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TET3 Antibody

Catalog # ASC11537

Product Information

Application	WB, IF, E
Primary Accession	O43151
Other Accession	NP_001274420, 149944516
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	193705
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	TET3 antibody can be used for detection of TET3 by Western blot at 1 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	200424
Other Names	Methylcytosine dioxygenase TET3, 1.14.11.n2, TET3, KIAA0401
Target/Specificity	TET3; At least three isoforms of TET3 are known to exist. TET3 antibody is predicted to not cross react with other TET proteins.
Reconstitution & Storage	TET3 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	TET3 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	TET3 (HGNC:28313)
Function	Dioxygenase that catalyzes the conversion of the modified genomic base 5-methylcytosine (5mC) into 5-hydroxymethylcytosine (5hmC) and plays a key role in epigenetic chromatin reprogramming in the zygote following fertilization (PubMed:31928709). Also mediates subsequent conversion of 5hmC into 5-formylcytosine (5fC), and conversion of 5fC to 5-carboxylcytosine (5caC). Conversion of 5mC into 5hmC, 5fC and 5caC probably constitutes the first step in cytosine demethylation (By similarity). Selectively binds to the promoter region of target genes and contributes to regulate the expression of numerous developmental genes (PubMed:23217707). In zygotes, DNA demethylation occurs selectively in the paternal pronucleus before the first

	cell division, while the adjacent maternal pronucleus and certain paternally-imprinted loci are protected from this process. Participates in DNA demethylation in the paternal pronucleus by mediating conversion of 5mC into 5hmC, 5fC and 5caC. Does not mediate DNA demethylation of maternal pronucleus because of the presence of DPPA3/PGC7 on maternal chromatin that prevents TET3-binding to chromatin (By similarity). In addition to its role in DNA demethylation, also involved in the recruitment of the O-GlcNAc transferase OGT to CpG-rich transcription start sites of active genes, thereby promoting histone H2B GlcNAcylation by OGT (PubMed:23353889). 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:Q8BG87}. Cytoplasm {ECO:0000250|UniProtKB:Q8BG87}. Chromosome {ECO:0000250|UniProtKB:Q8BG87}. Note=At the zygotic stage, localizes in the male pronucleus, while it localizes to the cytoplasm at other preimplantation stages. Binds to the promoter of target genes, close to the transcription start site. {ECO:0000250|UniProtKB:Q8BG87}
Tissue Location	Expressed in colon, muscle, adrenal gland and peripheral blood lymphocytes.

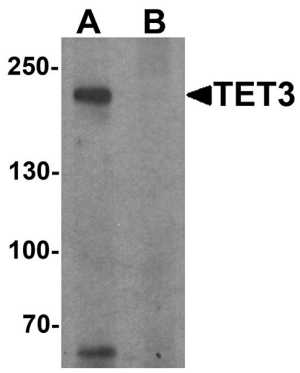
Background

TET3 Antibody: TET3, a member of the ten-eleven-translocation (TET) family of genes, is a methylcytosine dioxygenase that catalyzes the conversion of methylcytosine to 5-hydroxymethylcytosine and is most abundantly expressed in hematopoietic cells. Unlike the related TET2 protein, mutations in TET3 have not been observed in any myeloid malignancies. TET3 has been shown to be involved in the demethylation of zygotic DNA before the first mitosis and has been suggested to be involved in the epigenetic reprogramming of the zygotic paternal DNA following natural fertilization and may also contribute to somatic cell nuclear reprogramming during animal cloning.

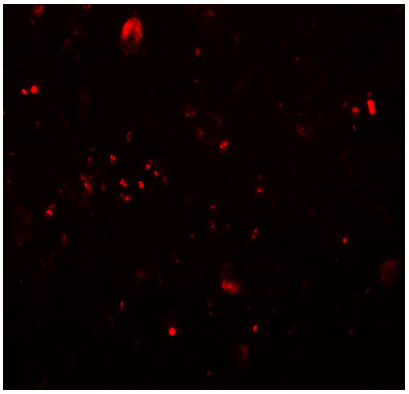
References

Langemeijer SM, Kuiper RP, Berends M, et al. Acquired mutations in TET2 are common in myelodysplastic syndromes. Nat. Genet. 2009; 41:838-42.
Schaub FX, Looser R, Li S, et al. Clonal analysis of TET2 and JAK2 mutations suggests that TET2 can be a late event in the progression of myeloproliferative neoplasms. Blood 2011; 115:2003-7.
Langemeijer SMC, Aslanyan MG, and Jansen JH. TET proteins in malignant hematopoiesis. Cell Cycle 2009; 4044-8.
Gu TP, Guo F, Yang H, et al. The role of Tet3 DNA dioxygenase in epigenetic reprogramming by oocytes. Nature 2011; 477:606-10.

Images



Western blot analysis of TET3 in SK-N-SH cell lysate with TET3 antibody at 1 µg/ml in (A) the absence and (B) the presence of blocking peptide.



Immunofluorescence of TET3 in human brain tissue with TET3 antibody at 20 µg/mL.

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