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NMR Studies of the Mn^{2+} Interactions with Amyloid Peptide Aβ13-23 in Water Environment

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Abstract

© 2016, Springer Science+Business Media New York.In this paper, binding of Mn2+ ions to the fragment of beta-amyloid peptide (Aβ13-23) 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 Aβ13-23 peptide is associated with the aspartate residue.

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Keywords

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

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