SANTA CRUZ BIOTECHNOLOGY, INC.

Dmap1 siRNA (h): sc-60543

BACKGROUND

Methylation of DNA contributes to the regulation of gene transcription in eukaryotic systems. DNA methylation is predominantly found on cytosine residues that are present in dinucleotide motifs consisting of a 5' cytosine followed by a guanosine (CpG), and it requires the enzymatic activity of DNA methyltransferases (DNMTs), which results in transcriptional repression of the methylated gene. DNA methyltransferase 1-associating protein (Dmap1) binds to methyl-CpG rich domains and mediate the transcriptional inhibition associated with DNA methylation. Dmap1 interacts with Daxx to enhanced Daxx-mediated repression of glucocorticoid receptor transcriptional activity. Daxx also protects Dmap1 from protein degradation *in vivo*.

REFERENCES

1. Boyes, J. and Bird, A. 1991. DNA methylation inhibits transcription indirectly via a methyl-CpG binding protein. Cell 64: 1123-1134.
2. Nan, X., et al. 1998. Transcriptional repression by the methyl-CpG-binding protein MeCP2 involves a histone deacetylase complex. Nature 393: 386-389.
3. Muromoto, R., et al. 2004. Physical and functional interactions between Daxx and DNA methyltransferase 1-associated protein, Dmap1. J. Immunol. 172: 2985-2993.
4. Delgermaa, L., et al. 2004. Subcellular localization of RPB5-mediating protein and its putative functional partner. Mol. Cell. Biol. 24: 8556-8566.
5. Muromoto, R., et al. 2004. Physical and functional interactions between Daxx and TSG101. Biochem. Biophys. Res. Commun. 316: 827-833.
6. Xin, H., et al. 2004. Components of a pathway maintaining histone modification and heterochromatin protein 1 binding at the pericentric heterochromatin in mammalian cells. J. Biol. Chem. 279: 9539-9546.
7. Liu, Z. and Fisher, R.A. 2004. RGS6 interacts with Dmap1 and Dnmt1 and inhibits Dmap1 transcriptional repressor activity. J. Biol. Chem. 279: 14120-14128.

CHROMOSOMAL LOCATION

Genetic locus: DMAP1 (human) mapping to 1p34.1.

PRODUCT

Dmap1 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 Dmap1 shRNA Plasmid (h): sc-60543-SH and Dmap1 shRNA (h) Lentiviral Particles: sc-60543-V as alternate gene silencing products.

For independent verification of Dmap1 (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-60543A, sc-60543B and sc-60543C.

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

Dmap1 siRNA (h) is recommended for the inhibition of Dmap1 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

Dmap1 (B-10): sc-373949 is recommended as a control antibody for monitoring of Dmap1 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 Dmap1 gene expression knockdown using RT-PCR Primer: Dmap1 (h)-PR: sc-60543-PR (20 µl). 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.