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Review Article **Published Date:- 2017-11-16**

Impact of alloimmunization on transfusion-dependent patients

Red blood cell (RBC) alloimmunization can be a life-threatening complication for patients with thalassemia major and sickle cell disease (SCD) who must receive chronic therapeutic transfusions. Chronic transfusions can lead to erythrocyte alloimmunization, patients continue to develop alloantibodies due to the transference of the immunogenic antigens on the donor RBCs. Many complications are possible. Difficulty in finding compatible match units for the patients can cause transfusion delays delayed, or present alternative risks to the patients from delayed hemolytic transfusion reactions. This review discusses the possible mechanisms, risk factors associated with alloimmunization formation and the hemolytic transfusion reactions and also describe the guideline for transfusion management of these patients, including opportunities and emerging approaches for minimizing this life-threatening complication.

Research Article **Published Date:- 2017-10-17**

Combinatorial Therapeutic Approaches to DNA/RNA and Benzylpenicillin (Penicillin G), Fluoxetine Hydrochloride (Prozac and Sarafem), Propofol (Diprivan), Acetylsalicylic Acid (ASA) (Aspirin), Naproxen Sodium (Aleve and Naprosyn) and Dextromethamphetamine Nanocapsules with Surface Conjugated DNA/RNA to Targeted Nano Drugs for Enhanced Anti-Cancer Efficacy and Targeted Cancer Therapy Using Nano Drugs Delivery Systems

In the current study, combinatorial therapeutic approaches to DNA/RNA of human cancer cells and Benzylpenicillin (Penicillin G), Fluoxetine Hydrochloride (Prozac and Sarafem), Propofol (Diprivan), Acetylsalicylic Acid (ASA) (Aspirin), Naproxen Sodium (Aleve and Naprosyn) and Dextromethamphetamine nanocapsules with surface conjugated DNA/RNA of human cancer cells to targeted Nano drugs for enhanced anti-cancer efficacy and targeted cancer therapy using Nano drugs delivery systems were investigated.

Thesis **Published Date:- 2017-09-26**

Retrosynthesis analysis; a way to design a retrosynthesis map for Pyridine and pyrimidine ring

Pyridine and pyrimidines are amongst the most important, well known heteroaromatic rings, owning to their bioactive importance. Herein, an idea about how to design the synthetic pathway for these rings using retrosynthesis analysis techniques.

Research Article **Published Date:- 2017-09-26**

Synthesis of some new Schiff bases of Pharmaceutical Interest

A series of Schiff bases of diphenylamine derivatives have been synthesized and evaluated in vitro for their antibacterial activity against pathogenic both Gram-positive bacteria B. subtilis and Gram-negative bacteria E. coli using ciprofloxacin as standard drug at conc. of 50 µg/ml and 100 µg/ml. The structures of these compounds were established on the basis of IR and 1H-NMR spectral analysis. The compound (3d) displayed potent antibacterial activity against Bacillus subtilis (17 and 15mm) and Escherichia coli (19 and 17mm) by disc diffusion method.

Research Article **Published Date:- 2017-09-22**

How Bruguiera gymnorhizza seedlings respond to climate change induced salinity rise?

A study was undertaken during August 2017 to evaluate the effect of salinity on chlorophyll a, chlorophyll b, total chlorophyll, and carotenoid and proline contents of hydroponically grown seedlings of Bruguiera gymnorhizza. The primary aim was to observe its tolerance to changing salinity. The selected seedlings were exposed to five different salinity levels (2,5,10,15 and 20psu) for a period of 30 days and observations were done at a regular interval of 7,14,21 and 30 days respectively. The concentrations of chlorophyll exhibited significant positive correlations with salinity ($p<0.01$). The chlorophyll a:b ratio in the plant varied between 2.39 to 3.71 throughout the period of investigation. The salinity fluctuation did not affect the carotenoid level and proline content in the leaves of the species as evidenced from the insignificant r values. The results show that Bruguiera gymnorhizza of Indian Sundarbans region can tolerate and adapt to high saline condition as witnessed in the central sector of the deltaic complex around the Matla River.

Research Article **Published Date:- 2017-08-29**

Convenient route synthesis of some new benzothiazole derivatives and their pharmacological screening as antimicrobial agents

Background: The reaction of 2-(benzo]d[thiazol-2-yl)-3-oxopentanedinitrile 4 with DMF/DMA has been investigated to explore the synthetic potentialities of this novel activated nitrile in heterocyclic synthesis.

Results: Pyrano, pyridino, pyrazolo, azepino and oxothiepano carbonitrile derivatives could be obtained starting from 4 and plausible mechanisms for their formations are reported.

Conclusion: The newly synthesized compounds were assessed for their antimicrobial activity. Compounds 7, 10 and 12 exhibited broad spectrum antibacterial profile against the tested organisms.

Research Article **Published Date:- 2017-06-30**

The impact of geographical origin on specific properties of pine honey

Pine honey represents the major type of honey produced in Greece. In that sense, the aim of the present study was to investigate if specific physicochemical and bioactive properties could serve as markers of its geographical origin. For this purpose, forty pine honey samples were collected during harvesting years 2011 and 2012 from Halkidiki and Thassos, the well-known pine honey producing areas in Greece. Physicochemical parameters taken into account, using conventional and literature cited methods, were: pH, CIE colour parameters L*,a*,b*, and browning index. Furthermore, colour intensity and the in vitro radical scavenging activity were estimated by the application of spectrometric assays. Results showed that, pine honeys exhibited statistically significant differences ($p<0.05$) in pH, colour intensity, and radical scavenging activity, depending on geographical origin. On the basis of radical scavenging activity results obtained, pine honeys proved to have a high in vitro antioxidant “character’’. Finally, perfect Pearson’s correlations ($r=1$) at the confidence level $p<0.01$ were obtained for the sets: pH-browning index, pH-radical scavenging activity, and browning index -radical scavenging activity, with respect to geographical origin.

Review Article **Published Date:- 2017-05-24**

Photocatalytic Degradation of Microcystins-LR over Mesoporous graphitic Carbon Nitride (mpg-CN)

Mesoporous graphitic carbon nitrides (mpg-CN) were synthesized by a templating method using Ludox (SiO_2) as hard template and guanidine hydrochloride (GndCl) as precursor, and were used as metal-free photocatalysts for microcystin-LR (MC-LR) degradation in aqueous solution. By tuning the mass ratio of SiO_2 to GndCl, mpg-CN with varied surface areas and condensation degrees were obtained. Catalytic results showed that sample prepared at mass ratio equals 0.4, i.e., mpg-CN(0.4), exhibits the best activity, with above 98% MC-LR conversion obtained at 120 min. Mechanism studies suggested that the reaction obeys the pseudo first-order equation and the produced superoxide anion radicals (•O2?) is the major reactive intermediates contributing to the reaction. Stability tests showed that no appreciable loss of activity is observed even the catalyst is recycled for five times, indicating that the material is stable in the reaction.

Research Article **Published Date:- 2017-02-21**

Neutralizing scFv Antibodies against Infectious Bursal Disease Virus Isolated From a Nlpa-Based Bacterial Display Library

Infectious bursal disease (IBD) considered as one of the major viral diseases threatening the poultry industry worldwide. The causative agent of the IBD is Infectious bursal disease virus (IBDV) which replicates in developing B lymphocytes in the bursa of Fabricius leading to its destruction and bursal inflammation. In this study, we investigated a technology to produce therapeutic recombinant antibodies against IBDV in bacteria by constructing a bacterial displayed recombinant scFv library from immunized chickens, followed by screening the scFv library by fluorescence activated cell sorting (FACS) with FITC-labeled VP2. Twelve VP2-binding scFv clones with unique sequences were obtained, with overall amino acid homology of 81.53%. The complementarity determining region (CDR) 3 in the heavy chain displayed the lowest homology, while the amino acid sequences in framework regions and CDR2 of both chains and CDR1 of the heavy chain are relatively conserved. Twelve VP2-binding scFv clones were expressed in E.coli and purified through denaturation and denaturation of inclusion bodies. Our ELISA results showed that all scFvs exhibited binding ability and specificity to VP2 and various IBDV strains. In addition, two scFvs showed significant neutralizing activity to IBDV (B-87 strain) as these scFvs inhibited cytopathic effect of chicken embryo fibroblast (DF1) caused by IBDV. In conclusion, our study provides a lead candidate for further development of therapeutic antibodies for IBDV infection.