

nicastrin (m): 293T Lysate: sc-122058

BACKGROUND

The Presenilin 1 (PS1) and Presenilin 2 (PS2) transmembrane proteins are components of high molecular weight complexes. These complexes mediate proteolytic cleavage within the transmembrane domain of several proteins, including the β -Amyloid precursor protein (β APP) and Notch. Missense mutations in the genes encoding the Presenilin proteins increase the proteolysis of β APP and results in the overproduction of the neurotoxic β -Amyloid peptide, which results in a condition associated with Familial Alzheimer's disease (FAD). A novel component of the presenilin complex, nicastrin, is a type I transmembrane glycoprotein that is involved in mediating Notch/GLP-1 signaling. In addition, nicastrin contributes to the processing of β APP, which makes nicastrin an attractive potential target for modulating the production of β -Amyloid in patients with Alzheimer's disease. Originally purified from immunoprecipitated PS1 complexes from HEK293 cells, nicastrin contains hydrophilic amino and carboxy-terminal domains, a short, hydrophobic transmembrane domain and potential N-myristoylation and phosphorylation sites.

REFERENCES

1. Yu, G., et al. 1998. The Presenilin 1 protein is a component of a high molecular weight intracellular complex that contains β -catenin. *J. Biol. Chem.* 273: 16470-16475.
2. De Strooper, B., et al. 1998. Deficiency of Presenilin 1 inhibits the normal cleavage of amyloid precursor protein. *Nature* 391: 387-390.
3. De Strooper, B., et al. 1999. A Presenilin 1-dependent γ -secretase-like protease mediates release of Notch intracellular domain. *Nature* 398: 518-522.
4. Song, W., et al. 1999. Proteolytic release and nuclear translocation of Notch 1 are induced by Presenilin 1 and impaired by pathogenic Presenilin 1 mutations. *Proc. Natl. Acad. Sci. USA* 96: 6959-6963.
5. Annaert, W., et al. 1999. Presenilins: molecular switches between proteolysis and signal transduction. *Trends Neurosci.* 22: 439-443.
6. Kulic, L., et al. 2000. Separation of Presenilin function in β -Amyloid-peptide generation and endoproteolysis of Notch. *Proc. Natl. Acad. Sci. USA* 97: 5913-5918.
7. Yu, G., et al. 2000. nicastrin modulates presenilin-mediated Notch/GLP-1 signal transduction and β APP processing. *Nature* 407: 48-54.

CHROMOSOMAL LOCATION

Genetic locus: Ncstn (mouse) mapping to 1 H3.

PRODUCT

nicastrin (m): 293T Lysate represents a lysate of mouse nicastrin transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

RESEARCH USE

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

APPLICATIONS

nicastrin (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive nicastrin antibodies. Recommended use: 10-20 μ l per lane.

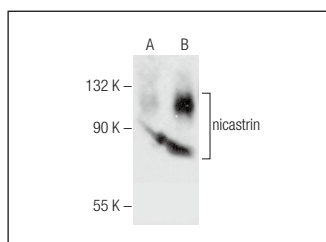
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

nicastrin (F-3): sc-377214 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse nicastrin expression in nicastrin transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



nicastrin (F-3): sc-377214. Western blot analysis of nicastrin expression in non-transfected: sc-117752 (A) and mouse nicastrin transfected: sc-122058 (B) 293T whole cell lysates.

PROTOCOLS

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