if available

THE FIRST INTERNATIONAL CONGRESS ON HEALTH SERVICES TRANSFORMATION

اولین کنگره بین المللی تحول خدمات سلامت

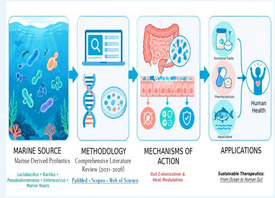
Code: 1549



Marine-Derived Probiotics: From Microbiome to Human Health

Reyhaneh Sajed[1], Mehdi Dadashpour[2]

1. PhD Student of Medical Biotechnology, Semnan University of Medical Sciences, Semnan, Iran
2. Associate Professor, Department of Medical Biotechnology, Semnan University of Medical Sciences, Semnan, Iran



Graphical Abstract

Backgrounds

- ❑ Marine probiotics are beneficial microorganisms from extreme marine environments.
- ❑ They produce antimicrobial, antioxidant, immunomodulatory, and anticancer compounds.

This review covers their isolation, safety, mechanisms, and therapeutic applications.

Methods

- ✓ Comprehensive literature review using PubMed, Scopus, and Web of Science databases.
- ✓ Studies published between 2021–2026 on marine-derived probiotics were included.
- ✓ Data extracted: isolation, characterization, safety assessment, and therapeutic applications.

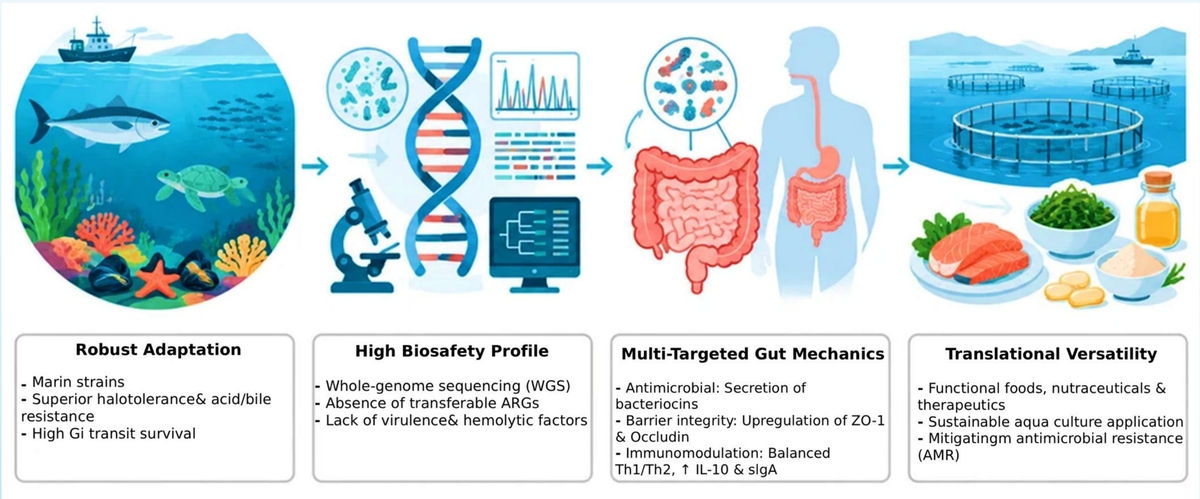
Findings

Marine Probiotic Sources

Bacterial: Lactobacillus, Bacillus, Pseudoalteromonas, Enterococcus, Pediococcus, Leuconostoc

Yeast: Saccharomyces, Meyerozyma, Kluyveromyces

Sources: Fish gut, Mollusks, Sponges, Algae



Conclusion

Marine ecosystems offer a rich reservoir of stress-adapted probiotics exhibiting resilient GI transit, broad antimicrobial activity, and effective gut-barrier modulation. Although preclinical results and functional food applications show significant promise, clinical translation is still in its infancy.

Future priorities include:

- ❑ Conducting rigorous, randomized controlled trials (RCTs) in humans.
- ❑ Deciphering strain-specific metabolomics via multi-omics profiling.
- ❑ Establishing standardized global safety and regulatory frameworks (GRAS/QPS) for commercial scalability.

References

1. Bambridge NB, Lu Y, Schirra HJ, Feng Y. Marine-Derived Bacillus and Their Potential as Probiotics. Int J Mol Sci. 2026;27(10).
2. Eze OC, Berebon DP, Emencheta SC, Evurani SA, Okorie CN, Balcão VM, et al. Therapeutic Potential of Marine Probiotics: A Survey on the Anticancer and Antibacterial Effects of Pseudoalteromonas spp. Pharmaceuticals (Basel). 2023;16(8).
3. Rudnyckyj S, Thomsen MH. Probiotics and Postbiotics Derived from Saline/Marine Plant-Based Feedstocks. Probiotics Antimicrob Proteins. 2026;18(2):2798-817.