Special Issue

Advances in Cyanobacterial Carbon Fixations and Assimilations

Message from the Guest Editors

As ancient photoautotrophic bacteria, cyanobacteria convert inorganic carbon into sugars. Cyanobacteria have evolved an efficient carbon fixation pathway that accumulates CO2 into carbon fixation machinery, termed carboxysome, for higher efficiency of carbon fixation and assimilation. During recent decades, extensive studies have yielded progress on the structure and molecular mechanism of carbon fixation pathways in cyanobacteria. As more carbon fixation pathways and molecular machineries are discovered, the potential for the applications of CO2-concentrating mechanisms in plants and crops are tested, providing the basis for guiding the design and engineering of crops with an enhanced carbon fixation pathway. This Issue mainly focuses on the structural basis and molecular mechanism of carbon fixation and assimilation pathways in cyanobacteria. Studies on carbon fixation pathways, the coordination of carbon and nitrogen metabolisms, and the engineering of RuBisCO and proteins involved in cyanobacterial carbon fixation are welcomed. The review articles and comments on recent advances in the carbon and nitrogen metabolisms in cyanobacteria are also encouraged.

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Plants is an open access journal which provides an advanced forum for research findings in areas related to plant function, its physiology, biology, taxonomy, stresses, and its interactions with other organisms. It publishes original research articles, reviews, reports, conference proceedings (peer reviewed full articles) and communications. In original research papers, it is important that full experimental details are provided. We also encourage timely reviews and commentaries on topics of interest to the plant research community.

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