

Specific interactions of Bi(III) with the Cys-Xaa-Cys unit of a peptide sequence.

Autorzy

Magdalena Rowińska-Żyrek

Daniela Valensin

Łukasz Szyrwiel

Z. Grzonka

Henryk Kozłowski

Rok wydania

2009

Czasopismo

Dalton Transactions

Strony

9131-9140

DOI

10.1039/b913430a

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

The medicinal application of bismuth compounds is focused in two fields: antimicrobial and anticancer. Bi(III) complexes have been used in medicine as an effective treatment of microbial infections, such as peptic ulcers, diarrhoea, gastritis and syphilis. (^{212}Bi) and (^{213}Bi) are strong alpha-particle emitters, which, bound to specific ligands, could be promising targeted radio-therapeutic agents for the treatment of cancer. In this work, the coordination of bismuth to three peptides with the Cys-Xaa-Cys motif was studied by potentiometric, spectroscopic, mass spectrometric and NMR methods. We have shown, that sulfur atoms from cysteines are critical donors for the coordination of Bi(III). Our investigation provides insight towards an understanding of the chemistry of bismuth-containing complexes and may lead to the further application of this metal in medicine.

Adres publiczny

[http://doi.org/ 10.1039/b913430a](http://doi.org/10.1039/b913430a)

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