SANTA CRUZ BIOTECHNOLOGY, INC.

Aph-1 siRNA (h): sc-105081

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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 β-Amyloid 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

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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.
8. Saito, S., et al. 2005. Expression profiles of two human APH-1 genes and their roles in formation of presenilin complexes. Biochem. Biophys. Res. Commun. 327: 18-22.

CHROMOSOMAL LOCATION

Genetic locus: APH1A (human) mapping to 1q21.2.

PRODUCT

Aph-1 siRNA (h) is a target-specific 19-25 nt siRNA designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Aph-1 shRNA Plasmid (h): sc-105081-SH and Aph-1 shRNA (h) Lentiviral Particles: sc-105081-V as alternate gene silencing products.

PROTOCOLS

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

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Aph-1 siRNA (h) is recommended for the inhibition of Aph-1 expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Aph-1 gene expression knockdown using RT-PCR Primer: Aph-1 (h)-PR: sc-105081-PR (20 µl, 600 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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