How non-bonding amino-acid side-chains may enormously increase the stability of a Cu(II) -peptide complex.

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Streszczenie

A combined pH-metric and spectroscopic (UV—Vis, circular dichroism and electron paramagnetic resonance) study of Cu(II) binding to analogues of Asn-Ser-Phe-Arg-Tyr-NH_2 systematically substituted with Ala residues revealed the presence of indirect, additive conformational effects resulting in a very high stability enhancement for 4N complexes. The major contribution to the stability is exerted by non-binding side-chains of 4th and 5th amino acids. This effect is explained on the basis of spectroscopic data by the formation of a secondary fence shielding the Cu(II) binding site from the bulk of the solution. Such a structure, not reported previously, is of possible importance for the understanding of interactions of metal ions with proteins.

Słowa kluczowe

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