Molecules

an Open Access Journal by MDPI

CiteScore: 8.6
Indexed in PubMed
Impact Factor: 4.6

Special Issue Reprint

Small-Molecule Modulators Targeting Emerging Therapeutic Pathways

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This Reprint presents a focused collection of recent research articles and reviews on small molecule modulators targeting emerging therapeutic pathways. The contributions highlight current advances in medicinal chemistry and chemical biology, integrating molecular design, synthesis, and biological evaluation to address complex disease mechanisms. Several studies report small molecules that modulate key signaling pathways, overcome therapeutic resistance, and promote regulated cell death, particularly in cancer models. Structural and mechanistic investigations provide molecular-level insights into target engagement, including enzyme and proteasome inhibition, supporting structure-guided drug design. Other contributions combine biophysical methods, computational modeling, and functional assays to clarify mechanisms of action and guide optimization.

The Reprint also includes studies on immune and inflammatory modulation, studies on metabolic and lipid signaling regulation, and updated reviews on naturally derived inhibitors and hypoxia-responsive compounds. Together, these works emphasize multidisciplinary approaches and biological relevance in small molecule research. Overall, this Reprint reflects current trends in pathway-oriented therapeutic development and serves as a valuable reference for researchers in drug discovery, chemical biology, and pharmacological sciences.

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