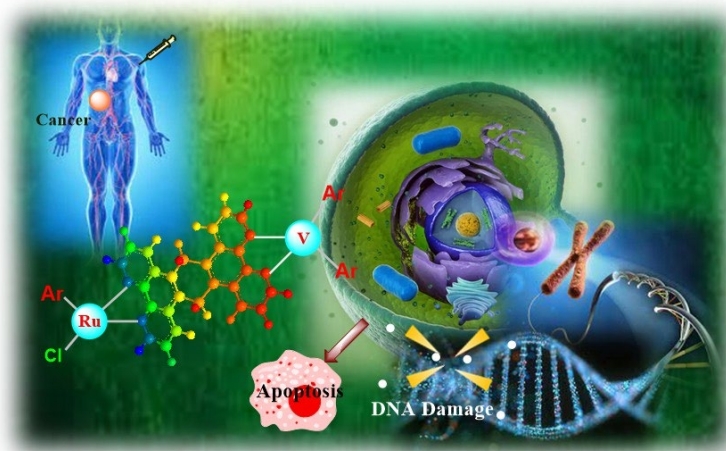


Design of Heterobinuclear Ruthenium (II) – Vanadium (IV) Complexes as Chemical Nucleases

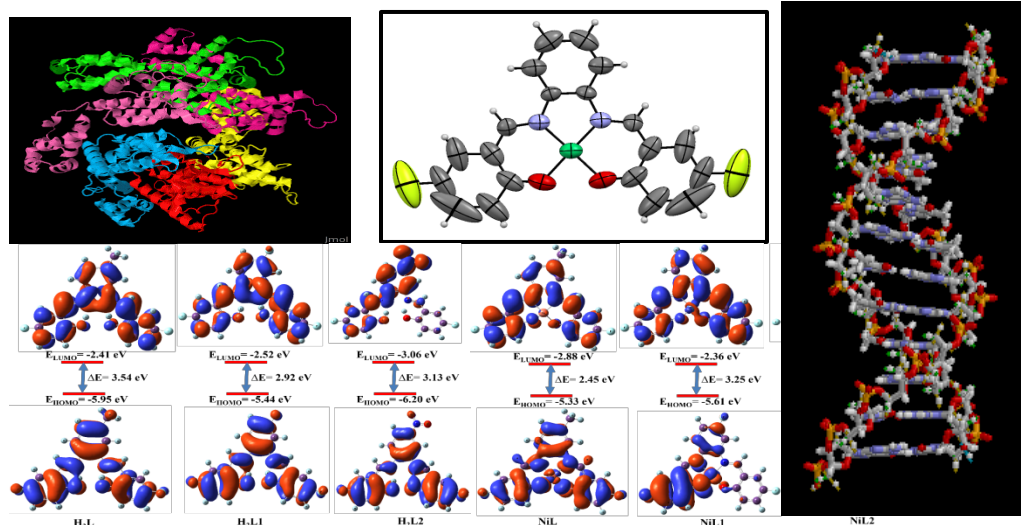
Graphical Abstract



Project Description:

Cancer is one of the most dangerous diseases, with the second-highest morbidity rate worldwide. Typically, doxorubicin or epirubicin-like organic drugs are commonly used for the treatment. However, the organometallic complexes have been developed to overcome the disadvantages of organic drugs like specificity or solubility. The embroidered polynuclear transition metal complexes with appropriate ligand framework show perfect synergism. This allows cooperative interaction which leads to enhanced properties and biological activities as compared to their monometallic counterparts. In this context, the involvement of vanadium and ruthenium complexes in cellular signaling pathways has been correlated to different diseases including insulin mimetic, osteogenic, cardio protective and antitumor actions. Recently, the drugs targeting mitochondria and effecting cell death *via* apoptotic pathways is considered as an alternative viable strategy in anticancer drug development. Towards this, we intent to design organelle specific mixed-metal binuclear ruthenium(II)–vanadium(IV) complexes for cancer theranostic

Products/ Instruments/ Results/ Outreach Activities (Pictures)



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Name of the Funding Agency

Council of Scientific & Industrial Research (CSIR)

Name of the Scheme

ExtraMural Research-II

Sanctioned Amount (in Rupees)

Rs. 25,46,000

Duration of the Project (years)

3

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