

Active Recombinant Human TET2 Protein, His&Flag tagged

Cat. No. TET2-01H Lot. No. (See product label)

SPECIFICATION

Product Overview	Recombinant TET2 (1129-2002) protein that includes amino acids 1129-2002 of human TET2 proteins (accession number NP_001120680.1) was expressed in Sf9 cells and contains an N-terminal 6×His Tag and FLAG-Tag.
Species	Human
Source	Insect Cells
ProteinLength	1129-2002 aa
Description	TET (Ten Eleven Translocation) family proteins are cytosine oxygenases that catalyze the conversion of 5-methylcytosine (5mC) into 5-hydroxymethylcytosine (5hmC). 5hmC can be further oxidized into 5-formylcytosine (5fC) and 5-carboxylcytosine (5caC) by TET proteins. Methylation at the C5 position of cytosine is an epigenetic modification of the mammalian genome that plays an important role in transcriptional regulation. TET proteins are responsible for initiating the enzymatic deamination process leading to cytosine demethylation. TET2 plays an important role in normal myelopoiesis. Somatic loss-of-function mutations in TET2 gene frequently occur in patients with myeloid malignancies. TET2 loss increased hematopoietic stem cell self-renewal and myeloid transformation. TET2 promotes histone O-GlcNAcylation during gene transcription in embryonic stem cells. In addition, TET2 can be recruited to chromatin by CXXC domain protein IDAX. IDAX downregulates TET2 protein by activating caspase pathway.

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Form	Supplied in 25mM HEPES pH 7.5, 300mM NaCl, 5% glycerol, 0.04% Triton X-100, 0.2 mM TCEP.
Molecular Mass	102.7 kDa
Purity	> 70% by SDS-PAGE
Applications	Recombinant TET2 (1129-2002) protein is suitable for use in cytosine oxygenase assays, enzyme kinetics, inhibitor screening, and selectivity profiling. TET Activity Assay Conditions: 250 nM of 30 bp DNA oligos (sequence: 5'-CAGTAACTGTGGTC(mC)GGTAACTGACTTGCA-3', contains a 5mCpG site) was incubated with 100 nM recombinant TET2 (1129-2002) protein in buffer containing 50 mM HEPES, pH 8.0, 100 µM Fe(NH ₄) ₂ (SO ₄) ₂ , 2 mM ascorbate, 1 mM alpha-ketoglutarate, 1 mM ATP, 1 mM TCEP at 37 centigrade for 1 hr. Activity was detected by Dot-blot. This product has been used in the following publication(s): Shen, et. al., Nature. 2018 Feb 1;554(7690):123-127.
Storage	Recombinant proteins in solution are temperature sensitive and must be stored at -80 centigrade to prevent degradation. Avoid repeated freeze/thaw cycles and keep on ice when not in storage.
Concentration	0.2 µg/µL

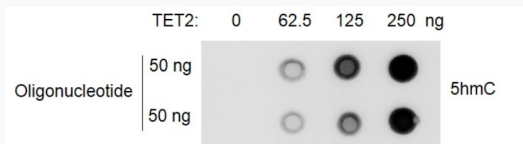
GENE INFORMATION

Gene Name	TET2 tet methylcytosine dioxygenase 2 [Homo sapiens (human)]
Official Symbol	TET2
Synonyms	TET2; tet methylcytosine dioxygenase 2; KIAA1546, tet oncogene family member 2; methylcytosine dioxygenase TET2; FLJ20032; tet oncogene family member 2; probable methylcytosine dioxygenase TET2; MDS; KIAA1546; MGC125715;

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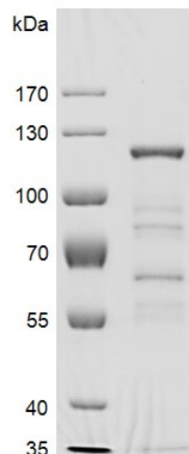
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Gene ID	54790
mRNA Refseq	NM_001127208
Protein Refseq	NP_001120680
MIM	612839
UniProt ID	Q6N021
Activity	 Recombinant TET2 (1129-2002) protein activity. 250 ng of 30 base oligo (containing 5mCpG) was incubated with 0.3125 µg, 0.625 µg or 1.25 µg TET2 in reaction buffer at 37 centigrade for 1 hour. Sample was concentrated to 5 µL, and 1 µL was spotted onto nylon membrane. Anti-5hmC Ab was used to detect products.

SDS-PAGE and WB

TET2 (1129-2002)



Recombinant TET2 (1129-2002) protein gel. Recombinant TET2 (1129-2002) protein was run on an 8% SDS-PAGE gel and stained with Coomassie Blue.

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