Special Issue

Activation and Regulation of NLRP3 Inflammasome

Message from the Guest Editor

The NLRP3 inflammasome represents one of the most extensively studied innate immune complexes and plays a crucial role in the host defense against pathogens and cellular damage. However, dysregulation of NLRP3 inflammasome activation contributes to the pathogenesis of numerous inflammatory, metabolic, and neurodegenerative disorders. This Special Issue aims to compile cutting-edge research and comprehensive reviews focusing on the molecular mechanisms governing NLRP3 inflammasome activation, regulation, and its implications in health and disease. We welcome original research articles and reviews that explore various aspects of NLRP3 inflammasome biology, including but not limited to structural insights into assembly and activation; novel regulatory mechanisms involving post-translational modifications; crosstalk with other cellular pathways such as autophagy, mitochondrial dynamics, and metabolic processes; roles in specific disease contexts; and innovative therapeutic strategies targeting the NLRP3 inflammasome. Emerging technologies for studying inflammasome dynamics and the development of selective NLRP3 inhibitors are also of particular interest.

Guest Editor

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Message from the Editor-in-Chief

Biomedicines (ISSN 2227-9059) is an open access journal devoted to all aspects of research on human health and disease, the discovery and characterization of new therapeutic targets, therapeutic strategies, and research of naturally driven biomedicines, pharmaceuticals, and biopharmaceutical products. Topics include pathogenesis mechanisms of diseases, translational medical research, biomaterial in biomedical research, natural bioactive molecules, biologics, vaccines, gene therapies, cell-based therapies, targeted specific antibodies, recombinant therapeutic proteins, nanobiotechnology driven products, targeted therapy, bioimaging, biosensors, biomarkers, and biosimilars. The journal is open for publication of studies conducted at the basic science and preclinical research levels. We invite you to consider submitting your work to Biomedicines, be it original research, review articles, or developing Special Issues of current key topics.

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