

A study on the nickel(II)-famotidine complexes.

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Streszczenie

Potentiometric studies have shown that Ni(II) forms three pH-dependent complexes with famotidine (L), namely: [NiHL](3+), [NiL](2+) and [NiH(-2)L]. Two of them have been isolated from solution with a Ni/famotidine ratio of 1:1. At pH 6.0, a paramagnetic complex [NiL](2+) with octahedral geometry is formed in which, most likely thiazole N(9) and guanidine N(3) nitrogens are involved in the metal binding. Additionally, two water molecules and two perchlorate anions, ClO(4)(-), fulfil the coordination sphere. The second complex, [NiH(-2)L], that precipitates at pH 8 is diamagnetic and takes square-planar geometry in which four nitrogen donors: N(3), N(9), N(16) and N(20) coordinate to Ni(II). Potentiometric studies, mass spectrometry, FT-IR and Raman spectroscopy are employed to determine and discuss the structure of both complexes. Additionally, ¹H, ¹³C and ¹⁵N NMR spectroscopy is used to confirm the binding site in a square-planar complex. The assignment of vibrational bands are made using ab initio HF/CEP-31G method.

Adres publiczny

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