SANTA CRUZ BIOTECHNOLOGY, INC.

ATF-5 siRNA (h): sc-43580

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The Power to Question

BACKGROUND

Eukaryotic gene transcription is regulated by sequence-specific transcription factors that bind modular *cis*-acting promoter and enhancer elements. The ATF/CREB transcription factor family binds the palindromic cAMP response element (CRE) octanucleotide TGACGTCA. The best characterized members of this gene family include CREB-1, CREB-2 (also designated ATF-4), CRE-BPa, LZIP (also designated CREB3 and Luman), CREM-1, CREM-2, ATF-1, ATF-2, ATF-3, ATF-5, ATF-6 and ATF-7. This family of proteins contain highly divergent N-terminal domains, but share a C-terminal leucine zipper for dimerization and DNA binding. ATF-5 (ATFx), which can localize to the cytoplasm or the nucleus, binds DNA as a dimer. It interacts with CCND3 and PTP4A1.

REFERENCES

1. Pati, D., et al. 1999. Human Cdc34 and Rad6B ubiquitin-conjugating enzymes target repressors of cyclic AMP-induced transcription for proteolysis. Mol. Cell. Biol. 19: 5001-5013.
2. Hansen, M.B., et al. 2002. Mouse ATF-5: molecular cloning of two novel mRNAs, genomic organization and odorant sensory neuron localization. Genomics 80: 344-350.
3. Morris, J.A., et al. 2003. DISC-1 (disrupted-in-schizophrenia 1) is a centrosome-associated protein that interacts with MAP-1A, MIPT-3, ATF-4/5 and nudel: regulation and loss of interaction with mutation. Hum. Mol. Genet. 12: 1591-1608.
4. Angelastro, J.M., et al. 2003. Regulated expression of ATF-5 is required for the progression of neural progenitor cells to neurons. J. Neurosci. 23: 4590-4600.
5. Fernandez, P., et al. 2004. Distinctive gene expression of human lung adenocarcinomas carrying LKB1 mutations. Oncogene 23: 5084-5091.
6. Angelastro, J.M., et al. 2005. Downregulation of activating transcription factor 5 is required for differentiation of neural progenitor cells into astrocytes. J. Neurosci. 25: 3889-3899.

CHROMOSOMAL LOCATION

Genetic locus: ATF5 (human) mapping to 19q13.33.

PRODUCT

ATF-5 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. Suitable for 50-100 transfections. Also see ATF-5 shRNA Plasmid (h): sc-43580-SH and ATF-5 shRNA (h) Lentiviral Particles: sc-43580-V as alternate gene silencing products.

For independent verification of ATF-5 (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-43580A, sc-43580B and sc-43580C.

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

ATF-5 siRNA (h) is recommended for the inhibition of ATF-5 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.

GENE EXPRESSION MONITORING

ATF-5 (E-10): sc-377168 is recommended as a control antibody for monitoring of ATF-5 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 ATF-5 gene expression knockdown using RT-PCR Primer: ATF-5 (h)-PR: sc-43580-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.