SANTA CRUZ BIOTECHNOLOGY, INC.

PTP IA-2β (B-4): sc-393922

BACKGROUND

Protein-tyrosine phosphatase receptor-type IA-2β (PTP IA-2β), alternately known as PTPRN2 or Phogrin, localizes in dense-core secretory vesicles of pancreas islet cells and influences Insulin secretion. The PTP IA-2β precursor is an autoantigen that contributes to Insulin-dependent diabetes mellitus (IDDM). The autoantigenic epitopes of PTP IA-2β appear within the cytoplasmic domain of this transmembrane protein. PTP IA-2β 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. 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-2β (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-2β with receptor PTPs (RPTPs). Inhibition of RPTPα 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-2β). Biochem. J. 373: 393-401.

CHROMOSOMAL LOCATION

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

SOURCE

PTP IA-2β (B-4) is a mouse monoclonal antibody raised against amino acids 61-360 mapping near the N-terminus of PTP IA-2β of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PTP IA-2β (B-4) is available conjugated to agarose (sc-393922 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-393922 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393922 PE), fluorescein (sc-393922 FITC), Alexa Fluor® 488 (sc-393922 AF488), Alexa Fluor® 546 (sc-393922 AF546), Alexa Fluor® 594 (sc-393922 AF594) or Alexa Fluor® 647 (sc-393922 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393922 AF680) or Alexa Fluor® 790 (sc-393922 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

PTP IA-2β (B-4) is recommended for detection of PTP IA-2β 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 PTP IA-2β siRNA (h): sc-106910, PTP IA-2β shRNA Plasmid (h): sc-106910-SH and PTP IA-2β shRNA (h) Lentiviral Particles: sc-106910-V.

Molecular Weight of PTP IA-2β precursor: 135 kDa.

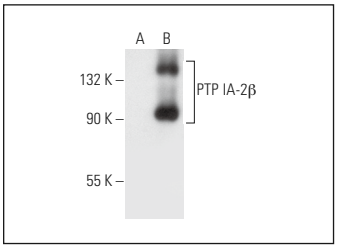
Molecular Weight of mature PTP IA-2β: 60/64 kDa.

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

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



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

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.