

NMR Studies of the Mn²⁺ Interactions with Amyloid Peptide A β 13-23 in Water Environment

Abdrakhmanov R., Blokhin D., Usachev K., Karataeva F., Klochkov V.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

© 2016, Springer Science+Business Media New York. In this paper, binding of Mn²⁺ ions to the fragment of beta-amyloid peptide (A β 13-23) was studied. Manganese complexation induces important structural changes within the C-terminal segment of the peptide. Investigation of peptide-metal ion binding was made by MnCl₂ salt titration and recording 2D 1H-1H NMR TOCSY spectra (TOtal Correlation Spectroscopy). Multidimensional NMR techniques were performed to understand the details of the conformational behavior of the peptide and to reveal the metal-binding sites. According to changes in NMR spectra, the manganese-binding center of the A β 13-23 peptide is associated with the aspartate residue.

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Keywords

Amyloid peptide A β 13-23, Mn ions 2+, NMR spectroscopy

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