

TRAIL siRNA (h): sc-36719

BACKGROUND

Proteins belonging to the tumor necrosis factor (TNF) superfamily are potent mediators of the inflammation and immune systems. Members of the TNF superfamily include TNF β , lymphotoxin β (LT β), CD40L, CD30L, CD27L, O α 40L, 4-1BBL and FAS-L (Apo-1). Most TNF family members are type II transmembrane proteins that are proteolytically processed at their carboxy-terminal extracellular domain to form a soluble homotrimeric molecule. The extracellular domain of an additional TNF family member, designated TNF-related apoptosis-inducing ligand (TRAIL) or Apo-2L, exhibits 14-28% homology with other members of the TNF family. Like soluble FAS-L, soluble TRAIL will induce apoptosis. The morphological and cellular changes caused by the introduction of soluble TRAIL to Jurkat cells are indistinguishable from those caused by the introduction of soluble FAS-L. Unlike FAS-L, whose expression is more or less restricted to activated T cells, significant levels of TRAIL are observed in many tissues and it is constitutively expressed by some cell lines.

REFERENCES

1. Smith, C.A., et al. 1994. The TNF receptor superfamily of cellular and viral proteins: activation, costimulation and death. *Cell* 76: 959-962.
2. Cosman, D. 1994. A family of ligands for the TNF receptor superfamily. *Stem Cells* 12: 440-455.
3. Cleveland, J.L., et al. 1995. Contenders in FAS-L/TNF death signaling. *Cell* 81: 479-482.
4. Nagata, S., et al. 1995. The FAS death factor. *Science* 267: 1449-1456.
5. Wiley, S.R., et al. 1995. Identification and characterization of a new member of the TNF family that induces apoptosis. *Immunity* 3: 673-682.

CHROMOSOMAL LOCATION

Genetic locus: TNFSF10 (human) mapping to 3q26.31.

PRODUCT

TRAIL 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TRAIL shRNA Plasmid (h): sc-36719-SH and TRAIL shRNA (h) Lentiviral Particles: sc-36719-V as alternate gene silencing products.

For independent verification of TRAIL (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-36719A, sc-36719B and sc-36719C.

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

APPLICATIONS

TRAIL siRNA (h) is recommended for the inhibition of TRAIL 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 μ M in 66 μ 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

TRAIL (D-3): sc-8440 is recommended as a control antibody for monitoring of TRAIL 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 κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 TRAIL gene expression knockdown using RT-PCR Primer: TRAIL (h)-PR: sc-36719-PR (20 μ l, 502 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Zhu, H., et al. 2007. Hepatitis C virus triggers apoptosis of a newly developed hepatoma cell line through antiviral defense system. *Gastroenterology* 133: 1649-1659.
2. Kuribayashi, K., et al. 2008. TNFSF10 (TRAIL), a p53 target gene that mediates p53-dependent cell death. *Cancer Biol. Ther.* 7: 2034-2038.
3. Azahri, N.S., et al. 2012. Sp1, acetylated histone-3 and p300 regulate TRAIL transcription: mechanisms of PDGF-BB-mediated VSMC proliferation and migration. *J. Cell. Biochem.* 113: 2597-2606.
4. Li, Z., et al. 2016. Serine 574 phosphorylation alters transcriptional programming of FOXO3 by selectively enhancing apoptotic gene expression. *Cell Death Differ.* 23: 583-595.

RESEARCH USE

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