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(Mouse) Tet1 Blocking Peptide (C-term)

Synthetic peptide
Catalog # BP21235b

Specification

(Mouse) Tet1 Blocking Peptide (C-term) - Product Information

Primary Accession Q3URK3

(Mouse) Tet1 Blocking Peptide (C-term) - Additional Information

Gene ID 52463

Target/Specificity
The synthetic peptide sequence is selected from aa 1845-1859 of HUMAN Tet1

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

(Mouse) Tet1 Blocking Peptide (C-term) - Protein Information

Name Tet1

Synonyms Cxxc6, Kiaa1676

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:20639862, PubMed:21496894, PubMed:21778364). 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:28504700, PubMed:32286661). Plays therefore a role in many biological processes, including stem cell maintenance, T- and B-cell development, inflammation regulation, iron homeostasis, neural activity or DNA repair (PubMed:20639862, PubMed:31089182, PubMed:32855402,

PubMed:33895792). Involved in the balance between pluripotency and lineage commitment of cells it plays a role in embryonic stem cells maintenance and inner cell mass cell specification (PubMed:20639862, PubMed:28504700). 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 (By similarity). May play a role in the 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 (By similarity). 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 (PubMed:34166371). During embryonic development, may be required for normal meiotic progression in oocytes and meiotic gene activation (PubMed:23151479). Binds preferentially to DNA containing cytidine-phosphate-guanosine (CpG) dinucleotides over CpH (H=A, T, and C), hemimethylated-CpG and hemimethylated-hydroxymethyl-CpG (By similarity).

Cellular Location
Nucleus. Chromosome [Isoform 2]: Nucleus. Chromosome. 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, by ubiquitination of the conserved residue Lys-1537. Localization to heterochromatin is independent of catalytic activity.

Tissue Location
Expressed in germinal vesicle (GV) stage and MII- stage oocytes and in early embryos (PubMed:24357321). Also detected somatic tissues, including brain, liver and kidney, but at very low levels (PubMed:24357321). [Isoform 2]: Preferentially expressed in differentiated cells, including in cerebral cortex, cerebellum and thymus (PubMed:27916660). Also expressed in heart, kidney, liver, muscle and spleen at much higher levels than isoform 1 (PubMed:28531272, PubMed:28855337, PubMed:33262245). In the brain, expressed at higher levels in neurons than in glial cells (PubMed:33262245). Expressed in the olfactory bulb and in the mammary gland (PubMed:28531272, PubMed:28855337).

(Mouse) Tet1 Blocking Peptide (C-term) - Protocols

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

- Blocking Peptides

(Mouse) Tet1 Blocking Peptide (C-term) - Images