

Special Issue

Advances in Microbial Cell Factories, 3rd Edition

Message from the Guest Editors

In the “cell factory” concept, microorganisms convert substrates into desirable products. Well-established fermentation products include beer, antibiotics and insulin. Recent developments enabled by native and engineered microbial cell factories include oleochemicals, biopolymers, biofuels, animal feed, biopesticides, nutraceuticals and flavors. Currently, the availability of standardized and newly developed cloning and expression vectors, the accessibility and affordability of de novo DNA synthesis, the advancement in bioinformatics tools and the expansion of biological databases have allowed cells to become more programmable. In this revolutionized era, the design and modeling of bioprocesses, AI-guided automation and high-throughput process monitoring significantly reduce bioprocess development time and costs. Despite all this progress, only a few biotechnological processes have been adopted at an industrial level outside the confines of laboratory settings. Challenges and bottlenecks still need to be addressed at several levels, including feedstock flexibility, bioreactor design, metabolic burdens and downstream processing and iterative scale-up.

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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.

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