trans-Bis(saccharinato)zinc and -cadmium Complexes with N-(2-Aminoethyl)piperazine: Synthesis, Crystal Structures and IR Spectra

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The reactions of N-(2-aminoethyl)piperazine (aeppz) with tetraaqua-bis(saccharinato)zinc(II) and -cadmium(II) in ethanol solution yield the new complexes *trans*-[$Zn(sac)_2(aeppz)_2$] (**1**), and *trans*-[$Cd(sac)_2(aeppz)_2$] (**2**) (sac = saccharinate), respectively. The complexes were characterized by elemental analyses, IR spectroscopy and X-ray crystallography. Both complexes **1** and **2** are mononuclear of C_i symmetry. The zinc(II) and cadmium(II) ions are coordinated by two neutral aeppz ligands and two sac anions in an elongated distorted octahedral environment. The aeppz ligand acts as a bidentate N, N' donor through the central heterocyclic N atom and the N atom of the aminoethyl group, while the sac ligand is *O*-coordinated *via* the carbonyl O atom. The packing of the molecules in the crystals in both complexes is consolidated by arene $\pi - \pi$ stacking interactions between the sac rings and by intermolecular hydrogen bonds involving the amine groups of aeppz and the sulfonyl oxygen atoms of the sac ligands.

Key words: N-(2-Aminoethyl)piperazine, Saccharinate, Zinc(II), Cadmium(II), Crystal Structure