

## Recombinant TET1 (1418-2136) protein

**Catalog No:** 31417, 31817**Expressed In:** Baculovirus**Quantity:** 20, 1000 µg**Concentration:** 0.2 µg/µl**Source:** Human

**Buffer Contents:** Recombinant TET1 (1418-2136) protein is supplied at a concentration of 0.2 µg/µl in 25 mM HEPES pH 7.5, 300 mM NaCl, 5% glycerol, 0.04% Triton X-100, 0.2 mM TCEP.

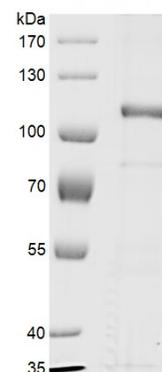
**Background:** TET (Ten Eleven Translocation) family proteins are cytosine oxygenases that catalyze the conversion of 5-methylcytosine (5mC) into 5-hydroxymethylcytosine (5hmC). 5hmC can be further oxidized into 5-formylcytosine (5fC) and 5-carboxylcytosine (5caC) by TET proteins. Methylation at the 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. TET1 preferentially binds to CpG-rich sequences at the promoters of both transcriptionally active and Polycomb-repressed genes and modulates gene silencing induced by cytosine methylation by controlling the levels of 5-mC and 5-hmC at gene promoters. TET1 may have the dual function of repressing the expression of a subset of genes through recruitment of transcriptional repressors to promoters. TET1 is important for stem cell maintenance and specification and is involved in the balance between pluripotency and lineage commitment. TET1 plays an important role in regulating adult hippocampal neurogenesis and cognition

**Protein Details:** Recombinant TET1 (1418-2136) protein that includes amino acids 1418-2136 of human TET1 (accession number NP\_085128.2) was expressed in a baculovirus expression system and contains an N-terminal 6×His and FLAG tag with a molecular weight of 84.3 kDa. The purity of the protein is >75% by SDS-PAGE.

**Application Notes:** Recombinant TET1 (1418-2136) protein is suitable for use in cytosine oxygenase assays, enzyme kinetics, inhibitor screening, and selectivity profiling.

**TET Activity Assay Conditions:** 250 nM DNA oligos (contains a 5mCpG site) was incubated with 100 nM recombinant TET1 (1418-2136) protein in buffer containing 50 mM HEPES, pH 8.0, 50 µM Fe(NH<sub>4</sub>)<sub>2</sub>(SO<sub>4</sub>)<sub>2</sub>, 100 µM ascorbate, 100 µM alpha-ketoglutarate, 100 µM ATP, 1 mM TCEP at 37deg;C for 1 hr. Activity was detected by Dot-blot.

**Storage and Guarantee:** Recombinant proteins in solution are temperature sensitive and must be stored at -80°C to prevent degradation. Avoid repeated freeze/thaw cycles and keep on ice when not in storage. This product is guaranteed for 6 months from date of receipt.

**TET1 (1418-2136)****Recombinant TET1 (1418-2136) protein gel.**

Recombinant TET1 (1418-2136) protein was run on an 8% SDS-PAGE gel and stained with Coomassie Blue.

**Recombinant TET1 (1418-2136) protein activity assay.**

250 ng of 30 base oligo (containing 5mCpG) was incubated with 0.3125 µg, 0.625 µg or 1.25 µg TET1 in reaction buffer at 37°C for 1 hour. Sample was concentrated to 5 µl, and 1 µl was spotted onto nylon membrane. Anti-5hmC Ab (Cat#: 39769) was used to detect products.