

NEW STRATEGIES FOR THE DESIGN AND SYNTHESIS OF METAL DRUGS

The research activity is in the field of bioinorganic chemistry and deals particularly with inorganic and organometallic drugs.

GOALS

(a) Design, synthesis and characterization of new inorganic synthons for a low-impact production of anticancer Platinum complexes bearing anionic O-donors and S-donors.

(b) Study of the chemical and biological properties of PTA (1,3,5 triaza-7-phosphaadamantane) derivatives to be used as ligands for anticancer metal ions (platinum, ruthenium, rhenium etc.), supported on lipidic nanoparticles.

(c) Use of the water-soluble phosphine PTA (1,3,5 triaza-7-phosphaadamantane) as hydrogen bond acceptor in solution and in the solid state; study of co-crystals of pharmaceutical interest.

(d) Coordination of the cancer cell pro-apoptotic dichloroacetic acid and its synthetic derivatives to anticancer metal ions (platinum, ruthenium, rhenium etc.) aimed at obtaining polifunctional drugs.

INSTRUMENTS AND METHODS

Synthetic techniques under controller atmosphere and by microwaves, spectroscopic techniques (such as FTIR, multinuclear NMR, mass spectrometry), elemental analysis, X-ray diffraction, atomic absorption spectroscopy.

MAIN SUBJECTS

Organic synthesis, inorganic synthesis, spectroscopy, pharmaceutical chemistry.

RESEARCH GROUP

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