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Phenolic phytochemical compounds are reactive toward free radicals such as reactive oxygen species (ROS). Free radicals and ROS are implicated in protein/DNA damage, cancer and especially accelerated cell aging. Herein, the structural and electronic properties of the four phenolic phytochemical compounds including caffeic acid, ferulic acid, p-coumaric acid and sinapinic acid have been theoretically investigated by performing semi-empirical molecular orbital theory at the level of AM1 quantum chemical method. Structure of the caffeic acid showing features important in defining the classical antioxidant potential of phenolic acids. The results indicated that caffeic acid is more reactive toward free radicals. This is mainly because of the catechol or dihydroxylated ring that having hydroxyl substitutions, enable the compound to scavenge free radicals.

Keywords: Semi-empirical, AM1, Antioxidant, Phenolic Acids, Caffeic Acid.

Abstract No.180

Golden Hamster Monoclonal Antibodies in the Treatment of Metastatic Rectal Cancer in Veterinary Kazeroon, Iran

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Monoclonal antibodies(MAB)have found increasing use experimental therapies.great limitation of their use is that they are recognized by the patient as being of foreign origin and an antiglobulin response is provoked.recombinant DNA technology offers the ability to convert these rodent antibodies into a more human form.there are currently several different strategies which can be adopted to generate humanized antibodies resulting in different degrees of humanization can be achieved ranging from chimeric antibodies with a combination of human constant regions with rodent variable regions to fully reshaped antibodies where the variable regions are also humanized.

At present the available data on clinical use of chimeric and reshaped antibodies is very limited. The rat IgG2b antibody CAMPATH-1G has been shown to be both useful as an immunosuppressive antibody as well as in the treatment of lymphoid malignancies. The reshaped version, CAMPATH-1H, was successfully used to clear detectable malignant cells from the blood and bone marrow in two patients with B-cell lymphoma . A more sustained course of the human antibody (126 mg over 30 days and 86 mg over 43 days) was tolerated than had previously been used for the rat antibody.

In the future in veterinary clinic of Sina gilan, it is clear that a majority of monoclonal antibodies produced for therapy will be humanised for the reasons discussed above. As far as improvements in the abilities of these antibodies to interact with human effector mechanisms goes it seems that there is unlikely to be any major differences between chimeric and fully reshaped antibodies.

important about humanised antibodies is whether there are any sequences contained within the variable region frameworks, complimentary determining regions or constant region allotypes which can be processed and presented as T-cell epitopes.

Keywords: Monoclonal Antibodies, Chimeric Antibody, Recombinant DNA Technology, Humanized Antibody, Antiglobulin.

Abstract No.181

Differential Scanning Calorimetry Study of Camel Serum Albumin in Presence and Absence of Fatty Acids

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This study aims to determine the thermal stability of camel albumin and compare it with human and bovine sources. Camel albumin was purified from serum via combination of Cohn method and anion-exchange chromatography. Physiologically albumin binds 0.1-2 fatty acid per mol so activated charcoal treatment was taken to remove them. The thermal denaturation process of camel albumin containing fatty acid (CAF) and free fatty acid camel albumins (CA) in aqueous solution was studied by use of differential scanning calorimetry. The melting temperature of CAF was similar to human serum albumin (80°C) and markedly higher than bovine source (69°C). Removing fatty acids decreased melting temperature of camel albumin, which shows the stabilizing effect of fatty acid. Here fatty acid may be

defined as glue which binds to different subunits in 3-D structure and holds them against each other.

Keywords: Camel Albumin, Thermal Denaturation, Thermal Stability, Differential Scanning Calorimetry.

Abstract No.182

The Comparative Study of the Antioxidant Influence and α-Glucosidase Inhibitory Effect of Aloin

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Oxidative stress happens during normal metabolic process in the body and it is induced by a variety of environmental factors and chemicals. It has been investigated that oxidative stress plays significant role in the etiology of diabetes in humans as well as in diabetes related complications. Diabetes mellitus is responsible for about 5% of global deaths. The α-glucosidase has been recognized as a therapeutic target for the modulation of postprandial hyperglycemia. Therefore the inhibition of α-glucosidase activity has a positive effect on prevention of hyperglycemia. Nutrition is the gold key to good health. Studies have shown that regular consumption of natural antioxidants that show α-glucosidase inhibitory that reduces the risk of hyperglycemia. Aloe vera is a commercial and medicinal important plant. Many active components have been isolated from aloe vera and studied for their biological activities. In this report the antioxidant influence and α-glucosidase inhibitory effect of active aloe vera component "aloin" was investigated. The total antioxidant capacity of aloin was investigated using spectrophotometry ABTS-based method (reduction of the cation radical of 2,20-azinobis(3-ethylenebenzothiazoline-6-sulfonic acid(ABTS)). The mode of inhibition of α-glucosidase by aloin was determined using Lineweaver–Burk equation. The result of this study indicated that aloin has a good antioxidant and α-glucosidase inhibitor. The mechanism of α-glucosidase inhibition by aloin is a mix inhibition with α value of 3.6 (α > 1, showing anti-cooperativity between substrate and inhibitor binding sites) and a KI value of 1.36 mM (better inhibitor relative to reference drug, acarbose (KI =9.11±0.25 mM)). From the result of this study it can be concluded that aloin can be considered as a natural medication for the diabetes patient.

Keywords: α-Glucosidase, Aloin, Inhibition, Enzyme Kinetics, Diabetes, Nutrition.

Abstract No.183

The Effect of Intramolecular and Intermolecular Disulfide Bonds on Tau Protein Aggregation

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Tau protein is a microtubule-assosiated protein (MAPs) that is mainly present in neurons and is involved in neurite extension and maintenence. There are two known isoforms for tau protein: 3R and 4R. As tau aggregation likely plays role in a number of neurodegenrative diseases (taupathy), understanding tau aggregation process is of considerable importance. One of the hallmarks of the Alzheimer's disease is the pathological aggregation of tau protein into paired helical filaments (PHFs) and neurofibrilary tangles.Several studies suggest that interdisulfide bonds can promote tau aggregation in vitro. By contrast, some believe that intramolecualr disulfide bond formation retards tau aggregation in vitro. But the precise mechanism still remains unclear. We suggest that tau aggregation depends on disulfide bridges formed by the Cys291 and Cys322. . In our work, the assembly of PHFs from 4R tau protein was tested in the presence of heparin and aggregation of oxidized tau was analyzed. . Our initial results argue that the main effect of intramolecular disulfide bond formation accelerates tau aggregation. However definite result needs further work and studies.

Keywords: Tau, Agggregation, Oxidation, Disulfide Bond.

Abstract No.184

Production and Characterization of a Thermostable Polymethyl Galacturonase From Bacillus Licheniformis BR1

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Pectinases are biotechnologically important enzymes that involved in depolymerisation of the heterogeneous polysaccharide, pectin. A