SANTA CRUZ BIOTECHNOLOGY, INC.

Aph-1b siRNA (m): sc-60191

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-γ-secretase enzyme complex. This enzyme complex is necessary for the intramembrane proteolysis of several different membrane proteins, including the β-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 γ-secretase activity, however deficiency of Aph-1b does not; thus, Aph-1b may execute redundant functions in the cell. Aph-1b expression and γ-secretase activity may be implicated in neurodevelopmental disorders, such as schizophrenia.

REFERENCES

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2. Coolen, M.W., et al. 2005. Gene dosage effect on γ-secretase component Aph-1b in a rat model for neurodevelopmental disorders. Neuron 45: 497-503.
3. Saito, S., et al. 2005. Expression profiles of two human APH1 genes and their roles in formation of presenilin complexes. Biochem. Biophys. Res. Commun. 327: 18-22.
4. 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.
5. Ellenbroek, B.A., et al. 2005. Individual differences in drug dependence in rats: the role of genetic factors and life events. Eur. J. Pharmacol. 526: 251-258.
6. Coolen, M.W., et al. 2006. Ontogenic reduction of Aph-1b mRNA and γ-secretase activity in rats with a complex neurodevelopmental phenotype. Mol. Psychiatry 11: 787-793.
7. Coolen, M.W., et al. 2006. Reduced Aph-1b expression causes tissue- and substrate-specific changes in γ-secretase activity in rats with a complex phenotype. FASEB J. 20: 175-177.

CHROMOSOMAL LOCATION

Genetic locus: Aph1b (mouse) mapping to 9 C.

PRODUCT

Aph-1b siRNA (m) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Aph-1b shRNA Plasmid (m): sc-60191-SH and Aph-1b shRNA (m) Lentiviral Particles: sc-60191-V as alternate gene silencing products.

For independent verification of Aph-1b (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-60191A, sc-60191B and sc-60191C.

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-1b siRNA (m) is recommended for the inhibition of Aph-1b 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 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-1b gene expression knockdown using RT-PCR Primer: Aph-1b (m)-PR: sc-60191-PR (20 µl, 461 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.

PROTOCOLS

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