

SOLUTION EQUILIBRIA AND STRUCTURAL CHARACTERIZATIONS OF HALF-SANDWICH Rh(η^5 -C₅Me₅) COMPLEXES OF (N,N) DONOR BIDENTATE LIGANDS

János P. Mészáros¹; Orsolya Dömötör^{1,2}; Carmen M. Hackl³; Alexander Roller³; Wolfgang Kandiolle³; Bernhard K. Keppler³; Éva A. Enyedy¹

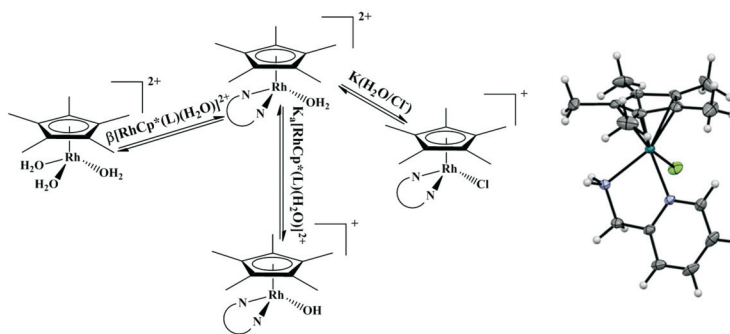
¹Department of Inorganic and Analytical Chemistry, University of Szeged,
Dóm tér 7, H-6720 Szeged, Hungary

²MTA-SZTE Bioinorganic Chemistry Research Group, Dóm tér 7, H-6720 Szeged, Hungary

³Institute of Inorganic Chemistry, Faculty of Chemistry, University of Vienna,
Währinger Str. 42, A-1090 Vienna, Austria
Meszaros.Janos.Peter.1@stud.u-szeged.hu

Cisplatin and its derivatives are successful therapeutics in cancer chemotherapy. Due to their severe side effects Ru(III)-based complexes NAMI-A and NKP-1339 were developed and investigated in clinical trials. Other promising candidates in the development of anticancer metallodrugs are organometallic Ru complexes and prominent representatives are RAED and RAPTA complexes. These drug candidates contain Ru(II) metal centres bonded to an arene ring¹. Their isoelectronic Os, Rh and Ir congeners are also synthesized and characterized.

Herein we report the comparative X-ray structural and solution equilibrium study of six organometallic rhodium complexes formed with (N,N) donor bidentate ligands, namely: ethylenediamine², N,N'-dimethylethylenediamine, N,N,N',N'-tetramethylethylenediamine, 2-picolylamine, 2,2'-bipyridine² and 1,10-phenanthroline. These studies were performed using pH-potentiometry, ¹H NMR spectroscopy and UV-Vis spectrophotometry. The experiments revealed high complex stability and chloride ion affinity. Probably these properties have influence on the mode of action in cells. We have also investigated the possible binding modes to human serum albumin via spectrofluorometry and ¹H NMR spectroscopy.



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1. B.S. Murray; M.V. Babak; C.G. Hartinger; P.J. Dyson; Coord. Chem. Rev. (2016), 306, 86
2. É.A. Enyedy; J.P. Mészáros; O. Dömötör; C.M. Hackl; A. Roller; B.K. Keppler; W. Kandiolle; J. Inorg. Biochem. (2015), 152, 93