

Specific interactions of bovine and human β -casomorphin-7 with Cu(II) ions.

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Complex formation between Cu(II) and human and bovine β -casomorphin heptapeptides, Tyr-Pro-Phe-Val-Glu-Pro-Ile and Tyr-Pro-Phe-Pro-Gly-Pro-Ile, respectively, was investigated by pH potentiometry and spectroscopic (CD, EPR and electronic absorption) techniques. The results showed the critical impact of Pro residues on the complex equilibria formed. The presence of the Pro residue at the second position leads to formation of very stable dimeric species in which two metal ions co-ordinate to N-terminal $\{NH_2, C\ddot{O}\}$ binding sites of one peptide molecule and the deprotonated phenolic oxygen of the second ligand molecule. The presence of two additional hydrophobic residues on the C-terminal makes heptapeptide molecule much more effective ligand than its pentapeptide N-terminal fragment.

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