

Supplementary Materials

Understanding the impact of nitrogen availability: a limiting factor for enhancing fucoxanthin productivity in microalgae cultivation

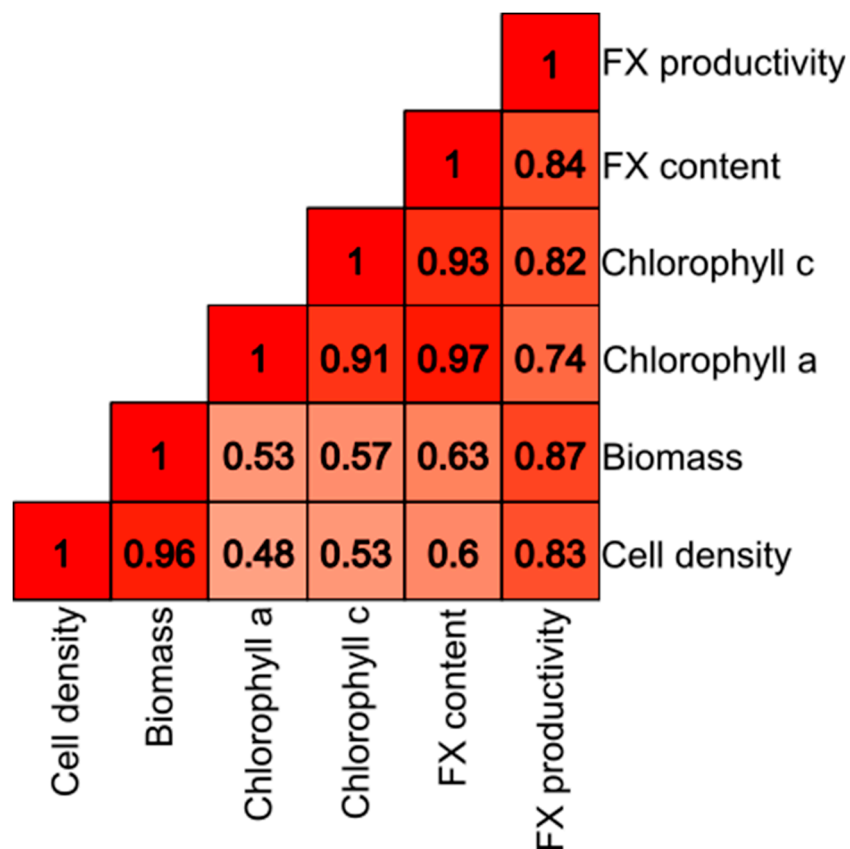
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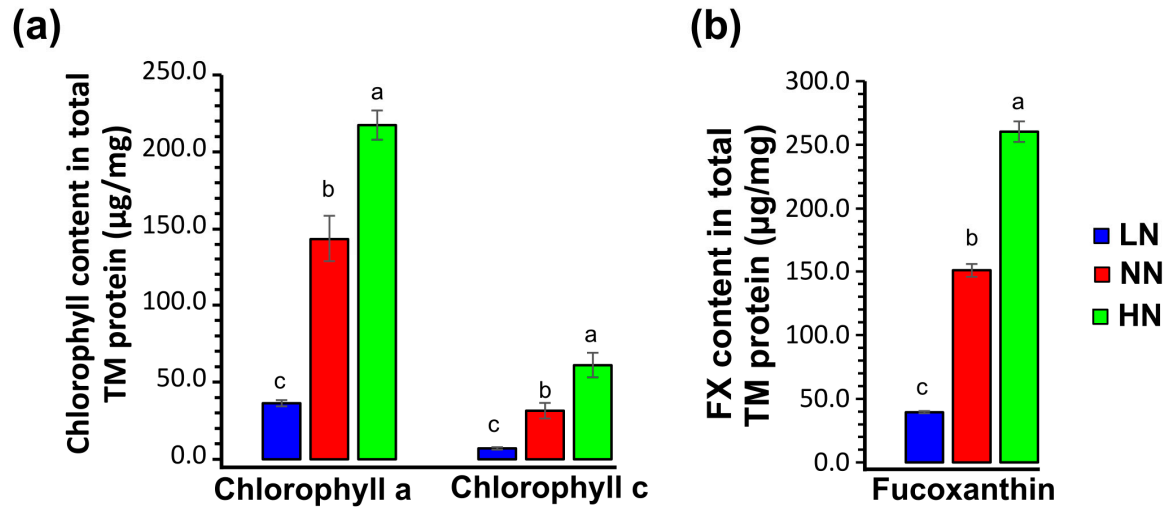
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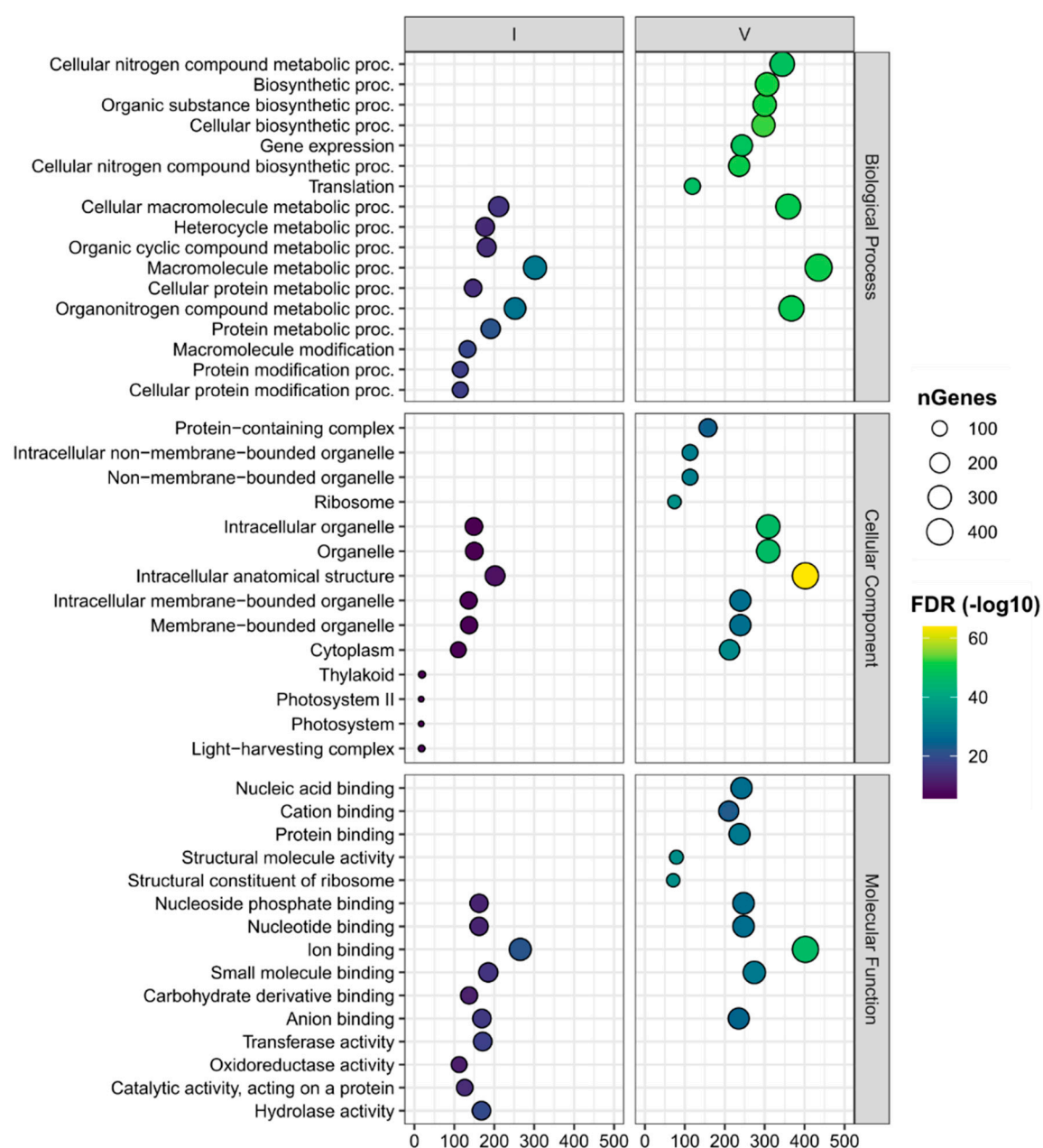
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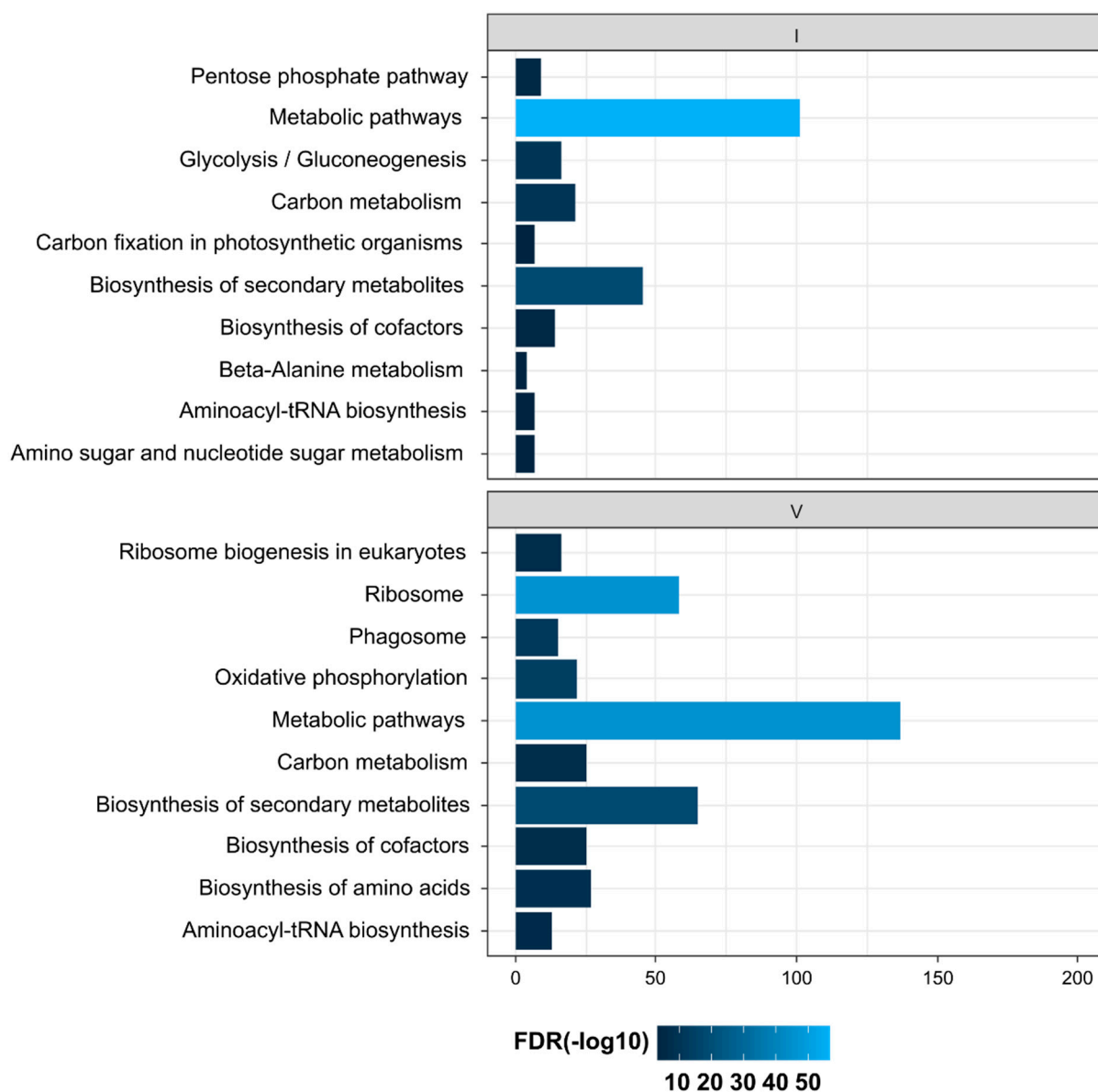
Supplementary Figure S1. The correlation analysis of observed traits including cell density, biomass, chlorophyll *a*, *c*, and fucoxanthin production of *Phaeodactylum tricornutum* microalgae cultured at different initial nitrogen concentrations [limited nitrogen (LN), normal nitrogen (NN), and high nitrogen (HN)], $p < 0.05$.



Supplementary Figure S2. (a) Chlorophyll *a* and *c* and (b) fucoxanthin content of isolated thylakoid membrane from day-5 samples of *Phaeodactylum tricornutum* microalgae cultured at different nitrogen conditions [limited nitrogen (LN), normal nitrogen (NN), and high nitrogen (HN)]. Different letters denote significant difference amongst three groups analyzed with One-way ANOVA test, $p < 0.5$. FX, fucoxanthin; TM, thylakoid membrane.



Supplementary Figure S3. Top Gene Ontology enrichment of genes found in Cluster I and V. The analysis was performed using online informatics tool-ShinyGO with cutoff 0.05.



Supplementary Figure S4. Top Kyoto Encyclopedia of Genes and Genomes pathways of genes found in Cluster I and V. The analysis was performed using online informatics tool-ShinyGO with a cutoff < 0.05.