



# Aph-1b siRNA (h): sc-60190

## BACKGROUND

Anterior pharynx defective 1 (Aph-1) is a polytopic, seven-pass membrane protein that functions as one of the four essential components in the presenilin- $\gamma$ -secretase enzyme complex. This enzyme complex is necessary for the intramembrane proteolysis of several different membrane proteins, including the  $\beta$ -Amyloid precursor protein, and is involved in multiple neurodevelopmental signaling pathways. Aph-1b and Aph-1a are splice variants of Aph-1. Aph-1b specifically lacks exon 4, which encodes for the entire fourth transmembrane domain, causing the protein to be destabilized. Deficiency of Aph-1a causes a reduction in  $\gamma$ -secretase activity, however deficiency of Aph-1b does not; thus, Aph-1b may execute redundant functions in the cell. Aph-1b expression and  $\gamma$ -secretase activity may be implicated in neurodevelopmental disorders, such as schizophrenia.

## REFERENCES

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- Coolen, M.W., et al. 2005. Gene dosage effect on  $\gamma$ -secretase component Aph-1b in a rat model for neurodevelopmental disorders. *Neuron* 45: 497-503.
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- Saito, S., et al. 2005. Identification and characterization of a novel human Aph-1b splice variant lacking exon 4. *Biochem. Biophys. Res. Commun.* 330: 1068-1072.
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- Coolen, M.W., et al. 2006. Ontogenic reduction of Aph-1b mRNA and  $\gamma$ -secretase activity in rats with a complex neurodevelopmental phenotype. *Mol. Psychiatry* 11: 787-793.
- Coolen, M.W., et al. 2006. Reduced Aph-1b expression causes tissue- and substrate-specific changes in  $\gamma$ -secretase activity in rats with a complex phenotype. *FASEB J.* 20: 175-177.

## CHROMOSOMAL LOCATION

Genetic locus: APH1B (human) mapping to 15q22.2.

## PRODUCT

Aph-1b siRNA (h) is a pool of 3 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-1b shRNA Plasmid (h): sc-60190-SH and Aph-1b shRNA (h) Lentiviral Particles: sc-60190-V as alternate gene silencing products.

For independent verification of Aph-1b (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-60190A, sc-60190B and sc-60190C.

## 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-1b siRNA (h) is recommended for the inhibition of Aph-1b 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  $\mu$ 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-1b gene expression knockdown using RT-PCR Primer: Aph-1b (h)-PR: sc-60190-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.