SANTA CRUZ BIOTECHNOLOGY, INC.

SMYD2 siRNA (m): sc-76530

BACKGROUND

SMYD2 (SET and MYND domain containing 2), also known as KMT3C, HSKM-B or ZMYND14, is a 433 amino acid protein that contains one SET domain and one MYND-type zinc finger. Expressed at high levels in liver, heart, kidney, ovary and brain, SMYD2 functions as a lysine methyltransferase that, via methylation of p53, may play a role in repressing p53-mediated transcriptional regulation. The gene encoding MSYD2 maps to human chromosome 1, which spans 260 million base pairs, contains over 3,000 genes and comprises nearly 8% of the human genome. Chromosome 1 houses a large number of disease-associated genes, including those that are involved in familial adenomatous polyposis, stickler syndrome, Parkinson's disease, Gaucher disease, schizophrenia and Usher syndrome. Aberrations in chromosome 1 are found in a variety of cancers, including head and neck cancer, malignant melanoma and multiple myeloma.

REFERENCES

1. Brown, M.A., et al. 2006. Identification and characterization of SMYD2: a split SET/MYND domain-containing Histone H3 lysine 36-specific methyltransferase that interacts with the Sin3 histone deacetylase complex. Mol. Cancer 5: 26.
2. Huang, J., et al. 2006. Repression of p53 activity by SMYD2-mediated methylation. Nature 444: 629-632.
3. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 610663. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: Smyd2 (mouse) mapping to 1 H6.

PRODUCT

SMYD2 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 SMYD2 shRNA Plasmid (m): sc-76530-SH and SMYD2 shRNA (m) Lentiviral Particles: sc-76530-V as alternate gene silencing products.

For independent verification of SMYD2 (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-76530A, sc-76530B and sc-76530C.

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

SMYD2 siRNA (m) is recommended for the inhibition of SMYD2 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

SMYD2 (F-9): sc-393827 is recommended as a control antibody for monitoring of SMYD2 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 SMYD2 gene expression knockdown using RT-PCR Primer: SMYD2 (m)-PR: sc-76530-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Xu, G., et al. 2015. The histone methyltransferase SMYD2 is a negative regulator of macrophage activation by suppressing interleukin 6 (IL-6) and tumor necrosis factor α (TNF-α) production. J. Biol. Chem. 290: 5414-5423.
2. Li, L.X., et al. 2017. Lysine methyltransferase SMYD2 promotes cyst growth in autosomal dominant polycystic kidney disease. J. Clin. Invest. 127: 2751-2764.
3. Parmar, N., et al. 2020. *Leishmania donovani* subverts host immune response by epigenetic reprogramming of macrophage M(lipopolysaccharides + IFN-γ)/M(IL-10) polarization. J. Immunol. 204: 2762-2778.

RESEARCH USE

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