SANTA CRUZ BIOTECHNOLOGY, INC.

SETD6 siRNA (h): sc-93442

BACKGROUND

SETD6 (SET domain-containing protein 6) is a 473 amino acid protein that belongs to the SETD6 family. Containing one SET domain, SETD6 is structurally similar to the Rubisco large subunit methyltransferase. SETD6 is a protein-lysine N-methyltransferase that specifically monomethylates "Lys-310" of the NFκB p65 subunit of NFκB complex, leading to down-regulate NFκB transcription factor activity. SETD6-mediated methylation renders NFκB p65 inert and attenuates NFκB p65-driven transcriptional programs, including inflammatory responses in primary immune cells. The SETD6-initiated lysine-methylation signaling cascade acts to restrain activation of NFκB-mediated inflammatory responses in diverse cell types. Existing as two alternatively spliced isoforms, the SETD6 gene is conserved in canine, bovine, mouse, rat, chicken, zebrafish, *M.grisea* and *N.crassa*, and maps to human chromosome 16q21.

REFERENCES

1. Sun, X.J., et al. 2008. Genome-wide survey and developmental expression mapping of zebrafish SET domain-containing genes. PLoS ONE 3: e1499.
2. Stark, G.R., et al. 2011. Lysine methylation of promoter-bound transcription factors and relevance to cancer. Cell Res. 21: 375-380.
3. Yang, X.D. and Chen, L.F. 2011. Talking to histone: methylated RelA serves as a messenger. Cell Res. 21: 561-563.
4. Shinkai, Y. and Tachibana, M. 2011. H3K9 methyltransferase G9a and the related molecule GLP. Genes Dev. 25: 781-788.
5. Petrossian, T.C. and Clarke, S.G. 2011. Uncovering the human methyltransferasome. Mol. Cell. Proteomics. 10: M110.000976.
6. Moscat, J. and Diaz-Meco, M.T. 2011. Fine tuning NFκB: new openings for PKC-ζ. Nat. Immunol. 12: 12-14.
7. Levy, D., et al. 2011. Lysine methylation of the NFκB subunit RelA by SETD6 couples activity of the histone methyltransferase GLP at chromatin to tonic repression of NFκB signaling. Nat. Immunol. 12: 29-36.
8. Chang, Y., et al. 2011. Structural basis of SETD6-mediated regulation of the NFkB network via methyl-lysine signaling. Nucleic Acids Res.

CHROMOSOMAL LOCATION

Genetic locus: SETD6 (human) mapping to 16q21.

PRODUCT

SETD6 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 SETD6 shRNA Plasmid (h): sc-93442-SH and SETD6 shRNA (h) Lentiviral Particles: sc-93442-V as alternate gene silencing products.

For independent verification of SETD6 (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-93442A, sc-93442B and sc-93442C.

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

SETD6 siRNA (h) is recommended for the inhibition of SETD6 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SETD6 gene expression knockdown using RT-PCR Primer: SETD6 (h)-PR: sc-93442-PR (20 µl, 530 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Jose, L., et al. 2022. SETD6 regulates E2-dependent human papillomavirus transcription. J. Virol. 96: e0129522.

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.