Datasheet: AHP538

BATCH NUMBER 160034

Description:	RABBIT ANTI AMYLOID PRECURSOR PROTEIN (C-TERMINAL)
Specificity:	AMYLOID PRECURSOR PROTEIN (C-TERMINAL)
Other names:	APP
Format:	Purified
Product Type:	Polyclonal Antibody
Isotype:	Polyclonal IgG
Quantity:	0.1 mg

Product Details

Applications

This product has been reported to work in the following applications. This information is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information. For general protocol recommendations, please visit www.bio-rad-antibodies.com/protocols.

	Yes	No	Not Determined	Suggested Dilution
Flow Cytometry			▪	
Immunohistology - Frozen			▪	
Immunohistology - Paraffin (1)	▪			
ELISA			▪	
Immunoprecipitation			▪	
Western Blotting	▪			1/500 - 1/1000

Where this antibody has not been tested for use in a particular technique this does not necessarily exclude its use in such procedures. Suggested working dilutions are given as a guide only. It is recommended that the user titrates the antibody for use in their own system using appropriate negative/positive controls.

(1)**This product requires antigen retrieval using heat treatment prior to staining of paraffin section**

Species Cross Reactivity

Reacts with: Human, Rat, Mouse

N.B. Antibody reactivity and working conditions may vary between species. Cross reactivity is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information.

Product Form

Purified IgG - liquid

Antiserum Preparation

Antisera to APP were raised by repeated immunisation of rabbits with highly purified

	antigen. Purified IgG was prepared by affinity chromatography.
Buffer Solution	Phosphate buffered saline
Preservative Stabilisers	0.02% Sodium Azide
Approx. Protein Concentrations	IgG concentration 1.0 mg/ml
Immunogen	Synthetic peptide corresponding to amino acids 737-751 of human APP.
External Database Links	**UniProt:** P05067 Related reagents **Entrez Gene:** 351 APP Related reagents
Synonyms	A4, AD1
RRID	AB_321972
Specificity	**Rabbit anti Amyloid Precursor Protein antibody** recognizes both intact Amyloid Precursor Protein (APP), and also the C99 fragment generated by beta-secretase. The sequence recognized by this antibody corresponds to amino acids 85-99 of the C99 fragment. The C99 fragment itself is a substrate for gamma-secretase to generate the 4 kDa beta amyloid peptide, found in the brains of Alzheimer's disease patients. APP also inhibits Notch signaling through it's interaction with NUMB (Roncarati *et al.* 2002). Rabbit anti Amyloid Precursor Protein antibody has been used successfully for the detection of the ~14 kDa β C-terminal fragment of APP, produced as a result of cleavage by BACE1 using western blotting -in rat retinal lysates (Huang *et al.*2012).
References	1. Yan, X.X. *et al.* (2007) beta-Secretase expression in normal and functionally deprived rat olfactory bulbs: inverse correlation with oxidative metabolic activity. J Comp Neurol. 501: 52-69. 2. Zhang, H. *et al.* (2011) IGF-1 reduces BACE-1 expression in PC12 cells via activation of PI3-K/Akt and MAPK/ERK1/2 signaling pathways. Neurochem Res. 36: 49-57. 3. Désiré, L. *et al.* (2005) RAC1 inhibition targets amyloid precursor protein processing by gamma-secretase and decreases Abeta production *in vitro* and *in vivo*. J Biol Chem. 280: 37516-25. 4. Huang JF *et al.* (2012) Timosaponin-BII inhibits the up-regulation of BACE1 induced by ferric chloride in rat retina. BMC Complement Altern Med. 12: 189. 5. Xiong, K. *et al.* (2007) Mitochondrial respiratory inhibition and oxidative stress elevate beta-secretase (BACE1) proteins and activity *in vivo* in the rat retina. Exp Brain Res. 181: 435-46. 6. Zhang, X.M. *et al.* (2010) Functional deprivation promotes amyloid plaque pathogenesis in Tg2576 mouse olfactory bulb and piriform cortex. Eur J Neurosci. 31: 710-21.

7. Cai, Y. *et al.* (2010) β-Secretase-1 elevation in aged monkey and Alzheimer's disease human cerebral cortex occurs around the vasculature in partnership with multisystem axon terminal pathogenesis and β-amyloid accumulation. Eur J Neurosci. 32: 1223-38.
8. Marcade, M. *et al.* (2008) Etazolate, a neuroprotective drug linking GABA(A) receptor pharmacology to amyloid precursor protein processing. J Neurochem. 106: 392-404.
9. Cai, Y. *et al.* (2012) BACE1 elevation is involved in amyloid plaque development in the triple transgenic model of Alzheimer's disease: differential Aβ antibody labeling of early-onset axon terminal pathology. Neurotox Res. 21: 160-74.
10. Zhang, H. *et al.* (2015) Hydrogen sulfide-induced processing of the amyloid precursor protein in SH-SY5Y human neuroblastoma cells involves the PI3-K/Akt signaling pathway. Cell Mol Neurobiol. 35 (2): 265-72.
11. Xue, Z.Q. *et al.* (2015) Non-neuronal and neuronal BACE1 elevation in association with angiopathic and leptomeningeal β-amyloid deposition in the human brain. BMC Neurol. 15: 71.
12. Belichenko, P.V. *et al.* (2016) An Anti-β-Amyloid Vaccine for Treating Cognitive Deficits in a Mouse Model of Down Syndrome. PLoS One. 11 (3): e0152471.
13. He, X.L. *et al.* (2016) Hydrogen sulfide down-regulates BACE1 and PS1 via activating PI3K/Akt pathway in the brain of APP/PS1 transgenic mouse. Pharmacol Rep. 68 (5): 975-82.
14. Fourcade, S. *et al.* (2020) High-dose biotin restores redox balance, energy and lipid homeostasis, and axonal health in a model of adrenoleukodystrophy. Brain Pathol. 30 (5): 945-63.
15. Parameswaran, J. *et al.* (2022) Activating cannabinoid receptor 2 preserves axonal health through GSK-3β/NRF2 axis in adrenoleukodystrophy. Acta Neuropathol. 144 (2): 241-258.
16. Xiang, C. *et al.* (2024) Catalpol alleviates amyloid- generation and neuronal oxidative stress injury via activating the Keap1-Nrf2/ARE signaling pathway in the immortalized lymphocytes from patients with late-onset Alzheimer's disease and SKNMC cells co-culture model. Iran J Basic Med Sci. 27 (12): 1547-1557.

Further Reading

1. Ponte, P. *et al*. (1988) A new A4 amyloid mRNA contains a domain homologous to serine proteinase inhibitors. Nature 331: 525-527.
2. Selkoe, D.J. (1994) Cell biology of the amyloid beta-protein precursor and the mechanism of Alzheimer's disease. Annu Rev Cell Biol. 10: 373-403.

Storage

This product is shipped at ambient temperature. It is recommended to aliquot and store at -20°C on receipt. When thawed, aliquot the sample as needed. Keep aliquots at 2-8°C for short term use (up to 4 weeks) and store the remaining aliquots at -20°C.

Avoid repeated freezing and thawing as this may denature the antibody. Storage in frost-free freezers is not recommended.

Guarantee

12 months from date of despatch

Health And Safety Information

Material Safety Datasheet documentation #10040 available at:
https://www.bio-rad-antibodies.com/SDS/AHP538
10040

Regulatory	For research purposes only

Related Products

Recommended Secondary Antibodies

Goat Anti Rabbit IgG (Fc) (STAR121...)	Biotin, FITC, HRP
Goat Anti Rabbit IgG (H/L) (STAR124...)	HRP
Sheep Anti Rabbit IgG (STAR35...)	RPE

Recommended Useful Reagents

ANTIGEN RETRIEVAL BUFFER, pH8.0 (BUF025A)
TidyBlot WESTERN BLOT DETECTION REAGENT:HRP (STAR209P)

North & South America Tel: +1 800 265 7376 Fax: +1 919 878 3751 Email: antibody_sales_us@bio-rad.com

Worldwide Tel: +44 (0)1865 852 700 Fax: +44 (0)1865 852 739 Email: antibody_sales_uk@bio-rad.com

Europe Tel: +49 (0) 89 8090 95 21 Fax: +49 (0) 89 8090 95 50 Email: antibody_sales_de@bio-rad.com

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