SANTA CRUZ BIOTECHNOLOGY, INC.

dcTRAILR1 siRNA (m): sc-60512

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The Power to Question

BACKGROUND

TRAILR1 and TRAILR2, receptors for the tumor necrosis factor-related apoptosis-inducing ligand (TRAIL), are members of the tumor necrosis factor (TNF) family of cytokines and induce apoptosis in a broad range of cells. The two function as dosage-dependent tumor suppressors, and both TRAILR1 and TRAILR2 activate a caspase-dependent apoptotic pathway but, unlike TRAILR1, TRAILR2 mediates apoptosis via the intracellular adaptor molecule FADD/MORT1. Since TRAIL triggers apoptosis in tumor cells without toxicity to normal cells, these proteins are implicated in the treatment of cancer, especially for patients whose disease is in relapse. Decoy TRAIL receptor 1 (or dcTRAILR1) is a receptor for the cytotoxic ligand TRAIL. dcTRAILR1 lacks a cytoplasmic death domain and so is not capable of inducing apoptosis or the NFκB pathway. dcTRAILR1 may protect cells against TRAIL mediated apoptosis through ligand competition.

REFERENCES

1. Walczak, H., et al. 1997. TRAILR2: a novel apoptosis-mediating receptor for TRAIL. EMBO J. 16: 5386-5397.
2. Neznanov, N., et al. 2002. Unstable receptors disappear from cell surface during poliovirus infection. Med. Sci. Monit. 8: BR391-BR396.
3. Petit, F., et al. 2002. Productive HIV-1 infection of primary CD4+ T cells induces mitochondrial membrane permeabilization leading to a caspase-independent cell death. J. Biol. Chem. 277: 1477-1487.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 603598. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Harper, N., et al. 2003. Fas-associated death domain protein and caspase-8 are not recruited to the tumor necrosis factor receptor 1 signaling complex during tumor necrosis factor-induced apoptosis. J. Biol. Chem. 278: 25534-25541.
6. MacFarlane, M., et al. 2005. TRAIL receptor-selective mutants signal to apoptosis via TRAILR1 in primary lymphoid malignancies. Cancer Res. 65: 11265-11270.
7. Rubio-Moscardo, F., et al. 2005. Characterization of 8p21.3 chromosomal deletions in B-cell lymphoma: TRAILR1 and TRAILR2 as candidate dosage-dependent tumor suppressor genes. Blood 106: 3214-3222.
8. Menoret, E., et al. 2006. Mcl-1L cleavage is involved in TRAILR1- and TRAILR2-mediated apoptosis induced by HGS-ETR1 and HGS-ETR2 human mAbs in myeloma cells. Blood 108: 1346-1352.
9. Younes, M., et al. 2006. Functional expression of TRAIL receptors TRAILR1 and TRAILR2 in esophageal adenocarcinoma. Eur. J. Cancer 42: 542-547.

CHROMOSOMAL LOCATION

Genetic locus: Tnfrsf23 (mouse) mapping to 7 F5.

PROTOCOLS

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

PRODUCT

dcTRAILR1 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 dcTRAILR1 shRNA Plasmid (m): sc-60512-SH and dcTRAILR1 shRNA (m) Lentiviral Particles: sc-60512-V as alternate gene silencing products.

For independent verification of dcTRAILR1 (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-60512A, sc-60512B and sc-60512C.

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

dcTRAILR1 siRNA (m) is recommended for the inhibition of dcTRAILR1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor dcTRAILR1 gene expression knockdown using RT-PCR Primer: dcTRAILR1 (m)-PR: sc-60512-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.