



Ni(II) binding to the 429-460 peptide fragment from human Toll like receptor (hTLR4); a crucial role for nickel-induced contact allergy ?.

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Streszczenie

The FQH₄₃₁SNLKQMSEFSVFLSLRNLIYLDISH₄₅₆TH₄₅₈TR fragment, containing three histidine residues, the conserved H₄₃₁ and the non-conserved H₄₅₆ and H₄₅₈, located from 429 to 460 amino acid residues in the C-terminal portion of human Toll-like-receptor 4 (hTLR4), which is directly activated by nickel, a well known contact allergen, has been tested for Ni(II) binding. The complex formation capability of the 32-amino acid sequence with Ni(II) ions has been followed by potentiometric, UV-Vis, CD, MS and NMR measurements. Ni(II) is able to bind to all three histidines by forming macrocycle complexes at low and physiological pH. From pH 9 on, a 4N diamagnetic species (N_{im}, 3N_{am}⁻) with the participation of an imidazole nitrogen and three deprotonated nitrogens from His₂₈, Ser₂₇ and Ile₂₆ amides from the backbone of the model peptide has been determined. From the NMR results it was possible to determine that His₂₈, which mimics the H₄₅₆ residue in the protein, together with the environment around it, was mainly involved in the binding.

Adres publiczny

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Strona internetowa wydawcy

<https://www.rsc.org/>