Special Issue

Advances in Microbial Enzyme Engineering

Message from the Guest Editors

Microbial enzyme engineering has emerged as a pivotal area in biotechnology, offering sustainable and efficient solutions for industrial, agricultural, medical, and environmental applications. Fundamental research in this field focuses on understanding the structure–function relationships of enzymes, elucidating their catalytic mechanisms, and exploring microbial diversity to discover novel enzymes. With the aid of protein engineering, directed evolution, and synthetic biology, researchers can now rationally design or improve enzyme properties, such as stability, specificity, and activity under extreme conditions. Recent advances have also highlighted the importance of metagenomics and systems biology in uncovering uncultivable microbial resources and their enzymatic potential. These developments provide new opportunities to bridge the gap between enzyme discovery and application. This Special Issue welcomes original research articles, reviews, and short communications addressing breakthroughs in microbial enzyme discovery, structure-based enzyme engineering, and functional expression in microbial hosts.

Guest Editors

Dr. Thanongsak Chaiyaso

Division of Biotechnology, Faculty of Agro-Industry, Chiang Mai University, Mae-Hea, Muang, Chiang Mai 50100, Thailand

Dr. Kamon Yakul

Division of Biotechnology, Chiang Mai University, Mae-Hea, Muang, Chiang Mai 50100, Thailand

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

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A major strength of biological science is the diversity of approaches that biological scientists apply to their research problems. *Biology* reflects this diversity and brings together studies employing the varied experimental and theoretical approaches that are fueling biological discovery. *Biology*, the journal, is a fully peer-reviewed publication with a rapid and economical route to open access publication and is listed on PubMed. All articles are peer-reviewed and the editorial focus is on determining that the work is scientifically sound rather than trying to predict its future impact.

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Prof. Dr. Jukka Finne
Research Programme in Molecular and Integrative Biosciences, Faculty of Biological and Environmental Sciences, University of Helsinki, P.O. Box 56, FI-00014 Helsinki, Finland

Prof. Dr. Andrés Moya
Integrative Systems Biology Institute, University of Valencia and CSIC, 46980 Valencia, Spain

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