

Product Information Sheet

Anti- β -Amyloid Antibody, Mouse Monoclonal

Clone NAB 228, purified from hybridoma cell culture

A8354

Product Description

Monoclonal Anti- β -Amyloid (mouse IgG2a isotype) is derived from the NAB 228 hybridoma produced by the fusion of mouse myeloma cells (SP2 cells) and splenocytes from BALB/c mice immunized with a synthetic peptide corresponding to amino acids 1-11 of human β -amyloid protein, conjugated to KLH.¹ The isotype is determined by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Cat. No. ISO2.

Monoclonal Anti- β -Amyloid recognizes human β -amyloid peptide, full-length amyloid precursor protein (APP) (approx 110 kDa), soluble-APP (sAPP β ' and sAPP α) C99 cleavage form and A β (1-40/42), but not the soluble-APP form sAPP β . The product is useful in ELISA, immunoblotting,¹ immunoprecipitation and immunohistochemistry.

The β -amyloid precursor protein (APP) is cleaved sequentially by the proteolytic enzymes β -secretase (BACE1) and γ -secretase to produce β -amyloid (A β) peptides with the A β 1-42 and the A β 1-40 forms being the most prevalent. Secreted A β peptides are degraded either via a re-uptake mechanism followed by endosomal degradation, or by an extracellular insulin degrading enzyme. Extracellular accumulation of A β leads to the formation of aggregates, fibrils and eventually amyloid deposits called neuritic plaques, a hallmark of Alzheimer's disease (AD).² Much of the AD research has focused on determining the underlying mechanism(s) of A β protein toxicity. Of the many proposed mechanisms, one possible mechanism of A β protein toxicity may be through calcium-mediated neurotoxicity. A β peptides can increase calcium influx through voltage-gated calcium channels (N- and L-type), reduce the magnesium blockade of NMDA receptors to allow increased calcium influx, and can form a cation-selective ion channel after their incorporation into the cell membrane.³⁻⁵ Cation channels are induced by both nascent and globular A β peptides.⁶ Thus, A β peptides may elicit toxic effects prior to fibril formation. Recent evidence suggests that copper and zinc may modulate the structure of the pleomorphic A β peptides to induce either pore formation or peptide precipitation.⁷ In other models it was found that the A β peptides exhibit superoxidase dismutase activity thus producing hydrogen peroxidase that may be responsible for neurotoxicity.⁸

Reagent

The antibody is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody Concentration: ~ 2 mg/mL.

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the 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 dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 2-4 µg/mL is determined using cell extract of human embryonal carcinoma NTERA-2 (NT2/D1) cells, treated for 2-3 weeks with 10 µM retinoic acid.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

References

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