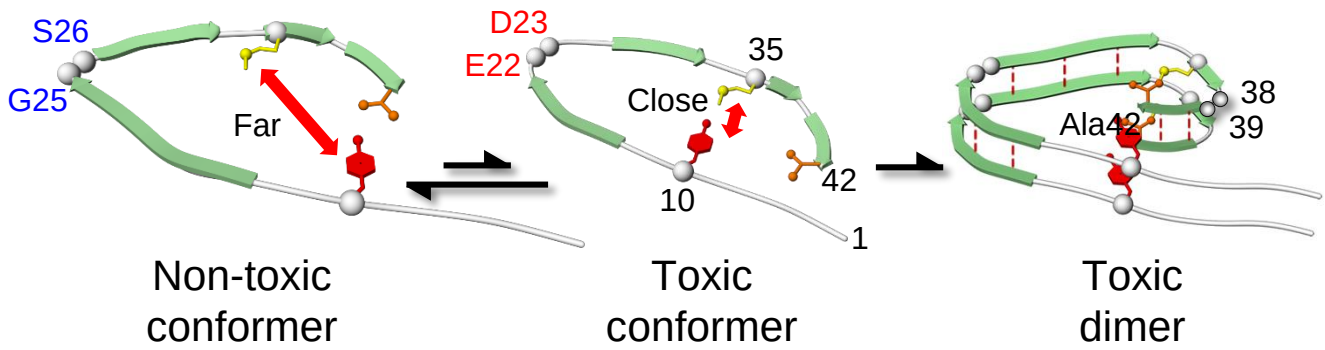
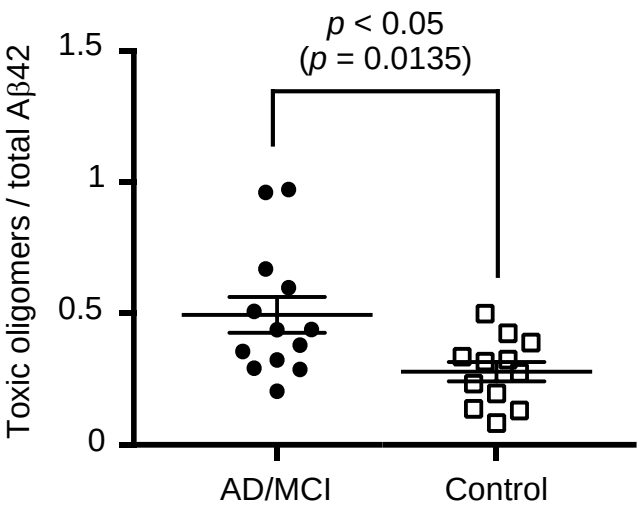
Specific ELISA for Toxic Amyloid β Oligomers

New!

- For Research Use-

- Toxic and non-toxic conformer of Aβ
- Specific ELISA kit for toxic Aβ oligomer





Oligomerization of Aβ42 is considered as an early event in AD. Irie *et al.* have proposed the toxic conformer with a turn at positions 22 and 23 in Aβ42 aggregates.[1)] This toxic Aβ conformer could form stable and neurotoxic oligomers.

Antibody 24B3, highly specific for the toxic Aβ42 conformer, has been developed to be applied for ELISA assay kit.[2)] This kit could detect selectively putative Aβ oligomers in CSF.

The ratio of toxic Aβ oligomers to total Aβ42 in CSF could distinguish between AD/MCI patients and age-matched individuals.

Code	Species	Name	Package Size	Measurement Range	Measuring Samples
27709	Human	Human Amyloid β Toxic Oligomer Assay Kit - IBL	96 well	3.13 ~ 200 pg/mL	CSF

References
1. Morimoto A, Irie K, Murakami K, Masuda Y, Ohigashi H, Nagao M, Fukuda H, Shimizu T, Shirasawa T. Analysis of the secondary structure of β-amyloid (Aβ42) fibrils by systematic proline replacement. J Biol Chem. 2004 Dec 10; 279(50): 52781-8.
2. Murakami K, Tokuda M, Suzuki T, Irie Y, Hanaki M, Izuo N, Monobe Y, Akagi K, Ishii R, Tatebe H, Tokuda T, Maeda M, Kume T, Shimizu T, Irie K. Monoclonal antibody with conformational specificity for a toxic conformer of amyloid β42 and its application toward the Alzheimer's disease diagnosis. Sci Rep. 2016 Jul 4; 6: 29038.

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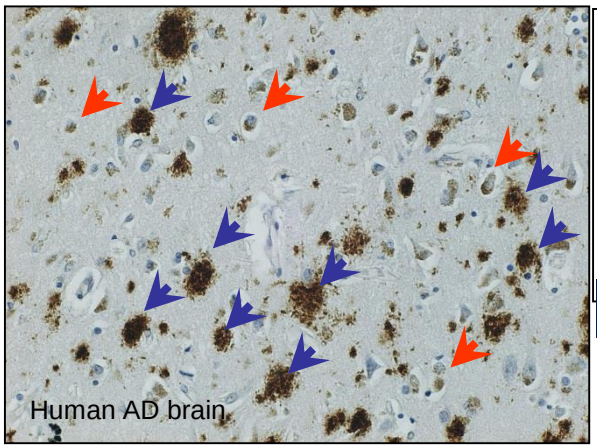
Specific Antibody （Clone:11A1) for Toxic Amyloid β Conformer

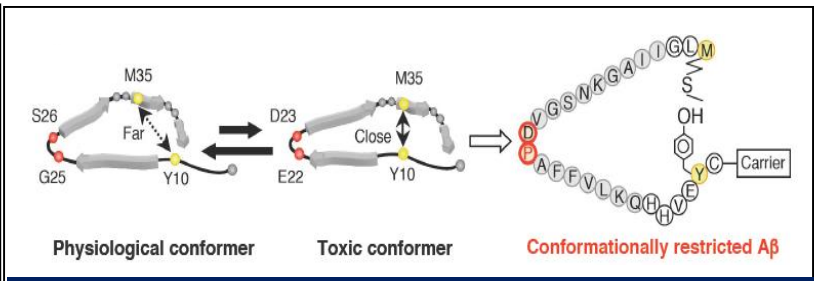
－For Research Use －

Code	Name	Application	Specificity	Volume
10379	Anti-Human Amyloidβ E22P (11A1) Mouse IgG MoAb	IHC, WB, IP	React to Human wild type Aβ40/42	50μg
				5μg

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 (Aβ42) plays a critical role in the pathogenesis of AD. The monoclonal antibody named 11A1 was developed for toxic Aβ42, using E22P-Aβ10-35, 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. 11A1 could detect toxic oligomers of Aβ with the turn at positions 22 and 23.



IHC by Clone 11A1



Toxic and Non-toxic Conformer of Aβ

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

参考文献:

1. Morimoto A, Irie K, Murakami K, Masuda Y, Ohigashi H, Nagao M, Fukuda H, Shimizu T, Shirasawa T. Analysis of the secondary structure of beta-amyloid (Abeta42) fibrils by systematic proline replacement. J Biol Chem. 2004 Dec 10;279(50):52781-8.
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.
4. Murakami K, Horikoshi-Sakuraba Y, Murata N, Noda Y, Masuda Y, Kinoshita N, Hatsuta H, Murayama S, Shirasawa T, Shimizu T, Irie K. Monoclonal antibody against the turn of the 42-residue amyloid β-protein at positions 22 and 23. ACS Chem. Neurosci. 2010 Sept 28;1(11):747-56.

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