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Short Communication **Published Date:- 2018-10-26**

Synthesis and Biological Evaluation of Fluorescein-Tagged 1-Methyl-o-carborane for Boron Neutron Capture Therapy

Fluorescein was conjugated with 1-methyl-o-carborane and the resulting bioconjugate was biologically evaluated through microscopic and flow cytometric studies in pancreatic cancer and squamous cell carcinoma cell lines. The uniform distribution of this bioconjugate, as well as its moderate cytotoxicity and higher boron content relative to present boronated delivery agents sodium borocaptate (BSH) and boronophenylalanine (BPA), provide justification for its further evaluation as a potential delivery agent for BNCT.

Editorial **Published Date:- 2018-10-23**

Knowledge or Money: Which One is More Important?

When I asked the students in my general Chemistry class whether grade is more important than knowledge, a majority of them opted for grades over knowledge and this answer did not surprise me a bit as the smart phones are available for them to think while their brains are corrupted or unused for most of the time. This brings one to the Einstein's prediction that technology will develop to the point where there is no human interaction, which will be the day a new generation of idiots will emerge, and we are witnessing everywhere, including in the classrooms all over the world.

Review Article **Published Date:- 2018-10-04**

Validation of HPLC-UV method for determination of amoxicillin Trihydrate in capsule

The intention of the present work is to validate an easy, better and reasonable approach for estimation of amoxicillin trihydrate in tablet formulation by opposite segment(reverse phase) HPLC –UV with advanced conditions and parameters for habitual use in Rwanda well known board in pharmaceutical laboratory in order to check if no substandard or counterfeit amoxicillin has entered in our country that can result in antimicrobial resistance, treatment failure which can be a chief difficulty on public health. an easy, selective, precise, speedy, specific, and correct reverse phase HPLC UV-seen technique has been verified for the dedication of amoxicillin, in addition that is a cost-effective technique for the established method, monobasic potassium phosphate (KH2PO4) used as buffer and methanol and had been used as a mobile section in the ratio 95:5 respectively. The elution turned into finished in an isocratic mode at a go with the flow rate of 1.5ml/minute proposed method became demonstrated as according to ICH guiding principle refereeing additionally to USP necessities for amoxicillin capsule. linearity range of amoxicillin and was evaluated inside the variety of 20–160 g/ml. the correlation coefficient r2 changed into 0.9998 and the relative well known deviation between six replicates injection was always much less than 2%. The retention time was found 3.5±0.02. the high percentage of healing of amoxicillin is 100.6±4% indicates that the proposed method is exceptionally correct and precise trueness of with the trueness of 100.06±1.2% .the statistical evaluation proved that the demonstrated method is appropriate for analysis of amoxicillin as the majority drug and pharmaceutical formula with none interference from excipients .with the aid of considering the efficiency of the drug samples, all analyzed pattern were within the variety of 90-120 % of percentage of labeled amount, but the efficiency had been distinctive amongst samples. The have a look at located that no counterfeit, no substandard product turned into amongst all batches of amoxicillin samples throughout the c programming language of the look at.

Research Article **Published Date:- 2018-09-04**

Chromium Isotopes Detection in their Ores with Minimal Errors

The industrial production and use of chromium have grown considerably during the past five decades. Abundances of the chromium isotopes in terrestrial samples are identical to 0.01%. Among the dominant species of chromium, the trivalent form widely occurs in nature in chromite ores which is extremely immobilized especially in water bodies. Samples were mixtures of separated chromium isotopes and the calibration was made with the same species as those used in the measurements. The method had simplified the conversion of the ores to chromyl fluoride since the element could be readily separated as lead chromate from the leaching of chromite-sodium peroxide fusions. Isotope assay of chromyl fluoride under certain conditions was measured and the measurements of chromium isotopic anomalies ratios and isotope abundance of the chromite ores have been assessed. These provided sufficient quantitative mass spectrometric data, which were analyzed to calculate the abundance and the mean atomic mass of the questioned isotopes. Based on the high mass spectroscopy stability and the correction factors, the results were of good precision (incl. negligible systematic errors normally associated to inter-laboratory discrepancies) and the Cr isotopes availability (52Cr > 53Cr > 50Cr > 54Cr) was in conjunction with other classical tools such as oxygen isotopes. This paper is important for paleoecological, environmental, archeological, forensic, and nuclear researchers.

Review Article **Published Date:- 2018-09-03**

A Gateway to Metal Resistance: Bacterial Response to Heavy Metal Toxicity in the Biological Environment

Heavy metals and metalloids are dangerous because they have the tendency to bioaccumulate in biological organisms over a period of time. However, it is conceived that a number of phytochemical agents as well microorganism can act as heavy metal removing agent both from human beings and the environment surrounding. For instance, microbes are used for the removal of heavy metals from the water bodies including bacteria, fungi, algae and yeast. This review shows that bacteria can play an important role in understanding the uptake and potential removal behaviour of heavy metal ions. The bacteria are chosen based on their resistance to heavy metals (incl. their toxicities) and capacity of adsorbing them. Due to specific resistance transfer factors, cell impermeability is drastically inhibited by several ion (i.e. mercury, cadmium, cobalt, copper, arsenic) forms. Between these elements, free-ion cadmium and copper concentrations in the biological medium provide more accurate determination of metal concentrations that affect the bacteria, than with most of the other existing media. Metal toxicity is usually assessed by using appropriate metal ion chelators and adjusting pH factor. Bacteria and metals in the ecosystem can form synergistic or antagonistic relationships, supplying each other with nutrients or energy sources, or producing toxins to reduce growth and competition for limiting nutritional elements. Thus, this relation may present a more sustainable approach for the restoration of contaminated sources.

Research Article **Published Date:- 2018-07-13**

Agricultural Residues for Future Energy Option in Sudan: An Analysis

Like many tropical countries, Sudan has ample biomass resources that can be efficiently exploited in a manner that is both profitable and sustainable. Fuel-wood farming offers cost-effective and environmentally friendly energy solutions for Sudan, with the added benefit of providing sustainable livelihoods in rural areas. This article provides an overview of biomass energy activities and highlights future plans concerning optimum technical and economical utilization of biomass energy available in Sudan. Results suggest that biomass energy technologies must be encouraged, promoted, implemented, and fully demonstrated in Sudan.

Research Article **Published Date:- 2018-04-09**

The Role of Tau Protein in Diseases

Amyloid-? peptide (A?) and tau protein deposits in the human brain are the pathological hallmarks of Alzheimer’s disease (AD). Tau is a class of proteins that are abundant in nerve cells and perform the function of stabilizing microtubules. However, in certain pathological situations, Tau proteins become defective and fail to adequately stabilize microtubules, which can result in the generation of abnormal masses that are toxic to neurons. This process occurs in a number of neurological disorders collectively known as Tauopathies. Tau protein is the major factor of the intracellular filamentous deposits that relate to a number of neurodegenerative diseases which includes the progressive supranuclear palsy (PSP), Pick’s disease, and Parkinsonism. The identification of mutations in Tau established that dysfunction or misregulation of tau protein is sufficient to cause dementia and neurodegeneration. In this review article, we discussed the etiology of the tau formation and role in AD and subsequently therapeutic approach for disassembling and Tau inhibition.