

## δ-catenin siRNA (m): sc-43022

### BACKGROUND

The catenins,  $\alpha$ ,  $\beta$  and  $\gamma$ , 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.  $\alpha$ -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.  $\beta$ -catenin associates with the cytoplasmic portion of E-cadherin, which is necessary for the function of E-cadherin as an adhesion molecule.  $\beta$ -catenin has also been found in complexes with the tumor suppressor protein APC.  $\gamma$ -catenin, also known as plakoglobin, binds with  $\alpha$ -catenin and N-cadherin.  $\delta$ -catenin interacts with presenilin 1 and is expressed in the brain. The gene encoding  $\delta$ -catenin maps to human chromosome 5p15.2. A hemizygous loss of the gene encoding  $\delta$ -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  $\alpha$ -actinin with the cadherin/catenin cell-cell adhesion complex via  $\alpha$ -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.
3. Breen, E., et al. 1995. Role of the E-cadherin/ $\alpha$ -catenin complex in modulating cell-cell and cell-matrix adhesive properties of invasive colon carcinoma cells. *Ann. Surg. Oncol.* 2: 378-385.
4. Pierceall, W.E., et al. 1995. Frequent alterations in E-cadherin and  $\alpha$ - and  $\beta$ -catenin expression in human breast cancer cell lines. *Oncogene* 11: 1319-1326.
5. Sacco, P.A., et al. 1995. Identification of plakoglobin domains required for association with N-cadherin and  $\alpha$ -catenin. *J. Biol. Chem.* 270: 20201-20206.
6. Ozawa, M., et al. 1995. Cloning of an alternative form of plakoglobin ( $\gamma$ -catenin) lacking the fourth armadillo repeat. *J. Biochem.* 118: 836-840.
7. Takayama, T., et al. 1996.  $\beta$ -catenin expression in human cancers. *Am. J. Pathol.* 148: 39-46.

### CHROMOSOMAL LOCATION

Genetic locus: Ctnnd2 (mouse) mapping to 15 B2.

### PRODUCT

$\delta$ -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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see  $\delta$ -catenin shRNA Plasmid (m): sc-43022-SH and  $\delta$ -catenin shRNA (m) Lentiviral Particles: sc-43022-V as alternate gene silencing products.

For independent verification of  $\delta$ -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-43022A, sc-43022B and sc-43022C.

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

### APPLICATIONS

$\delta$ -catenin siRNA (m) is recommended for the inhibition of  $\delta$ -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  $\mu$ M in 66  $\mu$ 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

$\delta$ -catenin (40.1): sc-81793 is recommended as a control antibody for monitoring of  $\delta$ -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-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

### RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor  $\delta$ -catenin gene expression knockdown using RT-PCR Primer:  $\delta$ -catenin (m)-PR: sc-43022-PR (20  $\mu$ 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.

### PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.