and growth capability were investigated by scanning electron microscopy (SEM(and finally fluorescence staining with DAPI (4', 6-diamidino-2-phenylindole) used for evaluation of mesenchymal cells adhesion and penetration into the scaffolds nanopores. These observations enabled us to conclude that the cell culture on appropriate scaffolds helps the MSC expansion growth and differentiation.

Keywords: Tissue Engineering, Cell Interaction, PLLA Scaffold, Cell Viability, Proliferation, Adhesion.

Abstract No.212

Study of some Chemical Compounds on Tyrosinase Inhibition and Their Potential Application in Melanoma

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Tyrosinase, an enzyme that catalyzes the rate limiting step in melanin biosynthesis and found abundantly in melanoma, considered as a molecular therapeutic target for development of novel prodrugs for selective treatment of melanoma. In addition, tyrosinase inhibitors are becoming important constituents of cosmetic products in relation to hyperpigmentation. The effects of some aromatic and fatty acids on activity of tyrosinase were assessed by kinetic studies. Caffeic, p-comaric acids used as substrates in the catecholase and cresolase reactions of mushroom tyrosinase. 2-amino benzoic acid, 4-amino benzoic acid, nicotinic acid, picolinic acid and oleic acid showed inhibitory activity on cresolase and catecholase reactions. The inhibition mode of nicotinic and picolinic acid were competitive in both activities of enzyme, and their inhibition constants (Ki) were determined as 1.21 and 1.97 mM for cresolase activity and 2.4 and 2.93 mM for catecholase activity, respectively. 2-aminobenzoic and 4-aminobenzoic acids showed non-competitive inhibition for the two activities with Ki of 5.15 and 3.8 μM for cresolase activity and of 4.72 and 20 μM for catecholase activity, respectively. Oleic acid showed mix manner of inhibition with Ki of 0.85 and 0.68 mM in cresolase and catecholase reactions, respectively. Although nicotinic, picolinic and oleic acids have significant cytotoxic effect against melanoma tumor cell line, such effect didn't obtained with caffeic, p-comaric, 2-amino benzoic and 4-amino benzoic acids.

Keywords: Tyrosinase, Melanoma, Kinetic, Cytotoxicity, Acids.

Abstract No.213

Effect of Inorganic Arsenic on the Expression Level of GST Metabolizing Enzymes

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Millions of people around the world drink water with elevated concentrations of arsenic. Epidemiological studies have showed that chronic exposure to arsenic is associated with several diseases including skin, lung and bladder cancers as well as vascular diseases and diabetes. While several studies showed that arsenic is a human carcinogen, the mechanism underlying of this toxicity remain largely unknown. One possible mechanism involves the induction of oxidative stress via the generation of reactive oxygen species (ROS). Glutathione and related enzymes are involved in cellular protection against ROS. Since Glutathione S-transferases (GSTs) involve in the metabolism of inorganic arsenic, the aim of the present study was to demonstrate the expression level of GSTM1 (a member of GST class mu), GSTT1 (a member of GSTclass theta) and GSTO2 (a member of GST class omega) genes in HeLa cell line in the response of sodium arsenite.. In order to determine whether the GSTM1, GSTT1 and GSTO2 mRNA are transcriptionally regulated by sodium arsenite, HeLa cells treated at the final concentration 2μM sodium arsenite for 24 h. The expression level of GSTM1, GSTT1 and GSTO2 was determined with the quantitative real time PCR. The expression of GSTs metabolizing enzymes in sodium arsenite treated cells was slightly decreased compared to untreated cells, but the alterations were not significant.

Keywords: GSTM1, GSTT1, GSTO2, Expression level, Sodium arsenite.

Abstract No.214

Hemoglobin Fructation in the Presence of Iron-chelating Drugs

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Proteinopathies or protein conformational diseases such as Alzheimer's, Parkinson's diseases and type II diabetes, are conditions that arise from the misfolding and aggregation of proteins in non-native conformations. Non-enzymatic mechanisms such as glycation or oxidation are a modifying factor that leads to proteinopathy, by affecting the structure and function of proteins which have essential role in diabetes. Identification of anti-glycation compounds is attracting considerable interest.In this study, deferiprone, deferasirox and desferal, three iron chelators used in the treatment of β-thalassemic patients, were chosen to explore their effects on the fructation of hemoglobin. Our results indicated that deferasirox cannot prevent AGE and carbonyl formation but it reduces the functional changes of hemoglobin, heme losses and helix depletion due to fructation. Deferiprone and desferal, on the other hand, prevent AGE formation and inhibit changes in the structure and function of hemoglobin during the fructation process.

Keywords: Glycation, Hemoglobin, Iron chelators, Proteinopathies.

Abstract No.215

Nanoflowers of Cobalt: Synthesis, Characterization and Application for the Electrocatalytic Oxidation and Determination of Sulfite and Nitrite

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Cobalt hexacyanoferrate (CoHCF) nanostructure was synthesized by anodic oxidation of metallic cobalt nanoflowers in a solution of K3Fe(CN)6. The synthesized CoHCF sample was then employed to prepare a modified carbon paste electrode. The modified electrode was characterized electrochemically in a phosphate buffer solution at physiological pH. Two redox transitions were appeared in the voltammograms which were related to the redox processes of CoII/CoIII and FeII/FeIII in the solid state of CoHCF. The modified electrode was successfully applied to the electrooxidation of nitrite and sulfite and these substrates were oxidized electrocatalytically on the modified electrode surface via the active FeIII species. The catalytic rate constants, the electron transfer coefficients and diffusion coefficients involved in the electrocatalytic oxidation of the compounds were reported. The modified electrode was applied to the amperometric determination of nitrite and sulfite.

Keywords: Cobalt hexacyanoferrate, Cobalt nanoflowers, Electrocatalysis, Modified electrode, Nanoflowers, Nitrite, Sulfite.

Abstract No.216

Measuring the Activity of Cytomegalovirus Promoter Using an in Vivo

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Transgenic technologies are dependent upon genetic tools among which sufficiently strong promoters for the construction of expression genes are very important. Reporter genes are essential for the quantitative analysis of gene elements that potentially regulate gene expression. Several kinds of reporter genes have been developed and luciferase reporter gene is the most favored for functional analysis of promoters and enhancers, due to rapid, sensitive and reproducible assay system.In this study we investigated the activity rate of cytomegalovirus promoter of mammalian viruse in model plant cell suspension of Nicotiana tabacum via firefly luciferase. The sequence of firefly luciferase (codon optimized luciferase gene LUC+) from pgl3 control vector was introduced in to plox vector via appropriate primers and two restriction enzymes (BamHI and XhoI). The luciferase gene was cloned in Plox vector so cytomegalovirus promoter used to drive the expression of firefly luciferase in suspension cells of Nicotiana tabacum. The plox vector which contains luciferase reporter was transformed to cells. Measurement of luciferase activity was done in intact cells. Our result show that the cytomegalovirus promoter can be