

Special Issue

Cellular and Molecular Pathways in Immune Tolerance and Autoimmune Regulation

Message from the Guest Editor

We are excited to invite you to contribute to this Special Issue of *Cells*, entitled “Cellular and Molecular Pathways in Immune Tolerance and Autoimmune Regulation”. The immune system walks a fine line: it must defend against external pathogens while not attacking the body’s own tissues. Recent advances have revealed the complexity of immune tolerance, involving both classical and emerging immune checkpoint molecules and their ligands, such as PD-1/PD-L1 and CTLA-4/CD80-CD86, LAG-3, TIM-3, TIGIT, and VISTA. These regulatory molecules coordinate complex networks of immune cell interactions, cytokine signalling, and feedback mechanisms that collectively shape immune responses in both healthy and pathological contexts, thereby preserving self-tolerance and maintaining immune homeostasis. For this Special Issue, we welcome original research articles and insightful reviews that explore cellular and molecular mechanisms of immune tolerance, translational models, and strategies for modulating autoimmune responses. We especially encourage contributions that investigate novel checkpoint pathways, regulatory circuits, and immune dynamics in healthy and disease states.

Guest Editor

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Deadline for manuscript submissions

31 May 2026



Cells

an Open Access Journal
by MDPI

Impact Factor 5.2
CiteScore 10.5
Indexed in PubMed



mdpi.com/si/261486

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About the Journal

Message from the Editorial Board

Cells has become a solid international scientific journal that is now indexed on SCIE and in other databases. We have successfully introduced a special issues format so that these issues serve as mini-forums in specific areas of cell science. *Cells* encourages researchers to suggest new special issues, serve as special issues editors, and volunteer to be reviewers. Our main focus will remain on cell anatomy and physiology, the structure and function of organelles, cell adhesion and motility, and the regulation of intracellular signaling, growth, differentiation, and aging. We are open to both original research papers and reviews.

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