SANTA CRUZ BIOTECHNOLOGY, INC.

dcTRAILR2 siRNA (m): sc-60514

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. Decoy TRAILR2 (or dcTRAILR2) represents the receptor for the cytotoxic ligand TNFSF10/TRAIL. dcTRAILR2 lacks a cytoplasmic death domain and is therefore not able to induce apoptosis or the NFκB pathway. dcTRAILR2 functions to protect cells against TRAIL mediated apoptosis, possibly through ligand competition.

REFERENCES

1. Wiley, S.R., et al. 1996. Identification and characterization of a new member of the TNF family that induces apoptosis. Immunity 3: 673-682.
2. Walczak, H., et al. 1997. TRAILR2: a novel apoptosis-mediating receptor for TRAIL. EMBO J. 16: 5386-5397.
3. Musgrave, B.L., et al. 1999. Murine TRAIL (TNF-related apoptosis inducing ligand) expression induced by T cell activation is blocked by Rapamycin, Cyclosporin A, and inhibitors of phosphatidylinositol 3-kinase, protein kinase C, and protein tyrosine kinases: evidence for TRAIL induction via the T cell receptor signaling pathway. Exp. Cell Res. 252: 96-103.
4. Shin, M.S., et al. 2001. Mutations of tumor necrosis factor-related apoptosis-inducing ligand receptor 1 (TRAILR1) and receptor 2 (TRAILR2) genes in metastatic breast cancers. Cancer Res. 61: 4942-4946.
5. Schneider, P., et al. 2003. Identification of a new murine tumor necrosis factor receptor locus that contains two novel murine receptors for tumor necrosis factor-related apoptosis-inducing ligand (TRAIL). J. Biol. Chem. 278: 5444-5454.
6. Melloni, E., et al. 2005. Functional expression of TRAIL and TRAIL-R2 during human megakaryocytic development. J. Cell. Physiol. 204: 975-982.
7. Inoue, S., et al. 2006. Upregulation of TRAIL-R2 is not involved in HDACi mediated sensitization to TRAIL-induced apoptosis. Cell Death Differ. 13: 2160-2162.

CHROMOSOMAL LOCATION

Genetic locus: Tnfrsf22 (mouse) mapping to 7 F5.

PRODUCT

dcTRAILR2 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 dcTRAILR2 shRNA Plasmid (m): sc-60514-SH and dcTRAILR2 shRNA (m) Lentiviral Particles: sc-60514-V as alternate gene silencing products.

For independent verification of dcTRAILR2 (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-60514A, sc-60514B and sc-60514C.

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

dcTRAILR2 siRNA (m) is recommended for the inhibition of dcTRAILR2 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

dcTRAILR2 (Lucy-1): sc-57078 is recommended as a control antibody for monitoring of dcTRAILR2 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 dcTRAILR2 gene expression knockdown using RT-PCR Primer: dcTRAILR2 (m)-PR: sc-60514-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.