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Impacts of the Nutrient Inputs from Riverine on the Dynamic and Community Structure of Fungal-like Protists in the Coastal Ocean Ecosystems

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The coastal ocean connects terrestrial (e.g., rivers and estuaries) with oceanic ecosystems and is considered as a major component of global carbon cycles and budgets. The coastal waters are featured with a high biodiversity and high primary production. Because of the excessive primary production, a large fraction of primary organic matter becomes available to consumers as detritus in the coastal waters. Bacterioplankton have long been known to play a key role in the degradation of this detritus, and export and storage of organic matter in the coastal ecosystems. However, the primary and secondary production and the carbon biogeochemical processes in the ecosystems are largely regulated by nutrient inputs from riverine and other anthropogenic activities through heterotrophic microbial communities.

Thraustochytrids, commonly known as fungal-like protists, are unicellular heterotrophic protists and are recently acknowledged to play a significant role in ocean carbon cycling. Their abundance exceeds that of bacterioplankton in the most time of the year in the coastal waters of China. Also, their abundance and diversity are largely regulated by nutrients inputs from riverine and other anthropogenic activities. Our findings support that thraustochytrids are a dominant heterotrophic microbial group in the coastal waters. Evidently, thraustochytrids are an import, but neglected, component in microbial carbon biogeochemical processes of the coastal ocean.

Biography

Guangyi Wang has completed his PhD from the University of Californiat at David and postdoctoral studies from University of California at Berkeley. Dr. Wang is the Founding Director of The Center for Marine Environmental Ecology and the Associate Dean of School of Environmental Science & Engineering at Tianjin University. He has authored over 50 peer-reviewed papers, chaired numerous sessions or panels for international conferences, and delivered numerous invited talks and lectures. Dr. Wang is members of Editorial Board for 2 international journals and a peer reviewer of over 25 international journals.

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