

Impact of histidine spacing on modified polyhistidine tag : metal ion interactions.

Autorzy

Joanna Wąty

Aleksandra Hecel

Magdalena Rowińska-Żyrek

Henryk Kozłowski

Rok wydania

2018

Czasopismo

Inorganica Chimica Acta

Numer woluminu

472

Strony

119-126

DOI

10.1016/j.ica.2017.06.053

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

Histidine rich sequences are chosen both by nature and by molecular biologists due to their high affinity towards metal ions. In this work, we examine the affinity and binding modes of Cu^{2+} , Ni^{2+} and Zn^{2+} towards two histidine tags, the common His_6 -tag (Ac-HHHHHH-NH₂) and its modified sequence, which also contains six histidines, but separated with two alanineresidues (Ac-HAAHAAHAAHAAHAAHAA-NH₂). The spatial separation of histidines has an important impact on its coordination properties. Cu^{2+} and Ni^{2+} complexes with Ac-HHHHHH-NH₂ are more stable than those with Ac-HAAHAAHAAHAAHAAHAA-NH₂; the contrary is observed for Zn^{2+} . In a narrow range of pH, Cu^{2+} -Ac-HHHHHH-NH₂ and Ni^{2+} -Ac-HHHHHH-NH₂ can even compete with the albumin-like binding of the respective metals.

Adres publiczny

<https://doi.org/10.1016/j.ica.2017.06.053>

Strona internetowa wydawcy

<http://www.elsevier.com>