Passive Immunotherapy Targeting Aβ Oligomers in Alzheimer's Disease

Etsuro Matsubara
(Department of Alzheimer's Disease Resarch, National Institute for Longevity Sciences)

  Several lines of evidence may indicate that memory loss represents a synaptic failure caused by soluble amyloid ß (Aß) oligomers.   To specifically target toxic Aß oligomers *in vivo*, monoclonal antibody specific for toxic Aß oligomers was generated.   We required candidate therapeutic antibody for Alzheimer's disease to satisfy 5 criteria: (1) anti-toxic activity; (2) anti-fibrillogenic activity; (3) specificity to Aβ oligomer; (4) ability to capture Aβ oligomers in AD brain; (5) ability to prevent Alzheimer-like phenotypes, including memory impairment, neuropathology, brain Aβ levels in APPswe-transgenic mice (Tg2576).   We herein reported that our monoclonal antibody satisfied all of the criteria, thus such monoclonal clone is a promising candidate for therapeutic antibody to prevent Alzheimer's disease.