

Special Issue

Microbial Mechanisms and Host Interactions in Oral Diseases: Implications for Pathogenesis, Prevention, and Novel Therapeutics

Message from the Guest Editor

Oral diseases, such as dental caries, periodontal diseases, and oral cancers, remain a major global health challenge. These conditions result from complex interactions between genetic, environmental, and microbial factors, with poor oral hygiene and lifestyle practices playing key roles. This review examines the etiology and pathogenesis of common oral diseases, focusing on microbial biofilms, host immune responses, and their systemic health impacts. It also explores advancements in diagnostic technologies, including molecular assays and advanced imaging, which improve early detection and disease monitoring. Preventive strategies like fluoride use, dietary changes, and public health initiatives are critically assessed. Furthermore, innovative therapies—such as probiotics, nanotechnology, and regenerative medicine—are highlighted for their potential to revolutionize oral healthcare. A comprehensive understanding of oral diseases is essential for effective prevention, early detection, and improved treatment outcomes.

Guest Editor

Prof. Dr. Shankargouda B. Patil

College of Dental Medicine, Roseman University of Health Sciences,
South Jordan, UT 84095, USA

Deadline for manuscript submissions

closed (15 December 2025)



Pathogens

an Open Access Journal
by MDPI

Impact Factor 3.3
CiteScore 6.8
Indexed in PubMed



mdpi.com/si/229824

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

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





Pathogens

an Open Access Journal
by MDPI

Impact Factor 3.3
CiteScore 6.8
Indexed in PubMed



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



About the Journal

Message from the Editor-in-Chief

The worldwide impact of infectious disease is incalculable. The consequences for human health in terms of morbidity and mortality are obvious and vast but, when infections of animals and plants are also taken into account, it is hard to imagine any other disease that has such a significant impact on our lives—on healthcare systems, on agriculture and on world economics.

Pathogens is proud to continue to serve the international community by publishing high quality studies that further our understanding of infection and have meaningful consequences for disease intervention.

Editor-in-Chief

Prof. Dr. Moriya Tsuji

School of Engineering Medicine, Texas A&M University, 2121 West
Holcombe Blvd., Suite 1007, Houston, TX 77030, USA

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, MEDLINE, PMC, Embase, PubAg, CaPlus / SciFinder, AGRIS, and other databases.

Journal Rank:

JCR - Q2 (Microbiology) / CiteScore - Q1 (Infectious Diseases)