

## Special Issue

# Genomics and Gene Expression of the Oral Microbiome

### Message from the Guest Editors

The oral microbiome is a complex community inhabiting oral surfaces under the dynamic influence of saliva. This fluid environment facilitates dense microbial interactions and biofilm formation, modulated by diet, hygiene, saliva, and pH. Microbial populations maintain a balance between health (eubiosis) and disease-associated states (dysbiosis) through mechanisms including quorum sensing, nutrient competition, and horizontal gene transfer. Dysbiosis is linked to caries and periodontitis. Mineral-surface biofilms are hotspots for gene exchange, spreading antimicrobial resistance (ARGs) and adaptive traits. Genomic and meta-transcriptomic studies reveal the transcriptional plasticity of oral microbes, underpinning rapid stress adaptation. The pangenome concept explains strain-level diversity in virulence, resistance, and niche specialization. Bacteriophages further contribute through transduction and population modulation. This Special Issue on "Genomics and Gene Expression of the Oral Microbiome" invites original research and reviews focusing on molecular mechanisms governing its composition, function, and adaptability. We welcome your submissions.

### Guest Editors

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### Deadline for manuscript submissions

25 February 2026

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## Genes

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*Genes* is central to our understanding of biology, and modern advances such as genomics and genome editing have maintained genetics as a vibrant, diverse and fast-moving field. There is a need for good quality, open access journals in this area, and the *Genes* team aims to provide expert manuscript handling, serious peer review, and rapid publication across the whole discipline of genetics. Starting in 2010, the journal is now well established and recognised. Why not consider *Genes* for your next genetics paper?

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### Editor-in-Chief

Prof. Dr. Selvarangan Ponnazhagan  
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