

ATF-7IP siRNA (h): sc-96134

BACKGROUND

ATF-7IP (activating transcription factor 7-interacting protein 1, MBD1-containing chromatin-associated factor 1) is a 1,270 amino acid protein encoded by the human gene ATF7IP. ATF-7IP can both act as an activator or a repressor depending on the context. ATF-7IP functions as a recruiter that couples transcriptional factors to general transcription apparatus and thereby modulates transcription regulation and chromatin formation. It mediates MBD1-dependent transcriptional repression, probably by recruiting complexes containing SETDB1. ATF-7IP is required to stimulate the histone methyltransferase activity of SETDB1 and it facilitates the conversion of dimethylated to trimethylated H3 "Lys-9". The complex formed by ATF-7IP, MBD1 and SETDB1 also acts to couple DNA methylation to histone "Lys-9" trimethylation.

REFERENCES

1. De Graeve, F., et al. 2000. A murine ATFa-associated factor with transcriptional repressing activity. *Oncogene* 19: 1807-1819.
2. Wang, H., et al. 2003. mAM facilitates conversion by ESET of dimethyl to trimethyl lysine 9 of histone H3 to cause transcriptional repression. *Mol. Cell* 12: 475-487.
3. Ichimura, T., et al. 2005. Transcriptional repression and heterochromatin formation by MBD1 and MCAF/AM family proteins. *J. Biol. Chem.* 280: 13928-13935.
4. Chang, L.K., et al. 2005. Activation of Sp1-mediated transcription by Rta of Epstein-Barr virus via an interaction with MCAF1. *Nucleic Acids Res.* 33: 6528-6539.
5. Uchimura, Y., et al. 2006. Involvement of SUMO modification in MBD1- and MCAF1-mediated heterochromatin formation. *J. Biol. Chem.* 281: 23180-23190.
6. McGraw, S., et al. 2007. Temporal expression of factors involved in chromatin remodeling and in gene regulation during early bovine *in vitro* embryo development. *Reproduction* 133: 597-608.

CHROMOSOMAL LOCATION

Genetic locus: ATF7IP (human) mapping to 12p13.1.

PRODUCT

ATF-7IP 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-7IP shRNA Plasmid (h): sc-96134-SH and ATF-7IP shRNA (h) Lentiviral Particles: sc-96134-V as alternate gene silencing products.

For independent verification of ATF-7IP (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-96134A, sc-96134B and sc-96134C.

PROTOCOLS

See our web site at www.scbt.com or our catalog 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-7IP siRNA (h) is recommended for the inhibition of ATF-7IP 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-7IP (C-1): sc-166753 is recommended as a control antibody for monitoring of ATF-7IP 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 (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgM-HRP: sc-2064 (dilution range: 1:500-1:5,000), TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-mouse IgM-FITC: sc-2082 (dilution range: 1:100-1:400) or goat anti-mouse IgM-TR: sc-2983 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ATF-7IP gene expression knockdown using RT-PCR Primer: ATF-7IP (h)-PR: sc-96134-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.