



## Does competition for nanomolar phosphate supply explain the predominance of the cyanobacterium *Synechococcus*?

Thierry, Moutin, Tron F. Thingstad, France Van Wambeke, Dominique Marie, Gerd Slawyk, Patrick Raimbault, Hervé Claustre

Limnol. Oceanogr., 47(5), 2002, 1562-1567 | DOI: 10.4319/lo.2002.47.5.1562

**ABSTRACT:** Experimental work during a cruise along a W-E transect in the Mediterranean Sea suggests that (1) orthophosphate concentrations in the upper photic zone show a decreasing trend from the west to the east reaching levels well below 1 nM and (2) microorganisms in the 0.6-2- $\mu$ m size fraction, probably *Synechococcus*, have, in addition to high affinity for orthophosphate, significantly higher maximum uptake rates than heterotrophic bacteria or eukaryotic algae. These specific advantages concerning orthophosphate uptake at low (<5 nM) as well as at relatively high (5-25 nM) concentrations could explain both general *Synechococcus* abundance in P-depleted environments and transient blooms of this species in the open ocean where episodic orthophosphate nanopulse events are likely to occur.

### Article Links

[Download Full-text PDF](#)

[Return to Table of Contents](#)

### Please Note

Articles in L&O appear in PDF format. Open access articles may be freely downloaded by anyone. Other articles are available for download to subscribers only, or may be purchased for \$10 per article. All L&O articles are moved into Open Access after three years.