PSI2009/710
Anti-\(A\beta1-42\) Monoclonal antibody Mainly Binding to Oligomer and Protofibrils May Target the Cytotoxicity and Improve Learning and Memory in SAMP8 Mice

Jin-Sheng He\(^a,b\), Ying Zhang\(^a\), Xin Wang\(^a\), Fu-Xiang Bao\(^a\), Yi-Qing Li\(^b\), Xiao-Bo Wang\(^a\) and Tao Hong\(^a\)
\(^a\)College of Life Sciences and Bioengineering, School of Science, Beijing Jiaotong University, 100044 Beijing, China
\(^b\)Institute for Viral Disease Control and Prevention, China CDC, 100052 Beijing, China
jshhe@bjtu.edu.cn

Amyloid \(\beta\)-peptide (A\(\beta\)) plays key roles in pathogenesis of Alzheimer’s disease (AD) and the aggregation of A\(\beta\) is the central event. In the present study, the A\(\beta1-42\) oligomers has been used as the antigen to immunize BALB/C mice. After subcloning and screening, a monoclonal antibody (A8) was obtained. It has much higher affinity to A\(\beta1-42\) oligomer than monomer, A\(\beta1-6\), A\(\beta1-12\), and A\(\beta1-28\). The isotype is IgG3. The binding ability is higher, with 1:100,000 titers in ELISA, 1: 4,000 in western blot and 1:150 in immuno-histochemistry. When A\(\beta1-42\) oligomer was preincubated with A8, the cytotoxicity was inhibited in SH-SY5Y cell line. Learning and memory ability was improved through intraperitoneal administration in SAMP8 mice. These results suggested that it may have potential application in AD diagnosis and therapeutic studies.

This work was supported by the National High-tech R & D Program of China (863 Program) (2006AA02A247)

Number of words in abstract: 144
Keywords: \(\beta\) Amyloid protein - Alzheimer’s diseases - A\(\beta\) oligomer - monoclonal antibody
Technical area: Special subsession on Health Challenges
Special session: Not specified
Presentation: No preference
Special equipment: No special equipment