

AChR α 6 siRNA (h): sc-105031

BACKGROUND

Members of the ligand-gated ion channel receptor family are characterized by their fast transmitting response to neurotransmitters. Two important members of this family are the nicotinic acetylcholine and glutamate receptors, both of which are composed of five homologous subunits forming a transmembrane aqueous pore. These transmembrane receptors change conformation in response to their cognate neurotransmitter. Nicotinic acetylcholine receptors (AChRs) are found at the postsynaptic membrane of the neuromuscular junction and bind acetylcholine molecules, allowing ions to move through the pore. AChR α 6, also designated cholinergic nicotinic receptor α polypeptide 6, is a neuronal acetylcholine receptor protein expressed in respiratory mucosa. AChR α 6 is also selectively expressed on dopaminergic terminals, where it complexes with AChR β 2 and AChR α 4.

REFERENCES

1. Barabino, B., et al. 2001. An α 4 β 4 nicotinic receptor subtype is present in chick retina: identification, characterization and pharmacological comparison with the transfected α 4 β 4 and α 6 β 4 subtypes. *Mol. Pharmacol.* 59: 1410-1417.
2. Mugnaini, M., et al. 2002. Upregulation of [³H]methyllycaconitine binding sites following continuous infusion of nicotine, without changes of α 7 or α 6 subunit mRNA: an autoradiography and *in situ* hybridization study in rat brain. *Eur. J. Neurosci.* 16: 1633-1646.
3. Zoli, M., et al. 2002. Identification of the nicotinic receptor subtypes expressed on dopaminergic terminals in the rat striatum. *J. Neurosci.* 22: 8785-8789.
4. Vailati, S., et al. 2003. Developmental expression of heteromeric nicotinic receptor subtypes in chick retina. *Mol. Pharmacol.* 63: 1329-1337.
5. Keiger, C.J., et al. 2003. Nicotinic cholinergic receptor expression in the human nasal mucosa. *Ann. Otol. Rhinol. Laryngol.* 112: 77-84.

CHROMOSOMAL LOCATION

Genetic locus: CHRNA6 (human) mapping to 8p11.21.

PRODUCT

AChR α 6 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see AChR α 6 shRNA Plasmid (h): sc-105031-SH and AChR α 6 shRNA (h) Lentiviral Particles: sc-105031-V as alternate gene silencing products.

For independent verification of AChR α 6 (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-105031A, sc-105031B and sc-105031C.

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

APPLICATIONS

AChR α 6 siRNA (h) is recommended for the inhibition of AChR α 6 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 μ M in 66 μ 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.

GENE EXPRESSION MONITORING

AChR α 6 (G-4): sc-376966 is recommended as a control antibody for monitoring of AChR α 6 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor AChR α 6 gene expression knockdown using RT-PCR Primer: AChR α 6 (h)-PR: sc-105031-PR (20 μ 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.