The influence of aspartic or glutamic acid residues in tetrapeptides on the formation of complexes with nickel(II) and zinc(II).

Autorzy

Henryk Kozłowski

A. Lebkiri

Ch. O. Onindo

L. D. Pettit

J. F. Galey

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Streszczenie

The formation of the complexes formed by Ni^{II} and Zn^{II} with Asp-Asp-Asp and a series of tetrapeptides containing one or two Asp residues or one Glu residue are reported. Stability constants were measured pH-metrically. The particular species and the metal ion binding sites were determined using ^{1}H NMR, UV-vis and CD spectroscopy. The β-carboxylate group of the Asp residue stabilizes the complexes significantly, particularly when present as the N-terminal residue. As a result the tendency for Ni^{II} to deprotonate and bind to amide-nitrogen atoms, forming planar diamagnetic complexes, is reduced and their formation delayed to a significantly higher pH when compared to other peptides. The side chain of the Glu residue has a much smaller effect. As anticipated, Zn^{II} was unable to deprotonate and bind to peptide nitrogens.

Adres publiczny

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