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TET1 Antibody
Catalog # ASC11779

Specification

TET1 Antibody - Product Information

Application	**WB**
Primary Accession	Q8NFU7
Other Accession	NP_085128, 80312
Reactivity	**Human, Mouse, Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**IgG**
Calculated MW	**Predicted: 235 kDa** **Observed: 240 kDa KDa**
Application Notes	**TET1 antibody can be used for detection of TET1 by Western blot at 1 - 2 µg/ml. Antibody can also be used for Immunohistochemistry at 5 µg/mL. For Immunoflorescence start at 20 µg/mL.**

TET1 Antibody - Additional Information

Gene ID **80312**

Target/Specificity
TET1 antibody was raised against an 18 amino acid peptide near the carboxy terminus of human TET1.

The immunogen is located within amino acids 2030 - 2080 of TET1.

Reconstitution & Storage
TET1 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.

Precautions
TET1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

TET1 Antibody - Protein Information

Name TET1 {ECO:0000303|PubMed:28397838, ECO:0000312|HGNC:HGNC:29484}

Function
Dioxygenase that plays a key role in active DNA demethylation, by catalyzing the sequential oxidation of the modified genomic base 5-methylcytosine (5mC) into 5-hydroxymethylcytosine (5hmC), 5-formylcytosine (5fC), and 5-carboxylcytosine (5caC) (PubMed:19372391, PubMed:21496894, PubMed:21778364, PubMed:35798741). In addition to its role in DNA demethylation, plays a more general role in chromatin regulation by recruiting histone modifying protein complexes to alter histone marks and chromatin accessibility, leading to

both activation and repression of gene expression (PubMed:33833093). Plays therefore a role in many biological processes, including stem cell maintenance, T- and B-cell development, inflammation regulation, genomic imprinting, neural activity or DNA repair (PubMed:31278917). Involved in the balance between pluripotency and lineage commitment of cells and plays a role in embryonic stem cells maintenance and inner cell mass cell specification. Together with QSER1, plays an essential role in the protection and maintenance of transcriptional and developmental programs to inhibit the binding of DNMT3A/3B and therefore de novo methylation (PubMed:33833093). May play a role in pancreatic beta-cell specification during development. In this context, may function as an upstream epigenetic regulator of PAX4 presumably through direct recruitment by FOXA2 to a PAX4 enhancer to preserve its unmethylated status, thereby potentiating PAX4 expression to adopt beta-cell fate during endocrine lineage commitment (PubMed:35798741). Under DNA hypomethylation conditions, such as in female meiotic germ cells, may induce epigenetic reprogramming of pericentromeric heterochromatin (PCH), the constitutive heterochromatin of pericentromeric regions. PCH forms chromocenters in the interphase nucleus and chromocenters cluster at the prophase of meiosis. In this context, may also be essential for chromocenter clustering in a catalytic activity-independent manner, possibly through the recruitment polycomb repressive complex 1 (PRC1) to the chromocenters (By similarity). During embryonic development, may be required for normal meiotic progression in oocytes and meiotic gene activation (By similarity). Binds preferentially to DNA containing cytidine-phosphate- guanosine (CpG) dinucleotides over CpH (H=A, T, and C), hemimethylated- CpG and hemimethylated-hydroxymethyl-CpG (PubMed:29276034).

Cellular Location
Nucleus {ECO:0000250|UniProtKB:Q3URK3}. Chromosome. Note=Localization to chromatin is promoted by monoubiquitination on Lys-1589 [Isoform 2]: Nucleus. Chromosome {ECO:0000250|UniProtKB:Q3URK3}. Note=During DNA replication, localizes to sites of ongoing DNA replication in heterochromatin (in late S phase) in an UHRF1- and CRL4(VprBP)-dependent manner, as a consequence of ubiquitination of the conserved residue Lys-1589. Localization to heterochromatin is independent of catalytic activity

Tissue Location
Expressed in fetal heart, lung and brain, and in adult skeletal muscle, thymus and ovary. Not detected in adult heart, lung or brain. Up-regulated in glioblastoma cells (at protein level) (PubMed:25284789).

TET1 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

TET1 Antibody - Images

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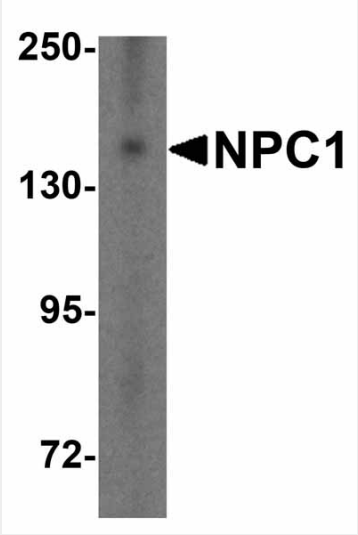

Western blot analysis of NPC1 in HepG2 cell lysate with NPC1 antibody at 1 µg/mL.

TET1 Antibody - Background

TET1, a member of the ten-eleven-translocation (TET) family of genes, was initially discovered as a fusion partner of MLL in acute myeloid leukemias containing the t(10;11)(q22;q23) (1). It is a methylcytosine dioxygenase that catalyzes the conversion of methylcytosine to 5-hydroxymethylcytosine (2). TET1 expression is regulated during inflammation in both THP-1 and primary dendritic cells, and is a negative transcriptional regulator of IL-1beta following and inflammatory stimulus (3). Recent evidence has shown that TET1 is part of a signaling pathway that regulates breast cancer growth and metastasis (4).

TET1 Antibody - References

Lorsbach RB, Moore J, Mathew S, et al. TET1, a member of a novel protein family, is fused to MLL in acute myeloid leukemia containing the t(10;11)(q22;q23). Leukemia 2003; 17:637-41.
Tahilani M, Koh KP, Shen Y, et al. Conversion of 5-methylcytosine to 5-hydroxymethylcytosine in mammalian DNA by MLL partner TET1. Science 2009; 324:930-5.
Neves-Costa A and Moita LF. TET1 is a negative transcriptional regulator of IL-1b in the THP-1 cell line. Mol. Immunol. 2013; 54:264-70.
Sun M, Song CX, Huang H, et al. HMGA2/TET1/HOXA9 signaling pathway regulates breast cancer growth and metastasis. Proc. Natl. Acad. Sci. USA 2013; 110:9920-5.