

Table S1. Statistical/functional enrichment of *T. elongatus* gene functions within clusters of mRNA profiles.

| Subsystem | Cluster | Eigen-Gene | p-value | % in Module | % in Genome | Ratio |
|--|------------------|------------|---------|-------------|-------------|-------|
| allophycocyanin biosynthesis | A-light | | 0.026 | 1.493 | 0.245 | 6.1 |
| cytochrome c oxidase CoxABCD | A-light | | 0.049 | 0.995 | 0.123 | 8.1 |
| glycine cleavage system GcvHLPT | A-light | | 0.049 | 0.995 | 0.123 | 8.1 |
| photosystem II other common subunits | A-light | | 0.035 | 1.990 | 0.532 | 3.7 |
| RNA polymerase sigma factors | A-light | | 0.045 | 1.493 | 0.327 | 4.6 |
| double strand breaks repair | B-light | | 0.021 | 1.569 | 0.327 | 4.8 |
| photorespiration (oxidative C2 cycle) | B-light | | 0.047 | 0.784 | 0.082 | 9.6 |
| coenzyme A biosynthesis from pantothenate | C-light | | 0.045 | 0.713 | 0.164 | 4.4 |
| Uncharacterized Function | C-light | | 0.000 | 51.693 | 42.781 | 1.2 |
| F1/F0 ATPase AtpABCDEFGH | D-light | | 0.039 | 1.094 | 0.409 | 2.7 |
| NAD(P)H:quinone oxidoreductase (complex I) | D-light | | 0.013 | 2.079 | 0.941 | 2.2 |
| ribosome large subunit | D-light | | 0.000 | 3.501 | 1.309 | 2.7 |
| ribosome small subunit | D-light | | 0.039 | 1.751 | 0.859 | 2.0 |
| tRNA aminoacylation | D-light | | 0.026 | 1.860 | 0.859 | 2.2 |
| c-type cytochrome biogenesis_ system II | E-O ₂ | | 0.034 | 0.948 | 0.082 | 11.6 |
| cytochrome b6-f complex | E-O ₂ | | 0.012 | 1.896 | 0.327 | 5.8 |
| F1/F0 ATPase | E-O ₂ | | 0.021 | 1.896 | 0.409 | 4.6 |
| NAD(P)H:quinone oxidoreductase (complex I) | E-O ₂ | | 0.000 | 5.213 | 0.941 | 5.5 |
| photosystem I main subunits | E-O ₂ | | 0.029 | 1.422 | 0.245 | 5.8 |
| phycocyanin biosynthesis | E-O ₂ | | 0.003 | 2.370 | 0.368 | 6.4 |
| RNA polymerase sigma factors | F-O ₂ | | 0.038 | 1.604 | 0.327 | 4.9 |
| RND-type exporter Rnd3 | F-O ₂ | | 0.027 | 1.070 | 0.082 | 13.1 |
| Sodium:hydrogen antiport | F-O ₂ | | 0.029 | 1.604 | 0.286 | 5.6 |
| ribosome large subunit | G-O ₂ | | 0.000 | 3.505 | 1.309 | 2.7 |
| ribosome small subunit | G-O ₂ | | 0.006 | 2.081 | 0.859 | 2.4 |
| tRNA aminoacylation | G-O ₂ | | 0.039 | 1.752 | 0.859 | 2.0 |
| iron-sulfur cluster assembly SUF system | H-O ₂ | | 0.046 | 0.901 | 0.327 | 2.8 |
| Uncharacterized Function | H-O ₂ | | 0.007 | 48.09 | 42.78 | 1.1 |