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### Advances in determination of Alzheimer's $\beta$ -amyloid peptide

Alzheimer's disease (AD), the most common type of dementia in the elderly, is a progressive and devastating neurodegenerative disease causing memory loss, impaired thinking and other symptoms.  $\beta$ -amyloid peptide ( $A\beta$ ) indicates a biomarker for an AD in cerebrospinal fluid, blood, plasma and serum. Therefore, it is important to determine the  $A\beta$  concentration for early diagnosis and treatment of AD. In this study, micellar electrokinetic capillary chromatography (MEKC) combined with an on-line preconcentration method sweeping was established to determine  $A\beta_{1-42}$ . Electrophoresis was carried out at a constant voltage of 5 kV in an uncoated fused-silica capillary. The 15 mmol/L borate buffer containing 20 mmol/L sodium dodecyl sulfate (SDS) with pH 9.3 was used as the running buffer. The samples were injected into the capillary by applying a pressure of 50 mbar for 60s. Under the optimal conditions, the detection limit of  $A\beta_{1-42}$  was as low as 0.08  $\mu\text{mol/L}$ . The recoveries of the normal addition method in real human serum sample analysis were found to be between 89.2% and 98.5%. The relative standard deviation (RSD) of the determination was less than 6%.

### Biography

Maotian Xu has completed his PhD at the age of 42 years from Northwest University and postdoctoral studies from Central South University. He is the director of Henan Key Laboratory of Biomolecular Recognition and Sensing. He has published more than 40 papers in reputed journals.

Yintang Zhang has completed his PhD at the age of 29 years from Central South University. He is the director of Henan Joint International Research Laboratory of Chemo/Biosensing and Early Diagnosis of Major Diseases. He has published more than 25 papers in reputed journals.

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