

3rd World Congress on Bioavailability & Bioequivalence

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

DNA-binding and Photocleavage Studies of Polypyridyl Cobalt(III) and Ruthenium(II) Mixed Ligand Complexes their "light switch" on off effect

Nazar Mohammed Gabra, Bakheit Mustafa and S. Satyanarayana

Department of Chemistry, Osmania University, Hyderabad, Andhra Pradesh, India

F⁰ur novel cobalt(III) and ruthenium(II) complexes [Ru(bpy)2icpip] (bpy 2,2-bipyridine 1), [Ru(phen)₂icpip] (phen 1,10-phenantroline; 2),[Co(phen)₂icpp] and [Co(bpy)₂icpip], (icpip 2-(1H-Indol-3-yl)-1H-1,3,7,8-tetraaza-cyclopenta{L} phenanthrene are described. The complexes were characterized by elemental analysis, UV/VIS, IR, ¹H-NMR, ¹³C-NMR and mass spectra. The binding of the complexes with calf thymus DNA has been investigated by absorption, emission spectroscopy, viscosity measurements, DNA melting, and DNA photocleavage. Experimental results indicate that the four complexes can interact in to DNA base pairs. Upon irradiation at 365nm, this complexes were found to promote the cleavage of plasmid pBR322 DNA from super coiled form I to nicked form II, and the mechanism for DNA cleavage by complexes were also investigated.



Fig 1. Absorption spectra of [Ru(phen)₂icpip]²⁺ in absence (top) and presence (lower) of DNA with subtraction of the DNA absorbance.



F ig 9. [R u(b py)₂icpip] in Tris b uffer(1), complex + D N A (2), complex + D N A + Co²⁺(3), and complex + D N A + Co²⁺ + E D T A (4).

High performance liquid chromatographic method for the determination of Rufinamide in pharmaceutical formulations

^{*}S.V.S. Goutam, C. Naga Saketha and M. Mathrusri Annapurna

GITAM Institute of Pharmacy, GITAM University, Visakhapatnam, India

R ufinamide is chemically known as 1- [(2, 6-difluorophenyl) methyl]-1H-1,2,3-triazole-4 carboxamide with molecular formula formula C10H8F2N4O and molecular weight 238.19 g/mol. Rufinamide is an antiepileptic drug used as adjunctive treatment of seizures associated with Lennox-Gastaut syndrome in children 4 years and older and adults. Lennox-Gastaut syndrome consists of a variety of treatment-resistant seizures and is most common among paediatric patients. An isocratic RP-HPLC method was proposed for the determination of Rufinamide in pharmaceutical formulations (Tablets). Isocratic elution was performed using tetra butyl ammonium hydrogen sulphate and acetonitrile as mobile phase. The overall run time was 10 min. and UV detection was carried at 215 nm. 20 μ L 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 μ m 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 1–100 μ g/mL (R² = 0.999) 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 Rufinamide.