SANTA CRUZ BIOTECHNOLOGY, INC.

α T-catenin siRNA (m): sc-61905

BACKGROUND

The catenins (α, β, γ and δ) are ubiquitously expressed, cytoplasmic proteins that associate with E-cadherin at cellular junctions. Catenin/cadherin complexes play an important role in mediating cellular adhesion. α T-catenin, also referred to as VR22, is a 895 amino acid protein that is most abundantally expressed in cardiomyocytes and in the peritubular myoid cells of the testis. α T-catenin binds to α E-catenin as well as to β-catenin, and it functions to inhibit Wnt signaling. CTNNA3, the gene that encodes for α T-catenin, is located on chromosome 10, and mutations in this gene show a strong correlation to late-onset Alzheimer's disease (LOAD) as well as to dilated cardiomyopathy.

REFERENCES

1. Ertekin-Taner, N., et al. 2000. Linkage of plasma Aβ42 to a quantitative locus on chromosome 10 in late-onset Alzheimer's disease pedigrees. Science 290: 2303-2304.
2. Janssens, B., et al. 2001 α T-catenin: A novel tissue-specific β-catenin-binding protein mediating strong cell-cell adhesion. J. Cell Sci. 114: 3177-3188.
3. Ertekin-Taner, N., et al. 2003. Fine mapping of the α T-catenin gene to a quantitative trait locus on chromosome 10 in late-onset Alzheimer's disease pedigrees. Hum. Mol. Genet. 12: 3133-3143.
4. Janssens, B., et al. 2003. Assessment of the CTNNA3 gene encoding human α T-catenin regarding its involvement in dilated cardiomyopathy. Hum. Genet. 112: 227-236.
5. Blomqvist, M.E., et al. 2004. Genetic variation in CTNNA3 encoding α-3 catenin and Alzheimer's disease. Neurosci. Lett. 358: 220-222.
6. Busby, V., et al. 2004. α T-catenin is expressed in human brain and interacts with the Wnt signaling pathway but is not responsible for linkage to chromosome 10 in Alzheimer's disease. Neuromol. Med. 5: 133-146.
7. Martin, E.R., et al. 2005. Interaction between the α-T catenin gene (VR22) and APOE in Alzheimer's disease. J. Med. Genet. 42: 787-92.
8. Kuwano, R., et al. 2006. Dynamin-binding protein gene on chromosome 10q is associated with late-onset Alzheimer's disease. Hum. Mol. Genet. 15: 2170-2182.

CHROMOSOMAL LOCATION

Genetic locus: Ctnna3 (mouse) mapping to 10 B4.

PRODUCT

α T-catenin 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 α T-catenin shRNA Plasmid (m): sc-61905-SH and α T-catenin shRNA (m) Lentiviral Particles: sc-61905-V as alternate gene silencing products.

For independent verification of α T-catenin (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-61905A, sc-61905B and sc-61905C.

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

α T-catenin siRNA (m) is recommended for the inhibition of α T-catenin 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

α T-catenin (4A21): sc-69968 is recommended as a control antibody for monitoring of α T-catenin 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 α T-catenin gene expression knockdown using RT-PCR Primer: α T-catenin (m)-PR: sc-61905-PR (20 µl). 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.