

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.

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**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 (R²_{train}= 0.99, RMSE = 0.138, Q²_{LOO}= 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