Advances in determination of Alzheimer's β-amyloid peptide

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Abstract

Alzheimer's disease (AD), as the most common progressive neurodegenerative disorder, is pathologically characterized by deposition of extracellular plaque composed of amyloid-β peptide (Aβ). Therefore, the development of reliable assays for Aβ (both monomers and oligomers) are important for the early differential diagnosis of dementia, predicting the progression of AD, as well as monitoring the effectiveness of novel anti-Aβ drugs for AD. Recently, our group has constructed several analytical assays for sensing Aβ (both monomers and oligomers): by using aptamer- and thioninemodified gold nanoparticles (aptamer-Au-Th) as the signing probe, we fabricated an antibody-aptamer sandwich assay for electrochemical evaluation of levels of β-amyloid oligomers; based on metal–organic frameworks as electrochemical signal probes, we developed a sensitive aptasensor for the detection of β-amyloid oligomers; based on the target-mediate aggreation of gold nanoparticle, we constructed a sensitive colorimetric assay for β-amyloid oligomers; based on the specific binding between Cu2+ and Aβ1−40, we proposed a colorimetric assay as well as a fluorescent assay for Aβ1−40 monomer.

Biography:-

Yanli Zhou has completed her PhD at the age of 27 years from the Technical Institute of Physics and Chemistry, Chinese Academy of Sciences. She is currently a professor at Shangqiu Normal University. She has published more than 40 papers in reputed journals.

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