SANTA CRUZ BIOTECHNOLOGY, INC.

δ-catenin siRNA (h): sc-43021

BACKGROUND

The catenins, α, β and γ, are proteins which bind to the highly conserved, intracellular cytoplasmic tail of E-cadherin. Together, the catenin/cadherin complexes play an important role mediating cellular adhesion. α-catenin was initially described as an E-cadherin associated protein, and since has been shown to associate with other members of the cadherin family, such as N-cadherin and P-cadherin. β-catenin associates with the cytoplasmic portion of E-cadherin, which is necessary for the function of E-cadherin as an adhesion molecule. β-catenin has also been found in complexes with the tumor suppressor protein APC. γ-catenin, also known as plakoglobin, binds with α-catenin and N-cadherin. δ-catenin interacts with presenilin 1 and is expressed in the brain. The gene encoding δ-catenin maps to human chromosome 5p15.2. A hemizygous loss of the gene encoding δ-catenin leads to the mental retardation associated with Cri-du-Chat syndrome. In addition, the transmembrane phosphatase PTPm associates with catenin/cadherin complexes and may regulate complex signaling.

REFERENCES

1. Knudsen, K.A., et al. 1995. Interaction of α-actinin with the cadherin/catenin cell-cell adhesion complex via α-catenin. J. Cell Biol. 130: 67-77.
2. Brady-Kalnay, S.M., et al. 1995. Receptor protein tyrosine phosphatase PTP associates with cadherins and catenins *in vivo*. J. Cell Biol. 130: 977-986.

CHROMOSOMAL LOCATION

Genetic locus: CTNND2 (human) mapping to 5p15.2.

PRODUCT

δ-catenin 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see δ-catenin shRNA Plasmid (h): sc-43021-SH and δ-catenin shRNA (h) Lentiviral Particles: sc-43021-V as alternate gene silencing products.

For independent verification of δ-catenin (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-43021A, sc-43021B and sc-43021C.

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

δ-catenin siRNA (h) is recommended for the inhibition of δ-catenin 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 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

δ-catenin (40.1): sc-81793 is recommended as a control antibody for monitoring of δ-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 δ-catenin gene expression knockdown using RT-PCR Primer: δ-catenin (h)-PR: sc-43021-PR (20 µl, 446 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Odell, A.F., et al. 2012. A VE-cadherin-PAR3-α-catenin complex regulates the Golgi localization and activity of cytosolic phospholipase A_2α in endothelial cells. Mol. Biol. Cell 23: 1783-1796.
2. Huang, C., et al. 2016. AKR1B10 promotes breast cancer metastasis through Integrin α5/δ-catenin mediated FAK/Src/Rac1 signaling pathway. Oncotarget 7: 43779-43791.
3. Shen, Y., et al. 2021. δ-catenin participates in EGF/AKT/p21Waf signaling and induces prostate cancer cell proliferation and invasion. Int. J. Mol. Sci. 22: 5306.
4. Chen, G., et al. 2021. bFGF-mediated phosphorylation of δ-catenin increases its protein stability and the ability to induce the nuclear redistribution of β-catenin. Am. J. Cancer Res. 11: 3877-3892.

RESEARCH USE

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