invitrogen™

Rabbit (polyclonal)
Anti-Aβ42
Unconjugated

PRODUCT ANALYSIS SHEET

Catalog Number:	44-344
Lot Number:	See product label
Quantity/Concentration:	See product label
Form of Antibody:	Rabbit polyclonal immunoglobulins in phosphate buffer, pH 7.4. Carrier and preservative free.
Purification:	Purified from rabbit serum by peptide affinity chromatography.
Immunogen:	The antibody was produced using a synthetic peptide derived from amino acids 36-42 within the carboxyl-terminus region of human β-Amyloid protein.
Target Summary:	Alzheimer's Disease (AD) is characterized by the presence of extracellular plaques and intracellular neurofibrillary tangles (NFTs) in the brain. The major component of these plaques is Aβ peptide (β-amyloid), a 40 to 43 amino acid peptide cleaved from amyloid precursor protein (APP) by β-secretase (e.g., BACE) and a putative γ secretase. Increased release of the 'longer forms' of Aβ peptide, Aβ42 or Aβ43, which have a greater tendency to aggregate than Aβ40, occurs in individuals expressing certain genetic mutations, expressing certain ApoE alleles, or may involve other, still undiscovered, factors. Many researchers theorize that this increased release of Aβ42/Aβ43 leads to the abnormal deposition of Aβ and the associated neurotoxicity in the brains of affected individuals.
Reactivity:	Reacts with human Aβ42. No significant cross-reactivity to Aβ40 has been observed. Previous lots have shown no cross reactivity to Aβ43. Cross-reactivity against Aβ42 from mouse, rat, pig, cow, sheep, dog, rabbit, frog and polar bear (100% homology) is expected but has not been tested.
Applications:	The antibody has been used in ELISA. Previous lots of this antibody have been used in dot blots, RIA and other related assays.
Suggested Working Dilutions:	For ELISA applications, we recommend using the antibody at 1.0 μg/mL. The optimal antibody concentration should be determined empirically for each specific application.
Storage:	Store at −80°C. Upon initial thawing, apportion into working aliquots and store at −80°C. Avoid repeated freeze-thaw cycles to prevent denaturing the antibody.
Expiration Date:	Expires one year from the date of receipt when stored as instructed.

Related Products:

Antibodies:

Neurofibrillary Tangle Antiserum, Cat. # AHB0161	Aβ pan, Cat. #44-136
Presenilin-1, Cat. #AHB0181	APP [pT^{668}], Cat. # 44-336Z
Presenilin-2, Cat. #AHB0191	N-terminal Aβ, Cat. # 44-338-50
Alpha-synuclein, Cat. #AHB0211	Aβ42 Biotin-labeled, Cat. # 44-3449
BACE26-45, Cat. #AHB0271	Aβ40, Cat. # 44-348A
APP mAbP2-1 monoclonal, Cat. # 44-100	Stress Signal Sampler Pack, Cat. # 44-648G

Related Products **ELISAs:** Tau [pS^{214}] human, Cat. #KHB7021

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(Continued):	APP human, Cat. #KHB0051	Tau [pS^{396}] human, Cat. #KHB7031
	Alpha-synuclein, Cat. #KHB0061	Tau [pS^{199}] human, Cat. #KHB7041
	Aβ42 Colorimetric, Cat. #KHB3441	Aβ42 Fluorimetric, Cat. #88-344
	Aβ40 Colorimetric, Cat. #KHB3481	Aβ40 Fluorimetric, Cat. #88-348

References:

Patel, N.S., et al (2005) Inflammatory cytokine levels correlate with amyloid load in transgenic mouse models of Alzheimer's disease. J Neuroinflammation 2:9.

Lin, K.F., et al (2004) Modulation of calcium/calmodulin kinase-II provides partial neuroprotection against beta-amyloid peptide toxicity. Eur. J. Neurosci. 19(8):2047-2055.

Sugarman, M.C., et al. (2002) Inclusion body myositis-like phenotype induced by transgenic overexpression of βAPP in skeletal muscle. Proc. Nat'l. Acad. Sci. 99(9):6334-6339 (cites the use of this antibody in immunohistochemistry with formalin-fixed, paraffin embedded tissue sections and cryostat sections).

Vassar, R., et al. (1999) β-Secretase cleavage of Alzheimer's amyloid precursor protein by the transmembrane aspartic protease BACE. Science 286:735-741.

Savage, M.J., et al. (1998) Turnover of amyloid β-protein in mouse brain and acute reduction of its level by phorbol ester. J. Neurosci. 18:1743-1752.

Borchelt, D.R., et al. (1997) Accelerated amyloid deposition in the brains of transgenic mice coexpressing mutant presenilin 1 and amyloid precursor proteins. Neuron 19:939-945.

Cotman, C.W. (1997) The beta-amyloid peptide, peptide self-assembly, and the emergence of biological activities. A new principle in peptide function and the induction of neuropathology. Ann. N. Y. Acad. Sci. 814:1-16.

Estus, S., et al. (1997) Aggregated amyloid-beta protein induces cortical neuronal apoptosis and concomitant "apoptotic" pattern of gene induction. J. Neurosci. 17:7736-7745.

Bancher, C., et al. (1997) Mechanisms of cell death in Alzheimer's disease. J. Neural Transm. Suppl. 50:141-152.