

help to rational design of novel PI3Ks inhibitors with preferred activities.

Keywords: 4D-QSAR, CoMFA, CDOCKER, Molecular Dynamic Simulation, Phosphoinositide-3-Kinase (PI3K) Inhibitors.

Abstract No.284

Hydrophilicity of Ionic Liquids Plays Important Role on Choline Oxidase Electron Transferring

*Hedayatollah Ghourchian**, *Parvaneh Rahimi*

Laboratory of Microanalysis, Institute of Biochemistry and Biophysics,
University of Tehran, Tehran, IR
(E-mail: hadi@ibb.ut.ac.ir)

Room-temperature ionic liquids (RTILs) and their related nano-composites attracted considerable attention because of their desirable properties and potential applications in biomolecular immobilization, biocatalysis, electrochemical biosensors and bioreactors. In the present report, six different nano-composites containing the same amine functionalized multi-walled carbon nanotubes (NH₂-MWCNTs) but different room temperature ionic liquids (RTILs) were prepared. Then, the efficiency of these nano-composites as supporting materials for studying the electrochemistry and electrocatalysis of choline oxidase (ChOx) as a model enzyme were compared. The corresponding cyclic voltammetric and amperometric data showed that the electrocatalytic activity and the electroanalytical performance of immobilized ChOx depend on the degree of hydrophilicity of RTILs used in the applied nano-composite. The higher stability (180 days), more enzyme loading (6.56 M cm⁻²), lower detection limit (3.85 μM) and wider linear range (0.005-0.8 mM) were obtained for the most hydrophilic RTIL (1-allyl-3-methylimidazolium bromide).

Keywords: Nanocomposite, Choline Oxidase, Electron Transfer, Functionalized Carbon Nanotubes, Ionic-Liquid, Choline.

Abstract No.285

Chemical Modification of Antibody Using Gold Nanoparticles Bearing Luminol

Soheila Sabouri¹, *Hedayatollah Ghourchian*²*

1. Institute of Biochemistry and Biophysics, University of Tehran, IR

2. Laboratory of Microanalysis, Institute of Biophysics and Biochemistry, University of Tehran, IR
(E-mail: hadi@ibb.ut.ac.ir)

Gold nanoparticles (GNPs) are very attractive labels due to their special physical and chemical properties such as ease of synthesis, simplicity of conjugation and excellent biocompatibility. Because of these advantages they can be used as the carrier for a large number of markers and bio-catalysts. In the present work, at first luminol was attached to GNPs then the modified GNPs were chemically bound to antibody as a secondary antibody (Ab2-GNPs). The characteristics of chemically modified antibody were investigated by three methods including: UV-Vis spectroscopy, chemiluminescence emission and ELISA (Enzyme linked immuno-sorbance assay). The native antibody showed a UV-Vis absorbance at 521 nm wavelength. But after chemical modification it has a broad peak along with 10 nm red shift compared to GNP. In second method, Ab2-GNPs were added to Ab1-Ag (primary antibody (Ab1) bonded to antigen (Ag)), after washing, chemiluminescence emission was recorded in 425 nm. High chemiluminescence emission shows antibody preserves its function in conjugation with GNP-Luminol. Preservation of antibody function has been proved by ELISA method too. This bio-composite proposed for diagnostic and medical usage, due to its praiseworthy detection limit of antigen in this immuno-sensors (14 pg/ml).

Keywords: Gold Nanoparticles, Chemiluminescence, Immuno Sensor, Antibody Function, Antigen Detection.

Abstract No.286

Fine Structural Analysis of Human Serum Albumin

*Mostafa Rezaei-Tavirani*¹*, *Roya Tadayon*, *Minoo Shahani²*

1. Shahid Beheshti University of Medical Sciences, Tehran, IR
2. Department of Base Science, Science and Research Branch, Islamic Azad University, Tehran, IR
(E-mail: tavirany@yahoo.com)

Human serum albumin is the most abounding protein in human blood plasma. It plays essential roles such as maintaining pH level and osmotic pressure in blood. This protein possesses a particular adequacy to bind to a great number of various endogenous and exogenous compounds. This article outlines different features of HAS and its multifunction eligibility. These studies can be obtained by pH metery, ligand binding, UV spectroscopy, fluorescence spectroscopy and CD techniques. The results compared and discussed based on data