

Code No. 10379

**Anti-Human  
Amyloid $\beta$  E22P (11A1) Mouse IgG MoAb**Volume : 50  $\mu$ g

- Introduction** : 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  $\beta$ -protein (A $\beta$ 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 $\beta$ 42 aggregates from systematic proline scanning and solid-state NMR studies (ref. 1-3). This monoclonal antibody named 11A1 was developed for toxic A $\beta$ 42, using E22P-A $\beta$ 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 (ref. 4), which suggest that 11A1 could detect toxic oligomers of A $\beta$  with the turn at positions 22 and 23.
- Antigen** : Synthetic peptide of E22P- Amyloid $\beta$ 10-35 part
- Source** : Mouse-Mouse hybridoma  
(X63 - Ag 8.653  $\times$  BALB/c mouse spleen cells)
- Clone** : 11A1                      **Subclass** : IgG<sub>1</sub>
- Purification** : Protein A purified
- Form** : Lyophilized product from PBS containing 1 % BSA and 0.05 % NaN<sub>3</sub>
- How to use** : 1.0 mL deionized water will be added to the product, then its concentration comes to 50  $\mu$ g/mL
- Stability** : Lyophilized product, 5 years at 2 - 8  $^{\circ}$ C  
: Solution, 2 years at -20  $^{\circ}$ C
- Application** : This antibody can be used for immunohistochemistry with formalin fixed paraffin embedded tissues after formic acid treatment\*<sup>1</sup>. The optimal concentration is 0.5-1.0  $\mu$ g/mL, however, the concentration should be optimized by each laboratory.  
\*1: Rinse by running water after formic acid treatment for 5 minutes following de-paraffin.  
: This antibody can be used for western blotting (by SDS-PAGE under 2ME(-) condition/ nonreducing condition) at the concentration of 0.5 - 1.0  $\mu$ g/mL.  
: This antibody can be used for immuno-precipitation.
- Specificity** : Reacts with native human Amyloid $\beta$  1-40, 1-42
- Reference** : 1. Kondo T, Asai M, Tsukita K, Kutoku Y, Ohsawa Y, Sunada Y, Imamura K, Egawa N, Yahata N, Okita K, Takahashi K, Asaka I, Aoi T, Watanabe A, Watanabe K, Kadoya C, Nakano R, Watanabe D, Maruyama K, Hori O, Hibino S, Choshi T, Nakahata T, Hioki H, Kaneko T, Naitoh M, Yoshikawa K, Yamawaki S, Suzuki S, Hata R, Ueno SI, Seki T, Kobayashi K, Toda T, Murakami K, Irie K, Klein WL, Mori H, Asada T, Takahashi R, Iwata N, Yamanaka S, Inoue H. Modeling Alzheimer's Disease with iPSCs Reveals Stress Phenotypes Associated with Intracellular A $\beta$  and Differential Drug Responsiveness. Cell Stem Cell. 2013 Feb 19. pii: S1934-5909(13)00012-X. doi: 10.1016/j.stem.2013.01.009.  
2. Soejima N, Ohyagi Y, Nakamura N, Himeno E, Iinuma KM, Sakae N, Yamasaki R, Tabira T, Murakami K, Irie K, Kinoshita N, LaFerla FM, Kiyohara Y, Iwaki T, Kira J. Intracellular accumulation of toxic turn amyloid- $\beta$  is associated with endoplasmic reticulum stress in Alzheimer's disease. Curr Alzheimer Res. 2013 Jan;10(1):11-20.  
3. Izuo N, Kume T, Sato M, Murakami K, Irie K, Izumi Y, Akaike A. Toxicity in Rat Primary Neurons through the Cellular Oxidative Stress Induced by the Turn Formation at Positions 22 and 23 of A $\beta$  42. ACS Chem Neurosci. 2012 Sep 19;3(9):674-81.  
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  $\beta$ -Protein at Positions 22 and 23. ACS Chem. Neurosci. 2010 Sept 28;1(11):747-56.

*For research use only, not for use in diagnostic procedures.*