**Table S3.** Genes up-regulated in mid log phase by Ax21

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|  |  |  | **Fold up-regulated** |
| **Locus ID** | **Common name** | **COG ID** | **Early log** | **Mid log** | **Late log** |
| PXO\_00006 | cytochrome o ubiquinol oxidase subunit IV | COG3125C |  | 1.79 |  |
| PXO\_00120 | 2-dehydro-3-deoxy-6-phosphogalactonate | COG0800G |  | 2.06 |  |
| PXO\_00158 | cell division protease (FtsH) | COG0465O |  | 1.92 | 1.86 |
| PXO\_00302 | TonB-dependent receptor (CirA) | COG1629P |  | 3.25 |  |
| PXO\_00366 | general stress protein | COG3871R |  | 1.77 |  |
| PXO\_00459 | OprN | COG1538MU |  | 2.06 |  |
| PXO\_00483 | transposase and inactivated derivative |  |  | 1.80 |  |
| PXO\_00537 | conserved hypothetical protein | COG5455S |  | 2.04 |  |
| PXO\_00905 | inosine-5'-monophosphate dehydrogenase | COG0516F |  | 1.81 |  |
| PXO\_00907 | conserved hypothetical protein | COG3002S |  | 1.86 |  |
| PXO\_00973 | flagellar protein | COG1886NU |  | 1.82 |  |
| PXO\_01171 | 1-deoxy-D-xylulose-5-phosphate synthase | COG1154HI |  | 2.14 |  |
| PXO\_01293 | NADH-quinone oxidoreductase, chain g | COG1034C |  | 2.09 | 1.87 |
| PXO\_01294 | NADH-ubiquinone oxidoreductase chain 1 | COG1005C |  | 2.15 |  |
| PXO\_01297 | NADH-ubiquinone oxidoreductase NQO11 subunit (NuoK) | COG0713C |  | 2.45 | 1.84 |
| PXO\_01322 | prepilin-type N-terminal cleavage/methylation domain protein | COG4966NU |  | 1.77 |  |
| PXO\_01323 | PilX | COG4726NU |  | 1.96 |  |
| PXO\_01351 | conserved hypothetical protein |  |  | 1.99 |  |
| PXO\_01401 | exopolysaccharide xanthan biosynthesis glucuronosyltransferase (GumK) | COG0438M |  | 1.75 |  |
| PXO\_01502 | conserved hypothetical protein |  |  | 2.04 |  |
| PXO\_01666 | TonB-dependent outer membrane receptor | COG4206H |  | 1.78 |  |
| PXO\_01716 | conserved hypothetical protein |  |  | 1.95 |  |
| PXO\_01731 | conserved hypothetical protein | COG1278K |  | 1.95 |  |
| PXO\_01780 | delta 9 acyl-lipid fatty acid desaturase | COG1398I |  | 1.81 |  |
| PXO\_02352 | fimbrial assembly protein | COG3168NU |  | 2.39 |  |
| PXO\_02353 | fimbrial assembly membrane protein | COG3167NU |  | 2.08 |  |
| PXO\_02354 | fimbrial assembly membrane protein | COG3166NU |  | 1.79 |  |
| PXO\_02549 | glu-trnAgln amidotransferase a subunit | COG0154J |  | 1.95 |  |
| PXO\_02602 | transcriptional regulatory protein, C terminal | COG3710K |  | 1.81 |  |
| PXO\_02618 | conserved hypothetical protein | COG3292T |  | 3.00 | 1.81 |
| PXO\_02689 | PnuC | COG3201H |  | 1.92 |  |
| PXO\_02701 | crispr-associated helicase Cas3 domain protein | COG1203R |  | 1.93 |  |
| PXO\_02892 | conserved hypothetical protein |  |  | 1.94 | 1.76 |
| PXO\_03010 | C-type cytochrome biogenesis protein | COG4232OC |  | 1.77 |  |
| PXO\_03084 | HAD superfamily hydrolase | COG0637R |  | 2.64 |  |
| PXO\_03138 | beta-hydroxyacyl-(acyl-carrier-protein) dehydratase (FabA) | COG0764I |  | 1.91 |  |
| PXO\_03166 | ABC transporter | COG1134GM |  | 1.76 |  |
| PXO\_03266 | RTS beta protein | COG4948MR |  | 1.78 |  |
| PXO\_03475 | biopolymer transport (ExbB) | COG0811U |  | 1.83 |  |
| PXO\_03819 | conserved hypothetical protein |  |  | 2.51 |  |
| PXO\_03827 | TonB-dependent receptor | COG4771P |  | 2.92 |  |
| PXO\_03863 | glycosyl hydrolase family 10 | COG3693G |  | 2.22 |  |
| PXO\_03916 | conserved hypothetical protein |  |  | 1.81 |  |
| PXO\_04024 | conserved hypothetical protein |  |  | 2.36 |  |
| PXO\_04026 | conserved hypothetical protein |  |  | 1.90 |  |
| PXO\_04274 | ubiquinone/menaquinone biosynthesis methyltransferase (UbiE) | COG2226H |  | 2.12 |  |
| PXO\_04276 | aminopeptidase | COG0308E |  | 2.30 |  |
| PXO\_04366 | UDP-N-acetylmuramate--alanine ligase | COG0773M |  | 1.86 |  |
| PXO\_04378 | conserved hypothetical protein | COG0313R |  | 1.81 |  |
| PXO\_04471 | transmembrane protein | COG3907R |  | 2.24 |  |
| PXO\_04508 | 30S ribosomal protein S14 | COG0199J |  | 1.79 |  |
| PXO\_04509 | 50S ribosomal protein L5 | COG0094J |  | 1.82 |  |
| PXO\_04512 | RpsQ | COG0186J |  | 1.93 |  |
| PXO\_04514 | ribosomal protein L16 | COG0197J |  | 1.95 |  |
| PXO\_04517 | ribosomal protein S19 | COG0185J |  | 1.96 |  |
| PXO\_04518 | ribosomal protein L2 | COG0090J |  | 1.76 |  |
| PXO\_04568 | conserved hypothetical protein |  |  | 1.89 |  |
| PXO\_04857 | conserved hypothetical protein |  |  | 1.82 |  |
| PXO\_04876 | glutamine-dependent NAD(+) synthetase | COG0171H |  | 1.77 |  |
| PXO\_04882 | type IV-A pilus assembly ATPase (PilB) | COG2804NU |  | 1.95 |  |
| PXO\_04886 | pilin | COG4969NU |  | 2.14 | 1.90 |
| PXO\_04887 | pilin biogenesis protein | COG1459NU |  | 2.05 | 1.78 |
| PXO\_06172 | response regulator | COG2197TK |  | 2.05 |  |
| PXO\_06192 | flagellar motor switch protein (FliM) | COG1868N |  | 1.86 |  |
| PXO\_06194 | flagellar protein | COG1868N |  | 2.06 |  |