

Abstract No.198

**Mobile Phone Electromagnetic Field Effect on HEK Cell Line
Trough Luciferase Reporter**

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Wireless technology and mobile phones are now inseparable aspect of life. The possibility of adverse effects of these fields is subject of variety of researches. The cellular effects of electromagnetic field are still no clear. There is variety of targets for EMF action on cell from the cell membrane to the genomic content and regulatory systems. Hence, it is valuable to have a sensor that can report the EMF effects from inside the cell. Luciferase enzyme is well known as reporter enzyme. Luciferase was transfected into HEK293T cell line by Lentiviral vector. We have studied the effect of 940 MHz Waveguide EMF on HEK293T cell line for 10- 90 minute in 2.5 cm plate at 37°C. At the indicated time points, the cells were lysed by CCLR buffer and luciferase activity was measured. The results show that within 30 minutes the luciferase activity decreases down to 20% while after 1 hour interestingly the exposed group activity was 20% higher than control one. This shows that the cell response can compensate the first 30 min activity lose in next 30 min exposure. Therefore, at overall after 1 hour the exposed cells are 20% more active than control ones. This shows the mechanism in HEK293T cell line that can resist the damage caused by the applied EMF. The reason for the 40% remediation between 30 min to 60 min exposure time might be due to the activation of cell response via heat-shock proteins.

Keywords: Mobile Phone, Electromagnetic Field, HEK cell Line, Luciferase Reporter.

Abstract No.199

**QSAR Study on Fe (III)-salen-like Complexes as Potent
Anticancer Agents**

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Some of Iron(III) Salen Complexeshave a very desirable Anti-Tumor activity against MCF7 cells. Their Anti-Tumor activity is the result of optimizing a collection of descriptors. Quantitative structure activity relationship (QSAR) of the Anti-Tumor activity of Fe(III)-salen and salen-like complexes was studied .The method of DFT (B3LYP/Lan12dz) was used in order to optimizing 3D shape of the complexes. A pool of descriptors was calculated, 1497theoretical descriptors by Dragon software and quantum-chemical parameter, shielding NMR, electronic descriptors by Gaussian 09 and AIM software. Study of structure and activity relationship was performed with multiple linear regression (MLR) and Artificial Neural Network (ANN). In nonlinear method, the Adaptive Neuro-Fuzzy Interference System (ANFIS) was used to select the most effective descriptors. The ANN-ANFIS model with high statistical significance (R²train= 0.99, RMSE = 0.138, Q²LOO= 0.82) has better capability to predict Anti-Tumor activity of new compounds series of this family. Based on this study antitumor activity of this compound is mainly dependent on the geometrical parameters and position and nature of the substituent of the salen ligand.

Keywords: QSAR, Iron (III) Salen Complexeshave, Artificial Neural Network, Multiple Linear Regression.

Abstract No.200

**Diminishing the Allergenicity of Beta Lactoglobulin by Digester
Copper Complexes**

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Beta-lactoglobulin (BLG) is one of the bovine milk proteins that causes allergic response. The cleavage of the allergic sequence is the superlative method for decreasing protein allergenicity. As regarding to the literatures, Cu complexes make the proteins slicing to peptides. In this research, four new Cu complexes were synthesized and characterized. These Cu complexes are:[Cu bpy Cl₂] complex 1, [Cu (bpy)₂ Cl₂] complex 2, [Cu (dien) OH₂] (NO₃-) complex 3, [Cu(trien) (NO₃)₂]complex 4, which supposed to reduce protein allergenicity through cleaving BLG, as mentioned above. New copper complexes were incubated with the protein. After 30 hours of incubation (as

optimum time), the samples were studied by SDS-PAGE, fluorescamine and ELISA methods. the effect of Cu complexes on protein digestibility was proved by SDS-PAGE and fluorescamine methods. Also ELISA method admitted that protein degradation cause allergenicity to be decreased. It seems that Cu complexes are able to operate as artificial proteases and cure related diseases by degradation of target protein .

Keywords: Beta-Lactoglobulin, Allergenicity, Cu Complexes.

domain of VEGF showed high angiogenic potential at low concentrations, nearly similar to that of the intact VEGF. Because of the key role of VEGF in wound healing, some experiments to elucidate the effect of the refolded receptor binding domain on this process, as well as some other angiogenic assays are under way.

Keywords: VEGF Receptor Binding Domain, Refolding, Angiogenesis, HUVEC Proliferation Assay, Wound Healing.

Abstract No.201

Expression, Refolding and Angiogenic Activity of Human VEGF Receptor Binding Domain

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Of the multitude of growth factors that regulate physiological and pathological angiogenesis, vascular endothelial growth factor (VEGF) is believed to be the most important. VEGF is an endothelial cell-specific mitogen and an angiogenic inducer as well as a mediator of vascular permeability. VEGF is essential for developmental angiogenesis and is also required for female reproductive functions, endochondral bone formation, fracture and wound healing, neuroprotection after ischemia or spinal cord injuries. VEGF actions are mediated through binding to two receptor tyrosine kinases, VEGFR-1 and VEGFR-2. VEGF binds to its receptors via its receptor binding domain. There are many inter and intra subunit disulfide bridges in the VEGF receptor binding domain. In this study, the receptor binding domain of VEGF was overexpressed as inclusion bodies in *E. coli* and refolded by multi-step refolding procedure. Considering to the fact that VEGF homodimerization is essential for its receptor binding and biological activity, we followed dimerization of the protein in the refolding process. Based on reducing and non-reducing SDS-PAGE, the refolded protein was present primarily in the dimeric form with little amount of monomer. Circular dichroism and fluorescence spectroscopy studies confirmed the correct refolding of this domain. The angiogenic potency of this variant of VEGF was also investigated using human umbilical vein endothelial cells (HUVEC) proliferation assay. Interestingly, the receptor binding

Abstract No.202

Comparison of APX activity of Different Cultivars of the Maize in Cold Stress Condition

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One of the consequences of environmental stress on plant is an increase in the cellular concentration of reactive oxygen speaice, which are subsequently converted to hydrogen peroxide . ROS damage cell components such as DNA , protein and lipid ,... . plants have two type of antioxidative systems against ROS , nonenzymatic and enzymatic system.APX is an important part of the enzymatic antioxidative system that control the peroxides such as hydrogen peroxide concentration in cell , in reaction APX using ascorbate as a substrate , and catalys transfer of electrons from ascorbate to peroxide , producing dehydroascorbate and water as products. We analyzed the activity of APX in different cultivars of maize to cold stress. These cultivar includes chilling sensitive and chilling tolerance cultivars, APX activity determined with assay containing hydrogen peroxide and one of the reducing substrate , such as ascorbate . for ascorbate the activity was followed as the decreases in A290 due to the consumption of ascorbate in an assay containing 10μ hydrogen peroxide and 0/5μascorbate in buffer. Result indicated APX activity Increase later cold strees ,and APX activity were much higher in the chilling tolerance maize than chilling sensitive maize.

Keywords: Reactive Oxygen Speaice, APX, Dehydroascorbate, Ascorbate, Hydrogen Peroxide.