SANTA CRUZ BIOTECHNOLOGY, INC.

MOF siRNA (h): sc-37129

BACKGROUND

Dosage compensation ensures that males with a single X chromosome and females with two X chromosomes have the same amount of most X-linked gene products. In *Drosophila,* this is acheived by enhancing the level of transcription of the X chromosome in males. Proteins such as maleless, male specific lethal 1, 2 and 3, and males absent on the first (MOF) form a dosage compensation complex (DCC) that is required for the twofold increase of transcription of the male X chromosome. The DCC is preferentially associated with many sites on the X chromosome in somatic cells of males. The binding of the DCC to the X chromosome is dependent upon histone 4 acetylation at lysine 16, which is accomplished by MOF. In mammals, MOF (also designated hMOF, MYST1, or MOZ) belongs to the MYST family of histone acetyltransferases which are characterized by a unique C2HC-type zinc finger close to their HAT domains. MOF utilizes the zinc finger domain to contact the globular part of the nucleosome as well as the histone H4 N-terminal tail substrate. The carboxy terminal domain of human MOF also has histone acetyltransferase activity directed against Histones H3 and H2A, a characteristic shared with other MYST family histone acetyltransferases.

REFERENCES

1. Hilfiker, A., et al. 1997. MOF, a putative acetyltransferase gene related to the Tip60 and MOZ human genes and to the SAS genes of yeast, is required for dosage compensation in *Drosophila*. EMBO J. 16: 2054-2060.
2. Gu, W., et al. 1998. Targeting of MOF, a putative histone acetyltransferase, to the X chromosome of *Drosophila melanogaster*. Dev. Genet. 22: 56-64.
3. Akhtar, A., et al. 2000. Chromodomains are protein-RNA interaction modules. Nature 407: 405-409.
4. Sterner, D.E., et al. 2000. Acetylation of histones and transcription-related factors. Microbiol. Mol. Biol. 64: 435-459.
5. Neal, K.C., et al. 2000. A new human member of the MYST family of histone acetyltransferases with high sequence similartiy to *Drosophila* MOF. Biochim. Biophys. Acta 1490: 170-174.
6. Akhtar, A., et al. 2000. Activation of transcription through Histone H4 acetylation by MOF, an acetyltransferase essential for dosage compensation in *Drosophila*. Mol. Cell 5: 367-375.

CHROMOSOMAL LOCATION

Genetic locus: KAT8 (human) mapping to 16p11.2.

PRODUCT

MOF 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 MOF shRNA Plasmid (h): sc-37129-SH and MOF shRNA (h) Lentiviral Particles: sc-37129-V as alternate gene silencing products.

For independent verification of MOF (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-37129A, sc-37129B and sc-37129C.

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

MOF siRNA (h) is recommended for the inhibition of MOF 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

MOF (8C4C4): sc-81163 is recommended as a control antibody for monitoring of MOF 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 MOF gene expression knockdown using RT-PCR Primer: MOF (h)-PR: sc-37129-PR (20 µl, 562 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. You, D., et al. 2016. Acetylation enhances the promoting role of AIB1 in breast cancer cell proliferation. Mol. Cells 39: 663-668.

RESEARCH USE

For research use only, not for use in diagnostic procedures.