Molybdenum(VI) *cis*-Dioxo Complexes with Chiral Schiff Base Ligands: Synthesis, Characterization, and Catalytic Applications

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Dedicated to Professor Hubert Schmidbaur on the occasion of his 70th birthday

Three optically active Molybdenum (VI) dioxo complexes with tetrahydro salen and substituted tetrahydro salen derivatives as ligands were synthesized and examined as catalysts for asymmetric epoxidation. Complexes of the type MoO_2(L)(Solv) and WO_2(L) (L = tridentate, *trans*-2-aminocyclohexanol derived chiral Schiff base, Solv = alcohol) were prepared and characterized by elemental analysis, NMR and IR spectroscopy. These complexes are applicable as catalysts for olefin epoxidation reactions with *tert*-butyl hydroperoxide (TBHP) being the oxidizing agent. In case of *cis*-β-methylstyrene moderate enantiomeric excesses of up to 26% can be reached when the reaction is carried out at 0 °C.

Key words: Catalysis, Chirality, Epoxidation, Molybdenum, Salen