SANTA CRUZ BIOTECHNOLOGY, INC.

SLC19A1 siRNA (bovine): sc-270691

BACKGROUND

SLC19A1 (solute carrier family 19 member 1), also designated reduced folate carrier protein (RFC-1), folate transporter 1, placental folate transporter (FOLT), or intestinal folate carrier (IFC-1), is a multi-pass membrane protein that acts as a transporter for folate intake. In human placental choriocarcinoma cells, folate intake occurs via potocytosis, a mechanism that couples three components: folate receptor, folate transporter and a H^+-pump. SLC19A1 is a heavily glycosylated protein that is primarily detected in liver and placenta. SLC19A1 mediates the uptake of methotrexate (MTX), the antifolate drug widely used as both an anticancer chemotherapeutic drug and as an immunosuppressive agent. MTX mimics natural folates to inhibit critical cellular biosynthetic pathways.

REFERENCES

1. Moscow, J.A., et al. 1995. Isolation of a gene encoding a human reduced folate carrier (RFC1) and analysis of its expression in transport-deficient, methotrexate-resistant human breast cancer cells. Cancer Res. 55: 3790-3794.
2. Prasad, P.D., et al. 1995. Molecular cloning of the human placental folate transporter. Biochem. Biophys. Res. Commun. 206: 681-687.
3. Wong, S.C., et al. 1995. Isolation of human cDNAs that restore methotrexate sensitivity and reduced folate carrier activity in methotrexate transport-defective Chinese hamster ovary cells. J. Biol. Chem. 270: 17468-17475.
4. Chiao, J.H., et al. 1997. RFC-1 gene expression regulates folate absorption in mouse small intestine. J. Biol. Chem. 272: 11165-11170.
5. Moscow, J.A. 1998. Methotrexate transport and resistance. Leuk. Lymphoma 30: 215-224.

CHROMOSOMAL LOCATION

Genetic locus: SLC19A1 (bovine) mapping to 1.

PRODUCT

SLC19A1 siRNA (bovine) is a pool of 2 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 SLC19A1 shRNA Plasmid (bovine): sc-270691-SH and SLC19A1 shRNA (bovine) Lentiviral Particles: sc-270691-V as alternate gene silencing products.

For independent verification of SLC19A1 (bovine) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-270691A and sc-270691B.

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.

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

SLC19A1 siRNA (bovine) is recommended for the inhibition of SLC19A1 expression in bovine 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 SLC19A1 gene expression knockdown using RT-PCR Primer: SLC19A1 (bovine)-PR: sc-270691-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.