J Bioequiv Availab, 4.3
doi: http://dx.doi.org/10.4172/0975-0851.S1.11

OMICS Group Conferences
Accelerating Scientific Discovery

3rd World Congress on
Bioavailability & Bioequivalence

March 26-28, 2012 Marriott Hotel & Convention Centre, Hyderabad, India

Liquid chromatographic method for the determination of Cefditoren Pivoxil in pharmaceutical formulations

Myneni. Harika, M. Mathrusri Annapurna, M.S.L. Sindhu and L. Srinivas

Department of Pharmaceutical Analysis & Quality Assurance, GITAM Institute of Pharmacy, GITAM University, Visakhapatnam, India

An isocratic RP-HPLC method was proposed for the determination of Cefditoren pivoxil in pharmaceutical formulations (Tablets). Cefditoren is used to treat uncomplicated skin and skin structure infections, community-acquired pneumonia, acute bacterial exacerbation of chronic bronchitis (ABECB), pharyngitis, and tonsillitis. Cefditoren pivoxil is a third-generation semi-synthetic cephalosporin antibiotic for oral administration. Isocratic elution was performed using phosphate buffer and acetonitrile as mobile phase. The overall run time was 10 min. and the flow rate of the mobile phase was 1.0 mL/min. with UV detection at 220 nm. 20 µL of sample was injected into the HPLC system. In the present work chromatographic separation was achieved by using a C-18 (250mm × 4.6mm i.d., 5 µm particle size) column of Shimadzu Model CBM-20A/20 Alite, equipped with SPD M20A prominence photodiode array detector, maintained at 25°C. Linearity was observed in the concentration range of 0.1–200 µg/mL (R^2 = 0.9998) and the method was validated as per ICH guidelines. The RSD for intra-day and inter-day precision were found to be less than 2 %. The percentage recovery was in good agreement with the labeled amount in the pharmaceutical formulations and the method is simple, precise, accurate and robust for the determination of Cefditoren pivoxil.

Gold nano particles-A revelation in the treatment of cancer

Harsha I.N.S. and K. Mani kumar

GITAM Institute of Pharmacy, India

It is generally believed that personalized medicine is the future for cancer patient management. Possessing unprecedented potential for early detection, accurate diagnosis, and personalized nanoparticles have been extensively studied over the last decade. The current state-of-the-art of gold nanoparticles in biomedical applications targeting cancer is by using gold nanospheres, nanorods, nanoshells, nanocages, and surface enhanced Raman scattering nanoparticles in in vitro assays, ex vivo and in vivo imaging, cancer therapy, and drug delivery. By properly conjugating gold nanoparticles with specific peptides, it is possible in selectively transporting them to the nuclei of cancer cells. Confocal microscopy images of DNA double-strand breaks showed that localization of gold nanoparticles at the nucleus of a cancer cell damages the DNA. Gold nanoparticle dark-field imaging of live cells in real time revealed that the nuclear targeting of gold nanoparticles specifically induces cytokinesis arrest in cancer cells, where binucleate cell formation occurs after mitosis takes place. Flow cytometry results indicated that the failure to complete cell division led to programmed cell death (apoptosis) in cancer cells. These results show that gold nanoparticles localized at the nuclei of cancer cells have important implications in understanding the interaction between nanomaterials and living systems.

A microwave-assisted facile synthesis of fluorine substituted 2-(furan-2-ylmethyleneamino) -6-(2-oxo-2H-chromen-3-yl)-4-phenylnicotinonitrile derivatives as antimicrobial agents

H. M. Satodiya, N. C. Desai*

Department of Chemisty, Bhavnagar University, India

In this paper we described the Microwave-assisted method for the synthesis of novel 4-(aryl)-6-(6-fluoro-2-oxo-2H-chromen-3-yl)-2-(furan-2-ylmethyleneamino)nicotinonitriles with very good yield from the reaction of 2-amino-4-(aryl)-6-(6-fluoro-2-oxo-2H-chromen-3-yl)nicotinonitriles and 2-furfuraldehyde. Structures of synthesized compounds were confirmed by IR, 1H and 13C NMR, mass spectra. The antimicrobial activity of the compounds was studied against several bacteria strains (Escherichia coli MTCC 443, Pseudomonas aeruginosa MTCC 1688, Staphylococcus aureus MTCC 96, Streptococcus pyogenus MTCC 442) and fungi (Candida albicans MTCC 227, Aspergillus niger MTCC 282, Aspergillus clavatus MTCC 1323) using serial broth dilution method.