can increase antimicrobial properties of nisin and were more effective than free nisin. Methods: The nisin-loaded PLA-PEG-PLA nanoparticles were prepared using colloidal dispersion of the copolymers in the presence of nisin. After the preparation of the nisin-loaded PLA-PEG-PLA nanoparticles, their physicochemical properties such as size distribution of the formulations were studied using DLS instrument. Entrapment efficiency of the nisin-loaded nanoparticles were examined to assess the application potential of these formulations. For measuring the antibacterial activity of the nisin-loaded PLA-PEG-PLA nanoparticles, MIC methods were employed. Results: entrapment efficiency of nisin inside of the nanoparticles was about 90%. size distribution of them was 50 nm(Figure). In agar diffusion assay, an antibacterial activity (inhibition zone diameter, at 440 IU/mL) about 2 times higher than that of free nisin was observed for the nisin-loaded PLA-PEG-PLA nanoparticles. Conclusion: Our studies achieved successful formulation of nisin-loaded PLA-PEG-PLA nanoparticles, thus indicating that nanoparticle-based formulation of nisin has high potential as an antimicrobial peptide for clinical and foods application.

Keywords: Nisin, PLA-PEG-PLA nanoparticles, Bucillus Cereus, Antimicrobial Activity.

Abstract No.100

Structural Analysis of New Designed Antiangiogenic Endostatin Peptides Based on Structural Dynamics Properties and Docking Energy Landscapes

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Endostatin is a proteolytic fragment of collagen XVIII that potently inhibits angiogenesis and tumor growth. The mechanism by which endostatin exerts its antiangiogenic effect is still incompletely understood. It has been shown that some N-terminal fragments from mouse and human endostatin exhibited antitumoral activity analogous to the full-length endostatin. It has been shown that Zn++-binding is required for thermal and thermodynamic stability and also antitumor and antimigration of these endostatin peptides.In this study to understand the function mechanism of these peptides, new variant active endostatin peptides containing disulfide bond that able or unable to coordinate zinc ion on structure were designed and synthesised. The results from structural dynamics studies showed that in the presence of disulfide bond with or without Zn++, C-terminal structural dynamic properties and rigidity of the Zn++ coordinating loop of endostatin peptide are changed drastically. Our docking simulations also showed notable changes in interaction energy between new peptides and integrin αV‧3 receptor. Our findings suggest that a fine zinc dependent structure play a critical role in efficient inhibition activity of endostatin peptide.

Keywords: Antiangiogenic, Endostatin Peptide, Structural Dynamics, Docking Energy.

Abstract No.101

Designing and Producing of a Cloning Construct for Odorranain-HP

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Amphibian skin glands are rich resources for antimicrobial peptides that are parts of the armament that insects have developed to fight off pathogens.Insect AMPs are typically cationic and often made of less than 100 amino acid residues. Although their structures are diverse, most of the AMPs can be assigned to a limited number of families. The most common structures are represented by peptides assuming a α-helical conformation in organic solutions or disulfide-stabilized β-sheets with or without α-helical domains present.An antimicrobial peptide named odorranain-HP was identified from skin secretions of the diskless odorous frog, Odorrana grahami. It is composed of 23 amino acids with an amino acid sequence of GLLRASSVWGRKYYVDLAGCAKA.This peptide showed antimicrobial activities against tested microorganisms. Interestingly,odorranain-HP could exert antimicrobial capability against Helicobacter pylori, along with its antimicrobial activities similar to odorranain-W1. In order to design souitable primers for synthesis of peptide by overlapping extension polymerase chain reaction,we replace serine instead of methionine that has minimal effect on the bioactive structure of the peptide. Since,presence of methionin in the first of the peptide had spread effect on the structure and function of the pepetide.The PCR product digested with desired restriction enzymes ,and then inserted into Pcold I vector that digested with the same enzymes.

Keywords: Odorranain-HP, Antimicrobial Peptide, Overlapping Extension Polymerase Chain Reaction.
