SANTA CRUZ BIOTECHNOLOGY, INC.

ATF-7IP siRNA (m): sc-141319

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 (mouse) mapping to 6 G1.

PRODUCT

ATF-7IP siRNA (m) is a target-specific 19-25 nt siRNA 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-7IP shRNA Plasmid (m): sc-141319-SH and ATF-7IP shRNA (m) Lentiviral Particles: sc-141319-V as alternate gene silencing products.

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

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 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-7IP gene expression knockdown using RT-PCR Primer: ATF-7IP (m)-PR: sc-141319-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.