

Qty: 100µg/400 µL

Rabbit anti-Amyloid-β Precursor Protein

Catalog No. 36-6900

Lot No.

Rabbit anti-Amyloid-β Precursor Protein

FORM

This polyclonal antibody is supplied as a 400 µL aliquot at a concentration of 0.25 mg/mL in phosphate buffered saline (pH 7.4) containing 0.1% sodium azide. This antibody is epitope-affinity purified from rabbit antiserum.

PAD: ZMD.316

IMMUNOGEN

Synthetic peptide derived from the C-terminal region of the human and mouse amyloid-β precursor protein (APP₆₉₅).

SPECIFICITY

This antibody reacts with mouse and human APP. On Western blots, this antibody identifies a specific band representing the full-length protein at ~ 100 kDa, and a band at ~ 10-12 kDa representing the C99 C-terminal cleavage fragment. A major non-specific band has been observed at ~50 kDa in mouse brain homogenates.

REACTIVITY

Reactivity has been confirmed with APLP2 (amyloid precursor-like protein 2) -/- knock-out and wildtype mouse brain homogenates, and APP₆₉₅ C99 (C-terminal fragment)-transfected HEK293 cell lysates by Western blotting. Negative control tests with APP -/- knock-out and APP/APLP2 double knock-out mice have confirmed the specificity of this antibody; neither of the target bands were identified in these test samples. Reactivity has also been confirmed with human Alzheimer's brain tissue by immunohistochemistry.

Sample	Western Blotting	Immuno-precipitation	Immuno-histochemistry (paraffin)*
Mouse	+++	++	ND
Human	ND	ND	+++

(Excellent +++, Good++, Poor +, No reactivity 0, Not applicable N/A, Not Determined ND)

USAGE

Working concentrations for specific applications should be determined by the investigator. Appropriate concentrations will be affected by several factors, including secondary antibody affinity, antigen concentration, sensitivity of detection method, temperature and length of incubations, etc. The suitability of this antibody for applications other than those listed below has not been determined. The following concentration ranges are recommended starting points for this product.

Western Blotting : 1-3 µg/mL

Immunoprecipitation : 7 µg/Reaction

Immunohistochemistry* : 1-2 µg/mL

*For immunohistochemistry in formalin-fixed, paraffin-embedded tissues, digestion with trypsin prior to staining is required.

STORAGE

Store at 2-8°C for up to one month. Store at -20°C for long-term storage. Avoid repeated freezing and thawing.

BACKGROUND

Amyloid-β precursor protein (APP) is the source of the amyloid-beta (Aβ) peptide found in neuritic plaques of Alzheimer's disease (AD) patients. APP is a glycosylated transmembrane protein with a long extracellular N-terminal domain, a short intracellular C-terminal domain, and an Aβ-segment of intermediate length shared between the intra- and extracellular regions.¹ APP is cleaved by α-secretase immediately before or after reaching the cell surface, releasing the non-amyloidogenic secreted form of the N-terminal soluble APP fragment (sAPPα).² APP molecules that are not cleaved by α-secretase are internalized, and subjected to β-site cleavage by β-secretase, leaving behind a membrane-bound C-terminal stub.³ This terminal stub is the substrate for γ-secretase, which cleaves the molecule at γ-site(s) to release the 40 aa, 42 aa, or 43 aa -long Aβ peptides.⁴

(cont'd)

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Processing of APP by β - and γ -secretases occurs under normal physiological conditions, indicating that all fragments of APP, including A β , play roles in normal physiology.⁴⁻⁵ In neurons, around 95% of APP is cleaved by γ -secretases while 5% is cleaved by β -secretase.⁶

Excessive generation of A β and its subsequent oligomerization and fibrillation leads to the detrimental effects of AD. Reductions in the level or activity of certain APP fragments, in addition to accumulation of A β , may play a critical role in the cognitive dysfunction associated with AD, especially in the early stages of the disease. APP fragments including A β regulate key neural functions including cell excitability, synaptic transmission, long-term potentiation, behavioral learning, and memory.⁷

REFERENCES

1. Weidemann A, et al. *Cell* 57:115-126, 1989.
2. Selkoe DJ, et al. *Ann Rev Neurosci* 17:489-517, 1994.
3. Kang J, et al. *Nature* 325:733-736, 1987.
4. Haass C, et al. *Nature* 357:500-503, 1992.
5. Seubert P, et al. *Nature* 359:325-327, 1992.
6. Simons M, et al. *Neurology* 57:1089-1093, 2001.
7. Turner PR, et al. *Prog Neurobiol* 70:1-32, 2003.

RELATED PRODUCTS

Product	Clone/PAD*	Cat. No.
Rb anti-APP	CT695	51-2700
Ms anti-APP	LN27	13-0200
Rb anti-Amyloid- β Peptide	Polyclonal	71-5800
Ms anti-Amyloid- β Peptide	AMY-33	13-0100
Rb anti-AIDA-1	ZMD.317	36-7000
Rb anti-Pen2	ZMD.318	36-7100
Rb anti-ARH	ZMD.253	36-0400
Rb anti-BACE	ZMD.116	34-4900
Rb anti-BACE 2 (C-term)	ZMD.117	34-5000
Rb anti-BACE 2 (Mid)	ZMD.167	34-5100
Ms anti-Calmyrin	1G8C8	34-4500
Ms anti-Kunitz Protease Inhibitor	KPI4.1	35-4100
Rb anti-Nicastrin	ZMD.242	34-9200
Rb anti-Presenilin-1 (N-term)	PS-1N	71-1300
Rb anti-Presenilin-1 (Loop)	PS-1L	51-4200
Rb anti-Presenilin-1 (N-term)	ZMD.97	34-4600
Rb anti-Presenilin-2 (N-term)	ZMD.96	34-5400
Rb anti-Presenilin-2 (Loop)	ZMD.84	34-4400
Ms anti-Tau	T14	13-1400
Ms anti-Tau	T64	13-6400
Ms anti-phospho-Tau (Ser396)	PHF13.6	35-5300
Ms anti-phospho-Tau (Thr231)	PHF-6	35-5200
Ms anti-Ubiquilin	3B8A10	35-4400
Ms anti-Ubiquitin	Ubi-1	13-1600

*PAD: Polyclonal Antibody Designation

Conjugate	ZyMAX™ Goat x Rabbit IgG (H+L)	ZyMAX™ Goat x Mouse IgG (H+L)
Purified	81-6100	81-6500
FITC	81-6111	81-6511
TRITC	81-6114	81-6514
Cy™3	81-6115	81-6515
Cy™5	81-6116	81-6516
HRP	81-6120	81-6520
AP	81-6122	81-6522
Biotin	81-6140	81-6540

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