Trichodesmium Has Cells Specialized for Nitrogen Fixation but Lacks Heterocysts

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Abstract
Two features make research on the marine cyanobacterium Trichodesmium of particular relevance. The first, relates to its common occurrence and important role in a global perspective. Although Trichodesmium is restricted to coastal habitats and open oceans with temperatures above about 18–20°C, it is probably quantitatively one of the most common cyanobacterium in nature. Recent estimates also indicate that it supports the pelagic zone of the oligotrophic oceans with considerable amounts of fixed nitrogen (Carpenter & Romans 1991). Furthermore, Trichodesmium is unique in that it fixes nitrogen aerobically in light, a feature only known from cyanobacteria differentiating heterocysts, a specific cell type for the oxygen sensitive nitrogen-fixing enzyme nitrogenase.

Keywords
Cyanobacteria
Nitrogen-fixation
Nitrogenase
Nif genes
Cell differentiation
CO2 fixation