Abstract No.49

Effects of magnetic field on the interaction between Amlodipine and hemoglobin

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Hemoglobin is the major protein component of red blood cell and as an allosteric tetrameric protein; it has an important role in carrying oxygen from lungs to different tissues, and it reacts with other gasses and also with several organic molecules. Amlodipine, which is calcium channel blocker, used for the treatment of hypertension, angina pectoris and cerebrovascular disease. In recent times, many studies concerning magnetic fields effects on biological objects were carried out, because in modern society, due to its impossibility of avoiding exposure to magnetic field produced by transmission and distribution of electric power and devices used inside houses and work places.

In this work, we investigated the interaction between amlodipine and hemoglobin in the absence and presence of magnetic field (52 mT) using UV and fluorescence absorption spectroscopy. To analyze the UV data, obtaining the binding capacity, g, binding constant, K, and Hill constant, n_H, Scatchard and Hill equations were employed. The results revealed that the value of g was the same in both case, in the presence and absence of magnetic field, but n_H and K decreased slightly in the presence of magnetic field. In the case of fluorescence spectroscopy, the fluorescence intensity was found to be decreased in the presence of magnetic field.

Key words: magnetic field, Amlodipine, hemoglobin.

Abstract No.50

Kinetic studies of lactoperoxidase interaction lead ion

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Lactoperoxidase (LPO) which is an enzyme of the mammalian peroxidase family is known as an antibacterial enzyme, and it can be used as a biopreservative agent in food, feed specialties, cosmetics and related products. Lead (Pb), a heavy metal with no known physiological function in human body, is considered as one of the most hazards that affect all biological systems through exposure from air, water, and food source. The aim of this investigation was to study the effect of Pb on the LPO activity isolated from bovine milk in vitro. LPO purified using bath wise chromatography on phosphor cellulose with specific activity of 1.1 U/mg protein. LPO activity was determined in the absence and presence of different concentrations of Lead acetate, and Lineweaver-Burk double reciprocal plot was drawn according to the data obtained.

Pb^{2+} inhibited LPO activity progressively up to 0.8 mM concentrations where about 85% of the enzyme activity was lost. The inhibition was found to be non-competitive with respect to 2, 2´-azion- bis (3-ethylbenez- thiazoline-6- sulfonic acid (ABTS). Above data suggest a conformational change in the enzyme due to Pb^{2+} binding caused enzyme inactivation and sulfhydryl groups on the enzyme molecule probably are involved in the inhibition of the enzyme by Pb^{2+}.

Key words: Lactoperoxidase, Lead, inhibition, non- competitive.

Abstract No.51

Using utrophin (dystrophin homologue) immunohistochemistry in diagnostic field

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Genetic defaults on Xp21 which result to absence of dystrophin leads to Duchenne Muscular Dystrophy (DMD).these defects may result to decrease in dystreophin product or structural defects in it and there for a mild form, becker muscular dystrophy (BMD) occurs. Many years ago Utrophin in muscle tissue identified.this protein is homologue to dystrophin and named dystrophin related protein(DRP).utrophin expression is limited to neuromuscular junction and myotendinus in normal muscle tissue but it up regulates and labeled adjacent to the majority of muscle fibers in absence or decreased amount of dystrophin. Because of the high degree of sequence similarity between these homologues utrophin could compensate for the lack of