

BACE2 (D-20): sc-10049

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.
9. Patel, S., et al. 2004. Apo and inhibitor complex structures of BACE (β -secretase). *J. Mol. Biol.* 343: 407-416.

CHROMOSOMAL LOCATION

Genetic locus: BACE2 (human) mapping to 21q22.2; Bace2 (mouse) mapping to 16 C4.

SOURCE

BACE2 (D-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of BACE2 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-10049 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

BACE2 (D-20) is recommended for detection of BACE2 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

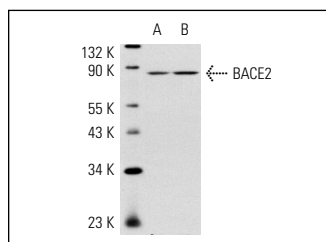
BACE2 (D-20) is also recommended for detection of BACE2 in additional species, including bovine, porcine and avian.

Suitable for use as control antibody for BACE2 siRNA (h): sc-29776, BACE2 siRNA (m): sc-29777, BACE2 shRNA Plasmid (h): sc-29776-SH, BACE2 shRNA Plasmid (m): sc-29777-SH, BACE2 shRNA (h) Lentiviral Particles: sc-29776-V and BACE2 shRNA (m) Lentiviral Particles: sc-29777-V.

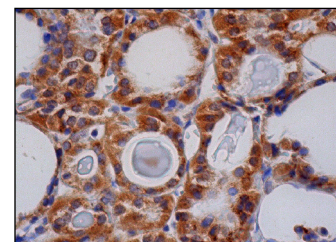
Molecular Weight of BACE2 isoforms: 70/56/50/48/46/43 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, H4 cell lysate: sc-2408 or mouse pancreas extract: sc-364244.

DATA



BACE2 (D-20): sc-10049. Western blot analysis of BACE2 expression in H4 (A) whole cell lysate and mouse pancreas (B) extract.



BACE2 (D-20): sc-10049. Immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Vattemi, G., et al. 2003. BACE1 and BACE2 in pathologic and normal human muscle. *Exp. Neurol.* 179: 150-158.
2. Finzi, G., et al. 2008. BACE2 is stored in secretory granules of mouse and rat pancreatic β cells. *Ultrastruct. Pathol.* 32: 246-251.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.



Try **BACE2 (H-3): sc-271212** or **BACE2 (F-12): sc-271286**, our highly recommended monoclonal alternatives to BACE2 (D-20).