บทความที่น่าสนใจประจำเดือน กุมภาพันธ์ 2556

Title :	The Relationship Between Nutritional Status and the Glasgow Prognostic Score in Patients with Cancer of the Esophagus and Stomach
Author :	Jacqueline Braga da Silva, et al.
Journal :	Nutrition and Cancer, January 2013, Volume 65, Issue 1, pages 25-33
Abstract :	A relationship between weight loss and inflammation has been described in patients with cancer. In the present study, the relationship between subjective global assessment (SGA) and the severity of inflammation, as defined by Glasgow prognostic score (GPS), as well as the relationship of both of these measures with the presence of complications and survival time, was assessed. In addition, we compared the diagnosis given by SGA with parameters of nutritional assessment, such as body mass index, triceps skinfold, midarm circumference (MAC), midarm muscle circumference (MAMC), phase angle (PA), adductor pollicis muscle thickness (APMT), and handgrip strength (HGS). According to the SGA, the nutritional status was associated with the GPS ($P < 0.05$), and both the SGA and GPS were associated with the presence of complications. However, the GPS [area under the curve (AUC): 0.77, $P < 0.05$, confidence interval (CI) = 0.580, 0.956] seems to be more accurate in identifying complications than the SGA (AUC: 0.679, $P < 0.05$, CI = 0.426, 0.931). Only GPS was associated with survival time. Comparing the different nutritional assessment methods with the SGA suggested that the MAC, MAMC, APMT, PA, and HGS parameters may be helpful in differentiating between nourished and malnourished patients, if new cutoffs are adopted.
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Title :	Intakes of Fruits, Vegetables, and Related Vitamins and Lung Cancer Risk: Results from the Shanghai Men's Health Study (2002–2009)
Author :	Yumie Takata, et al.
Journal :	Nutrition and Cancer, January 2013, Volume 65, Issue 1, pages 51-61
Abstract :	Most epidemiological studies evaluating the association of fruit and vegetable intakes on lung cancer risk were conducted in North American and European countries. We investigated the association of intakes of fruits, vegetables, dietary vitamins A and C, and folate with lung cancer risk among 61,491 adult Chinese men who were recruited into the Shanghai Men's Health Study, a population-based, prospective cohort study. Baseline dietary intake was assessed through a validated food frequency questionnaire during in-home visits. Multivariate Cox regression was used to estimate hazard ratios (HR) and 95% confidence intervals (CI) of lung cancer risk associated with dietary intakes. During a median follow-up of 5.5 yr, 359 incident lung cancer cases accrued after the first year of follow-up and 68.8% of them were current smokers. Intakes of green leafy vegetables, β-carotene-rich vegetables, watermelon, vitamin A, and carotenoids were inversely associated with lung cancer risk; the corresponding HR (95% CI) comparing the highest with the lowest quartiles were 0.72 (0.53–0.98), 0.69 (0.51–0.94), 0.65 (0.47–0.90), 0.63 (0.44–0.88), and 0.64 (0.46–0.88). Intake of all fruits and vegetables combined was marginally associated with lower risk. Our study suggests that the consumption of carotenoid-rich vegetables is inversely associated with lung cancer risk.
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Title :	Structural basis of metal hypersensitivity
Author :	Yang Wang and Shaodong Dai
Journal :	Immunologic Research, March 2013, Volume 55, Issue 1-3, pp 83-90
Abstract :	Metal hypersensitivity is a common immune disorder. Human immune systems mount the allergic attacks on metal ions through skin contacts, lung inhalation and metal-containing artificial body implants. The consequences can be simple annoyances to life-threatening systemic illness. Allergic hyper-reactivities to nickel (Ni) and beryllium (Be) are the best-studied human metal hypersensitivities. Ni-contact dermatitis affects 10 % of the human population, whereas Be compounds are the culprits of chronic Be disease (CBD). αβ T cells (T cells) play a crucial role in these hypersensitivity reactions. Metal ions work as haptens and bind to the surface of major histocompatibility complex (MHC) and peptide complex. This modifies the binding surface of MHC and triggers the immune response of T cells. Metal-specific αβ T cell receptors (TCRs) are usually MHC restricted, especially MHC class II (MHCII) restricted. Numerous models have been proposed, yet the mechanisms and molecular basis of metal hypersensitivity remain elusive. Recently, we determined the crystal structures of the Ni and Be presenting human MHCII molecules, HLA-DR52c (DRA*0101, DRB3*0301) and HLA-DP2 (DPA1*0103, DPB1*0201). These structures revealed unusual features of MHCII molecules and shed light on how metal ions are recognized by T cells.
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Title :	Real-time size discrimination and elemental analysis of gold nanoparticles using ES-DMA coupled to ICP-MS
Author :	Sherrie Elzey, et al.
Journal :	Analytical and Bioanalytical Chemistry, March 2013, Volume 405, Issue 7, pp 2279-2288
Abstract :	We report the development of a hyphenated instrument with the capacity to quantitatively characterize aqueous suspended gold nanoparticles (AuNPs) based on a combination of gas-phase size separation, particle counting, and elemental analysis. A customized electrospray-differential mobility analyzer (ES-DMA) was used to achieve real-time upstream size discrimination. A condensation particle counter and inductively coupled plasma mass spectrometer (ICP-MS) were employed as downstream detectors, providing information on number density and elemental composition, respectively, of aerosolized AuNPs versus the upstream size selected by ES-DMA. A gas-exchange device was designed and optimized to improve the conversion of air flow (from the electrospray) to argon flow required to sustain the ICP-MS plasma, the key compatibility issue for instrumental hyphenation. Our work provides the proof of concept and a working prototype for utilizing this construct to successfully measure (1) number- and mass-based distributions; (2) elemental compositions of nanoparticles classified by size, where the size classification and elemental analysis are performed within a single experiment; (3) particle concentrations in both solution (before size discrimination) and aerosol (after size discrimination) phases; and (4) the number of atoms per nanoparticle or the nanoparticle density.
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Title :	Effect of different types of plastic packaging films on the moisture and aflatoxin contents of pistachio nuts during storage
Author :	Ahmad Shakerardekani and Roselina Karim
Journal :	Journal of Food Science and Technology, April 2013, Volume 50, Issue 2, pp 409-411
Abstract :	Pistachio nut (Pistacia vera L.) is one of the popular tree nuts in the world. Proper selection of packaging materials is necessary to prevent absorption of moisture and aflatoxin formation which will influence the overall product quality and safety. This research is undertaken to study the effect of different type of flexible packaging films on the moisture and aflatoxin contents of whole pistachio nuts during storage at ambient temperature (22–28 °C) and relative humidity of 85–100%. Five types of plastic films tested were low density polyethylene (LDPE) which serves as the control, food-grade polyvinyl chloride (PVC), nylon (LDPE/PA), polyamide/polypropylene (PA/PP) and polyethylene terephthalate (PET). The moisture content and aflatoxin content of pistachio nuts were measured using oven drying method and HPLC, respectively. Sample were analysed at 0, 2, 4, 6, 8 and 10 months during the storage period. Results showed that there was an increase in moisture content with the increase in storage time of pistachio nuts. The increase in moisture content was associated with the aflatoxin level of pistachio nuts during storage time. All the packaging materials except LDPE delayed the moisture absorption and aflatoxin formation of the product. The most suitable packaging materials for maintaining the quality and safety of pistachio nuts is PET films followed by nylon, PA/PP and PVC. The shelf-life of pistachio can be extended from 2 months (Control) to 5 months when PET is used as the packaging material.
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Title :	Resveratrol ameliorates high-glucose-induced hyperpermeability mediated by caveolae via VEGF/KDR pathway
Author :	Chong Tian, et al.
Journal :	Genes & Nutrition, March 2013, Volume 8, Issue 2, pp 231-239
Abstract :	Endothelial hyperpermeability induced by hyperglycemia is the initial step in the development of atherosclerosis, one of the most serious cardiovascular complications in diabetes. In the present study, we investigated the effects of resveratrol (RSV), a bioactive ingredient extracted from Chinese herb rhizoma polygonum cuspidatum, on permeability in vitro and the molecular mechanisms involved. Permeability was assessed by the efflux of fluorescein isothiocyanate (FITC)-dextran permeated through the monolayer endothelial cells (ECs). The mRNA levels, protein expressions, and secretions were measured by quantitative real-time PCR, western blot, and ELISA, respectively. Increased permeability and caveolin-1 (cav-1) expression were observed in monolayer ECs exposed to high glucose. Resveratrol treatment alleviated the hyperpermeability and the overexpression of cav-1 induced by high glucose in a dose-dependent manner. β-Cyclodextrin, a structural inhibitor of caveolae, reduced the hyperpermeability caused by high glucose. Resveratrol also down-regulated the increased expressions of vascular endothelial growth factor (VEGF) and kinase insert domain receptor (KDR, or VEGF receptor-2) induced by high glucose. Inhibition of VEGF/KDR pathway by using SU5416, a selective inhibitor of KDR, alleviated the hyperpermeability and the cav-1 overexpression induced by high glucose. The above results demonstrate that RSV ameliorates caveolae-mediated

	hyperpermeability induced by high glucose via VEGF/KDR pathway.
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Title :	An unusual cause of gastric extraluminal compression: fibrolamellar hepatocellular carcinoma
Author :	Salvatore Dilettoso, et al.
Journal :	Central European Journal of Medicine, April 2013, Volume 8, Issue 2, pp 182-184
Abstract :	Fibrolamellar hepatocellular carcinoma (FLH) is a rare variant of hepatocellular carcinoma that typically occurs in adolescents or young subjects in an otherwise normal liver. Correct recognition of FLH is extremely important, because a complete resection of the tumor can confer an excellent prognosis. FLHs can become large, exerting mass effects on adjacent organs before diagnosis. Unfortunately, there are very few imaging reports describing external compression of the stomach caused by a FLH. We report the case of a young female suffering from dyspepsia and abdominal pain caused by stomach compression resulting from a large FLH.
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Title :	Subcutaneous adipose tissue measurements and better metabolic prediction
Author :	Petar Ristic, et al.
Journal :	Central European Journal of Medicine April 2013, Volume 8, Issue 2, pp 237-243
Abstract :	The aim of the study was to establish the importance of an additional measurement of subcutaneous adipose tissue thickness (SAT) on a predetermined position on the waistline, and its relation to waist measurements as an improvement of metabolic prediction in equally obese subjects. One hundred and forty two consecutive patients were enrolled in the study: stratified by weight as normal (body mass index — BMI 20–25 kg/m2), overweight (BMI 25–30 kg/m2) and obese (BMI >30 kg/m2); and by fasting glucose level as normoglycemic, impaired fasting glucose (IFG), or with type 2 diabetes mellitus (T2DM). SAT was measured in relaxed expiration, 3 cm left of the umbilicus, with ultrasound. Fasting blood samples for glucose, insulin and HbAlc were taken. Waist circumference was slightly higher in the IFG (112.8 cm) and normoglycemic groups (115.62 cm), compared to T2DM (108.15 cm). The T2DM group had a lower average SAT (2.7 cm) than both the IFG group (3.4 cm, $p<0.01$) and the normoglycemic group (4.2cm, $p=0.001$). The homeostatic model of assessment for insulin resistance (HOMA IR) was the lowest in normoglycemic and the highest in IFG group. Waistline radius to SAT ratio provides better insight into the deterioration of glucose metabolism than standard anthropometric markers of abdominal obesity in equally obese patients.
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Title :	Effect of carbon and nitrogen sources on simultaneous production of α-amylase and green food packaging polymer by Bacillus sp. CFR 67
Author :	M. S. Sreekanth, et al.
Journal :	Journal of Food Science and Technology, April 2013, Volume 50, Issue 2, pp 404-

	408
Abstract :	In this paper, effect of different carbon and nitrogen sources, including hydrolysates of rice bran and wheat bran, on simultaneous production of α-amylase (for hydrolysis of starch in food systems) and polyhydroxyalkanoates (PHA, a green biopolymer, which can be used as a packing material for foods) by Bacillus sp. CFR 67 was studied by submerged fermentation. Amongst various carbon sources tested, glucose and sucrose supported production of significantly ($P < 0.05$) higher amount of α-amylase (66 U/ml) and PHA (444 mg/l), respectively. Of the nitrogen sources tested, ammonium acetate and beef extract led to the production of maximum amount of amylase (36 U/ml) and PHA (592 mg/l), respectively. Supplementation of the production medium with wheat bran hydrolysate (50 ml/l) produced significantly higher amounts of amylase (73 U/ml) and PHA (524 mg/l). Thus this study indicated the potential of agro-residues for the production of value added biomolecules, which can reduce the cost of production of these molecules and enables to reduce the pollution mainly caused by the use of non biodegradable plastics.
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Title :	Current challenges in contraception in adolescents and young women.
Author :	Cornet, Ariana
Journal :	Current Opinion in Obstetrics & Gynecology, March 2013, 25 (Supplement 1) page S1-S10
Abstract :	Purpose of review: Although developing countries have made much progress in expanding the availability and use of family planning services, the need for effective contraception is large, and growing because the largest cohorts in human history are entering their reproductive years. Not only regarding developing countries but also in developed countries, where the usual contraceptive methods, such as the oral contraceptives, intrauterine devices (IUDs) and condoms, have been available for decades, there have been many new advances in contraceptive technology in the last several years. New formulations of oral contraceptives, extended and continuous use of oral contraceptives and long-acting reversible contraceptives (LARC) may have a wider role in contraception and their increased implementation could help to reduce unintended pregnancy.
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