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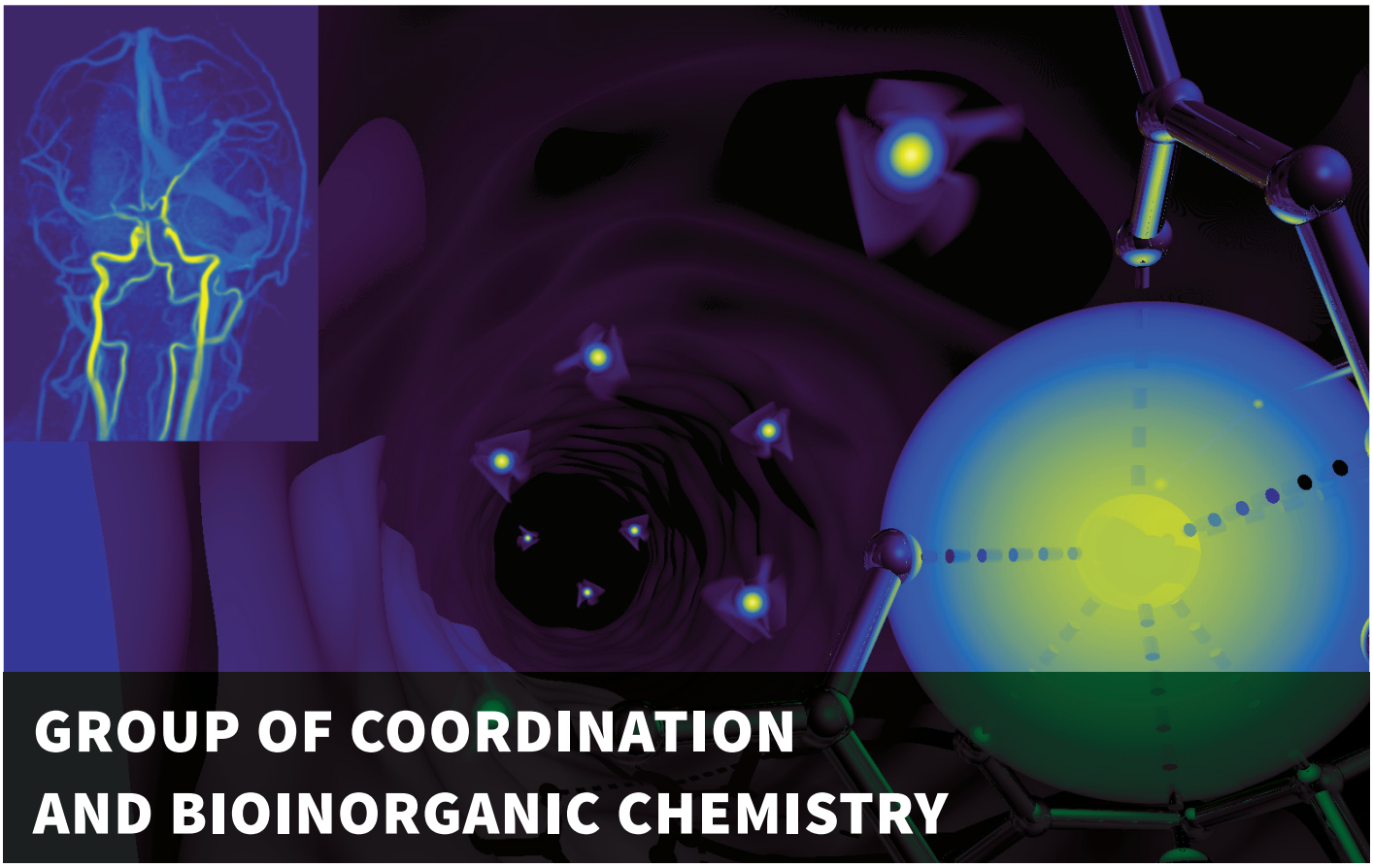


GROUP OF COORDINATION AND BIOINORGANIC CHEMISTRY

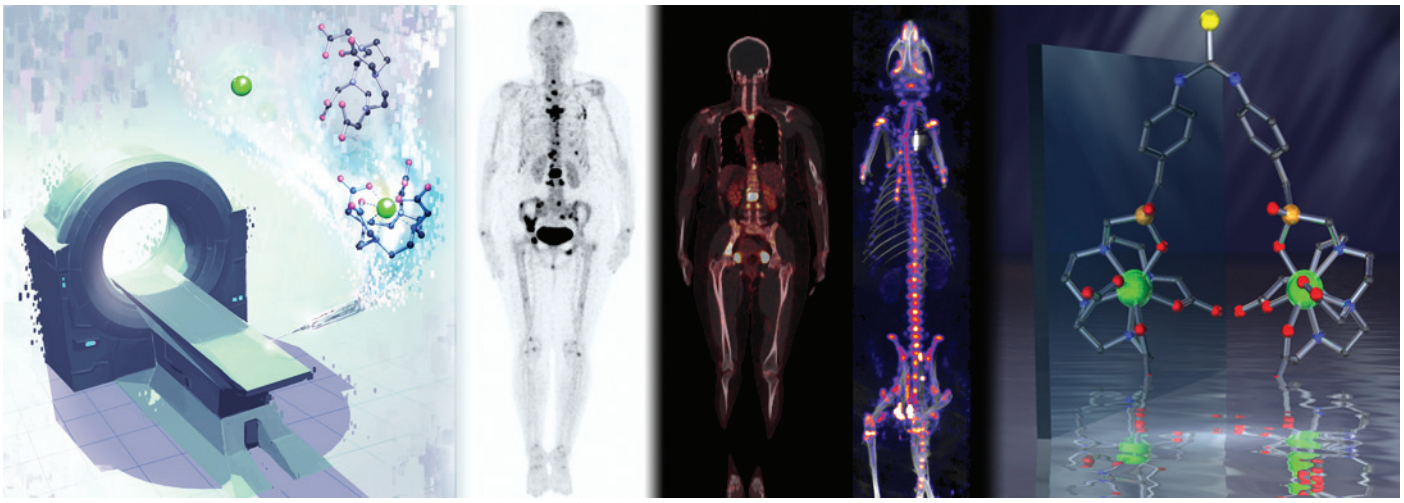
OFFER

- We offer our expertise within a diverse range of issues related to design, synthesis, characterisation and medicinal application of chelators and their metal complexes as well as some of their conjugates (e.g. conjugates with bis(phosphonate) group for bone targeting).
- We are able to design and synthesize bifunctional macrocyclic ligands for a particular application and, with advantage, we employ our long-term experience with organophosphorus chemistry.

KNOW-HOW & TECHNOLOGIES

- Synthesis and characterization of new macrocyclic ligands and their complexes.
- Contrast agents for Magnetic Resonance Imaging (MRI).
- Carriers of metal radioisotopes for radiodiagnostics (SPECT, PET).
- Radiopharmaceuticals for imaging or therapy of tumors and metastases.
- We have a unique expertise in determination of stability constants of metal complexes.

„We are looking for cooperation in the fields of molecular imaging (MRI, PET, SPECT, and optical methods), radiotherapy (theranostics) and other applications of metal complexes in biomedical science (personalized medicine).“



MAIN CAPABILITIES

Coordination chemistry, chemistry of macrocyclic ligands, organophosphorus chemistry, probes for molecular imaging or therapy, potentiometry, NMR, MS, X-ray, optical methods.

PARTNERS AND COLLABORATIONS

ACADEMIC PARTNERS

- Cooperation with many academic research groups in the Czech Republic as well as in Europe through collaborative projects (Munich, Mainz, Dresden, Nantes, Torino, Oxford, Hull).
- Several complexes have been advanced into clinics as experimental radiopharmaceuticals, both for imaging and therapy (imaging/treatment of bone metastases, tenths of successfully treated patients).
- Important cooperation with MRI laboratory of Institute for Clinical and Experimental Medicine (IKEM) .
- Participation in the international projects – 6th framework programme, COST projects (frequent participation starting in 1999), bilateral cooperation.

PUBLIC AND PRIVATE SECTOR

- RadioMedic, s.r.o.
- Interpharma Praha a.s.
- Quinta, s.r.o.

MAIN RECENT PROJECTS

- Grant Agency of the Czech Republic, 16-03156S „Self-assembly polymeric nanostructures as bimodal magnetic resonance – ultrasound contrast agents for imaging“
- Grant Agency of the Czech Republic, 17-13721S “Copper radioisotopes and new theranostics”
- COST CA15209 – “European network on NMR relaxometry (EURELAX)“
- Ministry of Education of the Czech Republic, Inter-Excellence LTC17067 “Application of NMR relaxation and diffusion measurements for determination of dynamics of complex molecular systems”

ACHIEVEMENTS

In the last 10 years, more than 80 papers in international journals.

- Book chapter “Synthesis and Characterization of Ligands and their Gadolinium(III) Complexes“ in “The Chemistry of Contrast Agents in Medical Magnetic Resonance Imaging“ (A. E. Merbach, L. Helm, É. Tóth eds.), John Wiley & Sons 2013 (ISBN978-1-119-99176-2).

PATENTS

- T. David, P. Hermann, V. Kubíček: „Cyclam based compounds, their conjugates, co-ordination compounds, pharmaceutical composition containing thereof, method of preparation and use thereof“ PCT WO 2017/084645 (2017).
- I. Lukeš, P. Hermann: „Novel Chelating Agents of Tetraazacyclododecanemethyl-phosphonictriacetic Acid Derivatives and Their Conjugates, Their Synthesis and Use as Diagnostic and Therapeutic Agents“ PCT Int. Appl. WO03008394 (2003).

OUR WEB PAGES

http://web.natur.cuni.cz/anorchem/19

„Our mission is the development of new medicinal probes for improved medical imaging techniques and new metal radioisotope carriers for imaging or radiotherapy.“