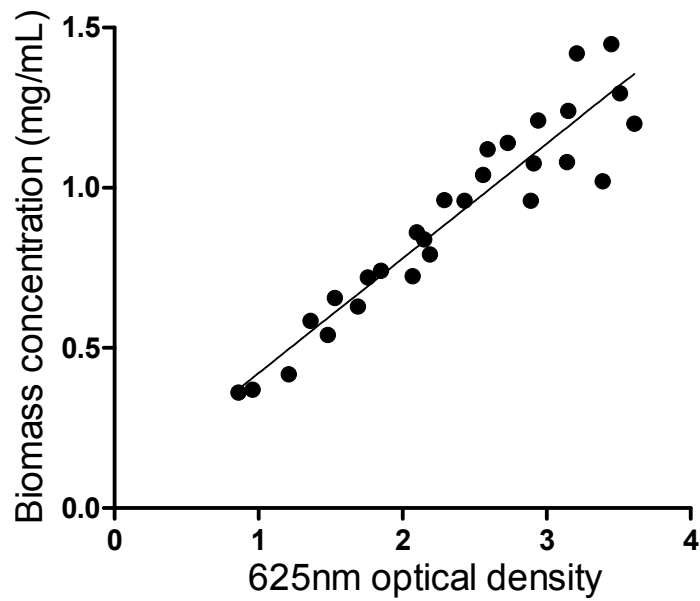
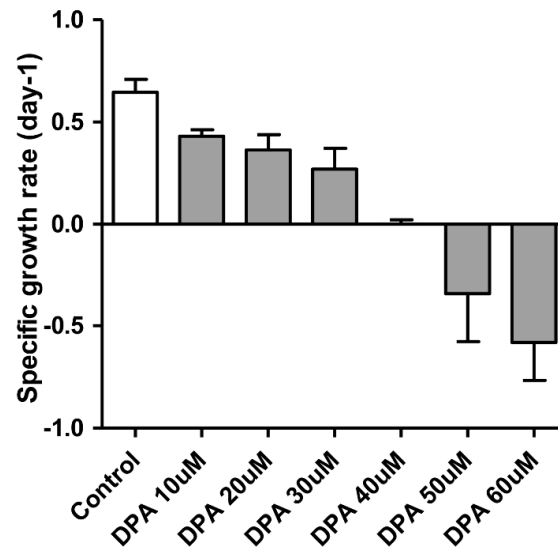


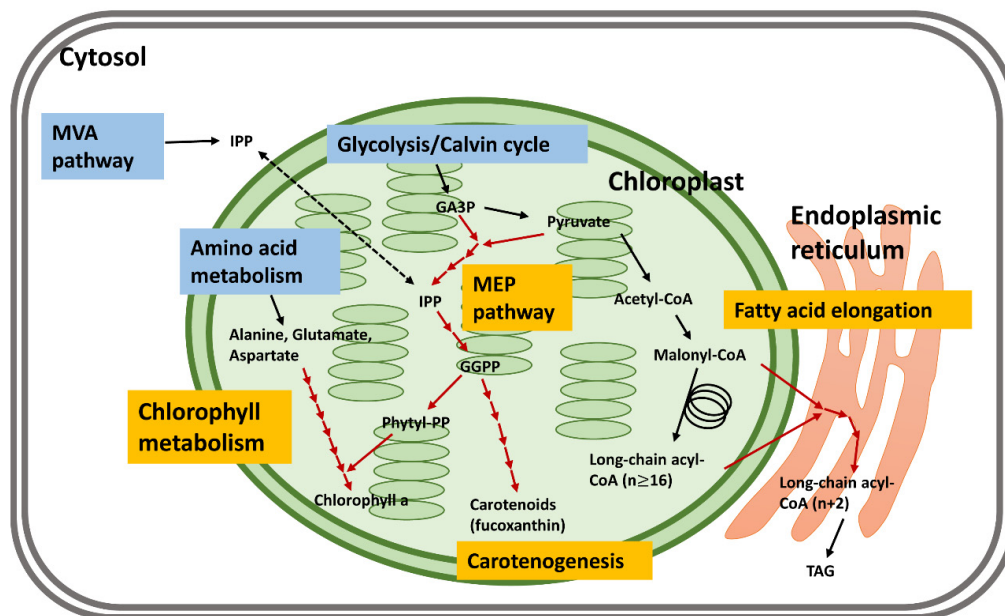
## SUPPLEMENTARY FIGURES



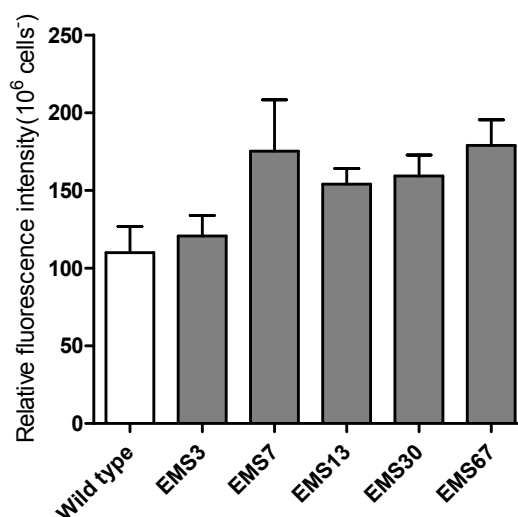
**Supplementary Figure 1.** Correlation between optical density at 625 nm and diatom dry biomass concentration. Diatom cell samples were harvested on a cellulose membrane (pore size, 0.45  $\mu\text{m}$ ) and washed twice with deionized water dried at 60  $^{\circ}\text{C}$  overnight, dried at 60  $^{\circ}\text{C}$  overnight.



**Supplementary Figure 2.** Effects of DPA concentration on *P. tricornutum* growth. *P. tricornutum* were incubated with different concentrations of DPA: 10 µM, 20 µM, 30 µM, 40 µM, 50 µM, and 60 µM for 4 days, respectively. Specific growth rate ( $\mu$ ) is defined as the rate of increase of biomass of a cell population per unit of biomass concentration and was measured in biological triplicates for each treatment.



**Supplementary Figure 3.** Intersectional metabolic pathways for carotenogenesis, chlorophyll *a* production and lipid metabolism.



**Supplementary Figure 4.** Relative Nile red fluorescence intensity for selected strains. Strains were incubated with 1 $\mu$ g/mL Nile red for 20min in dark room. Each fluorescence value was averaged from triplicates.