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agriculture and industries -- Chapter 13 Antimicrobial peptides from lactic acid bacteria as a hurdle technology component for food preservation applications and safety considerations.

Sommario/riassunto

Antimicrobial peptides (AMPs) have been sought to be a potential alternative to the current arsenal of antibiotics against undesirable microbes. AMPs synthesized by lactic acid bacteria have attracted significant attention due to their strong activity against a broad range of bacteria including pathogens. The bacteriocin (an AMP) has been known to us since early 1928, a year before penicillin was reported. This is possibly due to their narrower activity compared to antibiotics. However, several AMPs having promising activity have been thoroughly characterized in the past few decades. Renewed interest has developed focusing on industrially important bacteriocins produced by lactic acid bacteria. Some of these AMPs are also active against food spoilage and clinically important pathogens. Similar to antibiotics, large-scale intellectual screening is ongoing in the search for novel AMPs with unique properties. Recent research has revealed that AMPs may also play a role in maintaining gut microflora and keeping us protected from food-borne pathogens. The ongoing genomic studies suggest that there may be more such bioactive compounds waiting to be explored. This book provides an overview of the fundamental knowledge accumulated so far regarding the diversity and potential applications of AMPs produced by lactic acid bacteria. This updated reference book on AMPs from lactic acid bacteria is timely, covering the most important achievements in the field and providing the scientific community particularly graduate students, researchers, and clinicians with the latest updates. The goal of this book is to illustrate and detail the findings made so far, debate the state of the art, and draw new perspectives.