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Synthesis and X-Ray Structural Studies of Amino Acids Half Sandwich Complexes of Osmium(II)

of

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Abstract: The amino acids complexes of osmium(II), i.e. [Os(η 6-p-cymene)(η 1-N-(rac)-phenylglycine methyl ester)Cl₂] (A) and [Os(η 6-p-cymene) (η 1-N,N'-(S)-phenylalanine amido) Cl] (B), were prepared by an ultrasound energy-assisted method at room temperature. The solid structures of the newly synthesized complexes were determined by single crystal X-ray analysis. In A, osmium is bonded to 2 chloride ligands, the η 6-coordinated p-cymene molecule, and to a nitrogen atom of the corresponding amino acid derived ligand, whereas in the case of B the central osmium is surrounded by an N, N' bidentate amino amide ligand, by an η 6-coordinated p-cymene molecule, and a chloride ligand. Both complexes have a pseudo-tetrahedral geometry. As shown by X-ray structure, A exhibited racemization of the corresponding ligand. The ligand retained its configuration in B with co-crystallization of the 2 diastereomers, R_{Os}S_C and S_{Os}S_C, in a single crystal.

Key Words: Osmium; X-Ray studies, N ligands, Amino acids, Half sandwich Complexes

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