



an Open Access Journal by MDPI

## Regulation and Deregulation of Cell Metabolism in the Brain: Molecular Aspects, Functional Outcomes

Guest Editors:

### Dr. Marco Segatto

Department of Biosciences and Territory, University of Molise, Pesche (Is), Italy

### Dr. Piergiorgio La Rosa

1. Division of Neuroscience, Department of Psychology, University La Sapienza, Rome, Italy  
2. European Center for Brain Research, IRCCS Fondazione Santa Lucia, Rome, Italy

Deadline for manuscript submissions:

**closed (31 March 2023)**

### Message from the Guest Editors

Metabolism comprises the enzyme-mediated chemical processes that regulate the synthesis and the degradation of biological molecules required for cellular viability. A tight regulation of metabolic processes is of paramount importance in the cell, especially in the brain, where homeostasis maintenance is highly dynamic. Despite the central nervous system only accounts for 2% of the body mass, the energy demand is one of the highest in the whole organism. Lipids, such as long-chain polyunsaturated fatty acids and cholesterol, play pivotal structural and functional roles in brain cells. Furthermore, spatial and temporal regulation of protein homeostasis is essential for proper brain functioning and development. Thus, it is not surprising that alterations of the processes regulating ATP, redox status, glucose, lipids and protein metabolism can lead to severe neurodevelopmental and neurodegenerative disorders. For instance, reactive oxygen/nitrogen species (ROS/RNS) imbalance during development or in adult brain is a defect observed in most of neurologic conditions.



[mdpi.com/si/90381](https://mdpi.com/si/90381)

# Special Issue



an Open Access Journal by MDPI

## Editor-in-Chief

### Prof. Dr. Felipe Fregni

1. Neuromodulation Center and  
Center for Clinical Research  
Learning, Spaulding  
Rehabilitation Hospital and  
Massachusetts General Hospital,  
Harvard Medical School, Boston,  
MA 02114, USA  
2. Department of Epidemiology,  
Harvard T.H. Chan School of  
Public Health, Boston, MA 02115,  
USA

## 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.

## Author Benefits

**Open Access:** free for readers, with article processing charges (APC) paid by authors or their institutions.

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

**Journal Rank:** JCR - Q1 (*Pharmacology & Pharmacy*) / CiteScore - Q2 (*Medicine (miscellaneous)*)

## Contact Us

*Biomedicines* Editorial Office  
MDPI, St. Alban-Anlage 66  
4052 Basel, Switzerland

Tel: +41 61 683 77 34  
[www.mdpi.com](http://www.mdpi.com)

[mdpi.com/journal/biomedicines](https://mdpi.com/journal/biomedicines)  
[biomedicines@mdpi.com](mailto:biomedicines@mdpi.com)  
[X@Biomed\\_MDPI](https://twitter.com/Biomed_MDPI)