

Special Issue

Functional (Pharmaco) Genomics and Genetics in Atrial Fibrillation Associated with Sudden Cardiac Death Syndromes

Message from the Guest Editors

Atrial fibrillation (AF) is the most common type of sustained cardiac arrhythmia, characterized by disorganized electrical activity in the atria. Electrical chaos is largely driven by ion channel remodeling, which alters the heart's electrophysiological properties. Changes in voltage-gated and non-voltage-gated ion channels have been reported in the pathogenesis of AF. These changes are part of electrical remodeling, which occurs alongside structural remodeling (e.g., fibrosis, cellular differentiation), which further sustains AF. Atrial fibrillation is not just an electrical glitch—it is a complex interplay of ion channel dysfunction, cellular remodeling, and systemic risk factors. Its rising global incidence and economic costs demand more targeted therapies, especially those that address its molecular underpinnings such as ion channel modulation. This Special Issue will address genetics, genomics, 3D and AI-based structural analyses and molecular pathways regulating ion channel function in AF and the potential for future therapeutic opportunities regarding this debilitating disease

Guest Editors

Dr. Hector Barajas-Martinez

Department of Cardiovascular Research, Lankenau Institute for Medical Research, Wynnewood, PA 19096, USA

Prof. Dr. Anthony Ashton

Division of Cardiovascular Medicine, Lankenau Institute for Medical Research, Wynnewood, PA 19096, USA

Deadline for manuscript submissions

30 March 2026



International Journal of Molecular Sciences

an Open Access Journal
by MDPI

Impact Factor 4.9
CiteScore 9.0
Indexed in PubMed



mdpi.com/si/258449

*International Journal of
Molecular Sciences*
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
ijms@mdpi.com

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





International Journal of Molecular Sciences

an Open Access Journal
by MDPI

Impact Factor 4.9
CiteScore 9.0
Indexed in PubMed



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



About the Journal

Message from the Editor-in-Chief

The International Journal of Molecular Sciences (*IJMS*, ISSN 1422-0067) is an open access journal, which was established in 2000. The journal aims to provide a forum for scholarly research on a range of topics, including biochemistry, molecular and cell biology, molecular biophysics, molecular medicine, and all aspects of molecular research in chemistry. *IJMS* publishes both original research and review articles, and regularly publishes special issues to highlight advances at the cutting edge of research. We invite you to read recent articles published in *IJMS* and consider publishing your next paper with us.

Editor-in-Chief

Prof. Dr. Maurizio Battino

Department of Odontostomatologic and Specialized Clinical Sciences,
Sez-Biochimica, Faculty of Medicine, Università Politecnica delle
Marche, Via Ranieri 65, 60100 Ancona, Italy

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, MEDLINE, Embase, CAPlus / SciFinder, and other databases.

Journal Rank:

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