SANTA CRUZ BIOTECHNOLOGY, INC.

RARα siRNA (h): sc-29465

BACKGROUND

Retinoids (RA) are metabolites of vitamin A (retinol) that are important signaling molecules during vertebrate development and tissue differentiation. RAs activate the retinoic acid receptor (RAR) and retinoid X receptor (RXR) nuclear transcription factor families. Most retinoid forms activate RAR family members, whereas RXR family members are activated by 9-*cis*-RA only. RAR family members, which include RARα, RARβ and RARγ, have a high affinity for all-*trans* retinoic acids and belong to the same class of nuclear transcription factors as thyroid hormone receptors, vitamin D_3 receptor and ecdysone receptor. RAR isoforms are expressed in distinct patterns throughout development and in the mature organism. The human RARα gene maps to chromosome 17q21.2 and is implicated in the chromosomal translocation associated with acute promyelocytic leukemia (APL-M3). Specifically, the RARα gene is fused with the promyelocytic leukemia (PML) gene, which encodes the fusion protein PML/RARα. The PML/RARα fusion protein inhibits PML-dependent apoptotic pathways and halts myeloid differentiation at the promyelocytic stage.

CHROMOSOMAL LOCATION

Genetic locus: RARA (human) mapping to 17q21.2.

PRODUCT

RARα 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 RARα shRNA Plasmid (h): sc-29465-SH and RARα shRNA (h) Lentiviral Particles: sc-29465-V as alternate gene silencing products.

For independent verification of RARα (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-29465A, sc-29465B and sc-29465C.

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

RARα siRNA (h) is recommended for the inhibition of RARα expression in human cells.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

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.

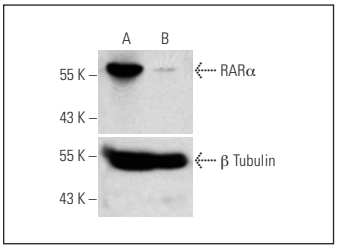
GENE EXPRESSION MONITORING

RARα (C-1): sc-515796 is recommended as a control antibody for monitoring of RARα 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor RARα gene expression knockdown using RT-PCR Primer: RARα (h)-PR: sc-29465-PR (20 µl, 446 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

DATA



RARα siRNA (h): sc-29465. Western blot analysis of RARα expression in non-transfected control (**A**) and RARα siRNA transfected (**B**) HeLa cells. Blot probed with RARα (C-20): sc-551. β Tubulin (D-10): sc-5274 used as specificity and loading control.

SELECT PRODUCT CITATIONS

1. Weiss, F.U., et al. 2009. Retinoic acid receptor antagonists inhibit miR-10a expression and block metastatic behavior of pancreatic cancer. Gastroenterology 137: 2136-2145.e1-7.
2. Roe, M.M., et al. 2020. P38 MAPK signaling mediates retinoic acid-induced CD103 expression in human dendritic cells. Immunology 161: 230-244.
3. Alessio, N., et al. 2024. IGFBP5 is released by senescent cells and is internalized by healthy cells, promoting their senescence through interaction with retinoic receptors. Cell Commun. Signal. 22: 122.

RESEARCH USE

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