Special Issue

Molecular Research Progress of Cereal Crop Disease Resistance

Message from the Guest Editors

Cereal crops, vital for global food security & nutrition, face myriad challenges from pathogens like fungi, bacteria, nematodes, & viruses, threatening yields & food supply. Molecular research on disease resistance is crucial in cereal breeding programs. This Special Issue explores the latest progress & trends in discovering novel resistance genes, their molecular characterization, regulatory networks, & markerassisted selection.

Key areas include:

Novel resistance gene sources from diverse backgrounds, including wild relatives & landraces.

Molecular dissection of resistance genes to understand their structure, function, & mechanisms.

Unraveling complex regulatory networks controlling resistance gene expression for insights into activation & interactions.

Marker-assisted selection in breeding to accelerate the creation of disease-resistant cultivars.

This Issue compiles pioneering research & reviews, offering a comprehensive view of molecular mechanisms underpinning cereal crop disease resistance.

Guest Editors

Prof. Dr. Hongjie Li

- 1. The National Engineering Laboratory of Crop Molecular Breeding, Institute of Crop Sciences, Chinese Academy of Agricultural Sciences, Beijing 100081, China
- 2. Xianghu Laboratory, Institute of Biotechnology, Hangzhou 311231, China

Prof. Dr. Zhengi Su

College of Agronomy and Biotechnology, China Agricultural University, Beijing 100193, China

Deadline for manuscript submissions

20 August 2025



International Journal of Molecular Sciences

an Open Access Journal by MDPI

Impact Factor 4.9 CiteScore 9.0 Indexed in PubMed



mdpi.com/si/211032

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





International Journal of Molecular Sciences

an Open Access Journal by MDPI

Impact Factor 4.9 CiteScore 9.0 Indexed in PubMed





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)

