

Metallacrowns as products of the aqueous medium self-assembly of histidinehydroxamic acid-containing polypeptides.

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Streszczenie

Self-assembly is a widely studied, spontaneous, and reversible phenomenon leading to the formation of the ordered structures by non-covalent specific interactions among starting molecules. In this work, a new template for the self-assembly of polypeptides based on peptides containing the C-terminal histidinehydroxamic acid moiety and Cu(2+) ions is characterized. Two peptide (tripeptide and pentadecapeptide) hydroxamic acid systems were synthesized and their interactions with Cu(2+) ions were investigated, revealing a high stability of the supramolecular assemblies formed. The supramolecular metallacrown-based L4Cu5 complexes exist at physiological pH in the presence of Cu(2+) ions as is evidenced from the spectroscopic methods, ESI mass spectrometry, and physicochemical techniques.

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