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SLC5A8 shRNA (h) Lentiviral Particles: sc-45289-V

BACKGROUND

SLC5A8, a member of the sodium/glucose co-transporter gene family, mediates the transport of a variety of monocarboxylates, including short-chain fatty acids, lactate, nicotinate and pyruvate. It may also transport iodide. SLC5A8 is expressed in colon, ileum, kidney, thyroid gland and brain. Cancers detected in these tissues may involve the silencing of the SLC5A8 gene, which is associated with the hypermethylation of CpG islands in exon 1. Also, acetylation of Histone H3 in the 5' region of the gene correlates directly with SLC5A8 expression and inversely with DNA methylation, suggesting its involvement in silencing SLC5A8 expression in cancers. The gene encoding human SLC5A8 maps to chromosome 12q23.1.

REFERENCES

1. Coady, M.J., et al. 2004. The human tumour suppressor gene SLC5A8 expresses a Na⁺-monocarboxylate cotransporter. *J. Physiol.* 557: 719-731.
2. Gopal, E., et al. 2004. Expression of SLC5A8 in kidney and its role in Na⁺-coupled transport of lactate. *J. Biol. Chem.* 279: 44522-44532.
3. Ueno, M., et al. 2004. Aberrant methylation and Histone deacetylation associated with silencing of SLC5A8 in gastric cancer. *Tumour Biol.* 25: 134-140.
4. Ganapathy, V., et al. 2005. Biological functions of SLC5A8, a candidate tumour suppressor. *Biochem. Soc. Trans.* 33: 237-240.
5. Gopal, E., et al. 2005. Sodium-coupled and electrogenic transport of B-complex vitamin nicotinic acid by SLC5A8, a member of the Na/glucose co-transporter gene family. *Biochem. J.* 388: 309-316.

CHROMOSOMAL LOCATION

Genetic locus: SLC5A8 (human) mapping to 12q23.1.

PRODUCT

SLC5A8 shRNA (h) 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 µl frozen stock containing 1.0 x 10⁶ 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 SLC5A8 siRNA (h): sc-45289 and SLC5A8 shRNA Plasmid (h): sc-45289-SH as alternate gene silencing products.

APPLICATIONS

SLC5A8 shRNA (h) Lentiviral Particles is recommended for the inhibition of SLC5A8 expression in human cells.

SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200 µl frozen viral stock containing 1.0 x 10⁶ 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

SLC5A8 (A-15): sc-34189 is recommended as a control antibody for monitoring of SLC5A8 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 donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SLC5A8 gene expression knockdown using RT-PCR Primer: SLC5A8 (h)-PR: sc-45289-PR (20 µl). 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.

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.

PROTOCOLS

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