

TDG Antibody (N-term) Blocking Peptide
Synthetic peptide
Catalog # BP6624a**Specification**

TDG Antibody (N-term) Blocking Peptide - Product InformationPrimary Accession [Q13569](#)**TDG Antibody (N-term) Blocking Peptide - Additional Information****Gene ID** 6996**Other Names**

G/T mismatch-specific thymine DNA glycosylase, Thymine-DNA glycosylase, hTDG, TDG

Target/Specificity

The synthetic peptide sequence used to generate the antibody [AP6624a](/products/AP6624a) was selected from the N-term region of human TDG. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

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.

TDG Antibody (N-term) Blocking Peptide - Protein Information**Name** TDG**Function**

DNA glycosylase that plays a key role in active DNA demethylation: specifically recognizes and binds 5-formylcytosine (5fC) and 5-carboxylcytosine (5caC) in the context of CpG sites and mediates their excision through base-excision repair (BER) to install an unmethylated cytosine. Cannot remove 5-hydroxymethylcytosine (5hmC). According to an alternative model, involved in DNA demethylation by mediating DNA glycolase activity toward 5-hydroxymethyluracil (5hmU) produced by deamination of 5hmC. Also involved in DNA repair by acting as a thymine-DNA glycosylase that mediates correction of G/T mispairs to G/C pairs: in the DNA of higher eukaryotes, hydrolytic deamination of 5-methylcytosine to thymine leads to the formation of G/T mismatches. Its role in the repair of canonical base damage is however minor compared to its role in DNA demethylation. It is capable of hydrolyzing the carbon-nitrogen bond between the sugar-phosphate backbone of the DNA and a mispaired thymine. In addition to the G/T, it can remove thymine also from C/T and T/T mispairs in the order G/T >> C/T > T/T. It has no detectable

activity on apyrimidinic sites and does not catalyze the removal of thymine from A/T pairs or from single-stranded DNA. It can also remove uracil and 5-bromouracil from mispairs with guanine.

Cellular Location

Nucleus.

TDG Antibody (N-term) Blocking Peptide - Protocols

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

- [Blocking Peptides](#)

TDG Antibody (N-term) Blocking Peptide - Images**TDG Antibody (N-term) Blocking Peptide - Background**

The protein TDG belongs to the TDG/mug DNA glycosylase family. Thymine-DNA glycosylase (TDG) removes thymine moieties from G/T mismatches by hydrolyzing the carbon-nitrogen bond between the sugar-phosphate backbone of DNA and the mispaired thymine. With lower activity, this enzyme also removes thymine from C/T and T/T mispairings. TDG can also remove uracil and 5-bromouracil from mispairings with guanine. This enzyme plays a central role in cellular defense against genetic mutation caused by the spontaneous deamination of 5-methylcytosine and cytosine.

TDG Antibody (N-term) Blocking Peptide - References

Kim, E.J., Biochem. Biophys. Res. Commun. 377 (3), 838-842 (2008) Neddermann, P., J. Biol. Chem. 271 (22), 12767-12774 (1996)