

Seminar

Recent Advances in Metal-Based Anticancer Agents: Study of Solution Behaviour, Cytotoxicity and Cellular Localisation

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Today, metal-based drugs that are luminescent are crucial to diagnosis and therapeutics. In anticancer research, a fluorescent compound possessing low cytotoxicity, high fluorescence properties, and organelle specificity would prove useful for diagnosing physiological disorders related to that organelle. In short, it can act as a real-time tracking bioimaging agent. Similarly, fluorescent compounds with high cytotoxic properties help in evaluating the cell death mechanism more accurately. As an alternative to platinum-based anticancer drugs, many metal-based compounds have been studied. However, their mechanistic pathways of cell death are still less explored. Again, main-group metal probes are rare in bioimaging. Thus, encouraging findings from the pharmacological investigation of metal complexes offer an opportunity to explore how these transition and main group metal complexes can be used in “Biomedical molecular imaging”. In addition, there is always a demand for complexes that are stable in aqueous media; however, most metal complexes undergo hydrolysis, ligand exchange, and redox reactions when exposed to biological media. Thus, it is vital to know what species are generated in the solution state before we ascribe biological significance to them. As a result of this ongoing trend, our group has begun investigating the metal-based anticancer and bioimaging agents based on transition and main group metals with various bioactive ligands and a few of the systems exhibited very promising results. Here, I will focus on some of the recent results linked to luminescent metal-based chemistry and their biomedical applications.

Friday, Jul 5th 2024

16:00 Hrs (Tea / Coffee 15:45 Hrs)

Auditorium, TIFR-H