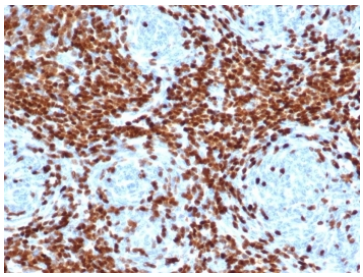
DNA nucleotidylexotransferase Antibody / TdT [clone DNTT/4506R] (V8879)

Catalog No.	Formulation	Size
V8879-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V8879-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V8879SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

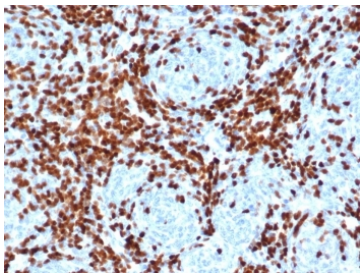
Recombinant RABBIT MONOCLONAL

Bulk quote request

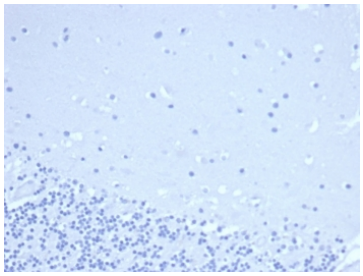
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG, kappa
Clone Name	DNTT/4506R
Purity	Protein A/G affinity
UniProt	P04053
Localization	Nucleus
Applications	Immunohistochemistry (FFPE) : 1-2ug/ml
Limitations	This DNA nucleotidylexotransferase antibody is available for research use only.



DNA nucleotidylexotransferase Antibody Thymus IHC. Immunohistochemistry of DNA nucleotidylexotransferase antibody in human thymus tissue. Formalin-fixed, paraffin-embedded human thymus demonstrates strong nuclear staining in immature cortical thymocytes, consistent with Terminal deoxynucleotidyl transferase expression in developing T lymphoblasts. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 9 10mM Tris with 1mM EDTA for 20 minutes followed by cooling prior to staining. The monoclonal antibody clone DNTT/4506R was used as the primary antibody, showing distinct nuclear localization in thymic precursor cells.



DNA nucleotidylexotransferase Antibody Thymus Immunohistochemistry. IHC staining of FFPE human thymus tissue with DNA nucleotidylexotransferase antibody (clone DNTT/4506R). HIER: boil tissue sections in pH 9 10mM Tris with 1mM EDTA for 20 min and allow to cool before testing.



Negative control: IHC staining of FFPE human brain tissue with DNA nucleotidylexotransferase antibody (clone DNTT/4506R) at 2ug/ml in PBS for 30min RT. HIER: boil tissue sections in pH 9 10mM Tris with 1mM EDTA for 20 min and allow to cool before testing.

Description

DNA nucleotidylexotransferase antibody, also known as Terminal deoxynucleotidyl transferase antibody, recognizes a specialized nuclear DNA polymerase encoded by the DNTT gene on chromosome 10q23-q24. DNA nucleotidylexotransferase Antibody (clone DNTT/4506R) detects Terminal deoxynucleotidyl transferase, commonly referred to as TdT, a member of the DNA polymerase X family selectively expressed in immature lymphoid cells. DNA nucleotidylexotransferase antibody, also referred to as DNTT antibody and TdT antibody in the literature, is widely used in research focused on lymphoid differentiation and hematologic malignancies.

Terminal deoxynucleotidyl transferase catalyzes the template-independent addition of deoxynucleotides to the 3-prime hydroxyl termini of DNA during V(D)J recombination. This unique enzymatic activity introduces N-region nucleotide diversity within immunoglobulin and T cell receptor gene segments, significantly expanding antigen receptor repertoire complexity. TdT functions within nuclear recombination centers in coordination with RAG1 and RAG2 complexes and other components of the non-homologous end joining pathway. Its catalytic core contains conserved polymerase domains characteristic of the Pol X family, enabling nucleotide incorporation without requiring a DNA template. A DNA nucleotidylexotransferase antibody therefore supports studies of adaptive immune system development and antigen receptor assembly.

DNTT expression is tightly regulated and largely restricted to early B and T lymphoblasts in bone marrow and thymus. In thymic cortex, TdT-positive cells represent developing T cell precursors undergoing receptor rearrangement. Expression decreases as lymphocytes mature, making TdT a well-established marker of lymphoid immaturity. Elevated nuclear TdT expression is frequently observed in acute lymphoblastic leukemia and lymphoblastic lymphoma, where DNA nucleotidylexotransferase antibody detection supports investigation of leukemic blast populations and lymphoid neoplasia biology.

Structurally, TdT contains regulatory regions that influence substrate selection and protein-protein interactions within recombination complexes. Alternative splicing of DNTT can generate isoforms with subtle biochemical differences that may affect catalytic efficiency and regulation. Persistent or dysregulated expression of DNTT contributes to genomic variability and is implicated in lymphoid malignancy development. Through its central role in immune receptor diversification, Terminal deoxynucleotidyl transferase remains essential to both normal lymphopoiesis and disease-oriented research applications.

This antibody can be compared with our TdT Antibody (clone TDT/1393) for detection of terminal deoxynucleotidyl transferase in lymphoid precursor cells and hematologic malignancy studies.

Application Notes

Optimal dilution of the DNA nucleotidylexotransferase antibody should be determined by the researcher.

Immunogen

A portion of amino acids 1-100 from the human protein was used as the immunogen for the DNA nucleotidylexotransferase antibody.

Storage

Aliquot the DNA nucleotidylexotransferase antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.