SANTA CRUZ BIOTECHNOLOGY, INC.

ABCF1 siRNA (m): sc-140760

BACKGROUND

ABCF1 (ATP-binding cassette sub-family F member 1, TNF-α-stimulated ABC protein) is a 845 amino acid protein encoded by the human gene ABCF1. ABCF1 belongs to the ABC transporter family (EF3 subfamily) and contains two ABC transporter domains. ABC proteins transport various molecules across extra- and intra-cellular membranes. ABC genes are divided into seven distinct subfamilies (ABC1, MDR/TAP, MRP, ALD, OABP, GCN20, White). Unlike other members of the superfamily, this protein lacks the transmembrane domains which are characteristic of most ABC transporters. ABCF1 is believed to have a role in mRNA translation due to its interaction with eukaryotic initiation factor 2 (eIF2). It is also associated with ribosomes. ABCF1 is ubiquitously expressed and can be induced with TNF. Upon DNA damage, ABCF1 is phosphorylated by either ATM or ATR.

REFERENCES

1. Richard, M., et al. 1998. ABC50, a novel human ATP-binding cassette protein found in tumor necrosis factor-α-stimulated synoviocytes. Genomics 53: 137-145.
2. Klein, I., et al. 2000. An inventory of the human ABC proteins. Biochim. Biophys. Acta 1461: 237-262.
3. Shichijo, S., et al. 2005. ABCE1, a member of ATP-binding cassette transporter gene, encodes peptides capable of inducing HLA-A2-restricted and tumor-reactive cytotoxic T lymphocytes in colon cancer patients. Oncol. Rep. 13: 907-913.
4. Ota, M., et al. 2006. Two critical genes (HLA-DRB1 and ABCF1) in the HLA region are associated with the susceptibility to autoimmune pancreatitis. Immunogenetics 59: 45-52.

CHROMOSOMAL LOCATION

Genetic locus: Abcf1 (mouse) mapping to 17 B1.

PRODUCT

ABCF1 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 ABCF1 shRNA Plasmid (m): sc-140760-SH and ABCF1 shRNA (m) Lentiviral Particles: sc-140760-V as alternate gene silencing products.

For independent verification of ABCF1 (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-140760A, sc-140760B and sc-140760C.

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

ABCF1 siRNA (m) is recommended for the inhibition of ABCF1 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

ABCF1 (H-3): sc-377185 is recommended as a control antibody for monitoring of ABCF1 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 ABCF1 gene expression knockdown using RT-PCR Primer: ABCF1 (m)-PR: sc-140760-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Arora, H., et al. 2019. The ATP-binding cassette gene ABCF1 functions as an E2 ubiquitin-conjugating enzyme controlling macrophage polarization to dampen lethal septic shock. Immunity 50: 418-431.

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.