

**Supplemental Table 2.** Pathways analyzed in the distribution of pathway connections analysis.

| <b>Pathway</b>                                    | <b>Number of pathway steps</b> |
|---|--------------------------------|
| de novo biosynthesis of pyrimidineribonucleotides | 10                             |
| Glycolysis_1                                      | 8                              |
| Menaquinone biosynthesis                          | 8                              |
| Phospholipid biosynthesis 2                       | 9                              |
| Serine isocitrate pwy                             | 14                             |
| Arginine degradation 2                            | 7                              |
| Glucosinolate from tryptophan                     | 8                              |
| Histidine_biosynthesis                            | 10                             |
| Mevalonate biosynthesis                           | 8                              |
| Photorespiration                                  | 9                              |
| Starch_biosynthesis                               | 6                              |
| Chorismate biosynthesis                           | 7                              |
| Glycerol degradation 2                            | 8                              |
| Jasmonic acid biosynthesis                        | 8                              |
| Phenylalanine-degradation 1                       | 9                              |
| Proto- and siroheme biosynthesis                  | 13                             |
| Tryptophan_biosynthesis                           | 6                              |