SANTA CRUZ BIOTECHNOLOGY, INC.

MMS19 siRNA (h): sc-90393

BACKGROUND

MMS19 (MMS19 nucleotide excision repair homolog), also known as MET18, is a 1,030 amino acid nuclear protein containing seven HEAT repeats that belongs to the MET18/MMS19 family. Via its interactions with TFIIH p80 and TFIIH p89 helicases, MMS19 plays a role in nucleotide excision repair (NER) and RNA polymerase II (Pol II) transcription. MMS19 may also function as a transcriptional coactivator of estrogen receptor. While ubiquitously expressed, highest levels of MMS19 have been found in testis. At least five distinct MMS19 protein isoforms exist, which are produced by alternative splicing events. The gene encoding MMS19 maps to human chromosome 10q24.1, and is associated with the risk of pancreatic cancer.

REFERENCES

1. Seroz, T., et al. 2000. Cloning of a human homolog of the yeast nucleotide excision repair gene MMS19 and interaction with transcription repair factor TFIIH via the XPB and XPD helicases. Nucleic Acids Res. 28: 4506-4513.
2. Wu, X., et al. 2001. The human homologue of the yeast DNA repair and TFIIH regulator MMS19 is an AF-1-specific coactivator of estrogen receptor. J. Biol. Chem. 276: 23962-23968.
3. Queimado, L., et al. 2001. Cloning the human and mouse MMS19 genes and functional complementation of a yeast mms19 deletion mutant. Nucleic Acids Res. 29: 1884-1891.
4. Hatfield, M.D., et al. 2006. Identification of MMS19 domains with distinct functions in NER and transcription. DNA Repair 5: 914-924.
5. Daub, H., et al. 2008. Kinase-selective enrichment enables quantitative phosphoproteomics of the kinome across the cell cycle. Mol. Cell 31: 438-448.
6. McWilliams, R.R., et al. 2009. Nucleotide excision repair pathway polymorphisms and pancreatic cancer risk: evidence for role of MMS19L. Cancer Epidemiol. Biomarkers Prev. 18: 1295-1302.
7. Choudhary, C., et al. 2009. Lysine acetylation targets protein complexes and co-regulates major cellular functions. Science 325: 834-840.

CHROMOSOMAL LOCATION

Genetic locus: MMS19 (human) mapping to 10q24.1.

PRODUCT

MMS19 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 MMS19 shRNA Plasmid (h): sc-90393-SH and MMS19 shRNA (h) Lentiviral Particles: sc-90393-V as alternate gene silencing products.

For independent verification of MMS19 (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-90393A, sc-90393B and sc-90393C.

RESEARCH USE

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

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

MMS19 siRNA (h) is recommended for the inhibition of MMS19 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

MMS19 (G-12): sc-390028 is recommended as a control antibody for monitoring of MMS19 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 MMS19 gene expression knockdown using RT-PCR Primer: MMS19 (h)-PR: sc-90393-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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