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ATF-5 siRNA (h): sc-43580

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

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- 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.
- 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.
- 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.
- Fernandez, P., et al. 2004. Distinctive gene expression of human lung adenocarcinomas carrying LKB1 mutations. *Oncogene* 23: 5084-5091.

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 μ M 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.

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.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M 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 μ M in 66 μ l. 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.