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PTP IA-2 β (h2): 293T Lysate: sc-176568

BACKGROUND

Protein-tyrosine phosphatase receptor-type IA-2 β (PTP IA-2 β), alternately known as PTPRN2 or phogrin, localizes in dense-core secretory vesicles of pancreas islet cells and influences Insulin secretion. The PTP IA-2 β precursor is an autoantigen that contributes to Insulin-dependent diabetes mellitus (IDDM). The autoantigenic epitopes of PTP IA-2 β appear within the cytoplasmic domain of this transmembrane protein. PTP IA-2 β is present at high levels in brain and pancreas with lower levels in trachea, prostate, stomach and spinal cord. The human PTPRN2 gene maps to chromosome 7q36.3. Northern blot analysis showed that PTPRN2 was expressed as 5.5- and 3.7-kb transcripts primarily in human brain and pancreas. Three alternative transcript splice variants of this gene encode distinct proteins.

REFERENCES

1. Kawasaki, E., et al. 1996. Molecular cloning and characterization of the human transmembrane protein tyrosine phosphatase homologue, phogrin, an autoantigen of type 1 diabetes. *Biochem. Biophys. Res. Commun.* 227: 440-447.
2. Smith, P.D., et al. 1996. ICAAR, a novel member of a new family of transmembrane, tyrosine phosphatase-like proteins. *Biochem. Biophys. Res. Commun.* 229: 402-411.
3. Achenbach, P., et al. 2002. Spontaneous peripheral T cell responses to the IA-2 β (phogrin) autoantigen in young nonobese diabetic mice. *J. Autoimmun.* 19: 111-116.
4. Gross, S., et al. 2002. Multimerization of the protein-tyrosine phosphatase (PTP)-like Insulin-dependent diabetes mellitus autoantigens IA-2 and IA-2 β with receptor PTPs (RPTPs). Inhibition of RPTP α enzymatic activity. *J. Biol. Chem.* 277: 48139-48145.
5. Drake, P.G., et al. 2003. A novel strategy for the development of selective active-site inhibitors of the protein tyrosine phosphatase-like proteins islet-cell antigen 512 (IA-2) and phogrin (IA-2 β). *Biochem. J.* 373: 393-401.
6. Kubosaki, A., et al. 2004. Targeted disruption of the IA-2 β gene causes glucose intolerance and impairs Insulin secretion but does not prevent the development of diabetes in NOD mice. *Diabetes* 53: 1684-1691.
7. SWISS-PROT/TrEMBL (Q92932). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>

CHROMOSOMAL LOCATION

Genetic locus: PTPRN2 (human) mapping to 7q36.3.

PRODUCT

PTP IA-2 β (h2): 293T Lysate represents a lysate of human PTP IA-2 β transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

STORAGE

Store at -20 $^{\circ}$ C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

APPLICATIONS

PTP IA-2 β (h2): 293T Lysate is suitable as a Western Blotting positive control for human reactive PTP IA-2 β antibodies.

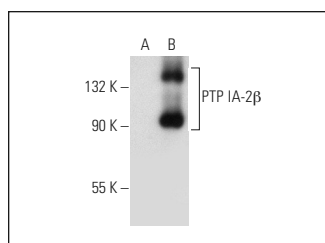
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

PTP IA-2 β (B-4): sc-393922 is recommended as a positive control antibody for Western Blot analysis of enhanced human PTP IA-2 β expression in PTP IA-2 β 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 MarkerTM Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



PTP IA-2 β (B-4): sc-393922. Western blot analysis of PTP IA-2 β expression in non-transfected: sc-117752 (A) and human PTP IA-2 β transfected: sc-176568 (B) 293T whole cell lysates.

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.