



**Rabbit (polyclonal)  
Anti- $\beta$ -Amyloid [1-40]  
Unconjugated**

**PRODUCT ANALYSIS SHEET**

<b>Catalog Number:</b>	44136
<b>Lot Number:</b>	See product label
<b>Quantity:</b>	100 $\mu$ g
<b>Form of Antibody:</b>	Rabbit polyclonal immunoglobulin in Dulbecco's phosphate buffered saline (without $Mg^{2+}$ and $Ca^{2+}$ ), pH 7.3 (+/- 0.1).
<b>Preservative:</b>	No preservative added.
<b>Purification:</b>	Purified from rabbit serum by epitope-specific chromatography.
<b>Immunogen:</b>	The antiserum was produced against a chemically synthesized peptide corresponding to amino acids 1-40 of human $\beta$ -Amyloid ( $A\beta$ ).
<b>Specificity:</b>	Previous lots of this antibody recognized the sequence of $A\beta$ [1-40] in the region from amino acids 15-30. No blocking activity was observed with $A\beta$ [1-12] whereas the peptides $A\beta$ [14-35], $A\beta$ [15-28], $A\beta$ [17-30] and $A\beta$ [1-40] were all able to block antibody activity.
<b>Target Summary:</b>	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 $A\beta$ peptide ( $\beta$ -amyloid), a 40 to 43 amino acid peptide cleaved from amyloid precursor protein (APP) by $\beta$ -secretase (e.g., BACE) and a putative $\gamma$ secretase. Increased release of the 'longer forms' of $A\beta$ peptide, $A\beta$ 42 or $A\beta$ 43, which have a greater tendency to aggregate than $A\beta$ 40, 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 $A\beta$ 42/ $A\beta$ 43 leads to the abnormal deposition of $A\beta$ and the associated neurotoxicity in the brains of affected individuals.
<b>Reactivity:</b>	Reacts with human $A\beta$ 40. No significant cross-reactivity to $A\beta$ 42 has been observed.
<b>Applications:</b>	The antibody has been used to detect $A\beta$ [1-40] in ELISA. Previous lots have been used in immunohistochemistry, dot blots and RIA. Other applications may work but have not been tested.
<b>Suggested Working Dilutions:</b>	For ELISA applications, we recommend using the antibody at starting concentration of 1.0 $\mu$ g/mL. The optimal antibody concentration should be determined empirically for each specific application.
<b>Storage:</b>	Store at $-80^{\circ}C$ . Upon initial thawing, we recommend a brief centrifugation before opening to settle vial contents. Then, apportion into working aliquots and store at $-80^{\circ}C$ . Avoid repeated freeze-thaw cycles to prevent denaturing the antibody.
<b>Expiration Date:</b>	Expires one year from date of receipt when stored as instructed.

**For research use only. CAUTION: Not for human or animal therapeutic or diagnostic use.**

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**Related Products:****Antibodies:**

Neurofibrillary Tangle Antiserum,  
Cat. # AHB0161

Presenilin-1, Cat. # AHB0181

Presenilin-2, Cat. # AHB0191

Alpha-synuclein, Cat. # AHB0211

A $\beta$ 40, Cat. # 44348A

APP [pT<sup>668</sup>], Cat. # 44336G

N-terminal A $\beta$ , Cat. # 44338100

A $\beta$ 42 Biotin-labeled, Cat. # 443449

A $\beta$ 42, Cat. # 44344

Stress Signal Sampler Pack, Cat. # 44648G

**Related Products****Antibodies:**

BACE26-45, Cat. # AHB0271

**ELISAs:**

APP human, Cat. # KHB0051

Alpha-synuclein, Cat. # KHB0061

A $\beta$ 42 Colorimetric, Cat. # KHB3441

A $\beta$ 40 Colorimetric, Cat. # KHB3481

APP (mAbP2-1) monoclonal, Cat. # 44100

Tau [pS<sup>214</sup>] human, Cat. # KHB7021

Tau [pS<sup>396</sup>] human, Cat. # KHB7031

Tau [pS<sup>199</sup>] human, Cat. # KHB7041

A $\beta$ 42 Fluorimetric, Cat. # 88344

A $\beta$ 40 Fluorimetric, Cat. # 88348

**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  $\beta$ APP 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).

DeMattos, R.B., et al. (2002) Plaque-associated disruption of CSF and plasma amyloid-beta (A beta) equilibrium in a mouse model of Alzheimer's disease. *J. Neurochem.* 81(2):229-236.

Fagan, A.M., et al. (2002) Human and murine ApoE markedly alters A beta metabolism before and after plaque formation in a mouse model of Alzheimer's disease. *Neurobiol. Dis.* 9(3):305-318.

DeMattos, R.B., et al. (2001) Peripheral anti-A $\beta$  antibody alters CNS and plasma A $\beta$  clearance and decreases brains A $\beta$  burden in a mouse model of Alzheimer's disease. *Proc. Nat'l. Acad. Sci. USA* 98(15):8850-8855.

Savage, M.J., et al. (1998) Turnover of amyloid  $\beta$ -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.

**Explanation of symbols**

Symbol	Description	Symbol	Description
	Catalogue Number		Batch code
	Research Use Only		In vitro diagnostic medical device
	Use by		Temperature limitation
	Manufacturer		European Community authorised representative
	Without, does not contain		With, contains
	Protect from light		Consult accompanying documents
	Directs the user to consult instructions for use (IFU), accompanying the product.		

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