

Synthese und Charakterisierung von kronenetherstabilisierten Platin(IV)-Komplexen mit Aminosäureliganden

Synthesis and Characterization of Amino Acid Complexes of Platinum(IV) Stabilized by Crown Ethers

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Platinum(IV) Complexes, Crown Ethers, Amino Acids, Crystal Structure

Crown ether complexed pentachloro(aqua)platinic acid, $(\text{H}_3\text{O})[\text{PtCl}_5(\text{H}_2\text{O})] \cdot 2(18\text{-cr-6}) \cdot 6\text{H}_2\text{O}$ (**1**) reacts with glycine, L-alanine, and DL-2-aminobutyric acid to give *cis*- $[\text{PtCl}_4(\text{O-glyH})(\text{H}_2\text{O})] \cdot (18\text{-cr-6}) \cdot \text{H}_2\text{O}$ (**4a**)¹ and *cis*- $[\text{PtCl}_4(\text{O-amacH})(\text{H}_2\text{O})] \cdot (18\text{-cr-6})$ (amacH = alaH **4b**, abuH **4c**), respectively, as well as $(\text{amacH}_2)_2[\text{PtCl}_6] \cdot 2(18\text{-cr-6})$ (amacH = glyH **5a**, alaH **5b**, abuH **5c**). The crown ether complexed hexachloroplatinic acid, $(\text{H}_3\text{O})_2[\text{PtCl}_6] \cdot 2(18\text{-cr-6})$ (**2**), reacts with glycine to afford $(\text{glyH}_2)[\text{PtCl}_4(\text{N},\text{O-gly})] \cdot 2(18\text{-cr-6}) \cdot 1.25\text{H}_2\text{O}$ (**6**).

The structures of **4b** and **6** were determined by X-ray diffraction. The alanine ligand in **4b** is a zwitterion that is coordinated to platinum by one oxygen atom of the carboxylate group only. The other oxygen atom is engaged in a strong hydrogen bond to the *cis*-coordinated aqua ligand. The glycinato ligand in **6** is *N,O*-coordinated at platinum forming an anion $[\text{PtCl}_4(\text{N},\text{O-gly})]^-$. The other oxygen atom of the carboxylate group is involved in a strong hydrogen bridge to the cation $(\text{glyH}_2)^+$. In both complexes hydrogen bridges are formed between the $-\text{N}^+\text{H}_3$ and $-\text{NH}_2$ groups of the amino acid ligands and the oxygen atoms of the crown ether molecules.

¹Abbreviations: amacH = amino acid, glyH = glycine, alaH = L-alanine, abuH = DL-2-aminobutyric acid.

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