SANTA CRUZ BIOTECHNOLOGY, INC.

ATBF1 siRNA (m): sc-37695

BACKGROUND

AT-motif binding factor 1 (ATBF1) binds to the AT-rich core sequence element in the human α-fetoprotein enhancer. Alternative splicing generates the ATBF1-A and ATBF1-B. While ATBF1-A contains a 920-amino acid extension at the N-terminus, both ATBF1-A and ATBF1-B contain 4 DNA-binding homeobox domains. Additionally, ATBF1-A contains 23 zinc finger motifs while ATBF1-B contains 18 zinc finger motifs. The N-terminal extension unique to ATBF1-A has transcriptional repressor activity. ATBF1-B may function as an inhibitor of the ATBF1-A isoform. It shares the same DNA-binding domains and may compete for binding sites thereby blocking the repressor activity of ATBF1-A. Besides functioning in transcription regulation, ATBF1 also functions in ATPase activity. ATPase activity associated with ATBF1-A is DNA/RNA-dependent and requires both homeobox domains and zinc finger motifs. ATBF1 is highly expressed in spleen and brain tissues. The gene encoding human ATBF1 maps to chromosome 16q22.2.

REFERENCES

1. Morinaga, T., et al. 1991. A human α-fetoprotein enhancer-binding protein, ATBF1, contains four homeodomains and seventeen zinc fingers. Mol. Cell. Biol. 11: 6041-6049.
2. Yasuda, H., et al. 1994. ATBF1, a multiple-homeodomain zinc finger protein, selectively downregulates AT-rich elements of the human α-fetoprotein gene. Mol. Cell. Biol. 14: 1395-1401.
3. Miura, Y., et al. 1995. Cloning and characterization of an ATBF1 isoform that expresses in a neuronal differentiation-dependent manner. J. Biol. Chem. 270: 26840-26848.
4. Yamada, K., et al. 1995. Assignment of the human ATBF1 transcription factor gene to chromosome 16q22.3-q23.1. Genomics 29: 552-553.
5. Kaspar, P., et al. 1999. Myb-interacting protein, ATBF1, represses transcriptional activity of Myb oncoprotein. J. Biol. Chem. 274: 14422-14428.
6. Kataoka, H., et al. 2000. AT motif binding factor 1-A (ATBF1-A) negatively regulates transcription of the aminopeptidase N gene in the crypt-villus axis of small intestine. Biochem. Biophys. Res. Commun. 267: 91-95.

CHROMOSOMAL LOCATION

Genetic locus: Zfhx3 (mouse) mapping to 8 D3.

PRODUCT

ATBF1 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 ATBF1 shRNA Plasmid (m): sc-37695-SH and ATBF1 shRNA (m) Lentiviral Particles: sc-37695-V as alternate gene silencing products.

For independent verification of ATBF1 (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-37695A, sc-37695B and sc-37695C.

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

ATBF1 siRNA (m) is recommended for the inhibition of ATBF1 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

ATBF1 (3B1): sc-517126 is recommended as a control antibody for monitoring of ATBF1 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 ATBF1 gene expression knockdown using RT-PCR Primer: ATBF1 (m)-PR: sc-37695-PR (20 µl). An-nealing 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.