phosporylation levels. Supportive evidence suggests that molecular inhibition of Akt by the benzimidazole-derived inhibitor IV totally rendered the cytoprotection by RSAE ineffective on lidocaine-induced cell injury. These findings infer the potential capability of natural plant extracts from radish in exerting a cytoprotective effect on lidocaine-induced injury in neonatal fibroblasts through the Akt signal transduction pathway.

Keywords: Akt, Cytoprotection, Anesthetic, Cell Injury.

Abstract No.67

Thermodynamics of Thermal Denaturation of Ribonuclease A in the Presence of Guanidine Hydrochloride and Urea

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Bovine pancreatic ribonuclease A (RNase A, E.C.3.1.27.1), one of the most extensively studied proteins,has 124 amino-acid residues and no tryptophan residues.Molecular weight of Ribonucleas A is 13 KD. The Second dominant structures consists of are the four long anti-parallel β strands and three short α Helix. Ribonucleas A catalyzes the cleavage of single-stranded RNA at the end of P-O5'pyrimidine nucleotides. Three residue Lys 41, His12 and His119 play an important role in catalysis by Ribonucleas A. Ribonucleas A is remarkably stable, and structurally and functionally very versatile.In this study,Tm of Ribonuclaes A as an indicator of thermal stability has been studied by UV-Vis spectrophotometry and spectrofluoremetry in the presence of Guanidine hydrochloride (GuHCl) and urea at pHs 1.5 and 3.3.The major conclusions based on our studyare that the thermal stability of ribonucleaseA decreases with increasing concentration of denaturants and that the effect of GuHCl on the thermal stability of RNase A is more pronounced than that of urea.GuHCl is decreased dielecteric constant of solvent more than urea.Urea can denature Ribonucleas A indirectly, By changing the structure and hydrodynamics of the solvent itself, similar to putting a non-polar solute into the mix, urea encourages the destabilization of internal bonds. It would then appear that direct interaction of urea with the protein, through hydrogen bonding, is the likely beginning of Ribonucleas A unraveling. By increasing Urea concentration from 0 to 4 M and Guanidine hydrochlorideconcentration from 0 to 3 M at pH=1.5 and 3.3 fluorescence emission is decreased.

Keywords: Bovine Pancreatic Ribonuclease A, guanidinine Hydrochloride (GuHCl).

Abstract No.68

Study on the Effect of Newly Synthesized Cateionic Pt (II)-complexes on Structure and Binding Properties of Human Serum Albumin

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Since human serum albumin (HSA) primarily serves as a transport carrier for steroids, fatty acids, thyroid hormones and variety of pharmaceutical drugs, it is important to study the interaction between this protein and potential drugs. Knowledge of the interaction mechanisms is of crucial importance to the understanding of the pharmacodynamics and pharmacokinetics of a drug. In the present study, the interactions between novel cationic Pt (II) complexes and HSA were investigated under different experimental setups, using fluorescence and circular dichroism (CD) instruments. Also as 3-(4,5-Dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) assay performed to assess their inhibitory activity against growth of two leukemia cancer cell lines, range of anticancer activities were observed. Both florescence- and far-UV CD results suggest that Pt (II)-complexes can induce structural changes in HSA. Also the synthetic Pt (II)-complex revealed strong abilities to quench Trp fluorescence emissions of HSA. Moreover, thermodynamic parameters (ΔG, ΔH and ΔS) of the interaction between these complexes and HSA were calculated. The results revealed that the interaction was spontaneous, mainly entropy driven and primarily dominated with the hydrophobic forces. The results of current study clearly indicate that newly synthesized Pt (II)-complexes could effectively bind to HSA, inducing structural alteration in this protein.

Keywords: Cationic Platinum- (II) Complexes, Human Serum Albumin, Anticancer Activity, Fluorescence Study, Circular Dichroism.
