

## Cryo-EM Structure of phycobilisome

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### Abstract

Phycobilisomes (PBS) are the major light harvesting antennae of two very important groups of photosynthetic organisms on earth, the cyanobacteria and red algae. PBS absorb light energy and transfer it to the photosystem I and II with an extremely high efficiency. Ever since the discovery of PBS over 50 years ago, people have been trying to understand how this gigantic supramolecular complex is assembled and how the energy is delivered to photosynthetic reaction centers. While some progresses are made over the years, many key questions remain unanswered. This is largely due to the lack of high-resolution three-dimensional structure of PBS. Here, we report the structure of a 18.0-megadalton PBS from a red alga at an average resolution of 3.5 angstroms, leading to the atomic model of the entire complex. To our knowledge, this is so far the largest protein complex structure reported at a resolution higher than 4 Å, in which 860 protein subunits are modeled.

### About the Speaker



Dr. Sen-Fang Sui is a professor at the School of Life Sciences, Tsinghua University. He obtained his bachelor's degree in Precision Instruments and Mechanology in 1970, and master's degree in Solid State Physics in 1981, from Tsinghua University, and doctoral degree in Biophysics from Technical University Munich, Germany in 1988. He started his research group in Tsinghua University in 1989 as an associate professor and was promoted to full professor in 1991. He served as the dean of the Department of Biological Science and Technology of Tsinghua University from December 1992 to December 1995. He was elected as member of Chinese Academy of Sciences in 2009.