

PTP22 (G-3): sc-376349

BACKGROUND

The protein tyrosine phosphatase PTPN22 (PTP22, LYP, PEP, formerly PTPN8) is a genetic variant that confers risk of developing diverse human autoimmune diseases such as type 1 diabetes and rheumatoid arthritis. The minor allele of a missense SNP in PTPN22 encodes a hematopoietic-specific protein tyrosine phosphatase also known as "Lyp". The risk allele is present in about 17% of Caucasian individuals from the general population and in approximately 28% of Caucasian individuals with rheumatoid arthritis; it is thought to disrupt the P1 proline-rich motif that is important for interaction with the Src homology-3 (SH3) domain of CSK (cytoplasmic tyrosine kinase), potentially altering the normal functions of these proteins as negative regulators of T cell activation. The interaction between CSK and PTPN22 is highly specific and it is speculated that PTPN22 may be an effector and/or regulator of CSK in T cells and other hematopoietic cells.

REFERENCES

1. Cloutier, J.F., et al. 1996. Association of inhibitory tyrosine protein kinase p50^{csk} with protein tyrosine phosphatase PEP in T cells and other hemopoietic cells. *EMBO J.* 15: 4909-4918.
2. Cohen, S., et al. 1999. Cloning and characterization of a lymphoid-specific, inducible human protein tyrosine phosphatase, Lyp. *Blood* 93: 2013-2024.
3. Siminovitch, K.A. 2004. PTPN22 and autoimmune disease. *Nat. Genet.* 36: 1248-1249.
4. Cantón, I., et al. 2005. A single-nucleotide polymorphism in the gene encoding lymphoid protein tyrosine phosphatase (PTPN22) confers susceptibility to generalised vitiligo. *Genes Immun.* 6: 584-587.
5. Reddy, M.V., et al. 2005. The R620W C/T polymorphism of the gene PTPN22 is associated with SLE independently of the association of PDCD1. *Genes Immun.* 6: 658-662.

CHROMOSOMAL LOCATION

Genetic locus: Ptpn22 (mouse) mapping to 3 F2.2.

SOURCE

PTP22 (G-3) is a mouse monoclonal antibody raised against amino acids 368-506 mapping within an internal region of PTP22 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PTP22 (G-3) is available conjugated to agarose (sc-376349 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376349 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376349 PE), fluorescein (sc-376349 FITC), Alexa Fluor[®] 488 (sc-376349 AF488), Alexa Fluor[®] 546 (sc-376349 AF546), Alexa Fluor[®] 594 (sc-376349 AF594) or Alexa Fluor[®] 647 (sc-376349 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-376349 AF680) or Alexa Fluor[®] 790 (sc-376349 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor[®] is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

PTP22 (G-3) is recommended for detection of PTP22 of mouse and rat 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PTP22 siRNA (m): sc-61420, PTP22 shRNA Plasmid (m): sc-61420-SH and PTP22 shRNA (m) Lentiviral Particles: sc-61420-V.

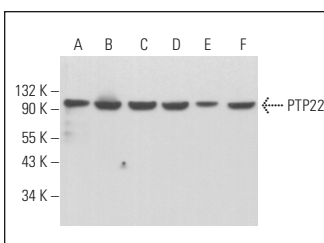
Molecular Weight of PTP22: 105 kDa.

Positive Controls: MTE1D whole cell lysate: sc-364918, RAW 264.7 whole cell lysate: sc-2211 or NIH/3T3 whole cell lysate: sc-2210.

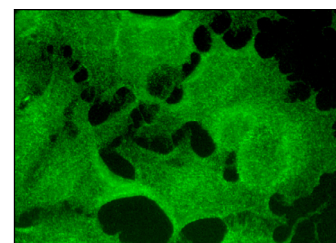
RECOMMENDED SUPPORT REAGENTS

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.

DATA



PTP22 (G-3): sc-376349. Western blot analysis of PTP22 expression in MTE1D (A), RAW 264.7 (B), NIH/3T3 (C), F9 (D), 3T3-L1 (E) and KNRK (F) whole cell lysates.



PTP22 (G-3): sc-376349. Immunofluorescence staining of formalin-fixed Hep G2 cells showing membrane localization.

SELECT PRODUCT CITATIONS

1. Joshi, R.N., et al. 2019. Phosphatase inhibitor PPP1R11 modulates resistance of human T cells toward Treg-mediated suppression of cytokine expression. *J. Leukoc. Biol.* 106: 413-430.

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.