

Special Issue

Bioactive Molecules in Infection and Toxicity: Antimicrobial Peptides and Drug-Induced Damage in Disease Models

Message from the Guest Editor

AMPs, naturally occurring defense molecules, offer promising alternatives to conventional antibiotics, especially in the context of rising antimicrobial resistance. Their multifunctional properties—ranging from direct microbial killing to immunomodulatory and antitumor effects—make them strong candidates for next-generation anti-infective therapies. At the same time, understanding how drugs, particularly AMPs, interact with biological systems to cause toxicity is essential for improving safety and efficacy. Novel formulations or delivery systems may help reduce unwanted side effects.

By exploring cellular responses, signaling pathways, and biomarkers of damage, this Special Issue aims to clarify which bioactive molecules—and through which mechanisms—affect both infection outcomes and toxicological profiles. Together, the contributions will offer a comprehensive view of how molecular interventions can be leveraged to mitigate disease and enhance therapeutic precision.

Guest Editor

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