SANTA CRUZ BIOTECHNOLOGY, INC.

Aph-1 (D-20): sc-30242

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Four proteins comprise the γ-secretase complex: presenilin, nicastrin, Aph-1, and PEN-2. Together, these proteins mediate cell surface signaling pathways for a variety of type I membrane proteins, notably amyloid-beta precursor protein, a protein implicated in the development of Alzheimer's disease, via intramembrane proteolysis. The proteins assemble into a proteolytically active complex in the Golgi/*trans*-Golgi network (TGN) compartments. Assembly leads to autocleavage of presenilin into two subunits to create the active site of γ-secretase, an important step in understanding the mechanisms involved in the etiology and possible treatment of Alzheimer's disease.

REFERENCES

1. Kimberly, W.T., et al. 2003. Identity and function of γ-secretase. J. Neurosci. Res. 74: 353-360.
2. Baulac, S., et al. 2003. Functional γ-secretase complex assembly in Golgi/*trans*-Golgi network: interactions among presenilin, nicastrin, Aph-1, PEN-2, and γ-secretase substrates. Neurobiol. Dis. 14: 194-204.
3. Wolfe, M.S. 2003. γ-secretase — intramembrane protease with a complex. Sci. Aging Knowledge Environ. 11: 7.
4. Fortna, R.R., et al. 2004. Membrane topology and nicastrin-enhanced endoproteolysis of Aph-1, a component of the γ-secretase complex. J. Biol. Chem. 279: 3685-3693.
5. Shirotani, K., et al. 2004. Identification of distinct γ-secretase complexes with different Aph-1 variants. J. Biol. Chem. 279: 41340-41345.
6. Hansson, E.M., et al. 2005. Aph-1 interacts at the cell surface with proteins in the active γ-secretase complex and membrane-tethered Notch. J. Neurochem. 92: 1010-1020.
7. Ma, G., et al. 2005. Aph-1a is the principal mammalian Aph-1 isoform present in γ-secretase complexes during embryonic development. J. Neurosci. 25: 192-198.

CHROMOSOMAL LOCATION

Genetic locus: APH1A (human) mapping to 1q21.2; Aph1a (mouse) mapping to 3 F2.1.

SOURCE

Aph-1 (D-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Aph-1 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-30242 P, (100 µg 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

Aph-1 (D-20) is recommended for detection of Aph-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Aph-1 (D-20) is also recommended for detection of Aph-1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Aph-1 siRNA (h): sc-105081, Aph-1 siRNA (m): sc-141150, Aph-1 shRNA Plasmid (h): sc-105081-SH, Aph-1 shRNA Plasmid (m): sc-141150-SH, Aph-1 shRNA (h) Lentiviral Particles: sc-105081-V and Aph-1 shRNA (m) Lentiviral Particles: sc-141150-V.

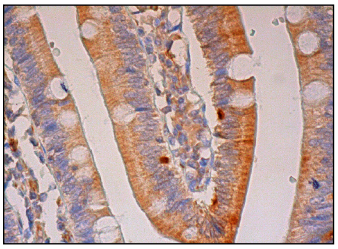
Molecular Weight of Aph-1: 18 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



Aph-1 (D-20): sc-30242. Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing cytoplasmic staining of glandular cells.

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.