

Documents

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A comparative study of the effects of low-dose topiramate versus sodium valproate in migraine prophylaxis

(2012) *International Journal of Neuroscience*, 122 (2), pp. 60-68.

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Abstract

The present study was performed to evaluate the efficacy of low-dose topiramate and compare it with sodium valproate that is prevalently prescribed as a migraine prophylaxis. This was a randomized, double-blind, parallel-group clinical trial on 56 patients who completed the course of study. Topiramate and valproate were administered at 50 mg/day and 400 mg/day, respectively, during the follow-up period. Frequency, intensity, duration, associated symptoms with headaches, analgesics use, as well as drugs' side effects were studied. Participants completed MIDAS and HIT-6 questionnaires before and after treatment. Frequency, intensity, and duration of migraine headaches as well as MIDAS score and symptomatic medications decreased significantly between repeated follow-up visits in both groups. Responder rate for patients treated with topiramate and valproate were 71.6% and 64.3%, respectively, and the difference between the two groups was not statistically significant. The reduction of headache severity in the topiramate group was significantly more than that in the valproate group ($p = .027$). During the study, no statistically significant reduction in associated symptoms with migraine were observed in both the groups. Topiramate dose of 50 mg/day with fewer side effects in comparison with its higher doses may be an appropriate substitution for first-line migraine prophylaxis such as valproate. © 2012 Informa Healthcare USA, Inc.

Author Keywords

low dose; migraine; prophylaxis; sodium valproate; topiramate

Document Type: Article

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Ahmadi, F.^a, Alizadeh, A.A.^a, Shahabadi, N.^b, Rahimi-Nasrabadi, M.^c

Erratum: Study bonding of Al-Curcumin complex to ds-DNA, monitoring by multispectroscopic and voltammetric techniques (*Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy* (2011) 79: 5 (1466-1474))

(2012) *Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy*, 90, p. 230.

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Document Type: Erratum

Source: Scopus

Ahmadi, F.^a, Jamali, N.^a, Moradian, R.^{b c}, Astinchap, B.^{b c}

Binding studies of pyriproxyfen to DNA by multispectroscopic atomic force microscopy and molecular modeling methods

(2012) *DNA and Cell Biology*, 31 (2), pp. 259-268.

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Abstract

In this work, multispectroscopic atomic force microscopy and molecular modeling [ONIOM 2(B3LYP/6-31++G(d,p): Universal Force Field (UFF)) level] techniques were used to study the interaction between Calf-Thymus-DNA (CT-DNA) and pyriproxyfen (PYR) insecticide. The binding constant of PYR with double-strand deoxyribonucleic acid (ds-DNA) was obtained by ultraviolet-visible absorbance spectroscopy as 2.8×10^4 at 20°C. Thermodynamic parameters, that is, ΔH , ΔS° , and ΔG , were $-53.82 \text{ kJ mol}^{-1}$, 96.11 J mol^{-1} , and $-82.46 \text{ kJ mol}^{-1}$, respectively. Thermal denaturation study of DNA with PYR revealed the ΔT_m of 3.0 and 6.0°C at $r_i=0.5$ and 1.0, respectively. The Fourier transform infrared study showed a major interaction of PYR with G-C and A-T base pairs and a minor perturbation of the backbone PO 2 group. Further, PYR induces detectable changes in the circular dichroism spectrum of CT-DNA. In fluorimetric studies, the dynamic enhancement constants (k_D) and bimolecular enhancement constant (k_B) were calculated, which showed that the fluorescence enhancement was initiated by a static process in the ground state. The hybrid of quantum mechanical/molecular mechanics theoretical calculations revealed that the interaction is base sequence dependent, and PYR interacts more with DNA via the AT base sequence. From the data we concluded that PYR may interact with ds-DNA via two modes: intercalating and outside groove binding. © Copyright 2012, Mary Ann Liebert, Inc. 2012.

Document Type: Article

Source: Scopus

Amiri, M.^{a b c}, Bahrami, F.^d, Janahmadi, M.^e

Modified thalamocortical model: A step towards more understanding of the functional contribution of astrocytes to epilepsy

(2012) *Journal of Computational Neuroscience*, pp. 1-15. Article in Press.

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Abstract

It is evident that the cortex plays a primary role in seizure generation. At the same time, various experimental results clearly confirm that thalamic neurons are also actively involved in seizure generation and spreading. On the other hand, recent neurophysiologic findings suggest that astrocytes regulate dynamically the synaptic activity in neuronal networks. Therefore, in the present study, the thalamocortical neural population model (TCPM) is modified by embedding into the model the functional role of astrocytes in the regulation of synaptic transmission. Using the modified TCPM (MTCPM) we examined the hypothesis that one of the possible causes of neural hypersynchronization is the dysfunction of astrocytes in the regulatory feedback loop. Then, two MTCPMs are coupled via excitatory synapses and the astrocytes are also coupled together through gap junctions. Utilizing the MTCPM and CMTCPM, the transition from normal to malfunctioned states is analyzed using a dynamical system approach. In this way, the hypothesis is investigated and it is demonstrated that the healthy astrocytes provide feedback control to regulate neural activity. That is, the astrocytes compensate to a large extent variations in the coupling between neural populations and maintain the balance between the excitation and inhibition levels. However, the malfunctioned astrocytes are no longer able to regulate and/or compensate the excessive increase of the inter-population coupling strength. As a consequence, disruption of the signaling function of astrocytes could contribute to the neuronal hyperexcitability and generating epileptiform activity. These results suggest that astrocytes might be one of the potential targets for the treatment of epilepsy. © 2012 Springer Science+Business Media, LLC.

Author Keywords

Astrocytes; Epilepsy; Functional modeling; Thalamocortical model

Document Type: Article in Press

Source: Scopus

Amiri, M.^{a b d}, Bahrami, F.^e, Janahmadi, M.^c

On the role of astrocytes in epilepsy: A functional modeling approach
(2012) *Neuroscience Research*, 72 (2), pp. 172-180.

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Abstract

In the present research, we extend a biologically plausible cortical neural population model (CPM), which was developed previously in the literature, by integrating the functional role of astrocytes in the synaptic transmission in the model. In other words, the original CPM is modified to consider neuron-astrocyte interaction. Then, two modified CPMs (MCPMs) are coupled via excitatory synapses; the astrocytes are also coupled through gap junctions. Using the coupled MCPMs (CMCPMs), it is demonstrated that the healthy astrocytes provide appropriate feedback control in regulating neural activity. As a result, the astrocytes compensate the coupling variations between CPMs in order to maintain the normal level of synchronized behavior. Next, malfunction of astrocytes in the regulatory feedback loop as one of the plausible causes of seizures is investigated. In this way, dysfunctional astrocytes are not any more able to regulate the excessive increase of the inter-population coupling strength. Consequently, disruption of the homeostatic function of astrocytes may initiate the hypersynchronous firing of neurons. This suggests that the neuron-astrocyte interaction may represent a novel target to develop effective therapeutic strategies for epilepsy. © 2011 Elsevier Ireland Ltd and the Japan Neuroscience Society.

Author Keywords

Astrocytes; Epilepsy; Functional modeling; Synchronization

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Amiri, M.^{a b}, Bahrami, F.^c, Janahmadi, M.^d

Functional contributions of astrocytes in synchronization of a neuronal network model (2012) *Journal of Theoretical Biology*, 292, pp. 60-70.

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Abstract

In the present study, a biologically plausible neuronal population model is developed, which considers functional outcome of neuron-astrocyte interactions. Based on established neurophysiologic findings, astrocytes dynamically regulate the synaptic transmission of neuronal networks. The employed structure is based on the main physiological and anatomical features of the CA1 subfield of the hippocampus. Utilizing our model, we demonstrate that healthy astrocytes provide appropriate feedback control in regulating neural activity. In this way, the astrocytes compensate the increase of excitation coupling strength among neurons and stabilize the normal level of synchronized behavior. Next, malfunction of

astrocytes in the regulatory feedback loop is investigated. In this way, pathologic astrocytes are no longer able to regulate and/or compensate the excessive increase of the excitation level. Consequently, disruption of astrocyte signaling initiates hypersynchronous firing of neurons. Our results suggest that diminishing of neuron-astrocyte cross-talk leads to an abnormal synchronized neuronal firing, which suggests that astrocytes could be a proximal target for the treatment of related disorders including epilepsy. © 2011.

Author Keywords

Astrocyte; Epilepsy; Neuronal population model; Synchronization

Document Type: Article

Source: Scopus

Azhar, M.-R.^{a b}, Rahimi, Z.^{a c}, Vaisi-Raygani, A.^c, Akramipour, R.^d, Madani, H.^e, Rahimi, Z.^a, Parsian, A.^f

Lack of association between MTHFR C677T and A1298C polymorphisms and risk of childhood acute lymphoblastic leukemia in the Kurdish population from Western Iran (2012) *Genetic Testing and Molecular Biomarkers*, 16 (3), pp. 198-202.

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Abstract

Aims: Polymorphism in genes involved in folate metabolism may influence the susceptibility to acute lymphoblastic leukemia (ALL). The aim of the present study was to determine the role of the two most common polymorphisms of the 5, 10-methylenetetrahydrofolate reductase (MTHFR) gene, MTHFR C677T and A1298C, and their interaction on the susceptibility to ALL. **Methods:** Seventy-two children with ALL and 109 age- and sex-matched healthy children from Western Iran were screened for MTHFR C677T and A1298C variants by using polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP). **Results:** The frequencies of MTHFR 677T and 1298C alleles in patients were 29.9% and 43.1%, respectively, that were higher than those in controls (24.8% and 38.1%, respectively). Logistic regression analysis was performed and its result in the odds ratios (ORs) for possession of either MTHFR 677T or 1298C allele was found to be 1.98 [95% confidence interval (CI) 0.72-5.4, p=0.18] and 1.48 (95% CI 0.59-3.69, p=0.4), respectively. Also the concomitant presence of both MTHFR 677T and 1298C alleles was not associated with the risk of ALL [OR=2.12 (95% CI 0.8-5.7, p=0.13)]. **Conclusion:** Our results in a homogenous population with Kurdish ethnic background indicated that neither the MTHFR

677T allele nor the MTHFR 1298C allele is associated with increased risk of ALL. ©
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Document Type: Article
Source: Scopus

Azimi, L.^{a b}, Pourmotabbed, A.^a, Ghadami, M.R.^a, Nedaei, S.E.^b, Pourmotabbed, T.^c
Effects of peripheral and intra-hippocampal administration of sodium salicylate on spatial learning and memory of rats
(2012) *Iranian Journal of Basic Medical Sciences*, 15 (2), pp. 709-718.

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Abstract

Objective(s): Cyclooxygenases (COXs) are known to play some roles in physiological mechanisms related to learning and memory. Since sodium salicylate is an inhibitor of COX, we have evaluated the effect of peripheral and intrahippocampal administration of sodium salicylate on spatial learning and memory in male rats. Materials and Methods: Male rats were studied in two groups; the first group received different intraperitoneal (i.p.) sodium salicylate doses (0, 200, 300, and 400 mg/kg) and the second group received intra-hippocampal doses of the drug (0, 30, 50, and 100 µg/0.5 µl/side). The spatial performance of rats was tested using Morris water maze (MWM) task. The spatial learning and memory parameters were analyzed using ANOVA. Results: Peripheral and intra-hippocampal administration of sodium salicylate did not lead to a statistically significant change in the mean time (escape latency), and also the distance traveled for finding the hidden platform during the training days, compared with the control group. But at the probe trial, the percentage of time spent in the target quadrant by rats which received the highest doses of drug significantly increased. Conclusion: We found that both peripheral and intra-hippocampal administration of sodium salicylate facilitates the process of spatial memory consolidation in the MWM.

Author Keywords

Cyclooxygenase; Rat; Sodium salicylate; Spatial memory

Document Type: Article
Source: Scopus

Bakhtiari, M.^a, Mansouri, K.^a, Sadeghi, Y.^b, Mostafaie, A.^a
Proliferation and differentiation potential of cryopreserved human skin-derived precursors
(2012) *Cell Proliferation*, 45 (2), pp. 148-157.

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Abstract

Objectives: Skin-derived precursors are recognized to be a potentially autologous and accessible source of neural precursor cells for drug screening or cell-based treatments, in many neurological disorders. Thus, it is necessary to investigate appropriate methods for cryopreservation of such human skin-derived precursors (hSKPs). The aim of this study was to evaluate different cryopreservation techniques for retention of hSKPs to discover an optimized protocol. **Materials and methods:** We cryopreserved hSKPs treated with 0%, 10%, 20%, 30% and 40% foetal bovine serum (FBS) and three concentrations of dimethylsulphoxide (DMSO) 5%, 10% and 15%, with two different storage periods in liquid nitrogen (2days: short-term storage; and 2months: long-term storage). Then, we assessed survival and proliferation levels of the cells after freeze-thaw processes, by viability measurement and colony-forming assay. For detecting hSKPs, we used immunocytochemistry and RT-PCR assessments. **Results:** Our findings indicated that hSKPs cryopreserved in 5% DMSO without FBS, had better survival and proliferation potentials compared to other working formulations. With various concentrations of cryoprotectants over different time periods, hSKPs retained their differentiation potentiality and were able to differentiate into neurons (NFM and β III tubulin-positive), glial cells (GFAP-positive) and smooth muscle cells (SMA-positive). **Conclusions:** Results revealed that in only 5% DMSO, hSKPs could be cryopreserved for long-term storage with considerable survival and proliferation levels, without losing multipotency. © 2012 Blackwell Publishing Ltd.

Document Type: Article

Source: Scopus

Barzegar-Jalali, M.^{a b}, Alaei-Beirami, M.^b, Javadzadeh, Y.^a, Mohammadi, G.^c, Hamidi, A.^a, Andalib, S.^b, Adibkia, K.^{a b}

Comparison of physicochemical characteristics and drug release of diclofenac sodium-eudragit® RS100 nanoparticles and solid dispersions
(2012) *Powder Technology*, 219, pp. 211-216.

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Abstract

The aim of the present study was to formulate and characterize diclofenac sodium (DNA)-eudragit® RS100 nanoparticles and solid dispersions. The conventional double-emulsion solvent diffusion technique for preparing nanoparticles of the water-soluble drugs is limited due to low encapsulation efficiency because of the drug rapid partitioning to the external aqueous phase. So therefore, nanoparticles of DNA with different amounts of eudragit®

RS100 were prepared by a modified single-emulsion solvent diffusion method. The solid dispersions were also formulated using co-evaporation technique. The physicochemical characteristics of the prepared formulations were assessed operating particle size analysis, differential scanning calorimetry, X-ray crystallography, Fourier transform infrared spectroscopy and transmission electron microscopy. The release rate of DNA from the prepared nanoparticles and solid dispersions was investigated as well. The size of relatively monodisperse nanoparticles ranged from 103. nm to 170. nm. Employing the modified single-emulsion solvent diffusion technique to prepare the nanoparticles could perfectly improve the drug encapsulation efficiency. Both nanoparticles and solid dispersions of DNA-eudragit® RS100 displayed lower crystallinity and the intermolecular interaction between drug and polymer could not be ruled out. All the solid dispersions revealed slower drug release rate in comparison with the nanoparticles. DNA-eudragit® RS100 nanoparticle with the low drug/polymer ratios could relatively reduce the drug release rate up to 5. h whereas the solid dispersions were found to be suitable to control drug release for an extended times. As stated by these findings, formulation of the DNA-eudragit® RS100 nanoparticles was able to adjust the physicochemical characteristics of the drug and may well increase the anti-inflammatory effects of drug following its ocular or intra-joint administration. © 2011 Elsevier B.V.

Author Keywords

Diclofenac sodium; Drug release; Eudragit® RS100; Nanoparticles; Physicochemical characteristics; Solid dispersions

Document Type: Article

Source: Scopus

Beiki, O.^{a b}, Hall, P.^c, Ekbom, A.^d, Moradi, T.^a

Breast cancer incidence and case fatality among 4.7 million women in relation to social and ethnic background: A population-based cohort study
(2012) *Breast Cancer Research*, 14 (1), art. no. R5, .

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Abstract

Introduction: Incidence of breast cancer is increasing around the world and it is still the leading cause of cancer mortality in low- and middle-income countries. We utilized Swedish nationwide registers to study breast cancer incidence and case fatality to disentangle the effect of socioeconomic position (SEP) and immigration from the trends in native Swedes. **Methods:** A nation-wide cohort of women in Sweden was followed between 1961 and 2007 and incidence rate ratio (IRR) and hazard ratio (HR) with 95% confidence intervals (CIs) were estimated using Poisson and Cox proportional regression models, respectively. **Results:** Incidence continued to increase; however, it remained lower among

immigrants (IRR = 0.88, 95% CI = 0.86 to 0.90) but not among immigrants' daughters (IRR = 0.97, 95% CI = 0.94 to 1.01) compared to native Swedes. Case fatality decreased over the last decades and was similar in native Swedes and immigrants. However, case fatality was significantly 14% higher if cancer was diagnosed after age 50 and 20% higher if cancer was diagnosed in the most recent years among immigrants compared with native Swedes. Women with the highest SEP had significantly 20% to 30% higher incidence but had 30% to 40% lower case fatality compared with women with the lowest SEP irrespective of country of birth. Age at immigration and duration of residence significantly modified the incidence and case fatality. Conclusions: Disparities found in case fatality among immigrants by age, duration of residence, age at immigration and country of birth emphasize the importance of targeting interventions on women that are not likely to attend screenings or are not likely to adhere to the therapy suggested by physicians. The lower risk of breast cancer among immigrant women calls for more knowledge about how the lifestyle factors in these women differ from those with high risk, so that preventative measures may be implemented. © 2012 Beiki et al.; licensee BioMed Central Ltd.

Document Type: Article

Source: Scopus

Fassihi, A.^a, Shahlai, M.^b, Moeinifard, B.^c, Sabet, R.^d

QSAR study of anthranilic acid sulfonamides as methionine aminopeptidase-2 inhibitors (2012) *Monatshefte fur Chemie*, 143 (2), pp. 189-198.

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Abstract

Quantitative relationships between molecular structure and methionine aminopeptidase-2 inhibitory activity of a series of cytotoxic anthranilic acid sulfonamides were determined by the partial least-squares (PLS) method. Evaluation of a test set of ten compounds with the developed PLS model revealed it is reliable and has good predictive power. Because the QSAR study was performed on the basis of theoretical descriptors calculated completely from molecular structure, the proposed model could potentially provide useful information about the activity of the compounds studied. Various tests and criteria, for example leave-one-out cross validation, leave-many-out cross validation, and criteria suggested by Tropsha, were used to examine the predictive power and robustness of the model. The model could explain and predict 73 and 64% of variances in the pIC 50 data. © 2011 Springer-Verlag.

Author Keywords

Aminopeptidase-2 inhibitors; Anticancer agents; Partial least-squares; QSAR

Document Type: Article

Source: Scopus

Ganjian, H.^a, Nikokar, I.^b, Tieshayar, A.^b, Mostafaei, A.^c, Amirmozafari, N.^d, Kiani, S.^c
Effects of salt stress on the antimicrobial drug resistance and protein profile of
staphylococcus aureus
(2012) *Jundishapur Journal of Microbiology*, 5 (1), pp. 328-331.

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Abstract

Background: Staphylococcus aureus is the causative agent of a high percentage of nosocomially acquired infections and food-borne illnesses. Antimicrobial resistance of S. aureus, especially methicillin-resistant S. aureus (MRSA), continues to be a concern for clinicians worldwide. Objectives: The aim of this study was to investigate the effects of salt stress on the antimicrobial drug resistance and protein profile of S. aureus. Materials and Methods: Staphylococcus aureus (ATCC 25823) was grown in trypticase soy broth at 37°C. Cells in the exponential growth phase were gradually exposed to sub-lethal salt stress with concentrations ranging from 5% to 35% (wt/vol). There after, these cells were harvested and re-suspended in a tube containing 0.5mL of saline. To standardize the number of bacteria, the bacterial suspension was compared to the 0.5 McFarland standard suspension. Antibiotic susceptibility was determined using the disk diffusion method, and the method involved plating of cell suspensions with stressed cells and unstressed cells on Mueller-Hinton agar plates. The pooled proteins from each condition were analyzed using sodium dodecyl sulfate-polyacrylamide gel electrophoresis (SDS-PAGE). Results: Compared to the unstressed cells, the cells exposed to salt showed significant changes in resistance to rifampicin (P=0.032), penicillin (P=0.02) and methicillin (P=0.001). Furthermore, SDS-PAGE analysis of pooled proteins from cells exposed to salt showed changes in the protein profile. Conclusions: We conclude that salt stress is responsible for the changes in protein profile and antimicrobial resistance of S. aureus, especially to methicillin. © 2012, AJUMS. Published by Kowsar M.P.Co. All rights reserved.

Author Keywords

Antibiotic resistance; Electrophoresis; Polyacrylamide gel; Salt stress; Staphylococcus aureus

Document Type: Article

Source: Scopus

Ghadami, S.A.^{a c}, Hossein-pour, Z.^{a b}, Khodarahmi, R.^{a b}, Ghobadi, S.^c, Adibi, H.^b
Synthesis and in vitro characterization of some benzothiazole- and benzofuranone-derivatives for quantification of fibrillar aggregates and inhibition of amyloid-mediated peroxidase activity
(2012) *Medicinal Chemistry Research*, pp. 1-12. Article in Press.

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Abstract

Neurodegenerative diseases are characterized by amyloid deposition. Thioflavin T (ThT) is one of the molecules considered for detection of amyloid deposits; however, its lipophilicity is too low to cross the blood-brain barrier. Therefore, there is a strong motivation to develop suitable compounds for in vitro fibril quantification as well as for in vivo amyloid imaging. Moreover, oxidative stress (particularly, uncontrolled peroxidase activity) has frequently been reported to play a critical role in the onset/progression of some neurodegenerative disorders. In this study, we describe the synthesis of some benzothiazole and benzofuranone compounds and examine their peroxidase inhibitory properties. Furthermore, to establish the potential binding of synthesized compounds to amyloid aggregates, their in vitro binding to some non-disease related amyloidogenic proteins were characterized. Analyses of the in vitro binding studies indicated that compounds 2 and 4 bind to the amyloid structures successfully while compounds 1 and 3 showed a low affinity in binding to fibrils. Furthermore, compounds 3 and 4 were observed to inhibit amyloid-mediated peroxidase activity in a reversible un-competitive manner. © 2012 Springer Science+Business Media, LLC.

Author Keywords

α -Chymotrypsin; Amyloid determination; Peroxidase activity

Document Type: Article in Press

Source: Scopus

Gharloghi, S.^a, Torkzahrani, S.^b, Akbarzadeh, A.R.^c, Heshmat, R.^d

The effects of acupressure on severity of primary dysmenorrhea
(2012) *Patient Preference and Adherence*, 6, pp. 137-142.

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Abstract

Background: Dysmenorrhea constitutes one of the most frequent disorders in women of a fertile age. The objective of this research was to determine the effects of acupressure at Sanyinjiao (SP6) point and DiJi (SP8) point on pain severity of primary dysmenorrhea and the associated systemic symptoms. Materials and methods: In this crossover clinical trial, 50 females aged 18-30 years old who met the study criteria and were under the care of Sarpolezahab Health Center were selected. Subjects were randomly assigned to one of two groups and evaluated during three menstrual cycles. We evaluated pain severity using the

McGill pain scale and associated systemic symptoms using a verbal multidimensional scoring system. Data acquired from 42 cases were analyzed using SPSS software, with a P value of < 0.05 considered significant. Results: The findings of our study indicate that the severity of dysmenorrhea pain diminishes significantly for up to 2 hours following treatment with acupressure at the SP6 and SP8 points ($P < 0.001$). Furthermore, the severity of associated systemic symptoms reduced significantly after acupressure at the SP6 and SP8 points, except for nausea and vomiting. Comparison of the severity of systemic symptoms with acupressure at the SP6 and SP8 points revealed no significant difference except for severity of fatigue, which was reduced significantly further with SP6 point compared to SP8 point ($P = 0.004$). Conclusion: Acupressure at the SP6 and SP8 points can reduce pain severity of dysmenorrhea for up to 2 hours after application, and these points may be used to alleviate the severity of systemic symptoms accompanying dysmenorrhea. © 2012 Gharloghi et al, publisher and licensee Dove Medical Press Ltd.

Author Keywords

Acupressure; Dysmenorrhea; SP6 point; SP8 point; Systemic symptoms

Document Type: Article

Source: Scopus

Ghotbi Ravandi, M.R.^a, Khanjani, N.^b, Nadri, F.^{a c}, Nadri, A.^d, Nadri, H.^e, Ahmadian, M.^f, Toolabi, A.^g, Karimi Bami, E.^h

Evaluation of illumination intensity and ultraviolet radiation at Kerman Medical University libraries

(2012) *Iran Occupational Health*, 8 (4), .

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Abstract

Background and aim: Adequate lighting in work environments can increase productivity and concentration and reduced fatigue. Light and illumination studies have been done mainly in industrial environments, and public or administrative environments were less under consideration. The aim of this study was to evaluate the ultraviolet radiation and illumination level at Kerman Medical Sciences University libraries. Methods: In this study, the total,

natural and artificial amount of illumination was measured at two different times, at the center of the designated stations in 14 study halls and the height of 30 inches by Hagner (Model EC 1) luxmeter. Also, ultraviolet radiation (UVB & UVA) was measured by Hanger (Model S4) equipped with UVB & UVA detectors. The results of ultraviolet radiation and illumination level measurements were compared with standard by Excel. Results: The overall, natural and artificial illumination level, in 28.57%, 100% and 71.42% study halls was less than the National and IESNA standard (300 lux). The School of Nursing has the highest amount of UVB and UVA radiation in both total and natural light measurements. The Shahid Bahonar Hospital, men's section had the highest amount of UVB and UVA radiation in artificial light measurements. Conclusion: Initiatives such as proper alignment of bulbs, periodic dusting and cleaning, regular replacing of burnt bulbs, using study desks with the appropriate level of brightness, placing lamps at appropriate heights, and using bulbs with less UV radiation can improve the lighting situation in libraries.

Author Keywords

Illumination; Study hall; Ultraviolet radiation

Document Type: Article

Source: Scopus

Hashemi, S.H.^a, Gachkar, L.^b, Keramat, F.^c, Mamani, M.^d, Hajilooi, M.^e, Janbakhsh, A.^a, Majzoobi, M.M.^a, Mahjub, H.^a

Comparison of doxycycline-streptomycin, doxycycline-rifampin, and ofloxacin-rifampin in the treatment of brucellosis: A randomized clinical trial

(2012) *International Journal of Infectious Diseases*, 16 (4), pp. e247-e251.

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Abstract

Background: Traditional regimens for the treatment of brucellosis are associated with significant relapse rates. The aim of this study was to compare the efficacy of ofloxacin plus rifampin (OFX-RIF) versus doxycycline plus streptomycin (DOX-STR) and doxycycline plus rifampin (DOX-RIF) regimens in the treatment of brucellosis. **Methods:** Two hundred and nineteen patients with brucellosis were enrolled in a randomized clinical trial; 28 cases were withdrawn because they did not attend the follow-up. Out of 191 patients with brucellosis, 64 received OFX-RIF, 62 received DOX-RIF, and 65 patients received DOX-STR regimens. All patients were assessed during the period of therapy in the second, fourth, and sixth weeks by clinical course and were also followed up clinically and serologically for 6 months after the cessation of therapy. **Results:** The highest clinical response (95.4%) was observed in the DOX-STR group (. $p=$. 0.009). The results of multivariate analysis indicate that treatment

with DOX-STR had the least therapeutic failures among the three groups (. $p=$. 0.033). Adverse reactions were seen in 16.8% of patients, but there was no significant difference among the three groups (. $p=$. 0.613). The lowest relapse rate (4.6%) was observed in the DOX-STR group (. $p=$. 0.109). Conclusions: We conclude that the DOX-STR combination should remain the first-line regimen for the treatment of brucellosis in our region; we recommend DOX-RIF and OFX-RIF combinations as the second-line regimens. © 2012 International Society for Infectious Diseases.

Author Keywords

Brucellosis; Doxycycline; Ofloxacin; Rifampin; Streptomycin

Document Type: Article

Source: Scopus

Ibrahimi, E.^a , Hamoleh, M.M.^b , Heidari, H.^c , Mahboobi, M.^d

Assessment of perceived social support among selected hospital personnel in Isfahan (2012) *Journal of Medical Ethics and History of Medicine*, 5 (1), pp. 82-88.

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^b Tehran University of Medical Sciences, Tehran, Iran

^c Isfahan University of Medical Sciences, Isfahan, Iran

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Abstract

One of the most important factors for effective function in an organization is human factor. Social support is known as a psychocognitive factor in workplace that affects human productivity. The purpose of this study was to determine the rate of perceived social support at domain of emotional support among hospital staff. In this cross-sectional study, 120 hospital staff who worked at a selected hospital of Isfahan were included based on convenience sampling. Data was collected using social support and demographic data questionnaires. These questionnaires were developed by researcher. The validity of questionnaires was evaluated by content analysis and reliability of questionnaires was evaluated by test re-test and data were analyzed by descriptive and analytical statistics. Our results show that perceived social support at the domain of emotional support from coworkers (mean \pm SD=3.34 \pm 0.9) was significantly more than perceived social support at domain of emotional support from managers (mean \pm SD =2.58 \pm 0.88). Also, a significant association was found between perceived social support at the domain of emotional support and age and work experience ($P<0.005$). In conclusion social support from personnel at the domain of emotional support is necessary for increasing human productivity and hospital managers can affect staff efficiency by developing their relationship with hospital personnel.

Author Keywords

Emotional support; Hospital managers; Perceived social support

Document Type: Article

Source: Scopus

Karaji, A.G.^a, Hamzavi, Y.^b

The opioid antagonist naloxone inhibits *Leishmania major* infection in BALB/c mice (2012) *Experimental Parasitology*, 130 (1), pp. 73-77. Cited 1 time.

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Abstract

BALB/c mice are susceptible to develop non-healing, progressive infection with *Leishmania major* (*L. major*) due to the development of a non-protective Th2 response. Resistance to *L. major* infection is dependent to Th1 response. Treatment of mice with the opioid antagonist naloxone can promote the activation of Th1 responses. Here we study the effect of chronic administration of various doses of naloxone on susceptibility of BALB/c mice to *L. major* infection. Our results showed that naloxone has dose-dependent biphasic effect on *L. major* infection in BALB/c mice. While administration of 1. mg/kg. ×. 2/day tends to exacerbate the local reaction to *L. major* infection, treatment with 10. mg/kg. ×. 2/day of naloxone suppresses the local reaction and progress of infection. On the other hand treatment of mice with middle dose (5. mg/kg whether 1 or 2 times per day) does not have significant effect on the infection. This study demonstrates that administration of high dose of naloxone could improve protection against *L. major* infection in BALB/c mice, presumably by modulation in Th1/Th2 balance or by affecting macrophages through binding to Toll-like receptors. © 2011 Elsevier Inc.

Author Keywords

IFN- γ ; IL-4; Immune modulation; *Leishmania major*; Naloxone

Document Type: Article

Source: Scopus

Karimi, M.^a, Vafafar, A.^a, Haghpanah, S.^a, Payandeh, M.^b, Eshghi, P.^c, Hoofar, H.^d, Afrasiabi, A.^a, Gerdabi, J.^a, Ardeshiri, R.^a, Menegatti, M.^e, Peyvandi, F.^e

Efficacy of prophylaxis and genotype-phenotype correlation in patients with severe Factor X deficiency in Iran

(2012) *Haemophilia*, 18 (2), pp. 211-215.

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Hemophilia and Thrombosis Center, Fondazione IRCCS CaGranda Ospedale Maggiore Policlinico, Università degli Studi di Milano and Luigi Villa Foundation, Milan, Italy

Abstract

Summary. We aimed to evaluate the effect of regular prophylaxis with a Factor X (FX) concentrate for patients with severe FXD in Iran and to assess the correlation of the genotype and phenotype in these patients. Ten patients with severe FXD (FX activity <1%) were enrolled and characterized during 2010-2011. Prophylaxis with 20IU FX P Behring per kg body weight was administered once a week. FX levels, were monitored at baseline, 15 and 30min, 1, 3, 6, 12, 24, 48, 72 and 96h after starting prophylaxis. All patients were followed for 1year. The mean age of the patients was 15±7.8years (age range of: 6-27years). One patient had anaphylactic reaction after the first infusion, and the treatment was stopped. During one-year follow-up after starting prophylaxis, no bleeding symptoms occurred in any patient who tolerated and remained on the prophylaxis programme and all of them had a FX level of 1% or above. The maximum level of FX activity has been observed at 15min after starting prophylaxis. A level of 1.5-3.5% was detected after 96h. Homozygous mutations p.Arg40Thr (Arg-1Thr), p.Gly51Arg and p.Glu69Lys were detected in patients with intracranial haemorrhage. In our patients, significant decrease in symptoms without any complication after administration of FX, was demonstrated in all except one patient who had an anaphylactic reaction. It seems that the dose of 20IU/kg -1 could be probably the best choice for patients with severe FXD, who require regular prophylaxis. © 2011 Blackwell Publishing Ltd.

Author Keywords

Efficacy; Factor X deficiency; Genotype; Iran; Prophylaxis

Document Type: Article

Source: Scopus

Khazaei, S.^a, Kazemi, S.^a, Khazaei, M.^b

Is adiponectin related to orofacial clefts?

(2012) *Iranian Red Crescent Medical Journal*, 14 (1), . Cited 1 time.

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Author Keywords

Adiponectin; Cleft lip and palate; Diabetes mellitus

Document Type: Letter

Source: Scopus

Khodarahmi, R.^{a b}, Karimi, S.A.^b, Ashrafi Kooshk, M.R.^{a c}, Ghadami, S.A.^{a c}, Ghobadi, S.^c, Amani, M.^d

Comparative spectroscopic studies on drug binding characteristics and protein surface

hydrophobicity of native and modified forms of bovine serum albumin: Possible relevance to change in protein structure/function upon non-enzymatic glycation
(2012) *Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy*, 89, pp. 177-186.

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Abstract

The interaction between serum albumin (SA) and drugs has provided an interesting ground for understanding of drug effects, especially in drug distribution and drug-drug interaction on SA, in the case of multi-drug therapy. Determination of the impact of various factors on drug-protein interaction is especially important upon significant binding of drug to albumin. In the present study, the interaction of two drugs (furosemide and indomethacin) with native and modified albumins were investigated by using various spectroscopic methods. Fluorescence data indicated that 1:1 binding of drugs to bovine serum albumin (BSA) is associated with quenching of albumin intrinsic fluorescence. The Job's plot also confirmed that drug binds to BSA via mentioned stoichiometry. Analysis of the quenching and thermodynamic parameters indicated that intermolecular interactions between drug and albumin may change upon protein modification. The theoretical analyses also suggested some conformational changes of interacting side chains in subdomain IIA binding site (at the vicinity of W 237), which were in good agreement with experimental data. Decrease of protein surface hydrophobicity (PSH) was also observed upon both albumin modification and drug binding. © 2011 Elsevier B.V.

Author Keywords

Binding site; Bovine serum albumin; Fluorescence quenching; Furosemide; Indomethacin; Protein surface hydrophobicity

Document Type: Article

Source: Scopus

Majnooni, M.-B.^{a c}, Mansouri, K.^{b c}, Gholivand, M.-B.^d, Mostafaie, A.^c, Mohammadi-Motlagh, H.-R.^c, Afnanzade, N.-S.^a, Abolghasemi, M.-M.^d, Piriyaie, M.^d
Chemical composition, cytotoxicity and antioxidant activities of the essential oil from the leaves of *Citrus aurantium L*
(2012) *African Journal of Biotechnology*, 11 (2), pp. 498-503.

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Abstract

The species of the genus *Citrus* (Rutaceae) have been widely used in traditional medicine. In this study, the essential oil was extracted from the leaves of *Citrus aurantium* and its cytotoxicity effect on six tumor cell lines and a normal cell line was studied. Furthermore, antioxidant potential of the oil was tested by 2, 2-diphenyl-1-picrylhydrazyl (DPPH) assay, hydrogen peroxide scavenging and reducing antioxidant power methods. The composition of the essential oil was also analyzed by GC-MS. Results indicate 41 components that represented 97.81% of the total oil. The major components were limonene, linalool and trans-beta-ocimene. In addition, the essential oil also exhibited strong antioxidant activity. The IC₅₀ of the oil in DPPH assay, H₂O₂ scavenging and reducing antioxidant power were 1040 ± 0.9, 140 ± 1.5 and 1580 ± 1.03 µg/ml, respectively. The essential oil also had marked cytotoxicity against the all tumor cell lines, with the highest activity on Jurkat and HL60. © 2012 Academic Journals.

Author Keywords

Antioxidant effect; Chemical composition; *Citrus aurantium*; Cytotoxicity; Essential oil

Document Type: Article

Source: Scopus

Malakootian, M.^a, Ahmadian, M.^b, Yaghmaeian, K.^c, Dowlatshahi, S.H.^a, Ghotbi Ravandi, M.R.^d

Level changes of traffic noise in Kerman City, Southeast Iran
(2012) *Iranian Journal of Public Health*, 41 (1), pp. 107-113.

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Abstract

Background: The purpose of this research was to determine the traffic noise level and changes in the Kerman City, southeast Iran in recent years. **Methods:** This cross-sectional study was carried out in 2008 to investigate the existing noise situation in Kerman. Sound levels (L_{Max}, L_{Min}, L_{eq}, L₉₉, L₉₀, L₅₀ and L₁₀) were determined throughout 13 stations using sound level measurement system (model, CEL-440). Number of passing vehicles was also assessed at the sampled stations. **Results:** Sound level in all sampled stations was higher than Iran and World Health Organization guidelines. Comparison of L_{eq} in different hours using statistical tests showed significant difference between different hours with 95 % confidence coefficient (P=0.01). Comparison of L_{eq} throughout the week also showed that there was a significant difference (P=0.001) between Friday and workday. The comparison of L_{eq} with the number of passing vehicles using Pearson correlation statistical test showed significant difference between the number of heavy vehicles passed and the level of L_{eq} (P=0.001). It also showed that number of heavy vehicles caused the most noise levels.

Conclusion: The results of this study compared to a similar study conducted in 1999 showed an increasingly high noise level. Noise level increased from 1999 to 2008 by 3.89 % which is indicative of an increase in noise emission sources.

Author Keywords

Iran; Noise level; Traffic

Document Type: Article

Source: Scopus

Malek-Khosravi, S.^a , Rahimi, Z.^{b c} , Rahimi, Z.^{b c} , Jalilvand, F.^a , Parsian, A.^d
Thrombophilic mutations and susceptibility to preeclampsia in Western Iran
(2012) *Journal of Thrombosis and Thrombolysis*, 33 (1), pp. 109-115.

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Abstract

The aim of the present study was to investigate the frequency and the possible association between thrombophilic mutations of factor V Leiden (FVL) and prothrombin G20210A with preeclampsia among Kurdish population of Western Iran. We studied 198 women with preeclampsia including 128 women with mild and 70 women with severe forms and 101 healthy pregnant women with uncomplicated pregnancy. Among cases there were 23 women with early onset preeclampsia and 175 cases with late-onset preeclampsia. The sample was genotyped by polymerase chain reaction-restriction fragment-length polymorphism using Mnl I and Hind III for FVL and prothrombin G20210A, respectively. The frequency of heterozygous FVL mutation was 7.6% among all preeclamptic women (8.6% in mild and 5.7% in severe preeclamptic women) and 7.9% in controls ($P>0.05$). However the prevalence of heterozygous FVL were 10.5 and 3.9% among severe preeclamptic women with early onset and late-onset preeclampsia respectively ($P>0.05$). The prevalence of prothrombin G20210A were 1.6 2.9 and 3% among women with mild preeclampsia severe preeclampsia and controls respectively ($P>0.05$). The level of serum triglycerides (TG) was significantly higher among women with preeclampsia compared to healthy pregnant women that was not associated with the two thrombophilic mutations. Our results indicate that neither FVL nor prothrombin G20210A could be a risk factor for preeclampsia in our population. However high prevalence of FVL in preeclamptic women with early onset compared to those with late-onset preeclampsia may suggest a role for this mutation in predisposition to early onset preeclampsia that need to be confirmed with larger sample size. © Springer Science+Business Media LLC 2011.

Author Keywords

Factor V Leiden; Preeclampsia; Prothrombin G20210A; Western Iran

Document Type: Article
Source: Scopus

Mansouri, Y.^a, Zinatizadeh, A.A.^b, Mohammadi, P.^c, Irandoust, M.^d, Akhbari, A.^{d e}, Davoodi, R.^f

Hydraulic characteristics analysis of an anaerobic rotatory biological contactor (AnRBC) using tracer experiments and response surface methodology (RSM) (2012) *Korean Journal of Chemical Engineering*, pp. 1-12. Article in Press.

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Abstract

The hydraulic characteristic of an anaerobic rotating biological contactor (AnRBC) were studied by changing two important hydraulic factors effective in the treatment performance: the hydraulic retention time (τ) and rotational disk velocity (ω). The reactor hydraulic performance was analyzed by studying hydraulic residence time distributions (RTD) obtained from tracer (Rhodamine B) experiments. The experiments were conducted based on a central composite face-centered design (CCFD) and analyzed using response surface methodology (RSM). The region of exploration for the process was taken as the area enclosed by τ (60, 90 and 120 min) and ω (0.8 and 16 rpm) boundaries. Four dependent parameters, deviation from ideal retention time ($\Delta\tau$), dead volume percentage and dispersion indexes (Morrill dispersion index (MDI) and dispersion number (d)), were computed as response. The maximum modeled $\Delta\tau$ and dead volume percentage was 43.03 min and 37.51% at τ and ω 120 min and 0 rpm, respectively. While, the minimum predicted responses (2.57 min and 8.08%) were obtained at τ and ω 60min and 16 rpm, respectively. The interaction showed that disk rotational velocity and hydraulic retention time played an important role in MDI in the reactor. The AnRBC hydraulic regime was classified as moderate and high dispersion ($d=0.09$ to 0.253). As a result, in addition to the factors studied, the reactor geometry showed significant effect on the hydraulic regime. © 2012 Korean Institute of Chemical Engineers, Seoul, Korea.

Author Keywords

Anaerobic Rotatory Biological Contactor; Hydraulic Characteristics; Response Surface Methodology; Tracer Experiment

Document Type: Article in Press
Source: Scopus

Miraghaee, S.S.^a, Mostafaie, A.^a, Kahrizi, D.^{a b c}

Acclimatization related proteins and factors in somaclone lines in kiwifruit (*Actinidia deliciosa*)

(2012) *Journal of Food, Agriculture and Environment*, 10 (1), pp. 198-202.

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Abstract

Kiwifruit is adapted to Ramsar region (north of Iran) with high relative humidity. Twenty somaclone lines were collected and transplanted from Ramsar to Sahneh region (west of Iran) with moderate and low relative humidity. After five years of transplantation, only one clone acclimatized to new conditions, grown and set fruit and seed successfully. Current study was focused on ecological adaptation related proteins and factors (such as leaf proline, soluble leaf sugar, chlorophyll a and b and relative water content) in this line and comparison with stock plant in Ramsar. This research was conducted to compare electrophoretic protein patterns and main physiological traits in kiwifruit from Ramsar and Sahneh. Results of SDS-PAGE and two-dimensional electrophoresis showed maximal and minimal differences for leaf and seed proteins, respectively. Actinidin, as main protease of kiwifruit, is expressed in fruit of Ramsar line and leaves of Sahneh kiwifruit line mainly. Its expression was relatively low in leaves of Ramsar plant and fruit of Sahneh line. Statistical analysis showed significant differences between kiwifruit of Sahneh and its stock plant in Ramsar for proline, sugar, total protein (of seed, fruit and leaf) and chlorophyll content. Correlation between sugar and proline content was positive and significant (0.931). Total protein of leaf and fruit correlated with proline significantly and negatively (0.879 and 0.835, respectively). It is concluded that protein expression in kiwifruits was affected by environmental conditions seriously. Switch on and off and down or up regulating of some proteins may be in adaptation process.

Author Keywords

Actinidin; Adaptation; Kiwifruit; Protein electrophoresis

Document Type: Article

Source: Scopus

Mohammadi, B.^a, Majnooni, M.B.^a, Khatabi, P.M.^a, Jalili, R.^a, Bahrami, G.^{a b}

9-Fluorenylmethyl chloroformate as a fluorescence-labeling reagent for derivatization of carboxylic acid moiety of sodium valproate using liquid chromatography/tandem mass spectrometry for binding characterization: A human pharmacokinetic study

(2012) *Journal of Chromatography B: Analytical Technologies in the Biomedical and Life Sciences*, 880 (1), pp. 12-18.

^a Medical Biology Research Center, Kermanshah University of Medical Sciences, Kermanshah, Iran

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Abstract

In High Performance Liquid Chromatographic (HPLC) determination of chemicals with acidic functions, different labeling agents are used to improve sensitivity of the assay. 9-Fluorenylmethyl chloroformate (FMOC-Cl), on the other hand, is a suitable labeling agent, which reacts with both primary and secondary amines and less readily with hydroxyl groups in alkaline conditions. However, the reagent has not been applied in labeling of chemicals with acidic function yet. In this study which is the first report on application of FMOC-Cl in derivatization and analysis of a drug with acidic function, valproic acid (VPA), one of a series of fatty carboxylic acids with anticonvulsant activity, was derivatized using the reagent and quantified in serum samples by HPLC with fluorescence detection. In addition, to document the reaction between the labeling agent and carboxylic acid moiety of the drug, we developed a liquid chromatography-tandem MS/MS (LC-MS/MS) method. Following liquid-liquid extraction, derivatization of the drug and an internal standard was achieved in alkaline medium. The elute was monitored by a fluorescence detector with respective excitation and emission wavelengths of 265 and 315. nm. The present method is more sensitive comparing with other published HPLC procedures for analysis of VPA. The assay is sensitive enough to measure drug levels obtained in human single dose studies with a limit of quantification of 0.01. µg/mL. Also the method is linear over the concentrations range of 0.01-32. µg/mL of VPA in human serum using 100. µL serum sample and 5. µL injection. The coefficient variation values of both inter and intra day analysis were less than 12% and the percentage error was less than 4%. The method performance was studied and the validated procedure applied in a randomized cross-over bioequivalence study of two different VPA preparations in 24 healthy volunteers. © 2011 Elsevier B.V.

Author Keywords

Bioequivalence study; Derivatization; Fluorenylmethyl chloroformate; FMOC Cl; LC-MS/MS; Valproic acid

Document Type: Article

Source: Scopus

Mohammadi, H.^a, Bakhtiar, M.^b, Rezaei, M.^c, Sadeghi, K.^d
Stuttering behavior in Kurdish-Persian bilingual speakers
(2012) *Procedia - Social and Behavioral Sciences*, 32, pp. 283-287.

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^b Division of Speech and Hearing Sciences, University of Hong Kong, Hong Kong, Hong Kong

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Abstract

The present study was conducted to investigate the dissociation between some linguistic variables including the Mean Length of Utterance (MLU) and Type Token Ratio (TTR) and stuttering severity in both languages of Kurdish-Persian bilingual people who stutter (PWS). The connected speech of 31 PWS (age ranges: 9 to 13 years old) speaking in their first (Kurdish) and second (Persian) languages were collected. The results indicate that there is a significant correlation between stuttering severities in both languages. Moreover, it seems that MLU in Kurdish could predict the stuttering occurrence in the Persian language. © 2011 Published by Elsevier Ltd.

Author Keywords

Bilingualism; Stuttering; Syntax complexity

Document Type: Conference Paper

Source: Scopus

Moradkhani, S.^{a, g}, Ayatollahi, A.M.^b, Ghanadian, M.^c, Moin, M.R.^d, Razavizadeh, M.^e, Shahlaeif, M.^f

Phytochemical analysis and metal-chelation activity of *Achillea tenuifolia* Lam (2012) *Iranian Journal of Pharmaceutical Research*, 11 (1), pp. 177-183.

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^e Ministry of Health and Medical Education, Iran

^f Department of Medicinal Chemistry, Faculty of Pharmacy, Kermanshah University of Medical Sciences, Kermanshah, Iran

^g Student Research committee, School of Pharmacy, Shahid Beheshti University of Medical Sciences, Tehran, Iran

Abstract

Achillea tenuifolia Lam. (Asteraceae) afforded a dichloromethane fraction from which three known compounds β -sitosterol (compound 1), 5-hydroxy, 4',6,7-trimethoxy flavone (salvigenin compound 2), and methyl-gallate (compound 3) were isolated for the first time. The structure of isolated compounds was elucidated by different spectroscopic methods. Applying the molar-ratio method, the complexation of salvigenin with Fe(III), Cu(II) and Zn(II), the most abundant type of metal ions in the body, were then evaluated. It was determined that stoichiometric ratio of salvigenin with these cations were as Fe(Salvigenin) 2 (H₂O) 2 and Cu(Salvigenin) 2(H₂O) 2 in methanolic solution without pH control, while zinc ions didn't form significant complexes. The results were confirmed more, by computational molecular modeling of the structure of proposed ligand-complexes by semi-empirical PM3 calculations, which determined negative heat of formation for the complexes Fe(III) and Cu(II) ions as -689.7 and -573.5, respectively and proposed chelating affinity of salvigenin in the following order: Fe(III) > Cu(II) >> Zn(II). © 2012 by School of Pharmacy.

Author Keywords

5-hydroxy-flavone; *Achillea tenuifolia*; Chelation assay; Iron overload; Quercetin

Document Type: Article

Source: Scopus

Rad, E.J.^a, Almasi, A.^a, Khoshraftar, B.^b

Fasciitis ossificans of the larynx

(2012) *Iranian Journal of Pathology*, 7 (1), pp. 38-42.

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Abstract

We describe a rare case of laryngeal fasciitis ossificans. A 58-year-old man presented with hoarseness and a nodule was found in the larynx. Excisional biopsy was performed, and follow-up laryngoscopy showed complete resolution of this reactive lesion, and normal laryngeal function. The 0.6 cm diameter nodule was well circumscribed and histologically, the lesion was composed of uniform woven bone trabeculae with rimming of osteoblasts and cellular stroma. At the periphery, uniform spindle cells actively proliferated in edematous stroma. Spindle cells were immunoreactive for vimentin and α -smooth muscle actin, suggesting myofibroblastic differentiation. Fasciitis ossificans is histologically identical to myositis ossificans, but tends to present no zonation phenomenon. Fasciitis ossificans is a rare form of heterotopic bone formation, commonly presenting with signs of local inflammation or pain. This patient's successful outcome suggests that conservative resection may be both diagnostic and curative.

Author Keywords

Fasciitis; Larynx; Myositis ossificans

Document Type: Article

Source: Scopus

Rahimi, Z.^{a b}, Vaisi-Raygani, A.^b, Rahimi, Z.^a, Parsian, A.^c

Concomitant presence of endothelial nitric oxide 894T and angiotensin II-converting enzyme D alleles are associated with diabetic nephropathy in a Kurdish population from Western Iran (2012) *Nephrology*, 17 (2), pp. 175-181.

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Abstract

Aim: The present study investigated the influence of insertion (I)/deletion (D) polymorphism of the angiotensin II-converting enzyme (ACE) gene in combination with endothelial nitric oxide (eNOS) G894T polymorphism on the predisposition to diabetic nephropathy (DN). **Methods:** Using polymerase chain reaction (PCR) and PCR-restriction fragment length polymorphism (PCR-RFLP) method, the ACE and eNOS polymorphisms were genotyped in 72 microalbuminuric, 68 macroalbuminuric and 72 normoalbuminuric type 2 diabetes mellitus (T2DM) patients from Western Iran. **Results:** The presence of eNOS T or ACE D allele was not associated with increased risk of macroalbuminuria (odds ratio (OR) = 1.36, P = 0.27 and OR = 1.6, P = 0.062, respectively). However, in the presence of both alleles there was a trend towards increased risk of macroalbuminuria (fivefold, P = 0.05). **Conclusion:** Our study indicates that the concomitant presence of both ACE D and eNOS T alleles tends to be associated with an elevation risk of macroalbuminuria compared with the presence of each polymorphism alone. This risk could be attributed to the increasing activity of ACE and angiotensin II level in the presence of D allele and decreasing NO production in the presence of T allele accelerating diabetic nephropathy. The identification of genetic markers predicting progression in chronic kidney disease would help tailor treatment and predict renal prognosis. In this issue, a study from Western Iran demonstrates that eNOS T combined with an ACE D allele is associated with an increased risk of macroalbuminuria in type 2 diabetes. © 2011 Asian Pacific Society of Nephrology.

Author Keywords

ACE I/D; eNOS G894T; macroalbuminuria; microalbuminuria; type 2 diabetes mellitus

Document Type: Article

Source: Scopus

Rahimi, Z.^{a b}, Nourozi-Rad, R.^{b c}

Association of endothelial nitric oxide synthase gene variant (G894T) with coronary artery disease in Western Iran

(2012) *Angiology*, 63 (2), pp. 131-137.

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Abstract

There are conflicting reports about the association of endothelial nitric oxide synthase (eNOS) gene polymorphism and the risk of coronary artery disease (CAD). To determine the frequency of eNOS G894T variant and to find the possible association between this polymorphism with CAD we studied 207 unrelated patients with total CAD (with and without diabetes) and 92 controls. The eNOS variants were detected by polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP). The presence of GT + TT genotype was associated with 2.1-fold (P = .006), 2.29-fold (P = .006), and 1.93-fold (P = .032)

increased risk of CAD in total CAD, CAD with diabetes, and in CAD without diabetes patients, respectively. The presence of T allele of eNOS increased the risk of CAD 2.15-fold ($P = .001$). The levels of low-density lipoprotein cholesterol (LDL-C) and triglycerides (TG) tended to be higher in patients carrier for T allele compared to those with G allele. The results of present study revealed that eNOS G894T polymorphism is associated with increased risk of CAD in our population. © 2012 SAGE Publications.

Author Keywords

coronary artery disease; eNOS G894T; lipids; Western Iran

Document Type: Article

Source: Scopus

Rasekh, H.R.^a, Hosseinzadeh, L.^b, Mehri, S.^c, Kamli-Nejad, M.^a, Aslani, M.^a,
Tanbakoosazan, F.^a

Safety assessment of ocimum basilicum hydroalcoholic extract in wistar rats: Acute and subchronic toxicity studies

(2012) *Iranian Journal of Basic Medical Sciences*, 15 (1), pp. 645-653.

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Abstract

Objective(s) Ocimum basilicum L. is widely used in folk medicine of many countries including Iran. Both O. basilicum and its oil extract have received considerable attention for their potential medicinal properties, but there are a few reports about possible toxicity of this plant. Therefore, in the present study, acute and subchronic toxicity of O. basilicum hydroalcoholic extract have been evaluated in Wistar rats. **Materials and Methods** For the acute toxicity assessment, five groups of 10 animals (5 male, 5 female) received four different single dose of extract orally, the animals were, then, kept under observation for 14 days. For subchronic toxicity, the animals were divided into four groups (5 male, 5 female) and were gavaged daily by 50, 200 and 500 mg/kg of extract. Mortality, clinical signs, body weight changes, food and water consumption, and hematological and biochemical parameters were monitored during the study period. On the 45th day, animals were sacrificed and gross findings, weight of liver and left kidney and liver histological markers were assessed. **Results** The results of acute study indicated that LD 50 of O. basilicum is higher than 5 mg/kg. In subchronic study, no adverse effects were observed on serum parameters in male and female rats. The hematological results showed a reduction in the hematocrit, platelets and RBC in both sexes. No abnormalities were observed in other parameters. **Conclusion** Based on the results of this study, present data suggest that hematologic system could serve as a target organ in oral toxicity of this plant.

Author Keywords

Acute toxicity; Ocimum basilicum; Rats; Subchronic toxicity

Document Type: Article

Source: Scopus

Reshadat, S.^a, Nikray, R.^b, Alord, S.^b, Shackebaei, D.^{b c}, Godini, A.^c, Hesari, M.^c
The effects of acetazolamide on ischemia reperfused isolated hearts of 2- and 8-week-old rabbits
(2012) *Saudi Medical Journal*, 33 (3), pp. 250-255.

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Abstract

Objectives: To investigate the effects of acetazolamide on the ischemia-reperfused isolated hearts of 2- and 8-week-old rabbits. **Methods:** This study was conducted at the Kermanshah Medical Biology Research Center, Kermanshah, Iran from March to September 2011. Two- (n=17) and 8-week old (n=17) rabbits were separately divided into 2 control (n=9), and test (n=8) groups. Isolated hearts were subjected to 35 minutes ischemia and 30 minutes reperfusion. Acetazolamide (100 microgr/l) was added to the perfusion solution for 10 minutes before ischemia in the test group. Cardiac parameters including ventricular pressure, heart rate (HR), and rate pressure product (RPP) were measured. Data sets were analyzed by t-test. **Results:** Following acetazolamide administration the change percentage of HR was significantly different in the 2-week ($91 \pm 1.1\%$) compared with the 8-week ($96 \pm 0.8\%$) test groups ($p=0.0016$). Recovery percentage of RPP in reperfusion was lower ($p=0.005$) in the 8- ($28.9 \pm 3.4\%$) than the 2-week test groups ($45.2 \pm 3.5\%$). **Conclusion:** The 2-week hearts elicited more rapid response to carbonic anhydrase (CA) inhibition than the 8-week group. However, acetazolamide does not exacerbate ischemia-reperfusion (I/R) injury in the 2-week hearts. Therefore, it was revealed that after inhibition of CA, the age dependent pattern of I/R injury was similar to that of the normal hearts. In spite of the CA important role in the normal heart function, it is not a determining factor in I/R injury in different ages.

Document Type: Article

Source: Scopus

Sabzi, F.^a, Moradi, G.R.^b, Dadkhah, H.^c, Poormotaabed, A.^a, Dabiri, S.^a
Low dose aprotinin increases mortality and morbidity in coronary artery bypass surgery
(2012) *Journal of Research in Medical Sciences*, 17 (1), pp. 74-82. Cited 1 time.

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Abstract

BACKGROUND: The low dose aprotinin consistently reduces blood and transfusion requirement in adults during cardiac surgical procedures but its effectiveness in some ethnical groups were debated and controversy about its effect on mortality and morbidity precludes its routine use. This study was designated to determine whether a low dose of aprotinin causes more mortality and morbidity when used after coronary artery bypass grafting (CABG) surgery. **METHODS:** In a clinical trial study, 380 patients in placebo and 273 patients in aprotinin group were enrolled. A test dose before skin incision and 2 million kallikrein inactivation units (KIU) during initiation of cardiopulmonary bypass (CPB) were given to patients. Differences in quantity of blood transfusion, morbidity and mortality were analyzed. Multivariable analysis was performed to determine risk factors for mortality. **RESULTS:** Decreased blood product transfusions and increased rate of morbidity were found in the aprotinin group. Independent predictors for increased number of transfusion were aspirin continued before operation and small body mass index (BMI) but there was a significant difference in mortality and morbidity between two groups. **CONCLUSIONS:** In patients undergoing CABG procedure, low dose aprotinin is effective in attenuating post bypass coagulopathy and decreasing blood product use, but it increases morbidity.

Author Keywords

Aprotinin; Blood transfusion; Coronary artery bypass graft; Mortality

Document Type: Article

Source: Scopus

Sadeghi, E.^{a b}, Akhondzadeh Basti, A.^a, Noori, N.^a, Khanjari, A.^a, Partovi, R.^a
Effect of cuminum cyminum l. essential oil and lactobacillus acidophilus (a probiotic) on staphylococcus aureus during the manufacture, ripening and storage of white brined cheese (2012) *Journal of Food Processing and Preservation*, . Article in Press.

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Abstract

In this study, the effect of *Cuminum cyminum* L. essential oil (EO) and *Lactobacillus acidophilus* (a probiotic) on growth of *Staphylococcus aureus* in white brined cheese was evaluated. The experiment included different levels of EO (0, 7.5, 15 and 30 μ L/100mL milk) and *L.acidophilus* (0 and 0.5%) to assess their effects on *S.aureus* count during the manufacture, ripening and storage of Iranian white brined cheese for up to 75days. The significant ($P<0.05$) inhibitory effects of EO (even at its lowest concentration) and the probiotic on this organism were observed alone and in combination together. Considering the organoleptic evaluation of the EO used in this study, the best inhibitory effect was obtained at combination of EO=15 μ L/100mL and probiotic=0.5%. **PRACTICAL APPLICATIONS:** The significant ($P<0.05$) synergistic inhibitory effect of the EO and probiotic on *S.aureus* shown in this study can improve the scope of the EO function in the food industry. © 2012 Wiley Periodicals, Inc.

Document Type: Article in Press
Source: Scopus

Saedi, M.^a, Vaisi-Raygani, A.^{a b c}, Khaghani, S.^a, Sharifabrizi, A.^a, Rezaie, M.^a, Pasalar, P.^a, Rahimi, Z.^c, Pourmotabbed, T.^{a d}
Matrix metalloproteinase-9 functional promoter polymorphism 1562C>T increased risk of early-onset coronary artery disease
(2012) *Molecular Biology Reports*, 39 (1), pp. 555-562.

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Abstract

The Matrix metalloproteinase-9 functional promoter polymorphism 1562C>T may be considered an important genetic determinant of early-onset coronary artery disease (ECAD). In this study, association between MMP-9 1562C>T allele with plasma MMP-9 activity, homocysteine and lipid-lipoproteins level and ECAD in Iranian subjects was investigated. This case-control study consisted of 53 ECAD patients (age < 55 years) and unrelated late-onset CAD (age > 70 years) who angiographically had at least 50% stenosis. MMP-9 1562C>T polymorphism was detected by PCR-RFLP, plasma MMP-9 activity, serum lipid and homocysteine levels were determined by gelatin gel zymography, enzyme assay and by HPLC, respectively. The presence of MMP-9 1562C>T allele was found to be associated with ECAD (OR = 3.2, P = 0.001). The ECAD patients with MMP-9 1562C>T allele had higher MMP-9 activity (P = 0.001), LDL-C (P = 0.045), TC (P = 0.02) and homocysteine (P = 0.01) levels than the LCAD subjects. MMP-9 1562C>T allele is a risk factor for ECAD. The carriers of this allele have high levels of MMP-9 activity, LDL-C, TC and homocysteine (P = 0.01), thus, are more likely to develop myocardial infarction and CAD at young age (less than 55 years). © 2011 Springer Science+Business Media B.V.

Author Keywords

Early coronary artery disease; Genetic polymorphism; Homocysteine; Lipid profile; MMP-9; MMP-9 activity

Document Type: Article
Source: Scopus

Salimi, S.^a, Karami, D.^a, Salimi, E.^{b c}

Investigation of Preparation up to Six and N-Atom Graph States

(2012) *International Journal of Theoretical Physics*, pp. 1-13. Article in Press.

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^c Dermatologist of Emam Reza Hospital, Kermanshah University of Medical Sciences, Kermanshah, Iran

Abstract

The aims of this paper is to propose a feasible scheme for preparation of graph states up to six vertices, which are not equivalent under LU (Local unitary) transformations and graph isomorphisms, and special kind of N-atoms graph state (GHZ state, cluster state, ring state and complete state). First we show a two-qubit system (two-atoms with two-levels) how to acquire the maximal entanglement after interaction time t . Then, we generalize this method to mentioned above cases. © 2012 Springer Science+Business Media, LLC.

Author Keywords

Atom-cavity; Entanglement; Graph state

Document Type: Article in Press

Source: Scopus

Samadzadeh, B.^a, Alemi, M.^a, Heidarnejadiyan, J.^a, Torkamanasadi, F.^b

Prophylactic effect of mycophenolate mofetil on early outcomes of living donor kidney transplantation

(2012) *Iranian Journal of Kidney Diseases*, 6 (1), pp. 63-68.

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Abstract

Introduction. Living donor transplantation allows a priori scheduling and the recipient can receive immunosuppressive prophylaxis several days before surgery, which is preoperative induction therapy with oral agents. We evaluated the impact of preoperative mycophenolate mofetil on the outcomes of living donor kidney transplantations. **Materials and Methods.** In a randomized controlled trial was from November 2008 to November 2010, 99 patients receiving their first living donor kidney transplantation were divided into the mycophenolate mofetil (500 mg) and placebo groups, and received 2 tablets per day for 5 days before transplantation. **Results.** Forty-nine patients received mycophenolate mofetil and 48 received placebo. The mean serum creatinine on discharge day and hospitalization period were significantly less with mycophenolate mofetil compared to placebo (1.62 ± 1.00 mg/dL versus 1.22 ± 0.24 mg/dL, $P = 0.03$ and 20.8 ± 11.2 days versus 13.5 ± 4.4 days, $P < .001$, respectively). No delayed graft function was observed. Slow graft function was 2-fold higher in the placebo group (14.6% versus 8.2%, $P = .32$). Acute rejection was seen in 12.2% of the patients with mycophenolate mofetil and in 29.2% of the controls ($P = .04$). Serum creatinine levels at discharge were significantly lower in the mycophenolate mofetil group compared with that in the placebo group ($P = .03$). **Conclusions.** Prophylactic administration of mycophenolate mofetil before living donor kidney transplantation reduced hospitalization

period, improved early graft function, and decreased the risk of acute rejection in the first month posttransplant.

Author Keywords

Acute allograft rejection; Kidney transplantation; Prophylaxis

Document Type: Article

Source: Scopus

Shahlaei, M.^{a b}, Madadkar-Sobhani, A.^c, Saghale, L.^{b d}, Fassihi, A.^{b d}

Application of an expert system based on Genetic Algorithm-Adaptive Neuro-Fuzzy Inference System (GA-ANFIS) in QSAR of cathepsin K inhibitors
(2012) *Expert Systems with Applications*, 39 (6), pp. 6182-6191.

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Abstract

One strategy to potentially improve the success of drug design and development is to use chemometrics methods early in the process to propose molecules and scaffolds with ideal binding and to clarify physicochemical features influencing in their activity. Adaptive Neuro-Fuzzy Inference System (ANFIS) was used to construct the nonlinear quantitative structure-activity relationship (QSAR) model. The Genetic Algorithm (GA) was used to select descriptors which are responsible for the cathepsin K inhibitory activity of studied compounds. ANFIS regression is a nonlinear regression technique developed to relate many regressors to one or several response variables. The accuracy of the generated QSAR model ($R^2 = 0.916$) is described using various evaluation techniques, such as leave-one-out procedure (RLOO2=0.875) and validation through an external test set (Rpred2=0.932). © 2011 Elsevier Ltd. All rights reserved.

Author Keywords

Adaptive Neuro-Fuzzy Inference System; Cathepsin K inhibitory activity; Genetic Algorithm; QSAR

Document Type: Article

Source: Scopus

Shahlaei, M.^{a b}, Madadkar-Sobhani, A.^c, Fassihi, A.^{b d}, Saghale, L.^{b d}, Shamshirian, D.^b, Sakhi, H.^b

Comparative quantitative structure-activity relationship study of some 1-aminocyclopentyl-3-

carboxyamides as CCR2 inhibitors using stepwise MLR, FA-MLR, and GA-PLS (2012) *Medicinal Chemistry Research*, 21 (1), pp. 100-115.

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Abstract

Multiple linear regression (MLR), factor analysis in combination with multiple linear regression (FA-MLR), and genetic algorithm subset selection partial least square (GA-PLS) regression methods were used for quantitative structure-activity relationships (QSAR) model building. These approaches were employed to investigate the correlation between pIC₅₀ and various physicochemical descriptors of 28 compounds of 1-aminocyclopentyl- 3-carboxyamides including substituted tetrahydropyran moieties as CCR2 inhibitors. The obtained models were validated using cross-validation and external test set. The predictability and robustness of the developed models were considered by some figures of merit such as RMSEP and Y-randomization. MLR, FA-MLR, and GA-PLS have R² equal to 0.84, 0.69, and 0.93, respectively. Predicted variance by MLR, FA-MLR, and GA-PLS (R² test) is 78, 75, and 78%, respectively. Furthermore, the domain of applicability which indicates the area of reliable predictions is defined. The prediction results by models are in good agreement with the experimental value. © Springer Science+Business Media, LLC 2010.

Author Keywords

CCR2 inhibitors; Factor analysis; Multivariate linear regression; Partial least square; Quantitative structure-activity relationship

Document Type: Article

Source: Scopus

Shahsavari, A.A.^a, Khodaei, K.^a, Asadian, F.^a, Ahmadi, F.^b, Zamanzadeh, S.M.^c

Groundwater pesticides residue in the southwest of Iran-Shushtar plain

(2012) *Environmental Earth Sciences*, 65 (1), pp. 231-239.

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Abstract

Study area with an area of about 415 km² is located from 31°40' to 32°05' northern latitudes and 48°45' to 49°00' eastern longitudes 85 km to the north-east of Ahwaz city, in the north of Khuzestan province, and south west of Iran. The purpose of this study is: (1) the determination of the pesticides concentration in the groundwater of the Shushtar plain (Mian-

Ab) and (2) the assessment of geology, hydrogeology and anthropogenic activities impacts the groundwater quality. Thirty-seven groundwater samples were taken from product wells based on the standard methods. A simple and efficient automated method for extraction and preconcentration was used. In this method, a pyrrole-based polymer was synthesized and applied as an efficient sorbent for micro-solid-phase extraction. After extraction, analytes were desorbed in ethyl acetate and analyzed using gas chromatography-flame. The study area is surrounded by Aghajari Formation dominated by silt and clay sediments and the Bakhtiari Formation dominated by sand and gravel. Existence of these formations affects the aquifer sediments and the hydrogeological properties. In the study area, the sediments grade from gravel and sand in the north and east into silt and clay to the south and west, respectively. The topsoil in the south of the study area contains more clay sediments. In this study, the concentration of two common herbicides, i.e., 2,4-D and clodinafop propargyl and two pesticides, i.e., permethrin and diazinon, in the groundwater of Mian-Ab aquifer was assessed. Chemical analysis results showed that the 2,4-D residue in the groundwater has the highest concentration (15 ppm). About 50% of the samples have concentration values more than the maximum contamination level based on EPA drinking standard. The pesticides concentrations decrease from the north to the south of the study area. Pesticides influx to the groundwater in the south of the area is prevented or diminished due to the specific geological situation and soil type. Distribution pattern of population centers, which increase to the north of the study area, and the role of groundwater as the main source of drinking water are two important issues that must be considered in management of pesticides use in the area. © 2011 The Author(s).

Author Keywords

Groundwater quality; Khuzestan province; Pesticide residue

Document Type: Article

Source: Scopus

Shobairi, E.^a, Shaykh, E.M.R.^b, Razazian, N.^c, Yousefinejad, V.^d, Rezaie, M.^e
Diagnostic value of T2-weighted gradient-echo for diagnosis of cerebral venous thrombosis (2012) *Pakistan Journal of Medical Sciences*, 28 (1), pp. 62-66.

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^e Bio Statistics Department, Kermanshah University of Medical Sciences, Kermanshah, Iran

Abstract

Objectives: The role of MRI has been increased for diagnosis of cerebral venous thrombosis during recent years. In this study the efficacy of T2 Gradient echo for diagnosing cerebral thrombosis has been assessed. **Methodology:** This study was a descriptive-analytical study, which was focused on diagnostic values. Diagnostic value T2 GRE sequence of MRI is being

evaluated and compared with common sequences of T1, T2, and FLAIR. Then, via Golden Standard of MR Venography, different sequences of MRI have been compared. Gathered data had been entered in SPSS software and through using descriptive statistical methods and data frequency, different sequence sensitivities were computed. Results: Twenty one patients, including three males (14.3%) and 18 females (85.7%) with the average age of 36.00 ± 10.13 participated in this study, and they have had a total number of 55 numbers of thrombosis. The most common clinical symptom, predisposing factor, involved sinus, and common underlying disorder was headache (95.2%), taking OCP (52.4%), superior sagittal sinus (71.4%), and infraction (47.6%) respectively. The sensitivity rates of T1, T2, and T2GRE sequence for diagnosis of acute thrombosis were 30%, 0, and 90% respectively, and for Early Sub-Acute cases they were 92.9%, 92.9%, and 100% respectively. Conclusions: T2 GRE sequence can be used as a quick diagnostic tool for diagnosing CVT before applying MR venography in patients. Using this sequence can be very effective, especially when it is critical to diagnose the disease quickly.

Author Keywords

Cerebral venous thrombosis; MRI; T1 sequence; T2 GRE sequence; T2 sequence

Document Type: Article

Source: Scopus

Vidal, V.^a, Potterat, O.^b, Louvel, S.^a, Hamy, F.^c, Mojarrab, M.^{b f}, Sanglier, J.-J.^c, Klimkait, T.^{c d}, Hamburger, M.^b

Library-based discovery and characterization of daphnane diterpenes as potent and selective hiv inhibitors in daphne gnidium

(2012) *Journal of Natural Products*, 75 (3), pp. 414-419.

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Abstract

Despite the existence of an extended armamentarium of effective synthetic drugs to treat HIV, there is a continuing need for new potent and affordable drugs. Given the successful history of natural product based drug discovery, a library of close to one thousand plant and fungal extracts was screened for antiretroviral activity. A dichloromethane extract of the aerial parts of *Daphne gnidium* exhibited strong antiretroviral activity and absence of cytotoxicity. With the aid of HPLC-based activity profiling, the antiviral activity could be tracked to four daphnane derivatives, namely, daphnetoxin (1), gnidicin (2), gniditrin (3), and excoecariatoxin (4). Detailed anti-HIV profiling revealed that the pure compounds were active against multidrug-resistant viruses irrespective of their cellular tropism. Mode of action studies that narrowed the site of activity to viral entry events suggested a direct

interference with the expression of the two main HIV co-receptors, CCR5 and CXCR4, at the cell surface by daphnetoxin (1). © 2011 The American Chemical Society and American Society of Pharmacognosy.

Document Type: Article

Source: Scopus

Yari, K.^{a b}, Fatemi, S.S.-A.^b, Tavallaei, M.^c

High level expression of recombinant BoNT/A-Hc by high cell density cultivation of *Escherichia coli*

(2012) *Bioprocess and Biosystems Engineering*, 35 (3), pp. 407-414.

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Abstract

The carboxylic domain of the *Clostridium botulinum* neurotoxin heavy chain (BoNT/A-HC), which has been reported as a vaccine candidate, contains the principle protective antigenic determinants. In this study, the high level expression of the BoNT/A-Hc was achieved by high cell density cultivation of recombinant *Escherichia coli* in a 2-l batch stirred-tank bioreactor. In order to maximize protein expression, post-induction time and IPTG inducer concentration were optimized by the Taguchi statistical design method. Results showed that the middle of the logarithmic phase and an IPTG concentration of 1 mM presented the optimum conditions for the maximum expression of BoNT/A-HC. High cell density cultivation was subsequently carried out as an effective strategy for the high level expression of recombinant BoNT/A-Hc. Consequently, soluble BoNT/A-Hc was produced at the maximum level of 486 mg l⁻¹, at 3 h post-induction, which was approximately 9.3 and 7.8 times higher than the levels produced by the shake flask and batch culturing methods, respectively. © 2011 Springer-Verlag.

Author Keywords

Clostridium botulinum; *Escherichia coli*; Fed-batch; High cell density cultivation; Taguchi method

Document Type: Article

Source: Scopus

Zangeneh, M., Malek-Khosravi, S., Veisi, F., Rezavand, N., Rezaee, M., Rajatee, M.

Multiple-dose vaginal misoprostol and single-dose misoprostol plus oxytocin for termination of second-trimester pregnancy

(2012) *International Journal of Gynecology and Obstetrics*, 117 (1), pp. 78-80.

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Abstract

Objective: To compare 2 different methods-multiple doses of misoprostol and a combination of misoprostol and oxytocin-for termination of pregnancy in the second trimester. **Methods:** Between 2006 and 2008, 120 women undergoing termination of second-trimester pregnancy in 2 hospitals in Kermanshah, Iran, were enrolled in a randomized trial comparing 2 treatments. In each treatment group, an initial vaginal dose of 600 µg of misoprostol was placed in the posterior fornix. After 6 hours, an intravenous infusion of concentrated oxytocin was given to women in group A, and 400 µg of vaginal misoprostol was given every 6 hours to women group B, up to a maximum of 4 doses. The outcomes were compared via χ^2 and independent t tests. **Results:** Within 30 hours, 96.7% of women in group A and 96.7% of women in group B delivered successfully. The average duration between induction and delivery time was 12.3 ± 6.0 hours in group A and 12.1 ± 6.0 hours in group B ($P > 0.05$). **Conclusion:** The use of misoprostol with oxytocin, and multiple doses of misoprostol gave similar results for termination of pregnancy in the second trimester. © 2012 International Federation of Gynecology and Obstetrics.

Author Keywords

Abortion; Misoprostol; Oxytocin; Second-trimester pregnancy

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Zargooshi, J.^{a b}, Rahmanian, E.^a, Motae, H.^a, Kohzadi, M.^a

Nonischemic priapism following penile tattooing
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Abstract

Introduction. To our knowledge, here we report the first case of nonischemic priapism following penile tattooing. **Aim.** To report the first case of nonischemic priapism following penile tattooing. **Methods.** A case with tattooing-induced priapism is presented including subjective reporting, physical examination, and laboratory/radiologic evaluations. **Results.** A 21-year-old man, presented with partially rigid penis of 3-month duration. On examination, the penis was half rigid, with a tattoo on its dorsal surface, and a smaller tattoo on the glans (Figure1). The patient initially stated that the tattoo had been created years ago, but later admitted that he had it created just before the occurrence of priapism. A traditional tattooist created the tattoo manually, using a handheld needle. Bleeding from deep penile tissue for several days complicated the tattooing. **1 Penile tattooing.** The tattoo on dorsal penis reads in Persian "borow be salaamat" ("good luck with your journeys"). Also note the tattooed English letter "M" on the glans ("M" was the first letter of the first name of the patient's girlfriend). Known etiologies of priapism were investigated and ruled out. Specifically,

perineal injury, leukemia, sickle cell trait, thalassemia, urinary tract infection, neurogenic, neoplastic, infectious, toxic, and pharmacological causes were actively investigated and ruled out. There was no history of alcohol consumption or smoking. Aspirated penile blood was bright red. Cavernous blood gas measurements confirmed high oxygen and low carbon dioxide content, diagnostic of arterial priapism. There was no embolization facility in Kermanshah. In fact, there are few experts in superselective embolization in Iran. We referred the patient for superselective embolization. However, he underwent a nonindicated Sacher procedure. Predictably, the procedure was unsuccessful. At present, the patient continues to have priapism. Because of the painless nature of erections, moderately good preservation of erectile function during intercourses, and disappointment with former surgery, the patient declined further therapies, and he lives with his condition. Conclusions. Tattooing should be added to the etiologies of nonischemic priapism. Considering this case, we discourage penile tattooing. © 2011 International Society for Sexual Medicine.

Author Keywords

Injections; Priapism; Tattooing

Document Type: Article

Source: Scopus

Zargooshi, J.^{a b}, Kavoussi, H.^c, Rahmanian, E.^a, Motaee, H.^a, Kohzadi, M.^a, Nourizad, S.^d Postcoital penile drug eruption in a co-trimoxazole-sensitive patient following vaginal use of triple sulfa vaginal cream by his partner (2012) *Journal of Sexual Medicine*, 9 (3), pp. 758-760.

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Abstract

Introduction. This is a report of a very rare case of proven postcoital penile drug eruption in a patient following vaginal use of triple sulfa vaginal cream by his partner. **Aim.** To report the rare case of cross-reaction following vaginal use of triple sulfa vaginal cream in partner.

Methods. A case of postcoital penile drug eruption in a patient following vaginal use of triple sulfa vaginal cream in his partner is presented including subjective reporting, physical examination, and laboratory evaluations. **Results.** We report a 42-year-old man with known sensitivity to trimethoprim/sulfamethoxazole (co-trimoxazole) who developed a penile drug eruption at the glans after having intercourse with his wife, who was taking sulfathiazole/sulfacetamide/sulfabenzamide (triple sulfa) vaginal cream. The nature of the lesion was confirmed by a rechallenge test. **Conclusion.** To our knowledge, this is the fourth case of proven postcoital penile drug eruption in a patient following vaginal use of triple sulfa vaginal cream in his partner. Our case illustrates the importance of history taking. In clinical practice of urology, it is not rare to see patients who present with strange penile lesions following coitus. To reach a correct diagnosis, one should obtain a drug history of the sexual

partner and allergic history of the patient in such cases. © 2011 International Society for Sexual Medicine.

Author Keywords

Coitus; Drug Eruptions; Drug Reactions; Drug Transfer in Sexual Medicine; Trimethoprim-Sulfamethoxazole Combination

Document Type: Article

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Zobeiri, M.^a, Adibi, P.^b, Alavian, S.M.^c
Intravenous drug use and hepatitis C virus in Iran
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Author Keywords

Hepatitis C; Intravenous; Substance abuse

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