

BACE (D-16): sc-10053

BACKGROUND

Autosomal dominant Alzheimer's disease is caused by mutations in the gene encoding the β -amyloid protein precursor (APP). Amyloid β -peptide (A β), the major feature of amyloid plaques in Alzheimer's patients, is the product of APP cleavage by β - and γ -secretases. BACE is the transmembrane protease which cleaves A β from APP. BACE and the related protein Asp1 are both widely expressed in human tissue with the highest levels in the pancreas. BACE is localized within Golgi and endosomes.

REFERENCES

1. Kang, J., et al. 1987. The precursor of Alzheimer's disease amyloid A4 protein resembles a cell-surface receptor. *Nature* 325: 733-736.
2. Goate, A., et al. 1991. Segregation of a missense mutation in the amyloid precursor protein gene with familial Alzheimer's disease. *Nature* 349: 704-706.
3. Mullan, M., et al. 1992. A pathogenic mutation for probable Alzheimer's disease in the APP gene at the N-terminus of β -amyloid. *Nat. Genet.* 1: 345-347.
4. Selkoe, D.J. 1998. The cell biology of β -amyloid precursor protein and presenilin in Alzheimer's disease. *Trends Cell Biol.* 8: 447-453.
5. Yan, R., et al. 1999. Membrane-anchored aspartyl protease with Alzheimer's disease β -secretase activity. *Nature* 402: 533-537.
6. Vassar, R., et al. 1999. β -secretase cleavage of Alzheimer's amyloid precursor protein by the transmembrane aspartic protease BACE. *Science* 286: 735-741.
7. Hussain, I., et al. 1999 Identification of a novel aspartic protease (Asp 2) as β -secretase. *Mol. Cell. Neurosci.* 14: 419-427.
8. Schmechel, A., et al. 2004. Human BACE forms dimers and colocalizes with APP. *J. Biol. Chem.* 279: 39710-39717.

CHROMOSOMAL LOCATION

Genetic locus: BACE1 (human) mapping to 11q23.3; Bace1 (mouse) mapping to 9 A5.2.

SOURCE

BACE (D-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of BACE of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-10053 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

BACE (D-16) is recommended for detection of BACE of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

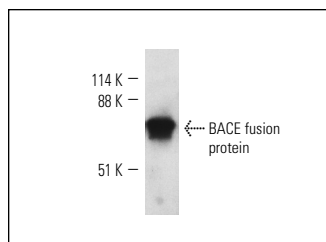
BACE (D-16) is also recommended for detection of BACE in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for BACE siRNA (h): sc-37224, BACE siRNA (m): sc-37225, BACE shRNA Plasmid (h): sc-37224-SH, BACE shRNA Plasmid (m): sc-37225-SH, BACE shRNA (h) Lentiviral Particles: sc-37224-V and BACE shRNA (m) Lentiviral Particles: sc-37225-V.

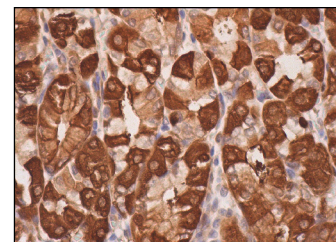
Molecular Weight of BACE: 70 kDa.

Positive Controls: SH-SY5Y cell lysate: sc-3812.

DATA



BACE (D-16): sc-10053. Western blot analysis of human recombinant BACE fusion protein.



BACE Antibody (D-16): sc-10053. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lower stomach tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Tanahashi, H., et al. 2007. A novel β -site amyloid precursor protein cleaving enzyme (BACE) isoform regulated by nonsense-mediated mRNA decay and proteasome-dependent degradation. *Neurosci. Lett.* 428: 103-108.
2. Zhao, Y., et al. 2007. Reduction of sortilin-1 in Alzheimer hippocampus and in cytokine-stressed human brain cells. *Neuroreport* 18: 1187-1191.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

MONOS
Satisfaction
Guaranteed

Try **BACE (61-3E7): sc-33711** or **BACE (A-12): sc-365948**, our highly recommended monoclonal alternatives to BACE (D-16). Also, for AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647 conjugates, see **BACE (61-3E7): sc-33711**.