The binding of Ni(II) and Cu(II) with the N-terminal tail of the histone H4.

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Streszczenie

We have analyzed, for Ni(II) and Cu(II) binding, the sequence of the N-terminal tail of the histone H4, the 22-amino acid peptide Ac-SGRGKGGKGLGKGGAKRHRKVL-Am and, in addition, the 7- and 11-amino acid peptides Ac-AK(Ac)RHRK(Ac)V-Am, Ac-GK(Ac)GGAK(Ac)RHRK(Ac)V-Am where all side chains of lysines were blocked by acetylation. Potentiometric and spectroscopic studies (UV-Vis, CD, EPR, NMR) showed that histidine 18 acted as an anchoring binding site for metal ions in all the peptides investigated. The stability constants of the 3N and 4N complexes are higher than those obtained for simple peptides with glycine instead of arginine and lysine residues in the metal binding site. The coordination was not significantly affected by the acetylation of lysines. The behavior of the “tail” suggested a possible bent structure with organized side-chain orientation promoted by Ni(II).

Adres publiczny

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