# Human/Mouse/Rat TC-PTP Antibody

Monoclonal Mouse $IgG_{2A}$ Clone # 252294

Catalog Number: MAB1930

## DESCRIPTION

| | |
|---|---|
| **Species Reactivity** | Human/Mouse/Rat |
| **Specificity** | Detects human, mouse, and rat TC-PTP in Western blots. In Western blots, no cross-reactivity with PTP1B is observed. |
| **Source** | Monoclonal Mouse $IgG_{2A}$ Clone # 252294 |
| **Purification** | Protein A or G purified from hybridoma culture supernatant |
| **Immunogen** | *E. coli*-derived recombinant human TC-PTP<br>Pro2-Asn314<br>Accession # P17706 |
| **Formulation** | Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.<br>*Small pack size (-SP) is supplied either lyophilized or as a 0.2 μm filtered solution in PBS. |

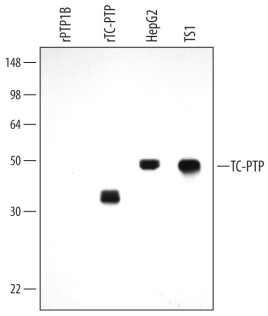
## APPLICATIONS

**Please Note:** *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

| | Recommended Concentration | Sample |
|---|---|---|
| **Western Blot** | 0.5 µg/mL | See Below |

## DATA

**Western Blot**




**Detection of Human/Mouse/Rat TC-PTP by Western Blot.** Western blot shows lysates of HepG2 human hepatocellular carcinoma cell line and TS1 mouse helper T cell line. PVDF membrane was probed with 0.5 µg/mL Mouse Anti-Human/Mouse/Rat TC-PTP Monoclonal Antibody (Catalog # MAB1930) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF007). For additional reference, Recombinant Human PTP1B (Catalog # 1366-PT) and Recombinant Human TC-PTP aa 2-314 (Catalog # 1930-PT) (1 ng/lane) were included. A specific band for TC-PTP was detected at approximately 45 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

## PREPARATION AND STORAGE

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|---|---|
| **Reconstitution** | Reconstitute at 0.5 mg/mL in sterile PBS. |
| **Shipping** | The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.<br>*Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C |
| **Stability & Storage** | **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**<br>● 12 months from date of receipt, -20 to -70 °C as supplied.<br>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.<br>● 6 months, -20 to -70 °C under sterile conditions after reconstitution. |

## BACKGROUND

T-cell protein tyrosine phosphatase (TC-PTP), also known as PTPT and PTPN2, is an enzyme that removes phosphate groups covalently attached to tyrosine residues in proteins. This enzyme has two C-terminal end splice variants with distinctly different subcellular localizations. The shorter 45 kilodalton isoform is exclusively nuclear in resting cells, but redistrubutes to the cytosol upon stimulation with growth factors (1) and cellular stress (2). The longer 48 kilodalton isoform is exclusively found in the endoplasmic reticulum (3) and seems to have distinctly different physiologic substrates from the smaller isoform (1, 4). Although found in many cell types and tissues, TC-PTP is particularly prominent in hemopoietic cell types (5, 6). Knockout mice lacking TC-PTP are born viable but die 3 to 5 weeks after birth of erythropoietic and lymphopoietic deficits (7), indicating a critical role for TC-PTP in bone marrow maturation. TC-PTP will dephosphorylate a wide range of phosphoproteins, such as $p52^{Shc}$ (6) and receptors for EGF (1), Insulin (8) and growth hormone (6). The recombinant protein lacks the C-terminal 100 amino acids that determine intracellular localization but is fully active (9).

**References:**


1. Tiganis, T. *et al.* (1999) J. Biol. Chem. **274**:27768.
2. Lam, M.H. *et al.* (2001) J. Biol. Chem. **276**:37700.
3. Lorenzen, J.A. *et al.* (1995) J. Cell Biol. **131**:631.
4. Tiganis, T. *et al.* (1998) Mol. Cell. Biol. **18**:1622.
5. Cool, D.E. *et al.* (1989) Proc. Natl. Acad. Sci. USA **86**:5257.
6. Pasquali, C. *et al.* (2003) Mol. Endocrinol. **17**:2228.
7. You-Ten, K.E. *et al.* (1997) J. Exp. Med. **186**:683.
8. Galic, S. *et al.* (2003) Mol. Cell. Biol. **23**:2096.
9. Cool, D.E. *et al.* (1990) Proc. Natl. Acad. Sci. USA **87**:7280.




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