SANTA CRUZ BIOTECHNOLOGY, INC.

β-catenin siRNA (r): sc-270011

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. It has been shown that the transmembrane phosphatase PTPμ associates with catenin/cadherin complexes and may regulate complex signaling.

CHROMOSOMAL LOCATION

Genetic locus: Ctnnb1 (rat) mapping to 8q32.

PRODUCT

β-catenin siRNA (r) 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 β-catenin shRNA Plasmid (r): sc-270011-SH and β-catenin shRNA (r) Lentiviral Particles: sc-270011-V as alternate gene silencing products.

For independent verification of β-catenin (r) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-270011A, sc-270011B and sc-270011C.

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

β-catenin siRNA (r) is recommended for the inhibition of β-catenin expression in rat 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

β-catenin (E-5): sc-7963 is recommended as a control antibody for monitoring of β-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 β-catenin gene expression knockdown using RT-PCR Primer: β-catenin (r)-PR: sc-270011-PR (20 µl, 600 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Sawant, D.A., et al. 2011. Role of β-catenin in regulating microvascular endothelial cell hyperpermeability. J. Trauma 70: 481-487.
2. Qian, J., et al. 2012. β-catenin pathway is required for TGF-β1 inhibition of PPARγ expression in cultured hepatic stellate cells. Pharmacol. Res. 66: 219-225.
3. Gong, F., et al. 2013. 14-3-3β regulates the proliferation of glioma cells through the GSK3β/β-catenin signaling pathway. Oncol. Rep. 30: 2976-2982.
4. Tsai, T.H., et al. 2014. Pigment epithelium-derived factor 34-mer peptide prevents liver fibrosis and hepatic stellate cell activation through down-regulation of the PDGF receptor. PLoS ONE 9: e95443.
5. Xie, B.S., et al. 2014. Involvement of β-catenin in matrine-induced autophagy and apoptosis in WB-F344 cells. Mol. Med. Rep. 9: 2547-2553.
6. Wang, J., et al. 2016. Inflammatory cytokines induce caveolin-1/β-catenin signalling in rat nucleus pulposus cell apoptosis through the p38 MAPK pathway. Cell Prolif. 49: 362-372.
7. Zhang, H., et al. 2017. Pigment epithelium-derived factor attenuates myocardial fibrosis via inhibiting endothelial-to-mesenchymal transition in rats with acute myocardial infarction. Sci. Rep. 7: 41932.
8. Shu, X.S., et al. 2020. Loss of β-catenin via activated GSK3β causes diabetic retinal neurodegeneration by instigating a vicious cycle of oxidative stress-driven mitochondrial impairment. Aging 12: 13437-13462.

RESEARCH USE

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