SANTA CRUZ BIOTECHNOLOGY, INC.

Codanin-1 siRNA (h): sc-62132

BACKGROUND

The congenital dyserythropoietic anemias (CDAs) are an uncommon and heterogeneous group of disorders that are characterized by markedly ineffective erythropoiesis and, usually, striking dysplastic changes in erythroblasts. Congenital dyserythropoietic anemia type 1 (CDA1) is a rare autosomal recessive disorder with ineffective erythropoiesis, characteristic morphological abnormalities of erythroblasts and iron overloading. CDA1 is caused by mutations in the CDAN1 gene, which maps to chromosome 15q15.2 and encodes the 1,227 amino acid protein Codanin-1. Codanin-1 has a 150 residue N-terminal domain with sequence similarity to collagens and two shorter segments that show weak similarities to the microtubule-associated proteins synapsin and MAP-1B (neuraxin). Research indicates that Codanin-1 may be involved in nuclear envelope integrity, conceivably related to microtubule attachments. Skeletal anomalism has been associated with mutations of CDAN1, indicating that Codanin-1 may play a role in the development of the skeleton.

REFERENCES

1. Tamary, H., et al. 1996. Clinical features and studies of erythropoiesis in Israeli Bedouins with congenital dyserythropoietic anemia type I. Blood 87: 1763-1770.
2. Dgany, O., et al. 2002. Congenital dyserythropoietic anemia type 1 is caused by mutations in Codanin-1. Am. J. Hum. Genet. 71: 1467-1474.
3. Pielage, J., et al. 2003. The *Drosophila* cell survival gene discs lost encodes a cytoplasmic Codanin-1-like protein, not a homolog of tight junction PDZ protein Patj. Dev. Cell 5: 841-851.
4. Delaunay, J. 2003. Red cell membrane and erythropoiesis genetic defects. Hematol. J. 4: 225-232.
5. Heimpel, H., et al. 2005. Congenital dyserythropoietic anemia type 1 (CDA1): molecular genetics, clinical appearance, and prognosis based on long-term observation. Blood 107: 334-340.

CHROMOSOMAL LOCATION

Genetic locus: CDAN1 (human) mapping to 15q15.2.

PRODUCT

Codanin-1 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 Codanin-1 shRNA Plasmid (h): sc-62132-SH and Codanin-1 shRNA (h) Lentiviral Particles: sc-62132-V as alternate gene silencing products.

For independent verification of Codanin-1 (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-62132A, sc-62132B and sc-62132C.

PROTOCOLS

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

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

Codanin-1 siRNA (h) is recommended for the inhibition of Codanin-1 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

Codanin-1 (G-1): sc-365839 is recommended as a control antibody for monitoring of Codanin-1 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 Codanin-1 gene expression knockdown using RT-PCR Primer: Codanin-1 (h)-PR: sc-62132-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.