SANTA CRUZ BIOTECHNOLOGY, INC.

MRP7 siRNA (h): sc-62641

BACKGROUND

The MRP family is represented by nine similar ABC transporters that have the ability to transport structurally diverse lipophilic anions and operate as chemical efflux pumps. MRP7 (multidrug resistance-associated protein 7, ATP-binding cassette sub-family C member 10) is a multi-pass membrane protein that belongs to the ABC transporter family (conjugate transporter subfamily). MRP7 is involved with the ATP-dependent transport of 17β-estradiol-D-17-β-glucuronide ($E_2$17βG). MRP7 is also probably involved in cellular detoxification through its lipophilic anion extrusion capabilities. MRP7 contains two ABC transmembrane type 1 domains and two ABC transporter domains. MRP7 likely has three isoforms. Isoform 2 is the most widely expressed, while isoform 1 is predominately expressed in the spleen.

REFERENCES

1. Hopper, E., et al. 2001. Analysis of the structure and expression pattern of MRP7 (ABCC10), a new member of the MRP subfamily. Cancer Lett. 162: 181-191.
2. Chen, Z.S., et al. 2003. Characterization of the transport properties of human multidrug resistance protein 7 (MRP7, ABCC10). Mol. Pharmacol. 63: 351-358.
3. Hopper-Borge, E., et al. 2004. Analysis of the drug resistance profile of multidrug resistance protein 7 (ABCC10): resistance to docetaxel. Cancer Res. 64: 4927-4930.
4. Dabrowska, M. and Sirotnak, F.M. 2004. Regulation of transcription of the human MRP7 gene. Characteristics of the basal promoter and identification of tumor-derived transcripts encoding additional 5' end heterogeneity. Gene 341: 129-139.
5. Maher, J.M., et al. 2005. Tissue distribution and hepatic and renal ontogeny of the multidrug resistance-associated protein (Mrp) family in mice. Drug Metab. Dispos. 33: 947-955.
6. Weaver, D.A., et al. 2005. ABCC5, ERCC2, XPA and XRCC1 transcript abundance levels correlate with cisplatin chemoresistance in non-small cell lung cancer cell lines. Mol. Cancer 4: 18-18.
7. Wooden, S.L., et al. 2005. Cutting edge: HLA-E binds a peptide derived from the ATP-binding cassette transporter multidrug resistance-associated protein 7 and inhibits NK cell-mediated lysis. J. Immunol. 175: 1383-1387.
8. Naramoto, H., et al. 2007. Multidrug resistance-associated protein 7 expression is involved in cross-resistance to docetaxel in salivary gland adenocarcinoma cell lines. Int. J. Oncol. 30: 393-401.
9. Kruh, G.D., et al. 2007. ABCC10, ABCC11, and ABCC12. Pflugers Arch. 453: 675-684.

CHROMOSOMAL LOCATION

Genetic locus: ABCC10 (human) mapping to 6p21.1.

PROTOCOLS

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

PRODUCT

MRP7 siRNA (h) 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. Suit-able for 50-100 transfections. Also see MRP7 shRNA Plasmid (h): sc-62641-SH and MRP7 shRNA (h) Lentiviral Particles: sc-62641-V as alternate gene silencing products.

For independent verification of MRP7 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-62641A, sc-62641B and sc-62641C.

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

MRP7 siRNA (h) is recommended for the inhibition of MRP7 expression in human 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 MRP7 gene expression knockdown using RT-PCR Primer: MRP7 (h)-PR: sc-62641-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.