

09.4-46 MONOMERIC AQUO AND HYDROXO COMPLEXES OF PLATINUM(II). By J.F. Britten, P. Pilon, B. Lippert, and C.J.L. Lock, Institute for Materials Research, McMaster University, Hamilton, Ontario, Canada. L8S 4M1.

Previous attempts to prepare monomeric aquo and hydroxo complexes of platinum(II) have been unsuccessful, (Faggiani, R., Lippert, B., Lock, C.J.L., J. Amer. Chem. Soc. (1977) 99, 777; Inorg. Chem. (1977) 16, 1192; (1978) 17, 1941; Lippert, B., Lock, C.J.L., Rosenberg, B., Zvagulis, M., Inorg. Chem. (1978) 17, 2971). Crystallization at low pH was no more successful, the product containing coordinated nitrate ion (Lippert, B., Lock, C.J.L., Rosenberg, B., Zvagulis, M., Inorg. Chem. (1977) 16, 1525) and this work, $[\text{Pt}(\text{NH}_2\text{CH}_2\text{CH}_2\text{NHCH}_2\text{CH}_2\text{NH}_2)(\text{NO}_3)]\text{NO}_3$.

It was possible to explain the results and postulate the conditions under which monomeric Pt(II) hydroxo and aquo complexes might be obtained (Lock, C.J.L., ACS Symposium Series, Inorganic Chemistry in Biology and Medicine (1980) 140, 209) using Brown's model (Brown, I.D., J. Chem. Soc., Dalton, in press). We have now obtained such complexes $[\text{Pt}(\text{NH}_3)_2(\text{OH})\text{C}_5\text{H}_7\text{N}_5\text{O}]\text{NO}_3 \cdot 2\text{H}_2\text{O}$ and $[\text{Pt}(\text{NH}_3)_2(\text{OH}_2)(\text{C}_5\text{H}_7\text{N}_5\text{O})]\text{NO}_3 \cdot \text{H}_2\text{O}$ and have examined their structures. The predicted hydrogen bonding requirements are observed.

09.4-47 STUDIES OF THE INTERACTION OF PLATINUM(II) WITH 9-ETHYLGUANINE AND THE N1 DEPROTONATED 9-ETHYLGUANINATE ANION. By R. Faggiani, B. Lippert, C.J.L. Lock and R.A. Speranzini, Institute for Materials Research, McMaster University, Hamilton, Ontario, Canada. L8S 4M1.

Structural studies have been undertaken of the complexes $[\text{Pt}(\text{NH}_3)_2(\text{C})(\text{G})](\text{ClO}_4)_2^{\text{A}}$, $[\text{Pt}(\text{NH}_3)_2(\text{C})(\text{G-H})][\text{Pt}(\text{NH}_3)_2(\text{C})(\text{G})](\text{ClO}_4)_3^{\text{B}}$, $[\text{Pt}(\text{NH}_3)_2(\text{C})(\text{G-H})](\text{ClO}_4)_2^{\text{C}}$, $[\text{Pt}(\text{NH}_3)_2(\text{G-H})_2]^{\text{D}}$, and $[\text{Pt}(\text{NH}_3)_2(\text{G-H})_2](\text{G}) \cdot 7\text{H}_2\text{O}^{\text{E}}$ (where C is 1-methylcytosine, G is 9-ethylguanine and G-H is the N1 deprotonated G anion). Platinum is bound at N3 of C and at N7 of G and G-H. The binding of G at N7 shifts the pK of N of G by about two pK units causing significant amounts of both complexed G and G-H at pH 7. An unusual type of (G-H)(G) base pairing then occurs which was first noted in B (Faggiani, R., Lippert, B., and Lock, C.J.L., J. Amer. Chem. Soc. (1981) 102, 5418) has now been observed in E, and may be the normal interaction between G and G-H. The structures of A-E will be discussed and the relevance of the Pt-induced "mispairing" will be discussed with respect to the biochemistry of platinum anti-cancer drugs.

09.4-48 STRUCTURES OF TECHNETIUM COMPOUNDS OF RADIOPHARMACEUTICAL INTEREST. By A. Davison, K.J. Franklin, and C.J.L. Lock, Institute of Materials Research, McMaster University, Hamilton, Ontario, Canada. L8S 4M1.

Complexes of technetium - 99m are widely used as scanning agents in nuclear medicine. However, relatively little is known about the chemistry and structures of these complexes. We report the x-ray structure determinations of 1-oxo-2,3,6(D-penicillaminato-S,N,O)-4,5-(D-penicillaminato-N,S)technetium(V), tetrabutylammonium oxobis-(catecholdiide)technetate(V) and triphenylmethylarsonium oxo(N,N¹-bis(mercaptoacetamide)ethylenediamine)technetate(V). The importance of these structures to the development of new radiopharmaceuticals will be discussed.

09.4-49 ADDUCTS OF ANTIMONY TRIHALIDES WITH N- AND π -DONORS: THE STRUCTURES OF $2\text{SbCl}_3 \cdot 3(4\text{-PHENYLPYRIDINE})$ AND $2\text{SbBr}_3 \cdot \text{BIPHENYL}$. STEREO-CHEMISTRY OF TRIVALENT ANTIMONY. By A. Lipka, Institut für Anorganische Chemie und Strukturchemie, Universität Düsseldorf, D-4000 Düsseldorf, Germany

The investigation of the title compounds forms part of a study of the stereochemistry of trivalent antimony in donor-acceptor compounds. Antimony trihalides as Lewis acids are acceptors towards various neutral donors. Adducts of SbCl_3 with aromatic amines and N-heterocycles are stabilized either by Sb-N or by Sb- π interactions. Interestingly with regard to

compound	D	d(Sb-D) Å	ref.
$\text{SbCl}_3 \cdot \text{Aniline}$	N	2.53	1
$\text{SbCl}_3 \cdot 2\text{Aniline}$	N	2.64	2
$\text{SbCl}_3 \cdot \text{Diphenylamine}$	π	3.13	3a
$2\text{SbCl}_3 \cdot \text{Diphenylamine}$	π	3.08, 3.09	3b
$2\text{SbCl}_3 \cdot \text{Triphenylamine}$	π	3.13	4
$\text{SbCl}_3 \cdot 2,2'\text{-Bipyridine}$	N	2.25, 2.32	5
$2\text{SbCl}_3 \cdot 3(4\text{-Phenylpyridine})$	N	2.39, 2.39	this work
		2.47	

(1. Hulme & Scruton, J. Chem. Soc. A (1968), 2448; 2. Hulme, Mullen & Scruton, Acta Cryst. (1969) A25, S171; 3a; b: Lipka, Z. anorg. allg. Chem. (1980) 466, 195; (1978) 440, 224; 4. Korte, Lipka & Mootz, ECM-5 (1980); 5. Lipka & Wunderlich, Z. Naturforsch. (1980) 35b, 1548)

Sb-Cl bonds, donor-acceptor interactions and short intermolecular Sb...Cl contacts the