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Product Information

Anti-β-Amyloid (22-35)
produced in rabbit, affinity isolated antibody

Catalog Number **A3356**

Product Description

Anti-β-Amyloid (22-35) is produced in rabbit using as immunogen a synthetic peptide corresponding to amino acids 22-35 of human β-amyloid (1-40) fragment, conjugated to KLH. This sequence corresponds to amino acids 693-706 of the human amyloid precursor protein APP (GeneID: 351), and is identical in mouse and rat APP. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-β-Amyloid (22-35) specifically recognizes β-amyloid (22-35), and β-amyloid (1-40). The antibody detects β-amyloid (1-40) by immunoblotting (~4 kDa). Staining of the β-amyloid (1-40) band in immunoblotting is specifically inhibited by the immunizing peptide.

The aggregation of β-amyloid (Aβ) to plaques in the brain is one of the hallmarks of Alzheimer disease (AD). Formation of Aβ involves sequential cleavage of the β-amyloid precursor protein (APP) by two proteases, β-secretase and γ-secretase.[1-3] Cleavage of APP by β-secretase, leads to the generation and extracellular release of APPs-β, a ~100 kDa soluble N-terminal fragment, and intracellular C-terminal fragments (CTFs) bearing the complete Aβ domain. Cleavage of the CTFs by γ-secretase leads to the formation of Aβ peptides, with the Aβ40 and the Aβ42 forms being the most prevalent. Secreted Aβ lead to synaptic and neuritic compromise and glial activation. A key event in the pathogenesis is the conversion of Aβ peptides from soluble oligomers to aggregated, fibrillary forms and eventually amyloid deposits called neuritic plaques.[1] AD research has focused on determining the underlying mechanism(s) of Aβ peptide toxicity. Aβ peptide toxicity may result from Ca^{2+}-mediated neurotoxicity. The lipid matrix of neuronal cell membranes may play an important role in the β-sheet oligomerization process of β-amyloid. Aβ(25-35) and Aβ(22-35) fragments are highly toxic segments of β-amyloid peptides that promote inflammatory processes in astrocytes and fibrillary aggregation of Aβ, thus representing a promising therapeutic target.[4-6]

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide and 1% bovine serum albumin.

Antibody concentration: ~0.5 mg/mL

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

Indirect ELISA: a working antibody concentration of 0.2-0.4 μg/mL is recommended using using β-amyloid (22-35) peptide.

Immunoblotting: a working antibody concentration of 0.25-0.5 μg/mL is recommended using β-amyloid (1-40).

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

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3. Haass, C., and De Strooper, B., *Science*, **286**, 916-919 (1999).
4. Pike, C.J., et al., *J. Neurochem.*, **64**, 253-265 (1995).

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6. Hull, M., et al., *Neurochem. Int.*, **48**, 663-672 (2006).

DS,PHC 07/14-1