SANTA CRUZ BIOTECHNOLOGY, INC.

CRLF1 siRNA (h): sc-97674

BACKGROUND

CRLF1 (cytokine receptor-like factor 1), also known as CLF, NR6, CISS, CISS1, ZcytoR5 or CLF-1, is a member of the type I cytokine receptor family and belongs to the type 3 subfamily. Expressed in a variety of tissues, CRLF1 is a secreted protein that plays a role in the CNTFR (ciliary neurotrophic factor receptor) pathway which is involved in the development and maintenance of the nervous system. More specifically, CRLF1 forms a heteromeric ligand with NNT-1/BSF-3 and competes with CNTF for binding to CNTFR. Mutations in the gene encoding CRLF1 can result in the autosomal recessive disorders cold-induced sweating syndrome 1 (CISS1) and Crisponi syndrome. CISS1 is a disease characterized by profuse sweating in temperatures of 7 to 18 degrees Celsius. Patients with Crisponi syndrome experience feeding and respiratory difficulties, congenital muscular contractions of facial muscles and hyperthermic episodes causing them to die within the first few months of life.

REFERENCES

1. Clancy, B.M., et al. 2003. A gene expression profile for endochondral bone formation: oligonucleotide microarrays establish novel connections between known genes and BMP-2-induced bone formation in mouse quadriceps. Bone 33: 46-63.
2. Knappskog, P.M., et al. 2003. Cold-induced sweating syndrome is caused by mutations in the CRLF1 gene. Am. J. Hum. Genet. 72: 375-383.
3. Lattanzio, F.A., et al. 2005. Cocaine increases intracellular calcium and reactive oxygen species, depolarizes mitochondria, and activates genes associated with heart failure and remodeling. Cardiovasc. Toxicol. 5: 377-390.
4. Hahn, A.F., et al. 2006. Cold-induced sweating syndrome: a report of two cases and demonstration of genetic heterogeneity. J. Neurol. Sci. 250: 62-70.
5. Rousseau, F., et al. 2006. Inactivation of cardiotrophin-like cytokine, a second ligand for ciliary neurotrophic factor receptor, leads to cold-induced sweating syndrome in a patient. Proc. Natl. Acad. Sci. USA 103: 10068-10073.

CHROMOSOMAL LOCATION

Genetic locus: CRLF1 (human) mapping to 19p13.11.

PRODUCT

CRLF1 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 CRLF1 shRNA Plasmid (h): sc-97674-SH and CRLF1 shRNA (h) Lentiviral Particles: sc-97674-V as alternate gene silencing products.

For independent verification of CRLF1 (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-97674A, sc-97674B and sc-97674C.

RESEARCH USE

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

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

CRLF1 siRNA (h) is recommended for the inhibition of CRLF1 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

CRLF1 (QQ9): sc-100297 is recommended as a control antibody for monitoring of CRLF1 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 CRLF1 gene expression knockdown using RT-PCR Primer: CRLF1 (h)-PR: sc-97674-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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