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SANTA CRUZ BIOTECHNOLOGY, INC.

MATE2 siRNA (m): sc-149294

BACKGROUND

Transporters are expressed in a wide variety of tissues where they perform the critical function of enabling anionic and cationic chemicals of exogenous and endogenous origin to cross otherwise impermeable cell membranes. The multi-drug and toxin extrusion (MATE) transporters mediate cellular efflux of a variety of organic cations, including many drugs. The MATE family of transporters is involved in excretion of toxic electrolytes through urine and bile. The MATE family share homology with the bacterial MATE protein family responsible for drug resistance. MATE2 (multi-drug and toxin extrusion 2), also known as MATE2K, MATE2-B, MATE2-K or SLC47A2, is a 602 amino acid multi-pass membrane protein belonging to the MATE family that localizes to the brush border membrane of proximal tubules. Considered an H^+-organic cation antiporter, MATE2 is responsible for the secretion of cationic drugs across the brush border membranes. MATE2 is expressed as six isoforms produced by alternative splicing events.

REFERENCES

1. Masuda, S., et al. 2006. Identification and functional characterization of a new human kidney-specific H^+/organic cation antiporter, kidney-specific multidrug and toxin extrusion 2. J. Am. Soc. Nephrol. 17: 2127-2135.
2. Zhang, X., et al. 2007. Molecular identification and functional characterization of rabbit MATE1 and MATE2-K. Am. J. Physiol. Renal Physiol. 293: F360-F370.
3. Tanihara, Y., et al. 2007. Substrate specificity of MATE1 and MATE2-K, human multidrug and toxin extrusions/H^+-organic cation antiporters. Biochem. Pharmacol. 74: 359-371.
4. Koepsell, H., et al. 2007. Polyspecific organic cation transporters: structure, function, physiological roles, and biopharmaceutical implications. Pharm. Res. 24: 1227-1251.
5. Terada, T. and Inui, K. 2008. Physiological and pharmacokinetic roles of H^+/organic cation antiporters (MATE/SLC47A). Biochem. Pharmacol. 75: 1689-1696.

CHROMOSOMAL LOCATION

Genetic locus: Slc47a2 (mouse) mapping to 11 B2.

PRODUCT

MATE2 siRNA (m) 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 MATE2 shRNA Plasmid (m): sc-149294-SH and MATE2 shRNA (m) Lentiviral Particles: sc-149294-V as alternate gene silencing products.

For independent verification of MATE2 (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-149294A and sc-149294B.

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

MATE2 siRNA (m) is recommended for the inhibition of MATE2 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 MATE2 gene expression knockdown using RT-PCR Primer: MATE2 (m)-PR: sc-149294-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.