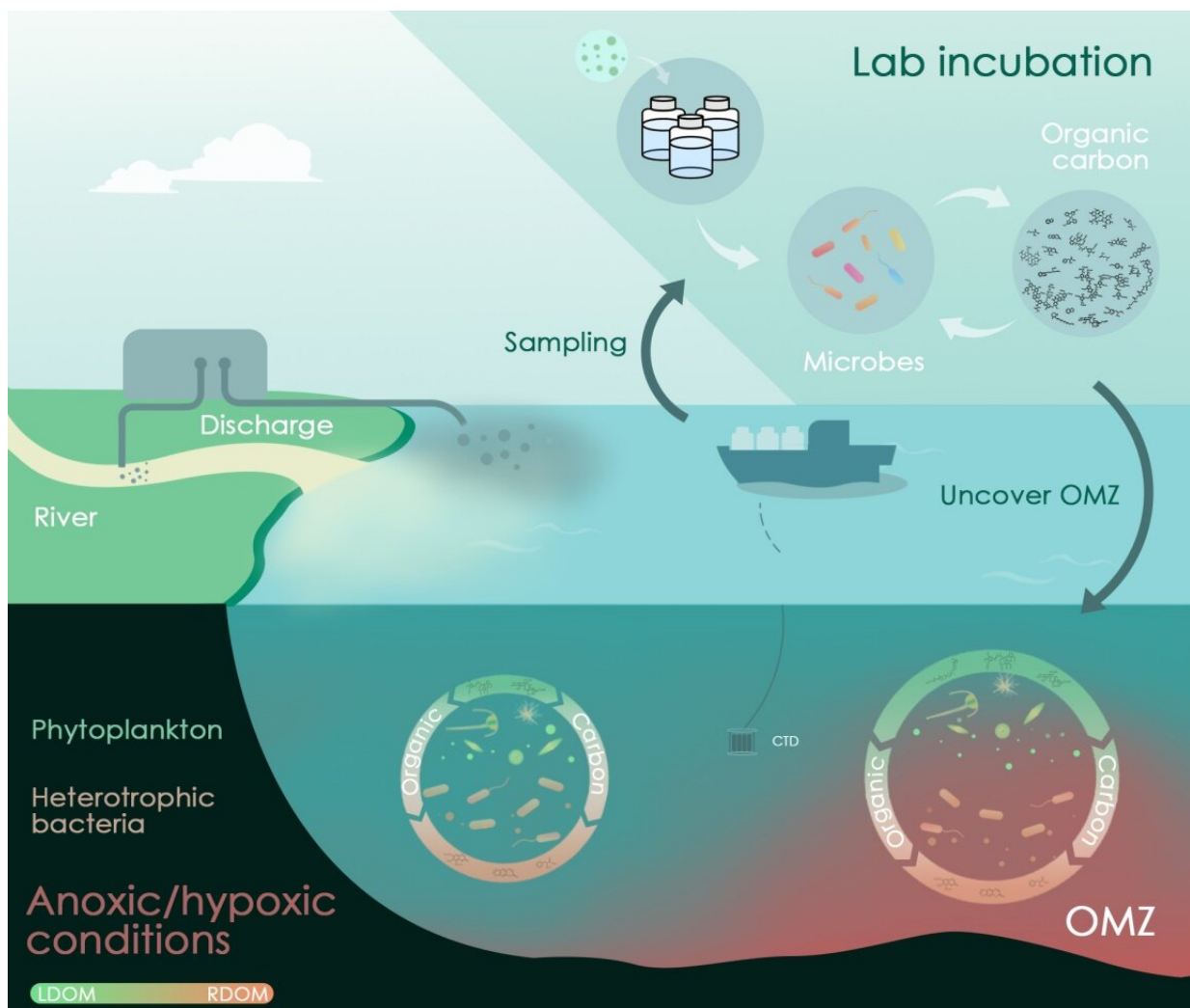


# How a hypoxic environment is conducive to organic carbon storage in the coastal ecosystem

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Based on the in situ sampling and the laboratory incubation experiment, it is demonstrated that the metabolic activity of microorganisms reduced in hypoxic

environment, which was conducive to the preservation of labile organic matter and carbon storage in the coastal ecosystem. Credit: Wenqing Shi.

Recently, *Science China Earth Sciences* published a paper about the transformation of organic matter by microorganisms under anoxic/hypoxic conditions. With the intensification of water eutrophication and global warming, hypoxia occurs frequently in coastal waters. In this study, the researchers performed an experiment to investigate changes in microbial community and the molecular characteristics of dissolved organic matter (DOM) under hypoxic conditions.

Microbial-mediated DOM transformation was compared in different media (natural and artificial seawater with and without laminarin) at different dissolved oxygen levels (7, 5, and 2 mg L<sup>-1</sup>). They also investigated differences in DOM composition among groups using [spectroscopic analysis](#) and ultrahigh-resolution Fourier transform ion cyclotron resonance mass spectrometry (FT-ICR MS). The experiments shed light on the interactions between [microorganisms](#) and DOM, as well as processes and mechanisms of DOM preservation in the hypoxic coastal ecosystem.

The researchers found that microbial community structure and [molecular characteristics](#) of DOM were obviously different between hypoxic group (O<sub>2</sub>

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