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UT-B siRNA (m): sc-154953

BACKGROUND

The Kidd antigen system (also referred to as the Jk antigen system) exists on the membrane of red blood cells (erythrocytes) and is responsible for urea transport and blood type determination. On the surface of red blood cells, Jk antigens (which exist as two alleles, designated Jk^a and Jk^b) are associated with a protein, known as UT-B, whose function is to mediate urea transport in kidneys and erythrocytes. UT-B, also known as SLC14A (solute carrier family 14 (urea transporter), member 1 (Kidd blood group)), Jk, UT1, UTE, HUT11 or RACH1, is a 389 amino acid multi-pass membrane protein that exists as a low-affinity urea transporter and is responsible for determination of Jk alleles. The gene encoding UT-B maps to human chromosome 18, which houses over 300 protein-coding genes and contains nearly 76 million bases.

REFERENCES

1. Geitvik, G.A., et al. 1987. The Kidd (JK) blood group locus assigned to chromosome 18 by close linkage to a DNA-RFLP. *Hum. Genet.* 77: 205-209.
2. Olives, B., et al. 1994. Cloning and functional expression of a urea transporter from human bone marrow cells. *J. Biol. Chem.* 269: 31649-31652.
3. Olivès, B., et al. 1995. Kidd blood group and urea transport function of human erythrocytes are carried by the same protein. *J. Biol. Chem.* 270: 15607-15610.
4. Olivès, B., et al. 1996. Molecular characterization of a new urea transporter in the human kidney. *FEBS Lett.* 386: 156-160.
5. Olivès, B., et al. 1997. The molecular basis of the Kidd blood group polymorphism and its lack of association with type 1 diabetes susceptibility. *Hum. Mol. Genet.* 6: 1017-1020.
6. Lucien, N., et al. 1998. Characterization of the gene encoding the human Kidd blood group/urea transporter protein. Evidence for splice site mutations in Jknull individuals. *J. Biol. Chem.* 273: 12973-12980.
7. Sidoux-Walter, F., et al. 1999. At physiological expression levels the Kidd blood group/urea transporter protein is not a water channel. *J. Biol. Chem.* 274: 30228-30235.

CHROMOSOMAL LOCATION

Genetic locus: Slc14a1 (mouse) mapping to 18 E3.

PRODUCT

UT-B 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see UT-B shRNA Plasmid (m): sc-154953-SH and UT-B shRNA (m) Lentiviral Particles: sc-154953-V as alternate gene silencing products.

For independent verification of UT-B (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-154953A, sc-154953B and sc-154953C.

RESEARCH USE

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

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

UT-B siRNA (m) is recommended for the inhibition of UT-B 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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor UT-B gene expression knockdown using RT-PCR Primer: UT-B (m)-PR: sc-154953-PR (20 μ l, 456 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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