SANTA CRUZ BIOTECHNOLOGY, INC.

CD137 siRNA (h): sc-29961

BACKGROUND

CD137, also designated ILA and 4-1BB in mouse, belongs to the tumor necrosis factor receptor family and delivers a costimulatory signal to T lymphocytes. CD137 is expressed on activated T cells and binds an inducible ligand that is found on B cells, macrophages, and dendritic cells. Interactions between CD137 and its ligand are involved in antigen presentation and the generation of cytotoxic T cells. Crosslinking of the CD137 ligand induces apoptosis in resting lymphocytes. In contrast, CD137 regulates peripheral monocyte survival by inducing a cytokine release profile, and is mediated by M-CSF and to a lesser extent by granulocyte-macrophage colony-stimulating factor and IL-3. Soluble forms of CD137 are found in sera from patients with rheumatoid arthritis and may provide a negative control mechanism for immune responses.

REFERENCES

1. Michel, J., et al. 1999. CD-137-induced apoptosis is independent of CD95. Immunology 98: 42-46.
2. Langstein, J., et al. 1999. Identification of CD137 as a potent monocyte survival factor. J. Leukoc. Biol. 65: 829-833.
3. Langstein, J., et al. 2000. Comparative analysis of CD137 and LPS effects on monocyte activation, survival, and proliferation. Biochem. Biophys. Res. Commun. 24: 117-122.
4. Kienzle, G., et al. 2000. CD137 (ILA/4-1BB), expressed by primary human monocytes, induces monocyte activation and apoptosis of B lymphocytes. Int. Immunol. 12: 73-82.
5. Michel, J., et al. 2000. Expression of soluble cd137 correlates with activation-induced cell death of lymphocytes. Cytokine 12: 742-746.
6. Dimberg, J., et al. 2006. Expression of CD137 and CD137 ligand in colorectal cancer patients. Oncol. Rep. 15: 1197-200.
7. McMillin, D.W., et al. 2006. Complete regression of large solid tumors using engineered drug-resistant hematopoietic cells and anti-CD137 immunotherapy. Hum. Gene Ther. 17: 798-806.
8. Myers, L., et al. 2006. Combined CD137 (4-1BB) and adjuvant therapy generates a developing pool of peptide-specific CD8 memory T cells. Int. Immunol. 18: 325-333.

CHROMOSOMAL LOCATION

Genetic locus: TNFRSF9 (human) mapping to 1p36.23.

PRODUCT

CD137 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 CD137 shRNA Plasmid (h): sc-29961-SH and CD137 shRNA (h) Lentiviral Particles: sc-29961-V as alternate gene silencing products.

For independent verification of CD137 (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-29961A, sc-29961B and sc-29961C.

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

CD137 siRNA (h) is recommended for the inhibition of CD137 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 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

CD137 (BBK-2): sc-58947 is recommended as a control antibody for monitoring of CD137 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 CD137 gene expression knockdown using RT-PCR Primer: CD137 (h)-PR: sc-29961-PR (20 µl, 553 bp). 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.