

Store at  
-20C  
#58935**TCPTP (TC45) (D7T7D) Rabbit mAb**

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP	H M R Hm Mk	Endogenous	45	Rabbit IgG	#P17706-2	5771

**Product Usage Information****Application**

Western Blotting  
Immunoprecipitation

**Dilution**

1:1000  
1:50

**Storage**

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

**Specificity/Sensitivity**

TCPTP (TC45) (D7T7D) Rabbit mAb recognizes endogenous levels of total TCPTP (TC45) protein. This antibody does not recognize the 48 kDa (TC48) isoform.

**Species predicted to react based on 100% sequence homology**

Bovine, Dog, Pig

**Source / Purification**

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Pro382 of human TCPTP (TC45) protein.

**Background**

T cell protein tyrosine phosphatase (TCPTP, PTPN2, PTN2) is a non-receptor protein tyrosine phosphatase (PTP) that regulates signal transduction pathways by catalyzing the dephosphorylation of tyrosine residues (1). Two described TCPTP splice variants include a 48 kDa isoform (TC48) that is targeted to secretory pathway organelles (e.g., endoplasmic reticulum) by a hydrophobic carboxy terminus, and a 45 kDa isoform (TC45) that actively shuttles between the nucleus and cytoplasm (2). TCPTP substrates include receptor and non-receptor tyrosine kinases, such as EGFR, JAK1/3, and Src-family kinases, as well as STAT3 and other nuclear substrates (3-6). Research studies show that the corresponding *PTPN2* gene is deleted in a subset of human T-cell acute lymphoblastic leukemias. The loss of TCPTP has been suggested to promote tumor progression through enhanced JAK/STAT signaling (7,8).

**Background References**

- Muppurala, M. et al. (2013) *Biochim Biophys Acta* 1833, 1125-32.
- Lorenzen, J.A. et al. (1995) *J Cell Biol* 131, 631-43.
- Simoncic, P.D. et al. (2002) *Curr Biol* 12, 446-53.
- Tiganis, T. et al. (1998) *Mol Cell Biol* 18, 1622-34.
- van Vliet, C. et al. (2005) *Nat Immunol* 6, 253-60.
- Fukushima, A. et al. (2010) *Diabetes* 59, 1906-14.
- Kleppe, M. et al. (2010) *Nat Genet* 42, 530-5.
- Kleppe, M. et al. (2011) *Blood* 117, 7090-8.

**Species Reactivity**

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

**Western Blot Buffer**

**IMPORTANT:** For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween@ 20 at 4°C with gentle shaking, overnight.

**Applications Key**

**W:** Western Blotting **IP:** Immunoprecipitation

**Cross-Reactivity Key**

**H:** Human **M:** Mouse **R:** Rat **Hm:** Hamster **Mk:** Monkey

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