

Special Issue

Decoding *Helicobacter pylori*: Genetic Secrets, Flagellar Motility, and Biofilm Mechanisms

Message from the Guest Editors

Helicobacter pylori remains a formidable global health burden and causes devastating outcomes from peptic ulcers to gastric cancer, despite decades of research. Recent breakthroughs in genomic sequencing, structural biology, and high-resolution imaging have uncovered *H. pylori*'s survival mechanisms, yet key questions persist. We still need to understand how genetic heterogeneity determines virulence, how flagellar torque facilitates gastric mucosa navigation, and how biofilms evade host defenses and antibiotics. Resolving these gaps is crucial for developing therapies against resistant strains. This Special Issue highlights *H. pylori*'s survival strategies through cutting-edge interdisciplinary research. We welcome original and review articles focusing on three key pillars: (1) Genetic Secrets—including genomic diversity, adaptive mutations, virulence regulation, and host-pathogen coevolution; (2) Flagellar Motility—encompassing molecular mechanisms of flagellar assembly, chemotaxis, and motility-driven colonization; and (3) Biofilm Mechanisms—focusing on biofilm architecture, matrix biochemistry, antibiotic tolerance, and clinical persistence.

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