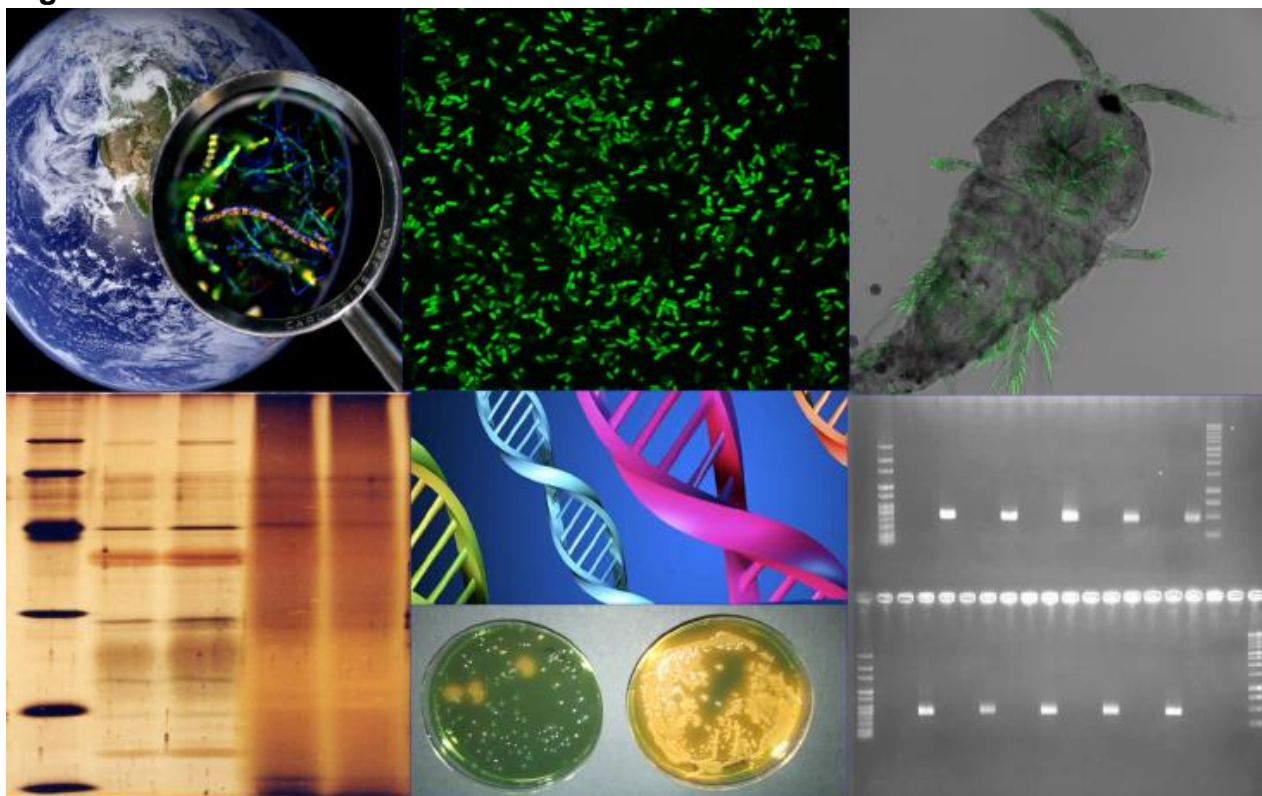


## MICROBIOLOGY

### Biology and ecology of pathogenic marine bacteria for humans and aquatic organisms



Research in the laboratory mainly focus on the biology and ecology of vibrios. *Vibrio* are indigenous bacteria in coastal marine waters and are classified into more than 200 species, some of which are pathogenic for humans and animals. Among the main characteristics of these microorganisms are thermodependency, genomic plasticity, the ability to activate different survival strategies in unfavourable environmental conditions, and to interact with different substrates and organisms present in marine waters. The research activity includes: (i) study of the interactions between vibrio and environmental substrates that can act as their environmental reservoirs (e.g., zooplankton) and transmission vectors to humans; characterization of the molecules involved. (ii) study of the ecology and virulence characteristics of *Vibrio* pathogens for marine invertebrates such as corals and bivalves. (iii) study of the *Vibrio* response to climate change. In particular, the ongoing research aims at studying the long-term and global relationships between climatic variables and pathogenic genotypes of vibrio by means of molecular analysis (PCR, qPCR, NGS) of historical samples collected on a large spatial scale. (iv) development of genomics and metagenomics tools to detect and genotype potentially pathogenic *Vibrio* strains in the marine environment.

**Parole chiave:** Environmental microbiology, Marine pathogens, *Vibrio*.

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