WORKSHOP ON PLATINUM CHEMISTRY

ABSTRACTS

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STUDIES OF THE SOLVENT-EXCHANGE RATE
OF \([Pt(CH_2CH_2CN)_4](CF_3SO_2)_2\)

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Solvent-exchange of complexes of the type \(PtS_4^{2+}\) has been studied for \(S\) being e.g. \(H_2O\), \(Me_3S\), \(DMSO\) and \(MeNC\). However, no \(N\)-bonded \(Pt\)-complex has so far been investigated, due to *inter alia* the instability of \(Pt(MeCN)_2^{2+}\). Recently, the corresponding propionitrile complex has been synthesized and we here present rate constants and activation parameters for the reaction

\[
Pt(EtCN)_2^{2+} + 4EtCN - d5 \rightarrow Pt(EtCN - d5)_2^{2+} + 4EtCN
\]

studied by \(^1H - NMR\) and isotopic labeling. Unlike other solvent-exchange reactions of platinum(II) complexes studied so far there is a propionitrile independent contribution to the rate of the above reaction, corresponding to a solvent path. The \(k_1\)- and \(k_2\)-values at 30°C are \(0.43 \cdot 10^{-4} s^{-1}\) and \(2.4 \cdot 10^{-4} m^{-1} s^{-1}\). The activation entropies are \(-21\) and \(-70\) \(J \cdot K^{-1} \cdot mol^{-1}\), respectively, indicating an associative mode of activation.
REFERENCES


TRIARYLPHOSPHINE Pt(II) COMPLEXES WITH AMINO ACIDS AND PEPTIDES

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In recent years renewed attention has been addressed to the synthesis and physico-characterization of amino acids and peptides metal complexes.

Complexes of Pt(II), Co(III) and Cu(II) have been used in peptide synthesis and they can provide a significant contribution to peptide chemistry: N-terminal or C-terminal end protection during peptide synthesis.[1]

Platinum has been proven to be an effective amino protecting group of α-amino acids and its electron withdrawing properties seem to increase the reactivity of N-coordinated amino acid in the formation of peptide bond.[2]

Beside the studies of platinum(II) complexes containing two metal ion N-coordinated amino acid residues, in order to better evaluate the usefulness of these compounds in peptide synthesis, we undertook the synthesis and structural characterization of Pt(II) complexes containing a single N-coordinated α-amino acid.[3]

In this work we report the synthesis and solution characterization by NMR spectroscopy, of triarylphosphine Pt(II)
complexes with only one amino acidic residue. A detailed X-ray analysis is also reported.

REFERENCES


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