

STRUCTURAL STUDY OF POTENTIAL METAL-BASED DRUGS

The activity of cisplatin, [Pt(NH₃)₂Cl₂], against cancer cells was discovered more than fifty years ago. This discovery provided a boost to “medicinal inorganic chemistry” which focuses on the design and discovery of metal-based drugs not only as anticancer agents but also for any possible therapeutic applications. Nowadays, metal complexes that are examined in vitro for their potential activity may contain diverse transition metal ions and a variety of ligands, and their potential applications cover a wide spectrum of activities against infections, inflammations and diseases.

GOALS

The main goal is to carry out a systematic structural study of Cu, Ag, Pt, Ni complexes with different ligands of pharmaceutical interest (e.g. NSAIDs), including the analysis of the intermolecular interactions in the crystals. The chemical nature of the ligands can affect both the coordination and interaction modes of the synthesized complexes, whose antimicrobial/DNA-binding /cytotoxicity properties are experimentally evaluated for a possible assessment of structure-activity relationships.

INSTRUMENTS AND METHODS

X-ray diffraction techniques (both single crystal and powder), crystallographic databases, theoretical calculations.

MAIN SUBJECTS

General chemistry, Physical chemistry, Structural chemistry

RESEARCH GROUP

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COLLABORATIONS

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