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Discovery and purification of novel antimicrobial protein: An alternative bio-therapeutic to conquer multidrug resistant organisms prevalent in the community

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Nowadays, increased antibiotic resistance of multi-drug resistant organisms has become a hot topic in healthcare sectors. Most of the effective drugs are now turn out to be nearly useless against these organisms. This public health dilemma is increasing globally due to over-prescription of medicines by doctors as well as increase use and misuse of these drugs by patients. Most of the bacteria causing hospital acquired infections are now resistant to at least one or more than one commonly used drugs. Threat posed to public health by multidrug resistant organisms can be resolved by the discovery of new antimicrobial compounds. This concern is becoming a challenge for researchers to investigate a natural antimicrobial compounds. Among these antimicrobial compounds, bacteriocins are highly specific antagonists having broad inhibitory spectrum. Bacteriocin (BAC-IB17) produced by Bacillus subtilisKIBGE-IB17 was found to be effective against various pathogenic strains. A low molecular weight BAC-IB17 was purified to homogeneity through gel permeation chromatography with a final specific activity of 186 AU mg-1. This unique bacteriocin is found to be highly thermostable and pH stable in nature. BAC-IB17 also showed its stability against various heavy metals, organic solvents, surfactants and proteolytic enzymes. N-terminal sequencing and aminoacid analysis was performed for complete characterization and classification ofbacteriocin. These findings suggests its applicability for the development of effective bio-therapeutics. BAC-IB17 exhibits a good potential for clinical and industrial applications and it can be a plausible candidate among other newly discovered drugs.

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Development and evaluation of *Solanum nigrum* extract loaded PLGA microspheres for antiulcer potential

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The apex aspire of current study was to design & fabricate *Solanum nigrum* extract loaded PLGA (Polylactic-glycolic acid) sustained released microspheres to appraise antiulcer bustle in Acetyl Salicylic acid induced ulcer rat model. Solvent evaporation method was engaged to fabricate the *Solanum nigrum* extract loaded microspheres. Scanning electron microscopy and Optical microscopy was employed for size, shape, architecture and distribution investigation of microspheres. Formulations containing *Solanum nigrum* loaded PLGA sustained released microspheres administered orally to the animal model. *Solanum nigrum* loaded microspheres significantly decreased free-acidity, total-acidity, ulcer index and gastric volume and considerably increased the pH in Acetyl Salicylic acid model. The results of histopathology of stomach (after administration of formulation) presume the zenith potential of sustained released PLGA microspheres loaded *Solanum nigrum* extract opening the new eon for the better management of ulcer predicament.

Biography

Prashant Sahu has completed his B.Pharm & M.Pharm from SIPS College Sagar MP India. He has done his masters degree in Quality Assurance and currently working as Research Scholar in Department of Pharmaceutical Sciences, Dr. H. S. Gour University, Sagar (MP) India in the field of Nanotechnology based Drug delivery system under the guidance of Sushil Kumar Kashaw. Prashant Sahu has won 2 International oral paper presentation awards and 2 National oral paper presentation awards with 3 National poster presentation award.

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