Special Issue

Emerging Trends in Food Enzyme Catalysis and Food Synthetic Biology

Message from the Guest Editors

Enzyme catalysis and synthetic biology have garnered increasing attention in food production and processing. Conventional food processing methods often rely on chemical or physical approaches that may compromise nutritional quality, generate undesirable byproducts, or face consumer skepticism. In contrast, enzyme catalysis offers high specificity and mild reaction conditions, while synthetic biology enables the design of novel biosynthetic pathways for tailored food ingredients. Despite their promise, challenges such as enzyme stability, scalability, regulatory acceptance, and public perception of bioengineered foods must be addressed. Recent advances in protein engineering, CRISPR-based genome editing, and computational biology are accelerating innovation in the field. Emerging applications include precision fermentation for alternative proteins, enzymatic modification of food textures, and microbial cell factories for bioactive compound production. This Special Issue explores cutting-edge developments in food enzyme catalysis and synthetic biology, highlighting their potential to revolutionize food systems while addressing current limitations for future industrial adoption.

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Message from the Editor-in-Chief

Foods (ISSN 2304-8158) is an open access and peer reviewed scientific journal that publishes original articles, critical reviews, case reports, and short communications on food science. Articles are released monthly online, with unlimited free access. Currently, Foods has been indexed by the Science Citation Index Expanded (SCIE - Web of Science), PubMed, and Scopus. Our aim is to encourage scientists, researchers, and other food professionals to publish their experimental and theoretical results as much detail as possible. We therefore invite you to be one of our authors, and in doing so share your important research findings with the global food science community.

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