

10<sup>th</sup> International Congress on

# CLINICAL VIROLOGY, FUNGAL INFECTIONS & INFECTIOUS DISEASES

December 04-05, 2017 Dubai, UAE



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### Bacteriocin: A potential antiviral and antimicrobial agents and an alternative to antibiotics against infections

The soil microorganisms have been greatly exploited for their antibiotics to combat and destroy disease causing microbes. The interaction of microbes, their competition for nutrients and survival, quorum sensing are all phenomenons having a biochemical basis. Since their discovery in the first half of the 19<sup>th</sup> century, antibiotics have been extensively used as therapeutic agents and growth promoters. Their efficacy and cost-effectiveness contribute to their popularity. Nevertheless, the continuous use of antibiotics has resulted in the emergence of multidrug-resistant microbial strains that no longer respond to antibiotic therapy. A number of strategies have been explored to control microbial pathogens without the use of antibiotics. Bacteriocins are antimicrobial, proteinaceous compounds with a bactericidal mode of action against bacteria closely related to the producer strain. There are a wide variety of bacteriocins produced by different bacterial genera that must be further studied. Bacteriocins have been thought as alternative bioactive substances to avoid the broad side-effects and alarming resistance dissemination produced by the use of classical antibiotics. The incorporation of bacteriocins as bioactive compounds in a pharmaceutical product needs different type of studies to demonstrate the no existence of adverse effects, which must be performed both *in vitro* and *in vivo* experimental systems. Cancer remains one of the leading causes of deaths worldwide, despite advances in its treatment and detection. The conventional chemotherapeutic agents used for the treatment of cancer have non-specific toxicity toward normal body cells that cause various side effects. Secondly, cancer cells are known to develop chemotherapy resistance in due course of treatment. Thus, the demand for novel anti-cancer agents is increasing day by day. Some of the experimental studies have reported the therapeutic potential of bacteriocins against various types of cancer cell lines. Bacteriocins showing not only the antibacterial and anticancer properties but also show the promising results as antiviral agents. The present paper describe the potential use of the bacteriocin production bacteria that can be a broad spectrum alternative to antibiotics and promising agents as an anticancer agents and antiviral agents.

### Biography

Sabiha Imran is a Medical Microbiologist and Associate Professor in the Department of Biotechnology, Faculty of Engineering and Science, Manav Rachna International University, Faridabad, India. She has more than 20 years research and teaching experience. She has earned her PhD in Medical Microbiology from JN Medical College, Aligarh Muslim University and published research papers in reputed journals and presented papers in many national and international journals. She is a Gold Medalist and a qualified Registered Microbiologist of Canadian College of Microbiology (RMCCM). Her area of research interest is the study on bacteriocin as an anticancer, antiviral agent and an alternative to antibiotics and immunochemotherapeutic approach for the treatment of visceral leishmaniasis.

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