

Table S3 – Function of genes found differentially in the ST-21 or ST-45 clonal complexes

| Present in ST-21 complex and absent from >90% ST-45 complex isolates | | |
|--|--|-------|
| Gene ¹ | Function | Ref |
| Cj0055c | Unknown | (1) |
| Cj0056c | unknown | (1) |
| Cj0057 | possible periplasmic protein | (1) |
| Cj0058 | possible periplasmic protein | (1) |
| Cj0122 | unknown | (1) |
| Cj0177 | putative iron transport protein | (2) |
| Cj0178 | TonB dependent receptor | (2,3) |
| exbB1 | putative iron transport protein | (4) |
| exbD1 | putative iron transport protein | (4) |
| tonB1 | putative iron transport protein | (4) |
| Cj0380c | unknown | (1) |
| Cj0424 | Functional link to iron stimulation | (4,5) |
| Cj0425 | Functional link to iron stimulation | (4,5) |
| Cj0480c | L-fucose metabolism | (6) |
| dapA | L-fucose metabolism | (1) |
| uxaA' | L-fucose metabolism | (1) |
| uxaA' | L-fucose metabolism | (1) |
| Cj0484 | L-fucose metabolism | (1) |
| Cj0485 | L-fucose metabolism | (1) |
| Cj0486 | L-fucose metabolism | (1) |
| Cj0487 | L-fucose metabolism | (1) |
| Cj0488 | L-fucose metabolism | (1) |
| ald' | L-fucose metabolism | (1) |
| ald' | L-fucose metabolism | (1) |
| Cj0566 | unknown | (1) |
| Cj0567 | putative iron transport protein | (4) |
| Cj0568 | unknown | (1) |
| Cj0569 | unknown | (7) |
| Cj0618 | Possibly involved in flagellin glycosylation | (1) |
| Cj0690c | Type I restriction enzyme | (1) |
| Cj0737 | Putative adhesin | (1) |
| Cj0738 | unknown | (1) |
| Cj0739 | unknown | (1) |
| Cj0740 | unknown | (1) |
| Cj0747 | unknown | (1) |
| Cj0748 | unknown | (8) |
| tonB3 | Iron regulated tonB protein | (4) |
| cfrA | putative iron uptake protein (ferric receptor) | (4) |
| Cj0818 | putative iron- and Fur-regulated lipoprotein | (1) |
| Cj0819 | putative iron transport protein | (4) |
| Cj1122c | unknown | (1) |
| Cj1135 | lipooligosaccharide synthesis | (1) |
| Cj1297 | antimicrobial efflux pump | (1) |
| hsdR | putative type I restriction enzyme protein | (1) |
| rloH | putative ATP/GTP-binding protein | (1) |
| hsdS | putative type I restriction enzyme protein | (1) |
| mloB | unknown | (1) |
| hsdM | putative type I restriction enzyme protein | (1) |

| | | |
|---------|---|-----|
| Cj1555c | hypothetical protein | (1) |
| Cj1585c | putative oxidoreductase | (1) |
| Cj1668c | putative periplasmic protein | (1) |
| Cj1725 | putative periplasmic protein | (1) |
| metA | homoserine O-succinyltransferase | (5) |
| metB | putative O-acetylhomoserine (thiol)-lyase | (5) |
| PAN0484 | hypothetical protein | - |
| PAN0513 | hypothetical protein | - |
| PAN1954 | hypothetical protein | - |
| PAN2855 | Predicted metal-dependent hydrolase | - |
| PAN2856 | putative tartrate transporter | - |
| PAN2879 | putative periplasmic protein | - |
| PAN3003 | unknown | - |
| PAN3004 | unknown | - |
| PAN3069 | hypothetical protein | - |
| PAN3181 | hypothetical protein | - |
| PAN3324 | putative periplasmic protein | - |
| PAN3325 | putative periplasmic protein | - |

Present in ST-45 complex and absent from >90% ST-21 complex isolates

| Gene ¹ | Function | Ref |
|-------------------|--|-----|
| PAN0180 | 3',5'-cyclic-nucleotide phosphodiesterase | - |
| PAN0367 | 4-carboxymuconolactone decarboxylase | - |
| PAN1906 | alginate O- acetylation protein | - |
| PAN0370 | Anaerobic dimethyl sulfoxide reductase chain A | - |
| PAN2385 | Arsenic efflux pump protein | - |
| PAN1864 | arylsulfate sulfotransferase | - |
| PAN0958 | binding-protein-dependent transport system component | - |
| PAN1841 | BII0374 protein | - |
| PAN1696 | conserved hypothetical protein | - |
| PAN1302 | DNA methylase-type I restriction-modification system | - |
| PAN1761 | DNA methylase-type I restriction-modification system | - |
| PAN1061 | Ferrochelatase, protoheme ferro-lyase | - |
| PAN0137 | hypothetical protein | - |
| PAN0387 | hypothetical protein | - |
| PAN2369 | hypothetical protein | - |
| PAN0368 | hypothetical protein | - |
| PAN0390 | hypothetical protein | - |
| PAN0361 | hypothetical protein | - |
| PAN0384 | hypothetical protein | - |
| PAN2592 | hypothetical protein | - |
| PAN0953 | hypothetical protein | - |
| PAN1543 | hypothetical protein | - |
| PAN0363 | hypothetical protein | - |
| PAN1297 | hypothetical protein | - |
| PAN0608 | hypothetical protein | - |
| PAN1851 | hypothetical protein | - |
| PAN1006 | hypothetical protein | - |
| PAN3380 | hypothetical protein | - |
| PAN0358 | Glucose-1-phosphate thymidyltransferase | - |
| PAN2754 | Hemerythrin-like iron-binding protein | - |
| PAN0035 | hypothetical protein | - |

| | | |
|---------|---|---|
| PAN0037 | hypothetical protein | - |
| PAN0364 | hypothetical protein | - |
| PAN0385 | hypothetical protein | - |
| PAN0386 | hypothetical protein | - |
| PAN0594 | hypothetical protein | - |
| PAN0746 | hypothetical protein | - |
| PAN0957 | hypothetical protein | - |
| PAN1490 | hypothetical protein | - |
| PAN1491 | hypothetical protein | - |
| PAN1535 | hypothetical protein | - |
| PAN1616 | hypothetical protein | - |
| PAN1793 | hypothetical protein | - |
| PAN1849 | hypothetical protein | - |
| PAN2215 | hypothetical protein | - |
| PAN2216 | hypothetical protein | - |
| PAN0388 | IncF plasmid conjugative transfer protein TraG | - |
| PAN3295 | IncF plasmid conjugative transfer protein TraG | - |
| PAN0389 | IncF plasmid conjugative transfer protein TraN | - |
| PAN0374 | lipopolysaccharide core biosynthesis protein LpsA | - |
| PAN0609 | MGC82361 protein | - |
| PAN0359 | Probable poly(beta-D-mannuronate) O-acetylase | - |
| PAN1630 | Putative periplasmic protein | - |
| PAN1663 | Putative periplasmic protein | - |
| PAN0391 | Putative phage protein | - |
| PAN2285 | RloB | - |
| PAN1536 | sugar ABC transporter, periplasmic sugar-binding protein | - |
| PAN0036 | sugar binding protein of ABC transporter | - |
| PAN1441 | TraG-like protein | - |
| PAN3202 | transporter, putative | - |
| PAN3269 | Type I restriction-modification enzyme M subunit | - |
| PAN0366 | Type I restriction-modification system, DNA-methyltransferase | - |
| PAN0362 | Type I restriction-modification system, restriction subunit R | - |
| PAN0365 | Type I restriction-modification system, specificity subunit S | - |
| PAN2410 | Type I restriction-modification system, specificity subunit S | - |
| PAN3397 | Type I restriction-modification system, specificity subunit S | - |
| PAN0360 | unknown | - |

¹Genes with a PAN prefix were identified in this study by aligning genomes with progressiveMauve (9) and assigning putative functions to non-core open reading frames using the RAST server (10).

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