

# Aph-1 siRNA (m): sc-141150

## 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  $\beta$ -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  $\gamma$ -secretase, an important step in understanding the mechanisms involved in the etiology and possible treatment of Alzheimer's disease.

## REFERENCES

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3. Wolfe, M.S. 2003.  $\gamma$ -secretase—intramembrane protease with a complex. *Sci. Aging Knowledge Environ.* 2003: 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.
5. Shirohani, K., et al. 2004. Identification of distinct  $\gamma$ -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  $\gamma$ -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  $\gamma$ -secretase complexes during embryonic development. *J. Neurosci.* 25: 192-198.
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## CHROMOSOMAL LOCATION

Genetic locus: Aph1a (mouse) mapping to 3 F2.1.

## PRODUCT

Aph-1 siRNA (m) is a pool of 2 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Aph-1 shRNA Plasmid (m): sc-141150-SH and Aph-1 shRNA (m) Lentiviral Particles: sc-141150-V as alternate gene silencing products.

For independent verification of Aph-1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-141150A and sc-141150B.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

Aph-1 siRNA (m) is recommended for the inhibition of Aph-1 expression in mouse 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  $\mu$ M in 66  $\mu$ l. 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 (m)-PR: sc-141150-PR (20  $\mu$ l). 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.