



Towards a new attenuating compound: a potentiometric, spectrophotometric and NMR equilibrium study on Fe(III), Al(III) and a new tetradentate mixed bisphosphonate-hydroxypyridinonate ligand.

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Streszczenie

Coordination properties toward Fe(III) and Al(III) of a mixed bisphosphonate–hydroxypyridinonate ligand are presented. Potentiometric, spectrophotometric and NMR results allowed to conclude that Fe(III) and Al(III) coordination takes place on the pyridinone moiety. The high steric hindrance prevents the possibility of simultaneous coordination of both groups to the same metal ion. Quantum mechanical calculations confirm this finding allowing to determine the minimal length of the linker necessary for a stable conformation of complexes in which Fe(III) is coordinated both by pyridinone and bisphosphonate groups.

Słowa kluczowe

Fe(III) complexes, Al(III) complexes, Bisphosphonates, 1-Hydroxy-2(1H)-pyridinone, Chelating agents, Potentiometry, Spectrophotometry, Quantum mechanical calculations

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