

Special Issue

The Pivotal Role of Endothelial Cells in Vascular Homeostasis and Immune Regulation

Message from the Guest Editor

Endothelial cells are dynamic sentinels that integrate hemodynamic, metabolic, and inflammatory signals to maintain vascular homeostasis and regulate immune responses. This Special Issue invites studies on molecular mechanisms—including mechanotransduction, glycocalyx integrity, nitric oxide and ROS signaling, and junctional dynamics—that control antithrombotic tone, permeability, and leukocyte trafficking. We seek work linking endothelial dysfunction to atherosclerosis, thrombosis, vasculitis, sepsis, autoimmune and metabolic diseases, infection, cancer, and vascular aging. Topics of interest include endothelial-immune crosstalk (adhesion molecules, cytokines, antigen presentation), immunometabolism, senescence, and epigenetic reprogramming. We encourage submissions using single-cell and spatial omics, intravital/high-content imaging, organ-on-chip systems, engineered tissues, systems biology, and AI-driven analytics. Translational studies identifying biomarkers, therapeutic targets, or vascular-protective interventions are especially welcome. We accept original research, reviews, brief reports, and methods papers advancing endothelial biology at the vascular-immune interface.

Guest Editor

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Deadline for manuscript submissions

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Message from the Editor-in-Chief

The International Journal of Molecular Sciences (*IJMS*, ISSN 1422-0067) is an open access journal, which was established in 2000. The journal aims to provide a forum for scholarly research on a range of topics, including biochemistry, molecular and cell biology, molecular biophysics, molecular medicine, and all aspects of molecular research in chemistry. *IJMS* publishes both original research and review articles, and regularly publishes special issues to highlight advances at the cutting edge of research. We invite you to read recent articles published in *IJMS* and consider publishing your next paper with us.

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