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Datasheet for 200-401-984

Beta-Site App-Cleaving Enzyme Antibody

Overview

Description:	Anti-Beta-site APP Cleaving Enzyme (BACE/Asp2) (RABBIT) Antibody - 200-401-984
Item No.:	200-401-984
Size:	100 µg
Applications:	ELISA, IHC, WB
Reactivity:	Human, Mouse, Rat
Host Species:	Rabbit

Product Details

Background:	Accumulation of the amyloid-beta (Abeta) plaque in the cerebral cortex is a critical event in the pathogenesis of Alzheimer's disease. Abeta peptide is generated by proteolytic cleavage of the beta-amyloid protein precursor (APP) at beta- and gamma-sites by two proteases. APP is first cleaved by beta-secretase, producing a soluble derivative of the protein and a membrane anchored 99-amino acid carboxy-terminal fragment (C99). The C99 fragment serves as substrate for gamma-secretase to generate the 4 kDa amyloid-beta peptide, which is deposited in the brains of all suffers of Alzheimer's disease. The long-sought beta-secretase was recently identified by several groups independently and designated beta-site APP cleaving enzyme (BACE) and aspartyl protease 2 (Asp2). BACE/Asp2 is a novel transmembrane aspartic protease and colocalizes with APP. Anti-BACE antibody is ideal for investigators involved in Neuroscience research.
Synonyms:	APP beta secretase antibody, Asp 2 antibody, ASP2 antibody, Aspartyl protease 2 antibody, BACE 1 antibody, BACE antibody, Beta secretase 1 antibody, Beta secretase antibody, Membrane-Associated Aspartic Protease 2, Beta-Site APP Cleaving Enzyme 1, Memapsin-2, Beta-Site Amyloid Beta A4 Precursor Protein-Cleaving Enzyme, Transmembrane Aspartic Proteinase Asp2
Host Species:	Rabbit
Clonality:	Polyclonal
Format:	IgG

Target Details

Gene Name:	BACE1

Reactivity:	Human, Mouse, Rat
Immunogen Type:	Conjugated Peptide
Immunogen:	BACE Antibody was prepared from whole rabbit serum produced by repeated immunizations with a synthetic peptide corresponding to amino acids near the carboxyl terminus of human BACE protein.
Purity/Specificity:	Anti-BACE Antibody is directed against human BACE protein. The product is affinity chromatography purified via peptide column. The antibody is human and mouse reactive. Reactivity against homologues from other sources has not been determined.
Relevant Links:	• NCBI - 6118539 • UniProtKB - P56817 • GeneID - 23621

Application Details

Tested Applications:	ELISA, IHC, WB
Application Note:	BACE antibody has been tested for use in ELISA, western blotting, and immunohistochemistry. Human brain tissue can be used as a positive control in western blotting, and a band at approximately 70 kDa is expected. Specific conditions for reactivity should be optimized by the end user.
Assay Dilutions:	All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.
ELISA:	1:10,000 - 1:50,000
IHC:	2 µg/mL
WB:	0.5-1 µg/ml

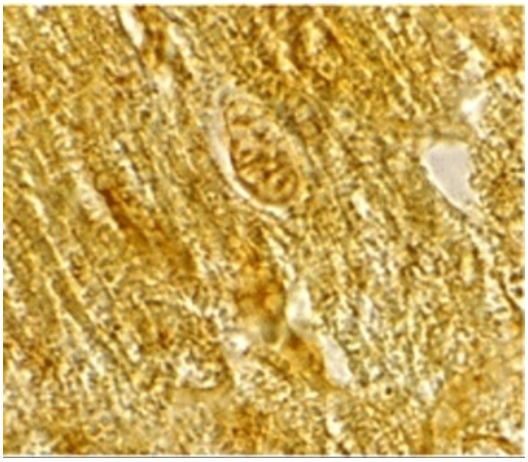
Formulation

Physical State:	Liquid (sterile filtered)
Concentration:	1.0 mg/mL by UV absorbance at 280 nm
Buffer:	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2
Preservative:	0.02% (w/v) Sodium Azide
Stabilizer:	None

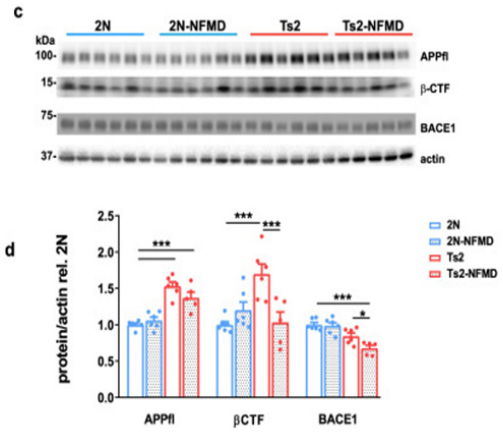
Shipping & Handling

Shipping Condition:	Dry Ice
Storage Condition:	Store vial at -20° C prior to opening. Aliquot contents and freeze at -20° C or below for extended storage. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use.
Expiration:	Expiration date is one (1) year from date of receipt.

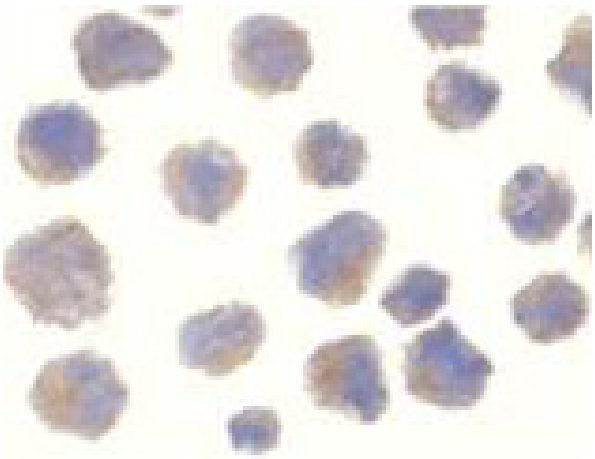
Images



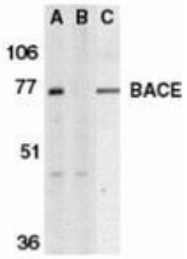
Immunofluorescence Microscopy
Immunohistochemistry of BACE2 in rat heart tissue with BACE2 antibody at 2 µg/mL.



Western Blot
The positive effects of neflamapimod on pathology and function in Ts2 mice appear to be mediated by inhibition of the p38α kinase pathway and related to BACE1 and βCTF reductions.
c, d Subsequent western blot analysis for full length APP (APPfl), APP-βCTF and BACE1 and western blot image quantified with Image J and graphed with GraphPad Prism 8.0.1 (Ordinary One-Way ANOVA, For APPfl $F(3, 19) = 23.33$, R square = 0.786, for 2 N vs Ts2, $p < 0.0001$, 95% CI = −684, −0.376; for 2 N vs Ts2-NFMD $p = 0.0001$, 95% CI = −0.532, −0.209; For APP-βCTF $F(3, 19) = 8.167$, R square = 0.563, for 2 N vs Ts2, $p = 0.0003$, 95% CI = −1.027, −0.367; for Ts2 vs Ts2-NFMD $p = 0.0007$, 95% CI = 0.3187, 1.010; For BACE1 $F(3, 19) = 12.86$, R square = 0.670, for 2 N vs Ts2-NFMD, $p = 0.0001$, 95% CI = 0.158, 0.491; for Ts2 vs TS2-NFMD $p = 0.0469$, 95% CI = −0.00185, 0.335). Data are presented as mean values ± SEM. Statistical significance is represented by asterisks $*p \le 0.05$, $**p \le 0.01$, $***p \le 0.001$. Source data are provided as a Source Data File. Fig. 3. PMID: 36130946



Immunohistochemistry
Immunocytochemistry of BACE in 3T3 cells with BACE antibody at 10 µg/ml.



Western Blot
Western blot analysis of BACE in human brain tissue lysate in the absence (A) or presence (B) of blocking peptide, and in mouse 3T3 cell lysate (C) with BACE antibody at 1 µg/ml.

References

- Jiang Y et al. Preclinical and randomized clinical evaluation of the p38α kinase inhibitor neflamapimod for basal forebrain cholinergic degeneration. *Nat Commun.* (2022)
- Perez-Gonzalez R et al. Extracellular vesicles: where the amyloid precursor protein carboxyl-terminal fragments accumulate and amyloid-β oligomerizes. *FASEB J.* (2020)

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