SANTA CRUZ BIOTECHNOLOGY, INC.

ABCB9 siRNA (m): sc-60116

BACKGROUND

ATP-binding cassette (ABC) transporters are an evolutionarily conserved family of widely-expressed proteins that use ATP hydrolysis to catalyze the transport of various molecules across extracellular and intracellular membranes. As the largest family of transmembrane proteins, ABC genes comprise several subfamilies (ABC1, ABCA, ABCE, ABCF, MDR/TAP, MRP, ALD, OABP, GCN20 and White (also known as ABCG)). In bacteria, ABC transporters are used to import compunds that cannot be obtained by diffusion. Eukaryotic ABC transporters are largely responsible for trafficking hydrophobic compounds either within the cell as part of a metabolic process or outside the cell for transport to other organs, or for secretion from the body. ABCB9 (also designated transporter associated with antigen processing (TAP)-like or TAPL) forms a homodimer, which is localized in lysosomes. It functions as an ATP-dependent peptide transporter that shows a broad peptide specificity ranging from 6-mer up to 59-mer peptides. ABCB9 transports these peptides with low affinity but high efficiency.

REFERENCES

1. Kobayashi, A., et al. 2000. A half-type ABC transporter TAPL is highly conserved between rodent and man, and the human gene is not responsive to interferon-γ in contrast to TAP1 and TAP2. J. Biochem. 128: 711-718.
2. Zhang, F., et al. 2000. Characterization of ABCB9, an ATP binding cassette protein associated with lysosomes. J. Biol. Chem. 275: 23287-23294.
3. Kobayashi, A., et al. 2003. Gene organization of human transporter associated with antigen processing-like (TAPL, ABCB9) analysis of alternative splicing variants and promoter activity. Biochem. Biophys. Res. Commun. 309: 815-822.
4. Yamaguchi, Y., et al. 2004. The carboxyl terminal sequence of rat transporter associated with antigen processing (TAP)-like (ABCB9) is heterogeneous due to splicing of its mRNA. Biol. Pharm. Bull. 27: 100-104.
5. Kobayashi, A., et al. 2004. Membrane localization of transporter associated with antigen processing (TAP)-like (ABCB9) visualized *in vivo* with a fluorescence protein-fusion technique. Biol. Pharm. Bull. 27: 1916-1922.
6. Wolters, J.C., et al. 2005. Selective and ATP-dependent translocation of peptides by the homodimeric ABC transporter TAP-like (ABCB9). J. Biol. Chem. 280: 23631-23636.

CHROMOSOMAL LOCATION

Genetic locus: Abcb9 (mouse) mapping to 5 F.

PRODUCT

ABCB9 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 ABCB9 shRNA Plasmid (m): sc-60116-SH and ABCB9 shRNA (m) Lentiviral Particles: sc-60116-V as alternate gene silencing products.

For independent verification of ABCB9 (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-60116A, sc-60116B and sc-60116C.

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

ABCB9 siRNA (m) is recommended for the inhibition of ABCB9 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.

GENE EXPRESSION MONITORING

ABCB9 (A-8): sc-393412 is recommended as a control antibody for monitoring of ABCB9 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ABCB9 gene expression knockdown using RT-PCR Primer: ABCB9 (m)-PR: sc-60116-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.

PROTOCOLS

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