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CD133 siRNA (h): sc-42820

BACKGROUND

CD133, also known as PROM1 or Prominin, is a stem cell antigen that may be useful for the selection and expansion of hematopoietic cells, and may be used as a positive marker for the characterization of trophoblast cell lines. The human CD133 gene maps to chromosome 4p15.32 and encodes an 865 amino acid protein. The CD133 gene codes for a pentaspan transmembrane glycoprotein that is expressed on primitive hematopoietic stem, progenitor, retinoblastoma, hemangioblasts and neural stem cells and developing epithelium. The 5-TM structure includes an extracellular N-terminus, two short intracellular loops, two large extracellular loops and an intracellular C-terminus. CD133 is a candidate gene for retinal proteins that are targeted to plasma membrane protrusions. These retinal proteins, including CD133, may influence the shedding of photoreceptive membranes from the terminal end of the outer segments of vertebrate photoreceptors, where they are phagocytosed by the retinal pigment epithelium, and represent candidates for inherited retinal degenerations.

REFERENCES

1. Yin, A.H., et al. 1997. AC133, a novel marker for human hematopoietic stem and progenitor cells. *Blood* 90: 5002-5012.
2. Miraglia, S., et al. 1997. A novel five-transmembrane hematopoietic stem cell antigen: isolation, characterization and molecular cloning. *Blood* 90: 5013-5021.
3. Online Mendelian Inheritance in Man, OMIM™. 1999. Johns Hopkins University, Baltimore, MD. MIM Number: 604365. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Kobari, L., et al. 2001. CD133⁺ cell selection is an alternative to CD34⁺ cell selection for *ex vivo* expansion of hematopoietic stem cells. *J. Hematother. Stem Cell Res.* 10: 273-281.
5. Potgens, A.J., et al. 2001. Human trophoblast contains an intracellular protein reactive with an antibody against CD133—a novel marker for trophoblast. *Placenta* 22: 639-645.
6. LocusLink Report (LocusID: 2243). <http://www.ncbi.nlm.nih.gov/LocusLink/>

CHROMOSOMAL LOCATION

Genetic locus: PROM1 (human) mapping to 4p15.32.

PRODUCT

CD133 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 CD133 shRNA Plasmid (h): sc-42820-SH and CD133 shRNA (h) Lentiviral Particles: sc-42820-V as alternate gene silencing products.

For independent verification of CD133 (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-42820A, sc-42820B and sc-42820C.

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

CD133 siRNA (h) is recommended for the inhibition of CD133 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

CD133 (E-11): sc-365537 is recommended as a control antibody for monitoring of CD133 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).

SELECT PRODUCT CITATIONS

1. Grunt, T.W., et al. 2015. Prominin-1 (CD133, AC133) and dipeptidyl-peptidase IV (CD26) are indicators of infinite growth in colon cancer cells. *Am. J. Cancer Res.* 5: 560-574.

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.