Designing Cyanobacterial Strains With Optimal Antenna Systems

Scientific Achievement

Cyanobacteria can naturally tune antenna size to acclimate to changes in the environment. We have found that the process of phycobilisome degradation occurs rapidly under a variety of nutritional conditions and is dependent upon continuous synthesis of "a protease system"

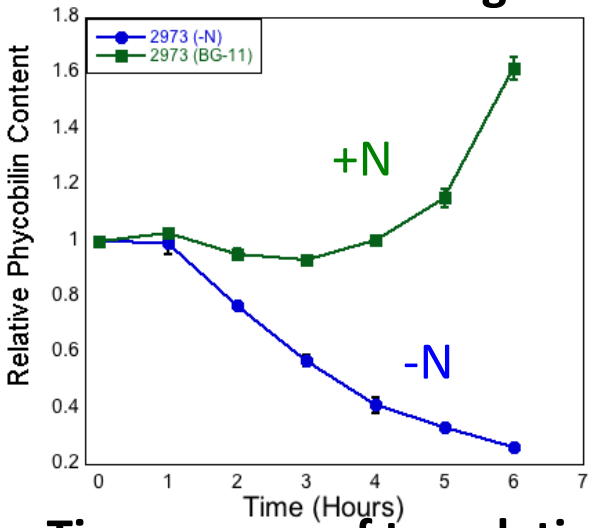
Significance and Impact

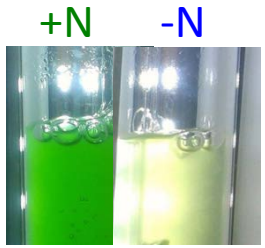
Permanently truncated antenna provide little benefit to cyanobacterial cells. This research focuses on designing optimal antenna size and composition for enhanced productivity.

Research Details

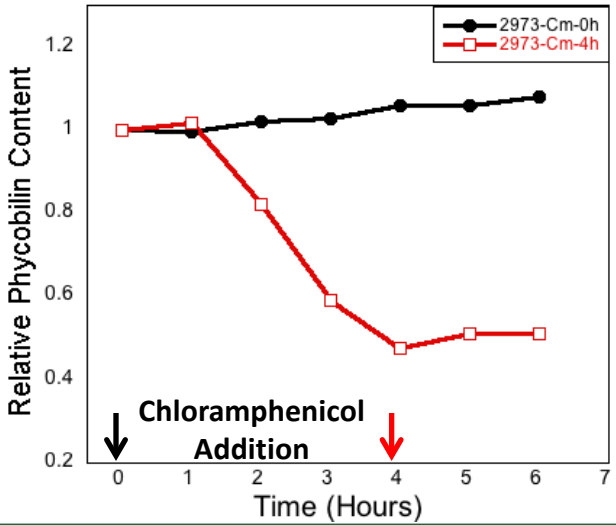
- **In *Synechococcus* 2973, nitrogen starvation results in ~70% PBS degradation over a course of six hours.**
- **Inhibition of protein synthesis by chloramphenicol halts the process of PBS degradation.**

Time course of nitrogen starvation





Time course of translation inhibition



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Aparna Nagarajan, Michelle Liberton, Himadri B. Pakrasi