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Adenosine and Purinergic Receptors: Regulation and Essential Role in Human Disease

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Message from the Guest Editors

The purinergic signaling system comprises both adenosine receptors (ARs) and purinergic receptors (P2Rs), where adenosine and nucleotides act as extracellular messengers, respectively. The signaling pathways activated by ligand–receptor interaction are cross-linked with other transmitter networks to regulate numerous key physiological processes like proliferation, differentiation, and apoptosis. Thus, the deregulation of the system establishes pathological conditions that include, but are not limited to, inflammation, cancer, and neurodegeneration. Few adenosinergic and purinergic drugs have been approved to date. Great efforts are still focused on the research and development of ligands, with emerging interest in the field of allosteric modulation, biased agonism, and bitopic ligands. On the other hand, even more efforts are ongoing in understanding the pathophysiological implications of the different receptors in order to validate them as targets in specific diseases.

With this Special Issue, we aim to shed light on the pharmacology of AR and P2R, as well as present the advancements in the development of ligands towards them.



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Special Issue



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