

## Special Issue

# Nanomaterials and Regulated Cell Death Pathways: Novel Therapeutic Opportunities

### Message from the Guest Editor

Currently, over two dozen distinct types of regulated cell death (RCD) have been described, including apoptosis, cuproptosis, ferroptosis, necroptosis, PANoptosis, pyroptosis, etc., which rely on unique but frequently overlapping molecular pathways. A growing body of evidence indicates that RCDs play an important role in maintaining homeostasis and ensuring host defence. Moreover, RCDs contribute to the pathogenesis of a wide array of diseases, especially cancer. Thus, targeting RCDs has emerged as a promising therapeutic avenue in multiple pathologies. Notably, nanomaterials hold great potential as modulators of RCDs, and the RCD-based nanotherapeutic strategy is currently under extensive exploration in oncology. This Special Issue focuses on the development of novel nanoscale materials that can modulate RCDs and the investigation of their application as RCD-modulating nanotherapeutic agents. Studies that explore the molecular pathways through which nanomaterials induce RCDs are gladly welcomed. Investigation of the RCD-based nanomedicines will pave the way for improving the effectiveness of cancer therapy and expand our knowledge of the intricate cell death machinery.

---

### Guest Editor

Dr. Anton S. Tkachenko  
BIOCEV, First Faculty of Medicine, Charles University, Průmyslová 595,  
25250 Vestec, Czech Republic

---

### Deadline for manuscript submissions

30 October 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/250647](https://mdpi.com/si/250647)

*International Journal of  
Molecular Sciences*  
Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[ijms@mdpi.com](mailto: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)* 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, and molecular biophysics. *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. José L. Quiles  
Department of Physiology, Institute of Nutrition and Food Technology  
"Jose Mataix", Biomedical Research Center, University of Granada,  
Avda. Conocimiento s/n, 18100 Armilla, Granada, Spain

---

### 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, CAPus / SciFinder, and other databases.

#### Journal Rank:

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