Special Issue

GABA Signaling: Therapeutic Targets for Neurodegenerative and Neurodevelopmental Disorders

Message from the Guest Editors

⍰-aminobutyric acid (GABA) inhibits adult neurons and depolarizes and excites immature ones due to a developmental shift of the activity of the co-transporters NKCC1 and KCC2, involved in chloride uptake and extrusion, respectively. Indeed, GABA (and glycine) are unique in their capacity to shift the polarity of their actions depending on $[Cl-]i$ levels. Interestingly, in a wide range of brain disorders, there is a reversed reduction and enhanced activity of KCC2 and NKCC1, respectively, leading to depolarizing and often excitatory actions of GABA. These alterations are observed not only in developmental disorders but also in neurodegenerative ones, as well as trauma, infarct, and lesions, suggesting that this is a common reaction of networks to insults. These articles, written by experts in theses domains, highlight the therapeutic potential of restoring GABAergic inhibition and a proper E/I balance in key neuronal circuits of the brain.

Guest Editors

Dr. Enrico Cherubini

European Brain Research Institute (EBRI), Fondazione Rita Levi-Montalcini, 00161 Roma, Italy

Dr. Yehezkel Ben-Ari

Neurochlore, Campus scientifique de Luminy, Bâtiment Beret-Delaage, 163 Route de Luminy, 13288 Marseille CEDEX 09, France

Deadline for manuscript submissions

closed (5 December 2022)

Brain Sciences

an Open Access Journal
by MDPI

Impact Factor 2.8
CiteScore 5.6
Indexed in PubMed

mdpi.com/journal/
brainsci

About the Journal

Message from the Editor-in-Chief

You are invited to contribute a research article or a comprehensive review for consideration and publication in *Brain Sciences* (ISSN 2076-3425). *Brain Sciences* is an open access, peer-reviewed scientific journal that publishes original articles, critical reviews, research notes, and short communications on neuroscience. The scientific community and the general public can access the content free of charge as soon as it is published.

Editor-in-Chief

Prof. Dr. Stephen D. Meriney
Department of Neuroscience, University of Pittsburgh, Pittsburgh, PA 15260, USA

Author Benefits

High Visibility:
indexed within Scopus, SCIE (Web of Science), PubMed, PMC, Embase, PSYNDEX, PsycInfo, CAPlus / SciFinder, and other databases.

Rapid Publication:
manuscripts are peer-reviewed and a first decision is provided to authors approximately 16.2 days after submission; acceptance to publication is undertaken in 1.9 days (median values for papers published in this journal in the first half of 2025).

Recognition of Reviewers:
reviewers who provide timely, thorough peer-review reports receive vouchers entitling them to a discount on the APC of their next publication in any MDPI journal, in appreciation of the work done.