FAKULTÄT FÜR CHEMIE

universität wien

Einladung zum Vortrag von

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„The importance of solution speciation studies in the field of anticancer complexes”

Metal complexes – unlike classic organic drugs – may undergo more extreme changes in biofluids, such as ligand-exchange, hydrolysis, redox reactions as long as they arrive to the final target(s). Therefore in favor of rational drug design – besides the basic physico-chemical description – the investigation of complex stoichiometry, solution stability and kinetic behavior at therapeutically relevant conditions is required. At the same time only incomplete and limited information is available in the field of metallodrugs with anticancer activity regarding to the above mentioned mechanisms. Traditional solution equilibrium studies are considerably useful tools in terms of various pharmacokinetic questions. Investigations of the interactions with serum proteins can promote the wider understanding of distribution and biotransfer processes. Further important step is the exploration of probable targets such as DNA nucleobases.
The main objective of the lecture is to demonstrate the importance of thermodynamic approaches in this field, via the presentation of some selected results of ours. The following topics will be discussed in detail:
(i) Applicability of measurement protocols for the determination of cysteine content in proteins: the interaction of maleimide functionalised Pt(IV)-complexes with Cys34 of human serum albumin;
(ii) Quantitative description of the interaction between macromolecules and metal complexes regarding binding strength and location: binding of KP1019 and KP1339 towards human serum albumin;
(iii) The effect of complex solution stability on the expected biospeciation in blood serum: tris-ligand complexes of Ga(III) formed with maltol and 8-hydroqyquinoline, interaction with albumin and apo-transferrin.

Dienstag, 19. Juli 2016, 14:30 Uhr
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