|  |  |  |  |
| --- | --- | --- | --- |
| **module** | **Only significant annotation - kofam** | **All annotation – kofam(with threshold of 0.5 for score to threshold ratio)** | **Missing Kos in all annotation** |
| 173 |  |  | 'K18559', 'K18558', 'K15233' |
| 374 |  |  | K18860', 'K15017', 'K18861' |
| 375 |  |  | K15017', 'K18861 |
| 376 |  |  | K14469 |
| 377 |  |  | 'K00194', 'K00198', 'K14138', 'K00197' |
| 579 |  |  |  |
| 620 |  |  |  |

Descriptions of missing Kos – cross verify with GTDB

|  |  |
| --- | --- |
| KO | Description & organism |
| K18559 | NADH-dependent fumarate reductase subunit D, COG0446, Hydrogenobacter thermophilus TK-6(according to KEGG) |
| K18558 | NADH-dependent fumarate reductase subunit C, COG0446, Hydrogenobacter thermophilus TK-6(according to KEGG) |
| K15233 | citryl-CoA synthetase small subunit Hydrogenobacter thermophilus TK-6(according to KEGG) |
| K18860 | succinate dehydrogenase subunit D(TCA cycle and Dicarboxylate-hydroxybutyrate cycle – there is 59 & has info <https://www.genome.jp/entry/K18859> -Sulfolobus tokodaii - thermophilic archaeon |
| K15017 | malonyl-CoA/succinyl-CoA reductase (NADPH) both 375 & 374 ( was absent in both 375 & 374 in which it should be present) archaea & crenarchaeota https://www.genome.jp/entry/K15017 |
| K18861 | 4-hydroxybutyrate---CoA ligase (AMP-forming) present in hyperthermophilic Archaeum Ignicoccus hospitalis (374 & 375) |
| K14469 | acrylyl-CoA reductase (NADPH) / 3-hydroxypropionyl-CoA dehydratase / 3-hydroxypropionyl-CoA synthetase |
| K00194 | acetyl-CoA decarbonylase/synthase, CODH/ACS complex subunit delta - Methanosarcina thermophila - Reductive acetyl-CoA pathway (Wood-Ljungdahl pathway) |
| K00198 | anaerobic carbon-monoxide dehydrogenase catalytic subunit (see orgs) |
| K14138 | acetyl-CoA synthase https://www.genome.jp/dbget-bin/www\_bget?ko:K14138 |
| K00197 | acetyl-CoA decarbonylase/synthase, CODH/ACS complex subunit gamma https://www.genome.jp/dbget-bin/www\_bget?ko:K00197 |