920 | Hypothetical protein |  | x |  |
| VP2167 | 28898941 | Acetyltransferase | x |  |  |
| VP2262 | 28899036 | MSHA biogenesis protein MshF |  |  |  |
| VP2264 | 28899038 | Hypothetical protein | x | x | x |
| VP2267 | 28899041 | Cryptic beta-D-galactosidase subunit beta |  |  |  |
| VP2273 | 28899047 | Hypothetical protein | x |  |  |
| VP2282 | 28899056 | Hypothetical protein | x | x | x |
| VP2286 | 28899060 | Ferrochelatase |  |  |  |
| VP2300 | 28899074 | Guanine dinucleotide biosynthesis protein MobA |  |  |  |
| VP2308 | 28899082 | Hypothetical protein | x |  |  |
| VP2311 | 28899085 | Fimbrial assembly protein PilE |  |  |  |
| VP2322 | 28899096 | Exopolyphosphatase | x | x | x |
| VP2332 | 28899106 | LysR family transcriptional regulator | x | x | x |
| VP2334 | 28899108 | Hypothetical protein | x |  |  |
| VP2336 | 28899110 | Hypothetical protein |  | x |  |
| VP2339 | 28899113 | Outer membrane protein | x |  |  |
| VP2341 | 28899114 | Glutaredoxin |  |  |  |
| VP2353 | 28899127 | Flagellar basal body P-ring biosynthesis protein FlgA | x | x | x |
| VP2368 | 28899142 | Uroporphyrin-III C-methyltransferase | x |  |  |
| VP2369 | 28899143 | Hypothetical protein |  | x |  |
| VP2401 | 28899175 | Lipoprotein |  | x |  |
| VP2404 | 28899178 | Aspartate carbamoyltransferase | x |  |  |
| VP2426 | 28899200 | ABC transporter phosphate-binding protein |  |  |  |
| VP2431 | 28899205 | Aspartate-semialdehyde dehydrogenase | x | x | x |
| VP2442 | 28899216 | Hypothetical protein |  | x |  |
| VP2444 | 28899218 | Binding protein component of ABC transporter | x |  |  |
| VP2542 | 28899316 | tRNA pseudouridine synthase C |  | x |  |
| VP2587 | 28899361 | Hypothetical protein | x |  |  |
| VP2603 | 28899377 | Hypothetical protein | x |  |  |
| VP2634 | 28899408 | Homoserine/homoserine lactone efflux protein | x | x | x |
| VP2639 | 28899413 | Beta-hydroxydecanoyl-ACP dehydrase | x | x | x |
| VP2648 | 28899422 | Phosphorelay protein | x |  |  |
| VP2651 | 28899425 | Hypothetical protein |  |  |  |
| VP2654 | 28899428 | Hypothetical protein |  |  |  |
| VP2663 | 28899437 | 2-octaprenyl-6-methoxyphenyl hydroxylase |  |  |  |
| VP2699 | 28899473 | Hypothetical protein |  |  |  |
| VP2703 | 28899477 | Hypothetical protein | x |  |  |
| VP2728 | 28899502 | Sodium/dicarboxylate symporter |  |  |  |
| VP2747 | 28899521 | Hypothetical protein |  |  |  |
| VP2755 | 28899529 | Hypothetical protein |  |  |  |
| VP2765 | 28899539 | Hypothetical protein | x |  |  |
| VP2808 | 28899582 | Outer membrane lipoprotein Slp |  | x |  |
| VP2809 | 28899583 | Cytochrome subunit of sulfide dehydrogenase |  |  |  |
| VP2969 | 28899743 | Hypothetical protein | x |  |  |
| VP2988 | 28899762 | Flavodoxin FldB | x |  |  |
| VP3004 | 28899778 | L-2,4-diaminobutyric acid acetyltransferase |  |  |  |
| VP3016 | 28899790 | Lipoprotein VirG | x | x | x |
| VP3017 | 28899791 | Hypothetical protein |  |  |  |
| VP3025 | 28899799 | Hypothetical protein |  | x |  |
| VP3035 | 28899809 | Hypothetical protein |  |  |  |
| VP3056 | 28899830 | Hypothetical protein |  | x |  |
| VPA0002 | 28899857 | Hypothetical protein | x | x | x |
| VPA0016 | 28899870 | Hypothetical protein |  | x |  |
| VPA0020 | 28899875 | Hypothetical protein | x | x | x |
| VPA0022 | 28899877 | Hypothetical protein | x | x | x |
| VPA0025 | 28899880 | Hypothetical protein | x |  |  |
| VPA0032 | 28899887 | Hypothetical protein |  |  |  |
| VPA0037 | 28899892 | Hypothetical protein | x | x | x |
| VPA0043 | 28899898 | Hypothetical protein | x | x | x |
| VPA0058 | 28899913 | Hypothetical protein |  | x |  |
| VPA0070 | 28899925 | Esterase |  | x |  |
| VPA0072 | 28899927 | N-hydroxyarylamine O-acetyltransferase |  | x |  |
| VPA0109 | 28899964 | Hypothetical protein | x | x | x |
| VPA0113 | 28899968 | Hypothetical protein |  | x |  |
| VPA0123 | 28899978 | Hydrolase | x |  |  |
| VPA0126 | 28899981 | Acetyltransferase | x | x | x |
| VPA0130 | 28899985 | Thiamine-phosphate pyrophosphorylase |  |  |  |
| VPA0159 | 28900014 | Hypothetical protein | x |  |  |
| VPA0172 | 28900027 | Hypothetical protein |  |  |  |
| VPA0185 | 28900040 | Branched chain amino acid transporter | x |  |  |
| VPA0198 | 28900053 | GGDEF family protein | x |  |  |
| **VPA0203** | **28900058** | **DNA photolyase** | **x** | **x** | **x** |
| VPA0210 | 28900065 | Hypothetical protein |  |  |  |
| VPA0231 | 28900086 | Phosphotransferase enzyme II, A component |  |  |  |
| VPA0240 | 28900095 | Repressor protein PhnR |  |  |  |
| VPA0242 | 28900097 | Hypothetical protein | x | x | x |
| VPA0246 | 28900101 | Hypothetical protein |  | x |  |
| VPA0251 | 28900106 | LysR family transcriptional regulator |  |  |  |
| VPA0281 | 28900136 | Hypothetical protein | x | x | x |
| **VPA0290** | **28900145** | **LysR family transcriptional regulator** | **x** | **x** | **x** |
| **VPA0293** | **28900148** | **TetR family transcriptional regulator** | **x** | **x** | **x** |
| VPA0319 | 28900174 | Hypothetical protein | x | x | x |
| VPA0320 | 28900175 | Lipoprotein | x |  |  |
| VPA0325 | 28900180 | Hypothetical protein |  | x |  |
| VPA0327 | 28900183 | Hypothetical protein |  |  |  |
| VPA0335 | 28900190 | SoxR protein |  |  |  |
| VPA0339 | 28900194 | Hypothetical protein | x | x | x |
| VPA0340 | 28900195 | Tellurite resistance protein-like protein | x | x | x |
| VPA0365 | 28900220 | Transcriptional regulator |  | x |  |
| VPA0367 | 28900222 | Spermidine/putrescine ABC transporter | x | x | x |
| VPA0370 | 28900226 | Hypothetical protein |  |  |  |
| VPA0377 | 28900232 | Hypothetical protein |  | x |  |
| VPA0417 | 28900272 | Hypothetical protein | x | x | x |
| VPA0428 | 28900283 | Hypothetical protein | x | x | x |
| VPA0429 | 28900284 | Hypothetical protein | x | x | x |
| VPA0433 | 28900287 | Hypothetical protein |  |  |  |
| VPA0452 | 28900307 | Cytochrome b561 |  |  |  |
| VPA0456 | 28900311 | Transcriptional regulator |  | x |  |
| VPA0457 | 28900312 | Hypothetical protein | x | x | x |
| VPA0458 | 28900313 | Hypothetical protein | x | x | x |
| VPA0494 | 28900349 | Outer membrane protein |  | x |  |
| VPA0504 | 28900359 | Fructose transport system kinase |  |  |  |
| VPA0505 | 28900360 | Hydrolase |  | x |  |
| VPA0521 | 28900377 | Hypothetical protein |  | x |  |
| VPA0529 | 28900384 | Hypothetical protein | x | x | x |
| VPA0531 | 28900386 | AraC family transcriptional regulator | x |  |  |
| VPA0533 | 28900389 | Acetyltransferase |  | x |  |
| VPA0540 | 28900396 | Transmembrane cytochrome oxidase | x | x | x |
| VPA0542 | 28900397 | Hypothetical protein |  | x |  |
| VPA0543 | 28900398 | Cytochrome c oxidase assembly protein |  |  |  |
| VPA0545 | 28900400 | Peptidyl-prolyl cis-trans isomerase protein |  |  |  |
| VPA0569 | 28900424 | Hypothetical protein |  | x |  |
| VPA0570 | 28900425 | Hypothetical protein |  | x |  |
| VPA0581 | 28900436 | Hypothetical protein | x | x | x |
| VPA0651 | 28900507 | Ferredoxin | x | x | x |
| VPA0665 | 28900520 | Hypothetical protein | x | x | x |
| VPA0669 | 28900524 | Hypothetical protein |  | x |  |
| VPA0674 | 28900529 | TMAO reductase system periplasmic protein TorT | x | x | x |
| VPA0687 | 28900542 | Hypothetical protein |  | x |  |
| VPA0693 | 28900548 | Lipid kinase | x | x | x |
| VPA0705 | 28900560 | Cytoplasmic membrane protein |  | x |  |
| VPA0707 | 28900562 | Delta-9 fatty acid desaturase |  | x |  |
| VPA0732 | 28900587 | Hypothetical protein |  |  |  |
| VPA0738 | 28900593 | Fimbrial protein Z transcriptional regulator |  | x |  |
| **VPA0740** | **28900595** | **LysR family transcriptional regulator** | **x** | **x** | **x** |
| VPA0744 | 28900599 | Hypothetical protein | x | x | x |
| VPA0769 | 28900624 | Hypothetical protein |  |  |  |
| VPA0770 | 28900625 | Hypothetical protein |  |  |  |
| VPA0776 | 28900631 | MazG-like protein | x | x | x |
| VPA0785 | 28900640 | Transcriptional regulator |  | x |  |
| VPA0787 | 28900642 | Hypothetical protein |  | x |  |
| VPA0789 | 28900644 | Hypothetical protein | x |  |  |
| VPA0791 | 28900646 | Hypothetical protein | x | x | x |
| **VPA0793** | **28900648** | **DNA replication protein** | **x** | **x** | **x** |
| VPA0813 | 28900668 | Bifunctional PTS system fructose-specific protein | x | x | x |
| VPA0828 | 28900683 | Hypothetical protein |  | x |  |
| VPA0835 | 28900690 | Inosine-guanosine kinase | x | x | x |
| VPA0875 | 28900730 | Carboxylase |  |  |  |
| VPA0916 | 28900771 | Hypothetical protein |  |  |  |
| VPA0923 | 28900778 | Hypothetical protein |  |  |  |
| VPA0926 | 28900781 | Hypothetical protein |  |  |  |
| VPA0933 | 28900788 | Hypothetical protein | x | x | x |
| VPA0936 | 28900791 | Aromatic amino acid aminotransferase |  |  |  |
| VPA0937 | 28900793 | Hypothetical protein |  | x |  |
| VPA0942 | 28900797 | Hypothetical protein |  | x |  |
| VPA0976 | 28900831 | Hypothetical protein |  |  |  |
| VPA1012 | 28900867 | Cytochrome c554 | x |  |  |
| VPA1018 | 28900873 | Lipoprotein Blc | x | x | x |
| VPA1020 | 28900875 | Hypothetical protein |  |  |  |
| VPA1026 | 28900881 | Hypothetical protein | x |  |  |
| VPA1029 | 28900884 | Hypothetical protein |  | x |  |
| VPA1036 | 28900891 | Hypothetical protein |  | x |  |
| VPA1072 | 28900927 | Hypothetical protein | x |  |  |
| VPA1078 | 28900933 | Hypothetical protein |  | x |  |
| VPA1080 | 28900935 | Membrane transport protein | x | x | x |
| VPA1095 | 28900950 | Hypothetical protein |  | x |  |
| VPA1097 | 28900952 | Hypothetical protein | x |  |  |
| VPA1107 | 28900962 | Hypothetical protein | x |  |  |
| VPA1108 | 28900963 | NAD(P)H-flavin reductase |  |  |  |
| VPA1135 | 28900990 | Acetyltransferase | x |  |  |
| **VPA1142** | **28900997** | **MerR family transcriptional regulator** | **x** | **x** | **x** |
| VPA1154 | 28901009 | Hypothetical protein |  |  |  |
| VPA1173 | 28901028 | Hypothetical protein |  | x |  |
| VPA1186 | 28901041 | Outer membrane protein OmpA |  |  |  |
| VPA1197 | 28901052 | (Fe-S)-binding protein | x | x | x |
| VPA1222 | 28901077 | Hypothetical protein |  |  |  |
| VPA1246 | 28901101 | Hypothetical protein | x |  |  |
| VPA1252 | 28901107 | Hypothetical protein |  | x |  |
| VPA1277 | 28901132 | Sensor histidine kinase | x | x | x |
| VPA1280 | 28901135 | Hypothetical protein | x | x | x |
| VPA1291 | 28901146 | Hypothetical protein | x | x | x |
| VPA1292 | 28901147 | Adenosine deaminase | x | x | x |
| VPA1297 | 28901152 | Hypothetical protein |  |  |  |
| VPA1298 | 28901153 | Glutathione S-transferase YghU | x | x | x |
| **VPA1299** | **28901154** | **TetR family transcriptional regulator** | **x** | **x** | **x** |
| VPA1400 | 28901255 | Maltose transporter membrane protein | x |  |  |
| VPA1407 | 28901262 | Hypothetical protein | x |  |  |
| VPA1411 | 28901266 | Glycosyltransferase |  | x |  |
| VPA1426 | 28901281 | Hypothetical protein |  |  |  |
| VPA1432 | 28901287 | Two-component response regulator |  | x |  |
| VPA1448 | 28901303 | Hypothetical protein |  | x |  |
| VPA1463 | 28901318 | Hypothetical protein |  | x |  |
| **VPA1472** | **28901327** | **MerR family transcriptional regulator** | **x** | **x** | **x** |
| VPA1474 | 28901329 | Hypothetical protein |  |  |  |
| VPA1483 | 28901338 | ABC transporter membrane-spanning permease |  |  |  |
| VPA1491 | 28901346 | Hypothetical protein |  |  |  |
| VPA1496 | 28901351 | Prolyl endopeptidase | x | x | x |
| VPA1519 | 28901374 | Hypothetical protein | x | x | x |
| VPA1521 | 28901376 | Hypothetical protein | x | x | x |
| VPA1525 | 28901380 | Hypothetical protein | x | x | x |
| VPA1529 | 28901384 | Hypothetical protein | x | x | x |
| VPA1553 | 28901408 | LafE protein | x | x | x |
| VPA1560 | 28901415 | Hypothetical protein | x | x | x |
| VPA1573 | 28901428 | Hypothetical protein | x |  |  |
| VPA1590 | 28901445 | Hypothetical protein |  |  |  |
| VPA1597 | 28901452 | Hypothetical protein | x |  |  |
| VPA1598 | 28901453 | N-acetylglucosamine-binding protein A |  | x |  |
| VPA1617 | 28901472 | Biosynthetic peptidoglycan transglycosylase |  | x |  |
| VPA1637 | 28901492 | Hypothetical protein |  |  |  |
| VPA1688 | 28901543 | Hypothetical protein |  |  |  |
| VPA1710 | 28901566 | Hypothetical protein | x |  |  |
| VPA1714 | 28901569 | Hypothetical protein |  | x |  |
| VPA1716 | 28901571 | Hypothetical protein |  |  |  |
| VPA1720 | 28901575 | Acetyltransferase | x | x | x |
| VPA1721 | 28901576 | Hypothetical protein | x | x | x |
| **VPA1729** | **28901584** | **LuxR family transcriptional regulator** | **x** | **x** | **x** |
| VPA1732 | 28901587 | Two-component response regulator |  |  |  |
| VPA1737 | 28901592 | Hypothetical protein |  |  |  |
| VPA1740 | 28901595 | Murein peptide amidase A | x | x | x |
| VPA1748 | 28901603 | Chloramphenicol acetyltransferase |  |  |  |
| **VPA1751** | **28901606** | **ParB family protein** | **x** | **x** | **x** |

aHotspot genes significantly overrepresented for transcriptional regulation shown in bold font.