**Table S7:**

**Enrichment analysis of candidate genes by KEGG**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pathway ID** | **Pathway** | **KEGG class** | **NO. of genes** | ***P-*value** | | **Gene ID** |
| ko00966 | Glucosinolate biosynthesis | Metabolism | 1 | 0.01 | *TraesCS2A02G018800* | |
| ko00020 | Citrate cycle (TCA cycle) | Metabolism | 1 | 0.03 | *TraesCS2A02G017500* | |
| ko01210 | 2-Oxocarboxylic acid metabolism | Metabolism | 1 | 0.04 | *TraesCS2A02G018800* | |
| ko00970 | Aminoacyl-tRNA biosynthesis | Genetic Information  Processing | 1 | 0.05 | *TraesCS2A02G017200* | |
| ko00040 | Pentose and glucuronate interconversions | Metabolism | 1 | 0.05 | *TraesCS2A02G016500* | |
| ko00620 | Pyruvate metabolism | Metabolism | 1 | 0.05 | *TraesCS2A02G017500* | |
| ko00460 | Cyanoamino acid metabolism | Metabolism | 1 | 0.06 | *TraesCS2A02G018800* | |
| ko00010 | Glycolysis / Gluconeogenesis | Metabolism | 1 | 0.09 | *TraesCS2A02G017500* | |
| ko01200 | Carbon metabolism | Metabolism | 1 | 0.15 | *TraesCS2A02G017500* | |
| ko01100 | Metabolic pathways | Metabolism | 3 | 0.29 | *TraesCS2A02G016500*  *TraesCS2A02G017500  TraesCS2A02G018800* | |
| ko01110 | Biosynthesis of secondary metabolites | Metabolism | 2 | 0.30 | *TraesCS2A02G017500*  *TraesCS2A02G018800* | |