International Research Training Group
Metal Sites in Biomolecules
Structures, Regulation and Mechanisms

Seminar
Tuesday 20 April 14.15
Lecture hall B, Chemical Center

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The anticancer drug cisplatin and its adducts

Investigation of adduct formation and stability in serum and uptake in *in vitro* cancer cell lines using ICPMS technology

Platinum drugs are used for treatment of solid tumours and more than 50% of all cancer patients are treated with platinum drugs. They are given intravenously and accumulate inside the cell, bind to DNA and induce cell death. Much effort in the design of new Pt-drugs is directed towards more selective delivery and increased accumulation in cancer cells. Although there seems to be consensus in the scientific community that platinum drugs cross the cell membrane via diffusion and/or the copper transport system and that the cytotoxicity is mediated via binding of platinum to DNA ,it is still debated what exactly takes place on a molecular level. Especially the binding of Pt-drug to biomolecules (e.g. albumin, transferring, and glutathione) and formation of various adducts is often discussed. Adducts which may be responsible for undesirable side effects and development of resistance.
The presentation will give an overview of the application and potential of ICPMS technology for the investigation of the role of platinum drugs and their adducts in biological systems with regard to uptake and toxicity. The main focus will be on two different topics: A) Application of hyphenated ICPMS techniques. B) The application of ICPMS for total platinum determination in cancer cells.

Welcome!