

ATF-7 siRNA (m): sc-29760

BACKGROUND

Eukaryotic gene transcription is regulated by sequence-specific transcription factors, which bind modular *cis* acting promoter and enhancer elements. The cAMP response element (CRE) consists of the palindromic octanucleotide TGACGTC A. There are several CRE binding proteins within the ATF/CREB family, including CREB-1, CREB-2 (also designated ATF-4), ATF-1, ATF-2 and ATF-3. A novel basic leucine zipper (bZIP) protein, designated ATF-7, is closely related to members of the ATF/CREB family of bZIP proteins, with highest homology to ATF-4. ATF-7 physically interacts with the PRL-1 protein-tyrosine phosphatase (PTPase), which is a predominately nuclear, farnesylated PTPase. ATF-7 homodimers bind specifically to CRE elements. ATF-7 is expressed in a number of different tissues and is expressed in association with differentiation. ATF-7 and PRL-1 interact with each other through the bZIP region of ATF-7 and the phosphatase domain of PRL-1. In addition, PRL-1 is able to dephosphorylate ATF-7 *in vitro*.

REFERENCES

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6. Kara, C.J., Liou, H.C., Ivashkiv, L.B. and Glimcher, L.H. 1990. A cDNA for a human cyclin AMP response element-binding protein which is distinct from CREB and expressed preferentially in brain. *Mol. Cell. Biol.* 10: 1347-1357.

CHROMOSOMAL LOCATION

Genetic locus: *Atf7* (mouse) mapping to 15 F3.

PRODUCT

ATF-7 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ATF-7 shRNA Plasmid (m): sc-29760-SH and ATF-7 shRNA (m) Lentiviral Particles: sc-29760-V as alternate gene silencing products.

For independent verification of ATF-7 (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-29760A, sc-29760B and sc-29760C.

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-7 siRNA (m) is recommended for the inhibition of ATF-7 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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ATF-7 gene expression knockdown using RT-PCR Primer: ATF-7 (m)-PR: sc-29760-PR (20 μ l). 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.