SANTA CRUZ BIOTECHNOLOGY, INC.

PTP22 (E-5): sc-393766

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. and Veillette, A. 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 (human) mapping to 1p13.2.

SOURCE

PTP22 (E-5) is a mouse monoclonal antibody raised against amino acids 363-615 mapping within an internal region of PTP22 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PTP22 (E-5) is available conjugated to agarose (sc-393766 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393766 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393766 PE), fluorescein (sc-393766 FITC), Alexa Fluor® 488 (sc-393766 AF488), Alexa Fluor® 546 (sc-393766 AF546), Alexa Fluor® 594 (sc-393766 AF594) or Alexa Fluor® 647 (sc-393766 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393766 AF680) or Alexa Fluor® 790 (sc-393766 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

PTP22 (E-5) is recommended for detection of PTP22 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PTP22 siRNA (h): sc-61419, PTP22 shRNA Plasmid (h): sc-61419-SH and PTP22 shRNA (h) Lentiviral Particles: sc-61419-V.

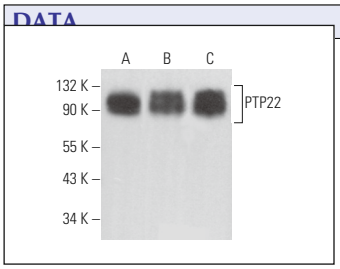
Molecular Weight of PTP22: 105 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, Ramos cell lysate: sc-2216 or Raji whole cell lysate: sc-364236.

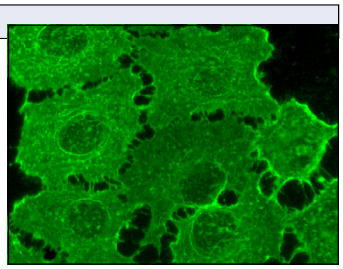
RECOMMENDED SUPPORT REAGENTS

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 (E-5): sc-393766. Western blot analysis of PTP22 expression in Jurkat (**A**), Ramos (**B**) and Raji (**C**) whole cell lysates.



PTP22 (E-5): sc-393766. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane and cytoplasmic localization.

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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.