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Chiral macrocyclic lanthanide complexes derived from (1*R*,2*R*)-1,2-diphenylethylenediamine and 2,6-diformylpyridine.

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The enantiopure complexes $[LnL]Cl_3 \cdot nH_2O$ (Ln=La^{3+}, Ce^{3+} and Eu^{3+}) of the new chiral macrocycle derived from (1*R*,2*R*)-1,2-diphenylethylenediamine and 2,6-diformylpyridine have been synthesised. The complexes have been characterised by NMR spectroscopy and mass spectrometry. The ^{1}H and ^{13}C signal assignment has been based on COSY, NOESY and HMQC measurements. The X-ray crystal structure of the $[CeL]Cl_3 \cdot 4H_2O$ complex has been determined. The cerium(III) ion is coordinated by six nitrogen atoms of the macrocyclic ligand and three chloride anions. The macrocycle in this complex adopts a relatively flat, twist-bent conformation. The enantiopure La^{3+}, Ce^{3+} and Eu^{3+} complexes of the new chiral macrocycle derived from (1*R*,2*R*)-1,2-diphenylethylenediamine and 2,6-diformylpyridine have been obtained in template condensation. The complexes have been characterised by 2D NMR spectroscopy and mass spectrometry. The X-ray crystal structure of the cerium(III) complex shows the Ce(III) ion coordinated by six nitrogen atoms of the macrocyclic ligand and three chloride anions. The macrocycle in this complex adopts a relatively flat, twist-bent conformation.

Słowa kluczowe

Macrocycles, Lanthanide complexes, Chiral complexes, NMR

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