11th Annual Congress on

Chemistry

September 12-13, 2018 Singapore

Posters

Akihito Yokosuka et al., Chem Sci J 2018, Volume 9
DOI: 10.4172/2150-3494-C5-030

Steroidal glycosides from the aerial parts of *Avena sativa* and their cytotoxic activity

Akihito Yokosuka, Keita Ishihara, Tomoki Iguchi, Tsuyoshi Yamada and Yoshihiro Mimaki
Tokyo University of Pharmacy and Life Sciences, Japan

Oats (*Avena sativa L.*) are a cereal grain worldwide and used as a livestock feed and food such as breakfast cereals, oatmeal porridge and hard cakes. Although a few steroidal glycosides, such as Avenacosides A and B and lignan derivatives were isolated from A. sativa, there has been no systematic investigation concerning the secondary metabolites of the plant. We conducted a phytochemical examination of *A. sativa* and evaluated the cytotoxic activity of the isolated compounds. The aerial parts of A. sativa were extracted with MeOH. The concentrated MeOH extract was passed through a Diaion HP-20 column, successively eluted with 30% MeOH, 50% MeOH, MeOH, EtOH and EtOAc. The MeOH eluate fraction showed cytotoxicity against HL-60 leukemia cells with an IC50 value of 16.8 μg/mL. Then, the MeOH eluate fraction was subjected to column chromatography on silica gel and octadecylsilanized silica gel and HPLC, giving compounds 1-12. The structures of the new compounds (1-6) were determined by analysis of their spectroscopic data and hydrolysis. Compounds 1-12 were evaluated for cytotoxic activity against HL-60 cells. Compounds 1, 9, 11 and 12 were cytotoxic to HL-60 cells with IC50 values ranging from 0.79 to 5.6 μM, whereas cisplatin, which was used as a positive control, gave an IC50 value of 1.49 μM. Compound 1 is a new Steroidal Glycoside with a potent cytotoxicity against HL-60 cells with an IC50 value of 0.79 μM. Then, the ability of apoptotic induction of 1 was evaluated. Compound 1 was revealed to induce apoptotic cell-death in HL-60 cells, which was shown by the morphologic and biochemical hallmarks of apoptosis such as fragmented and condensed nuclear chromatins, and a loss of mitochondrial membrane potential followed by the activation of caspase-3.

Biography

Akihito Yokosuka is an Assistant Professor in Department of Medicinal Pharmacognosy, School of Pharmacy, Tokyo University of Pharmacy and Life Sciences, Japan. He has completed his PhD from Tokyo University of Pharmacy and Life Sciences in 2004. His area of expertise includes pharmacognosy, phytochemistry and evaluation of natural products for medicinal uses.

yokosuka@toyaku.ac.jp

Notes:

Tomoki Iguchi et al., Chem Sci J 2018, Volume 9
DOI: 10.4172/2150-3494-C5-030

Cholestane rhamnosides from *Ornithogalum saundersiae* bulbs and their cytotoxic activity against HL-60, A549 and TIG-3 cells

Tomoki Iguchi, Minpei Kuroda, Akihito Yokosuka and Yoshihiro Mimaki
Tokyo University of Pharmacy and Life Sciences, Japan

Ornithogalum saundersiae (Liliaceae) is native to South Africa and cultivated as an ornamental plant in the world. Previously, we have reported a total of 29 cholestane glycosides, including OSW-1, isolated from the MeOH extract of *O. saundersiae* bulbs and their cytotoxic activity against several malignant tumor cells. In this presentation, we wish to report focus on cholestane rhamnosides isolated from the MeOH extract of *O. saundersiae* bulbs. The concentrated MeOH extract of O. saundersiae bulbs was passed through a Diaion HP-20 column eluted with 20% MeOH, EtOH, EtOAc, successively. The EtOH eluate fraction was subjected to column chromatography on silica gel and ODS silica gel, as well as preparative HPLC to give 19 Cholestane Rhamnosides including 12 new naturally occurring compounds. The structures of the new compounds were determined by spectroscopic analysis mainly based on one and two-dimensional NMR and the results of hydrolysis. Cholestane rhamnosides 3, 7-12, 15-17 and 19 exhibited cytotoxic activity against HL-60 human promyelocytic leukemia cells and A549 human lung cancer cells with IC50 values ranging from 0.05 M to 7.72 M and 0.27 M to 2.41 M, respectively. HL-60 cells treated with (22S)-3, 22-Dihydroxycholest-5, 24-dien-16-yl-L-Rhamnopyranoside (11), which had an IC50 value of 0.16 M, displayed the hallmark indicators of apoptosis, such as fragmented and condensed nuclear chromatins and activation of caspase-3. In the HL-60 cells treated with 11, the accumulation of sub-G1 cells and G2/M phase cells was shown by flow cytometry analysis. These results suggested that 11 arrests HL-60 cell proliferation in the G2/M phase induces apoptotic cell death. Furthermore, the loss of the mitochondria membrane potential and release of cytochrome c to the cytosol were not observed in the HL-60 cells treated with 11. In conclusion, 11 may induce apoptosis in HL-60 cells via a mitochondria-independent pathway.

Biography

Tomoki Iguchi is a Doctoral student in Department of Medicinal Pharmacognosy, School of Pharmacy, Tokyo University of Pharmacy and Life Sciences, Japan. He majors in Chemistry and Biochemistry of Natural Products.

y091015@toyaku.ac.jp

Notes:

Benice Lyrem Joy S Lim et al., Chem Sci J 2018, Volume 9
DOI: 10.4172/2150-3494-C5-030

Galactofuranose-based compounds as potential inhibitors of GlfT1

Benice Lyrem Joy S Lim[1], Completo Gladys Cherisse J[1], Tabilog Andrew Exequiel S[1], Allas Mikel Jason D G[1,2], Angkico Rowin Christian B[2], Espejo Jaevee William T[2], Sumalde Jan Michael C[2], Joe Maju[3], Zheng Blake[3] and Lowary Todd L[3]

[1]University of the Philippines-Los Baños, Philippines
[2]De La Salle University, Philippines
[3]University of Alberta, Canada

The enzyme Galactofuranosyltransferase 1 (GlfT1), initiates the elongation of the Galactan chain of the mycolyl-Arabinogalactan Peptidoglycan (mAGP) complex of the mycobacterial cell wall. mAGP is essential for the microorganism's viability and its Galactan chain backbone is comprised of alternating 5- and 6-linked β-D-Galactofuranose (Galf) units that are not found in humans and thus, enzymes (e.g. GlfT1) involved in its biosynthesis might serve as putative therapeutic targets in diseases such as tuberculosis. Several potential inhibitors resembling the polysaccharide glycan were synthesized and tested against GlfT1.

Biography

Benice Lyrem Joy S Lim is a MS Chemistry student at the University of the Philippines Los Baños. She works as a Research Associate in the laboratory of Dr. Gladys Cherisse J Completo. Her field of interests involves synthetic and Natural products chemistry.

bslim@up.edu.ph

Notes:

Gladys Cherisse J. Completo et al., Chem Sci J 2018, Volume 9
DOI: 10.4172/2150-3494-C5-030

Analysis of Human Milk Oligosaccharides from Filipino breastmilk reveals secretor status variation

Gladys Cherisse J. Completo[1], Anthony Salvador B. Albaladejo[2], Ruel C. Nacario[1], Baby Richard R. Navarro[3], Carlito B. Lebrilla[4]
[1]Institute of Chemistry, University of the Philippines Los Baños, Laguna 4031
[2]Department of Chemistry, University of the Philippines Visayas, Miagao, Iloilo 5023
[3]Institute of Food Science and Technology, University of the Philippines Los Baños, Laguna 4031
[4]Department of Chemistry, and Biochemistry (School of Medicine), University of California, Davis, CA 95616

Human Milk Oligosaccharides (HMOs), although lacking in nutritional value and considered indigestible to the infant, serve many infant-health-beneficial functions, such as nourishment of gut bacteria, inhibition of pathogenic infection, and aiding in brain development. Their expression depends on a series of competing Glycosyltransferases driven by the secretor gene and Lewis blood group. In this study, aiming to determine possible correlation between HMOs and secretor status, a rapid- throughput 96-wellplate method, entailing lipid separation by centrifugation, protein precipitation using Ethanol, Alditol sugar reduction using Sodium Borohydride, and solid phase extraction purification using porous graphitized carbon, was used to analyze HMOs from Filipino breastmilk. A Nano-HPLC Chip/TOF- MS coupled with the use of Agilent MassHunter programs and an in-house library was used to analyze purified HMOs. Five HMO secretor markers were also used to quantify the level of α(12) fucosylation. From the results, 81% of the mothers sampled were determined to be secretors and 19% to be non- secretors; ,Moreover, the secretor mothers were found to produce milk richer in Oligosaccharides than the non-secretormothers. However, variations in Oligosaccharide type, which could be linked to variations in secretor status, were observed in both. Thus, this study provided a rapid method for determining phenotypic secretor status using HMO markers from Filipino breastmilk samples.

Biography

Gladys C.J. Completo is a Professor at the University of the Philippines Los Baños. Her field of interests includes Carbohydrate synthesis, Glycomics and Glucoproteomics of milk Oligosaccharides.

gjcompleto@up.edu.ph

Notes:

Ruel C Nacario et al., Chem Sci J 2018, Volume 9
DOI: 10.4172/2150-3494-C5-030

Exploring Protein interactions in Non-small-cell Lung cancer-associated Glycoproteins through Mass Spectrometry and StringDB

Ruel C Nacario[1], Gladys Cherisse J Completo[1], Joeriggo M Reyes[1], Francisco M Heralde III[2,3], Ma Teresa A Barzaga[3], Nelia Tan Liu[3], Guia Ladrera[3], Jose Danguilan[3], Patrick G Moreno[2], Jomar Rabajante[1], Isagani D Padolina[4], Carlito B Lebrilla[5]

[1]University of the Philippines Los Baños, Philippines
[2]University of the Philippines, Philippines
[3]Lung Center of the Philippines, Philippines
[4]Pascual Pharma Corp., Philippines
[5]University of California Davis, USA

Identification of glycans as potential biomarkers for cancer is a recent development in the field, with several studies reporting differential profiles of N-glycans among various cancers. High mortality in lung cancer is still an unresolved problem due to late detection/diagnosis and varying response to treatment regimens. Here we report glycomic profiling of A549, NCI-H23 (NSCLC) and CCD-Lu19 (normal lung tissue), glycoproteomic analysis of A549 non-small-cell lung cancer (NSCLC) cell lines using high-resolution mass spectrometry, and protein interaction network analysis of modified glycoproteins using StringDB to gain insights on the disease mechanisms involving protein glycosylation. We identified nine glycans that were differentially expressed in normal versus cancer cell lines and 124 proteins that were associated with these glycosylations, including the known cancer markers EGFR and CD44, ranging in the number of N-glycan modifications from 1 to 5. Hex(9) HexNAc(2), a high-mannose N-glycan, modifies the most number of proteins (n=105, unique=78). While HexNAc(4)Hex(5)Fuc(1), a complex hybrid-fucosylated N-glycan. The expanded protein interaction network for each of the glycan show enrichment for 5-7 cancer-related pathways including PI3K-Akt signaling, Pathways in cancer (KEGG: 05200), Proteoglycans in cancer (KEGG: 05205), micro-RNAs in cancer (KEGG: 05206) and non-small-cell lung cancer (KEGG: 05223), mostly via integrins, EGFR, EGF, CD44 and several other cell adhesion molecules. These results suggest the importance of glycans in mediating signaling cascades that are important in NSCLC. Further work is being done to validate these analyses and explore the utility of these glycans as possible cancer biomarkers for different NSCLC stages

Biography

Ruel Nacario received his Ph.D in Chemistry from the University of Toledo (USA) in 2005. From 2005-2007, he was a Postdoctoral Fellow with Prof. Todd Lowary at the University of Alberta, Canada, working in a collaborative total synthesis of arabinan-containing octadecasaccharide precursor and a docosanasaccharide proposed to be a common intermediate in mycobacterial cell wall biosynthesis. He then joined Nitto Denko Technical Corp (NDT) in California, USA, initially, as an Industrial Postdoctoral Fellow (2008) and then subsequently promoted to the Sr. Scientist (2009-2012) positions, working on the synthesis, purification and analysis of oligonucleotides in support of NDT's development of a delivery system and siRNA-based drug for treatment of liver fibrosis. He then returned to the Philippines and joined the University of the Philippines (2013-present) where he is currently an Associate Professor of Chemistry. His research interests span both Organic and Medicinal Chemistry.

rcnacario@up.edu.ph

Notes:

11th Annual Congress on

Chemistry

September 12-13, 2018 Singapore

Accepted Abstracts

Chem Sci J 2018, Volume 9
DOI: 10.4172/2150-3494-C5-030

11th Annual Congress on
CHEMISTRY
September 12-13, 2018 Singapore

Construction of an Electrochemical sensor based on Carbon nanotubes/Gold nanoparticles for trace determination of Amoxicillin in bovine milk

Aliyu Muhammad[1, 2], Nor Azah Yusof[2], Reza Hajian[2] and Jaafar Abdullah[2]
[1]Kebbi State University of Science and Technology Aliero, Nigeria
[2]Universiti Putra Malaysia, Malaysia

In this work, a novel electrochemical sensor was fabricated for determination of amoxicillin in bovine milk samples by decoration of carboxylated Multi-Walled Carbon Nanotubes (MWCNTs) with gold Nanoparticles (AuNPs) using ethylenediamine (en) as a cross linker (AuNPs/en-MWCNTs). The constructed nanocomposite was homogenized in dimethylformamide and drop casted on screen printed electrode. Field Emission Scanning Electron Microscopy (FESEM), Energy Dispersive X-Ray (EDX), X-Ray Diffraction (XRD) and cyclic voltammetry were used to characterize the Synthesized Nanocomposites. The results show that the synthesized nanocomposites induced a remarkable synergetic effect for the oxidation of amoxicillin. Effect of some parameters, including pH, buffer, scan rate, accumulation potential, accumulation time and amount of casted nanocomposites, on the sensitivity of fabricated sensor were optimized. Under the optimum conditions, there was two linear calibration ranges from 0.2-10 μM and 10-30 μM with equations of Ipa (μA)=2.88C (μM)+1.2017; r=0.9939 and Ipa (μA)=0.88C (μM)+22.97; r=0.9973, respectively. The Limit of Detection (LOD) and Limit of Quantitation (LOQ) were calculated as 0.015 μM and 0.149 μM, respectively. The fabricated electrochemical sensor was successfully applied for determination of Amoxicillin in bovine milk samples and all results compared with High Performance Liquid Chromatography (HPLC) standard method.

amnakowa@yahoo.com

Notes:

conferenceseries.com

Chem Sci J 2018, Volume 9
DOI: 10.4172/2150-3494-C5-030

Rotational excitation of the CP($X^2\Sigma^+$) open shell molecule due to Collision with He(^1S)

Cheikh Tidiane Bop
Cheikh Anta Diop University, Senegal

Phosphorus bearing molecules have been discovered in the circumstellar and interstellar media. Modeling their abundance accurately requires computations of rate coefficients induced by collision with He and H_2 (i.e., the most abundant gaseous components). Without these data along with radiative transitions, astrophysicists would assume the Local Thermodynamic Equilibrium (LTE) which is rarely verified in space. Rate coefficients may be computed by first determining highly accurate Potential Energy Surface (PES) and cross sections. Here, we present the first PES of the CP($X^2\Sigma^+$)-He(^1S) Van Der Waals collisional complex. The ab initio interaction potential was performed using the explicitly correlated restricted coupled cluster approach with simple, double, and perturbative triple excitation (RCCSD(T)-F12) in connection with the augmented correlation consistent polarized valence triple-ζ Gaussian basis set (aug-cc-pVTZ), as implemented in the Molpro program. The potential presents two minima of -18.62 cm^{-1} and -18.72 cm^{-1}. From the PES obtained, we have computed state-to-state excitation cross sections of CP due to collision with He for energies up to 500 cm^{-1}. Rotational transitions involving the fine-structure levels of the CP molecule were treated with a Recoupling Technique based on the scattering matrix calculated with the exact quantum mechanical close coupling method implemented in the Molscat code. Discussions on the propensity rules between the fine-structure levels were made and we found that the $\Delta j=\Delta N$ transitions are favored with respect to the $\Delta j\neq\Delta N$ ones. The data presented here may have a great impact on the accurate determination of the CP abundance in space. This would yield a better understanding of the phosphorous interstellar chemistry. Indeed, carbon phosphorus is expected to originate from HCP photo-dissociation and it is thought to be the main precursor of CCP formation.

cheikhtidiane.bop@ucad.edu.sn

Notes:

conferenceseries.com

Chem Sci J 2018, Volume 9
DOI: 10.4172/2150-3494-C5-030

Successive resolution technique of quaternary mixture of Aceclofenac and Diacerin in presence of their degradation products using different wavelength regions

Dina Abbas Ahmed Mostafa[1], Hayam Mahmoud Lotfy[1], Mohamed Khaled Abdel Rahman[2] and Soheir Abdel Fattah Weshahy[2]
[1]Future University in Egypt, Egypt
[2]Cairo University, Egypt

A novel comparative study of smart spectrophotometric methods for the simultaneous determination of a binary mixture of Aceclofenac (ACE) and Diacerin (DIA) in presence of Diclofenac Sodium (DIC) and Rhein (RH), the degradation products and active metabolites of ACE and DIA, respectively was performed without preliminary separation steps. Where, RH could be eliminated from DIA at wavelength region (460-485 nm) using constant multiplication coupled with Spectrum Subtraction method (CM-SS) without any contribution from the other two components (ACE and DIC), while ACE could be resolved from its degradation product (DIC) at wavelength region (200 nm- 320 nm) using Concentration Subtraction Method (CSM). The linearity, accuracy and precision ranges of these methods were determined and validated as per ICH guidelines. Moreover, the specificity was checked by analyzing synthetic mixtures of both drugs with their degradation products. The two methods were applied for the determination of the cited drugs in pharmaceutical formulation. Results for the proposed methods were statistically compared with those obtained by applying a reported method for the drugs and showed that there is no significant difference between the proposed methods and the reported one regarding both accuracy and precision.

dinaabbas1@hotmail.com

Notes:

conferenceseries.com

Chem Sci J 2018, Volume 9
DOI: 10.4172/2150-3494-C5-030

Cytotoxicity and Phytochemical evaluation of *Pycnanthus angolensis* (Welw.) Warb dichloromethane and Ethyl acetate stem bark extracts against HeLa cells

Ijeoma Solomon Okoro and Terrumun Amom Tor-Anyiin
University of Agriculture, Nigeria

Cancer is one of the major life threatening diseases in the world today and its cell resistance to widely used chemotherapeutic agents is gradually developed. Natural products, mainly isolated from medicinal plants, have been considered as valuable sources for herbal anticancer drugs. The present study aimed to evaluate phytochemicals and *in vitro* cytotoxic activities of the dichloromethane and ethyl acetate stem bark extracts from *Pycnanthus angolensis* (Welw.) Warb. on cancer cell line-Human Cervix Adenocarcinoma (HeLa) cells. Dichloromethane and Ethyl acetate extracts of *P. angolensis* were prepared. The phytochemical screening of the extracts was analyzed using standard method. *In vitro* cytotoxicity of the extract on HeLa cells was evaluated using resazurin assay with the reference drug Emetine. Our result of the phytochemical screening revealed the presence of glycosides, alkaloids, saponin, steroids, tannins, flavonoids and terpenoids. A value of $p<0.05$, <0.01 and <0.0001 were considered to be significant, very significant and highly significant, respectively. The extracts decreased the viability of the cells in a concentration-dependent manner. The Ethyl Acetate extract of *P. angolensis* showed a significant cytotoxicity with CC^{50} 90.27 ug mL^{-1}. The Dichloromethane extract demonstrated a higher cytotoxic activity with CC^{50} 26.66 ug mL^{-1} <30 ug mL^{-1} a limit recommended for cytotoxicity for extract. The result of cytotoxicity study showed that *P. angolensis* extracts as having potential inhibitory effect on HeLa cells. In conclusion, the dichloromethane and ethyl acetate extracts of *P. angolensis* are promising cancer drug and their significance may increase in future in view of the lack of unwanted side effects characteristic for Emetine compound currently in clinical use for treatment of cancer.

ijeomasolomonokoro@gmail.com

Notes:

conferenceseries.com

Chem Sci J 2018, Volume 9
DOI: 10.4172/2150-3494-C5-030

Source and toxicological assessment of Polycyclic Aromatic Hydrocarbons in sediments from Imo River, Southeastern Nigeria

Inyang Okon Oyo Ita[1], Orok E Oyo Ita[1], Hope A Neji[1] and Soumaya Elarbaoui[2]
[1]University of Calabar, Nigeria
[2]University of Carthage, Tunisia

Rivers are an important interface between the continents and oceans since they are involved in the delivery of a key flux of toxic and persistent organic pollutants such as Polycyclic Aromatic Hydrocarbons (PAHs) to the ocean. Continued gas flaring associated with petroleum related activity as well as bunkering/oil pipeline vandalization introduce large amounts of PAHs into the Niger delta river network with attendant adverse health effect on the resident fauna and flora. As part of the river system, understanding the sources of PAHs in sediments allows mitigation process to be carried out much easier. PAHs in sediments from the Imo River were analyzed to characterize their sources and assess their toxicity potential with the view of mitigating them. Localized contamination prevailed, reflected in a wide range of total PAH concentrations (TPAH) of 409.43-41,198.36 ng/g dry weight (dw) with a large standard deviation of 4,796.67±1941.56. A more robust Principal Component Analysis (PCA) coupled with n-alkanes distribution profiles approach differentiated stations that were heavily from those that were mildly impacted by oil and discriminated among stations that were influenced by pyrogenic sources. Effect Range Low (ERL) and Effect Range Median (ERM) as well as Risk Quotients (RQwcs) revealed that only naphthalene, flourene, dibenzo(a,h)anthracene and low molecular weight PAHs were implicated as compounds of concern. The Maximum Toxicity Equivalency value measured for the illegal petroleum refinery site, 179.81 ng/g TEQ_{scarc}, indicated that this site requires some control measure and remedial action. Currently, the mechanism and kinetic of a natural based biochar augmented biodegradation process with higher remediation efficiency potential is being investigated by us for application in the Niger delta environment.

inyangoyoita@yahoo.com

Notes:

conferenceseries.com

Chem Sci J 2018, Volume 9
DOI: 10.4172/2150-3494-C5-030

Sonophotocatalytic degradation of textile dyes using copper impregnated Al_2O_3 under visible light Irradiation

Jasmin Shah and Fatima Khitab
University of Peshawar, Pakistan

Visible-light-driven photocatalyst was prepared by wet Impregnation method. The prepared photocatalyst was characterized with different spectroscopic techniques. Cupper impregnated alumina (Cu-Al_2O_3) photocatalyst was used for Sonophotocatalytic degradation of two textile dyes, Acid Red 27 (AR-27) and Direct Violet 51 (DV-51). Effect of parameters such as pH, photocatalyst dosage, oxidizing agents, dye concentration, scavengers, photocatalyst re-used ability and catalyst poisoning were investigated. The catalytic degradation of AR-27 increased from 26.8% to 85.1% and DV-51 increased from 23.9% to 84.6% with 8 mmol of hydrogen peroxide. At pH 10, the sonophotocatalytic degradation of AR-27 was 100% in 50 minutes and DV-51 was 100% in 60 minutes. It was found that scavengers increased the degradation time and decreased the percent removal of AR-27 from 100% in 50 minutes to 81.8% in 60 minutes. Catalyst reusability was checked and up to five-time use good results were achieved. Kinetics study was also carried out and found that both of the dyes undergo first order kinetic model. All the experiments revealed that the Sonophotocatalytic Degradation method in the presence of Cu-Al_2O_3 is a suitable option for the treatment of textile effluents in the presence of visible light.

jasminshah2001@yahoo.com

Notes:

conferenceseries.com

Chem Sci J 2018, Volume 9
DOI: 10.4172/2150-3494-C5-030

Terpenes, Coumarins, Steroids, Flavonoids and Flavonoid Glycosides from species *Pulicaria* and their biological activity

K A Eshbakova
Acad. S.Yu. Yunusov Institute of the Chemistry of Plant Substances Academy of Sciences of the Republic of Uzbekistan, Uzbekistan

Medicinal plants are an important component of plant communities. Their study has a significant scientific and practical importance, related to the conservation of their resources and their sustainable use. Plant of the family Asteraceae are widespread in nature and are rich sources of flavonoids, terpenoids and coumarin in the flora of Uzbekistan. Flavonoids, terpenoids and coumarins the class of natural compounds, which are characterized by structural diversity, and versatile high activity and low toxicity. From the plant family Asteraceae isolated natural compounds with cytotoxic, antioxidant, hypoglycemic, lipid-lowering, hepatoprotective, antibacterial and other types of activity. In Uzbekistan there are more than 596 species of plants from the family Asteraceae. Of these, only a few species studied. Therefore, the study of phenolic compounds and terpenoid plant family *Asteraceae* actually represents a certain theoretical interest, are of great scientific and fundamental. Learning new structure of flavonoids, coumarins and terpenoids will make some contribution to the chemistry of natural compounds, and will help address the problems associated with Chemotaxonomy and finding new physiologically active compounds. Plants of the species Pulicaria belong to family of Asteraceae, widely distributed in the flora Uzbekistan and used in the folk medicine. Study their chemical components and identify biological activity of current interest. We have studied four representatives of the species *Pulicaria: Pulicaria salviifolia, Pulicaria gnaphalodes* and *Pulicaria uliginosa*. Aerial parts these plants we have isolated a new and known compounds in relation to terpenoids, coumarins, flavonoids, sterols, phenols and studied their biological activity. The isolated compounds showed highly hypoglycemic, hypolipidemic, vitiligo, anti-cancer, hinotropic, antihypertensive, anticoagulants and spasmolytic effects.

e_komila@yahoo.com

Notes:

Chem Sci J 2018, Volume 9
DOI: 10.4172/2150-3494-C5-030

Discovery of 18β-Glycyrrhetinic acid Conjugated Aminobenzothiazole derivatives as Hsp90-Cdc37 interaction disruptors that inhibit Cell migration and Reverse Drug resistance

Le Jin
Southeast University, China

A series of 18β-Glycyrrhetinic Acid (GA) conjugated Aminobenzothiazole derivatives were designed, synthesized and evaluated for disruption activity of Hsp90-Cdc37 as well as the effects of *in vitro* cell migration. These compounds exhibited relatively good disruption activity against Hsp90-Cdc37 with IC50 values in low micromolar range. A docking study of the most active compound 11 g revealed key interactions between 11 g and Hsp90-Cdc37 complex in which the Benzothiazole moiety and the amine chain group were important for improving activity. It is noteworthy that further antitumor activity screening revealed that some compounds exhibited better inhibitory activity than the commercial anticancer drug 5-FU and showed potent suppression activity against drug-resistant cancer cells. In particular, compound 11 g appeared to be the most potent compound against the A549 cell line, at least partly, by inhibition of the activity of Hsp90 and apoptosis induction. The treatment of A549 cells with compound 11 g resulted in inhibition of *in vitro* cell migration through wound healing assay and S phase of cell cycle arrested. In addition, 11 g-induced apoptosis was significantly facilitated in A549 cells. Thus, we conclude that GA aminobenzothiazole derivatives may be the potential Hsp90-Cdc37 disruptors with the ability to suppress cells migration and reversed drug-resistant.

745262415@qq.com

Notes:

conferenceseries.com

Chem Sci J 2018, Volume 9
DOI: 10.4172/2150-3494-C5-030

Contribution of Chemical and Isotopic tracers for water resources management and climate in Semi-arid area? Cases from Morocco

Lhoussaine Bouchaou
Ibn Zohr University, Morocco

The semi-arid regions experience highly variable rainfall and recurrent droughts. The limited water resources are threatened by increasing demands and accelerated quality degradation. Consequently, projections for future renewable water resources in these regions are bleak and climate change coupled with increasing water overexploitation are likely to exaggerate the water crisis within. The main issues are to understand if the water resources are renewable- how and where? And sustainability impact of climate change. Based on the scientific research for understanding the origin of water and contamination mechanisms, the decision makers aim to develop adequate management plans upon different issues and future predictions. In this talk we present some results about the contribution of a combined Geochemical and isotopic investigation using several chemical and isotopic tracers in order to determine the sources of water recharge to the aquifer, the origin of salinity and the residence time of water in some aquifers in different contexts. The multiple isotopes analysis and chemical tracing of groundwater identify the sources of salinity in groundwater (seawater intrusion, evaporates, fertilizers, wastewater). These techniques are successful in semi-arid regions where a systematic monitoring seems sometimes difficult. The data generated in this study will certainly encourage the revision and improvement of the current hydrological water resources model. In contrast, we argued that the intensively exploited aquifers are more vulnerable given the relatively longer residence time of the water and mineralization processes. The results provide a framework for development of a comprehensive management plan and climate change impacts.

l.bouchaou@uiz.ac.ma

Notes:

conferenceseries.com

Chem Sci J 2018, Volume 9
DOI: 10.4172/2150-3494-C5-030

Chemistry is the major tool for the development of Health, daily use of Life, reduces financial crises, Poverty and Hunger in the World

Muhammad Usman
Pakistan

The aim of presentation consist of chemistry, major tool, health, daily life, financial crises, poverty and hunger were studied and reported that chemistry is the major tool for the development of health, daily use of life, reduce financial crises, poverty and hunger in the world. Chemistry is the science of composition, structure, properties and reaction of matter, especially of atomic and molecular system. In simple words, the composition, structure, property and reaction of a substance. In other words chemistry is the major industry consists of the different branches including: (1) Analytical chemistry (2) Physical chemistry (3) Organic chemistry (4) Inorganic chemistry (5) Bio chemistry (6) Food chemistry (7) Envoi mental chemistry (8) Agriculture chemistry (9) Chemical engineering (10) Geo chemistry (11) Nuclear chemistry (12) Green chemistry (13) Clinical chemistry (14) Advance chemistry (15) Global chemistry, etc. Chemical engineering is the branch of engineering that deals with chemical production and the manufacture of products through chemical processes. In the light of the above study, it is proposed that all the different types of chemistry industries should be commercialized for the absorbing millions of technical and non-technical peoples, generate income, create employment, stronger economy, reduces financial crises, poverty and hunger in the world.

usmankhan1949@yahoo.com

Notes:

conferenceseries.com

Chem Sci J 2018, Volume 9
DOI: 10.4172/2150-3494-C5-030

Characteristics influenced by Post modification of Tea waste biochars pyrolyzed at different temperatures

Oshani Nayanathara[1], Sameera R Gunatilake[1], Chathuri Peiris[1, 2], Priyani A Paranagama[1, 3], Meththika Vithanage[3, 5], M N Kaumal[4] and Todd MIsna[6]

[1]Institute of Chemistry Ceylon, Sri Lanka
[2]University of Colombo, Sri Lanka
[3]University of Kelaniya, Sri Lanka
[4]National Institute of Fundamental Studies, Sri Lanka
[5]University of Sri Jayewardenepura, Sri Lanka
[6]Mississippi State University, USA

Biochar (BC) is a low cost adsorbent produced by the pyrolysis of biomass which can be used for water remediation and soil amendment purposes. Tea waste is an excellent biomass for BC production since it is an abundant solid waste in Sri Lanka. A systematic comparison was carried out to evaluate the characteristics influenced by post modification of tea waste BC pyrolyzed at 300, 500 and 700 °C. According to FTIR spectra, BC produced at Low Temperatures (LTBC) contained high content of oxygen containing Surface Functional Groups (SFGs) in comparison with BC produced at High Temperatures (HTBC). Peaks observed mainly at 3300-3400, 1650-1700 and 1350-1450 cm-1. In order to enhance adsorption characteristics, three post modification methods have been carried out using hydrochloric, sulfuric and nitric acids. Surface acidities of BC were determined by Boehm titration method. All three BC contained a significantly high amount of Phenolic functional groups than lactonic and carboxylic SFGs. Nitric acid modification considerably increased the carboxylic acid content while the total acidic FG content was increased by acid modifications. Surface Morphology of BC was evaluated by SEM imaging. An increment of Cation Exchange Capacity (CEC) was observed at elevated pH and highest CEC was obtained by nitric acid modified BC when comparing with hydrochloric and sulfuric acid treatments. The pH at the point of zero charge of non-modified BC was ranged from 6.3-7.5 which were decreased upon acid treatment up to 2.6. The produced BC contained 6.75-11.40% ash content whereas the moisture content varied from 6.33-9.70%.

onayanathara@gmail.com

Notes:

conferenceseries.com

Chem Sci J 2018, Volume 9
DOI: 10.4172/2150-3494-C5-030

Transition Metal complexes/Organometallic compounds as Anticancer/anti HIV drugs in Pharmaceutical Industry

Prakash Kinthada
Sri Vidyanikethan Engineering College, India

Cancer is a dreadful disease and any practical solution in combating this disease is of paramount importance to public health. Cancer patients have burdened by drug induced toxic side effects, and no turned to seek help from the complementary and alternative medicine hoping for a better cure. Research on platinum based drugs and non-platinum based drugs is a multi-million dollar industry in USA and there is every need to produce safe drugs for the cure of this monstrous disease. Flavonoids have a long history of use in traditional medicines in many cultures. The phytochemical, curcumin is one of the major dietary flavonoid, belonging to a group of Flavonol, Curcumin is a natural Polyphenol. It is highly potential molecule capable of preventing and treating various cancers. Various dietary chemo preventive agents, turmeric powder or its extract are broadly used as therapeutic preparations in Indian System of medicine. The use of these analogs for prevention of cancer tumor progression and treatments of human malignancies. A pharmacologic agent for treating and/or preventing cancer, among other diseases and conditions and particularly breast, prostate and pancreatic cancer in humans and animals. The novel pharmacologic agent is an isoflavonoid or isoflavonoid mimetic covalently attached to a cytotoxic pharmacophore that, preferably has the ability to conjugate with a metal salt to form a more potent metal complex, particularly a Au (III) complex and other complexes of platinum, palladium, ruthenium, copper, etc. My talk would mainly encompass different transition metal complexes/organometallic compounds that are presently used as drugs, especially anticancer and anti-HIV drugs, apart from anti-inflammatory, antimicrobial, antibacterial and diseases like arthritis and Parkinson's disease, etc. The talk would mainly focus on the use of medicinal chemistry and its application to drug design and development in pharmaceutical industry, especially transition metal complexes and organometallic compounds viz. gold, platinum, palladium and ruthenium apart from copper, cobalt, iron, nickel, zinc, cadmium, etc. The main emphasis of my talk would be on different class of ligands, their Schiff's bases and transition metal complexes especially Au, Pt, Pd and Ru, with the main aim of designing, developing very novel small molecules, as possible and extremely potential candidates as anti-cancer and anti-HIV drugs. We have synthesized and characterized several phytochemicals from traditional medicinal plants and isolated some phytochemicals and made the corresponding Oximes, Thiosemicarbazones and substituted Thiosemicarbazones as ligands and synthesized, characterized, structurally elucidated their transition metal complexes especially with gold, platinum, palladium, ruthenium, copper, etc. and studied their anticancer activity, nuclease activity and tested their potential as anticancer drugs. The main aim of our extensive/preclinical pharmaceutical development program is to investigate the use of these extremely novel small molecules-metal complexes/compounds of Phytochemicals, Flavonoids, etc., which have very interesting structural features and properties and hence are excellent candidates as Anti-cancer and Anti-HIV drugs.

pk6030882@gmail.com

Notes:

conferenceseries.com

Chem Sci J 2018, Volume 9
DOI: 10.4172/2150-3494-C5-030

Development of a novel and efficient route to the Tropomyosin-Related Kinase (Trk) inhibitor Larotrectinib (LOXO-101)

Yong Zhang
Southeast University, China

Larotrectinib (LOXO-101) is a small-molecule ATP-competitive oral inhibitor of the Tropomyosin-Related Kinase (Trk) family of receptor kinases, including Trk-A, Trk-B and Trk-C kinases. Herein, a novel and efficient route for the synthesis of Larotrectinib using starting materials that are commercially available has been achieved. The procedure employed mild reaction conditions and avoided the use of expensive reagents compared to the original synthetic route reported by Array BioPharma. More importantly, gram scale synthesis was accomplished and this protocol could be valid in the synthesis of similar drugs.

zy_zhiyao@126.com

Notes: