SANTA CRUZ BIOTECHNOLOGY, INC.

ROR1 siRNA (m): sc-76425

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The Power to Question

BACKGROUND

The ROR-family receptor tyrosine kinases consist of two structurally related proteins, ROR1 and ROR2. These proteins are characterized by having intracellular tyrosine kinase domains, which are highly related to Trk-family kinases, extracellular Frizzled-like cysteine-rich domains (CRDs) and Kringle domains. The ROR family members are highly conserved among species, such as *C. elegans, Drosophila, Xenopus* and mammals. ROR1 and ROR2 are both involved in organogenesis with particular emphasis in neuronal differentiation. Increased expression of ROR1 in acute lymphoblastic leukemias (ALLs) as well as chronic lymphocytic leukemias (CLLs) implicate this protein as a potential tool for targeted immunotherapy in these diseases. ROR2 is involved in the Wnt-signalling pathway, and mutations in ROR2 lead to brachydactyly type B and Robinow syndrome.

REFERENCES

1. Masiakowski, P. and Carroll, R.D. 1992. A novel family of cell surface receptors with tyrosine kinase-like domain. J. Biol. Chem. 267: 26181-26190.
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3. Yoda, A., et al. 2003. Expression and function of the ROR-family receptor tyrosine kinases during development: lessons from genetic analyses of nematodes, mice, and humans. J. Recept. Signal Transduct. Res. 23: 1-15.
4. Shabani, M., et al. 2007. Overexpression of orphan receptor tyrosine kinase ROR1 as a putative tumor-associated antigen in Iranian patients with acute lymphoblastic leukemia. Tumour Biol. 28: 318-326.
5. Winkel, A., et al. 2008. Wnt-ligand-dependent interaction of TAK1 (TGF-β-activated kinase-1) with the receptor tyrosine kinase ROR2 modulates canonical Wnt-signalling. Cell. Signal. 20: 2134-2144.
6. Baskar, S., et al. 2008. Unique cell surface expression of receptor tyrosine kinase ROR1 in human B-cell chronic lymphocytic leukemia. Clin. Cancer Res. 14: 396-404.
7. Daneshmanesh, A.H., et al. 2008. ROR1, a cell surface receptor tyrosine kinase is expressed in chronic lymphocytic leukemia and may serve as a putative target for therapy. Int. J. Cancer 123: 1190-1195.

CHROMOSOMAL LOCATION

Genetic locus: Ror1 (mouse) mapping to 4 C6.

PRODUCT

ROR1 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 ROR1 shRNA Plasmid (m): sc-76425-SH and ROR1 shRNA (m) Lentiviral Particles: sc-76425-V as alternate gene silencing products.

For independent verification of ROR1 (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-76425A, sc-76425B and sc-76425C.

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

ROR1 siRNA (m) is recommended for the inhibition of ROR1 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

ROR1 (60-D): sc-130386 is recommended as a control antibody for monitoring of ROR1 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 ROR1 gene expression knockdown using RT-PCR Primer: ROR1 (m)-PR: sc-76425-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.