

Ni(II) and Cu(II) binding with a 14-aminoacid sequence of Cap43 protein, TRSRSHTSEGTRSR.

Autorzy

Maria Antonietta Zoroddu
Teresa Kowalik-Jankowska
Henryk Kozłowski
Konstantin Salnikow

Max Costa

Rok wydania

2001

Czasopismo

Journal of Inorganic
Biochemistry

Numer woluminu

85

Strony

47-54

DOI

10.1016/S0162-
0134(00)00204-X

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

The tetradecapeptide containing the 10 aminoacid repeated sequence on the C-terminus of the Ni(II)-induced Cap43 protein, was analyzed for Ni(II) and Cu(II) binding. A combined pH-metric and spectroscopic UV-VIS, EPR, CD and NMR study of Ni(II) and Cu(II) binding to the blocked CH₃CO-Thr-Arg-Ser-Arg-Ser-His-Thr-Ser-Glu-Gly-Thr-Arg-Ser-Arg-NH₂ (Ac-TRSRSHTSEGTRSR-Am) peptide, modeling a part of the C-terminal sequence of the Cap43 protein, revealed the formation of octahedral complexes involving imidazole nitrogen of histidine, at pH 5.5 and pH 7 for Cu(II) and Ni(II), respectively; a major square planar 4N-Ni(II) complex (about 100% at pH 9, log $K^* = -28.16$) involving imidazole nitrogen of histidine and three deprotonated amide nitrogens of the backbone of the peptide was revealed; a 3N-Cu(II) complex (maximum about 70% at pH 7, log $K^* = -13.91$) and a series of 4N-Cu(II) complexes starting at pH 5.5 (maximum about 90% at pH 8.7, log $K^* = -21.39$ for CuH₋₃L), were revealed. This work supports the existence of a metal binding site at the COOH-terminal part of the Cap43 peptide.

Słowa kluczowe

Ni(II), Cu(II), Bindi, 14-aminoacid peptide

Adres publiczny

[https://doi.org/10.1016/S0162-0134\(00\)00204-X](https://doi.org/10.1016/S0162-0134(00)00204-X)

Strona internetowa wydawcy

<http://www.elsevier.com>