

综述

阿尔茨海默病中的磁铁矿作用机制

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摘要:

阿尔茨海默病 (Alzheimer's disease, AD) 与铁代谢异常密切相关。目前研究发现人脑内有生物磁铁矿的存在。磁铁矿是一种含有两种价态铁的铁氧复合物, 呈反铁磁性耦合, 在AD病人脑中其含量和结构均出现异常, 表明磁铁矿在AD的发病中可能发挥重要作用, 氧化应激可能是磁铁矿发挥作用的一个重要途径。深入研究磁铁矿的形成机制以及调控因素, 可以为解析AD的发病机制, 以及电磁场生物学效应提供新的科学依据。

关键词: 阿尔茨海默病 铁 铁蛋白 磁铁矿 电磁场

Magnetite Mechanisms in Alzheimer's Disease

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Abstract:

Alzheimer's disease (AD) is closely correlated with abnormal iron metabolism. It has been shown that biological magnetite was identified in the human brain. Magnetite is a iron oxide compound with alternating lattices of antiferromagnetically coupled Fe²⁺ and Fe³⁺. In the AD, the content and structure of magnetite are all abnormal, indicating that magnetite may play an important role in the pathogenesis of AD, and of which oxidative stress is probably a route. Study on the mechanism of magnetite formation and regulatory factors can provide a new scientific evidence for AD pathogenesis and biological effect estimation of electromagnetic field.

Keywords: Alzheimer's disease Iron Ferritin Magnetite Electromagnetic field

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