



Unexpected formation of the copper(II) dinuclear mixed-ligand species in the ternary system of N,N,N',N'',N''' -pentamethyldiethylenetriamine with methionine- or histidinehydroxamic acids in aqueous solution.

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Streszczenie

Equilibrium studies of the mixed-ligand complexes of the copper(II) ion with pentamethyldiethylenetriamine (N,N,N',N'',N''' -pentamethyl-[bis(2-aminoethyl)amine], Me_5dien) as a primary ligand and methioninehydroxamic acid (2-amino-4-(methylthio)butanehydroxamic acid, Metha) or histidinehydroxamic acid (2-amino-3-(4'-imidazolyl)propanehydroxamic acid, Hisha) as a secondary ligand L were performed by potentiometric titration, UV-Vis and EPR spectroscopy. The results show that in these ternary systems the dinuclear $[\text{Cu}_2(\text{Me}_5\text{dien})\text{L}_2\text{H}_{-1}]^+$ mixed-ligand species is formed as a predominant one in the basic solution. The mononuclear $[\text{Cu}(\text{Me}_5\text{dien})\text{L}]^+$ species is formed in low concentration. Our spectroscopic results indicate that the geometry of these mixed-ligand five-coordinate complexes is strongly distorted towards trigonal-bipyramidal.

Słowa kluczowe

Copper(II) complexes, Mixed-ligand complexes, Amino hydroxamic acids, Stability constants, Five-coordinate complexes, Polyamines

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