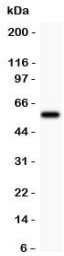
# TdT Antibody Rabbit Polyclonal / DNA nucleotidylexotransferase (R31581)

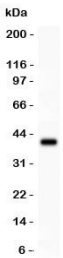
| Catalog No. | Formulation | Size |
|---|---|---|
| R31581 | 0.5mg/ml if reconstituted with 0.2ml sterile DI water | 100 ug |

**Bulk quote request**

| | |
|---|---|
| **Availability** | 1-3 business days |
| **Species Reactivity** | Human |
| **Format** | Antigen affinity purified |
| **Host** | Rabbit |
| **Clonality** | Polyclonal (rabbit origin) |
| **Isotype** | Rabbit IgG |
| **Purity** | Antigen affinity |
| **Buffer** | Lyophilized from 1X PBS with 2.5% BSA and 0.025% sodium azide |
| **Gene ID** | 1791 |
| **Applications** | Western Blot : 0.5-1ug/ml |
| **Limitations** | This TdT antibody is available for research use only. |




TdT Antibody Jurkat WB. Western blot of TdT antibody in human Jurkat cell lysate. A single band is observed at approximately 56 kDa, consistent with the predicted molecular weight of Terminal deoxynucleotidyl transferase. The rabbit polyclonal TdT antibody detects a distinct band corresponding to endogenous DNTT, supporting specific recognition of the nuclear DNA polymerase expressed in immature T lymphoblast-derived cells.




Western blot testing of TdT antibody rabbit polyclonal and recombinant human protein (0.5ng)

## Description

TdT antibody, also known as DNA nucleotidylexotransferase antibody and Terminal deoxynucleotidyl transferase antibody, recognizes a specialized nuclear DNA polymerase encoded by the DNTT gene on chromosome 10q23-q24. The TdT Antibody Rabbit Polyclonal detects Terminal deoxynucleotidyl transferase, commonly referred to as TdT, a member of the DNA polymerase X family selectively expressed in immature lymphoid cells. TdT antibody, also referred to as DNTT antibody and Terminal transferase antibody in the literature, is widely used in research focused on lymphoid development 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 distinctive 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 TdT 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 TdT 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 rabbit polyclonal TdT antibody is suitable for detecting Terminal deoxynucleotidyl transferase expression in research applications focused on lymphoid differentiation, immune repertoire formation, and leukemia biology. 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

The stated application concentrations are suggested starting amounts. Titration of the TdT antibody rabbit polyclonal may be required due to differences in protocols and secondary/substrate sensitivity.

## Immunogen

Human partial recombinant protein (AA 316-509) was used as the immunogen for this TdT antibody rabbit polyclonal.

## Storage

After reconstitution, the TdT antibody rabbit polyclonal can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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