

Special Issue

Compounds Modulating Mitochondrial Ion Channels

Message from the Guest Editors

Recently, in mitochondrial membranes, a variety of channel proteins have been described. On top of the well-characterized porin channel in the outer mitochondrial membrane, a plethora of channel proteins were identified in the inner mitochondrial membranes. These include both anion-selective channels and cation-selective channels. The latter group is represented by calcium channels and potassium channels such as ATP, voltage-regulated, or calcium-activated potassium channels. The recent understanding of the molecular identity of mitochondrial permeability transition pore also leads to a new pharmacology of this protein. The main part of this Special Issue will describe the basic characteristics of each channel type mentioned above and its interaction with various molecules. Available channel modulators will be critically evaluated and rated by suitability for research and medical usage. Information on the potential side effects of these substances will be reported. Mitochondrial channel modulators will also be described in the physiological context of cytoprotection or cancer cell death.

Guest Editors

Prof. Dr. Adam Szewczyk

Nencki Institute of Experimental Biology of the Polish Academy of Sciences, Warsaw, Poland

Dr. Bogusz Kulawiak

Laboratory of Intracellular Ion Channels, Nencki Institute of Experimental Biology, Polish Academy of Sciences, 02-093 Warsaw, Poland

Deadline for manuscript submissions

closed (31 October 2021)



Molecules

an Open Access Journal
by MDPI

Impact Factor 4.6
CiteScore 8.6
Indexed in PubMed



mdpi.com/si/61122

Molecules
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
molecules@mdpi.com

[mdpi.com/journal/
molecules](https://mdpi.com/journal/molecules)





Molecules

an Open Access Journal
by MDPI

Impact Factor 4.6
CiteScore 8.6
Indexed in PubMed



[mdpi.com/journal/
molecules](https://mdpi.com/journal/molecules)



About the Journal

Message from the Editor-in-Chief

As the premier open access journal dedicated to molecular chemistry, now in its 29th year of publication, the papers published in *Molecules* span from classical synthetic methodology to natural product isolation and characterization, as well as physicochemical studies and the applications of these molecules as pharmaceuticals, catalysts, and novel materials. Pushing the boundaries of the discipline, we invite papers on all major fields of molecular chemistry and multidisciplinary topics bridging chemistry with biology, physics, and materials science, as well as timely reviews and topical issues on cutting-edge fields in all of these areas.

Editor-in-Chief

Prof. Dr. Thomas J. Schmidt

Institute of Pharmaceutical Biology and Phytochemistry, University of
Münster, Corrensstrasse 48, D-48149 Münster, Germany

Author Benefits

High Visibility:

indexed within Scopus, SCIE (Web of Science), PubMed, MEDLINE, PMC, Reaxys, CaPlus / SciFinder, MarInLit, AGRIS, and other databases.

Journal Rank:

JCR - Q2 (Biochemistry and Molecular Biology) / CiteScore
- Q1 (Organic Chemistry)

Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 16.1 days after submission; acceptance to publication is undertaken in 2.6 days (median values for papers published in this journal in the first half of 2025).