**Supplementary Table 1. Record of the annotated genes on the fosmid.**

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| --- | --- | --- | --- | --- |
| **Start** | **End** | **Gene** | **COG** | **Protein Function** |
| 2756 | 1041 | *mfd* | COG1197 | Transcription-repair-coupling factor |
| 3147 | 2800 | *mfd* | COG1197 | Transcription-repair-coupling factor |
| 4933 | 5304 | *proB* | COG0263 | Glutamate 5-kinase |
| 5291 | 5863 | *proB* | COG0263 | Glutamate 5-kinase |
| 5752 | 6057 | *proB* | COG0263 | Glutamate 5-kinase  |
| 6180 | 6515 | *proA* | COG0014 | Gamma-glutamyl phosphate reductase |
| 6718 | 7389 | *proA* | COG0014 | Gamma-glutamyl phosphate reductase |
| 8918 | 8535 | *dxs* | COG3958 | Putative transketolase C-terminal section |
| 8532 | 7969 | *dxs* | COG3958 | Putative transketolase C-terminal section |
| 9412 | 8918 | *tktB* | COG3959 | Putative transketolase N-terminal section |
| 9849 | 9409 | *tktA* | COG3959 | Putative transketolase N-terminal section |
| 12922 | 13854 | *ydcC* | - | Uncharacterized protein in dhlA 3'region |
| 16056 | 16493 | *repE* | - | Replication initiation protein |
| 17273 | 18265 | *sopA* | COG1192 | Protein sopA  |
| 18118 | 18447 | *sopA* | - | Protein sopA |
| 18447 | 19196 | *sopB* | COG1475 | Protein sopB  |
| 24901 | 24095 | *aacC4* | COG2746 | Aminoglycoside N(3')-acetyltransferase IV |
| 25302 | 25640 | *traJ* | - | Protein traJ |
| 26297 | 25602 | *cat* | - | Chloramphenicol acetyltransferase |
| 26313 | 26903 | *resD* | - | Resolvase |
| 27262 | 26915 | *betA* | COG2303 | Choline dehydrogenase |
| 27470 | 27988 | *baiF* | COG1804 | Bile acid-CoA hydrolase |
| 27989 | 28825 | *baiF* | COG1804 | Bile acid-CoA hydrolase  |
| 28911 | 29732 | *mutM*  | COG0266 | Formamidopyrimidine-DNA glycosylase |
| 30107 | 30997 | *bah* | COG0657 | Acetyl-hydrolase |
| 32466 | 32627 | *mutB* | COG1884 | Methylmalonyl-CoA mutase large subunit |
| 32678 | 33205 | *mutB*  | COG1884 | Methylmalonyl-CoA mutase large subunit  |
| 34009 | 34956 | *acoA*  | COG1071 | Acetoin:2,6-dichlorophenolindophenol oxidoreductase subunit alpha  |
| 35222 | 35545 | *pdhB* | COG0022 | Pyruvate dehydrogenase E1 component subunit beta |
| 35536 | 36117 | *acoB* | COG0022 | Acetoin:2,6-dichlorophenolindophenol oxidoreductase subunit beta  |
| 37965 | 37342 | *ysgA* | COG0412 | Putative carboxymethylenebutenolidase  |