NGF, BDNF,NT3/4,NT3 and their receptors displayed crucial roles as proliferation, migration, differentiation, survival, apoptosis, In previous studies improved TRK B is as oncogene agent and BDNF bind to trk b and active signaling angiogenesis for tumor proliferation.In the current century using intelligent biomolecule such as antibody and peptides is hopeful therapies in cancers.In this study we design of new peptides by using monte carlo methods and study the effect of them on cancer cell lines. For this aim we use backrub protocol and docking with trkB as receptor. our result showed that this protocol could improve the peptide design for cancer treatment. At the first step of this protocol we designed peptide library by using sequence tolerance method in rosetta3.3 package,then peptide energy optimization performed by backrub protocol for finding peptides with more stability,the five of best peptides selected based on R software and peptide 3D-structure prediction performed by using molecular dynamic in Hyperchem 7 software. the final step is Docking of peptides with receptor trkb in HADDOCK then cyclotraxin and designed peptides.

Keywords: TrkB inhibitor, Cancer Treatment, Peptide Desining, Rosetta3.3 Package.

Abstract No.194

A Study on the Interaction of Chickpea Seedling Copper Diamine Oxidases by Tetraethylen Pentamine

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Copper amine oxidase are soluble dimeric enzymes, each monomer contains one Cu(II) ion and one organic prosthetic group 2,4,5-trihydroxyphenylalanine quinone as cofactors. Inhibitors represent important role in the study of catalytic properties of copper amine oxidase and they also find a wide application in physiological research. They catalyze the oxidative deamination of primary amines to aldehydes with a ping-pong mechanism consisting of a transamination, followed by the transfer of two electrons to molecular oxygen which is reduced to H_2O_2. Kinetic parameters K_m and V_{max} of purified enzyme by analysis of Lineweaver - Burk plot was determined 3.3 mM and 0.95 mmol/min/mg, respectively. In this study interaction chickpea diamino oxidase withtetraethylen pentamine was studied. Analysis of kinetic data indicated considerable inhibitory effects for tetraethylen pentamine. Results showed that in the presence of tetraethylen pentamine reduced apparent K_m and V_{max} i.e. tetraethylen pentamine with K_i=0.1 mM inhibits the enzyme by linear mixed inhibitory effect. In linear mixed inhibition, the inhibitor can bind to the enzyme at the same time as the substrate. However, the binding of the inhibitor affects the binding of the substrate, and vice versa. This type of inhibition can be reduced, but not overcome by increasing concentrations of substrate.

Keywords: Chickpea, Copper-Containing Amine Oxidases, Tetraethylen Pentamine, Linear Mixed.

Abstract No.195

Synthesis of Cyclooxygenase Inhibitor 2-(1-benzyl-alkyl thio-5-imidazolyl)-3-pheenyl-1, 3-Thiazolidin-4-one as Anticancer Agent

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Recently study was shown that enzyme cyclooxygenase have a role in cancer tissue. Since the derivatives of thiazolidine 4-one and other pharmacophore patterns of central ring have a cox-2 inhibitory effect, thus we decide to synthesis of novel derivatives of thiazolidin -4-ones. At first, benzyl amine hydrochloride was produced. Then the mixture of, dihydroxy acetone, thiocianate potassium was reacting for 72 hours. By alkylation and oxidation formyl imidazole was obtained .The resultant aldehyde was reacted with aniline and thioglicolic in two ways including classic (in one and two step ways) and microwave method until the title compounds were obtained.1-Classic method: In the one step way ,all the reactant (resultant aldehyde, aniline and thioglicolic) were refluxed in dean stark apparatus in dry toluene for 48 hours.B: In the two step way, at first aldehyde and aniline react in dean stark for 24 hours to give imine intermediate, then thioglicolic acid was added and reacted for 24 hours. In two stages: at first aldehyde and aniline react in dean stark for 24 hours after synthesizing dimidiate product, thioglicolicacid was added and react for 24 hours.2- Microwave method: All of reactant was treated at 800 w, 100 c for 15 minute. TLC was used to evaluate the progress of the reaction and purify material.

Structure elucidation was done using NMR and IR spectrum.Yields of production of thiazolidone in both method is less than previous steps (80-90%).the yield of two stage method was about 10% more than one step method and microwave only decreased the time of reaction the yield was unchanged.As the reaction is reversible, the water that is produced during the synthesis, takes the reaction to left side thus without using the dean stark and drying solvent, the yield decrease.

Keywords: Cyclooxygenase Inhibitor, Derivatives Of Thiazolidine 4-One, Anti Cancer.

Abstract No.196

Study on p53R2(small Subunit of Ribonucleotide Reductase) Function Via Exploring its Expression Level After Different Doses of Irradiation in Human Mouth Epitelial ,KB, Cells

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Ribonucleotide reductase ,(RNR), is the enzyme that provides deoxyribonucleoside triphosphates (dNTP) for DNA synthesis. The recently discovered p53-inducible small subunit of ribonucleotide reductase (p53R2) plays essential roles in DNA repair and mitochondrial DNA synthesis. It is believed to provide deoxyribonucleotides for DNA repair since the protein is expressed via p53 which is involved in DNA damage checkpoints. Because of late expression of p53R2 (12h) in response to DNA damage to repair, it was suggested that this protein has other functions in the cell.Taken together, in this study, we are investigating the expression level changes of p53R2 after different doses of irradiation treatment of KB cells. This project hopefully will be able to shed light on the function of p53R2 in DNA repair and mitochondrial DNA synthesis. We did KB cell culture, and obtained doubling time (20.5 h) and clonogenic assay for obtaining plating efficiency (38%) to investigate cell survival. In final step, will do western blotting to probe the protein level in different doses of x-ray. The detailed results will be discussed.

Keywords: RNR, p53R2, DNA repair, Radiation.

Abstract No.197

Dynamics and Flexibility of Mnemiopsin in the Presence of Calcium

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Mnemiopsin is a photoprotein that belongs to the EF-hand calcium-binding proteins (EFCaBP). Ca^{2+} is involved in specific and selective regulation of cellular processes. Many of these functions are accomplished through the interaction of Ca^{2+} with specific proteins. EFCaBPs have eminent properties which change upon interacting with calcium ions. It is generally believed that Ca^{2+} confers on proteins an increased thermal stability, affect flexibility and rigidity, interface reversible unfolding, protein-protein interaction and etc. Our previous spectroscopic (CD and fluorescence) studies indicate that the apo-form (Ca^{2+}-depleted) of the protein adopt a closed conformation when compared to the Ca^{2+}-loaded once. In this study, flexibility and dynamics of mnemiopsin were investigated for apo-mnemiopsin and Ca^{2+}-loaded-mnemiopsin with fluorescence acrylamide quenching and limited proteolysis. Calcium is removed by TCA (trichloroacetic acid) precipitation to obtain apo-mnemiopsin. Fluorescence quenching was carried out by the addition of 1M acrylamide to protein solutions at an excitation wavelength of 295 nm and an emission wavelength of 337 nm in a Perkin-Elmer luminescence spectrometer. Limited proteolysis was performed by incubation of protein with thermolysin at 37 °C. Acrylamide quenching of tryptophan fluorescence is widely used to monitor tryptophan environments in proteins. Dynamic quenching analysis revealed that Ca^{2+}-loded- mnemiopsin was quenched more than the apo-form. Molecular modeling indicates microenvironment of Trp21 is important to explain this experimental data. Limited proteolysis experiments can be used to identify the sites of enhanced flexibility or of local unfolding of a polypeptide chain. Although thermolysin has been classified as proteases with broad specificity, it should be considered that thermolysin cleaves mostly the amino side of bulky and hydrophobic amino acids. Mnemiopsin proteolysis results indicate that Ca^{2+}-loaded form is more sensitive to proteolysis than apo-form. Therefore, the present results from limited proteolysis and digestion experiments as well as quenching analysis can be explained by the fact that Ca^{2+}-loaded-mnemiopsin is more flexible in some regions when compared to apo-mnemiopsin.

Keywords: Mnemiopsin, Flexibility, Quenching, Proteolysis.
