SANTA CRUZ BIOTECHNOLOGY, INC.

SLC5A8 siRNA (m): sc-45290

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.
6. Hong, C., et al. 2005. Shared epigenetic mechanisms in human and mouse gliomas inactivate expression of the growth suppressor SLC5A8. Cancer Res. 65: 3617-3623.
7. Porra, V., et al. 2005. Silencing of the tumor suppressor gene SLC5A8 is associated with BRAF mutations in classical papillary thyroid carcinomas. J. Clin. Endocrinol. Metab. 90: 3028-3035.

CHROMOSOMAL LOCATION

Genetic locus: Slc5a8 (mouse) mapping to 10 C1.

PRODUCT

SLC5A8 siRNA (m) 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 SLC5A8 shRNA Plasmid (m): sc-45290-SH and SLC5A8 shRNA (m) Lentiviral Particles: sc-45290-V as alternate gene silencing products.

For independent verification of SLC5A8 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-45290A, sc-45290B and sc-45290C.

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

SLC5A8 siRNA (m) is recommended for the inhibition of SLC5A8 expression in mouse 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SLC5A8 gene expression knockdown using RT-PCR Primer: SLC5A8 (m)-PR: sc-45290-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. López-Barradas, A., et al. 2016. Insulin and SGK1 reduce the function of Na^+/monocarboxylate transporter 1 (SMCT1/SLC5A8). Am. J. Physiol. Cell Physiol. 311: C720-C734.

RESEARCH USE

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