

Technology/ Title	A novel antibody against Aβ possessing diagnostic and therapeutic potentials for Alzheimer's disease		
Technology Type	<input checked="" type="checkbox"/> Biotechnology	<input type="checkbox"/> Device/Diagnostics	
	<input checked="" type="checkbox"/> Pharmaceutical	<input type="checkbox"/> Others: _____ -	
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Technology Description	<p>We have newly developed an antibody in both mouse and fully humanized versions, which recognizes various Aβ species and N-terminally modified pyro-glutamate Aβ. We found that this novel antibody can be used for early detection of cerebral Aβ levels and exerts multifaceted functionality in alleviating the AD-like pathology in APP/PS1 mice. This antibody exerts an ability to engage Aβ plaques via crossing blood-brain barrier (BBB) via intraperitoneal injection and is able to transform over-activated microglia into ramified microglia with a functional morphology, while enhancing microglial Aβ phagocytosis <i>in vitro</i> and <i>in vivo</i>. Our data further indicate that treatment of this novel antibody appears to improve neuronal functions and recover behavioral deficits in APP/PS1 mice. Since Aβ levels in the blood cannot reflect the severity of Aβ pathology in the brain, serum Aβ levels are not indicative of the amount of cerebral Aβ. By using our Aβ antibody, we demonstrate an innovative approach for early diagnosis of AD-like pathology in APP/PS1 mice. The Aβ content in the brain can be estimated by measuring the markedly increased Aβ levels in the serum induced by our newly developed antibody that recognizes Aβ species. A robust transport of cerebral Aβ into the blood was triggered by the antibody treatment. Increased serum Aβ by antibody was strongly correlated with the corresponding Aβ levels in APP/PS1 mice. This novel antibody thus may be useful for estimating the amount of cerebral Aβ, and may also be useful for predicting the timing of initial Aβ plaque formation in the brain. Data suggest that this novel antibody might exert theranostic potential for AD.</p>		

