Special Issue

Advances in Drug Design and Drug Discovery

Message from the Guest Editor

Drug design and discovery is a dynamic field that has witnessed rapid progress due to the integration of computational sciences, structural biology, and biotechnology, Artificial intelligence (AI) and machine learning now allow prediction of drug-target interactions and optimization of chemical structures, accelerating early development stages. Structure-based drug design, powered by cryo-electron microscopy and crystallography, provides precise insights into molecular interactions, enabling the creation of highly selective drugs. Omics technologies—including genomics, proteomics, and metabolomics—are driving the identification of disease-associated pathways and biomarkers for personalized therapies. Beyond small molecules, biologics, and advanced modalities such as monoclonal antibodies, RNA-based therapeutics, and gene-editing approaches are expanding treatment possibilities. Collectively, these advances are transforming drug discovery into a more precise, efficient, and patient-centered process. While challenges remain, the innovations of the past decade mark a significant step forward in the development of safe and effective therapeutics.

Guest Editor

Dr. Arjun Singh

Molecular Pharmacology Program, Laboratory of Signal Transduction, Mortimer B. Zuckerman Research Center, 417 East 68th Street, Memorial Sloan Kettering Cancer Center, New York, NY 10065, USA

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Message from the Editor-in-Chief

Editor-in-Chief

Prof. Dr. Madhav Bhatia

Department of Pathology and Biomedical Science, University of Otago, Christchurch, 2 Riccarton Avenue, P.O. Box 4345, Christchurch 8140, New Zealand

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