

# METTL3 (Q-12): sc-104991

## BACKGROUND

METTL3 (methyltransferase like 3), also known as M6A, IME4, Spo8 or MT-A70, is a 580 amino acid nuclear speckle protein belonging to the methyltransferase superfamily, which includes DNA methyltransferases (Dnmt), histone methyltransferases and catechol-O-methyl transferases, as well as many others. Members of this family have enzymatic activity that results in the transfer of a methyl group to and from DNA, RNA or amino acids. Widely expressed at low levels, it is suggested that METTL3 may be associated with nuclear pre-mRNA splicing components. Considered a N6-methyltransferase, METTL3 methylates adenosine residues of some mRNAs. N6-methyladenosine is present at internal sites of several mRNAs, which may play a role in the efficiency of mRNA splicing, transport or translation. The gene encoding METTL3 is located on human chromosome 14, which houses over 700 genes and comprises nearly 3.5% of the human genome. Produced by alternative splicing events, two isoforms of METTL3 exists.

## REFERENCES

1. Bokar, J.A., et al. 1997. Purification and cDNA cloning of the AdoMet-binding subunit of the human mRNA (N6-adenosine)-methyltransferase. *RNA* 3: 1233-1247.
2. Bujnicki, J.M., et al. 2002. Structure prediction and phylogenetic analysis of a functionally diverse family of proteins homologous to the MT-A70 subunit of the human mRNA:m(6)A methyltransferase. *J. Mol. Evol.* 55: 431-444.
3. Clancy, M.J., et al. 2002. Induction of sporulation in *Saccharomyces cerevisiae* leads to the formation of N6-methyladenosine in mRNA: a potential mechanism for the activity of the IME4 gene. *Nucleic Acids Res.* 30: 4509-4518.
4. Heilig, R., et al. 2003. The DNA sequence and analysis of human chromosome 14. *Nature* 421: 601-607.
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. Liang, Y.J., et al. 2008. Membrane glycoprotein M6A promotes mu-opioid receptor endocytosis and facilitates receptor sorting into the recycling pathway. *Cell Res.* 18: 768-779.
7. Chen, G.D., et al. 2008. Effects of 50 Hz magnetic fields on gene expression in MCF-7 cells. *Zhejiang Da Xue Xue Bao Yi Xue Ban* 37: 15-22.

## CHROMOSOMAL LOCATION

Genetic locus: METTL3 (human) mapping to 14q11.2; Mettl3 (mouse) mapping to 14 C2.

## SOURCE

METTL3 (Q-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of METTL3 of human origin.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-104991 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

METTL3 (Q-12) is recommended for detection of METTL3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with other METTL family members.

METTL3 (Q-12) is also recommended for detection of METTL3 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for METTL3 siRNA (h): sc-92172, METTL3 siRNA (m): sc-149387, METTL3 shRNA Plasmid (h): sc-92172-SH, METTL3 shRNA Plasmid (m): sc-149387-SH, METTL3 shRNA (h) Lentiviral Particles: sc-92172-V and METTL3 shRNA (m) Lentiviral Particles: sc-149387-V.

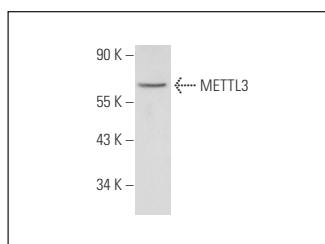
Molecular Weight of METTL3: 64 kDa.

Positive Controls: HEK293 whole cell lysate: sc-45136.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



METTL3 (Q-12): sc-104991. Western blot analysis of METTL3 expression in HEK293 whole cell lysate.

## RESEARCH USE

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