SANTA CRUZ BIOTECHNOLOGY, INC.

BTR1 siRNA (m): sc-62027

BACKGROUND

BTR1 (bicarbonate transporter-related protein 1), also known as sodium bicarbonate transporter-like protein 11, sodium-coupled borate cotransporter 1 (NaBC1) or solute carrier family 4 member 11 (SLC4A11), belongs to the anion exchanger family of proteins. BTR1 is ubiquitously expressed, localizes to the plasma membrane and exists as a multi-pass membrane protein. It functions as an electrogenic Na^+-dependent borate transporter and is essential for cell growth, proliferation and borate homeostasis. In the absence of borate, BTR1 functions as a conductive transporter, permeable to Na^+ and H^+. Several different mutations in BTR1 result in recessive congenital hereditary endothelial dystrophy (CHED2), a rare eye disorder characterized by corneal opacification and involuntary eye movement (nystagmus).

REFERENCES

1. Parker, M.D., et al. 2001. Human BTR1, a new bicarbonate transporter superfamily member and human AE4 from kidney. Biochem. Biophys. Res. Commun. 282: 1103-1109.
2. Romero, M.F., et al. 2004. The SLC4 family of HCO 3-transporters. Pflugers Arch. 447: 495-509.
3. Park, M., et al. 2004. NaBC1 is a ubiquitous electrogenic Na^+-coupled borate transporter essential for cellular boron homeostasis and cell growth and proliferation. Mol. Cell 16: 331-341.
4. Romero, M.F. 2005. Molecular pathophysiology of SLC4 bicarbonate transporters. Curr. Opin. Nephrol. Hypertens. 14: 495-501.
5. Park, M., et al. 2005. Borate transport and cell growth and proliferation. Not only in plants. Cell Cycle 4: 24-26.
6. Vithana, E.N., et al. 2006. Mutations in sodium-borate cotransporter SLC4A11 cause recessive congenital hereditary endothelial dystrophy (CHED2). Nat. Genet. 38: 755-757.

CHROMOSOMAL LOCATION

Genetic locus: Slc4a11 (mouse) mapping to 2 F1.

PRODUCT

BTR1 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 BTR1 shRNA Plasmid (m): sc-62027-SH and BTR1 shRNA (m) Lentiviral Particles: sc-62027-V as alternate gene silencing products.

For independent verification of BTR1 (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-62027A, sc-62027B and sc-62027C.

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

BTR1 siRNA (m) is recommended for the inhibition of BTR1 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 BTR1 gene expression knockdown using RT-PCR Primer: BTR1 (m)-PR: sc-62027-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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