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### Terminal Deoxynucleotidyl Transferase (TdT) Antibodies

#### Anti-Terminal Deoxynucleotidyl Transferase (TdT) antibodies (TdT-100P and TdT-101AP)

Terminal Deoxynucleotidyl Transferase (TdT). TdT is a DNA polymerase located in the cell nucleus which catalyses the polymerization of deoxynucleotides at the 3' hydroxyl ends of oligo or polydeoxynucleotide initiators and functions without a template. The Terminal Deoxynucleotidyl Transferase (TdT) enzyme involved in DNA polymerization and is localized in the nucleus of several hematopoietic cells such as prothymocytes, precursor T and a subset of B cells. The TdT protein is a 58 kDa nuclear protein. The expression of TdT has been known as a nuclear maker for the hematopoietic cells for many years (1). The conspicuous absence of expression and activity of TdT clearly distinguishes B cell development in the fetus from that in adult bone marrow. The TdT is expressed in most of cases of acute lymphatic leukemia (ALL), and non Hodgkinson lymphoma (NHL), in a subset of chronic and acute myeloid leukemia (CML and AML), acute non-lymphocytic leukemia (ANLL; 1, 2). Detection of nuclear expression of TdT is a valuable method for detection of various type of leukemia and monitoring minimal residual leukemic cells. The DNA polymerase, TdT, is involved in the rearrangement of the T-cell receptor genes in early thymocytes and in rearrangement of of the immunoglobulin genes during B-cell development. These rearrangements of the T-cell receptor genes and the immunoglobulin genes are performed in the nucleus and are lost upon maturation of the immune cells. Detection of TdT by flow cytometry and by IHC can be useful in detecting a small percentage of leukemic cells, in cases such as minimal residual T-cell acute lymphoblastic leukemia (3). Other antibodies that are used to detect residual T-cell ALL are combination of Anti-TdT with CD1a, CD2, CD5 and CD7 antibodies. The sensitivity of detecting smaller percentage of cell expressing TdT can be enhanced by double or triple staining with Anti-TdT and a combination of anti-CD antibodies. Antibodies used for double staining of AML cells are combination of Anti-TdT and Anti-HLA-DR, CD13, CD33, CD34 and CD45 antibodies. The anti-TdT antibodies label a 58 kDa nuclear protein in Western blot positive control and in bone marrow cells.

*FabGennix Inc.* provides Western blot positive controls for the TdT in ready-to-use buffer for applications in Western blot analyses. The TdT antibodies were (TdT-100P/101AP) were generated using cyclic peptide methodology that results in higher titer and specificity (6). Antibody TdT-100P and TdT-101AP also label nuclear TdT protein in CML, AML and ANLL samples in immuno-histochemistry applications. TdT-selective antibody is also available in affinity purified form for confocal, Western blotting and immunocytochemical analyses. *FabGennix Inc.* will also conjugate antibodies with fluorescent probes upon request at extra charge.

Catalog #	Host Species	Nature	Cross reactivity	Quantity	price
TdT-100P	Rabbit	Polyclonal antisera	R, M, H, *C, *monk	100 µl	195
TdT-101AP	Rabbit	Affinity purified IgG	R, M, H, *C, *monk	100 µg	225
PC-TdT	N/A	WB Positive control	N/A	5 appl	145
P-TdT-1	Peptide	Antigenic peptide	n/a	250 ug	125

R = rat; M = mouse; H = human; C = chicken; monk = monkey ; \* not all variants are labeled equally

- Immunogen:** Synthetic cyclic peptide (common to human terminal deoxynucleotidyl transferase (TdT) protein).
- Concentration:** TdT-100P Neat serum, TdT-101AP (IgG concentration 1-1.25 mg/ml in 50% antibody stabilization buffer).
- Applications:** Antibody TdT-100P and TdT-101AP is ideal for immunoprecipitation/ immunopull-down assays for rat, human and avian TdT protein. The dilutions for this antibody is for reference only, investigators are expected to determine the optimal conditions. Western blotting: > 1:1000; IMM & i.p pull-down assays: > 1:250; IHC <1:250
- Reactivity:** This antibody detects the 58 kDa TdT protein in PC-TdT samples and in bone marrow cells.
- Protocols:** Standard protocol for various applications (WB, IHC and IMM) of this antibody is provided with the product specification sheet, however, FabGennix Inc. strongly recommends investigators to optimize conditions.
- Form/Storage:** The antiserum is supplied in antibody stabilization buffer with 0.02% sodium azide. The affinity-purified antibodies are isolated on immobilized antigen affinity column and supplied as 0.5-0.65mg/ml IgG in antibody stabilization buffer. For long-term storage of antibodies, store at -20°C. FabGennix Inc. does not recommend storage of very dilute antibody solutions unless they are prepared in specially formulated multi-use antibody dilution buffer (Cat # DiluOBuffer). Working solutions of antibodies in DiluOBuffer should be filtered through 0.45µ filter after every use for long-term storage.

#### References:

- Bollum F. J. Blood 1979, 54, 1203-1215.
- Slaper-Cortenbach I. C.M et. al., Blood 1988, 72-1639-1644.
- Gore S. D. et. al., Immuno. Methods 1991, 32, 275-286.

\* For users who may require large amounts of Cal-100P or Cal-101AP, please enquire about bulk material discounts.

This Product is for Research Use Only and is NOT intended for use in humans or clinical diagnosis.

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