SANTA CRUZ BIOTECHNOLOGY, INC.

PRMT2 siRNA (m): sc-62861

BACKGROUND

PRMT2 (protein arginine N-methyltransferase 2) is a 433 amino acid protein encoded by the human gene PRMT2. PRMT2 belongs to the protein arginine N-methyltransferase family and contains one SH3 domain. The primary function of protein methyltransferases is the post-translational methylation of arginine residues. The PRMT family of proteins contains related putative methyltransferase domains that modify chromatin and regulate cellular transcription. Some family members, PRMT1 and PRMT4, show transcriptional modulation and intracellular signaling. Through a highly conserved S-adenosylmethionine-binding domain, PRMT2 inhibits NFκB-dependent transcription and promotes apoptosis. PRMT2 has this effect by blocking nuclear export of IκB-α through a leptomycin-sensitive pathway, which increases nuclear IκB-α and decreases NFκB DNA binding. PRMT2 also renders cells susceptible to apoptosis by cytokines or cytotoxic drugs.

REFERENCES

1. Qi, C., et al. 2002. Identification of protein arginine methyltransferase 2 as a coactivator for estrogen receptor α. J. Biol. Chem. 277: 28624-28630.
2. Ganesh, L., et al. 2006. Protein methyltransferase 2 inhibits NFκB function and promotes apoptosis. Mol. Cell. Biol. 26: 3864-3874.
3. Yildirim, A.O., et al. 2006. Increased protein arginine methylation in chronic hypoxia: role of protein arginine methyltransferases. Am. J. Respir. Cell Mol. Biol. 35: 436-443.
4. Dong, C.W., et al. 2006. Molecular characterisation and inductive expression of a fish protein arginine methyltransferase 1 gene in response to virus infection. Fish Shellfish Immunol. 22: 380-393.
5. 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.
6. Meyer, R., et al. 2007. PRMT2, a member of the protein arginine methyltransferase family, is a coactivator of the androgen receptor. J. Steroid Biochem. Mol. Biol. 107: 1-14.
7. Besson, V., et al. 2007. Modeling the monosomy for the telomeric part of human chromosome 21 reveals haploinsufficient genes modulating the inflammatory and airway responses. Hum. Mol. Genet. 16: 2040-2052.

CHROMOSOMAL LOCATION

Genetic locus: Prmt2 (mouse) mapping to 10 C1.

PRODUCT

PRMT2 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PRMT2 shRNA Plasmid (m): sc-62861-SH and PRMT2 shRNA (m) Lentiviral Particles: sc-62861-V as alternate gene silencing products.

For independent verification of PRMT2 (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-62861A, sc-62861B and sc-62861C.

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

PRMT2 siRNA (m) is recommended for the inhibition of PRMT2 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

PRMT2 (B-11): sc-393254 is recommended as a control antibody for monitoring of PRMT2 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 PRMT2 gene expression knockdown using RT-PCR Primer: PRMT2 (m)-PR: sc-62861-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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.