SANTA CRUZ BIOTECHNOLOGY, INC.

nicastrin (B-3): sc-376513

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 (βAPP) and Notch. Missense mutations in the genes encoding the Presenilin proteins increase the proteolysis of βAPP 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 βAPP, 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.

CHROMOSOMAL LOCATION

Genetic locus: NCSTN (human) mapping to 1q23.2; Ncstn (mouse) mapping to 1 H3.

SOURCE

nicastrin (B-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 23-59 near the N-terminus of nicastrin of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

nicastrin (B-3) is available conjugated to agarose (sc-376513 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-376513 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376513 PE), fluorescein (sc-376513 FITC), Alexa Fluor® 488 (sc-376513 AF488), Alexa Fluor® 546 (sc-376513 AF546), Alexa Fluor® 594 (sc-376513 AF594) or Alexa Fluor® 647 (sc-376513 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376513 AF680) or Alexa Fluor® 790 (sc-376513 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-376513 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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APPLICATIONS

nicastrin (B-3) is recommended for detection of nicastrin of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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).

nicastrin (B-3) is also recommended for detection of nicastrin in additional species, including equine, bovine and avian.

Suitable for use as control antibody for nicastrin siRNA (h): sc-36063, nicastrin siRNA (m): sc-36064, nicastrin shRNA Plasmid (h): sc-36063-SH, nicastrin shRNA Plasmid (m): sc-36064-SH, nicastrin shRNA (h) Lentiviral Particles: sc-36063-V and nicastrin shRNA (m) Lentiviral Particles: sc-36064-V.

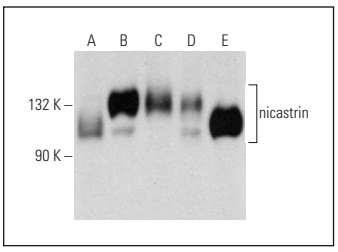
Molecular Weight of nicastrin: 110/150 kDa.

Positive Controls: RAW 264.7 whole cell lysate: sc-2211, A-10 cell lysate: sc-3806 or KNRK whole cell lysate: sc-2214.

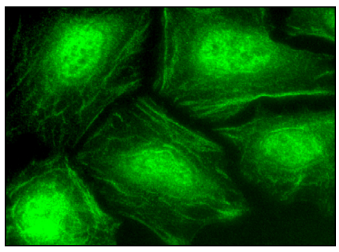
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



nicastrin (B-3): sc-376513. Western blot analysis of nicastrin expression in SHP-77 (**A**), RAW 264.7 (**B**), AMJ2-C8 (**C**), KNRK (**D**) and A-10 (**E**) whole cell lysates.



nicastrin (B-3): sc-376513. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization.

STORAGE

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

RESEARCH USE

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