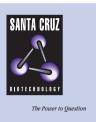
# SANTA CRUZ BIOTECHNOLOGY, INC.

# PEN-2 (cP-16): sc-30234



#### BACKGROUND

Four proteins comprise the  $\gamma$ -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  $\gamma$ -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  $\gamma\text{-secretase.}$  J. Neurosci. Res. 74: 353-360.
- 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.
- Wolfe, M.S. 2003. γ-secretase—intramembrane protease with a complex. Sci. Aging Knowledge Environ. 11: PE7
- 4. Fortna, R.R., et al. 2004. Membrane topology and nicastrin-enhanced endoproteolysis of Aph-1, a component of the  $\gamma$ -secretase complex. J. Biol. Chem. 279: 3685-3693.
- Bergman, A., et al. 2004. PEN-2 is sequestered in the endoplasmic reticulum and subjected to ubiquitylation and proteasome-mediated degradation in the absence of Presenilin. J. Biol. Chem. 279: 16744-16753.
- 6. Prokop, S., et al. 2004. Requirement of PEN-2 for stabilization of the Presenilin N/C terminal fragment heterodimer within the  $\gamma$ -secretase complex. J. Biol. Chem. 279: 23255-23261.
- Hasegawa, H., et al. 2004. Both the sequence and length of the C terminus of PEN-2 are critical for intermolecular interactions and function of Presenilin complexes. J. Biol. Chem. 279: 46455-46463.
- 8. Shiraishi, H., et al. 2004. PEN-2 enhances  $\gamma$ -cleavage after Presenilin heterodimer formation. J. Neurochem. 90: 1402-1413.
- 9. Kim, S.H. 2005. A sequence within the first transmembrane domain of PEN-2 is critical for PEN-2-mediated endoproteolysis of Presenilin 1.
  J. Biol. Chem. 280: 1992-2001.

#### CHROMOSOMAL LOCATION

Genetic locus: PSENEN (human) mapping to 19q13.12; Psenen (mouse) mapping to 7 B1.

#### SOURCE

PEN-2 (cP-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PEN-2 of *C. elegans* origin.

### **STORAGE**

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

#### PRODUCT

Each vial contains 200  $\mu g$  lgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-30234 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## **APPLICATIONS**

PEN-2 (cP-16) is recommended for detection of PEN-2 (enhancer of sel-12 null) of *Caenorhabditis elegans* 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

#### **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<sup>™</sup> compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> 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<sup>™</sup> Mounting Medium: sc-24941.

#### **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.