Special Issue

Dysregulated Synaptic Plasticity in Chronic Pain: Molecular Mechanisms, Circuit Dysfunction, and Translational Approaches

Message from the Guest Editor

This Special Issue welcomes original research, reviews, mini-reviews, and perspectives that explore the molecular, synaptic, and circuit-level mechanisms underlying chronic pain. Key areas of interest include the following: Excitatory–inhibitory imbalance in pain circuits;
Long-term potentiation/depression in nociceptive and affective pathways;
Non-canonical glutamate receptor signaling and metaplasticity;
Transcriptomic, proteomic, and epigenetic changes driving pain plasticity;
Glial-neuronal interactions and neuroinflammation;
Circuit-selective pharmacological, gene therapy, and neuromodulatory strategies; Biomarker discovery and precision medicine approaches;
Integration of AI/machine learning in pain prediction and intervention.
We encourage contributions using innovative techniques such as optogenetics, chemogenetics, in vivo imaging, and computational modeling. Authors should aim to connect mechanistic insights to translational relevance, paving the way for future therapeutic developments.

Guest Editor

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Deadline for manuscript submissions

25 December 2025

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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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manuscripts are peer-reviewed and a first decision is provided to authors approximately 16 days after submission; acceptance to publication is undertaken in 2.7 days (median values for papers published in this journal in the first half of 2025).