

# TdTIF1 (m): 293 Lysate: sc-111290

## BACKGROUND

Terminal deoxynucleotidyltransferase (TdT) is a DNA polymerase which catalyzes the addition of deoxyribonucleotides onto the 3'-hydroxyl end of DNA primers without a DNA template. TdT activity can be positively or negatively regulated by association with certain TdT-interacting factors. TdTIF1 (terminal deoxynucleotidyltransferase-interacting factor 1), also called DNTTIP1 or TdIF1, localizes to the nucleus and functions to repress TdT activity. *In vitro*, TdTIF1 binds to the Pol  $\beta$ -like region of TdT, thus masking its DNA-binding region and blocking its access to the DNA. Expressed throughout the body with highest expression in the thymus, TdTIF1 contains N-terminal AT-hook motifs through which it binds to TdT. In addition to inhibiting TdT-DNA interaction, TdTIF1 can bind to TReP-132, a transcriptional co-activator of steroidogenic factor 1 (SF-1). When bound to SF-1, TdTIF1 enhances gene expression in steroid-producing cells.

## REFERENCES

1. Yamashita, N., Shimazaki, N., Ibe, S., Kaneko, R., Tanabe, A., Toyomoto, T., Fujita, K., Hasegawa, T., Toji, S., Tamai, K., Yamamoto, H. and Koiwai, O. 2001. Terminal deoxynucleotidyltransferase directly interacts with a novel nuclear protein that is homologous to p65. *Genes Cells* 6: 641-652.
2. Fujita, K., Shimazaki, N., Ohta, Y., Kubota, T., Ibe, S., Toji, S., Tamai, K., Fujisaki, S., Hayano, T. and Koiwai, O. 2003. Terminal deoxynucleotidyltransferase forms a ternary complex with a novel chromatin remodeling protein with 82 kDa and core histone. *Genes Cells* 8: 559-571.
3. Fujisaki, S., Sato, A., Toyomoto, T., Hayano, T., Sugai, M., Kubota, T. and Koiwai, O. 2005. Direct binding of TReP-132 with TdT results in reduction of TdT activity. *Genes Cells* 11: 47-57.
4. Kubota, T., Maezawa, S., Koiwai, K., Hayano, T. and Koiwai, O. 2007. Identification of functional domains in TdIF1 and its inhibitory mechanism for TdT activity. *Genes Cells* 12: 941-959.
5. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 611388. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

## CHROMOSOMAL LOCATION

Genetic locus: Dntt1p (mouse) mapping to 2 H3.

## PRODUCT

TdTIF1 (m): 293 Lysate represents a lysate of mouse TdTIF1 transfected 293 cells and is provided as 100  $\mu$ g protein in 200  $\mu$ l SDS-PAGE buffer.

## APPLICATIONS

TdTIF1 (m): 293 Lysate is suitable as a Western Blotting positive control for mouse reactive TdTIF1 antibodies. Recommended use: 10-20  $\mu$ l per lane.

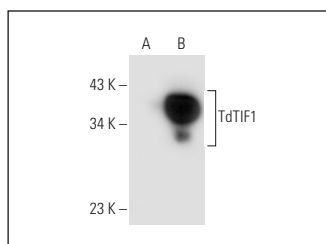
Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-transfected 293 cells.

TdTIF1 (G-2): sc-166296 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse TdTIF1 expression in TdTIF1 transfected 293 cells (starting dilution 1:100, dilution range 1:100-1:1,000).

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:  
1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

## DATA



TdTIF1 (G-2): sc-166296. Western blot analysis of TdTIF1 expression in non-transfected: sc-110760 (A) and mouse TdTIF1 transfected: sc-111290 (B) 293 whole cell lysates.

## STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.