Special Issue

Microbial Communities Involved in the Methane Cycle

Message from the Guest Editor

In recent years, our knowledge of the diversity of methanogens has expanded considerably. This leads to the next task for researchers: assessment of the ecological significance of these newly discovered groups of methanogens. Methanotrophic microorganisms oxidize methane to gain energy under oxic and anoxic conditions using a range of electron acceptors. Recent years have also been characterized by the convincing progress of our understanding of the diversity and physiology of these microorganisms. The evaluation of their global role as a methane sink may be the main focus of their future study. The diversity, ecological role, and physiology of numerous syntrophic partners of methanogenic and methanotrophic prokaryotes also deserve special attention since their activity can be the limiting link in the methane cycle stages. All these tasks can be successfully completed thanks to integrated approaches, including NGS-based molecular methods, bioinformatics, cultivation of new prokaryotes, isotope-based process rate estimation, and statistical approaches.

Guest Editor

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"Microorganism" merges the idea of the very small with the idea of the evolving reproducing organism is a unifying principle for the discipline of microbiology. Our journal recognizes the broadly diverse yet connected nature of microorganisms and provides an advanced publishing forum for original articles from scientists involved in high-quality basic and applied research on any prokaryotic or eukaryotic microorganism, and for research on the ecology, genomics and evolution of microbial communities as well as that exploring cultured microorganisms in the laboratory.

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