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ADVANCES IN DETERMINATION OF ALZHEIMER'S β -AMYLOID PEPTIDE

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Alzheimer's disease (AD), as the most common progressive neurodegenerative disorder, is pathologically characterized by deposition of extracellular plaque composed of amyloid- β peptide ($A\beta$). Therefore, the development of reliable assays for $A\beta$ (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- $A\beta$ drugs for AD. Recently, our group has constructed several analytical assays for sensing $A\beta$ (both monomers and oligomers): by using aptamer- and thionine-modified 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 aggregation of gold nanoparticle, we constructed a sensitive colorimetric assay for β -amyloid oligomers; based on the specific binding between Cu^{2+} and $A\beta_{1-40}$, we proposed a colorimetric assay as well as a fluorescent assay for $A\beta_{1-40}$ 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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