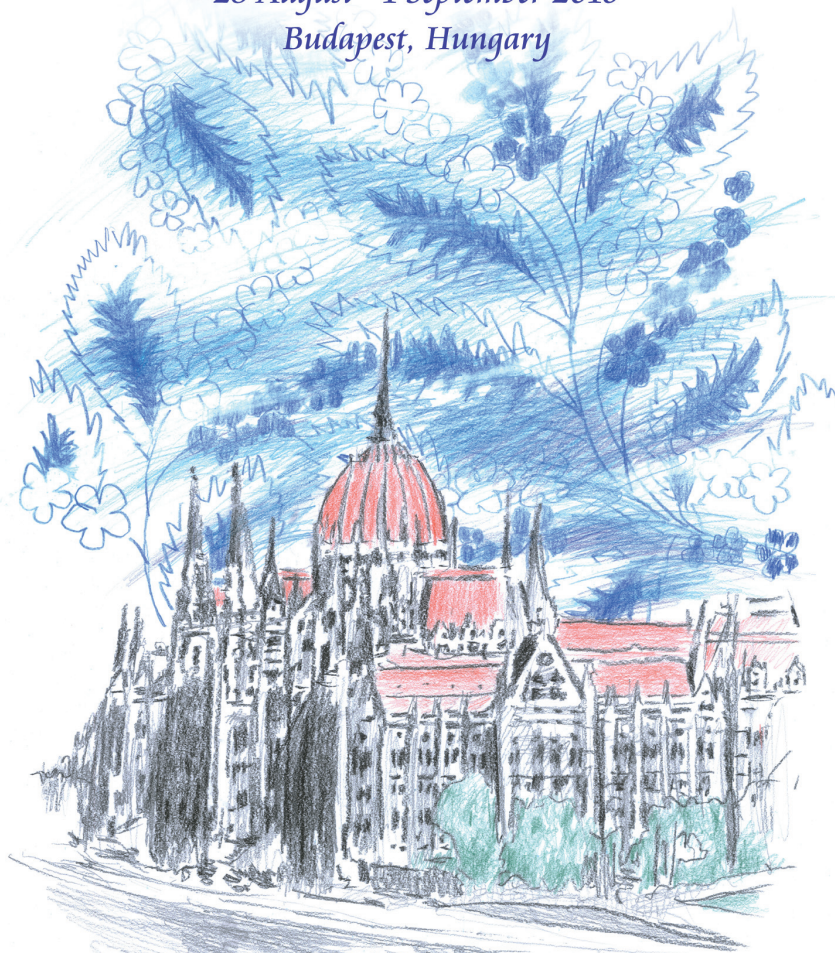


EuroBIC 13

13th European Biological Inorganic Chemistry Conference

*28 August - 1 September 2016
Budapest, Hungary*



Program & Book of Abstracts

Zsolt Kovács

Kovács Zsolt 2012

	Hall-A	Hall-B	Hall-C
Chair:	Wojciech Bal (Warsaw/Poland)	Charles G. Riordan (Delaware/USA)	Bernt Krebs (Munster/Germany)
14.00 – 14.30	KL4: Mi Hee Lim (Ulsan/S. Korea) <i>Multiple Interconnected Pathological Factors in Alzheimer's Disease</i>	KL5: Arthur Krezel (Wroclaw/Poland) <i>Structural and Thermodynamic Factors that Control Zinc Proteins Stability and Functionality</i>	KL6: Celine Marmion (Dublin/Ireland) <i>Exploiting a Multi-Functional Approach Towards the Generation of Innovative Metallo-Chemotherapeutics to Combat Cancer</i>
14.30 – 14.50	OL10: Luca Bertini (Milan/Italy) <i>Redox Properties of Human and Murine Copper-Amyloid Peptide Complexes. A Computational Insight of the OH Radical Production</i>	OL14: Michael D. Pluth (Oregon/USA) <i>Using Small Molecule Model Complexes to Understand the Action of Biological H₂S</i>	OL18: Éva A. Enyedy (Szeged/Hungary) <i>Comparative Solution Speciation Study on Antitumor Rh(III)(η^5-C₅Me₅) Complexes</i>
14.50 – 15.10	OL11: Francesco Bellia (Catania/Italy) <i>Effectors on the Proteolytic Cleavages of Amyloid β: News and Perspectives</i>	OL15: Ari Lehtonen (Turku/Finland) <i>Oxovanadium(V) Amino Bisphenolate Complexes and Their Activities as Oxidation Catalysts</i>	OL19: Miguel A. Galindo (Granada/Spain) <i>Double-Stranded DNA Containing Silver(I) Mediated Watson-Crick Base Pairs Based on 7-Deazapurines</i>
15.10 – 15.30	OL12: M. Amélia Santos (Lisbon/Portugal) <i>New Multi-target Compounds for Modulation of Metal-dependent Toxicity in Alzheimer's Disease</i>	OL16: Ana L. Iglesias (Tijuana/Mexico) <i>New Cu(II) Complexes of Tridentate N,N,N Schiff Bases Ligands Form 3-Amino-Pyrazole, Synthesis and Evaluation of Antimicrobial and Cancer Anticancer Activities</i>	OL20: Daniel Ruiz-Molina (Barcelona/Spain) <i>Coordination Polymer Nanoparticles for Cancer Theranostics</i>
15.30 – 15.50	OL13: Rachel Austin (New York/USA) <i>Lead Binding to Metallothionein-3</i>	OL17: Lukasz Szyrwił (Wroclaw/Poland) <i>Peptide Branching with 2,3-Diaminopropionic Acid for Bio-Functionalisation of Metallopeptides</i>	OL21: Xiaoyong Wang (Nanjing/China) <i>Cytotoxic Platinum Complexes with Both Mitochondrial and Nuclear DNA as the Cellular Target</i>
15.50 – 16.10	Coffee break		
16.10 – 16.55	Chair: Etelka Farkas (Debrecen/Hungary) PL4: Michael J. Hannon (Birmingham/U.K.) <i>Nanoscience and Metallo-Supramolecular Chemistry for DNA Recognition and Bioactivity</i>		
17.00 – 17.30	Chair: Éva A. Enyedy (Szeged/Hungary) Poster flash presentation. (8 x 3 min) Posters: P011, P025, P077, P081, P087, P115, P125, P181		
17.30 – 19.00	Poster session (odd numbers: 1, 3, ...)		

COMPARATIVE SOLUTION SPECIATION STUDY ON ANTITUMOR Rh(III)(η^5 -C₅Me₅) COMPLEXES

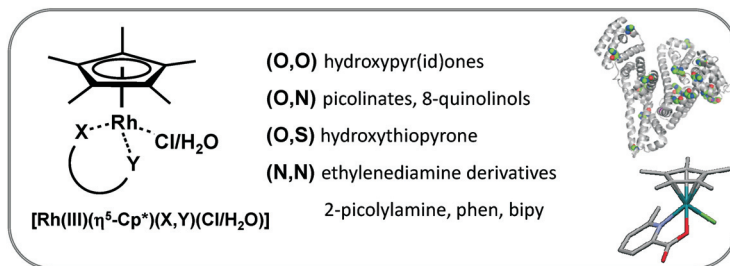
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Organoruthenium complexes are attractive alternatives to anticancer Pt(II) compounds and the Ru(III) complexes NKP-1339 and NAMI-A, and the Ru(II)-arene complex RAPTA-C have gained significant prominence due to their clinical and/or preclinical success. Half-sandwich Rh(III)-arenyl complexes are isoelectric with Ru(II)-arene complexes and have tunable reactivity and numerous of them show remarkable antiproliferative activity [1]. Despite the large number of Rh(III)(η^5 -C₅Me₅) based compounds quite few information is available about their solution speciation, although the knowledge on the solution stability and interactions with serum proteins strongly contributes to the understanding and controlling of the pharmacokinetic properties and mechanism of action.



In our work a series of Rh(III)(η^5 -C₅Me₅) complexes formed with various (O,O), (O,N), (O,S) and (N,N) donor set containing ligands was investigated in aqueous solution by the combined use of pH-potentiometry, UV-Vis spectrophotometry and 1H-NMR spectroscopy regarding their solution stability, lipophilicity and H₂O/Cl⁻ co-ligand exchange processes. Additionally these organorhodium complexes were studied by single-crystal X-ray diffraction and their antiproliferative effect was monitored in human cancer cell lines. The bioactivity unquestionably depends on numerous factors; our aim is to reveal differences in the solution behavior of these organorhodium compounds which may contribute to their diverse antiproliferative effect. Speciation results [2] are compared to analogous Ru(II)(η^6 -*p*-cymene) complexes as well. Interaction of some selected Rh(III)(η^5 -C₅Me₅) compounds towards human serum albumin was also studied to investigate differences or similarities in the strength and nature of binding in the case of biologically active and non-active complexes.

Acknowledgement: OTKA PD103905, János Bolyai Research Scholarship.

References:

1. Y. Geldmacher *et al.*; Inorg. Chim. Acta (2012), 393, 84.
2. O. Dömötör *et al.*; J. Inorg. Biochem. (2014), 134, 57; É.A. Enyedy *et al.*; J. Coord. Chem. (2015), 68, 1583; É.A. Enyedy *et al.*; J. Inorg. Biochem. (2016), 152, 93.