Uniwersytet Wrocławski

Repozytorium

Plik pochodzi z repozytorium Wydziału Chemii Uniwersytetu Wrocławskiego

HENRYK - an endless source of metal coordination surprises.

Autorzy

Paulina Kołkowska

Aleksandra Hecel

Dorota Kędzierska

Małgorzata Ostrowska

Paulina K. Walencik

Joanna Wątły

Karolina Zdyb

Marta Spodzieja

Sylwia Rodziewicz-Motowidlo

Sławomir Potocki

Marek Łuczkowski

Elżbieta Gumienna-Kontecka

Magdalena Rowińska-Żyrek

Rok wydania

2016

Czasopismo

Journal of Inorganic Biochemistry

Numer woluminu

163

Strony

258-265

DOI

10.1016/j.jinorgbio.2016.02.030

Streszczenie

NCNThe basic knowledge about biological inorganic chemistry, thermodynamics and metal binding sites of metalloproteins is crucial for the understanding of their metal binding-structure-function relationship. Metal-peptide complexes are useful and commonly used models of metal-enzyme active sites, among which copper and zinc models are one of the most extensively studied. HENRYK is a peptide sequence present in numerous proteins, and serves as a potentially tempting binding site for Cu2+ and Zn2+. Maybe more importantly, HENRYK also happens to be the first name of our group leader. The results of this work, which, at the first glance, might seem to be a 'chemical scrabble', went far beyond our expectations and surprised us with a novel, uncommon behavior of a Cu2+ complex with a peptide with a histidine in position one. At low pH, the binding is a typical histamine-like coordination, but with the increase of pH, the imidazole nitrogen is moved to the axial position and replaced with an amide; at basic pH, the binding mode is a {NH2, 3N-} one in the equatorial plane. It is important to note, that no dimeric species are formed in between. Such binding is thermodynamically much more stable than a simple complex with histamine, and quite comparable to complexes with several possible imidazole anchoring sites.

Słowa kluczowe

Histamine-like binding, Metal–peptide complexes, thermodynamic stability

Adres publiczny

http://dx.doi.org/10.1016/j.jinorgbio.2016.02.030

Strona internetowa wydawcy

http://www.elsevier.com

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Plik został wygenerowany dnia 2026-11-04 07:32:15

Adres w repozytorium https://old.chem.uni.wroc.pl/pl/repozytorium/LM2qQMq.