

Detection of Red Tide Organisms by Nucleic Acid Amplification

Researchers at the University of South Florida have developed a rapid method for detection and prediction of red tide blooms.

Karenia brevis is a dinoflagellate that is the causative agent of the recurring red tide blooms. Red tide blooms have occurred nearly every year from 1975-1997 in the Gulf of Mexico and Southeastern Atlantic Coast of the United States, and have been reported since the Spanish conquests. The toxin produced by *Karenia brevis* can result in massive fish kills and have been implicated in the death of 700 bottlenose dolphins off the east coast of the U.S. in 1987 and the mysterious deaths of 149 Florida manatees in 1995 and 1996. Rapid methods to detect *Karenia brevis* in the environment are consequently sorely needed.

To this end, scientists at the University of South Florida have investigated the Ribulose-1,5 bisphosphate Carboxylase/Oxygenase large subunit gene (*rbcl*) as a potential molecular marker for this organism. Detection of this biomarker via real time PCR allows for rapid identification and prediction of red tide blooms. This detection method can lend to the creation of a mobile device for increased convenience.

ADVANTAGES:

- Quick identification
- Reliable bloom prediction
- Potential mobile design

Rapid Method for Detecting and Predicting Red Tide Blooms



Karenia brevis

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