

PTP IA-2 (h): 293T Lysate: sc-158898

BACKGROUND

Protein tyrosine phosphatases, or PTPs, are type I transmembrane proteins, membrane-associated proteins or proteins localized in nuclei. Examples of transmembrane PTPs are LAR, PTP α , PTP β , PTP γ , PTP δ , PTP ϵ , PTP ζ , PTP κ and PTP μ . Transmembrane PTPs play diverse roles in a variety of cellular processes during development and in adult tissues. PTP IA-2 (PTP insulinoma-associated protein 2), also known as PTPRN, IA2, ICA512 (islet cell antigen 512) or RPTPN, is a receptor-type PTP-like protein containing a transmembrane region, an intracellular PTP-like domain and an extracellular N-terminus. Localizing to secretory granules, PTP IA-2 is exclusively expressed in neuroendocrine cells (including pancreatic islet cells) and is believed to participate in the regulation of secretory granule exocytosis. PTP IA-2 is an autoantigen and contributes to Insulin-dependent diabetes mellitus (IDDM). The detection of autoantibodies against PTP IA-2 is commonly used as a diabetes diagnosis marker.

REFERENCES

1. Dogra, R.S., et al. 2006. Alternative splicing of G6PC2, the gene coding for the islet-specific glucose-6-phosphatase catalytic subunit-related protein (IGRP), results in differential expression in human thymus and spleen compared with pancreas. *Diabetologia* 49: 953-957.
2. Piquer, S., et al. 2006. Monoclonal antibody 76F distinguishes IA-2 from IA-2 β and overlaps an autoantibody epitope. *J. Autoimmun.* 26: 215-222.
3. Primo, M.E., et al. 2006. Expression and physicochemical characterization of an extracellular segment of the receptor protein tyrosine phosphatase IA-2. *Biochim. Biophys. Acta* 1764: 174-181.
4. Gupta, M., et al. 2006. MHC class I chain-related gene-A is associated with IA-2 and IAA but not GAD in Swedish type 1 diabetes mellitus. *Ann. N.Y. Acad. Sci.* 1079: 229-239.
5. Mziaut, H., et al. 2006. Synergy of glucose and growth hormone signalling in islet cells through ICA512 and Stat5. *Nat. Cell Biol.* 8: 435-445.
6. Forrest, A.R., et al. 2006. Genome-wide review of transcriptional complexity in mouse protein kinases and phosphatases. *Genome Biol.* 7: R5.
7. Blancou, P., et al. 2007. Immunization of HLA class I transgenic mice identifies autoantigenic epitopes eliciting dominant responses in type 1 diabetes patients. *J. Immunol.* 178: 7458-7466.
8. Mett, V., et al. 2007. Engineering and expression of the intracellular domain of Insulinoma-associated tyrosine phosphatase (IA-2ic), a type 1 diabetes autoantigen, in plants. *Transgenic Res.* 16: 77-84.
9. Kim, S.J., et al. 2007. Crystal structure of the major diabetes autoantigen Insulinoma-associated protein 2 reveals distinctive immune epitopes. *Diabetes* 56: 41-48.

CHROMOSOMAL LOCATION

Genetic locus: PTPRN (human) mapping to 2q35.

PRODUCT

PTP IA-2 (h): 293T Lysate represents a lysate of human PTP IA-2 transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

APPLICATIONS

PTP IA-2 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive PTP IA-2 antibodies. Recommended use: 10-20 μ l per lane.

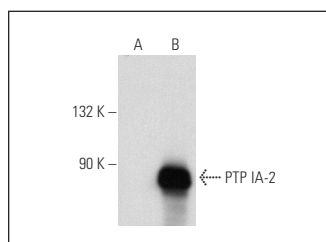
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

PTP IA-2 (98/4H6): sc-130570 is recommended as a positive control antibody for Western Blot analysis of enhanced human PTP IA-2 expression in PTP IA-2 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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.

DATA



PTP IA-2 (98/4H6): sc-130570. Western blot analysis of PTP IA-2 expression in non-transfected: sc-117752 (A) and human PTP IA-2 transfected: sc-158898 (B) 293T whole cell lysates.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. 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.