บทความที่น่าสนใจประจำเดือน มิถุนายน 2556

Title :	Ability of chitosan gels to disrupt bacterial biofilms and their applications in the treatment of bacterial vaginosis
Author :	Karunya K. Kandimalla, Emma Borden, Rajesh S. Omtri, Siva Prasad Boyapati, Michael Smith, Kimberly Lebby, Maanavi Mulpuru, Mounika Gadde
Journal :	Journal of Pharmaceutical Sciences: July2013,Volume 102, Issue 7, pages 2096–2101
Abstract :	Recurrence of bacterial vaginosis is attributed to the inability of various formulations to disrupt bacterial biofilms. A negatively charged polysaccharide matrix coats the bacterial communities in the biofilm and restricts the penetration of antibiotics. Therefore, bacteria in the deeper segments of the biofilm persist and perpetuate the infection. In this study, we have tested the efficacy of two bioadhesive polymers, cationic chitosan and anionic polycarbophil, to disrupt *Pseudomonas aeruginosa* biofilms grown in the Center for Disease Control bioreactor as well as on the 96-well plates. The biofilms were treated with various concentrations of polycarbophil and chitosan at pH 4 or 6. Biofilm integrity following various treatments was evaluated by crystal violet stain and laser confocal microscopy employing Syto9 (live-cell stain) and propidium iodide (dead-cell stain). These studies demonstrated that chitosan gel disrupts the *P. aeruginosa* biofilm more effectively than does polycarbophil; and this effect is independent of the pH and charge densities on either polymers. © 2013 U.S. Government. 102:2096–2101, 2013
Database :	Wiley Online Library

Title :	Size fractionation of microscopic protein aggregates using a preparative fluorescence-activated cell sorter
Author :	Verena Rombach-Riegraf, Cyril Allard, Eline Angevaare, Anja Matter, Bahman Ossuli, Rene Strehl, Friedrich Raulf, Markus Bluemel, Kamal Egodage, Margit Jeschke, Atanas V. Koulov
Journal :	Journal of Pharmaceutical Sciences: July 2013, Volume 102, Issue 7, pages 2128–2135,
Abstract :	Protein aggregation, which takes place both *in vivo* and *in vitro*, is an important degradative pathway for all proteins. Protein aggregates have distinct physicochemical and biological properties that are important to study and characterize from the perspective of both fundamental and applied sciences. The size of protein aggregates varies across a huge range, spanning several orders of magnitude. Currently, protein aggregates larger than hundreds of nanometers in diameter are impossible to physically fractionate. Here, we present a new method to fractionate microscopic proteinaceous particles using preparative fluorescence-activated cell sorting technology. © 2013 Wiley Periodicals, Inc. and the American Pharmacists Association J Pharm Sci 102:2128–2135, 2013
Database :	Wiley Online Library

Title :	Profiling the Ginsenosides of Three Ginseng Products by Lc-Q-Tof/Ms (pages C653–C659)
Author :	Chu Chu, Shaojing Xu, Xingnuo Li, Jizhong Yan and Li Liu
Journal :	Journal of Food Science: May 2013, Volume 78, Issue 5, pages C653–C659
Abstract :	Ginseng is a well-known herbal medicine that has been gaining increasingly popularity as a potential chemopreventive agent. In traditional Chinese medicine practice, white ginseng (WG), red ginseng (RG), and dali ginseng (DG) are 3 different ginseng-processed products used for different purposes. Although the morphological appearance and some constituents contained in these ginseng products are similar, their pharmacological activities are significantly different due to the varied types and quantity of ginsenosides in each product. In the present study, a practical method based on rapid liquid chromatography coupled with quadrupole time of flight mass spectrometry (LC-Q-TOF/MS) was developed to identify the chemical profiles of ginsenosides in these 3 ginseng products. The results demonstrated that a total of 55, 53, and 43 compounds were unambiguously assigned or tentatively identified in DG, WG, and RG samples, respectively. The featured compounds are mainly malonyl ginsenosides in WG, and decarboxyl products of mal-ginsenosides and the dehydrated compounds from polar ginsenosides were characteristic in RG, while DG contain some characteristic components present both in WG and RG. We presume that heating processing is the major factor affecting the chemical profile of ginseng products. The difference of chemical information revealed by LC-Q-TOF/MS could be used to discriminate the WG, RG, and DG samples.
Database :	Wiley Online Library

Title :	Utility of gastric-retained alginate gels to modulate pharmacokinetic profiles in rats
Author :	Kimberly A. Foster, Huadong Sun, Roderick Marcus Fancher, Mirek Proszynski, George Dixon, Kenneth Ford, Georgia Cornelius, Olafur S. Gudmundsson and Michael J. Hageman
Journal :	Journal of Pharmaceutical Sciences: Article first published online: 6 JUN 2013 | DOI: 10.1002/jps.23630
Abstract :	A gastric-retentive formulation amenable to dosing in rodents has the potential to enable sustained release in a preclinical setting. This may be useful to provide systemic exposure over a longer duration or to increase duration of exposure for compounds with targets localized in the gastrointestinal tract. Previous work has shown that a mixture of 1% sodium alginate and 0.625% karaya gum in the presence of a calcium chelator can form gels *in situ* that are gastric retained in rats. The aim of this work was to define the physicochemical boundaries of compounds within this technology and their relation to *in vivo* release using a series of model compounds with high permeability but varying solubility. *In vitro* data demonstrated a good correlation between solubility and initial release rates from the gels. *In vivo* studies were conducted in Sprague–Dawley rats to compare the exposure profile of compounds dosed in gel relative to a standard formulation. *In vivo* data were consistent with trends from the *in vitro* studies. These data suggest that, in conjunction with an understanding of compound solubility, sodium alginate/karaya gum gels may be a useful tool to modulate exposure profiles in rodent models in a preclinical setting.
Database :	Wiley Online Library

Title :	Prevention of Osteoporosis and Bone Fragility: A Pediatric Concern
Author :	Saija Annukka Kontulainen, Chantal Elizabeth Kawalilak, James Duncan Johnston, Donald Alexander Bailey
Journal :	AMERICAN JOURNAL OF LIFESTYLE MEDICINE: May 9, 2013 as doi: 10.1177/1559827613487664 (online first)
Abstract :	The importance of optimal bone growth in childhood and adolescence has been recognized as one of the key strategies in osteoporotic fracture prevention. Low birth size, poor childhood growth, and low peak bone mass at the cessation of growth have been linked to the later risk of osteoporosis and hip fracture. Formerly, the focus was merely on maximizing bone mineral accrual because a high peak bone mineral mass may prevent attainment of a critical "fracture threshold" associated with age-related bone loss and osteoporosis. More recently, the focus has shifted away from bone mineral accrual—as measured by dual-energy X-ray absorptiometry (DXA)—toward the optimization of bone strength. This is partly because of the advances in bone imaging that have enabled estimation of bone strength beyond bone mass. In this review, we briefly describe long-bone growth and structural development and our abilities to assess bone properties by medical imaging tools. In addition, we summarize the evidence of factors contributing to skeletal growth, bone fragility, and the development of strong, healthy bones.
Database :	Sage Journals Online

Title :	Applying Psychological Theories to Promote Healthy Lifestyles
Author :	Sarah E. Linke, Cody J. Robinson, Dorothy Pekmezi
Journal :	AMERICAN JOURNAL OF LIFESTYLE MEDICINE: May 2, 2013 as doi: 10.1177/1559827613487496 (online first)
Abstract :	Over the past few decades, researchers have been developing and refining psychological theories and models to provide solid behavioral frameworks for evidence-based research. Each year new theories and models are created; however, a select few appear to have withstood the test of time and continue to be frequently utilized in present-day research. The objectives of this review are to highlight these psychological theories and models and describe their application to various public health issues and behaviors. Descriptions and example applications of the following theories and models are described in this review: health belief model, theory of reasoned action/planned behavior, social cognitive theory, transtheoretical model, and socioecological model.
Database :	Sage Journals Online

Title :	Acupuncture in baby colic
Author :	Marianne Reinthal, Iréne Lund, Thomas Lundeberg
Journal :	Acupuncture and Related Therapies: May–June 2013, Volume 1, Issues 2–3, Pages 31–34
Abstract :	Baby colic or infantile colic is a condition in which an otherwise healthy baby cries or displays symptoms of distress (*periods of intense, unexplained fussing/crying*

	lasting more than 3 h a day, more than 3 days a week for more than 3 weeks) without any discernible reason. The condition typically appears within the first month of life and often disappears rather suddenly, before the baby is three to four months old, but can last up to one year. Persistent infant crying is much more than a parenting nuisance. Crying and the exhaustion associated with it can trigger serious problems, such as relationship stress, breastfeeding failure, excess visits to the doctor/emergency room and even automobile accidents.
Database :	ScienceDirect

Title :	Cognitive correlates of cerebrospinal fluid biomarkers in frontotemporal dementia
Author :	Esther L.G.E. Koedam, Annelies E. van der Vlies, Wiesje M. van der Flier, Nicolaas A. Verwey, Ted Koene, Philip Scheltens, Marinus A. Blankenstein, Yolande A.L. Pijnenburg
Journal :	Alzheimer's & Dementia: May 2013, Volume 9, Issue 3, Pages 269–275
Abstract :	In this study we investigated the relationships between cerebrospinal fluid (CSF) biomarkers (tau and amyloid-$\beta_{1\text{-}42}$ [$A\beta_{1\text{-}42}$]) and cognition or behavior in patients with frontotemporal dementia (the behavioral variant, bvFTD).
Database :	ScienceDirect

Title :	Pascal's Wager and Deciding About the Life-Sustaining Treatment of Patients in Persistent Vegetative State
Author :	Jukka Varelius
Journal :	Neuroethics : August 2013, Volume 6, Issue 2, pp 277-285
Abstract :	An adaptation of Pascal's Wager argument has been considered useful in deciding about the provision of life-sustaining treatment for patients in persistent vegetative state. In this article, I assess whether people making such decisions should resort to the application of Pascal's idea. I argue that there is no sufficient reason to give it an important role in making the decisions.
Database :	SpringerLink

Title :	Low-frequency subthalamic nucleus deep brain stimulation for axial symptoms in advanced Parkinson's disease
Author :	Christos Sidiropoulos, Richard Walsh, Christopher Meaney, Y. Y. Poon, Melanie Fallis, Elena Moro
Journal :	Journal of Neurology : June 2013, DOI 10.1007/s00415-013-6983-2
Abstract :	Axial symptoms such as freezing of gait and falls are common manifestations of advanced Parkinson's disease (PD) and are partially responsive to medical treatment. High-frequency (≥130 Hz) deep brain stimulation (DBS) of the subthalamic nucleus (STN) is highly efficacious in ameliorating appendicular symptoms in PD. However, it is typically less effective in improving axial symptomatology, especially in the long term. We have studied the effects of low-frequency stimulation (LFS) (≤80 Hz) for improving speech, gait and balance dysfunction in the largest patient population to date. PD patients with bilateral STN-DBS and resistant axial symptoms were switched from chronic 130 Hz

	stimulation to LFS and followed up to 4 years. Primary outcome measures were total motor UPDRS scores, and axial and gait subscores before and after LFS. Bivariate analyses and correlation coefficients were calculated for the different conditions. Potential predictors of therapeutic response were also investigated. Forty-five advanced PD patients who had high frequency stimulation (HFS) for 39.5 ± 27.8 consecutive months were switched to LFS. LFS was kept on for a median period of 111.5 days before the assessment. There was no significant improvement in any of the primary outcomes between HFS and LFS, although a minority of patients preferred to be maintained on LFS for longer periods of time. No predictive factors of response could be identified. There was overall no improvement from LFS in axial symptoms. This could be partly due to some study limitations. Larger prospective trials are warranted to better clarify the impact of stimulation frequency on axial signs.
Database :	SpringerLink

Title :	SENSING DNA WITH ALTERNATING CURRENTS USING A NANOGAP SENSOR EMBEDDED IN A NANOCHANNEL DEVICE
Author :	BRET H. DAVIS et al.
Journal :	*Nano LIFE* 03, 1340007 (2013) [9 pages] DOI: 10.1142/S1793984413400072
Abstract :	We report an integrated nanochannel/nanoelectrode sensor for the detection of DNA using alternating currents. We find that DNA can be detected using platinum as the metal for the detecting electrodes, with a signal to noise ratio exceeding 10. We argue that the signal is at least in part electrochemical in nature, thus holds the promise to yield a sequence-dependent signal. However, we also find that for large voltages, DNA attaches irreversibly to the driving electrodes.
Database :	World Scientific Publishing Co.