SANTA CRUZ BIOTECHNOLOGY, INC.

CTL2 siRNA (m): sc-62164

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Choline is an essential nutrient that is required for the synthesis of both acetylcholine, a neurotransmitter found in cholinergic nerve terminals, and phosphatidylcholine, a key component of cell membranes. Choline deficiencies are associated with defects in cell growth and have been implicated in disorders such as Alzheimer's and Parkinson's disease. The choline transporter-like protein family (CTL) are solute carriers that transport choline, a compound which is not able to permeate cells, across the cell membrane. CTL2, also called SLC44A2 (solute carrier family 44 member 2), is a multipass membrane protein expressed in cells of the inner ear. CTL2 is a possible candidate for autoimmune hearing loss in humans.

REFERENCES

1. O'Regan, S., et al. 2000. An electric lobe suppressor for a yeast choline transport mutation belongs to a new family of transporter-like proteins. Proc. Natl. Acad. Sci. USA 97: 1835-1840.
2. Nair, T.S., et al. 2004. Identification and characterization of choline transporter-like protein 2, an inner ear glycoprotein of 68 and 72 kDa that is the target of antibody-induced hearing loss. J. Neurosci. 24: 1772-1779.
3. Traiffort, E., et al. 2005. Molecular characterization of the family of choline transporter-like proteins and their splice variants. J. Neurochem. 92: 1116-1125.
4. Michel, V., et al. 2006. Choline transport for phospholipid synthesis. Exp. Biol. Med. 231: 490-504.
5. Santos, R.L., et al. 2006. DFNB68, a novel autosomal recessive non-syndromic hearing impairment locus at chromosomal region 19p13.2. Hum. Genet. 120: 85-92.
6. Wang, T., et al. 2007. Choline transporters in human lung adenocarcinoma: expression and functional implications. Acta Biochim. Biophys. Sin. 39: 668-674.
7. Kommareddi, P.K., et al. 2007. Cochlin isoforms and their interaction with CTL2 (SLC44A2) in the inner ear. J. Assoc. Res. Otolaryngol. 8: 435-446.

CHROMOSOMAL LOCATION

Genetic locus: Slc44a2 (mouse) mapping to 9 A3.

PRODUCT

CTL2 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 CTL2 shRNA Plasmid (m): sc-62164-SH and CTL2 shRNA (m) Lentiviral Particles: sc-62164-V as alternate gene silencing products.

For independent verification of CTL2 (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-62164A, sc-62164B and sc-62164C.

RESEARCH USE

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

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

CTL2 siRNA (m) is recommended for the inhibition of CTL2 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.

GENE EXPRESSION MONITORING

CTL2 (F7): sc-101266 is recommended as a control antibody for monitoring of CTL2 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 CTL2 gene expression knockdown using RT-PCR Primer: CTL2 (m)-PR: sc-62164-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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