

Special Issue

Rumen Microorganisms

Message from the Guest Editors

The rumen of ruminants—nature's most efficient bioreactor—harbors a complex ecosystem composed of trillions of bacteria, archaea, protozoa, and fungi. This unique microbial fermentation system transforms low-quality plant fibrous materials—inedible by humans—into high-quality animal protein for human consumption, while its reservoir of natural enzyme resources provides disruptive solutions for bioenergy and green industry.

This Special Issue aims to gather cutting-edge research regarding the rumen microbiome. We welcome original research articles, reviews, or brief reports on topics including:

1. Composition and functional evolution of rumen and intestinal bacteria, archaea, fungi, and protozoa under dietary interventions and environmental stresses.
2. Genetic background—microbiome synergistic regulatory mechanisms.
3. Inhibitor development and microbial targeted regulation.
4. Isolation and functional characterization of uncultivated microorganisms; application of extremophilic enzymes in feed/biomanufacturing.
5. Microbial interaction networks and metabolic flux in the rumen microenvironment.

Guest Editors

Dr. Lizhuang Hao

Key Laboratory of Plateau Grazing Animal Nutrition and Feed Science of Qinghai Province, Qinghai Academy of Science and Veterinary Medicine of Qinghai University, Xining 810016, China

Dr. Jianbo Zhang

Key Laboratory of Plateau Grazing Animal Nutrition and Feed Science of Qinghai Province, Academy of Animal Science and Veterinary Medicine, Qinghai University, Xining 810016, China

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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
microorganisms@mdpi.com

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About the Journal

Message from the Editor-in-Chief

"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.

Editor-in-Chief

Dr. Nico Jehmlich

Department of Molecular Toxicology, UFZ-Helmholtz Centre for Environmental Research, 04318 Leipzig, Germany

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Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 20 days after submission; acceptance to publication is undertaken in 2.9 days (median values for papers published in this journal in the second half of 2025).