Possible involvement of copper(II) in Alzheimer disease.

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Streszczenie

The β-amyloid (Aβ) peptide is a principal component of insoluble amyloid plaques that are characteristic neuropathological features of Alzheimer disease (AD). The amyloid peptide also exists as a normal soluble protein that undergoes a pathogenic transition to an aggregated, fibrous form. This
transition can be affected by extraneous proteinaceous elements and nonproteinaceous elements such as copper ions, which may promote aggregation and/or stabilization of the fibrils. Copper has been
found in abnormally high concentrations in amyloid plaques and AD-affected neuropil, and copperselective chelators have been shown to dissolve Aβ peptide from postmortem brain specimens. Although Cu2+ is an essential element for life and the function of numerous enzymes is basic to neurobiology,
free or incorrectly bound Cu2+ can also catalyze generation of the most damaging radicals, such as hydroxyl radical, giving a chemical modification of the protein, alternations in protein structure and solubility, and oxidative damage to surrounding tissue.

Słowa kluczowe

Alzheimer disease, β-amyloid peptide, complexes, copper(II)

Adres publiczny

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