

【SIV-1】

Acclimation of Photosynthesis to the Iron Stress in *Synechococcus* sp. PCC 7942

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Iron is one of the most abundant elements on Earth and its chemical properties have made it a key component in many important enzymatic reactions. In oxic aquatic environments, iron is virtually insoluble, and hence unavailable to living organisms. Thus, organisms, especially, phototrophs are highly vulnerable to iron stress as high iron is required for the photosynthesis. Since iron limitation in many environments may be chronic, morphological and physiological adaptations have evolved to allow these organisms to survive. In this presentation, the acclimation process in the unicellular, photoautotrophic cyanobacterium *Synechococcus* sp. PCC7942 to the iron stress will be presented. These include induction of the chlorophyll binding protein CP43' and flavodoxin, and decreases in all major components of the electron transport chain, phycobilisome as well as two photosystems. Especially, the function of CP43' in iron stress will be elucidated with respect to excess' excitation energy dissipater under the iron-limited conditions.