

TET2 (D9K3E) Rabbit mAb

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications: W, ChIP, ChIP-seq	Reactivity: M	Sensitivity: Endogenous	MW (kDa): 280	Source/Isotype: Rabbit IgG	UniProt ID: #Q4JK59	Entrez-Gene Id: 214133
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Product Usage Information

For optimal ChIP and ChIP-seq results, use 10 µl of antibody and 10 µg of chromatin (approximately 4 x 10⁶ cells) per IP. This antibody has been validated using SimpleChIP® Enzymatic Chromatin IP Kits.

Application

Western Blotting
Chromatin IP
Chromatin IP-seq

Dilution

1:1000
1:50
1:50

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

Specificity/Sensitivity

TET2 (D9K3E) Rabbit mAb recognizes endogenous levels of total mouse TET2 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with recombinant protein surrounding Ala1580 of mouse TET2 protein.

Background

Methylation of DNA at cytosine residues is a heritable, epigenetic modification that is critical for proper regulation of gene expression, genomic imprinting, and mammalian development (1,2). 5-methylcytosine is a repressive epigenetic mark established de novo by two enzymes, DNMT3a and DNMT3b, and is maintained by DNMT1 (3, 4). 5-methylcytosine was originally thought to be passively depleted during DNA replication. However, subsequent studies have shown that Ten-Eleven Translocation (TET) proteins TET1, TET2, and TET3 can catalyze the oxidation of methylated cytosine to 5-hydroxymethylcytosine (5-hmC) (5). Additionally, TET proteins can further oxidize 5-hmC to form 5-formylcytosine (5-fC) and 5-carboxylcytosine (5-caC), both of which are excised by thymine-DNA glycosylase (TDG), effectively linking cytosine oxidation to the base excision repair pathway and supporting active cytosine demethylation (6,7). TET2 is the most frequently mutated gene in myeloid dysplastic syndrome (MDS), a dysplasia of myeloid, megakaryocytic, and/or erythroid cell lineages, of which 30% progress to acute myeloid leukemia (AML) (8, 9). It is also mutated in diffuse large B-cell lymphoma (10). TET2 protein expression is often reduced in solid tumors such as prostate cancer, melanoma, and oral squamous cell carcinoma (11-13).

Background References

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Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **ChIP:** Chromatin IP **ChIP-seq:** Chromatin IP-seq

Cross-Reactivity Key

M: Mouse

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