PRODUCT INFORMATION

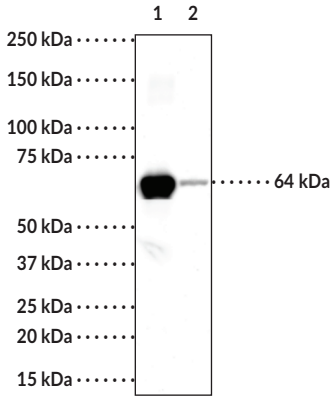
METTL16 Monoclonal Antibody (Clone 4C9)

Item No. 29207

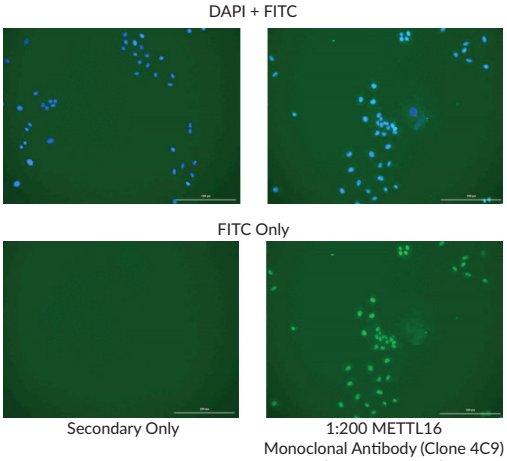
Overview and Properties

Contents:	This vial contains 100 µg of protein G-purified monoclonal antibody.
Synonyms:	N^6-Adenosine-methyltransferase METTL16, EC 2.1.1.346, EC 2.1.1.62, Methyltransferase-like Protein 16, Methyltransferase 10 Domain-containing Protein, Putative Methyltransferase METT10D, U6 snRNA Methyltransferase METT10D, U6 Small Nuclear RNA (adenine-(43)-N(6))-Methyltransferase
Immunogen:	Full-length recombinant human METTL16
Species Reactivity:	(+) Human; other species not tested
Uniprot No.:	Q86W50
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥3 years
Storage Buffer:	PBS, pH 7.2, with 50% glycerol and 0.02% sodium azide
Clone:	4C9
Host:	Mouse
Isotype:	IgG1
Applications:	ELISA, Immunofluorescence (IF), and Western blot (WB); the recommended starting dilution for ELISA and WB is 1:1,000 and 1:200 for IF. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Image



Lane 1: METTL16 Recombinant Protein (50 ng)
Lane 2: A549 Cell Lysate (30 µg)



Immunofluorescence analysis of paraformaldehyde-fixed A549 cells. After incubation with METT16 Monclonal Antibody (Item No. 29207) (Clone 4C9), at a 1:200 dilution (or negative control), cells were incubated with FITC-labeled anti-mouse IgG (Item No. 10006617), followed by DAPI nuclear stain. Images show FITC alone or both fluorescence channels to highlight nuclear staining (where applicable).

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Description

Methyltransferase-like protein 16 (METTL16) is an m^{6}A RNA methyltransferase encoded by the *METTL16* gene in humans and localized to the cell nucleus.[1,2] It is composed of a methyltransferase domain that associates with RNA and two vertebrate conserved regions (VCRs) on the C-terminal end that promote splicing.[3] METTL16 acts as an epigenetic writer by methylating the pre-mRNA of the S-adenosylmethionine (SAM) synthetase MAT2A in the presence of SAM. It also methylates the adenine at position 43 of spliceosome component U6 snRNA and interacts with cancer-associated MALAT1 long non-coding RNA (lncRNA).[1,4] Knockout of *Mettl16* in mouse embryos leads to a reduction in Mat2a mRNA expression, transcriptome dysregulation, and lethality at approximately the implantation stage.[5] The expression of *METTL16* is increased in isolated human colon, but not rectal, adenocarcinoma tumor tissue, and decreased *METTL16* expression in rectal adenocarcinoma tumor tissue is associated with lower overall survival.[6] Cayman's METTL16 Monoclonal Antibody (Clone 4C9) can be used for ELISA, Immunofluorescence, and Western blot applications. The antibody recognizes METTL16 at 64 kDa from human samples.

References

1. Ruszkowska, A., Ruszkowski, A., Dauter, Z., *et al.* Structural insights into the RNA methyltransferase domain of METTL16. *Sci. Rep.* **8(1)**, 5311 (2018).
2. Brown, J.A., Kinzig, C.G., DeGregorio, S.J., *et al.* Methyltransferase-like protein 16 binds the 3'-terminal triple helix of MALAT1 long noncoding RNA. *Proc. Natl. Acad. Sci. USA* **113(49)**, 14013-14018 (2016).
3. Pendleton, K.E., Chen, B., Liu, K., *et al.* The U6 snRNA m^{6}A methyltransferase METTL16 regulates SAM synthetase intron retention. *Cell* **169(5)**, 824-835 (2017).
4. Warda, A.S., Kretschmer, J., Hackert, P., *et al.* Human METTL16 is a N^6-methyladenosine (m^{6}A) methyltransferase that targets pre-mRNAs and various non-coding RNAs. *EMBO Rep.* **18(11)**, 2004-2014 (2017).
5. Mendel, M., Chen, K.M., Homolka, D., *et al.* Methylation of structured RNA by the m^{6}A writer METTL16 is essential for mouse embryonic development. *Mol. Cell.* **71(5)**, 986-1000 (2018).
6. Liu, X., Liu, L., Dong, Z., *et al.* Expression patterns and prognostic value of m^{6}A-related genes in colorectal cancer. *Am. J. Transl. Res.* **11(7)**, 3972-3991 (2019).

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