

The role of Phosphatidylglycerol in *Synechococcus* sp. PCC 7942 cells

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The role of phosphatidylglycerol (PG) in photosynthetic membranes was analyzed in a *Synechococcus* sp. PCC 7942 mutant produced by inactivating its *cdsA* gene presumably encoding cytidine 5'-diphosphate-diacylglycerol synthase, a key enzyme in PG synthesis. In a medium supplemented with PG the *Synechococcus* sp. PCC 7942/ Δ *cdsA* cells grew photoautotrophically. Depletion of PG in the medium resulted in an arrest of cell growth and division, in a suppression of O₂ evolving activity and in a modification of Chl fluorescence induction curves. In the absence of PG the amount of the photosystem I (PSI) monomers increased at the expense of the PSI trimers and photosystem II (PSII) dimers were decomposed into monomers. PG depletion did not block the de novo synthesis of PSII proteins but slowed down the assembly of the newly synthesized D1 protein into PSII core complexes. Retailoring of PG was observed during PG depletion: the exogenously added artificial dioleoyl PG was transformed into photosynthetically more essential PG derivatives.