

Anti-Microbial Peptides as Potential Therapeutics for Bacterial Infections

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Abstract The scenario in healthcare sector today is that rampant use of antibiotics has led to rapid increase in the resistant pathogenic strains of bacteria and viruses to antibiotics. Multi drug resistance (MDR) widespread increase has created a major hurdle in effective treatment of the infections and has led to tremendous morbidity contributing to higher rates of mortality. Developing new antibiotics for multi-drug resistant microbes can be the solution for overcoming MDR, but it's not a potential alternative as microbes develop resistance at an alarming rate. Thus, need of the hour is to develop new antimicrobial agents for effective therapy against these pathogenic strains. Antimicrobial peptides (AMPs) are an essential part of innate immunity that have evolved in the living organisms through the ages. These are small sized cationic peptides hosting a varied activity against various pathogenic microbes, viz. viruses, bacteria, fungi and protists. There is an interest to develop AMPs for mass therapeutic use as they are better alternative to their chemical counterparts. In this work, we have focused on bacteriocins isolated from lactic acid bacteria (LAB) as antimicrobial agents. LAB is a wide family of organisms having a large number of species producing potential AMP's having application in the sector of healthcare. Studies have shown that bacteriocins of gram-positive bacteria are found to be more diverse than those produced by gram-negative bacteria. The classification, mechanism of action, bacterial targets and advances in the field of therapeutics has been discussed in detail.

Keywords: Anti microbial peptides, bacteriocins, Lactic acid bacteria, Multi-drug resistance.