

Four Isotypic Highly Coordinated Lanthanide Complexes of the Tripodal Ligand Bis[(2-pyridyl)methyl][(1-methylimidazol-2-yl)methyl]amine

Michael Merkel, Matthias Pascaly, Christian Köster, and Bernt Krebs

Institut für Anorganische und Analytische Chemie, Westfälische Wilhelms-Universität,
Wilhelm-Klemm-Str. 8, D-48149 Münster, Germany

Reprint requests to Prof. Dr. B. Krebs. Fax: +49 (0)251/8338366. E-mail: krebs@uni-muenster.de

Z. Naturforsch. **59b**, 216 – 220 (2004); received December 29, 2003

Dedicated to Professor Ingo-Peter Lorenz on the occasion of his 60th birthday

The Ln(III) complexes (Ln = Pr, Nd, Sm and Tb) of the tripodal ligand bis[(2-pyridyl)methyl][(1-methylimidazol-2-yl)methyl]amine (bpia) have been synthesized and characterized by single crystal X-ray structure determination as well as vibrational spectroscopy. The coordination spheres of the lanthanide cations are completed by three chelating nitrate anions yielding neutral complexes with a tenfold coordination of the metal ions. All four compounds are found to be isotypic, crystallizing in space group $P\bar{1}$ (No. 2) with $Z = 2$. On comparing the IR-spectra of the new complexes to the spectra of the free ligands a shift to higher wave numbers is observed for corresponding bands in both, bpia and nitrate ligands.

Key words: Crystal Structures, Tripodal Tetradentate Ligands, Rare Earth Metals, Imidazole