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SANTA CRUZ BIOTECHNOLOGY, INC.

# METTL1 siRNA (m): sc-149382

## BACKGROUND

METTL1 (methyltransferase like 1), also known as TRM8, is a 276 amino acid ubiquitously expressed nuclear protein belonging to the TrmB family and methyltransferase superfamily. Containing a highly conserved S-adenosylmethionine-binding domain that is typical of methyltransferases, METTL1 shares a high degree of sequence similarity with yeast ORF YDL201w and has been shown to be inactivated by phosphorylation. METTL1 forms a complex with WDR4 and catalyzes the 7-methylguanosine modification of tRNA at position 46 (m7G46) in a widely occurring bacterial and eukaryotic process that causes the base to become positively charged. Multiple METTL1 isoforms are produced due to alternative splicing events, and the gene encoding METTL1 maps to human chromosome 12q14.1. A METTL1 pseudogene has been identified on chromosome X.

## REFERENCES


1. Bahr, A., et al. 1999. Molecular analysis of METTL1, a novel human methyltransferase-like gene with a high degree of phylogenetic conservation. Genomics 57: 424-428.
2. Alexandrov, A., et al. 2002. Two proteins that form a complex are required for 7-methylguanosine modification of yeast tRNA. RNA 8: 1253-1266.
3. Cartlidge, R.A., et al. 2005. The tRNA methylase METTL1 is phosphorylated and inactivated by PKB and RSK *in vitro* and in cells. EMBO J. 24: 1696-1705.
4. Alexandrov, A., et al. 2005. tRNA m7G methyltransferase Trm8p/Trm82p: evidence linking activity to a growth phenotype and implicating Trm82p in maintaining levels of active Trm8p. RNA 11: 821-830.
5. Muneyoshi, Y., et al. 2007. Hetero subunit interaction and RNA recognition of yeast tRNA (m7G46) methyltransferase synthesized in a wheat germ cell-free translation system. Nucleic Acids Symp. Ser. 51: 359-360.
6. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 604466. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
7. Matsumoto, K., et al. 2008. Production of yeast tRNA (m(7)G46) methyltransferase (Trm8-Trm82 complex) in a wheat germ cell-free translation system. J. Biotechnol. 133: 453-460.


## CHROMOSOMAL LOCATION

Genetic locus: Mettl1 (mouse) mapping to 10 D3.

## PRODUCT

METTL1 siRNA (m) is a target-specific 19-25 nt siRNA 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 METTL1 shRNA Plasmid (m): sc-149382-SH and METTL1 shRNA (m) Lentiviral Particles: sc-149382-V as alternate gene silencing products.

## 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

METTL1 siRNA (m) is recommended for the inhibition of METTL1 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor METTL1 gene expression knockdown using RT-PCR Primer: METTL1 (m)-PR: sc-149382-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.