Special Issue

Biocatalysis: Exploring and Designing Biocatalysts for Molecular Synthesis, and DNA/Protein Bio-Macromolecule Modifications

Message from the Guest Editors

Biocatalysis carried out by protein catalyst (i.e., enzyme) has proven its great synthetic advantages of superb selectivity and mild processing conditions in the production of valuable chemicals and secondary metabolites as well as biologically significant macromolecules. Rrecent developments in biocatalysis have moved forward to implement protein scaffold design in order to explore new chemistry of catalysis on previously unachievable substrate targets. Combining new enzyme chemistry in PTM enzyme and protein scaffolds, and tool development for site-specific drug loading onto therapeutic antibodies is worth exploring. Similarly, as nucleic acids have recently emerged as attractive reagents for potential therapeutic applications, biocatalytic process studies allowing the production of DNA or RNA uniformly with defined compositions and base modifications for better stability and efficacy are extremely valuable. In this Special Issue, we are seeking to explore the realm of studies at the intersection between novel enzyme design for new biocatalytic functions to process medically relevant small-molecule natural products, as well as proteins and nucleic acid macromolecules.

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