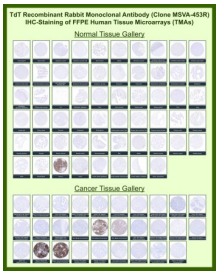
TdT Antibody for IHC / DNTT Antibody [clone MSVA-453R] (V6067)

Catalog No.	Formulation	Size
V6067-100UG	Antibody in 1X PBS with 0.05% BSA, 0.05% sodium azide	100 ug
V6067-20UG	Antibody in 1X PBS with 0.05% BSA, 0.05% sodium azide	20 ug

Recombinant RABBIT MONOCLONAL

Bulk quote request

Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG, kappa
Clone Name	MSVA-453R
UniProt	P04053
Localization	Nucleus
Applications	Immunohistochemistry (FFPE): 1:75-1:150
Limitations	This TdT antibody for IHC is available for research use only.



TdT Antibody for IHC Tissue Microarray (TMA). Immunohistochemistry analysis of Terminal deoxynucleotidyl transferase DNTT, also known as TdT, in formalin-fixed paraffin-embedded human normal and cancer tissue microarrays using recombinant rabbit monoclonal TdT antibody clone MSVA-453R. Tissue microarray (TMA) staining with HRP-DAB brown chromogen demonstrates strong nuclear localization in immature thymocytes, while most non-lymphoid normal tissues and non-lymphoid carcinomas show minimal to no staining. Within tumor tissue microarrays, nuclear positivity is observed in lymphoblastic neoplasms, including acute lymphoblastic leukemia, supporting its role as a marker of immature lymphoid cells. Evaluation across large TMA panels enables direct comparison of DNTT expression across diverse tissue types under standardized conditions. The observed staining patterns align with reported TdT expression profiles in the Human Protein Atlas.

Description

TdT Antibody for IHC detects Terminal deoxynucleotidyl transferase (DNTT), a specialized nuclear DNA polymerase encoded by the DNTT gene on chromosome 10q23-q24. Terminal deoxynucleotidyl transferase, commonly referred to as TdT and also known as DNA nucleotidylexotransferase or Terminal transferase, is a member of the DNA polymerase X

family selectively expressed in immature lymphoid cells. A TdT Antibody for IHC is commonly used to identify immature lymphoid populations in tissue sections and to support detection of lymphoblastic neoplasms in histological analysis. This recombinant monoclonal antibody clone MSVA-453R enables reliable immunohistochemical detection of nuclear TdT expression in formalin-fixed tissue samples. This antibody is part of a broader collection of IHC antibodies validated by tissue microarray analysis, supporting consistent staining across normal and cancer tissues.

TdT antibody, also referred to as DNTT antibody and Terminal transferase antibody in the literature, recognizes a nuclear enzyme that catalyzes the template-independent addition of deoxynucleotides to the 3-prime hydroxyl ends 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 additional 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.

DNTT expression is tightly regulated during lymphoid development and is largely restricted to early B and T lymphoblasts in bone marrow and thymus. In the thymic cortex, TdT-positive cells represent developing T cell precursors undergoing receptor rearrangement. Expression declines as lymphocytes mature, making TdT a well-established marker of lymphoid immaturity. A TdT Antibody for IHC typically demonstrates strong nuclear staining in immature lymphoid cells and is widely used to identify leukemic blast populations in acute lymphoblastic leukemia and lymphoblastic lymphoma, where nuclear TdT positivity serves as a key diagnostic feature distinguishing precursor lymphoid malignancies from mature lymphoid and non-hematologic tumors.

Structurally, Terminal deoxynucleotidyl transferase 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, TdT remains essential to normal lymphopoiesis and disease-oriented research applications. This TdT Antibody for IHC supports detection of nuclear TdT expression in studies of lymphoid development, leukemia biology, and hematologic malignancy research, and is available from NSJ Bioreagents. It 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

1. Optimal dilution of the TdT Antibody for IHC / DNTT Antibody should be determined by the researcher.

2. This DNTT/Terminal deoxynucleotidyl transferase antibody is recombinantly produced by expression in human HEK293 cells.

3. Manual Protocol: Freshly cut sections should be used (less than 10 days between cutting and staining). Heat-induced antigen retrieval for 5 minutes in an autoclave at 121oC in pH 7.8 Target Retrieval Solution buffer. Apply the antibody at a dilution of 1:150 at 37oC for 60 minutes. Visualization of bound antibody by the EnVision Kit (Dako, Agilent) according to the manufacturer's directions.

Immunogen

A recombinant fragment (around amino acids 52-192) of human Terminal deoxynucleotidyl transferase protein (exact sequence is proprietary) was used as the immunogen for the TdT antibody for IHC.

Storage

TdT/DNTT antibody with sodium azide - store at 2 to 8oC; antibody without sodium azide - store at -20 to -80oC.

Alternate Names

TdT antibody, DNTT antibody, Terminal deoxynucleotidyl transferase antibody, Terminal transferase antibody

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