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BACE Antibody

Catalog # ASC10099

Product Information

Application	WB, ICC, E
Primary Accession	P56817
Other Accession	AF190725, 6118538
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	55764
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	BACE can be used for detection of BACE by Western blot at 1 g/mL. Antibody can also be used for immunocytochemistry starting at 10 g/mL.

Additional Information

Gene ID	23621
Other Names	BACE Antibody: ASP2, BACE, HSPC104, KIAA1149, Beta-secretase 1, Aspartyl protease 2, ASP2, beta-site APP-cleaving enzyme 1
Target/Specificity	BACE1;
Reconstitution & Storage	BACE antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	BACE Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	BACE1 (HGNC:933)
Synonyms	BACE, KIAA1149
Function	Responsible for the proteolytic processing of the amyloid precursor protein (APP). Cleaves at the N-terminus of the A-beta peptide sequence, between residues 671 and 672 of APP, leads to the generation and extracellular release of beta-cleaved soluble APP, and a corresponding cell-associated C-terminal fragment which is later released by gamma-secretase (PubMed:10656250, PubMed:10677483, PubMed:20354142). Cleaves CHL1 (By similarity).
Cellular Location	Cell membrane; Single-pass type I membrane protein Golgi apparatus,

	trans-Golgi network. Endoplasmic reticulum. Endosome. Cell surface. Cytoplasmic vesicle membrane; Single-pass type I membrane protein. Membrane raft {ECO:0000250|UniProtKB:P56818}. Lysosome. Late endosome. Early endosome. Recycling endosome. Cell projection, axon {ECO:0000250|UniProtKB:P56818}. Cell projection, dendrite {ECO:0000250|UniProtKB:P56818}. Note=Predominantly localized to the later Golgi/trans-Golgi network (TGN) and minimally detectable in the early Golgi compartments. A small portion is also found in the endoplasmic reticulum, endosomes and on the cell surface (PubMed:11466313, PubMed:17425515). Colocalization with APP in early endosomes is due to addition of bisecting N-acetylglucosamine which blocks targeting to late endosomes and lysosomes (By similarity) Retrogradly transported from endosomal compartments to the trans-Golgi network in a phosphorylation- and GGA1- dependent manner (PubMed:15886016). {ECO:0000250|UniProtKB:P56818, ECO:0000269|PubMed:11466313, ECO:0000269|PubMed:15886016, ECO:0000269|PubMed:17425515}
Tissue Location	Expressed at high levels in the brain and pancreas. In the brain, expression is highest in the substantia nigra, locus coruleus and medulla oblongata.

Background

BACE Antibody: 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.

References

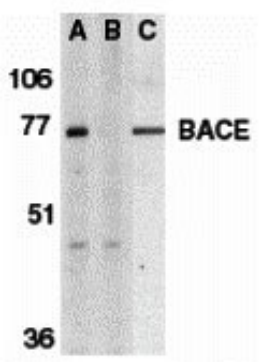
Vassar R, Bennett BD, Babu-Khan S, et al. β-secretase cleavage of Alzheimer's amyloid precursor protein by the transmembrane aspartic protease BACE. Science 1999;286:735-41

Hussain I, Powell D, Howlett DR , et al. Identification of a novel aspartic protease (Asp 2) as β-secretase. Mol Cell Neurosci 1999;14:419-27

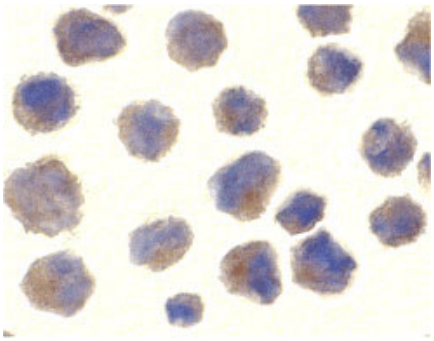
Yan R, Bienkowski MJ, Shuck ME, et al. Membrane-anchored aspartyl protease with Alzheimer's disease β-secretase activity. Nature 1999;402:533-7

Sinha S, Anderson JP, Barbour R, et al. Purification and cloning of amyloid precursor protein β-secretase from human brain. Nature 1999;402:537-40 (WD0500)

Images



Western blot analysis of BACE in human brain tissue lysate in the absence (A) or presence (B) of blocking peptide (APS10099P) and in mouse 3T3 cell lysate (C) with BACE antibody at 1 µg/mL.



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

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