

# TC-PTP (F-8): sc-373835

## BACKGROUND

T-cell protein tyrosine phosphatase (TC-PTP) is a non-transmembrane enzyme. The noncatalytic domain of TC-PTP is alternatively spliced to generate p45TC, which localizes to the nucleus, and p48TC, which contains a hydrophobic C-terminal tail and localizes to the ER. The C-terminal segment of p45TC regulates the activity of the catalytic domain through an intramolecular interaction. The p45TC variant of TC-PTP exits the nucleus upon EGF receptor activation and recognizes the EGF receptor and p52<sup>Shc</sup> cellular substrates. The p45TC activity almost completely inhibits the EGF-dependent activation of PI 3-kinase and PKB/Akt. In glioblastoma cells, the p45TC variant inhibits the DEGR-mediated activation of ERK2 and suppresses tumorigenicity *in vivo*. TC-PTP may play a role in lymphocyte signaling and hematopoietic homeostasis. TC-PTP negatively regulates JAK1 and JAK3 and TC-PTP-deficient mice display gross defects in the hematopoietic system. The gene encoding human TC-PTP maps to chromosome 18p11.21.

## CHROMOSOMAL LOCATION

Genetic locus: PTPN2 (human) mapping to 18p11.21.

## SOURCE

TC-PTP (F-8) is a mouse monoclonal antibody raised against amino acids 292-415 mapping at the C-terminus of TC-PTP of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

TC-PTP (F-8) is available conjugated to agarose (sc-373835 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-373835 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-373835 PE), fluorescein (sc-373835 FITC), Alexa Fluor® 488 (sc-373835 AF488), Alexa Fluor® 546 (sc-373835 AF546), Alexa Fluor® 594 (sc-373835 AF594) or Alexa Fluor® 647 (sc-373835 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-373835 AF680) or Alexa Fluor® 790 (sc-373835 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

TC-PTP (F-8) is recommended for detection of TC-PTP of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for TC-PTP siRNA (h): sc-76635, TC-PTP shRNA Plasmid (h): sc-76635-SH and TC-PTP shRNA (h) Lentiviral Particles: sc-76635-V.

Molecular Weight of TC-PTP isoforms: 48/45 kDa.

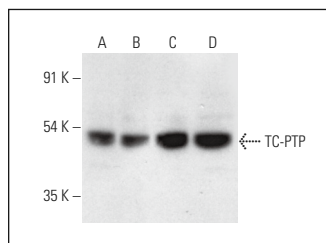
Positive Controls: HeLa whole cell lysate: sc-2200, HL-60 whole cell lysate: sc-2209 or Jurkat whole cell lysate: sc-2204.

## RECOMMENDED SUPPORT REAGENTS

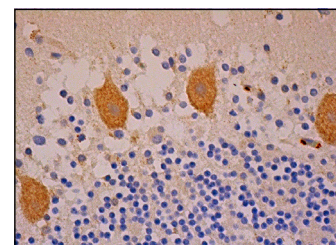
To ensure optimal results, the following support reagents are recommended:

- 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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.
- 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).
- 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.
- 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



TC-PTP (F-8): sc-373835. Western blot analysis of TC-PTP expression in HeLa (A), Jurkat (B), CCRF-CEM (C) and HL-60 (D) whole cell lysates.



TC-PTP (F-8): sc-373835. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing cytoplasmic staining of Purkinje cells.

## SELECT PRODUCT CITATIONS

1. Xu, Z.S., et al. 2016. PASD1 promotes Stat3 activity and tumor growth by inhibiting TC45-mediated dephosphorylation of Stat3 in the nucleus. *J. Mol. Cell Biol.* 8: 221-231.
2. Kramer, F., et al. 2020. Platelet-derived growth factor receptor β activation and regulation in murine myelofibrosis. *Haematologica* 105: 2083-2094.
3. Liu, J., et al. 2020. USP12 translocation maintains interferon antiviral efficacy by inhibiting CBP acetyltransferase activity. *PLoS Pathog.* 16: e1008215.
4. Parlato, M., et al. 2020. Loss-of-function mutation in PTPN2 causes aberrant activation of JAK signaling via STAT and very early onset intestinal inflammation. *Gastroenterology* 159: 1968-1971.e4.
5. Wang, X., et al. 2023. Matrine suppresses NLRP3 inflammasome activation via regulating PTPN2/JNK/SREBP2 pathway in sepsis. *Phytomedicine* 109: 154574.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

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