Coordination pattern and reactivity of two model peptides from porin protein P1.

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It has been reported that numerous of *Fusobacterium nucleatum* outer membrane proteins take part in cancerogenesis. Therefore, it is very interesting to study their interactions with metal ions and the ability to produce reactive oxygen species, which may be involved in cancer progression. Since investigations of metal binding to proteins are often based on fragments that contain the metal-binding domains, designing model peptides should be very mindful. As was shown in this paper, very similar protein fragments may behave differentially. Herein, combined potentiometric, spectroscopic, and computational studies were performed to determine metal ion binding by ligands constituting fragments of porin protein P1. Two studied tetrapeptides (Ac–KEHK–NH_2 and Ac–EHKA–NH_2) that have common EHK motif have different coordination properties and reactivity. Therefore, we should be cautious when transferring the behavior of small peptide fragments to whole protein.

Słowa kluczowe

Copper(II) coordination, Porin protein P1, Fusobacterium nucleatum, DNA degradation, Pro-oxidant, Fenton-like reaction

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