SANTA CRUZ BIOTECHNOLOGY, INC.

Axin siRNA (h): sc-41449

BACKGROUND

β-catenin is a component of both the cadherin cell adhesion system and the Wnt signaling pathway. Wnt signaling increases the amount of β-catenin by preventing its ubiquitination and degradation, allowing its direct interaction with transcription factors of the lymphoid enhancer factor/T cell factor family, and modulation of gene expression. Axin is involved in the degradation of β-catenin by acting as a scaffold to form a complex between β-catenin, adenomatous polyposis coli (APC) and GSK-3β. APC, which is phosphorylated by GSK-3β, induces degradation of β-catenin, thus inhibiting Wnt signal transduction. Conductin is 45% identical to Axin and appears to play a similar role to Axin in the Wnt signaling pathway.

REFERENCES

1. Hulsken, J., et al. 1994. E-cadherin and APC compete for the interaction with β-catenin and the cytoskeleton. J. Cell Biol. 127: 2061-2069.
2. Behrens, J., et al. 1996. Functional interaction of β-catenin with the transcription factor LEF-1. Nature 382: 638-642.
3. Aberle, H., et al. 1997. β-catenin is a target for the ubiquitin-proteasome pathway. EMBO J. 16: 3797-3804.
4. Zeng, L., et al. 1997. The mouse fused locus encodes Axin, an inhibitor of the Wnt signaling pathway that regulates embryonic axis formation. Cell 90: 181-192.

CHROMOSOMAL LOCATION

Genetic locus: AXIN1 (human) mapping to 16p13.3.

PRODUCT

Axin 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 Axin shRNA Plasmid (h): sc-41449-SH and Axin shRNA (h) Lentiviral Particles: sc-41449-V as alternate gene silencing products.

For independent verification of Axin (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-41449A, sc-41449B and sc-41449C.

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

Axin siRNA (h) is recommended for the inhibition of Axin 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

Axin (2B11): sc-293190 is recommended as a control antibody for monitoring of Axin 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 Axin gene expression knockdown using RT-PCR Primer: Axin (h)-PR: sc-41449-PR (20 µl, 491 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Gao, Y., et al. 2014. Overexpression of RNF146 in non-small cell lung cancer enhances proliferation and invasion of tumors through the Wnt/β-catenin signaling pathway. PLoS ONE 9: e85377.
2. Vasileiou, G., et al. 2015. Chromatin-remodeling-factor ARID1B represses Wnt/β-catenin signaling. Am. J. Hum. Genet. 97: 445-456.
3. Chen, Y., et al. 2016. Wnt-induced deubiquitination FOXM1 ensures nucleus β-catenin transactivation. EMBO J. 35: 668-684.
4. Eo, H.J., et al. 2016. Inhibition of Wnt signaling by silymarin in human colorectal cancer cells. Biomol. Ther. 24: 380-386.
5. Zhang, X., et al. 2020. TMED3 promotes proliferation and migration in breast cancer cells by activating Wnt/β-catenin signaling. Onco Targets Ther. 13: 5819-5830.

RESEARCH USE

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