



Toxic Conformer of Amyloid β Specific Antibody (Clone: 11A1)

- Research Use Only -

Product No.	Product Name	Application	Specificity	Volume	Sample Volume
10379	Anti-Human Amyloid β E22P (11A1) Mouse IgG MoAb	IHC, WB, IP	Reacts with native human Amyloid β 1-40, 1-42	50 μ G	5 μ G

Alzheimer's disease (AD) is characterized by the presence of extracellular plaques and intracellular neurofibrillary tangles (NFTs) in the brain. Aggregation of the 42-mer amyloid β -protein (A β 42) plays a critical role in the pathogenesis of AD. Shirasawa and Irie et. al have proposed a toxic conformer with a turn at positions 22 and 23, as well as a nontoxic conformer with a turn at positions 25 and 26, in A β 42 aggregates from systematic proline scanning and solid-state NMR studies. This monoclonal antibody named 11A1 was developed for toxic A β 42, using E22P-A β 10-35, a minimum moiety for neurotoxicity containing the turn at positions 22 and 23, for the generation. Immunohistochemical studies showed that not only extracellular but intracellular amyloid was stained in human AD brains, which suggest that 11A1 could detect toxic oligomers of A β with the turn at positions 22 and 23.

IHC by Clone 11A1

Human AD brain

Physiological conformer Toxic conformer Conformationally restricted A β

Toxic and non-Toxic conformer of A β

- This antibody can detect not only senile plaque (blue arrow in figure) but also intracellular A β (red arrow in figure) (Ref.4)
- This antibody can detect A β oligomer in AD brain extract.

References

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2. Murakami K, Irie K, Ohigashi H, Hara H, Nagao M, Shimizu T, Shirasawa T. Formation and stabilization model of the 42-mer Abeta radical: implications for the long-lasting oxidative stress in Alzheimer's disease. *J Am Chem Soc.* 2005 Nov 2;127(43):15168-74.
3. Masuda Y, Uemura S, Ohashi R, Nakanishi A, Takegoshi K, Shimizu T, Shirasawa T, Irie K. Identification of physiological and toxic conformations in Abeta42 aggregates. *Chembiochem.* 2009 Jan 26;10(2):287-95.
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