

Binding of Ni²⁺ and Cu²⁺ ions peptides with a Cys-His motif.

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Rok wydania

2008

Czasopismo

Dalton Transactions

Strony

5323-5330

DOI

10.1039/B806851H

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

Waglerin I is a 22 amino acid snake venom toxin. Its three fragments (GGKPDLRPCHP-NH₂, PCHYIPRPKPR-NH₂, PCHPPCHYIPR-NH₂), due to the presence of two Cys and His residues, are potentially very attractive ligands for transition metal ions. The main aim of this work was to establish the impact of these two adjacent residues on Ni²⁺ ion binding, especially because this kind of motif is very common in nature, and the study of low molecular weight models could be helpful in understanding larger systems. In this work waglerin fragments and their N-protected analogues were studied with Ni²⁺ (and Cu²⁺ for peptides with disulfide bridges) ions using combined potentiometric and spectroscopic measurements (UV-Vis, CD, EPR and NMR). In all peptides, except PCHPPCHYIPR-NH₂ with a disulfide bridge, the Cys–His motif was found to be crucial for the coordination of Ni²⁺ ions. In the case of the N-unprotected analogues, the N-terminal amino group participates in the coordination as well.

Adres publiczny

<https://doi.org/10.1039/B806851H>

Strona internetowa wydawcy

<https://www.rsc.org/>