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DICE1 shRNA (m) Lentiviral Particles: sc-45803-V

BACKGROUND

DICE1 (deleted in cancer 1) is a protein mapping to chromosome 13q14, which appears to be a tumor suppressor gene in non-small cell lung carcinoma. Expression of DICE1 is lost or downregulated in most non-small lung carcinomas compared to normal lung tissue. This is most likely due to a loss of heterozygosity (LOH) of chromosome 13, which is prone to deletions and rearrangements in human lung cancers. The DICE1 gene is extremely homologous to the mouse protein, DBI-1, at the carboxy terminus. DBI-1, when expressed at high levels, interferes with the mitogenic response to IGF-1. Both DICE1 and DBI-1 contain the highly conserved DEAD-box motif, which suggests that these proteins are involved in critical aspects of cellular function and regulation.

REFERENCES

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- Hoff, H.B. 3rd, et al. 1998. DBI-1, a novel gene related to the notch family, modulates mitogenic responses to Insulin-like growth factor 1. *Exp. Cell Res.* 238: 359-370.
- Wieland, I., et al. 1999. Isolation of DICE1: A gene frequently affected by LOH and downregulated in lung carcinomas. *Oncogene* 18: 4530-4537.
- Kohno, T., et al. 1999. How many tumor suppressor genes are involved in human lung carcinogenesis? *Carcinogenesis* 20: 1403-1410.
- Irion, U., et al. 1999. Developmental and cell biological functions of the *Drosophila* DEAD-box protein abstract. *Curr. Biol.* 9: 1373-1381.
- Hagberg, H., et al. 2004. PARP-1 gene disruption in mice preferentially protects males from perinatal brain injury. *J. Neurochem.* 90: 1068-1075.

CHROMOSOMAL LOCATION

Genetic locus: Ints6 (mouse) mapping to 14 D1.

PRODUCT

DICE1 shRNA (m) Lentiviral Particles is a pool of concentrated, transduction-ready viral particles containing 3 target-specific constructs that encode 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each vial contains 200 μ l frozen stock containing 1.0×10^6 infectious units of virus (IFU) in Dulbecco's Modified Eagle's Medium with 25 mM HEPES pH 7.3. Suitable for 10-20 transductions. Also see DICE1 siRNA (m): sc-45803 and DICE1 shRNA Plasmid (m): sc-45803-SH as alternate gene silencing products.

RESEARCH USE

The purchase of this product conveys to the buyer the nontransferable right to use the purchased amount of the product and all replicates and derivatives for research purposes conducted by the buyer in his laboratory only (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for Commercial Purposes.

APPLICATIONS

DICE1 shRNA (m) Lentiviral Particles is recommended for the inhibition of DICE1 expression in mouse cells.

SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200 μ l frozen viral stock containing 1.0×10^6 infectious units of virus (IFU); contains an shRNA construct encoding a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA.

GENE EXPRESSION MONITORING

DICE1 (H-114): sc-292600 is recommended as a control antibody for monitoring of DICE1 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 (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor DICE1 gene expression knockdown using RT-PCR Primer: DICE1 (m)-PR: sc-45803-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

BIOSAFETY

Lentiviral particles can be employed in standard Biosafety Level 2 tissue culture facilities (and should be treated with the same level of caution as with any other potentially infectious reagent). Lentiviral particles are replication-incompetent and are designed to self-inactivate after transduction and integration of shRNA constructs into genomic DNA of target cells.

STORAGE

Store lentiviral particles at -80° C. Stable for at least one year from the date of shipment. Once thawed, particles can be stored at 4° C for up to one week. Avoid repeated freeze thaw cycles.

PROTOCOLS

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